THE POLICY ROOTS OF THE MODERN ROYAL NAVY
1946 - 1963

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THE POLICY ROOTS OF THE MODERN ROYAL NAVY

1946 - 1963

by

William J. Crowe, Jr.
//
Commander, U. S. Navy

A Dissertation

presented to

the Faculty of Princeton University

in Candidacy for

the Degree of Doctor of Philosophy

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It is hardly possible to acknowledge all those individuals who have contributed to this study, so numerous have been their origins. Nevertheless, there are several which demand special mention. This entire dissertation revolves around the interviews which the writer conducted in England. Many Britons were most generous with their time in connection with these interviews, and in many instances extended the hospitality of their homes. It would be preferable to cite them by name and to acknowledge my gratitude to each. However, in order to induce a freer exchange of views and information every respondent was assured that there would be no citations of any nature. The fact remains that without their assistance this thesis could never have been written and that I owe these individuals a deep personal debt.

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* * *

It should be emphasized at this point that the judgments and opinions expressed in this study are mine alone. They do not necessarily reflect the views of the Department of the Navy, the Department of Defense, or any other agency of the United States Government. Similarly, they must not be interpreted as necessarily the views of the Ministry of Defense or any department or branch of the British Government.

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The following abbreviations may appear in footnotes and bibliographical references and in the text. It should be noted at the outset that American spelling is used throughout the dissertation as opposed to British.

AEA	Atomic Energy Authority (British)
AEC	Atomic Energy Commission (United States)
ASW	Anti-submarine Warfare
BBC	British Broadcasting Corporation
BOA	Board of Admiralty
CDS	Chief of Defense Staff
CENTO	Central Treaty Organization of the Middle East
CID	The British Committee of Imperial Defense
Cmd.	Command Paper
CSC	Chiefs of Staff Committee
DOD	Department of Defense (United States)
DRPC.	Defense Research Policy Committee
EDC	European Defense Community
FAA	Fleet Air Arm
FBM	Fleet Ballistic Missile
FOSM.	Flag Officer Submarines
GNP	Gross National Product
H.M.S.	Her Majesty's Ship (or His Majesty's Ship as appropriate)
H.M.S.O.	Her Majesty's Stationery Office.
H.C.Deb.	House of Commons Debates
H.L.Deb.	House of Lords Debates
ICBM.	Intercontinental Ballistic Missile
IRBM.	Intermediate Range Ballistic Missile
ISS	Institute for Strategic Studies
JCS	Joint Chiefs of Staff (United States)

JPS . . . . . Joint Planning Staff
LCA . . . . . Landing Craft Assault
LCM . . . . . Landing Craft Medium
LCT . . . . . Landing Craft Tank
LSA . . . . . Landing Ship Assault
LSD . . . . . Landing Ship Dock (U. S. - same as LSA)
LST . . . . . Landing Ship Tank
MP . . . . . Member of Parliament
MOA . . . . . Ministry of Aviation
MOD . . . . . Ministry of Defense
MOS . . . . . Ministry of Supply
MRBM. . . . . Medium Range Ballistic Missile
NATO. . . . . North Atlantic Treaty Organization
Navpers . . . . . Bureau of Naval Personnel (United States)
O. & M. . . . . Officers and Messenger Branch of Admiralty
PM . . . . . Prime Minister
RAF . . . . . Royal Air Force
RFA . . . . . Royal Fleet Auxiliary
RIIA . . . . . Royal Institute of International Affairs
RN . . . . . Royal Navy
RUSI. . . . . Royal United Service Institution
SAC . . . . . Strategic Air Command (United States)
SACLANT . . . . . Supreme Allied Commander Atlantic
SEATO . . . . . South East Asia Treaty Organization
SHAPE . . . . . Supreme Headquarters Allied Powers Europe
SHP . . . . . Shaft Horse Power
SP . . . . . Special Projects Office (United States)
U.K. . . . . United Kingdom
U.N. . . . . United Nations
U.S. . . . . United States
U.S.A. . . . . United States of America
USAF . . . . . United States Air Force
USMC . . . . . United States Marine Corps
USN . . . . . United States Navy
U.S.S. . . . . United States Ship
U.S.S.R. . . . . Union of Soviet Socialist Republics
WEU . . . . . Western European Union

CHAPTER I

INTRODUCTION

Although the pre-war British Navy was probably the world's best documented, there has been remarkably little written since World War II diagnosing its continually evolving role. Certainly there has been a great deal published describing the technical aspects of its ships, weapons and tactical doctrines. However, the few commentaries on the Royal Navy's place in the overall defense picture have largely confined themselves to a particular point in time or to a limited area of investigation.[1]

This can perhaps be explained by referring very quickly to some of the traumatic changes which have occurred in the British defense establishment over the last few years. The Royal Navy is no longer "second to none" among the world's navies, and in turn has abdicated the pre-eminent position which it held for so many decades in the British scheme of national strategy. The traditional task of defending the home islands from attack and protecting the links of Empire which once were the primary responsibility of the Royal Navy are now shared with the British Army and the Royal Air Force. As a result there has been an increasing tendency to treat British defense policy as a whole rather than as the sum of individual naval, air and army policies. At the same time the rapid march of technology has thrown the art of war into disarray. The most significant defense dispute in post-war Britain has revolved around nuclear weapons and served to a large extent to thrust into the background such lesser matters as purely naval strategy. In short events have combined to reduce the

time, effort and attention devoted specifically to British naval problems.

Nevertheless, it remains a fruitful topic for study. Along with practically every other element of British life the Navy has undergone some agonizing changes in adjusting to the realities of the mid-twentieth century. For the first decade after World War II the Navy's professional and political leaders were beset with a host of unforeseen problems - economic, technical, and international - which upset the traditional modes of thinking and which left the Admiralty searching for new concepts, rationales, and guideposts. This was a particularly trying period for the senior Service and at times there were doubts even among career officers as to whether the Navy had any significant role to play in the nuclear age. It is not only the story of physical responses but of complex psychological reactions as the Navy's leaders adjust to the new facts of life. Most of them were products of the pre-war era and were thoroughly indoctrinated with the Nelsonian traditions of British greatness and the Fleet's invincibility. To say the least it was difficult for these men to acknowledge the new order of things. Predictably this has been an important factor in the post-war policy process.

Gradually, however, the bi-polar nuclear stalemate and a precarious domestic economy made it clear to the British that they could no longer act with the freedom of old. Concurrently they came to the realization that Britain must act in partnership with the rest of the "free world" and that its traditional role must be scaled down correspondingly. For the Royal Navy this meant that the Fleet could no longer be expected to "rule the seas" or to secure the Empire's communications lines. These global tasks would have to be shared with allies. On the other hand Britain still had overseas responsibilities, and it was here that the Fleet could make a unique contribution. Under the sheltering umbrella of the "balance of terror" the greatest threat to peace and order has become the "brush fire"

or "local" war which threatens to escalate into major conflict. Mobile naval forces which can project air and land forces quickly to the scene are admirably suited to such operations and allow Britain still to play a meaningful role in the troubled areas of the Middle and Far East.

In addition to its important duties as a limited war force, the Royal Navy is now in the process of taking over the prime responsibility for Britain's nuclear deterrent. Ballistic missiles are in the process of replacing manned aircraft as the delivery agent for strategic weapons, and nuclear submarines have proved to be an ideal launching platform for such missiles. The Admiralty is presently in the process of constructing a small number of Polaris submarines which will by 1970 form the nation's nuclear deterrent force.

Today the Royal Navy is still the third largest in the world[2] and it has over 140 men-of-war actively deployed in every ocean. It boasts over 100,000 officers and men and a supporting establishment of over 140,000 civilians. Its Fleet is one of the main contributors to the naval forces of the Western Alliance and plays a major part in the continuing struggle for a more stable world order. After a prolonged period of decline, confusion and doubt the Admiralty has succeeded in defining a significant role for Britain's seagoing forces under dramatically altered and still changing conditions.

This investigation is concerned primarily with this search for a new role - in short, with the making of British naval policy. It is not a history of the Royal Navy since World War II. It is rather an attempt to delineate the major themes of naval policy, to discover the influences which have shaped them, to portray the physical result, and to suggest some of the more significant lessons of that experience. Hopefully a careful study of naval policy will offer several rewards:

(1) Most important it should give the reader a clearer understanding of what the policy was since 1945 and of how it has been translated into hardware and force levels.

Policies are not always accurately reflected in public declarations and documents. One has to look behind the public facade and to flesh out the picture with less obvious evidence which is nevertheless important and revealing. Sometimes research uncovers nothing to disaffirm the official public image, but until the search is carried out it is impossible to draw firm conclusions with any certitude.

(2) In addition this is an investigation of the interaction between governmental decision-makers which resulted in naval policy. In this regard it should offer the reader a fuller understanding of why individual steps were taken and how various political pressures combine to shape the policy product. Hopefully, it will explain to the practicing American naval officer why the Royal Navy responds the way it does and why it often reacts differently than the U. S. Navy in similar circumstances. The writer is a career naval officer, well aware that even as close as the American Navy and Royal Navy have been in thought and action, they exhibit different perspectives and many mutually misunderstood images and doctrines. Hopefully, this study may clear away some of this confusion and muddle.

(3) On a more general level this investigation is intended to offer the political analyst some empirical data against which to test general hypotheses regarding the British political system. This study of necessity is concerned with decision-making groups within the British Government and their relationships with each other. To diagnose the formation of naval policy is to examine the political process in action. This policy-making exhibits the familiar techniques - persuasion, bargaining and negotiation. Such a study inevitably offers opportunities for asking and answering important questions about the British system in general. What groups have influenced naval policy? What techniques are used and how successful are they? Are

administrative arrangements important in determining policy? What part does inertia and routine play in one department's relationships with another? These, of course, are only a few of the analytical questions which such a review might facilitate answering with regard to one organization's experience within the larger milieu of parliamentary government. This study will attempt to examine the Royal Navy's experience in this context and to draw some conclusions of more general relevance for political science.

(4) In the same vein an investigation of the Royal Navy during this period is also a partial examination of a great nation's reaction when its ability to manipulate the international environment is declining. Since World War II Great Britain has been beset with economic, technical and diplomatic difficulties which have steadily undermined its political potential in the society of nations. The Government has had to make painful adjustments in order to cope with these unwelcome problems. One of the most important aspects of this process has been its military policy. There has been too little analysis of the process of decline, and it is hoped that a close look at the evolution of British naval policy will in some measure fill in one small portion of this pattern.

(5) The last objective is strictly a practical one. It is extremely easy to find parallels between British and American experience and nowhere is this more true than in a study of military policy. Even more vital the examiner inevitably notes problems which have confronted Her Majesty's Government and which may very well in the near future plague American planners. For example both the English and American defense establishments exhibit the phenomenon of heavy commitments and limited resources. British experience may well have relevance for American planners and perhaps can offer them some helpful guidlines in meeting their own problems. This study will examine the Royal Navy's post-war evolution in this spirit.

It is appropriate at this point to say something about the methods employed in this study. The best evidence for this type of investigation would be such material as minutes of Defense Committee or Board of Admiralty meetings, memoranda or instructions by Ministers or Chiefs of Staff, and staff studies on which their considerations were based. There are, of course, severe restrictions on the use of such documents, and hence on the study of the interior processes of the British government for any recent period.[3] Many of the most pertinent documents carry a security classification that prevents their use in an open study.

This limitation manifestly enhances the opportunity for error. One cannot estimate the degree of distortion without access to the secret archives of the British government.[4] Nevertheless, this writer believes that the importance of the subject justifies a contemporary effort with materials available. Certainly a more definitive history will be welcome when it is practical to produce one, but no one can deny that fifty years hence the data will have lost much of its significance for the practicing military officer and politician. Effort has been made to reduce error by confining the study to general policy matters and by buttressing published information with personal interviews.

At this point it would be wise to describe briefly the writer's reasoning and methods in more detail so that the reader may make his own judgments as to the likelihood of distortion. The primary themes are those of naval policy and of the considerations which form them. It was chosen deliberately, because it implies a very general level of discourse and is not concerned so much with the classified details of weapons, dimensions of ships, missile performance and similar technical information. On the contrary it revolves around more basic issues such as the state of the economy, the balance of power in world politics, the nation's international responsibilities, prevailing strategical concepts and the availability of nuclear weapons.

These issues are dealt with in parliamentary debates, public Government documents, White Papers, and Service estimates. This is not to say that these sources in themselves are adequate or that this type of information is always readily available. Nevertheless, many of these matters are widely discussed in the popular press and in professional military literature. Often it is not so much events that are important as perspectives. The prevailing attitudes among naval officers, scientists and politicians are often much more helpful in explaining policy decisions than the memoranda which formalize those decisions. Such information can often be deduced from professional literature, newspaper statements and official declarations, when these are pieced into the overall picture. An effort was made to consult all of the public sources available.

Anyone with even superficial knowledge of British defense planning is well aware that a great amount of highly classified information finds its way into the public news media, particularly when it concerns policy choices made at the political level. Unfortunately, many misleading reports also appear in newsprint. The difficulty, of course, is to separate "the wheat from the chaff." To do this the writer has supplemented his library research with some ninety-seven personal interviews over a period of four months in England and a postal exchange of questionnaires with a number of other individuals. These included politicians (of both parties), scientists, professional officers of all three Services (with heavy emphasis on the Royal Navy), civil servants, journalists, historians and others. Needless to say these interviews were invaluable as a guide to public sources, as a check on published reports and as a means of eliciting substantive data not otherwise available.

Since this study rests heavily on these interviews it is appropriate to comment briefly on this phase of the research. A serious attempt was made to cover the relevant branches of government. The Departments represented included the three military Departments, the Ministry of Aviation (at one time

Ministry of Supply), the Ministry of Defense, and the Treasury. Many of the persons interviewed presently hold official positions, but a determined effort was also made to interview individuals who had contributed to the discussions, debates and decisions of previous Governments. In the same vein some officials were sought out not so much for their general knowledge but because of their ability to throw light on a particular decision, period of time, or facet of activity.

It was not practical to ask a common set of questions due to the wide differences in experience, background, and responsibility among the interviewees. Therefore conversations were tailored to capitalize on the respondent's particular knowledge and training. In order to make the exchange of information as free as possible all respondents were assured that although their comments might be used there would be no attributions or citations by name. It is difficult to document, but the writer is confident that this procedure increased the candor of the interviews and enhanced their overall value. In some instances there was a visible lowering of the guard once the respondent was assured that his name would not be cited. Interviews varied in length from thirty minutes to five hours, and some individuals were visited more than once. In some cases the writer was invited to take notes and in others the general bearing of the respondent seemed to dictate a conversational approach. In these instances I prepared a detailed summary of the interview at the first opportunity. These summaries are by no means exact transcripts, but I am confident that they captured the essence of the conversations. The difficulty here is not so much to record what was said as to understand it. "The problem of communications exists even between societies with as much in common as Britain and the United States."[5] Although every effort was made to avoid this pitfall one has no sure way of testing his degree of success or failure.

Needless to say, information and opinions from these interviews have been used throughout the thesis. Statements

attributed to interviews are normally the writer's impression of the respondent's remarks. A serious effort has been made to use interview data cautiously. In some instances the interviewee had actually made the decisions which were being investigated, and in other cases the writer has had to rely on the testimony of individuals who were observing the decision-making process from varying distances. In the latter case I have used only data which represent opinions shared by several respondents. Every effort will be made here to alert the reader when conclusions are particularly controversial or where interviewees were in marked disagreement. Where interview data corresponded to published reports, the latter have been cited.

Due to the fact that the dissertation necessarily rests in large part on interviews I purposely selected 1963 as the cut-off date for my research. This decision was dictated by the understandable reluctance of officials to comment on current affairs. Consequently, the knowledgeable reader will note that the thesis has neglected the "multi-lateral force" and the important reorganization which was consummated in early 1965. These are only two of the more prominent examples. I would have liked very much to have brought the study up to the present date, but in view of this practical obstacle I am confident that it would not have been fruitful. In line with this reasoning no questions were asked about contemporary issues, although the initial negotiations were in some cases being carried out in 1963 or earlier. An even earlier cut-off date was seriously considered, but 1963 seems to lend itself to a study of the Navy, because it took in the significant decisions to adopt Polaris and to build a new carrier.[6]

Now a word about the organization of the dissertation. Its major focus is the formation of naval policy since World War II. Consequently the first few chapters will be devoted to tracing that policy and to analysing the forces which moulded it. Chapter II sketches the economic, international, technical and administrative background against which British

naval policy has been made since 1945. It is essential to understand these general parameters before undertaking a more detailed analysis. Chapters III, IV and V trace the evolution of the mainstream of naval thinking and how it was translated into concrete policy from 1945 to 1963. Chapter VI deals with the Royal Navy's introduction to nuclear propulsion and its rather belated adoption of the Polaris missile and the "fleet ballistic missile submarine." This train of events is treated separately, because the Royal Navy has only entered this field with the greatest reluctance. Chapters VII and VIII are devoted to an analysis of the mechanics of policy formation and of the Admiralty's role in the overall process. These two chapters attempt to point up the more significant administrative lessons which the Royal Navy's post-war experience offers. Hopefully this will be of some benefit to the political scientist and professional administrator as well as to the practicing naval officer. Chapter IX is the concluding one. It presents an overview of naval policy in terms of the post-war environment with a brief look at future prospects.

NOTES

1. The most complete bibliographic summary of works on post-war British defense policy is in William P. Snyder, The Politics of British Defense Policy, 1945-1962 (Columbus: Ohio State University Press, 1964), pp. 261-272. He does not mention one single book or article devoted specifically to the post-war Royal Navy. There has been one book published dealing with the Royal Navy's post-war technical achievements: Paul E. Garbutt, Naval Challenge 1945-1961 (London: Macdonald & Co., 1961). However, this work in no sense deals with policy problems.

2. As the reader is no doubt aware, the largest is the U. S. Navy, and the second is the Soviet Navy.

3. The British government operates under a "fifty year rule" which normally precludes the release of internal governmental records of any kind for fifty years. The outstanding exception to this was the release of documents to the team of official historians appointed by the Government to write the military and civil histories of World War II. However, this seems to be a one-time exception, and there have been no significant relaxations made regarding the post-war years, as far as this writer knows. Even if an author is so fortunate as to get access to records he must submit his final product for inspection and clearance. Needless to say this severely limits his freedom and consumes considerable time. There is no question that this practice has contributed in large measure to the prevailing attitude among British historians that contemporary affairs (interpreted to mean any events in the last half century) are not a suitable subject for study. On the other hand there are a few authors and historians in Great Britain who disagree vehemently with this attitude and believe that contemporary history is most important. Some of this group are presently carrying on a bitter fight to get this harsh rule relaxed, but as yet there are no serious indications that the Government will retreat.

4. Perhaps it should be mentioned that even with such access, problems of interpretation would remain and that the probabilities of distortion although reduced would still be present. This, of course, is the fundamental challenge of writing history and political analysis.

5. William P. Snyder, "The Politics of British Defense Policy, 1951-1961" (Ph.D. dissertation Princeton University, 1963), p. 16. This dissertation has subsequently been published with some extensive alterations, The Politics of British Defense Policy 1945-1962 (Columbus: Ohio State University Press, 1964). In referring to his work the book will be cited wherever possible, but occasionally it will be necessary to refer to passages in the dissertation which were not reproduced in the book.

6. There is one exception to the 1963 cut-off date. The sequence of events leading to the decision to purchase American aircraft for the Fleet Air Arm is treated although they extended into early 1964. This was necessary, because of this project's close relationship to the carrier program.

CHAPTER II

BACKGROUND AND SETTING

Anthony Hartley in A State of England declares that "the main fact governing English life since 1939 - a fact so obvious that it is frequently overlooked altogether - is loss of power."[1] Great Britain entered World War II as one of the most influential nations of the world and took with it "overseas possessions which were then at the most extensive they had ever been."[2] It emerged from this conflict victorious, but seriously depleted. The post-war world was a great deal different than that of 1939, and Britain drifted into an unanticipated decline. Since 1945 the nation has been beset with difficulties which have severely impaired its ability to manipulate events in its favor. Economic problems have plagued all post-war Governments. The pressing demands of nationalism have gradually eroded the Empire, and diplomatically London's ability to influence world affairs has steadily diminished. These developments have necessitated a series of painful adjustments. In essence post-war statecraft has been dominated by the need to readjust traditional perspectives to Britain's "reduced status in the world scale of power."[3] This has been strikingly illustrated in the case of military policy. However, to appreciate fully this process it is essential first to sketch the major roots of British power and to trace how time and changing conditions have stunted their growth.

Although there is some controversy as to the degree of England's historic pre-eminence, there is a general consensus that about the middle of the nineteenth century Great Britain was the leading global power. She carried on a thriving trade in every corner of the world; her prestige was at an all-time

high; and militarily she was as secure in the home islands as any country had ever been or has been since. Lord William Strang in discussing this period attributed Britain's influence and position to three main factors: (1) her naval strength and the military potential which "she was believed to be capable of developing and using"; (2) her "outstanding commercial, financial and industrial strength"; and (3) "the relative weakness of the other great powers."[4] This simple classification offers an easy lead into the problem of background. It is proposed to examine briefly these categories and to illustrate how they contributed to Britain's nineteenth century greatness and how, in turn, altering conditions have undermined them. Only against such a backdrop can the dramatic transformations which have occurred since 1945 be adequately appreciated. It is then intended to close by briefly discussing the formal decision-making structure in order to give the reader a framework within which the post-war evolution of naval policy can be fitted.

Traditional Military Posture

The very cornerstone of England's rise to prominence was sea power. Without control of the oceans the British Empire could never have been built or maintained. Due to a unique combination of geographical factors and material resources Great Britain was able to develop an unchallenged Navy and in turn to extend its influence throughout the world. When the political and economic emphasis shifted to Western Europe, Britain found itself no longer on the periphery but at the focal point of power. Its insularity provided security and the advantage of a central position. The lack of continental frontiers allowed it to concentrate on maritime forces. No other European power could afford to devote so high a proportion of its military energies to sea power.[5] England's geographical position put it between Europe and the Atlantic

and athwart the principal maritime trade routes to Europe.[6] This combination soon led to both economic and military control of the English Channel and the North Sea.

As trade grew the Royal Navy likewise expanded, and the two made possible the extension of British influence and power. It was only natural that the Royal Navy was soon pushing into the Mediterranean and casting its eyes towards the tip of Spain. In 1704 Gibraltar was captured. This assured Great Britain control of the remaining European sea.[7] Complementing the iron ring which the Royal Navy was forging around Europe, the Government was gradually expanding its dominion along the principal sea routes of the world. A series of outposts were annexed, developed and fortified - Bermuda (1609), Jamaica (1655), Halifax (1713), Cape Town (1805), Ceylon (1805), Singapore (1805), Malta (1814), Falkland Islands (1832), Aden (1839), Hong Kong (1841) and Suez (1869) were among the more significant accessions. Many of these had insular characteristics, similar to England's, which made them highly defensible, and all of them were strategically located. These bases extended the Royal Navy's tentacles to the remotest corners of the world.

This maritime strategy not only allowed Great Britain to expand its economic influence and to protect its investments, but also to control the competition. Its main rival France was never able to break Britain's grip on its colonies or to attack the home islands successfully. On the other hand, the Royal Navy made it possible for the British to defeat the French in North America and India, and to fight on the Continent at times and places of their own choosing. The same forces that defended England could be used to project its offensive might and to guard its trade lanes. This was economy of force in the highest sense of the word. By the middle of the nineteenth century England had attained a degree of security such as no country had ever known or probably ever will know again. In effect the Royal Navy exercised "a leverage on world affairs without precedent in naval annals."[8]

But change is an immutable rule and the passing of the nineteenth century brought with it disturbing signs. As long as European states were the only ones possessing large navies Great Britain's control of the narrow European Seas assured it mastery of the world's oceans. By concentrating its naval might at home and in the Mediterranean it was possible to contain and neutralize the enemies' fleets. The remaining oceans fell by default. However, the rise of non-European sea powers seriously challenged this strategic doctrine.

In the late 1800's both the Japanese and American navies underwent significant development. Breaking away from their traditional "small navy" frame of reference these two new arrivals on the imperialist scene commenced constructing modern fleets modeled after the British example. The Admiralty's only alternative was to either relinquish its maritime grip in the Far East and in the Western Hemisphere or to strengthen its overseas forces by crippling its European squadrons. At this moment a third development interjected itself. Shortly after the turn of the century the German Navy launched a rapid expansion program which threatened to tip the scales in European waters. Rating the continental danger as the gravest His Majesty's Government chose to maintain superiority in the Atlantic and Mediterranean at the cost of weakening their overseas forces. In typical British style diplomacy was utilized to cover this retreat. In the Far East England entered into a military treaty with Japan.[9] In effect it was acceding to joint control of the oriental oceans. In the Western Hemisphere Great Britain initiated a policy of friendship and co-operation with the United States in order to secure the Carribbean and Western Atlantic.[10] The Royal Navy was still second to none, but in effect the United Kingdom was relying on the United States and Japan for overseas support and cooperation.

World War I demonstrated that England's trust in seapower had not been misplaced. The Home Fleet succeeded in bottling up the German High Seas Fleet. The United Kingdom was secured from

invasion; British troops were put ashore on the Continent and supported by the Royal Navy. The decision to commit a land army on the Western front was not unprecedented nor necessarily inconsistent with the traditional reliance on a maritime strategy. On the other hand the determination to decide the issue in Western France and to keep pouring men and resources into the trenches no matter what the cost, sacrificed the main advantages which seaborne forces could offer.[11] The Dardanellas campaign, of course, was an effort to avoid the impasse in Flanders and to utilize the mobility which the Fleet possessed. This was more in line with the traditional British approach and had a commendable air of innovation about it. But it failed due to a variety of causes; the most important of which was apathetic execution. Unfortunately, this disaster strengthened the arguments of those "cavalry" generals who were mesmerized by the Western front, and the Fleet was once again relegated to a blockading role which it carried out with telling effect.

However, during World War I a number of new weapons were introduced to sea warfare which indicated that the traditional role of fleets were beginning to change. Although the Royal Navy managed to keep open Britain's supply lines it was literally a fight for life, and the margin of success was a narrow one. German U-boats sank some 10 million tons of allied shipping.[12] The submarine counter-blockade of the United Kingdom came within a hair's breadth of choking off its vital supply lines.[13] Only a super-human effort upon the part of British seamen, and the entrance of the United States into the war managed to turn the tide. Submarines literally interjected a new dimension into naval warfare. In addition the use of aircraft at sea opened up a host of possibilities for progressive tacticians. Not only the evolving political patterns were eroding the position of British sea power, but technological advance was also threatening the Royal Navy's ability to defend the United Kingdom.

Despite these ominous portents the Royal Navy emerged from the Great War stronger than ever before. With "over

1,300 combatant vessels of all classes, including forty-two first-line capital ships"[14] she had no peer. On the other side of the ledger, however, the United States had accelerated its naval program and was operating from a position of new-found economic strength which had been stimulated by the war but not overtaxed by it. In the Western Pacific Japan's strategic position had improved as a result of the acquisition of Germany's Pacific islands, and it was laying new emphasis on naval power. Although Great Britain was free to cast its eyes either East or West, it was obvious that to reestablish the world-wide pre-eminence that the Royal Navy enjoyed in the nineteenth century was neither practicable nor feasible. In fact there was every danger of a disastrous naval arms race ensuing which would lead to an unacceptable economic burden and possibly to war.

This grim prospect was averted by the Washington Conference of 1922. In the resulting treaty[15] Great Britain discarded its "centuries-old policy of a predominant Navy and agreed to parity with the United States."[16] It was agreed that the capital ships and carrier tonnage of Britain, the United States, and Japan should be proportioned in the ratio 5-5-3. There were a number of other provisions but this feature was the most important. In 1930 the London Naval Conference met and extended the qualitative limitations of the Washington treaty. A proposal to restrict the number of cruisers was adopted, and England agreed to a limit of fifty. This was the last positive step taken to reduce fleets. By 1933 the Royal Navy had shrunk to 15 capital ships, 47 cruisers, 132 destroyers and 56 submarines.[17] In 1932 the Geneva Disarmament Conference failed, and shortly thereafter Japan served the necessary two years notice to terminate the Washington agreement. In turn Germany repudiated the naval and military limitations imposed upon it at Versailles. This was the signal for the long suppressed naval arms race.

His Majesty's Government picked up the gauntlet. In 1936 an extensive naval building program was inaugurated, and

it was accelerated in 1937 and 1938.[18] This was part of a general rearmament policy, but the lion's share of money and effort was devoted to the Navy. It was not until 1939 that the Army and Air Force estimates began to match the senior Service's appropriations.[19]

The inter-war period had seen little change in naval thinking, although there had been some technological progress. The aircraft carrier had become an integral part of modern fleets,[20] and submarines had been further developed and assimilated into all the large navies. Ship design and naval ordnance had undergone some improvement, but no radical modifications were evident. The major emphasis was still on the battleship and the battle line. The Royal Navy continued to envision itself as the United Kingdom's first line of defense. Commander Russell Grenfell, one of the foremost naval authorities of that period, set out the Fleet's four main tasks as: preventing invasion; covering the movement of troops overseas; protecting incoming supplies; blockading the enemy and driving his shipping from the ocean.[21]

While it was never to reestablish the lead it enjoyed in 1919, by the outbreak of World War II Britain was again the leading sea Power in the world. Its Navy was larger than those of Germany, Italy and France combined, and more ships were coming off the ways every month. It was firmly e'sconced in the home islands and the Mediterranean. British strategists strongly believed that if the United States and Japan would remain neutral, the Royal Navy could fulfill its traditional tasks in any European war and insure eventual victory.

The saga of World War II is too involved and too well known to repeat in any detail. Every school boy knows how close Great Britain came to the brink of disaster and how Germany employed armour and air power with such devastating effect. The magnificent role the Royal Air Force played in staving off defeat is now legend, and the dramatic rise of air forces to ascendancy in the military hierarchy is common

knowledge. Yet the day of sea power had not completely passed. An instrumental factor in preventing the German invasion was England's vast naval superiority.[22] After Dunkirk its hopes and fears rested solely on a small air force and a ready navy that was prepared and willing to bar the channel to German ships and barges. In the Mediterranean the British warships without adequate air support fought an up and down battle for command of that narrow sea. The Navy needed the help of both land-based aircraft and army troops to finally establish firm control of the Mediterranean, but its achievements in that theatre added another glorious chapter to its history. The fight to keep open the Atlantic supply lines was even more desperate than in World War I. The issue was in doubt until America's intervention began to shift the balance, and the battle was only narrowly won through the frantic and often gallant efforts of allied scientists, shipbuilders and seamen. The Royal Navy emerged from this holocaust victorious, but battered and shaken.

World War II had brought drastic changes in warfare in general and in naval weapons and tactics in particular. Sea warfare had become both extremely complex and expensive. Carriers had replaced battleships as the number one naval weapon system. They had made it possible for fleets to project their offensive might over great distances and into the enemy's heartland. Amphibious operations had been used with great success against heavily defended beaches demonstrating the advantages of mobility. The submarine had again proved its tremendous value in attacking merchant traffic and combatting capital ships. More significantly the year 1945 witnessed the first atomic bomb and the defeat of Japan's island empire without one American invading the home islands. This development alone threatened to revolutionize the nature of warfare.

It was painfully manifest that warships alone could no longer defend the United Kingdom and that this task would now have to be shared with the Royal Air Force. Aside from that

there were few clear guidelines as to the future of Britain's traditional maritime strategy. During the war His Majesty's Government had once again committed a vast army to the Continent; there were some signs that this might become a permanent feature of British defense policy. The advent of atomic weapons had led many to believe that the days of armies and navies were numbered. In turn they contended that only air forces would be viable in this new era. On the other hand Britain is an island completely dependent on the sea, and there was a general reluctance to discard traditional concepts until the road ahead was more clearly marked than it was in 1945. In essence the armistice found the field of military strategy in some disarray. One of the chief post-war tasks of the Government would be to assimilate the new military developments and arrive at a satisfactory accommodation with these new realities.

Economic Backdrop

In the nineteenth century Great Britain occupied an enviable economic position. It was truly "the most important of trading nations and the leaders in the economic development of the world."[23] This was the result of a number of reinforcing factors, some of which were not economic such as the stability of the British government, the trustworthiness of its financial institutions, and its ability to protect its trade. From a financial standpoint this pre-eminence rested on a long head start in the mechanization of industry and transportation which assured Britons "a generally favorable competitive position that lasted for several decades."[24] In fact until about 1880 Great Britain was the only thoroughly developed industrial state in the world.[25]

Drawing on their overwhelming superiority in industrial techniques Britons were able to establish a trade pattern which both enriched their coffers and brought others to rely on them as suppliers. Great Britain's trade at mid-century took the

form mainly of an exchange of manufactured products against imported foodstuffs and raw materials. "It was the trade of an industrial state with countries still largely agrarian and, as such, it was world-wide."[26] By steadily reducing and eventually eliminating customs duties on primary products, British politicians made this trade pattern increasingly attractive and profitable for less mechanized countries. "Industrial leadership and a bulk cargo, coal, to fill the ships on outbound voyages fostered the growth of the British merchant marine, which provided cheap and reliable ocean transportation."[27] This was a unique combination of factors which assured Britain the commercial leadership of the world.

Profits resulted in savings and in turn capital investment abroad, particularly in the colonies. Overseas investments brought in their wake British managers, engineers and other professionals. This made it possible for the possessions to absorb Britain's surplus population.[28] Inevitably this tied the Empire closer together and expedited the development of the colonies as primary producers. However, investments were not limited to the Empire. Great amounts were likewise deposited in Europe, South America and the United States. By 1871 Britons had invested over £800 million overseas, and this figure increased to approximately £3,500 million by 1913.[29] Great Britain had become a creditor nation with all the advantages that the term implies.

Income from foreign investments became a substantial source of profits serving to cushion the national balance of payments in years which were bad for exports. In turn sterling became an international currency as the nation's money handling facilities expanded. In the middle 1900's Great Britain became the center of the world's economic activities, and many nations depended heavily upon the financial services of London. British capitalists had considerable control over the stability of the international economy. Their decisions affected every continent. Consequently, there was a world-wide interest in the "uninterrupted

continuance of access to British goods, markets, and services"[30] and a general willingness to defer to British policies. It was an enviable system which assured Britain's commercial ascendancy and correspondingly strengthened her position diplomatically and militarily.[31]

However, this ideal economic situation could hardly be expected to continue indefinitely. Just as Britain's impregnable military position fell victim to the march of events, her economic pre-eminence gradually succumbed to changing conditions. W. H. B. Court struck to the heart of the problem when he characterized Great Britain's nineteenth century manufacturing monopoly as "the kind which is always dying."[32] It was impossible to sell manufactured products all over the world at great profit without stimulating the hunger of other countries for industry and its benefits. Not only did the English example excite envy and stimulate foreign industrial activity, but its exports in the form of machinery and capital facilitated the rise of overseas competitors. Starting somewhere around 1880 Britain's long-time dominance began to undergo gradual but nevertheless significant alterations.[33] The main element in this great change was the relatively rapid industrialization of western Europe and America. As in the case of the United States many primary producers began to process their own raw materials. This had several adverse effects on British traders. The price of foodstuffs and raw materials gradually increased; many of the traditional markets for consumer goods disappeared; and a host of new competitors appeared in the international market place.

By the late 1800's Britain's reliance on its manufacturing capacity and ability to organize a trade in industrial goods had made it dangerously dependent on imports of food and raw materials. By 1870 over 50% of the total food in England was imported. By 1930 the figure was to reach 75%. Although imports exceeded exports by as much as 20% this did not prove too much of a handicap in the late 1800's. Added to income

from exports were sizeable payments for British shipping and commercial services which more than paid the bill for foreign goods and left the nation a considerable sum for reinvestment abroad. However, as overseas competition and the price of imports increased the selling of exports became more difficult. The balance of payments inevitably became a bothersome problem.[34]

There was one important factor which allegiated the effects of this adverse trend. By 1913 Great Britain's overseas investments had built up to approximately £3,500 million. The annual interest due on foreign loans was sufficiently large to fill the balance of payments gap. This situation was by no means as satisfactory as that of the mid-nineteenth century, but it nevertheless stilled the cries of alarm and served to confirm Briton's faith in their financial position.

However, starting in 1914 the British economy was to receive a series of shocks. The First World War administered a temporary but immense setback to Britain's balance of payments. Foreign trade and the amount of industrial production available for exports were both severely reduced early in the struggle. Concurrently a large volume of necessary imports, including materials of war from the United States, had to be paid for. This led to the sale of foreign assets. From one-fifth to one-fourth of the pre-war volume of overseas investments was liquidated.[35] Compounding this loss, income from other investments fell, and the earnings from shipping and financial services dropped off sharply. By 1918 Britain's trading position had declined markedly.

During the inter-war years production, trade, and investment resumed their pre-war growth. This trend camouflaged the setbacks of the war and caused many Britons to overlook the basic transformations which had taken place. Good years were treated as normal, and bad years were attributed to the war or the Government. However, no one could overlook the failure of the export trade to revive. By 1929 it was still below the 1913 level. Unemployment consistently plagued the biggest exporters -

the coal, shipbuilding and textile industries. The depression of 1929 brought further distress and disorganized many foreign accounts. "It carried away much Victorian rigging, the gold standard and free trade included, within two years (1931-1932) and left an altered world behind."[36]

Moreover the line between industrial and primary producing states continued to grow fainter as the 1929 depression forced countries to rely on their own resources. Great Britain suffered progressive losses in consumer goods which were not made up by the sales of capital goods. Her economic structure was founded on coal, steam engineering, and iron production, but the world was turning to new techniques, fuels and metals. British industries and businessmen proved to be conservative, complacent and rigid. It was well into the 1930's before they began to respond to the demands of the times, and by then it was too late for new export industries to make up for the losses of the old. Attention had turned to preparations for war. Fearful nations began to draw back from international trade. This came at a critical juncture for Albion, just as her foreign accounts were beginning to recover from the aftermath of World War I.

The effects of the Second World War dwarfed those of the 1914-1918 conflict. Physical losses alone were astronomical. Over £18.1 billion worth of capital assets were consumed by this conflict.[37] This included bomb damage, shipping losses and reduction in value due to the inability to repair and maintain physical equipment. In material terms this represented the loss of one-half her merchant marine, destruction or damage to nearly one-third of all the homes in Britain, badly run down industrial plants. Pre-war overseas investments totalled some £3.7 billion. One-third to one-half of these were liquidated by sale or destroyed by enemy action. In place of these assets the nation acquired "overseas debts totalling £2.9 billion to cover war purchases and the cost of maintaining military forces."[39] The interest upon debts incurred during the war was to consume one-sixth of the national budget in coming years.[40] Paralleling

this were many losses more difficult to estimate. Invisible sources of income such as shipping and overseas banking operations dropped off sharply. Even more vital were the many overseas customers who turned away from Britain during the course of the war. Many of these contacts had been built up through centuries of trade and yet disappeared in just a few years. Taken as a whole these setbacks dealt the British economy an unprecedented blow and left the nation in a genuinely precarious economic situation.

The most important fact-of-life in post-war Great Britain has been its unstable economy. Correspondingly it has been the most significant single determinant of the size and shape of the military Services. In order to appreciate the evolution of defense policy since World War II, it is essential for the reader to have a clear understanding of the special nature of the economic situation since 1945.

By that date Britain found itself a small, densely settled and highly industrialized country. Approximately 5% of the population is engaged in agriculture, forestry and fisheries combined. The bulk of the population is involved in manufacturing, trade and finance. Its many decades of industrialization have systematically depleted the island's natural resources, and the only raw material in which the United Kingdom could be considered self-sufficient is coal. About half of its food is imported. In essence the British depend on imports for their very existence.

The only way to pay this imposing import bill is to sell goods and services abroad. Even more discouraging "as many of its exports are made largely of imported materials, exports must meet the cost of these imports as well as those retained for consumption at home."[41] In the final analysis the health of the British economy depends primarily on its ability to export. Industry must not only manufacture goods for foreign shipment, but sell them successfully abroad. This total dependence on foreign trade makes Britain highly vulnerable to the vagaries of the international market and to fluctuations in economic activity abroad.

Actually Great Britain has been an importing nation for many years, but the losses suffered in World War II have severely complicated her basic problems and made exports even more crucial. In order to repay her war debts, to revamp her damaged manufacturing plants, and to make her industry competitive again, it was necessary to allocate a large share of output to investment. Of course, the equipment needed for modernization and expansion also contains a large proportion of imported materials and in turn demands a higher level of exports to balance the account. In previous years the gap between exports and imports was filled by invisible overseas profits from banking services, shipping, insurance and particularly the interest on foreign investments. Before the war these sources of revenue normally ran over 8% of the Gross National Product. As a result of the war this income has declined to less than 2% of the GNP.[42] This has dramatically widened the trade voice, and as a result it has been necessary to expand drastically the amount of exports in order to counter-balance the losses in these areas. These reinforcing pressures have created a lengthening spiral which constantly calls for more imports and, in turn, a higher level of exports. This vicious cycle has plagued every British post-war Government and required a continuing effort to improve the nation's export position.

The need for exports and the crucial balance of payments problem have put relentless pressure on the Government since 1945 to reduce defense expenditures. To fully understand the relationship of military spending to the economy it is necessary to look at the overall distribution of goods and services in the United Kingdom.[43] There are a number of more or less distinct markets competing for a share of the total. The five main categories in normal order of magnitude are:

(1) The personal consumption market;
(2) The export market;
(3) The domestic capital market;
(4) The civil governments, national and local;
(5) The defense establishment.

It must be borne in mind that each of these competing markets requires imports of food and raw materials which must be paid for by greater exports of goods and services. In turn, to increase exports requires more imported materials.

The military Services find themselves at a great disadvantage in this system, since defense consumes imports and contributes nothing to the export sector. Since World War II Britain's export trade has relied heavily on the engineering and metals industries. These are the very ones which supply the bulk of the defense establishment's equipment. This means that defense production and exports are in constant competition. In essence the overriding need for exports imposes limits on the nation's ability to respond to defense requirements and to accelerate arms production when necessary. For example during the Korean War the Government's rearmament program was continually hampered and eventually had to be cut back as a result of the heavy pressure for exports. In the same manner military demands detract from the domestic capital market, and yet in an economy so dependent on international trade it is essential to keep investing in new factories and machinery.

Another facet of this same problem is the human resources which must be allocated to competing sectors of the economy. Defense projects consume scientists, engineers and large amounts of manpower which can be employed profitably in export industries. Diverting scientific and technical personnel to defense industries may retard export production and weaken Britain's competitive position. Off and on throughout the post-war period this has been of some concern to the Government. Again it has been a question of balancing the competing claims of different consumers against limited resources.

Even defense deployments effect the balance of payments and put additional pressure on the economy.[44] When military personnel are stationed abroad both the Government and the individual Service men expend large sums in the purchase of foreign goods and services. "For balance of payments purposes

both expenditures are outflows or deficits - the equivalent of imports into the British economy."[45] This increases the gap between payments and receipts that must be filled by exports. As a result there is continuous agitation to reduce the size of the Services and the numbers stationed overseas. However, the important point is that a primary goal of post-war British policy has had to be a balance of payments surplus, and this has constrained the general level of defense spending.

Thus far the discussion has been limited to the relationship between only three of the five sectors - defense, exports and domestic capital. There are two other markets which likewise compete for goods and services - the personal consumer and civil governments. There are only two ways to increase the share of a consumer. One is to expand the nation's Gross National Product (the total of goods and services available) and the other is to reduce the share that goes to other markets. Consequently, in studying defense policy it is necessary to examine defense expenditures in terms of the total product available and in relation to its competitors. Government policies markedly affect the allocation of goods and services among the competing sectors of the economy, and the way expenditures are divided often reveals a great deal about the political climate. Although defense expenditures may detract from the export sector, it would still be possible to maintain a balance by cutting back personal consumption and/or non-military governmental expenditures. The willingness of the Government to do this will depend on a number of conditions. In times of crisis one standard will prevail and when there is no external threat another.

What should be stressed is that the economic problem is not merely a two way relationship between the defense and export sectors of the economy. It is more involved than that. When a defense White Paper insists that economic pressures preclude increased expenditures on the military, it is often saying "that it would be politically inexpedient to make deep

cuts either in personal consumption or in government spending for non-military purposes."[46] In post-war Britain the Government has become heavily committed to a large and broad program of social services. Likewise the lean years of World War II and its immediate aftermath were followed by an immense demand for consumer goods. Once rationing and controls were lifted personal spending expanded rapidly, and the British people were loath to sacrifice any of their new-found opportunities. Post-war governments have had to take those pressures into account and have proved extremely reluctant to reduce expenditures in these areas. In essence the Government is dealing in "the logic of priorities."[47] It is often not only economic pressure which limits defense expenditures but a combination of political expediency and fiscal considerations. Together these factors have served to restrict severely post-war defense spending.

International Relationships

Lord Strang attributed Britain's nineteenth century hegemony partially to the weakness of other European countries, particularly France.[48] In sum he was saying that there were no competitors who could mount a serious challenge to Albion's leadership. As the previous discussion has indicated, by implication if not explicitly, the deterioration of England's military and economic position signaled the rapid rise of a number of nations to new levels of affluence and power. In 1870 the United Kingdom (including the Irish) had a population of 32 million people. This was roughly comparable to Germany's 40 million, France's 36 million and America's 40 million. By the First World War uneven population growth had significantly altered this state of affairs. The United States had increased to 91 million, Germany to 64 million and Britain to only 45 million.[49] This corresponded roughly to changes in production and trade. At the end of the third quarter in the nineteenth century British output had exceeded the combined French, German

and American production in three vital fields - coal, pig-iron and cotton. By the early 1900's American coal output exceeded Britain's. Germany and America were producing more pig-iron than England, and both were rapidly moving into the textile market. By 1914 the United States had become the world's leading manufacturing country in terms of value and volume of product, and Germany was second. Besides these two main competitors a number of other countries were undergoing industrialization - Sweden, Russia, Canada, Japan - and were exerting increased influence on world events. The international patterns of power were changing radically.

These alterations were reflected by British foreign policy.[50] Around the turn of the century Great Britain took a series of steps designed to reduce its overseas anxieties, so that it could devote more attention to Europe. The Hay-Pauncefote Treaty of 1901 agreed to exclusive American control of the Panama Canal and for all intents and purposes left the Caribbean to the United States. The same long-range aims inspired the Anglo-Japanese Alliance of 1902 which gave Japan a free hand in the Orient. The Entente Cordial of 1904 with France and the Anglo-Russian Convention of 1907 were intended to reduce friction in the Middle East and the Mediterranean. Although it was not so obvious at the time these steps reversed a standing policy of isolation. Never again would Great Britain be able to act with the independence it had enjoyed throughout the nineteenth century.

It was soon manifest to British statesmen that those were not the only compromises which were necessary. Germany's rise to prominence and its apparently limitless ambitions could not be countered by Britain alone. Germany's unwelcome interest in Morocco in 1905 and the resulting Algerian Conference served to throw France and England closer together and gave the Great Powers the first hint of a possible European war. Building on the foundation of the Entente Cordial the two countries in 1906 commenced non-committal talks on the possibilities of

conducting joint land operations on the Continent. This was a revolutionary move for a peacetime British Government, but one which was dictated by Britain's declining position in the international power structure. The coming years witnessed further Anglo-French collaboration as Germany's strength continued to grow. Although the United Kingdom was not formally committed to support France in 1914, the strong ties which had been forged between the two nations placed a genuine moral obligation on Britain. Even more important British leaders were well aware that Germany could only be defeated by a combination of opponents.

Although World War I temporarily eliminated Germany as a serious competitor in the international arena, it served to accelerate the significant trends which have just been discussed. The inroads which World War I made into Britain's economic position and maritime strategy have already been noted. She had lost over a million of her young men,[51] and her material resources had been drastically depleted. On the other hand America had entered the ranks of the Great Powers. She had been called upon to redress "the balance which Europe herself had been no longer able to maintain "[52] and had emerged with enhanced prestige, a greatly expanded industrial plant, and as the world's largest creditor. America's refusal to assume the mantle of world leadership in the inter-war years disguised to a certain extent her impressive power, but the fact remains that World War I had catapulted her to a position of ascendancy.

The international power structure had changed fundamentally. Britain's welfare was inextricably linked with the security of western Europe.[53] Despite some halfhearted attempts in the inter-war years to return to its old isolation, she found it impossible to do so. This dependence was reflected by her participation in the League of Nations and even more by the signing of the Treaty of Locarno in 1925. This instrument guaranteed Germany's western border from attack by either side.

It was an attempt to bring Germany back into harmonious relations with its neighbors and to put European security on a permanent basis. Although Britain and France seemingly appreciated the need for cooperation and European security, they were not willing to do more than negotiate to attain their ends. By the 1930's Communism and Facism had gained a firm foothold. The die was cast. American isolationism combined with Britain and France's refusal to take any positive action pressed Russia into an alliance with Hitler, and left the way open for Germany's legions to raze Europe for the second time in twenty years.

The changes in the international community wrought by World War II were even more dramatic and significant than those fashioned during the 1914 to 1918 era. The tremendous devastation which Britain suffered was more than matched by the damage done in Europe. Germany's collapse was combined with vast physical destruction in practically every part of the Continent.

> Over extensive areas there was unrelieved chaos. Transport had in many places come to a standstill; farm products were hoarded in the countryside through mistrust of unstable currencies; raw material stocks for industry had rundown; shortages of food and clothing kept workers at home. The sheer problem of dealing with refugees and displaced persons caused organized life to hang by a thread.54

The Allies had no choice but to assume sovereignty over Europe and to attempt to bring order out of confusion. With Soviet power on the Elbe the security of the western nations was in British and American hands. Continental Europe temporarily disappeared as a force in world politics.

In contrast to this picture of devastation America's power and prestige had expanded immensely. It had not only fought in Europe but had borne the great bulk of the effort in the Pacific against Japan. Washington's pre-eminent position technically and militarily was symbolized by its monopoly of atomic weapons. The war had stimulated the United States to herculean efforts and as a result had increased her manufacturing

and agricultural capacity some one and one half times in the short space of six years.[55] As in World War I she had again become the Allied Powers' banker and creditor except on a vastly increased scale. By 1945 America had extended over $42 billion in loans, gifts and credits to her allies.[56] At the same time she was the only major participant to be spared the horrors of physical attack and to enter the post-war period without a pressing rehabilitation problem. Columbia came out of that conflict as the undisputed leader of the free world.

Although the United States was the only major power to escape widespread destruction, she was not the only one to emerge from World War II with enhanced status. Under Stalin's leadership the Soviet Union had accomplished prodigious feats of arms. The Communists had stemmed the Nazi tide and eventually rolled it back to Berlin. In the process Russia had suffered incredible casualties[57] and lost a significant proportion of her economic base located in western Russia. However, these losses had been partly counterbalanced by heavy American aid (Lend-Lease and technological advice), the introduction of new manufacturing processes, a sweeping standardization of industry, and, due to the stimulus of war, the erection of hundreds of new plants East of the Urals.[58]

Even more vital was the vast empire in eastern Europe which the Soviets had acquired by force of arms. When Germany surrendered the Russians had at their disposal "35% of Germany's 1936 industrial capacity, or 41% of the 1943 capacity."[59] Similarly she was able to extract at will from the Satellites minerals, oil, optical and electrical instruments, sugar and fats, and large portions of their industrial output. In many instances whole plants were moved to Russia along with workers, engineers and scientists. These acquisitions combined with the Communist system of Government, which allows the leaders iron-fisted control over the nation's resources and people, offered the Soviet Union an excellent base for recovery. Georg von Rauch comments in this regard that "the year 1945 saw the Soviet

Union emerging from the Second World War in a position of power which was far removed from the nadir of the year of 1938 and exceeded the wildest expectations of the Kremlin."[60] There is little argument that the most important outcome of World War II was to propel the Soviet Union and the United States to positions of overwhelming power and affluence. Although the signs were by no means clear at the time that conflict laid the groundwork for the subsequent bi-polarization of international politics which has dominated the post-war era.

Britain found herself one of the leaders of the victorious coalition in 1945, but nevertheless a relatively weak junior partner. Diplomatically it was no longer possible to play the "balance-of-power" game as it had been known in the past. Europe was now a power void, and consequently Britain's freedom of maneuver had been severely reduced. The world was soon to be rent by a schism between Communism and the West which would be the outstanding feature of world politics. The main actors in this drama would be the United States and the U.S.S.R. Britain's major foreign policy task would be to carve out for herself a meaningful role which would accord with these new realities.

Thus far the discussion has concentrated on Britain's relationships with the other so called Great Powers. However, these are only a portion of the international problems which confront England's political overlords. In the nineteenth century British strength rested to a great extent on a vast colonial empire which extended to the remotest corners of the world and which offered the United Kingdom many advantages in the international competition for power. As with all other aspects of British life the ties between the homeland and the possessions have undergone considerable change in the last hundred years. This evolution has not only played a vital part in the decline of Britain's influence, but at the same time saddled the Government with a number of unique responsibilities and problems. Therefore it is important to examine briefly the course of these relationships.

The primary benefits which the colonies offered have already been touched upon. They furnished the Royal Navy a chain of bases around the globe from which it could exercise control of the seas. The Army maintained garrisons in these bases which could be easily deployed to trouble spots and contain crises before they became unmanageable. Moreover the Army drew heavily on colonial manpower (particularly India). This considerably reduced the money and men which Great Britain had to invest in a standing peacetime army. Economically the possessions were primary producers. They furnished foodstuffs and raw materials to stoke English industry and concurrently purchased an important share of the finished products. All in all this was a rather enviable arrangement.

Still the Empire held its own seeds of dissolution. The loosening of the bonds commenced in the large colonies located in the temperate zones which had attracted great numbers of British emigrants - Canada, Australia, New Zealand, and later South Africa. These settlers took with them English traditions of law, government and liberty. Once they became thoroughly identified with their new homes it was inevitable that they gradually began to press for political autonomy. In this respect the American revolution was a compelling example which was always in the background inspiring this trend.

"The industrial revolution in Britain proved to be more than a technological affair"[61] and furnished much of the impetus for this evolution. Railways and steamships linked up countries and continents. The fruits of manufacturing stimulated colonial appetites, and Britain's prosperity demonstrated the rewards of possessing an indigenous industry. In essence technical advances and economic pressures were likewise encouraging independent relations and reinforcing the centrifugal tendencies developing within the Empire.

By 1907 Canada, Australia, New Zealand and South Africa had established parliaments and attained a considerable measure of self-government.[62] Although the British Imperial Parliament

was still supreme, this meant in practice that these colonies could control their own internal affairs subject to London's rarely invoked veto. Foreign affairs and defense matters were still the prerogative of the Government in London which acted for the entire Empire, but the "white settlement" colonies had for all intents and purposes moved from the old pattern of centralized control to local government.

These steps set the precedent, and the remaining possessions were soon developing varying forms of legislative councils elected locally to assist the appointed officials in the making of laws and ordinances. "India, by reason of its size, great population and ancient civilization"[63] was granted considerable autonomy in its affairs and by the first World War was enjoying a modified form of parliamentarianism. Nevertheless Whitehall still commanded the Empire's allegiance, and in 1914 the House of Commons declared war on behalf of the whole British Empire without consulting the possessions. The Dominions supported the war effort wholeheartedly, but four years of extreme crisis served to accelerate their drift away from British domination. All of them had been stimulated to accelerate their industrialization and to become more self-sufficient. In addition they had contributed a full measure to the winning of the war. This gave them confidence in their abilities and inspired increased agitation for full independence.

As a reflection of their new status the Dominions and India were represented independently at the Peace Conference and in the League of Nations.[64] It was during this period that General Smuts of South Africa originated the term "The British Commonwealth of Nations" to describe the new relationship of the Dominions.[65] At a Commonwealth Conference in 1926 the famous Balfour Declaration was issued confirming that the "United Kingdom and the Dominions were 'autonomous' communities within the British Empire, equal in status, in no way subordinate one to another."[66] This definition was formalized by the Statute of Westminister in 1931 which granted the Dominions national sovereignty.

As the settlement colonies gradually broke their ties with London attention turned more and more to the Crown Colonies, protectorates and strategic bases. The warmer zones of the Empire had never attracted large numbers of white settlers and here control rested on the shoulders of those who had gone to administer and keep order. It was the Government's acknowledged intention to lead these possessions also to independence where possible, but they were not as prepared for self-government nor was Great Britain in any rush to reach this goal.

It was India where the first signs of strain appeared. The inter-war years were marked by continuing friction between the Government and the various political movements which were agitating for independence - primarily the Indian National Congress and the Moslem League. British concessions were few, and it took another world-wide holocaust to lay the groundwork for the next big steps in the transition from Empire to Commonwealth.

In 1939 the United Kingdom declared war only for India and the Crown Colonies. Each of the Dominions acted on its own. With the exception of Eire they threw their weight behind the mother country. Unlike World War I this conflict brought a number of the possessions under the direct threat of Japanese conquest and served to point up British weakness in Asia. In 1941 and early 1942 both the English and Americans suffered a series of defeats in the Far East which destroyed an image of invulnerability that had taken centuries to create. In addition Australia, New Zealand, India, Burma and Malaya had sent the bulk of their troops to the European theatre and when Japan entered the war they were relatively defenseless. Britain, hard pressed on all fronts, could send only limited aid. The United States had to fill the void. With irresistible force it was driven home to the peoples in that part of the world that Great Britain was no longer the lion of old and that their links with England could be a liability. The Indian nationalist movement

refused to cooperate in the prosecution of the war and took every advantage of Britain's newly demonstrated weakness to accelerate the pace of independence. It was more than clear that Indian nationalism would present Britain with one of its first and most pressing post-war problems. As the largest colony it was also manifest that the Indian example would have reverberations throughout the Empire.

The Japanese defeat left chaos in its wake and a new brood of nationalist movements all over Southeastern Asia. Communism had spread over half the globe, penetrated deeply into China, and was threatening European hegemony in every sector of the world. Britain severely weakened by its wartime exertions faced a restless and demanding Empire. Throughout the colonies the people's respect for traditional forms had been shaken, and their ambitions for self-government ignited. These developments signaled the beginning of a particularly trying period for the Government. Here as in so many other areas the nation would have to adjust to new realities and alter its traditional perspectives.

Formal Decision-Making Structure

The preceding sections have attempted to give the reader some background which will assist him in understanding why post-war developments took the course they did. But these events affected British policy only as they were perceived and interpreted by those responsible for steering the ship of state. In order to understand the evolution of British naval policy it is also essential to have at least some comprehension of the political bodies involved and of the mechanics of defense decision-making. It is the intention at this point to emphasize the policy-making side of the defense establishment as opposed to the arrangements for conducting military operations.

Prior to 1939 the Government relied on two major organs for the development of military policy - the Committee of

Imperial Defense and the Chiefs of Staff Committee. The former was organized to correct the defects in defense planning unearthed by the Esher Committee in 1904. This group complained of the lack of means for coordinating defense matters with all the interested sectors of the government and for dealing with them as a whole.[67] The remedy adopted was the Committee of Imperial Defense. It was chaired by the Prime Minister and composed of high level officials designated by him. Its principal responsibilities were to formulate "the principles to govern over defense" and to plan "the transition from peace to war."[68] Normally, the more important Cabinet Ministers and a few high ranking officers from each Service sat on this committee. In order not to interfere with ministerial responsibility it was established strictly as an advisory body to the Cabinet. A small permanent secretariat was created to order its affairs, keep its records, and provide continuity to its proceedings.

The CID was not designed to take executive control in war nor had it any responsibility for inter-Service planning. In fact in World War I it was temporarily suspended and direction of the combat effort was taken over by the War Cabinet. It should be stressed that each Service remained separately responsible for its own planning and operations. In 1919 the Committee of Imperial Defense was reactivated. However, with the establishment of the Royal Air Force as a separate Service the need for inter-departmental coordination became more pressing and to fill this void the Chiefs of Staff Committee was established in 1924.[69] This was the first attempt to produce an "overall military policy" among the three Services. The Government had considered seriously establishing a Ministry of Defense to coordinate the military departments, but decided instead, in typically British style, to rely on a committee which included the professional heads of each Service. They were to have both an individual and collective responsibility for advising the CID on "defense policy as a whole."[71] In

effect this was a sub-committee charged with coordinating military matters involving more than one Service and making joint recommendations to the CID.[72] Staff support was to be furnished by a number of joint bodies composed of planning officers from all three branches who were to work out the details on joint matters. Thus were the first foundations laid for direct inter-Service cooperation.

In 1939 a War Cabinet, on the World War I pattern, was established and it absorbed the machinery of the CID. When Mr. Churchill assumed the reins of government he took the title of Minister of Defense which confirmed his authority to assume personal direction of the war effort. However, there was no Ministry of Defense as such. He worked primarily through three groups. The Defense Committee (Operations), which was composed of key Cabinet members and the Chiefs of Staff, examined military plans and took operational decisions on behalf of the War Cabinet. Production programs were supervised by the Defense Committee (Supply) which also acted for the Cabinet. For inter-Service matters Mr. Churchill dealt directly with the Chiefs of Staff Committee. This body acted in its corporate capacity to give operational instructions and strategic guidance to the armed forces. This was a considerable improvement over previous wars when there was very little authoritative consultation between military departments. No Ministry of Defense was created during this period. The responsibility for administration and for carrying out the directives of the CSC remained within the individual Service Departments. Under the press of wartime and the influence of Mr. Churchill's forceful personality this arrangement proved more than satisfactory. The three Services managed to work together effectively and in harmony toward common ends.

In December 1946 the Labor Government initiated the first post-war modifications in Britain's security machinery. Its major provisions were to remain in effect for over a decade after the armistice. Although this act introduced some new

devices, it was primarily intended to formalize the successful wartime decision-making structure which had grown up under the stress of crisis. It was in no sense a "drastic break with the past,"[73] but rather the type of evolutionary step which is characteristic of the British governmental process. The following paragraphs will summarize the more significant features of these arrangements and then examine the Royal Navy's relationship to this central structure.

The Government was convinced that there was a need for more formal arrangements to unify defense policy. The two wartime Cabinet committees were replaced by a Defense Committee. This body was to be under the Chairmanship of the Prime Minister and was to be responsible to the Cabinet "both for the review of current strategy and the co-ordinating of departmental action in preparation for war."[74] In addition to the Prime Minister there were nine regular members - the Minister of Defense, the Lord President of the Council, the Foreign Secretary, the Chancellor of the Exchequer, the Service Ministers, the Ministers of Labor, and the Minister of Supply - and the Chiefs of Staff would always be in attendance to proffer military advice. To assure flexibility the Prime Minister was given authority to invite other officials to attend as he felt conditions warranted. In essence this group replaced the old Committee of Imperial Defense and was authorized to deal with top level defense matters for the Cabinet. In more practical terms the Defense Committee would be responsible for integrating the military effort with the Government's political objectives, formulating overall strategical guidelines for the Services, allotting resources to defense and reviewing Service estimates. This was the broadest kind of mandate, and the Defense Committee in actual practice dealt with the whole spectrum of policy problems. It should be emphasized, however, that this Committee's supervision was of a most general nature, and that like its predecessor it relied heavily on the Chiefs of Staff for detailed military advice.

In order to shift a major portion of the defense burden from the Prime Minister a new post, Minister of Defense, was created. He was also to be Deputy Chairman of the Defense Committee, to preside over meetings of the Chiefs of Staff whenever he or they so desired, to administer inter-Service organizations, and to settle questions of general administration where a common policy for all three military departments was thought desirable.[75] More important he was given responsibility for "the apportionment, in broad outline, of available resources between the three Services in accordance with the strategic policy laid down by the Defense Committee."[76] This was to include the framing of general policy to govern research and development and the correlation of production programs. It was hoped that this authority would result in a "unified defense policy for all three Services."[77]

He was to head an independent Ministry of Defense, but it was to include only a small staff of advisors and administrators. The bulk of his informational planning and organizational support was to be furnished by committees and joint planning groups made up of elements from the three Services and interested departments which conferred together periodically on security problems. This meant that he lacked independent resources and still had to rely heavily on the three departments for staff support. In the long run this deficiency would severely hamper his ability to control overall defense policy.

The Chiefs of Staff committee was left unchanged and retained its responsibility for furnishing military advice to the Government and the Defense Committee, for formulating defense requirements, and for preparing strategic military plans. At the same time they were directed to advise the Minister of Defense on all military matters, so that he would have ample information on which to base his decisions. However, the right of the Chiefs of Staff to have direct access to the Defense Committee was preserved. It was generally believed that this would offer the Services a form of protection against oppressive political dictation.

One completely novel and interesting wrinkle was grafted on to this scheme which obviously stemmed from the military's heavy reliance on scientists in World War II. A Defense Research Policy Council was established "to secure the continued and complete integration of military and scientific thought at all levels, and to see that, in planning defense research as a whole, account is taken of the scientific effort of the country in other fields in order that our resources may be efficiently and economically used."[78] This Committee was to be chaired by the Chief Scientist of the Ministry of Defense. It was composed of scientists and procurement officials from all three Services and the Ministry of Supply. In practice this group supervised the entire research program of the military establishment. No project could be undertaken without the approval of this body, and it assigned priorities to each and every development program. It was the major link between the Ministry of Supply and the military. In turn it offered the Services the only official organ (other than the Defense Committee or Cabinet) through which they could influence policies of the Ministry of Supply. This committee was to operate under the general guidance of the Minister of Defense. He would have the final voice in an irreconcilable dispute, but it would be a rare instance when he overruled the committee or its chairman. These were the main features of the policy organization which passed into law in 1946.

The reforms referred to above left the Royal Navy's basic policy-making mechanisms unchanged. The Admiralty was a unique organization rooted in the pervasive traditions of the Royal Navy which had stood the country in good stead since the late 1800's. The First Lord of the Admiralty, as the political head of the Royal Navy, was responsible to Parliament and the Prime Minister for the general conduct of all Admiralty business. He was supported by two other political appointees - the Parliamentary and Financial Secretary and the Civil Lord - who aided him in supervising and accounting for the expenditure of

funds. His professional assistants were seven Sea Lords, who were high ranking naval officers, and a top rank civil servant, the Permanent Secretary. Each of these individuals had an operational responsibility for some particular area of activity under the authority of the First Lord.

It is not important to go into any detail here except to illustrate the general nature of the organization.[79] The First Sea Lord, the professional head of the Royal Navy, was responsible "for general policy relating to naval strategy and tactics, and to ships, aircraft and weapons, for war planning, and for operational direction of the Fleet."[80] In addition to his responsibility to the First Lord, he was a Chief of Staff and as such directly responsible to the Minister of Defense and the Government. One of his most important responsibilities was to head the Naval Staff (this was only a portion of the total staff of naval officers in the Admiralty). On the one hand this important group initiated general policy and material requirements of the Navy and on the other exercised general direction over naval operations. In the same manner the remaining Sea Lords each had a particular sphere of activity which was his individual responsibility. The Second Sea Lord was the head of personnel; the Third Sea Lord and Controller was responsible for the building and maintenance of ships, weapons and equipment; the Fourth Sea Lord handled all affairs concerning supplies and transport; and the Fifth Sea Lord supervised general naval air policy. The Permanent Secretary was charged with supervising the administration of the Admiralty and coordinating Navy business with other Government departments. In their capacity as supervisors responsible for implementing directives, each of these professionals reported to the First Lord of the Admiralty. At the same time they were to keep the First Sea Lord informed, so that he could coordinate their actions with the plans and operations of the Fleet.

However, each of these individuals also sat on the Board of Admiralty in his capacity not so much as an

administrator, but as a policy-maker. This famous institution had developed over the years and had a history and significance all its own. In an earlier day Lord Fisher referred to it as "that mysterious and awful body."[81] The membership of the Board in 1946 was composed of the First Lord and his ten assistants, and since 1872 it had had no official collective responsibility for the conduct of war or for the business of running the Royal Navy, but had retained its role as a general council for advising the First Lord and First Sea Lord in regard to their special responsibilities to the Government. In actual practice, however, its influence far exceeded that of merely a discussion group and advisory council. War operations were outside its scope, but every other type of major policy problem was brought to the Board for a collective determination as to the Navy's position. If there were significant differences of opinion within the Navy on a policy issue, they were resolved within this body. It was here that the diverse political and technical pressures generated within the Service itself were brought to bear on the decision-making process and reconciled.

Predictably, the First Lord and First Sea Lord carry a major voice in the deliberations of this body, but it is a rare occasion when they flout the Board.[82] Deeply ingrained tradition, the past success of the system, the complexity of modern equipment and political forces similar to those in any large organization have combined to preserve the Board's collective responsibility and influence no matter what its legal mandate. "The responsibility for Board decisions is shared by all members"[83] and in actual fact its task is to "build, direct, maintain and administer the Royal Navy.[84] The views put forward by the Navy's leaders outside the walls of the Admiralty are without exception hammered out, refined and approved by the Board of Admiralty. It is the heart of the Royal Navy's policy mechanism.

If a Sea Lord desired to initiate a major change which would effect the nation's overall strategical policy in any

manner, he would first bring it to the Board of Admiralty. This body would possibly submit the matter to a study group and ask for the advice of the interested departments. After an extended exchange of views, memoranda and reports the consensus of the Board would be formalized and approved. The First Sea Lord would then inject the Board's recommendation into the Chiefs of Staff Committee machinery where it would undergo much the same process it underwent in the Admiralty. The First Sea Lord using the techniques of persuasion, negotiation and bargaining would attempt to obtain the approval of the CSC for the Navy's suggestion. Such an endorsement indicates that the Chiefs of Staff have found it militarily desirable and recommend it for the consideration of the political leaders.

Concurrently, the First Lord is laying the groundwork with the political side of the Government. He alerts the Minister of Defense as to what the Admiralty has in mind and both formally and informally presents the Navy's case. This is a crucial part of the process, for the Minister of Defense's endorsement is tantamount to Defense Committee approval. Over the years the Minister of Defense has become progressively more important in the making of policy, and consequently this role of the Navy's political head has become more crucial. If the decision is important enough to occasion a full fledged debate in the Defense Committee, the First Lord and his political assistants prepare the way for it by attempting to insure that it will receive the necessary support at that level.

That Committee reviews the recommendations of the Chiefs of Staff Committee and solicits the views of the assembled members. It is here that financial and partisan political considerations are given an opportunity to exert their full influence, and the Admiralty's suggestion is given its final test as to whether it meshes into the overall security policy of the Government. Actually political, diplomatic and financial considerations are at work all through this process. Often the Navy is continually reshaping its original recommendation to make it more

acceptable to all interests concerned. Nevertheless, the Defense Committee is the final court of appeal, and it is in this arena that opposing views which cannot be modified at lower levels must be reconciled.

This is necessarily an abbreviated description of an administrative process which in actual practice is both lengthy and involved. Hopefully it should suffice to enable the reader to follow the evolution and intricacies of general post-war naval policy.

* * *

This completes the technical, economic, diplomatic and administrative background. In summary Great Britain emerged from six years of total war to confront a radically new world. Two industrial giants, the United States and the U.S.S.R., would soon crowd the lesser players into the wings, and Britain would enter an unprecedented period of decline as regards her economic and political stature in the society of nations. These developments would inescapably require traumatic adjustments in British perspectives and correspondingly in the British way of life. The Royal Navy was to be no exception. The nation's traditional maritime strategy had been undermined by technical developments and radical changes in the international distribution of power. In this altered milieu, the British nation would have to move forward gradually and feel out the pressures which would in the end determine the shape of a new defense policy. It would be over a decade before the Government and the Admiralty would arrive at a viable accommodation with the economic, technical and international realities of the post-war era, and formulate a revised naval policy that could meet the new conditions with some promise of success.

CHAPTER II

NOTES

1. Anthony Hartley, A State of England (London: Hutchinson and Co. Ltd., 1963), p. 58.

2. Ibid.

3. F. S. Northedge, British Foreign Policy (New York: Frederick A. Praeger, 1962), p. 13.

4. Lord William Strang, Britain in World Affairs (New York: Frederick A. Praeger, 1961), p. 158. Lord Strang also mentioned a fourth factor, the "high capacity of those who formed and conducted her foreign policy." This factor is not utilized here primarily because the writer is interested in dealing with external influences.

5. Admiral Mahan noted and emphasized insularity as instrumental in Britain's rise to pre-eminence. See for example: Influence of Sea Power Upon History, pp. 140-141, 170: Influence of Sea Power Upon French Revolution, Vol. II, p. 17; "Considerations Governing the Disposition of Navies," National Review, Vol. 39, July 1902, pp. 701-711; and "The Persian Gulf and International Relations," Ibid., Vol. 40, Sept. 1902, pp. 27-43.

6. For a more extended discussion of this subject see Harold and Margaret Sprout, Toward a New Order of Sea Power (Princeton: Princeton University Press, 1940), p. 10-17.

7. Ibid.

8. Ibid., 15.

9. Anglo-Japanese Alliance (1902). For a brief but excellent discussion of the full implications of this treaty see G. M. Trevelyan, A Shortened History of England (New York: Longmans, Green & Co., Inc., 1942), Book Six, chap. vi, pp. 535-539.

10. The most prominent manifestation of this policy was made in 1901 when Great Britain after discussions which lasted a year agreed to give the United States complete liberty to "dig and administer the projected Panama Canal." Elie Halevy, Imperialism and the Rise of Labour (New York: Barnes & Noble Inc., 1961), p. 126.

11. For a most illuminating and detached account of the politics and tragedy of the British commitment to the Western Front see Leon Wolff, In Flanders Fields (New York: Time Inc., 1958).

12. Winston S. Churchill, The World Crisis 1916-1918, (Vol. II; New York: Charles Scribner's Sons, 1927), p. 90.

13. Ibid., 64

14. Henry Newbolt, Naval Operations (1931), Vol. 5, p. 430 cited in Sprout, Sea Power, 38. A great many of these ships were small craft which were soon sold or scrapped. By January 1, 1920 the British Navy had shrunk to 812 combatant ships.

15. There were actually a number of treaties signed at the Washington Conference. The one concerning naval armaments was the most significant and was titled "Treaty for the Limitation of Armament." For the full text of all the treaties see Sprout, Sea Power, App. B., 198-313.

16. Commander Russell Grenfell, Sea Power in the New War (London: Geoffrey Bles, 1938), p. 37.

17. Ibid., 45.

18. Ibid., 49.

19. This statement is based on a review of Service estimates over the period 1933 to 1939.

20. Although there was still no general recognition of the significant role that it would play in the coming war.

21. Grenfell, Sea Power, 4.

22. Winston S. Churchill, Their Finest Hour (Boston: Houghton Mifflin Company, 1949), pp. 280-300.

23. W. H. B. Court, A Concise Economic History of Britain (London: Cambridge University Press, 1954), p. 300.

24. Harold and Margaret Sprout, "Retreat from World Power," World Politics, XV, No. 4 (July 1963), p. 664.

25. Court, 302.

26. Ibid., 305.

27. Sprout, World Politics, 664.

28. For data on emigration to the colonies see C. E. Carrington, The British Overseas (London: George Allen & Unwin, Ltd., 1950), p. 506.

29. Court, 326.

30. Sprout, World Politics, 665.

31. The Sprouts express this hypothesis in Ibid. For other references to the same general theme see, for example, Herbert Feis, Europe: The World's Banker, 1870-1914 (New Haven: Yale University Press, 1930), pp. 87-117; A. H. Imlah, "The Pax Britannica," South Atlantic Quarterly, Vol. L (January 1951), pp. 12-24; Imlah, Economic Aspects in the Pax Britannica (Cambridge: Harvard University Press, 1958), chap. I; André Siegfried, England's Crisis (New York: Harcourt Brace & Co., 1931), pp. 11-26; Stephen King-Hall, Our Own Times (London: Nicholson, 1935), pp. 15-29.

32. Court, 302.

33. Authorities disagree as to the exact year when Britain's fortunes commenced declining, but there seems to be general consensus that it was between 1865 and 1900. Lord Strang estimates the turning point between 1887 and 1897. See Strang, 188ff & 233ff.

34. For a short but excellent treatment of these trends during this period see E. A. G. Robinson, "The United Kingdom's Economic Problems," United Kingdom Policy (London: Royal Institute of International Affairs, 1949), pp. 58-62.

35. A. E. Kahn, Great Britain in the World Economy (New York" Columbia University Press, 1946), p. 137.

36. Court, 338.

37. Robert A. Brady, Crisis in Britain (London: Cambridge University Press, 1950), p. 5.

38. Ibid., 6.

39. Francis Williams, Socialist Britain (New York: Viking Press, 1949), p. 12.

40. Brady, 6.

41. G. D. H. Cole, The Post-War Condition of Britain (New York: Praeger, 1956), p. 175.

42. Snyder, Politics, 234.

43. This brief explanation draws heavily on Professor Harold Sprout's views, see "Britain's Defense Program," Britain Today: Economics, Defense, and Foreign Policy (Papers delivered at a meeting of the Princeton University Conference May 12-13, 1959), pp. 65-71. For a more elaborate treatment of the economics of British defense policy see Snyder, Politics, chaps. IX and X. For

treatment of various economic aspects of British defense and a variety of perspectives also see A. C. L. Day, "The Economics of Defense," The Political Quarterly, Vol. 31, No. 1 (Jan.-March 1960), p. 57; C. Paige, "Defense Expenditures," Economic Review, No. 10 (1960), pp. 26ff; F. T. Blackaby and D. C. Paige, "Defense Expenditure - Burden or Stimulus," Survival, Vol. II, No. 6 (1960), pp. 242-60; "Britain's Defense Budget: The Real Cost," New Statesman and Nation, February 27, 1954, pp. 255-58.

44. For a detailed treatment of this facet of defense policy see Snyder, Politics, 216-224.

45. Ibid., 216-17.

46. Sprout, Britain Today, 68.

47. A. C. L. Day refers to the whole problem of defense spending in Britain as an exercise in "the logic of priorities." See, Political Quarterly, 57.

48. Strang, 158.

49. Court, 326-27.

50. This brief analysis draws heavily on Lord Strang's interpretation of the two decades preceding World War I. See Strang, chap. XII.

51. Russia lost more than 2 million, Germany almost 2 million, France close to 1½ million, Austria-Hungary 1½ million. The American losses in killed and wounded were about 130 thousand.

52. Strang, 296.

53. The degree of collaboration which is necessary is still an issue in British politics today, but the fact remains that World War I irrevocably broke down the traditional reluctance to stay aloof from Europe.

54. Northedge, 16.

55. Charles A. Beard and Mary R. Beard, The Beard's New Basic History of the United States (Garden City, N.Y.: Doubleday & Company, Inc., 1960), p. 440.

56. Samuel Flagg Bemis, The United States as a World Power (New York: Henry Holt and Co., 1955), p. 269.

57. Battle casualties ran to 7,500,000. Estimates of total casualties including both military personnel and civilian vary widely. Some run as high as 20 million.

58. Georg von Rauch, A History of Soviet Russia (New York: Frederick A. Praeger, 1962), p. 394.

59. Ibid., 395.

60. Ibid., 384.

61. Eric Estorick, Changing Empire (New York: Duell, Sloan and Pearce, 1950), p. 24.

62. Canada was the leader in this movement, and it is normally dated from 1828 when large groups of Canadians rioted in protest against the harsh centralized control then in effect. See Ibid., p. 21.

63. W. D. Hussey, The British Empire and Commonwealth 1500 to 1961 (Cambridge: University Press, 1963), p. 328.

64. India was allowed to participate with specific permission of the Government in London.

65. Estorick, 36.

66. Ibid., 38.

67. Cmd. 1932, "War Office (Reconstitution) Committee: Report of the War Office (Reconstitution) Committee (Esher Committee), Part I," 1904, p. 1. Cmd. 6923, "Central Organization for Defense," December 1946, p. 1.

68. Ibid., 2.

69. Special attention was drawn to the need for more inter-Service coordination by the Salisbury Committee on National and Imperial Defense in 1923 and this led directly to the formation of the Chiefs of Staff Committee. Cmd. 2029, "Report of the Sub-Committee of the Committee of Imperial Defense on National and Imperial Defense," 1924.

70. Franklyn Arthur Johnson, Defense by Committee (London: Oxford University Press, 1960), p. 198. This is the most complete account available of the evolution of British command structure.

71. Cmd. 2029, p. 18.

72. This was to be the prototype for the Joint Chiefs of Staff system adopted by the United States in World War II.

73. Cmd. 6923, p. 1.

74. Ibid., 5.

75. Ibid., 7.

76. Ibid.

77. Ibid., 5.

78. Ibid., 9.

79. For brief but authoritative descriptions of the Admiralty Organization during this period and of the special character of the Board of Admiralty see The Admiralty a Guide for Newcomers (O. & M. 5020/54). This is an unclassified pamphlet published by the Admiralty for its own personnel. See also Notes on the Royal Navy (B. R. 1868), 1950, pp. 17-18. Several committees have investigated the Admiralty organization since World War II and some major changes have been made, but up through the period of this study, 1945 to 1963, the general character of the Board of Admiralty remained unchanged. For the best public commentary on these changes see, Great Britain, "The Admiralty Headquarters Organization," First Report from the Select Committee on Estimates, Session 1959-60 (HMSO, 1960). A chart of the Admiralty Organization is reproduced as Appendix I.

80. O. & M. 5020/54, p. 22.

81. Cited in Ibid., 15.

82. The writer did not discover an instance since World War II when the First Lord or First Sea Lord chose to flout the Board.

83. B. R. 1868, p. 17.

84. O. & M. 5020/54, p. 17.

CHAPTER III

WAR TO PEACE: 1945-1948

When Germany collapsed in 1945 Great Britain had 5,100,000 men under arms.[1] There was public clamor to return to "normalcy" as soon as possible, and the Government made every effort to satisfy this demand. However, this was not an easy process. Great Britain along with its allies had accumulated short term commitments as a result of the war which would require troops and ships to fulfill. Even more important it was not possible to formulate a long term defense policy until the international scene had stabilized somewhat, and the emerging patterns of power had begun to clarify. Consequently the first few years after the war were transitional from the military standpoint. Not until late 1948 did the British Navy complete its post-war contractions. Though the transition was by no means complete, the beginning of 1949 signified the return of the Navy to a peacetime posture.

In surveying this period it is appropriate to begin with the official image of the Navy's role. With this picture in mind the inquiry can then move to a more practical level and review how naval policy was implemented in terms of money and men and what factors governed these dispositions. Then a look at how the Admiralty chose to employ its resources will furnish a basis for assessing the Navy's place in the defense establishment.

The Official Image

World War II had left the proponents of British sea power in an uneasy position. The Fleet had played a major role in preserving the United Kingdom and the Empire. Men and ships had performed magnificently. Britain's senior Service could look back with pride on its wartime contribution. On the other hand the war had not been particularly kind to the Royal Navy. At the signing of the Armistice the United States possessed the world's largest fleet, and there was little question that with her tremendous resources she was destined to retain that predominance. This was the first time in several centuries that Britannia had been outmatched at sea. Even more distressing, the Royal Navy had had to surrender its pre-eminent position within Britain's own defense heirarchy. During the "battle of Britain" the home islands had been heavily attacked from the air, and the Fleet had played no part in this crucial struggle. As a result the Royal Air Force had established a credible claim as "the first line of defense."

Just as the war ended an even more ominous shadow fell across the military scene. It was cast by atomic weapons. Hiroshima and Nagasaki made a profound impact on strategic thinking. Professionals and laymen alike began reexamining the traditional concepts of warfare and in some cases to question the importance of warships and navies. These individuals, operating on the basis of limited knowledge, were more than eager to cast aside conventional forces or at least to reduce their roles.[2] The proponents of sea power were justifiably apprehensive as to what lay ahead for the Royal Navy.

This, of course, was not the first time that the British Fleet had faced difficult times. Professor Michael Lewis in The Navy of Britain[3] revealed a repetitive pattern in the way the English turn to their Navy in crisis, express their thanks in victory and neglect it in peacetime. The Admiralty was only too aware of the historical precedents, and the Navy's leaders feared the rundown of forces that would

inevitably follow the armistice. On the other hand World War II had not shaken their faith in the need for a Navy, and even before the conclusion of hostilities they were arguing for a strong peacetime Fleet both publicly and behind-the-scenes.

There was little doubt as to where the Admiralty was to lay the emphasis in its post-war effort to keep attention riveted on the Fleet. The First Lord of the Admiralty, Mr. A. V. Alexander, as early as March 1945 described the U-boat war in some detail to the House of Commons stressing Britain's reliance on seaborne supplies. He expressed the fervent hope that this fact would never be forgotten by "future First Lords, Boards of Admiralty, Governments or by the people of this country."[4] Throughout the course of 1945 it became increasingly clear that the "protection of the nation's sea lanes"[5] was to be the cornerstone of the Admiralty's case. The First Sea Lord soon joined the fray with a reference to the atom bomb. Speaking at Manchester in December 1945 he declared, "As long as Britain's existence depends on the safe arrival of merchant ships the need for a British navy will remain, atom or no atom."[6] While presenting the first post-war Navy Estimates Mr. Alexander succinctly summed up the heart of the Navy's case:

> Our experience in the last war demonstrated once more that if we neglected the security of our communications we should be at the mercy of any aggressor. He would have no need to incur the hazards of using the atomic bomb. He would simply, surely and swiftly destroy us by cutting our arteries at sea.7

These were the first salvos in the crucial campaign to assure the Royal Navy a post-war role. In essence the Admiralty was falling back on the age-old doctrine which had buttressed the Navy over the centuries - control of the seas and protection of the trade routes. Of course its arguments had been updated. There were few references to the Fleet's ability to protect the homeland or to carry offensive operations to the enemy. This reflected the Royal Navy's wartime experience. It could no longer single handedly protect the British isles; this had become a mission shared with the Royal Air Force. In the same vein amphibious operations were joint ones carried out with

the other two Services. On the other hand the bulk of the Fleet's effort from 1939 to 1945 had been spent in keeping open the Mediterranean to merchant ships, fighting convoys through to America and Murmansk, and combatting the German U-boat and surface raiders. This appeared to be the one task which the British Navy could still claim as its own, and the Sea Lords chose to lay the stress on it.

These arguments struck a responsive note in many a British heart. Although a vocal minority insisted that atomic weapons had made naval forces obsolete, there was a general reluctance to abandon or modify a naval policy which had proved so successful in the past. There were no calls for Great Britain to overtake the United States or to recapture its naval ascendancy, but there was considerable pressure exerted in behalf of the Royal Navy. The first serious attempt to formulate a long range peacetime defense policy was made by a Chatham House Study Group formed in 1944. Its report was published in the summer of 1946.[8] While it dealt with the whole spectrum of national security problems it heavily emphasized the central role of naval forces. "The British Empire has been built and maintained on the basis of sea power. The whole position of this country in the world has depended upon it and it will continue to be of vital importance in the future."[9] Statements in the popular press and military journals reiterated this conception. They stressed the theme that "as long as the trade of the world is carried in ships the core of the Empire's defensive strength must be its Navy."[10] The House of Commons debate on the Navy Estimates in 1946 evoked numerous statements in a similar vein. Thus:

> Our Navy should be represented in all the major oceans, the smaller seas, throughout the British Empire and in every place where British lives and interests may be endangered.11

> We must never again ask our merchant seamen to go to sea, voyage after voyage, year after year, with the inadequate protection they had during the early years of the war.12

> The atomic bomb may change the type of ship, but it does not alter the mission of the Navy in controlling the sea. If our Navy were to be abandoned . . . all an enemy has to do is to cut our arteries at sea and destroy us.13

These statements had a "pax Britannica" ring about them. While it was too early to foresee all the factors which would shape post-war defense policy, it was obvious that the Royal Navy still had many advocates and that World War II had not materially altered their faith in sea power or their conception of the Navy's role. Essentially they envisioned a fleet which would fulfill the traditional tasks of dominating the narrow seas and insuring Great Britain's oceanic lifelines. Though they granted that the Royal Air Force would have a major share in the defense of the home islands, they still insisted "nothing has happened during the last year which in any way diminishes the fact that the survival of England in war depends as ever upon her ability to maintain her sea communications and seaborne trade across oceans."[14] They were thinking in "great power" terms. Britain had world-wide responsibilities, and in their eyes the Fleet was still the mortar which held the Empire together.

The White Paper on Defense in February 1947 confirmed the Government's faith in the Navy's reasoning. Britain's peacetime military goals were described as:[15] (1) security of the United Kingdom; (2) safeguarding of communications; (3) adequate forces to meet the requirements of the United Nations. It emphasized that the Navy would be instrumental in attaining those ends. That same year the First Lord of the Admiralty in his statement which accompanied the Navy Estimates stressed the Fleet's fundamental mission as one of keeping "our vital lines of supply" open.[16] This theme was even more heavily pressed in the parliamentary debate.[17] It was manifestly clear that until further evidence was available the official role of the British Navy with slight modifications was to remain substantially what it had always been - to dominate the narrow seas and the ocean lanes vital to Britain. The Government had apparently not altered its previous high opinion of sea power. At least in the immediate future it was the nation's intention to rely on its naval forces to a significant extent while it digested the technical lessons of World War II. However, naval

policy is neither totally made nor revealed by publis statements in defense documents or on the floor of Parliament. It is rather the resultant of converging forces, many of them non-military, and it is now appropriate to examine the more significant of these factors.

Economic Pressures

It was the Government's announced policy to complete demobilization and to stabilize the armed forces on a peacetime footing at the earliest possible date. This course certainly reflected the mood of the nation. It was reinforced by the generally held belief that the international situation would shortly level off and that the United Nations would assume effective responsibility for maintaining the peace. In the same vein the Government was confident that the commitments acquired as a result of the war would soon diminish and that the "Big Three" could successfully lead the world in peace as well as in war. Although there was some controversy as to the ultimate size and strength of the defense establishment there was nevertheless a general consensus that the Services could afford drastic reductions.

The demands for rapid demobilization were by no means unique to the period of 1946 to 1948. Actually every previous post-war British Government had had to operate in a similar atmosphere. However, there was a new and crucial consideration. Britain's post-war economic problems proved to be more critical than anyone had foreseen. The strain of war had severely taxed its industrial plant, depleted its capital reserves, loosened its overseas ties and generally damaged its competitive position.[18] It was essential that the maximum number of men be returned to civilian life to help in the rehabilitation of the economy and that defense scientists and workers be shifted to more productive areas. It was also necessary to reduce to the bare minimum any expenditures

which injured the balance of payments position. In order to revive the economy's health it was important to divert industry from defense and to concentrate on products for sale abroad.

The requirement for exports would have been urgent under any circumstances, but the war was followed by a succession of economic crises which intensified the problem. In August 1945 America terminated the wartime Lend-Lease arrangements which was a sharp blow to Britain's prospects for a quick post-war recovery. This void was later filled by a U. S.-Canadian loan,[19] on rather harsh terms. Almost immediately an adverse balance of trade began to plague the Government. In 1946 the deficit was £298,000,000, and in 1947 it increased sharply to £443,000,000.[20] Conditions in many respects were even worse than during the war. Food shortages led to the rationing of bread and potatoes for the first time. The 1946-47 winter was excessively cold, and due to the shortage of trained miners Britain's fuel stocks dropped so low that power stations were forced to reduce their generating hours. Many factories manufacturing export goods had to discontinue production or work part-time. In 1947 there were temporarily 1;800,000 unemployed in the United Kingdom.[21]

At the armistice the country was heavily in debt to non-sterling countries. There was a strong desire to achieve full convertibility of sterling in order to facilitate free trade and the liquidation of these debts. In fact one of the conditions of the U. S.-Canadian loan in December 1945 was that sterling should be made convertible by the summer of 1947. Convertibility was attempted in mid-1947, "but the balances held by countries outside the sterling area were switched into dollars and gold at such a rapid rate that it was necessary to suspend the privilege."[22] This demonstrated clearly the sparseness of the country's gold and dollar reserves, and precipitated a major financial crisis. It was essential that these reserves be increased in order to buy from non-sterling countries and to sustain foreign trade through normal trade cycles. Again, this required increased exports.

The Government was casting about in every direction for ways to economize. The British military commitment in Greece was passed to the United States in March 1947. Occupation costs in Germany were reduced by negotiating an agreement with America whereby the latter relieved Britain of all dollar expenditures in the Anglo-American zone and took over a large share of the occupation expenses.[23] Attempts were made to cut down imports and to negotiate with governments holding large sterling balances, hoping to scale them down. These were striking indications of Britain's economic weakness. Predictably, the Government came under increasing pressure to slash defense expenditures.

This problem was reflected in the 1947 White Paper on Defense which stressed "the urgent need of restoring a balanced peace economy at the earliest moment."[24] The 1948 Defense Statement mentioned balance of payments difficulties for the first time and emphasized the need for "a strong and sound economy with a flourishing industry."[25] These were only the first of a long series of references, in post-war White Papers, to Britain's precarious economy. Hugh Dalton referred to the intra-governmental arguments over the demands of defense and the economy as "the Battle of the Balance of Payments."[26] As Chancellor of the Exchequer he led the fight to cut down defense expenditures and succeeded in materially reducing the Services' share of appropriations and manpower. In short, domestic economic considerations were largely to shape the post-war defense establishment.

This can best be illustrated by examining the actual figures. In the last year of the war the military budget ran approximately £3,400,000,000, and by 1948 it had sunk to £631,000,000.[27] The total personnel in the Services had been reduced from 5,100,000 to 800,000. The appropriation and manpower situation of the Navy over those years is given in the following table:

	1945	1946	1947	1948
Estimates in millions of pounds	1,100	255	196	158
Personnel in thousands	781	493	191	167

These figures indicate the drastic shrinkage of the resources available to the Navy during this transitional period. Comparatively, the Navy's budget was the lowest of the three Services. However, it rose from 15% of the total defense budget in 1946 to 22% in 1948. By the end of this period the Royal Air Force was drawing 24% and the Army some 40%.[29] This can be explained by looking at the nature of the nation's post-war military commitments.

On the conclusion of hostilities with Germany and Japan the allies were presented with a myriad of short term military obligations. These were mainly occupation and order-keeping tasks, and Great Britain inherited a large number of them. Throughout the 1946-48 period British forces were performing occupation duties in Germany, Japan, Italy, Austria and Venezia Guilia; at the same time they were helping to maintain law and order in Indonesia, Palestine, Greece (withdrew in 1947) and throughout the Empire. These were primarily commitments to be fulfilled by troops. The Navy had the task of clearing the wartime minefields, and it maintained a blockade of Palestine to prevent unauthorized aliens from entering during the troubled months just before independence. In addition it was responsible for supplying and supporting the Crown's far flung garrisons. But all in all these were duties which did not require large numbers of men or ships. As a result the Army's demobilization schedule lagged behind both of the other services and consistently throughout this period it received the lion's share of appropriations.

One other consideration should be mentioned which weighed heavily in the Admiralty's quest for funds and recognition. The Royal Navy lacked a credible enemy. No major naval powers remained outside of the United States and England. Even the most diehard advocates of sea power had difficulties in arguing around this simple fact. Admiral of the Fleet Lord Chatfield, a former First Sea Lord, confessed "never since Trafalgar has there been a time when sea security, and all that it means to our nation and Empire, seemed less endangered; never

has it given strategists less anxiety."[30] No one suggested that the United States was a likely or even possible threat. In the face of heavy economic burdens the lack of an enemy made it difficult to generate enthusiasm for naval appropriations. References to "precedent," "vital sea lanes" and "showing the flag" were not sufficient in themselves. Politicians need tangible and imminent threats to arouse them. In the light of these circumstances it is not difficult to understand the drastic rundown which the Royal Navy underwent during the first few post-war years.

Interestingly enough this seems to have been a period of relatively little inter-service bitterness even though funds were scarce. There were many disagreements on the proper organization of the military establishments, and the Chiefs of Staff Committee was unable "to reach agreement on a coherent strategic plan"[31] which meshed the roles of all three Services. Nevertheless, the bitter competition for appropriations and primacy had not yet begun to accelerate. There was general consensus that contraction was the order of the day and that the Army must bear the brunt of the nation's occupation responsibilities. At the same time it was hoped that this was a temporary requirement which would soon disappear, and there was little time or effort left for a bitter contest between branches. The tasks of demobilization and pacification had severely dislocated the Services, and the painful adjustment to peacetime conditions fully occupied the energies of all three. This certainly described the Royal Navy. It had secured a place in the overall defense picture and was devoting its entire attention to the very pressing problems of forging a peacetime Fleet with the limited resources available.

It is instructive to note that despite continuing decreases in the defense budget, no attempt was made to redefine the role of the military, or the Navy in particular, in more austere terms. On the contrary the 1948 defense White Paper insisted that it was "the firm intention of His

Majesty's Government to maintain the forces which are needed to support its international policy, to insure the security of the United Kingdom, to maintain its interests throughout the world and to enable it to play its full part in the preservation of world peace."[32] In commenting on the Navy's contribution to this effort Mr. John Dugdale, Parliamentary and Financial Secretary to the Admiralty, informed the House of Commons in 1948 that "there is cause to be confident in the state of the Navy."[33] In other words, despite the tremendous contraction of funds and personnel, the Royal Navy was still expected to carry out its traditional role. With this in mind it is pertinent to examine the manner in which the Admiralty employed its resources and the tasks which the Fleet was actually prepared to perform.

Ships and Equipment

It is manifest from the previous discussion that the major determinant of the post-war rundown of military forces was to be the state of the economy and the need for exports. In an effort to furnish the three Services some kind of planning guidelines the Labour Government in the winter of 1946 adopted a "Ten Year Rule" which directed the military to assume there would be no major war for a decade.[34] Once before, in 1919, the Government had embraced such an assumption, and it governed defense planning until the early 1930's - with rather disastorous results. It rationalized the Government's policy of throttling down defense appropriations and stunted the growth of weapons and tactics after World War I. In terms of new developments the British services stood still until 1933 when this doctrine was discarded. Nevertheless, the Government readopted this expedient in 1947.

This seems to have been strictly a political decision. The Chiefs of Staff had no part in its adoption.[35] In essence it was a political ruse to reconcile military demands with an

extremely confining economy rather than a strategical conclusion logically deduced from a careful study of external affairs. Actually, the Government's decision represented simply a recognition of the post-war facts of life. Considering the problems facing the Government in the period 1946-48 it was probably inevitable that the armed forces would have to make maximum use of wartime stocks and that there could be only minimum production of new weapons and equipment until Britain's financial position should improve or the international situation should deteriorate again. Great Britain was by no means unique in its reluctance to write off its tremendous wartime investment, for the United States likewise followed a policy of using wartime equipment as long as possible.

The one area in which this policy may have had some independent effect was research. The Government's scientists initiated several projects after the war with the express intention of utilizing a ten year development period. Even here, however, money was extremely tight, and it is doubtful that much more could have been accomplished no matter what the Government's ground rules. In any case, with the "cold war" intensification in the late 1940's the Ten Year Rule was forgotten. Nevertheless, this was the official doctrine governing military research and procurement during the 1946-48 period.

With this in mind, it is now appropriate to examine how the Board of Admiralty employed its slender resources and what was the physical character of the peacetime Fleet which survived the demobilization. Although the Board's freedom of maneuver had been severely restricted by political decisions, it still had considerable control over the type of Navy which would emerge. On it would fall the burden of shaping the Navy's general approach, of selecting the ships to be retained, of directing the Navy's limited research program, of training its forces and of formulating strategical and tactical maritime doctrine.

This can best be done by first examining the seagoing forces in 1949. By this time the Fleet had reached "the

man-power level contemplated for the next few years"[36] and was at its planned peacetime strength. The emphasis was now to be directed toward the "welding of the new Royal Navy, that has now emerged, into an effective fighting instrument."[37] In February 1949 the Fleet's composition and deployment could be summarized as follows:[38]

Home Fleet (British Isles)

2 Light Carriers
1 Battleship
4 Cruisers
16 Destroyers
6 Frigates
8 Submarines

Mediterranean Fleet

1 Fleet Carrier
1 Light Carrier
1 Battleship
4 Cruisers
16 Destroyers
6 Frigates
8 Submarines

Pacific Fleet

1 Light Carrier
3 Cruisers
8 Destroyers
6 Frigates
12 Submarines

West Indies Squadron

1 Cruiser
2 Frigates

South Atlantic Squadron

1 Cruiser
2 Frigates

East Indies Squadron

2 Cruisers
4 Frigates

Training and Experimental Ships

2 Fleet Carriers
2 Light Carriers
3 Battleships
2 Cruisers
20 Destroyers
25 Frigates
4 Submarines
2 Minesweepers

Reserve Fleet

3 Fleet Carriers
1 Escort Carrier
12 Cruisers
65 Destroyers
129 Frigates
31 Submarines
53 Minesweepers
3 Minelayers

The Government's attempts to economize were certainly reflected in the size and nature of the Fleet. In the first three years after the war more than 1,250 ships of all descriptions were decommissioned. Approximately 500 were placed in reserve, 450 sold or transferred to other navies, and more than 300 scrapped or destroyed in experiments. The last two figures included 11 battleships, 10 carriers, 34 cruisers,

over 200 destroyers and 90 submarines.[39] More meaningful is a comparison with pre-war years. Although the total number of ships is just slightly below the average of the inter-war years, the number of major combatant types was considerably less. In 1939 there were 12 battleships, 3 battle cruisers, 7 carriers and 60 cruisers available to the Admiralty.[40] A quick glance at the above table will indicate that the 1948 Fleet fell considerably below that figure. If just major ships in active commission were compared (ignoring vessels in reserve) the pre-war Fleet was one and one-half times the size of the post-war Navy. Sheer numbers are not necessarily accurate measures of power, but over the short time span of 1939 to 1948 they certainly indicate that reduced appropriations and increased costs were forcing the Royal Navy to work with considerably fewer ships than it was accustomed to or desired.

Despite the references in White Papers to the "new" Royal Navy, the most striking feature about the Fleet in 1948 was that it was in no sense new. Essentially the Fleet was a small replica of the vast World War II Navy both in composition and design. The ships themselves with few exceptions were of World War II vintage. Of the major units only two had been completed since 1945 - one battleship[41] and one light fleet carrier.[42] However, they were of World War II design and had not been altered radically from their predecessors. None of the other capital ships had undergone modernization. All the cruisers were hold-overs from the late war. Some twelve of the destroyers were completed in 1946 and 1947, but these also, from the standpoint of design, were essentially the same ships which won the "battle of the Atlantic." Fifteen new submarines joined the Fleet right after the armistice, but they included no new developments such as snorkels or high capacity batteries. Only three new frigates had been commissioned and no new minesweepers.

The aircraft situation was comparable. By 1947 the Fleet Air Arm had returned the bulk of the American planes which

it had depended on during the latter part of the war and began to phase British aircraft into the Fleet. Again, however, these were models which had been put on the drawing board early in World War II. They had not been built sooner because other aircraft projects had had a higher priority. The two main types were the Firefly fighter and a combined torpedo and anti-submarine attack aircraft, the Sea Fury. Both of these were conventional propellor driven planes with World War II type performance. It was to be 1950 before the Fleet Air Arm was fully equipped with even these aircraft.

Needless to say this situation alarmed many of the Navy's supporters and inspired a continuous stream of calls for a larger peacetime Fleet.[43] However, the main difficulty was not so much the lack of numbers in the standing forces. Despite some embarrassing incidents which occurred during the accelerated rundown right after the war[44] the active fleet in 1948 was probably adequate for any of the tasks that might be put to it. It had carried out the Palestine Blockade with commendable proficiency. British minesweepers cleared over 6,000 mines in the first year after the war.[45] English occupation forces both in Europe and the Far East were admirably supported by Royal Navy units. In addition, many goodwill cruises and courtesy visits were paid to the Commonwealth countries and foreign nations. By 1948 most of its occupation responsibilities had terminated and the Palestine Blockade was complete. The Fleet had its post-war training program in hand and was operating at its full authorized strength. It was fully capable of showing the flag and handling the sort of peacetime chores which characterized this brief period.

As to a full scale war, the Navy's ability was probably greater than its critics would admit. The likelihood of conflict appeared genuinely remote and even more unlikely without the U. S. as an ally. The only possible enemy was Russia, and even she didn't seem a very likely prospect at that time. The Soviets did not have atomic weapons, and their Navy was both

small and inexperienced. In addition most of England's communication lines were outside the range of Russian landbased aircraft. These factors all enhanced the Royal Navy's capabilities during the years of transition.

Despite its reduced size the Fleet was capable of dealing with any seaborne threat (excluding the U. S. Navy). There simply was no European or Asiatic Navy which could pose an effective challenge. The Mediterranean which had proved so vulnerable during the war still was a cause for concern, but if necessary the Admiralty had five carriers in the active forces which it could commit in this narrow sea, and they carried approximately 250 aircraft. In a crisis there were another seven available which could be activated. All-in-all the Fleet in 1948 was more imposing than it was often given credit for being and certainly adequate for meeting any likely contingency.

This does not mean that the Admiralty had no serious problems. The major concern was not in meeting current commitments, but future ones. The cuts in the Navy Estimates had virtually brought new construction to a standstill, and there were no plans in hand for relieving the obsolescence which would eventually overtake the Fleet with a rush. Only a trickle of new aircraft were coming into the Fleet and there were no plans for any large scale replacements. By 1950 the Fleet Air Arm's first-line squadrons would be unable to compete with many types of land-based aircraft - particularly the jets which were rapidly coming into service in both the United States and the U.S.S.R. This was the beginning of a post-war deficiency which had not been fully corrected in the 1960's. It is one thing to put off committing a Navy to a definite course of action until the strategical picture clears; it is another not to replace or modernize ships and aircraft systematically. This means that when steps are taken to update the Fleet immense expense and time will be required, and its ability to respond or expand in the event of a crisis is

correspondingly reduced. The slow down in ship construction vitally effected the Fleet Air Arm. World War II carriers were not capable of handling high-performance aircraft and before a new generation of planes could be introduced either new or modernized carriers would have to be built. There were few signs that this discrepancy would be corrected. Due to the long periods of time involved in planning and construction a foresighted navy must always be looking ahead and building for tomorrow. In 1948 the Royal Navy was standing still as far as its physical equipment was concerned. This policy was to exact a high cost in coming years.

Strategy and Doctrine

Thus far the discussion has dealt only with the effect of the post-war rundown on the physical equipment of the Fleet. Certainly the bulk of the criticism leveled at the Government concerned the rapid reduction of personnel and numbers of ships. For this study, however, more important than the material situation in this period is the trend of the Admiralty's strategical and tactical thinking. To a great extent this would dominate the direction of future development and the evolution of the Fleet's role. In other words it is vital to consider what kind of war the Admiralty was preparing to fight and what missions it expected the Fleet to perform or not to perform. These are extremely important elements of overall naval policy.

The general organization of the Fleet outlined in the chart on page is significant in itself. It is identical to that of pre-war days. The heaviest concentrations were in the British Isles and the Mediterranean, supplemented by small squadrons on the outlying stations. The emphasis was on control of the narrow seas with particular stress on the Suez lifeline to the Far East.[46] Despite extensive cuts in appropriations and reductions in the number of active ships all the

pre-war commands had been reconstituted. Each of the chief overseas naval bases and dockyards had been reactivated. The White Ensign was once again represented in every major ocean of the world. There was little doubt that the Royal Navy intended to take up its colonial duties where it had left off in 1939. Not only the Government, but also the Admiralty was thinking in traditional and Great Power terms. Lack of funds was cutting drastically into the Fleet's available forces, but nevertheless there seemed to be a built-in resistance to cutting responsibilities. It would be several years before the Admiralty would make any compromises in its far flung deployments or command-structure in order to tailor the active forces to the economic realities of the post-war era. The reluctance to match resources and commitments has been one of the most striking features of the general British reaction to the post-war decline in world stature. The Royal Navy likewise exhibited this characteristic for almost a decade after World War II.

The backbone of the fighting formations was to be the carrier supported by cruisers and smaller combatant types. This development reflected the one major departure from pre-war doctrine. The Royal Navy starting in 1946 had steadily deemphasized the "battlewagon." The rise of the aircraft carrier as the new capital ship excited more press comment than any other post-war step taken by the Admiralty. Each decision to decommission or scrap a battleship was reported with a great deal of fanfare and greeted with cries of alarm or rejoicing depending on the observer's perspective and sympathies.

In 1939 when Britain declared war the Fleet was built around the dreadnought. At that time the Navy had fifteen capital ships and six aircraft carriers, only one of which had been built from the keel up as a carrier.[47] In short order both the British and American navies gained a new respect for naval air power. Surface ships proved to be particularly vulnerable to air attack, and it was extremely hazardous for them to operate without fighter protection. The shortage of British

carriers made the Royal Navy rely strongly on its capital ships particularly in the early stages of the war. But as the Fleet Air Arm expanded it took over a progressively larger share of the Fleet's offensive and defensive duties.[48] The rise of the aircraft carrier as a naval weapon is too well known to repeat at length. However, what is not generally realized is how markedly the emphasis changed in the Royal Navy during the war. In 1945 the Admiralty had fifteen capital ships at sea and only one on the ways. In contrast to this there were fifteen attack and light carriers for work with the major fleets, and nine building. In addition the Royal Navy had in commission forty escort carriers (thirty-four of these were on loan from the United States) which were engaged in convoy and anti-submarine work.[49] World War II had very definitely turned the Royal Navy to air power.

As the Admiralty entered the post-war era it was inevitable that it was to lay increasing emphasis on the Fleet Air Arm. Its wartime performance could hardly be denied, and American experience likewise testified that the carrier had replaced the battlewagon. Under the relentless pressure of the Government's economies the Board of Admiralty had to make a decision between the dreadnought and the carrier. It was impossible to support a large number of both. Despite the popular impression that the Royal Navy was reluctant to part with the battleship, the shift to carriers was made with remarkably little dissent. "As money got tighter no matter how attached the senior officers were sentimentally to the battleships we had little choice but to elect the ships that had proved the most versatile and could give us the most return for our money."[50] The fact that carriers are essentially capital ships themselves made the new policy more palatable to the "surface sailors" and gave it an air of continuity with the past.[51] It would be a mistake to underestimate the importance of this consideration in a Service that had been built around the "ship-of-the-line" and then the "dreadnought" for over 200 years.

It is interesting to note that during this period there were no aviators on the Board of Admiralty, although a number had commanded aviation units and carriers during the war. The pre-war Fleet Air Arm had been a part of the Royal Air Force, and when it was transferred to the Admiralty in 1939 there were only 200 pilots in the whole force, and they were practically without exception junior officers. Of course, the aviation branch underwent great expansion during the war, but it nevertheless was to be several years before any number of aviators would make their way to flag rank and positions of high responsibility. In the immediate post-war years there were a number of competent younger fliers who had fought the war at sea and were beginning to make their influence felt in the Navy's planning circles, but it would be some time before they moved into the senior posts.[52] In 1949 there were approximately 800 pilots out of a total of over 10,000 officers in the Royal Navy, and about a quarter of the Navy's personnel were involved directly or indirectly with the Fleet Air Arm.[53] In recognition of the increasing importance of aviation a new post had been created on the Board in 1945 - Fifth Sea Lord (Air) - to be responsible for the general direction and coordination of naval air policy. This appointment strengthened the Fleet Air Arm and gave it a direct channel to the Sea Lords. Nevertheless, the Board was dominated by "surface" Admirals, and it is to their credit that they elected for aircraft carriers as opposed to the battleship in the immediate post-war period.

Still, the Board's turn to the Fleet Air Arm was qualified by its experience. There was a general consensus that the Navy must rely on carriers for its main strength, but there was by no means the same agreement on how carriers were to be employed. It was here that the traditional biases of the senior Admirals showed their ugly heads. Just as World War II equipment was still in use, the Admiralty's thinking on the central purpose of the Fleet had likewise changed very little from 1939. It was designed to fight other naval forces - air,

surface, and submarine. As previously noted a number of squadrons had received new planes, but they were World War II type aircraft with very little versatility. The carrier's main offensive punch was represented by the Sea Fury which was capable of carrying torpedoes, depth charges and armor piercing bombs. It was designed to strike surface ships and submarines. The Fleet's newest fighter, the Firefly, was intended to fend off attacking bombers, but was not designed to counter land-based fighters nor to strike targets on its own. A very limited amount of research was going into naval aircraft. The Admiralty was putting some effort into developing a jet fighter in conjunction with the RAF. But what little emphasis funds would allow was being put on an experimental aircraft designated the GR17/45 which would be configured to perform reconnaissance, spot gunfire and attack surface ships with bombs. It represented very little if any change in the basic tactical thinking of the Admiralty since pre-war days.

Many of the younger officers, particularly pilots, would like to have seen the Navy expand its offensive scope. They cited the American experience in the Pacific where carrier aircraft challenged land-based fighters for control of the air over enemy territory, struck shore targets and supported amphibious landings, but they had little success in imposing their views on the Navy's leaders. This can be best explained by reference to the British naval experience in World War II; it was considerably different than that of the Americans.

British carriers were employed in three main theatres.[54] In the Mediterranean they were utilized primarily to protect the Malta bound convoys originating in Gibraltar and Alexandria. In these narrow waters the Fleet was constantly operating within range of German and Italian land-based bombers, and fighter air cover for the convoys was desperately needed. Due to the shortage of carriers they were used almost exclusively in this role and very sparingly to attack other forces on land.[55] In the

North Atlantic the carriers of the Home Fleet were used to furnish air cover for convoys and warships operating off Scandinavia and Iceland. Offensively they were employed to harass the Scandinavian coastal trade and German pocket battleships holed up in northern harbors and fiords. When a surface raider broke out they often played a prime role in the search and, weather permitting, in the attack. Their most famous exploit of course was the finding and wounding of the Bismarck in May 1941 which was eventually destroyed by the combined action of planes and surface craft. On the trade routes in mid-Atlantic small carriers were utilized with telling effect both in escorting convoys and as the main unit in hunter-killer groups. They proved to be a particularly effective complement to surface escorts in convoy work both against submarines and air attack.

It should be clear that British naval aircraft were employed almost exclusively in a defensive role or against other seagoing forces. They made remarkably few wartime sorties against land targets and were never employed to support ground troops. Due to the geography of the combat zones the large European amphibious landings were covered by land-based planes. Four of the Royal Navy's attack carriers were deployed to the Western Pacific during the last two months of the war where they operated with American task forces and witnessed seaborne aircraft attack land targets with impunity. This exposure was enough to whet the appetite of some individual aviators for expanding the role of the Fleet Air Arm, but it was not sufficient to divert the Admiralty to a new way of using its air power. The Sea Lords still envisioned the carrier as a glorified battleship whose primary purpose was to protect the Fleet from air bombardment and attack other naval forces.

In much the same manner political pressures and history led the Royal Navy to neglect amphibious warfare. Prior to 1938 the Admiralty had completely ignored the possibility of having to make opposed amphibious landings. Ever since the

Gallipoli Operation in 1916 there had been a general feeling in the British military that such landings were not practical in modern warfare. This belief was strong enough to prevent any amphibious planning or training being undertaken in the inter-war years. Only the imminence of a major war reversed the trend and even then almost a year had to pass before a serious organization evolved for studying, planning and implementing joint operations involving all three Services. After some halting starts a Combined Operations Headquarters was established in 1940 which took over the prime responsibility for these tasks, and it was out of this office that many of the amphibious techniques and equipment employed later in the war originated.[56] The Royal Navy's experience with amphibious landings during World War II differed from that of the U. S. Navy in some significant respects, and this contributed in large measure to the Admiralty's post-war attitude toward its amphibious responsibilities.

In the Pacific the U. S. Navy was conducting a series of amphibious landings in order to gain bases which would allow it to project its naval power further into the Western Pacific. It was basically a maritime operation conceived, directed and implemented by the U. S. Navy. The major amphibious efforts in which the Royal Navy participated, such as Sicily, Anzio and Normandy were designed merely to transport the Army from one place to another. In essence the Royal Navy was merely supporting what was basically a land campaign. Its ships put Army troops ashore and assisted them with gunfire. Air support was furnished by land-based air forces, and once the troops had a secure hold ashore the Navy no longer played a significant part in the drama. This type of work was neither glamorous nor attractive, and the Royal Navy never considered it part of its basic mission. It was just an extracurricular burden which it had assumed under the press of wartime demands, and it is hardly surprising that this attitude persisted into the post-war period.

In this regard the role played by the Royal Marines should be quickly mentioned. Unlike the U. S. Marine Corps the Royal Marines had never had a responsibility for amphibious warfare. They had been employed in a variety of duties both afloat and ashore but never in specific units organized to conduct opposed landings.[57] As a result up until World War II there was no military organization in Britain primarily concerned with this problem. Once the Combined Operations Headquarters commenced organizing forays against Continental Europe both the Army and Marines furnished troops which were organized into special "commando" units. Their exploits in raiding the Continent became famous throughout the world, and their experience with amphibious operations formed the basis for the later major operations in Europe. After the war the Combined Operations Headquarters was retained, because it was believed that amphibious operations involving all three Services could be better looked after by a joint organization reporting to the Ministry of Defense. However, it became merely a training organization with only a skeleton staff of personnel assigned to it permanently. In the final analysis this meant that neither the Army, Navy or Air Force had any special responsibility for amphibious operations, and the office that was interested did not have any means for extracting resources from any of the three Services against their will.

On the conclusion of hostilities the Royal Marines faced a particularly trying period. The Marine leadership hoped to carve out an amphibious role for the Royal Marines on the pattern of the U. S. Marine Corps, and thereby furnish the organization with a firm and unique justification which would assure its survival. However, the desperate need for troops and the shortage of money postponed any serious moves in this direction. In fact the future of the Royal Marines was in serious doubt at least once due to the pressure to cut-back the Services.[58] Organizationally the Marines were a part of the Navy and received their money as part of the Navy vote.

The Adjudant General[59] did not sit on the Board of Admiralty, nor was he represented on the Naval Staff which included the First Sea Lord's close operational advisors. This put him in a poor position to exert influence or to present his views. The Admiralty has always kept firm control over the seagoing soldiers, and the Marines have been more or less at the mercy of their naval seniors. Traditionally the Marines have felt that they were tolerated as long as they were "tame soldiers, not costing too much, not having ideas above their station, not quite soldiers."[60] From a practical political standpoint this meant that although the Royal Marines were eager to see a strong amphibious capability developed, they could exert very little effective pressure in this regard.

The net result was that the Navy's attitude toward amphibious vessels was similar to the Royal Air Force's toward air lift. Both Services considered these tasks as detracting from their major missions and gave them the minimum of attention. Once the Government throttled down on funds it was inevitable that amphibious equipment, planning and training would suffer, because it was at the bottom of the Navy's priority list. In order to assist the Combined Operations Headquarters the Admiralty kept a skeleton training squadron in commission which consisted of only 4 LST's, 5 LCT's and 7 LCA's. These ships were manned by reduced crews and would require additional personnel and maintenance before they could be deployed. They were stationed in England and the sole purpose of this squadron "was to keep amphibious techniques alive."[61] There was no intention to provide a ready amphibious capability. Once again here was an important area of naval warfare which budget pressures and historical background were leading the Royal Navy to neglect.

In combination with carrier strike forces and highly developed amphibious techniques World War II had witnessed noteworthy strides in naval logistics. American task forces in the Pacific had been forced to operate for months at sea

hundreds of miles from their supply bases. This was made possible by an extensive and modern fleet train which could operate at high speed and replenish warships underway in the combat zone. Elaborate vessels, equipment and procedures were developed for transferring fuel, supplies, ammunition, food, repair parts and people at sea under varying conditions of sea and weather. Complementing these replenishment task forces were a variety of maintenance ships which could move into newly acquired bases and without requiring any shore support could offer the fleet extensive maintenance support. In many respects these were the most important naval developments to come out of World War II, for they actually made it possible for task forces to operate independent of shore bases and dockyards for months on end. However, the Royal Navy's wartime experience was again quite different.

Great Britain's enviable complex of bases had traditionally facilitated the Royal Navy's world-wide deployment. At the same time, however, it had tied the seagoing forces to shore bases. World War II generated little change in this regard. The main British fleets in the Atlantic and Mediterranean always were in close proximity of both operating bases and repair facilities. Ships on convoy work were often refueled at sea, but, aside from this one operation, British warships were not trained in underway replenishment nor did they have an extensive fleet train. In the same vein they depended on shore support for repairs. In 1945 the Royal Navy was still a "short legged" force. In the post-war era this was to allow the Admiralty to concentrate its scarce funds on fighting forces rather than supply ships. Unfortunately,it delayed efforts to develop ships and techniques which make fleets independent of close shore support.

By 1948 there were signs of change in the air. India, Pakistan and Ceylon had received self-government and become members of the Commonwealth. Burma had been granted full independence, having chosen not to remain in the Empire. Although

British forces had been withdrawn, the military bases in these countries were still available to the Royal Navy. However, their security and usefulness had been definitely impaired. Moreover there were indications that these were only the first breaks in the dam. How long would colonial bases be available in a post-war world fired by nationalism? Nevertheless, the Royal Navy was still thinking in traditional terms, and there were few signs that its attitude toward logistics support was changing.

The Admiralty's reluctance to cast aside its traditional thinking was further evidenced by its insistence on maintaining a large reserve fleet. In the face of harsh economies which drastically reduced the active fleet, the Navy's leaders laid considerable stress on this device. In the years 1946 to 1948 over 400 units were consigned to mothballs and over 300 of these were combatant ships. This move was inspired by the Navy's experience in the inter-war years. After World War I hundreds of ships were scrapped or allowed to rot, yet in 1941 fifty overage destroyers obtained from the United States had made a substantial difference in the battle against German U-boats. The reserve fleet was considered by the Sea Lords to be a counter to the post-war economy drive. It was fervently believed that sheer numbers were a crucial item, and with a minimum of routine maintenance the reserve fleet could be kept available on short notice to supplement the active fleet. This policy undoubtedly assumed another conventional war similar to World War II where huge convoys would have to fight through to Europe and large numbers of escorts would be required to protect them.

Of course this policy consumed resources. By 1949 some 8,500 men were engaged in the reserve fleet upkeep, and it was absorbing over £10,000,000 a year in funds.[62] This was as much as was going into research. The reserve fleet also seemed to give the Navy a sense of comfort about its reduced size that was scarcely justified. It was impossible to keep these ships

continually in serviceable condition, and the problems of preventing deterioration were formidable. Before vessels could be returned to active duty they inevitably required work and expenditures as Korea was to prove. Similarly, the rapid advance of technology was soon to make these ships obsolete and a dubious asset. Perhaps more important this rather expensive policy turned the Navy's attention away from the new military problems which were developing and gave it a vested interest in a World War II type of conflict where the reserve fleet would be useful. This could be dangerous in an era which was chiefly characterized by rapid change.

In essence the Fleet was preparing to fight a general war on the same pattern as it had fought World War II. The Admiralty envisioned a protracted conflict at sea where the objective was to keep open Britain's supply routes and communications with the Empire. The primary enemy would be other naval forces - surface, air and submarines. Using its far flung bases the Fleet's objective would be to deny the sea to the enemy and to assure "the safe and timely arrival of convoys."[63] Just as its equipment was of World War II vintage, the "Admiralty's doctrinal thinking had changed very little since 1939."[64] The emphasis on air power was a new wrinkle, but otherwise the Fleet had a decisive pre-war character.

It should be emphasized that the Navy's planners were suffering from the same handicap that its political advocates were. They had no credible enemy. Only the United States possessed a large navy, and it was not considered a likely enemy. The cold war had not started in earnest yet, and Russia was not considered a naval power. Great Britain's immediate post-war tasks had not presented the Navy with any unusual tasks or problems which would direct its attention away from the traditional practices. Military planning without tangible opponents is like navigating without a compass. "There is no more frustrating experience than planning to fight a mythical nation."[65] The only real guidepost available was experience

and in that light it is easy to understand how British naval planning, beset with crushing economic limitations took the course it did.

One other area of endeavour bears examination. The one item which stood to affect naval warfare profoundly was the atomic bomb. Those critics who deprecated the value of seaborne forces based their entire argument on the destructive power of such weapons. The investigation will now look closely at the Royal Navy's relationship to atomic research and fission weapons.

Admiralty and the Bomb

Government leaders constantly attempted to cushion the effect of the cut-back in forces by referring to the immediate post-war period as a transitional one and stressing the uncertainties which beset modern military science. They insisted that the lessons of the war must be digested before firm policies could emerge and assured the country that a concentrated effort must go into research looking to the future rather than the present. Lord Chatfield discussing this policy in the House of Lords in 1947 cautioned that "we must be careful how the Government use that priority. It was used in the peace years (inter-war years) as a means of preventing anything being done for the Services."[66] These were words of wisdom. There is no question that the Government was exaggerating the effort it was putting into research in order to make defense reductions more palatable. The Government was to discover that in the atomic era an extensive research effort was to cost a great deal of money, and it was impossible to conduct a broad and deep program on limited funds.

In fact the emphasis in the early post-war years was to be more relative than absolute. In 1948 the Navy was still having difficulties inaugurating its post-war research program. The First Lord in 1948 stressed that due to the shortage of

trained scientists and technicians and problems in establishing laboratories "progress in all branches of research and development work continues under handicap."[67] The amounts spent on research are difficult to determine with accuracy since they are buried in the defense accounting system under several categories. The 1948 Navy Estimates asked for about £9,000,000 to be spent on experimental work funded by the Admiralty. This figure compared with approximately £700,000 spent annually before the war.[68] On the other hand it is less than a fourth being spent today. The £9,000,000 covered all the Navy's hydrographic work, its observatories, and the building of new laboratories. This left approximately £4,000,000 for actual research projects to improve Navy material. By post-war standards this is a depressing figure for an organization the size of the Royal Navy. This allowed the Admiralty to devote some attention to ship propulsion plants and hull design.[69] A part of this effort was the investigation of the effects of radiation and atomic blast. Although these efforts were modest they paved the way for the well designed frigates which were built in the 1950's. In addition naval scientists did some work on submarine snorkels and high capacity batteries. Anti-submarine equipment was likewise receiving some attention, but it had no particular priority.

The Ministry of Supply funded all atomic, aircraft and missile research for all three Services. The Supply Estimates gave no hint as to how its research money was divided. In 1948 the Ministry of Supply received an appropriation for £61 million but this sum had to go a long way.[70] There is little question that missile and aircraft projects were likewise operating on rather slender appropriations.[71] This could be attributed to several factors. In the first place atomic research and housekeeping tasks took the great bulk of the budget, and there was very little left for other research. Secondly, work on missiles and supersonic aircraft was still in its infancy, and early predictions of the resources required

turned out to be vastly under-estimated. On top of this the Defense Research Policy Committee controlled the priority of all military experimental projects, and it was applying the Ten Year Rule rigorously except in the area of nuclear weapons. Despite the "highest priority" awarded to research it was being throttled to meet a ten year development period, instead of proceeding on a rush basis. "There was in fact very little genuine weapon development other than that of the atomic bomb during the forties."[72]

This was illustrated by the Navy's experience. Within the Ministry of Supply the Admiralty was pushing for a new general purpose jet aircraft. However, it was the mid-1950's before the Fleet Air Arm received jet aircraft. In 1947 work began within the Ministry of Supply on what was later to be called the Seaslug missile. This was a truly sophisticated project which was to give surface ships protection against supersonic aircraft. However, British scientists were just beginning to discover the uncertainties of missile research, and too few resources were devoted to the program. As a result it would be over fourteen years before the Fleet received this weapon. Surprisingly the emphasis here was solely on anti-aircraft missiles and little interest was expressed in other types of missiles for shipboard use. All in all this was a rather restricted research effort which hardly promised to keep the Royal Navy in the forefront of naval warfare. In all fairness this can be attributed fundamentally not to the lack of foresight but the lack of funds.

As previously mentioned there was one important exception to this general pattern and that was atomic weapons. The Government was determined to join the "nuclear club" . The Ten Year Rule had no application here. Because of the immense significance of this effort it is pertinent to etch in some of the historical background before discussing the Admiralty's relationship to the program.

The atomic bombs which were dropped at Hiroshima and Nagasaki were the final result of a joint American-British-

Canadian research effort which had been launched early in World War II. However, the actual production of the bomb for a number of reasons had taken place in the United States and for all intents and purposes had become a solely American project.[73] For the first year after the war Prime Minister Attlee attempted through a series of intricate negotiations to obtain production information from the Americans. These efforts collapsed with the passage of the McMahon Act in July 1946 which forbade the dissemination of such information to any foreign country. This was a bitter blow to the English, and many of them considered it a gross betrayal of contracts made in the fullest faith and confidence.[74]

There had never been any doubt in the Government's mind that Britain would establish its own atomic energy program irrespective of U. S. cooperation. British scientists had been urging the creation of an atomic research agency since 1943 and as early as August 1945 Mr. Attlee had launched Britain's post-war effort by establishing an Advisory Committee on Atomic Energy.[75] By the time the McMahon Act was passed Great Britain had already established the nucleus of its future atomic energy program. The lack of American knowledge was an imposing handicap since the British had no production experience. Nevertheless, within the next few years they proceeded to build an atomic industry which is impressive both in its size and accomplishments.

Although the official determination to make an atomic bomb was not taken until 1948 "there can be little doubt that the decision had been implicit in the atomic energy program itself from the beginning."[76] Interestingly enough the decision was made by the Defense Committee not the Cabinet, and Alfred Goldberg makes the statement that there is no evidence of dissent.[77] It is unlikely that the Admiralty was consulted in any detail since the Prime Minister kept the atomic program under his close personal supervision. Still there is no doubt that the Navy as a whole was in full accord with the decision

to produce atomic weapons.[78] It is true that there was some apprehension as to the effect they would have on the future of sea power, and there was little detailed knowledge within the Navy of their workings or possibilities. Nevertheless there was strong consensus that a Great Power must have a modern military establishment and that this necessarily included fission bombs.

It would be 1952 before Great Britain exploded an atomic weapon, but by 1948 it had made impressive strides toward this goal. From the start this program had received the highest priority. Although it was plagued with many of the economic problems which beset all post-war British industry, relative to all other projects it was prosecuted with unusual purposefulness and vigour. It was also kept highly secret. Considering the obstacles which inherently confront the creation of an atomic industry and the restricted resources available in post-war Britain, its entry into the atomic field in such short order was a rather remarkable achievement. Although there may be some doubt today as to whether Britain has gained the military and political rewards it anticipated, this in no way dims the technical brilliance of its effort.

In order to employ atomic weapons it was necessary to develop delivery systems and this requirement brought the Services into the picture. All circumstances favored the choice of the Royal Air Force as the delivery agent. Commencing with Lord Trenchard[79] in the days of World War I British airmen had consistently preached the merits of strategic air bombardment, and in the inter-war years the Royal Air Force adopted it as its central rationale. World War II experience confirmed the Air Council's belief in this creed,[80] and the introduction of the atomic bomb served to make the doctrine even more attractive. The Royal Air Force entered the post-war era determined to fashion for itself a nuclear capability. There were some compelling precedents strengthening its claim on the bomb. The only atomic weapons employed in war had been dropped by aircraft

on strategic targets. The size and cost of the first bombs precluded their use on any but the biggest and most important targets. The United States which had the only practicing experience with these weapons was setting the pace with its Strategic Air Command which had first call on American fission weapons. Even more important there were no alternative delivery systems in sight, and the role fell to aircraft by default.

Like all the British Services the RAF after the war had been severely cut back and forced to make do with World War II equipment. Still the Air Council had a clear and consistent conception of what it wanted - an atomic jet bomber[81] - and as early as 1946 laid down a requirement for a remarkably advanced strategic aircraft. The year 1957 was set as the target date for reequipping Bomber Command. By April 1948 the RAF had underway a long-range and imaginative research program that called for the development of four medium jet bombers - this was the first step in the creation of the famous V-bomber force. To fill the "bomber gap" which was expected to occur between the phasing out of the large piston engine bombers and the introduction of the V-bombers a further requirement was generated for a tactical jet bomber - the Canberra. It would enter service at an early date, hopefully around 1952, and be configured to carry conventional weapons and "small atomic bombs." Due to its limited range and size it could not be classified as a strategic bomber, but it would usher Bomber Command into the jet age as early as 1952. It would be the mid-1950's before the RAF would have a credible delivery force. Nevertheless, in the late 1940's all the ingredients were present for the eventual creation of a strategic deterrent.

The Admiralty never challenged the Royal Air Force's pre-eminent claim. Needless to say atomic weapons caused considerable apprehension in the higher circles of the Navy, and their influence was discussed at great length. It should be emphasized that the only information available was that released by the United States, and this was disseminated only

to a limited circle of senior officers. It was clearly obvious that before the Royal Navy could make any definitive estimates on the role of atomic bombs in sea warfare that Great Britain would have to gain more knowledge of the weapons and their effects. Nevertheless, the Admiralty's early attitudes were governed by some general notions which were shared throughout the Government and the military.

In Britain strategic bombing and the Royal Air Force were inextricably linked in both the official and public minds. It hardly occurred to anyone to question the RAF's first claim on these weapons. While the Air Council was stressing strategic bombing in the years before 1939 the Fleet Air Arm was training solely to support the Fleet. During World War II it was Bomber Command which first carried the war to the enemy and which in cooperation with the USAF had mounted the massive strikes that razed Germany. Naval aircraft had taken no part in the strategic bombing campaign, and Navy airmen had never considered it a proper mission for seaborne planes. Offensive operations (as already noted) were confined to tactical targets with a strictly naval flavor. Actually the Admiralty could not see any vital military reason for changing this pattern and certainly did not feel that it should do so for the soul political purpose of injecting the Navy into the atomic field.

Just as the Royal Air Force looked at the atomic bomb as a strategic weapon, so did the Sea Lords. The cost of atomic research was immense and in the late 1940's there seemed little likelihood of producing a "cheap bomb." Physical size alone was considered to be a limiting factor. The American bombs were known to be huge and could only be carried in the largest aircraft. There was no reason to believe that a British weapon might be any smaller - at least for many years. Unlike the U. S. Navy which had acquired a large force of land based planes for anti-submarine and transport work the Royal Navy possessed no multi-engine aircraft. The equivalent force in Great Britain was the "Coastal Command" which was part of

the Royal Air Force. If the Navy was to enter the strategic bomber business it would have required a new generation of aircraft carriers and planes much larger than those in service in 1945. Harbor depths and maintenance facilities precluded a larger class of carrier without tremendous expenditures on support facilities as well as new ships. The Board of Admiralty was well aware that the country's financial state would hardly allow this. All these factors combined to keep the Royal Navy on the periphery of the atomic weapons program and to delay its entry into the field.[82]

Essentially the Admiralty adopted a "wait and see" attitude. It was following the course of the atomic energy program and planned to take any advantage of future developments which showed promise for shipboard use. However, as previously noted this appeared to the Sea Lords to be a distant prospect at best. In their minds atomic weapons were costly, and heavy strategic weapons were not suitable for employment by the Fleet Air Arm or ships.

Their effect on the Admiralty's strategic thinking and the deployment of the Fleet was another matter. The Board did make some moves to discover the effects of atomic weapons on ships. In 1946 a nine man team was sent to the United States Bikini trials. It was led by Captain S. W. Roskill and turned out a full report on the results of those tests which was eagerly consumed by the British Navy.[83] As a result the Royal Navy's designers immediately commenced making efforts to develop equipment and ships which could better withstand an atomic attack. By the time of the Korean War the Royal Navy was well along in the field of passive defense, and the new ships authorized during the rearmament era reflected some of these advances. However, these efforts had little effect on the Naval Staff's strategical thinking.

It was clear that atomic bombs would not be produced in Britain for a number of years, and the Admiralty was entirely at a loss as to exactly what effect they would have on sea

warfare. Vice-Admiral P. W. Gretton, commenting on this period, refers to the Navy's response as reflecting "a vacuum of strategic thought."[84] The Admiralty contended that atomic weapons might change tactics and equipment but that they didn't change the Fleet's basic mission. The Navy's leaders insisted that in any general war there would still be a prolonged and bitter battle for control of the sea lanes in the traditional pattern and that it would require the same types of ships as World War II. The general feeling prevailed among sea power advocates that the atomic bomb was just a "bigger and better" bomb and that it could be countered by dispersal.[85] On top of this they argued that such weapons would be too costly and scarce to employ against most targets at sea. The First Lord, Mr. A. V. Alexander, during the defense debate in March 1947, alluding to the bomb remarked "that curiously enough, it was the least likely (of new developments) to affect naval design radically."[86]

In essence the Navy's leaders had no intention of making any radical changes in the Fleet or its strategic rationale because of the atomic bomb until there was more evidence in court. Frankly, in retrospect this seems to have been the wisest course. In 1948 Great Britain didn't have the bomb as yet, and it would be some years before it would. No one could say with assurance what its final influence would be - even the air power advocates or United States strategists who had already had it for a number of years. The international situation had yet to clarify itself or to stabilize, and limited war as such had not entered the military thinking of the Great Powers. Of course the Admiralty could have conceded that atomic bombs had made navies obsolete and commenced to dismantle the Fleet. Naturally the Sea Lords never considered this alternative. No matter what the technical, political or strategical considerations one of the major objectives of all bureaucratic organizations is to survive, and the Royal Navy was no exception.

It will be even clearer as this study unfolds that the Admiralty was slow to appreciate the long-range effects of atomic weapons on military strategy. However, it was not unique in this respect, and it would be quite a bit to ask of a nation or Service to grasp fully the significance of these weapons either before an enemy had them or it possessed them itself. It should be pointed out in all fairness that conventional weapons are still on the scene today and with a good prospect of being around for sometime. The drastic predictions which the proponents of atomic air power were making in the late 1940's about the future of navies never came to pass. Perhaps one can fault the Admiralty for its failure to adjust to this new development, but it is difficult to criticize its persistent faith in the inherent value of navies.

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As far as the Royal Navy was concerned the transition from war to peace was characterized not so much by change, as by the lack of change. The Admiralty's approach to sea warfare had altered very little since pre-war days, and the 1948 Fleet was remarkably akin to the forces that had fought World War II. Undoubtedly the prime determinant of naval policy had been the nation's post-war economic problems which had severely circumscribed the Government's freedom of maneuver and forced the defense establishment to contract drastically. Constantly plagued by the lack of funds the Admiralty had been unable to expand its strategical or technical horizons and to take full advantage of the naval lessons of World War II. Despite the profound implications and promise of atomic weapons they had yet to make a genuine impression on the Royal Navy. It was relying on its traditional rationale of protecting the sea lanes and preparing to counter other naval forces in much the same manner as it had in World War II.

CHAPTER III

NOTES

1. Cmd. 6743,"Statement Relating to Defense," February 1946, p. 1.

2. Such opinions were often expressed in the press and military literature of that era. For two particularly vehement examples see editorial comment Daily Telegraph, February 15, 1946 and "Are Battleships Necessary?," Daily Express, March 9, 1946.

3. Michael Lewis, The Navy of Britain (London: George Allen Unwin Ltd., 1948).

4. 408 H. C. Deb. 2057.

5. Speech by First Lord of the Admiralty reported in Sunday Times, May 20, 1945. For further addresses delivered during this period stressing the same theme see Sunday Express, August 19, 1945, a speech by Adm. Bruce Fraser, the Commander-in-Chief of the Pacific Fleet; and Daily Telegraph, October 23, 1945, another address by the First Lord.

6. The Times, December 19, 1945.

7. 420 H. C. Deb. 552; The Times, March 8, 1946.

8. Royal Institute of International Affairs, British Security: A report by a Chatham House Study Group (London & New York: Broadwater Press, 1946).

9. Ibid., 32-33.

10. Commander G. M. Bennett, D.S.C., R.N., "Imperial Defense," Royal United Service Institution Journal, May 1946, p. 167.

11. Statement by Captain Marsden (Conservative-Chertsey), 421 H. C. Deb. 1311. Not one speaker in the 1946 debate on the Navy Estimates questioned the need for a strong fleet or took the line that atomic weapons had outmoded ships.

12. Statement by Mr. Maclay (Labor-Montrose Burghs), Ibid., 1316.

13. Statement by Mr. J. P. L. Thomas (Conservative-Hereford), 420 H. C. Deb. 560.

14. Volage, "The Future of Naval Aviation," Brassey's Naval Annual 1947. (New York: The Macmillan Company, 1947), p. 85.

15. Cmd. 7042, "Statement Relating to Defense," February 1947, p. 5.

16. Cmd. 7054,"Statement of the First Lord of the Admiralty Explanatory of the Navy Estimates 1947-48," March 1947, p. 2.

17. See especially the statement of Mr. John Dugdale, the Parliamentary and Financial Secretary to the Admiralty who presented the Estimates 435 H. C. Deb. 204-222. The whole debate is covered in Ibid., 204-376.

18. See Chapter II, pp. 25-30.

19. The loan, which was negotiated in December 1945 and approved by Congress in mid-1946, amounted to $3,750 million. An extra $650 million in Lend-Lease credits was also extended. In addition Canada provided $1,500 million in credits.

20. C. M. Woodhouse, British Foreign Policy Since the Second World War (London: Hutchinson, 1961), p. 112.

21. Ibid.

22. Snyder, Politics, 207. For a brief description of this attempt by a politician who played a key role in the affair see Hugh Dalton, High Tide and After: Memoirs, 1945-1960 (London: Frederick Muller, Ltd., 1962), pp. 254--71.

23. Woodhouse, 112.

24. Cmd. 7042, "Statement Relating to Defense 1947," February 1947, p. 4.

25. Cmd. 7327, "Statement Relating to Defense, 1948," February 1948, p. 9.

26. Dalton, 193.

27. See Appendix II for a fuller description of defense expenditures and manpower allocations during this period.

28. Ibid.

29. These figures do not add up to 100% because the Ministry of Supply and the Ministry of Defense also received their monies as part of the defense budget. Ibid.

30. Sunday Times, December 1, 1946.

31. Laurence W. Martin, "The Market for Strategic Ideas in Britain: The "Sandys Era"," The American Political Science Review, Vol. LVI, No. 1 (March 1962), p. 24. Field Marshal Montgomery stressed this in his autobiography. See The Memoirs of F. M. The Viscount Montgomery (New York: The World Publishing Co., 1958), chap. xxx. The conclusion that there was little strife between the services may seem to be a controversial one, particularly in view of Montgomery's comments. Nevertheless, this writer found unanimous agreement among the individuals interviewed that the inter-Service competition was remarkably subdued during the years 1945-50, as compared to its later intensity.

32. Cmd. 7327, p. 11.

33. 448 H. C. Deb. 819.

34. Alfred Goldberg, "The Military Origins of the British Nuclear Deterrent," International Affairs, October 1964, p. 601. Interestingly enough the only respondents to mention this rule as being significant were scientists who had been engaged in defense research.

35. Ibid.

36. Cmd. 7632,"Statement of the First Lord of the Admiralty Explanatory of the Navy Estimates 1949-50," February 1949, p. 2.

37. Ibid., 6.

38. For several years after the war the Government refused to publish figures on the strength and deployment of the armed Services. In February 1948 the Navy League published its own estimate of the Royal Navy's strength. See H. G. Thursfield, "A Naval Survey," Brassey's Naval Annual 1948 (New York: The Macmillan Company, 1948), p. 3. In response to such pressure and in view of the fact that a persevering researcher could obtain it through other channels the Admiralty began releasing the fleet's strength in 1949, although the other Services continued to withhold detailed information. The figures used here are taken both from the above cited source and Cmd. 7632, p. 6.

39. Sunday Times, February 29, 1948.

40. For more detailed comparative figures see Vice-Admiral B. B. Schofield, R.N. (Ret.), "Britain's Post War Naval Policy," United States Naval Institute Proceedings, May 1958, p. 77. Also E. Altham, "The Services in 1949-50," Brassey's Annual: The Armed Forces Yearbook 1950 (New York: The Macmillan Company, 1950), p. 17.

41. H. M. S. Vanguard.

42. H. M. S. Triumph.

43. The most pro-Navy publication in Great Britain has traditionally been Brassey's Naval Annual. It took up the fight for a big Navy immediately after the war and has waged it ever since. For the first salvo in its post-war campaign see H. G. Thursfield, "The Lessons of War," Brassey's Naval Annual 1946 (New York: The Macmillan Company, 1946), pp. 1-12.

44. Several examples received widespread publicity. In 1947 Argentina put a landing party ashore in Antarctica on territory that the British claimed and planted an Argentine flag in the middle of the "cricket pitch." There were no Royal Navy ships available to be dispatched to the scene for several days. Shortly thereafter riots broke out in British Honduras and again considerable effort was required to find an available British cruiser. However, these incidents occurred at the time the Fleet was converting from wartime to peacetime personnel and undergoing its worst demobilization pangs.

45. Cmd. 7054, p. 5.

46. In approximately 1947-48 the Government had asked the Services to make a joint study of where the cuts could be made in case even more severe retrenchment became necessary. A committee, headed by a civil servant not connected with defense and composed of representatives from all three Services, was formed and eventually submitted a report recommending some rather radical cut-backs. Needless to say its report was resisted strongly by the Services themselves and due to the outbreak of the cold war was never acted upon. Nevertheless, it gave some indication of how the Navy itself looked at its duties. It recommended that in economic extremis the Fleet withdraw from the Pacific (leaving it to the U. S.), Africa and the Carribbean, and concentrate in home waters and the Mediterranean. This report was never made public, but there were a few public references made to it. See General Sir Leslie Hollis, One Marine's Tale (London: André Deutsch Limited, 1956), p. 163. For a passing reference made while the committee was deliberating see Sunday Times, September 14, 1947. The above information was elicited in interviews.

47. Captain S. W. Roskill, White Ensign: The British Navy at War 1939-1945 (Annapolis: United States Naval Institute, 1960), pp. 24-25.

48. For the most complete and authoritative account of the Royal Navy in World War II see Captain S. W. Roskill, The War at Sea 1939-1945 (London: HMSO, 1954-60), Vols. I-III. This is the official history of the wartime Navy, and the author had complete access to official documents. He has written an abbreviated account in one volume which is easier to digest and still most informative. See Roskill, White Ensign.

49. "Reference Section," Brassey's Naval Annual 1946 (New York: The Macmillan Company, 1946), pp. 162-165.

50. Interview.

51. This conclusion was confirmed by a number of interviewees. For a writer who has reached a similar conclusion see Snyder, "Dissertation," 29.

52. This same general pattern was manifested in the U. S. Navy, but aviators reached senior posts much earlier due to the fact that the American Navy always had control of its own air arm. By the end of World War II the U. S. Navy had several high ranking officers who were wearing wings and had commanded aircraft units in combat.

53. These figures were furnished to the writer by the office of the Director General of Naval Manpower in the Admiralty.

54. For two of the best personal accounts by high ranking officers of how British carriers were employed see Admiral of the Fleet Viscount Cunningham of Hyndhope, A Sailor's Odyssey (London: Hutchinson, 1951) and Admiral of the Fleet Sir Philip Vian, Action This Day (London: Frederick Mueller Ltd., 1960).

55. It must not go unremarked that the most famous British carrier strike of the war was made by the British forces based on Alexandria when twenty Swordfish torpedo bombers from H.M.S. Illustrious struck the main Italian naval base at Taronto on November 11, 1940 and sank three enemy battleships. However, this was an attack against other ships rather than land installations and was the only major raid of this type mounted in the Mediterranean theatre. Even in this instance the small number of planes employed indicates that the British Navy was not thinking in the same terms as its U. S. counterpart. For an account of this action see Roskill, White Ensign, 110-114.

56. For the story of Combined Operations see Bernard Fergusson, The Watery Maze (London: Collins, 1961).

57. For a very brief description of what Royal Marines did before World War II see Hollis, 1-42.

58. Hollis, 163.

59. The Adjudent General is the top post in the Royal Marines and normally holds the rank of Lieutenant General. He is equivalent to the Commandant of the U. S. Marine Corps.

60. Major General J. L. Moulton, Haste to the Battle (London: Cassell, 1963), p. 194. This book is an exciting account of a Royal Marine Commando during World War II from the Normandy landings to the end of the war. General Moulton spent his whole career in the Royal Marines and served as Chief of Amphibious Warfare before retiring in 1961. (This organization was the successor to Combined Operations Headquarters.)

61. Interview.

62. Commander P. L. Cloete, "The Reserve Fleet," The Naval Review, Vol XLII (February 1954), p. 99.

63. This was a phrase that continually cropped up in interviews. Practically all the Air Force and Army officers interviewed used this expression derisively and expressed the belief that the Admiralty during the early post-war era had been overly concerned and preoccupied with "the safe and timely arrival of convoys."

64. Interview with a senior Admiralty civil servant. Surprisingly this opinion was expressed by a number of Admiralty respondents.

65. Interview.

66. 152 H. L. Deb. 184.

67. Cmd. 7337, "Statement of the First Lord of the Admiralty Explanatory of the Naval Estimates, 1948-49," February 1948, p. 8.

68. E. Altham, "The Naval Year," Brassey's Naval Annual 1949 (New York: The Macmillan Co., 1949), p. 24.

69. For an excellent review of naval research in this area see Vice-Admiral Sir Frank T. Mason,"A Review of Naval Propulsion Engineering Progress in the Last Ten Years," The Twenty-First Parsons Memorial Lecture (London: Institution of Marine Engineers, 1956).

70. Cmd. 7327, p. 4.

71. For comments on the small amount of research done in these areas in the immediate post-war period see Martin, 24; and Goldberg, "Military Origins," 600-09.

72. Martin, 24.

73. For the most complete and authoratative account of the British wartime role in the development of the atomic bomb see Margaret Gowing, Britain and Atomic Energy (London: Macmillan, 1964).

74. Senator McMahon later stated that if he had been aware of the exact wartime agreements that Congress would never have prevented an exchange of information with the British.

75. Alfred Goldberg,"The Atomic Origins of the British Nuclear Deterrent," International Affairs, July 1964, p. 416.

76. Ibid., 420.

77. Ibid.

78. Respondents were in unanimous agreement on this.

79. Lord Trenchard is known as "the father of the RAF." As a Lieutenant-Colonel he commanded the Royal Flying Corps when it went to France in 1914, and it was largely through his efforts that the Royal Air Force was constituted as a separate Service in 1918. He was Chief of Air Staff for ten years after World War I and guided the Royal Air Force through the first difficult years of its independence. His views more than any other single individual influenced pre-war RAF policy.

80. There has been a standing controversy since World War II over the influence of the Allied strategic bombing effort on the outcome of the war. The airmen insist that it was the decisive factor. This view is presented by Charles Webster and Noble Frankland, The Strategic Air Offensive Against Germany, 1939-1945 (London: H.M.S.O., 1961), Vol. III, chap. 14. Needless to say both Army and Navy advocates deny that strategic bombing was as effective as the USAF and RAF claim. Perhaps the most balanced analysis of the World War II strategic bombing campaign in both Europe and Japan are those reports of the U. S. Strategic Bombing Survey published in 1946 by the Government Printing Office.

81. On March 12, 1946 John Strachey, Parliamentary Secretary to the Secretary of State for Air, told Parliament that the RAF bomber of the future would have to be designed for atomic weapons. 420 H. C. Deb. 976-77.

82. The American Navy confronted much the same problem after World War II and resolved it by making an expensive and in some respects frantic effort to carve out a strategic bombing mission for its carriers. It was successful and as a result has had a nuclear capability since 1947. The long-range wisdom of the U. S. Navy's course is debatable. Today these carriers are relinquishing their strategic capability and there has always been a serious question as to the military value of the contribution which they made to the American deterrent. There is hardly any question that one of the main reasons the U. S. Navy was so intent on developing a nuclear capability was to get a larger share of the defense budget irrespective of the military merits of carrier aircraft delivering strategic nuclear weapons. Many of the higher ranking American naval officers were convinced that Congress would become mesmerized with nuclear weapons and that any service who couldn't employ atomic bombs would lose out in the race for funds. Later events more or less substantiated this hypothesis. The Royal Navy was later to run into this

identical problem, although the competition between the Royal Air Force and the Royal Navy never reached the intensity of the American dispute. The Royal Navy seems to have been governed more by military requirements and less by political ones than the U. S. Navy in regard to nuclear weapons. For the most interesting and complete account of the U. S. Navy's efforts to enter the nuclear weapons field see Vincent Davis, "Admirals, Politics and Post-war Defense Policy: The Origins of the Post-war U. S. Navy 1943-46 and After" (Unpublished Ph.D. dissertation, Princeton University, 1961).

83. Interestingly enough the British team wrote a short one volume report and sent some complimentary copies to the U. S. Navy. The Americans found it very useful and requested some 200 copies more. The reason they gave was that their own report which was a composite product of the several hundred observers at the trials was too long, involved and complicated to be easily used. On the other hand the British with only nine men had been able to write a short report and had been forced to concentrate on the fundamentals.

84. Vice-Adm. P. W. Gretton, "Maritime Strategy" (Unpublished manuscript), p. 3.

85. H. G. Thursfield, "The Naval Prospect," Brassey's Naval Annual 1947 (New York: Macmillan, 1947), p. 5.

86. E. Altham, "The Naval Year," Brassey's Naval Annual 1947 (New York: The Macmillan Company, 1947), p. 11. See this reference for further elaboration of the First Lord's remarks.

CHAPTER IV

NATO TO SUEZ
1949-1956

The period 1949-56 was to prove particularly significant in the development of the post-war Royal Navy. The preceding chapter examined the Government's first confrontation with the post-war economic realities and their influence on the general military picture. In regard to naval policy the Admiralty found its freedom of maneuver severely restricted. In response it had little choice but to rely on World War II equipment. Strategically the Board essentially adopted its pre-war posture. The early 1950's were to present the Navy's leadership with a series of challenges which served to push the seaborne forces into the background - even to raise serious misgivings about the very future of British sea power. Nevertheless it was during this period that events began to jar the Admiralty's thinking out of its World War II frame of reference, worked some important changes in the nature of the Fleet, and demonstrated the continuing value of mobile naval task forces. In these critical years the seeds of Britain's present day naval policy were sown.

International Tension vs Economic Conditions

Britain's intention in the early post-war years was to liquidate with all due speed her commitments incurred as a result of World War II and in turn to reduce her armed forces to a peacetime level that would allow a rapid and successful economic recovery. This did not seem to be an unrealistic

prospect in 1945. Great Britain had just won the greatest military victory in history. There were no enemies left. All the surviving great powers were Albion's allies. Presumably the United Nations offered a promising foundation on which to establish a workable peace. To the free world's great distress these hopes were shattered all too soon.

The armistice had hardly been signed when it became clear that the Kremlin intended to dominate the countries of Eastern Europe. Large numbers of Soviet troops were deployed throughout the Satellites, evidently on a permanent basis. These moves were accompanied by determined efforts to extend Russian influence in Persia, Turkey and Greece. At least in these instances pressure was being exerted on areas adjacent to the U.S.S.R., and where Russia had traditionally taken a strong diplomatic interest. However, it was soon feared that Russian ambitions extended to Western Europe as the Kremlin vigorously sponsored political infiltration and subversion throughout this area. In three years the great and powerful wartime ally, Soviet Russia, presented the "free world" with its second grave challenge in a decade. Although economic determinants had monopolized the military limelight in Great Britain during the immediate post-war period, other considerations now gradually assumed increased significance.

Throughout the late 1940's it was becoming painfully clear to British statesmen that Europe's weakened condition and their own country's fiscal troubles combined with the Soviet threat called for unusual measures. The post-war era was characterized by a steady succession of moves aligning Britain with her allies. In June 1947 General Marshal, the Secretary of State, offered extensive United States financial assistance to Europe. Mr. Bevin, the British Foreign Minister, responded enthusiastically to this American initiative and together with Mr. Georges Bidault, the then French Foreign Minister, organized Europe to accept the Marshall Plan. The Organization for European Economic Cooperation evolved from these efforts.

Within Europe some old ties were very shortly renewed. In March 1947 Britain and France signed the Dunkirk Treaty of Alliance and Mutual Assistance. A year later this arrangement was extended to include Belgium, Luxembourg and the Netherlands by the Brussels Treaty. This grouping later became known as the Western European Union. The Defense White Paper for 1949 for the first time expressed disillusionment with the United Nations and described at some length the joint military arrangements being made within the Western European Union.[1] This was the initial post-war step toward collective defense and in many ways it "provided a pattern for the North Atlantic Treaty"[2] which was soon to follow.

In the spring of 1948 the Communists' campaign was highlighted by the disappearance of Czechoslovokia behind the "iron curtain." In August Stalin initiated the Berlin blockade. That in turn drew the United States closer to Europe and accelerated the formation of the North Atlantic Treaty in April 1949. Militarily the parties undertook "to maintain and develop their individual and collective capacity - to resist armed attack."[3] The 1950 Defense White Paper declared that British policy was "to seek security through the development of collective self-defense . . . in cooperation with the other members of the Commonwealth, the United States of America and other like minded nations."[4] There is little question that America had loomed large in Britain's military thinking ever since the war, but it wasn't until 1950 that it was officially acknowledged.[5]

Despite the strong language of the North Atlantic Treaty it seems clear that prior to Korea it was not primarily designed to marshal military power, but rather "to provide political and psychological reinforcement in the continuing political warfare of the cold war."[6] Statesmen on both sides of the Atlantic believed that the commitment of America's military potential to the defense of Europe would both bolster Western European resolution and deter further Soviet aggressions with a show of trans-Atlantic solidarity.[7] To Britain it seemed to offer

the only means of insuring her security and "great power" status while regaining her economic strength. This was reflected in the Government's military budget. The NATO commitment and increased tension, particularly during the Berlin airlift, had caused slight increases in the annual appropriation for the years 1949 and 1950, and the Government initiated some efforts to improve Britain's air defenses which had been allowed to deteriorate along with the rest of the military establishment. However, the total manpower allowance continued to decrease, and by 1950 the annual appropriation was still a rather slender £780 million.[8] This was only £88 million more than in 1948. In fact the increase was largely consumed by rising prices and routine maintenance which had fallen behind during post-war demobilization. This was hardly enough to indicate any serious alarm on the part of the Government. Despite the threatening international environment domestic economic and welfare programs were still given priority over defense. Obviously Britain was depending on America to buttress her sagging defenses.

However, the level of tension was not allowed to subside. In August 1949 the Soviet Union exploded an atomic device, and less than a year later the North Koreans drove south across the thirty-eighth parallel. This event temporarily destroyed the West's confidence in the United States Strategic Air Command's ability to deter the Soviet Union from committing overt military aggression. "Consequently, it precipitated the first - and only - serious attempt to create the forces which the military had prescribed for withstanding a Soviet attack in Europe."[9] Great Britain was quick to pledge support to the United Nations and immediately offered troops and ships. Any further thought of reducing the armed forces disappeared. Under pressure from the United States the Labor Government undertook substantial remobilization. On July 26, 1950 the House of Commons voted an additional £100 million for immediate defense needs. Both the United States and Great Britain were seriously concerned that Korea might be only one step in a larger design. Winston

Churchill warned Great Britain in Cromwellian terms of the Soviet danger and emphasized that the major threat lay in Western Europe.[10] On July 30 the Prime Minister announced the Government's intention of undertaking large scale rearmament. This was followed on August 3 by a detailed program which called for expenditure of £3,400 million over the next three years. By the end of August this figure was increased to £3,600 million.

In November 1950 the Chinese entered the Korean conflict. The United States responded with a program which more than doubled her military strength and quadrupled her defense expenditure within three years. The NATO nations accelerated their efforts to build a credible military counter in Western Europe to the might of the Soviet Union. In January 1951 the British Defense White Paper was addressed to the crisis created by the Korean War. It stressed the "urgent need to strengthen the defenses of the free world"[11] and outlined an expanded program of "as much as £4,700 million"[12] in armaments over the 1951-54 period. This was more than double the previous rate of expenditure although still less than half of the wartime rate. Nevertheless, it was a heavy commitment for Great Britain and was officially characterized as the "biggest the United Kingdom could undertake without going over to a wartime economy."[13] C. M. Woodhouse summarized the Government's hopes as follows:

> The intention was to meet the cost out of income without running into debt abroad or reducing the level of investment. The expansion of defense production required a check on civilian demand and a switch in the engineering industries, which would inevitably reduce their exports. Some controls that had been relaxed would have to be reimposed. There would have to be a system of allocation of raw materials and a limitation on supplies to the home market and on civil building. But there would be no overriding priority for defense in all cases at the expense of exports. The sacrifices called for were considered bearable.[14]

Still these measures proved too strong for many Laborites. Three members of the Party led by Aneurin Bevan[15] resigned from the Government on the ground that this program would force a continuation of tight controls and a cut in social services.

Certainly the projected military-program aggravated Britain's chronic economic difficulties. Rearmament in Europe and in the United States caused a steep rise in the price of imported raw materials in relation to a slower rise in the price of manufactured exports. This adverse trend in Britain's terms of trade accentuated the balance of payments difficulties. As Bevan had predicted the Government was forced to tighten controls, increase income and purchase taxes, and ration raw materials.[16] In addition, the shift to defense production caused industrial dislocation, and it was several months before the re-distribution of manpower, materials and machine tools could be worked out.[17] As a result funds allocated to many critical items, such as aircraft and tanks, were underspent for the first two years. That there were serious political hazards associated with rearmament was illustrated by the Labor Party's defeat at the polls in October 1951.

The new Conservative Government immediately began to reassess the ambitious military program. Despite tighter controls Great Britain in 1951 suffered a deficit of £403 million in its balance of payments. In March 1952 Mr. Churchill informed the House that even with some $300 million in American aid it was necessary to reduce and stretch out armaments expenditures.[18] He predicted that the Labor Party's rearmament program if carried to fulfillment would now cost £5,100 million and insisted that policy be "governed by realities."[19] These required more emphasis on exports and less on defense. His concern was widely shared. The Financial Times voiced the growing opinion that it was no longer a matter of defense competing with "the national standard of living, but with national solvency."[20] As a result the anticipated defense budget was reduced £120 million and the Government announced that the total program would be stretched out over a four or five year period. In December 1952 further cuts were initiated in order to protect the balance of payments. The progressive increases which Mr. Attlee's original rearmament plans envisioned never took place. The defense budget rose sharply up to 1954 and then tapered off as a result of Mr. Churchill's reductions.

These steps and changes in the prices of imports served to better Great Britain's position markedly. Both 1953 and 1954 witnessed improvement in the economy's international accounts, and by the latter year the Government managed to discontinue rationing and many controls. Nevertheless, there was no move to intensify rearmament. The absolute cost of defense continued to rise slightly, but expressed as a percentage of the Gross National Product it had declined from a high of 11.3% in 1952 to 9.3% in 1956. Moreover, the Government no longer rated the Russian threat as dangerous as at the peak of the Korean crisis. Even on assuming office in December 1951 Prime Minister Churchill declared that the threat of a major war "has become more unlikely."[21] Thenceforth the Government began to think of defense in terms of the "long pull" rather than early major war. The Conservatives turned their attention to strengthening the nation's financial position and to eliminating the onerous controls which had been in effect since 1939, longer than in any other Western country.

Nevertheless, the generally high level of defense expenditures undertaken in 1951 was maintained up through 1956. In comparison with most other states 9% of the Gross National Product was a most impressive level.[22] After the lean years of the late forties the Korean rearmament effort was a welcome relief to the hard pressed Services, and set the tone of British defense policy until Mr. Sandys' famous White Paper of 1957. It pulled the British military establishment out of its post-war doldrums and thrust it into the atomic era.

Military Emphasis

It should be clear from the preceding review that the years following the Korean War were important ones for the British Services, because of the increased stress placed upon armaments. However, before investigating the Navy's specific part in all this, it is desirable to examine Great Britain's

general military response to the Soviet threat. Not only are the resources available to the Navy limited by economic and political parameters, but also by the shares of the total military budget that go to the Army and Royal Air Force. The Navy was by no means slated to play the pre-eminent peacetime role in the military establishment that it had in pre-war days, and it was during the period 1949-56 that the Navy's fortunes relative to the other Services reached their post-war nadir.

Institution of NATO signified the end of a British dominated balance-of-power system in Europe and marked Britain's official recognition that, in its reduced circumstances, it must rely on the United States. An important aspect of this evolution was the continuing peacetime commitment of British troops to the Continent. This was a sharp break from traditional defense doctrine, and one which is still viewed with some misgivings today.[23] Actually the commitment to Europe "was perhaps less a deliberate choice than a series of relatively isolated decisions whose cumulative effect served to place, seemingly on a permanent basis, British forces in Europe."[24] After the Armistice of 1945, Great Britain left troops in Europe to perform occupation duties, and sizeable units were still there when the first overtures were made toward collective security. Although the British sent a token force to Korea, their major interest was in strengthening Europe's defenses.

The outbreak of the Korean War transformed NATO from a multi-lateral guaranty pact into a genuine effort to redress the military balance on the Continent. In September 1950 the North Atlantic Council explicitly adopted a strategy of "defending Europe as far eastward as possible;"[25] and agreed to establish "an integrated force under centralized command."[26] In early 1951 SHAPE was formed, and in April it assumed control of the forces assigned by member nations. British experts were convinced that continued large-scale American involvement was essential if Europe was to be made secure and at the same time was to effect economic recovery. Most British officials believed that the

commitment of British troops to the Continent was necessary not only to bolster its defenses, but to tie the United States to NATO by demonstrating that an American military contribution would be matched by Europe.[27]

Again both military and political considerations were intertwined. At the first meeting of the NATO Council after the outbreak of Korea the United States had proposed the use of German troops in the defense of Western Europe. Despite strong anti-German sentiment it was clear that some kind of German participation was necessary if the Allied Command was to be effective militarily. In May 1952 the European Defense Community Treaty was signed, providing for a German contribution of twelve divisions to an international army corps under the overall control of the Supreme Allied Command. After two years of negotiation and controversy France refused to ratify the Treaty and EDC collapsed. NATO's stock temporarily plunged.

In a remarkable display of diplomatic skill, the British Government quickly contrived an entirely new scheme - Western European Union - which was acceptable to the Germans and gave the French the guarantees that they required to permit German rearmament. To achieve the final result the Churchill Government contracted to station in Europe for fifty years a ground force of four divisions with supporting air power.[28] Anthony Eden describes this decision as inspired by the British interest "in bringing in the Germans and French together and keeping the Americans in Europe."[29]

In 1954 this commitment did not appear to the British to be unmanageable. They anticipated gradual reduction of their overseas requirements. Troops deployed around the world could become available for NATO. However, this hope proved illusory. Despite the fact that their overseas base system was beginning to disappear the need for troops did not diminish greatly. The guerilla war in Malaya proved particularly burdensome and wasn't concluded until 1957. Civil unrest broke out in Kenya in 1952 and absorbed British forces until that country

received its independence. In 1955 the four year war in Cyprus began. All of these episodes pinned down British soldiers.

In addition the Government assumed that atomic weapons and the policy of strategic deterrence which was slowly taking shape would free troops from the overseas areas. This hope was voiced in the 1954 White Paper which expressed confidence that the "deterrent":

> . . . should have an increasing effect upon the cold war by making less likely such adventures on the part of the Communist world as their aggression in Korea. This should be of benefit to us by enabling us to reduce the great dispersal of effort which the existing international tension has hitherto imposed upon us.[30]

This, of course, proved to be a miscalculation. "A strategic retaliatory capability, besides being slow in creation, was irrelevant to the internal security problems normal to the overseas areas."[31] NATO and Britain's other overseas commitments both required troops and were thus competitors for manpower.

As a result the Government was committed to the largest peacetime Army in its history and one that consumed a heavy share of the defense budget throughout the 1950's. In 1951 the Army's share of the total military appropriation was about 38% and in 1956 had decreased only to 33%. This restricted severely the funds allotted to the Admiralty, and, in consequence, the Navy's capabilities.

Coupled with this departure from traditional British doctrine were some technical developments which likewise had a profound impact on military policy. In 1949 the Soviet Union tested an atomic bomb, and it was soon clear that fission weapons were being rapidly integrated into Russia's armed forces. This could not fail to have significant implications for insular Britain. This development came as somewhat of a shock to British scientists who had predicted that the Russians would require several more years to produce such a device. The immediate effect was to discredit the Ten Year Rule and to accelerate

Britain's atomic energy program. In 1952 Great Britain followed with her own atomic explosion at Monte Bello.

The study has already described the close relationship between air power and atomic energy and these events likewise turned the Government's attention to modernizing the Royal Air Force. Starting in 1949 Fighter Command had begun to receive jets and by 1951 its forces were doubled. That same year Canberra jet bombers commenced coming into service. The onset of Korea added further impetus to this effort, and the Minister of Defense declared in the House of Commons that "air strength has priority in our defense system, and it is my resolve to ensure that it is developed with all possible speed."[32] This sentiment was to strike the keynote of British defense policy for the next decade.

Once the decision had been made to produce an atomic bomb there was little question that Britain would develop a strategic atomic capability. Goldberg says that the "sheer momentum of the great scientific effort alone"[33] would have assured this outcome, however, there were a number of other incentives more compelling. The original political goal of assuring Great Britain a special tie with the United States and a voice at the council table of great powers would hardly have been realized without a credible delivery capability. The Services were in unanimous agreement that fission weapons were a necessary component of modern military power. Even more important, in 1952 when the Churchill Government was beginning to wrestle with Britain's incompatible military and economic requirements it appeared that atomic bombs might offer a cheaper form of defense than attempting to develop a large variety of forces to meet every contingency in kind.

In the early part of that year the British Chiefs of Staff were requested by the Prime Minister to conduct a thorough review of the armed forces and the strategic situation with a view toward working out a cheaper and more effective way of meeting the Soviet threat. The CSC secluded themselves for

several weeks and "drew up an overall review of defense resulting in a policy centered on nuclear deterrence."[34] In essence they concluded that atomic weapons offered the most feasible means for the West to counter the tremendous manpower advantage of the Soviets for the least money. The appeal of such a policy was irresistible to a government beset with economic problems. In early 1953 Churchill announced in the House that:

> As a result of the Government's strategic review, the types and quantities of weapons and ammunition to be produced have been more precisely related to the kind of wars which we might have to fight in various parts of the world. This has enabled us to make considerable economies in many directions.[35]

Thus was laid the foundation for the deterrent policy which Great Britain pursues today.

Both the Army and Navy concurred that the accumulation of a nuclear stockpile was essential and that atomic weapons and their delivery systems should receive priority for the next few years. The First Sea Lord had the Admiralty's support in this decision. However, it should be recalled that at this time Britain had not tested its first weapon, had not begun to produce bombs, nor had any experience with what this would involve. There seems to be no doubt that when the Navy's leaders approved this policy, they did not realize its full implications.[36] The bills for bombs and bombers were just beginning to come in. Conventional forces were still considered important and the role of neither the Army nor Navy was under assault. It was impossible to foresee the immensity of the effort which such a program would require or the effect it would have on conventional weapons. It is eminently fair to say that the Admiralty had no intention of ascribing to the deterrent the overriding priority which the Government subsequently awarded it. Nevertheless it should be clearly understood that the Navy never opposed the concept of deterrence and participated as well as concurred in its original formulation.

This decision was translated into policy by assigning priority to the building of a strategic bomber force. Although the Government did not publicly adopt deterrence as policy until 1954 a number of previous steps indicated that the decision had been made earlier. In 1952 Prime Minister Churchill elevated the Canberra and Valiant bombers into his famous "super priority" category and by February 1953 they were joined by the Victor and Vulcan bombers.[37] At the same time fighter production was cut back reflecting the recognition that effective air defense of the United Kingdom by fighters against atomic attack would soon be infeasible. By 1953 aircraft production accounted "for a little over half of the total production programm "[38] of the armed forces. The 1954 White Paper announced that delivery of atomic weapons to the forces had begun[39] and formally declared:

> The primary deterrent, however, remains the atomic bomb and the ability of the highly organized and trained United States strategic air power to use it. From our past experience and current knowledge we have a significant contribution to make both to the technical and to the tactical development of strategic air power. We intend as soon as possible to build up in the Royal Air Force a force of modern bombers capable of using the atomic weapons to the fullest effect.[40]

This same statement spelled out what this meant in more practical terms. "With all these considerations in mind the Government have concluded that a gradual change should be brought about in the direction and balance of our defense effort. Still greater emphasis will have to be placed on the Royal Air Force because of the need to build up a strategic bomber force."[41] This policy was reinforced by the introduction of thermo-nuclear weapons. The 1955 Defense Statement noted this development and heralded the Government's decision to proceed with the manufacture of fusion bombs. While not disowning the need for conventional weapons the Statement further stressed the horrors of a major nuclear war and asserted that the threat of "overwhelming nuclear retaliation" was the "surest guarantee" against it. The Statement concluded that the nation in its allocation of resources "must assign even higher priority to the deterrent, that is to

say the production of nuclear weapons, and the means of their delivery."[42] Perhaps belatedly by U. S. standards, but nevertheless relentlessly, official faith in deterrence was shouldering its way to the forefront, and the shadow of nuclear war was beginning to dominate all defense policy.

This philosophy was reflected in hardware and statistics. By 1956 some Valiant bomber squadrons had entered service,and the next generation of V-bombers were already in production. The Air Council's cherished vision of a modern strategic striking force was rapidly becoming a reality. In 1949 the RAF was receiving some 27.3% of the total defense estimates. By 1955 the "Junior Service" had surpassed both the Army and Navy and its share of the defense budget had risen to 35%. This figure didn't include the 9% allotted to the Ministry of Supply of which the lion's share was devoted to deferring research and development costs of land-based aircraft. Although deterrence was not to reach its apogee until Mr. Sandys' famous 1957 White Paper enthroned it as the predominant theme of British defense, it played a critical role during the "NATO to Suez" period. It was during this era that the foundations of the strategic bomber force were laid and that the RAF was ascending to a position of ascendancy in the defense heirarchy. The airmen in light blue had a modern, consistent and convincing strategical doctrine which dominated the military stage and placed them in an excellent position to compete in the political arena. As a result nuclear deterrence became one of the major parameters limiting the Navy's expansion and progress. Inevitably this was to push the Fleet into the background and restrict the resources available to it. The Admiralty was still searching for a viable role in the atomic era and had no strategic rationale which could match the Air Force's. Nevertheless, it was the Navy's experience during this most difficult period which eventually led the Sea Lords to face up to the post-war realities and hammer out a practical and worthwhile role for the Fleet.

Russian Naval Threat

The preceding section investigated the general international, economic and military parameters within which the Royal Navy had to work from 1949 to 1956. The focus now shifts to the responses of the Admiralty during this period and to the specific part envisaged for the Fleet in the total defense establishment.

Although the Soviet Union's immense land forces appeared to represent the primary threat to the Western nations, her military preparations likewise provided the Royal Navy with its first tangible post-war challenge. Reliable information on Russian naval development and policy was not available for a number of years after World War II. However, in late 1948, disturbing rumors began to filter out of the Baltic. These described an intensive submarine construction program taking place in the U.S.S.R.[43] By 1949 both the United States and Great Britain were convinced that the Soviet Union was building a huge underwater fleet. On July 26, 1950 in a defense debate in the House of Commons the Minister of Defense confirmed that Russia possessed a large number of modern seagoing submarines and was building more.[44] By 1951 estimates were as high as 350 to 400 boats.[45] Although Russia's surface forces were still considered relatively weak and obsolete it was well known that the naval element of Russia's land-based Air Force was being modernized and supplied with strike aircraft configured to attack ships.[46] By 1950 it was estimated that the naval branch had over 2,000 planes at its command. Over the next few years both the submarine fleet and naval air force were to grow in quantity and quality. These developments were to have considerable influence on the character of British sea power in the 1950's.

Although Russia did not possess a formidable battle fleet such as the Germans, Italians and Japanese had in World War II, its naval preparations were conceived to present a grave

threat to Britain's sea lanes and to call for a positive response on the part of the Royal Navy. In some respects the Soviet preparations were rather comforting to the Admiralty. Here at last was a real-life enemy to give direction and purpose to Britain's naval planners. These measures required no radical adjustment in the Admiralty's strategic thinking. Obviously Russian submarines and naval aircraft were being built for only one purpose - to attack and disrupt oceanic communications. This was distinctly a naval challenge and one which could only be adequately met at sea. In addition Russia's naval program had to be predicated on the assumptions that any war between the East and West would be protracted, that conventional weapons would play an important part, and that the high seas would be one of the vital battlegrounds much the same as in World War II. This supported the very arguments which the Sea Lords had been employing to rationalize their post-war forces.

Manifestly, the new-found enemy would dictate some adjustments in the British Navy's equipment. There was no question that the Russian threat would accelerate the trend away from large units - such as battleships and cruisers - toward destroyers and frigates which were better suited to anti-submarine work. However, these changes were not wholly unwelcome. Ever since the armistice in 1945 the Royal Navy had been forced to operate under adverse economic restrictions. This handicap promised to continue. Anti-submarine ships by the very nature of their mission are small and relatively inexpensive. Such ships do not present the design problems of larger units, lend themselves to mass production, and can be completed in a matter of months. In essence the Navy could get more ships more quickly for a given amount of money. This was bound to appeal to an Admiralty that was seriously concerned about the very numbers of men-of-war in the Fleet and the cost of every single unit.

At the same time the Russian threat left ample room for the aircraft carrier - the Royal Navy's modern capital ship.

During World War II the British employed carriers extensively in ASW work both as escorts for convoys and in hunter-killer groups.[47] Concurrently seaborne aircraft would be needed to protect convoys and warships from Russian air attack. Consequently the Soviet menace was to lend purpose and direction to the Fleet Air Arm also. All in all there was little resistance within the Navy to this new emphasis on anti-submarine and anti-air warfare.

Perhaps even more important than any of these factors was the general effect on the public and politicians of the Russian submarine menace. It was the type of threat which the British are most able to appreciate. In two great conflicts German submarines had blockaded the United Kingdom and in each instance had come close to paralyzing the British economy. Anti-submarine warfare is a mission which, since 1917, the public instinctively associates with the Fleet although the Navy shares this task with the RAF's Coastal Command. This was the very type of threat which the advocates of sea power had been citing as the basic rationale for the Royal Navy. Inevitably the rise of the Soviet submarine force was to furnish valuable support to the Navy's drive for a share of the nation's resources. Although Russia's land forces and later the deterrent were to receive priority attention throughout this period, there was never any serious questioning of the gravity of the Russian naval threat. This was to assure the Admiralty a share of the defense budget.

As early as 1949 the Navy reacted to this new challenge. Funds were still restricted, and the personnel rundown was continuing; but the Admiralty gradually reoriented its research and training effort to meet the problems associated with the Soviet menace. "The development program for a high performance general purpose carrier borne aircraft (the GR 17/45) was revised to provide instead a plane configured for anti-submarine warfare."[48] An effort was initiated to bring the reserve fleet to a higher state of readiness, so that its smaller escort type

ships could be activated more quickly. The scientific effort although modest was "directed to counter-measures against the various forms of high-speed attack which may be expected in the future" - jet aircraft, missiles, and especially "submarines with underwater speed, submerged endurance and capacity for deep diving greater than anything we have experienced in the past."[49] In the weapons field work was begun on advanced depth charges and homing torpedoes for use by both ships and aircraft.[50]

It was soon clear to the Navy's scientists and designers that a serious response to Russia's submarines would require escorts with higher speeds and more sophisticated equipment. The Russians were developing submarines with unprecedented capabilities when submerged. The Royal Navy's World War II destroyers and frigates were incapable of countering underwater craft with streamlined shapes, snorkels, high capacity batteries, and submerged speeds exceeding fifteen knots. These characteristics required vessels especially configured for ASW work against modern submarines. Due to the lack of funds the first effort to transfer these desires into hardware were modest. Two new ASW frigates were laid down in 1950. That same year a long term plan to convert World War II destroyers to ASW frigates was announced,[51] and two were taken in hand immediately. The intention was to gain valuable experience in making such conversions before a crisis developed. Vice-Admiral Denny, the Third Sea Lord, in a public address given on June 14, 1950 indicated the tenor of the Navy's thinking when he declared that apart from aircraft carriers the Navy's future ship construction would be confined to "light fast ships with immense hitting power whose prime adversary is the fast submarine."[52] This was the general picture when the Korean War broke out.

The Western reaction to Korea has already been described. The NATO powers were convinced that Russia was prepared to resort to force to achieve its ends and that war might come to

Europe within the next three years. The Government's general reaction has already been described. In 1950 Britain had no atomic weapons and did not expect to have any for at least two years. All three of the British Services were still relying heavily on World War II equipment and were thinking largely in terms of conventional weapons and protracted general war. Anticipating a possible conflict in the near future they had little choice but to expand their existing forces, modernize the equipment then in use, and put into hurried production whatever developments were on the drawing board at the time. Certainly the Government would have preferred to delay until atomic weapons should be available, and their implications for doctrine and equipment estimated. But the situation was considered urgent. The main objective was immediate rearmament to counter Russia's huge conventional establishment. This posture set the tone for the Korean rearmament program.

From the outset there was no question that the Navy would receive a large share of the increased appropriation, although it was likewise obvious that both the Army and Air Force would still take precedence. Prime Minister Attlee in launching the rearmament effort made it clear that NATO's sea communications were a prime concern of Great Britain and that the Royal Navy in conjunction with other Allied navies would be required to counter the submarine and mining threats from Russia.[53] The Navy Estimates in 1951 sounded the key for the next three years by announcing that the Admiralty's whole building program was largely "directed against the underwater menace."[54] In 1952 the First Lord in his policy statement in the Navy Estimates again emphasized that the Navy was concentrating on "anti-submarine and minesweeping forces and . . . expansion of naval aviation."[55] Following the change of Government in 1951, Churchill made it clear that the Conservatives contemplated little change. He emphasized that the Royal Navy has "three main threats to meet, each of which if successful, would affect our survival in this island - the mine, the U-boat, and the threat from the air."[56]

In order to meet these goals the Navy's appropriations were sharply increased and reached a peak of £367 million in 1954.[57] This was almost double the 1950 figure. By 1952 the annual funds for production and research alone exceeded the comparable figure in 1950 by two and a half times. Although the Royal Navy was still the junior Service in terms of absolute funds its relative share of the defense budget remained throughout this period between 23% and 24%. Obviously the traditional rationale of protecting the nation's sea lanes still pulled political support, even if it was no longer the pre-eminent military demand on the nation's resources.

In order to translate the Government's goals into reality the Admiralty inaugurated a series of modernization and new construction programs. In line with Admiral Denny's prediction, the major emphasis was placed on ASW ships. Work on eight "Daring class" destroyers, which had been discontinued in 1945, was accelerated in order to give the Fleet a new class of destroyer for escorting carriers and cruisers. They were configured with the latest anti-submarine equipment and at the time were the most advanced destroyers in the world. An extensive modernization program was launched for the purpose of converting World War II destroyers from both the active and reserve fleets to ASW frigates configured to deal with modern submarines. These ships would be capable of escorting either convoys or highspeed warships. The Admiralty was relying on these two programs to meet its immediate needs and to bring the active forces to a high state of readiness in a short time.

To supplement this effort a long-range new construction program for smaller and more specialized frigates was commenced. The World War II frigates were too slow to deal with modern submarines, and even modernization could not cure this basic defect. In line with its policy of preparing for a protracted general war, the Admiralty desperately desired new escorts which could furnish merchant convoys protection against submarines and aircraft. The planners hoped to settle on just a

few classes of standard design which would be relatively cheap and would lend themselves to mass production in the event of all-out war. In 1951 work commenced on four new classes of frigates. The "Whitby" and "Blackwood" classes were configured for ASW duties, the "Leopard" class as anti-aircraft escorts for convoys, and the "Salisbury" class to furnish aircraft direction facilities for fighters protecting convoys. The numbers which could be built would depend on costs and the available funds neither of which could be firmly estimated in 1951. However, it was the Admiralty's intention to lay heavy emphasis on this program and progressively to replace all of its World War II frigates in both the active and reserve fleets. This was an ambitious scheme designed to give the Royal Navy a meaningful capability for protecting Britain's supply lines. However, it was a long-range program based on a number of imponderables, and only time would tell if it was practical.

At the same time a Herculean effort was initiated to improve the nation's mine defenses. Britain's World War II minesweepers were all practically either unfit for service or obsolete. The Russian's have a reputation for being addicted to mine warfare, and the British Government, recalling the Germans' highly successful efforts in World War II, were particularly apprehensive about the country's mine defenses. This was one area where NATO would be of little help. The United States had let its minesweeping capability lapse and had no intention of expending large sums in this area. This was to be a strictly national problem. As a consequence the Admiralty inaugurated a large building program for minesweepers which was to continue until 1956 and to give Great Britain the most effective minesweeping capability in the world.[58]

Just as the surface forces were concentrating on the Russian menace, the Fleet Air Arm likewise turned its attention to this new threat. Due to the lack of funds and the Government's Ten Year Rule there had been very little aircraft production since the war, and the Fleet's aircraft just as the

RAF's were sadly obsolete. Starting in 1951 approximately one-third of the naval appropriation was diverted to aviation.[59] The major emphasis was placed on anti-submarine warfare. Carrier borne aircraft had proved themselves remarkably adept at killing submarines in World War II, and the Admiralty intended to make full use of this capability. As early as 1949 some effort had been devoted to developing a specially configured ASW plane. This program was accelerated and the Sea Lords managed to get this project placed in the super priority category.[60] The goal was to deliver this plane to the Fleet at the earliest date.

In addition steps were taken to reequip the Fleet Air Arm with its first jet fighters - the "Sea Hawk", a day fighter, and the "Sea Venom," an all weather interceptor. Due to the urgency of the rearmament effort these aircraft were rushed into production before their development program was completed, and their performance was sub-par as compared to the most modern aircraft of that date.[61] This did not seem too serious since the Admiralty contemplated using them only for defense of the Fleet and convoys, not against land targets. Nevertheless, they were considered interim models and a long-range program was put in hand to develop more modern replacements.

One of the Admiralty's most pressing aviation problems was carriers. The five in the active fleet were all of World War II vintage and not configured to handle the higher performance planes which were soon to come off the production line. Korea gave the Admiralty the opportunity it needed to repair this deficiency. Today the Admiralty is often criticized for not having built more new carriers during this period. However, in the context of the times the Navy's decision to modernize instead seems rather wise. Carriers are by far the most expensive item in the Fleet's inventory, and a government that is hard pressed financially inevitably views them with suspicion. However, the onset of hostilities in Korea found the Royal Navy in a unique position. Some six carriers commenced in World War II were still on the ways in 1950. While

funds had been throttled down to a trickle the Admiralty had nevertheless carried them as "under construction" and kept them alive as going projects. As a practical political matter it was much easier to "accelerate" than "commence" construction.[62] Even though the original plans had to be altered to incorporate the latest developments this scheme was still considerably cheaper than building new ones.[63]

Militarily the Admiralty was more than satisfied. It had an immediate requirement for modern carriers and this was certainly the most expedient scheme for obtaining them. With the appropriate modifications these ships could be configured to handle any seaborne aircraft in sight at that time. Perhaps most important, the Sea Lords were fully aware that they could get more ships for the investment this way. As a result the Korean rearmament program allowed the Admiralty to commence an extensive carrier modernization program which was to assure the post-war Fleet up-to-date carriers for over a decade.

Thus the Russian naval forces had a profound impact on the Royal Navy in the early 1950's. The Russian submarine fleet and naval air arm began to assume alarming proportions just at the time that the Korean War made increased funds available, and as a result they literally prescribed the direction which the bulk of the Royal Navy's shipbuilding and research programs were to take at a very critical time. The appearance of a tangible threat to Britain's sea lanes made it possible for the Admiralty to obtain a sizeable share of the nation's scarce resources. In turn this relieved a great deal of the obsolescence that had been fast developing in the Fleet since World War II. Both modernization and building programs would furnish the seagoing forces with up-to-date ships and planes which could better operate in a modern environment.

On the other hand these developments did little to advance the Admiralty's thinking beyond World War II. Unquestionably the preparations inspired by the Russian naval threat were designed to fight a conventional general war which would

last for several years. The Admiralty envisioned vast convoys plying the ocean protected by an umbrella of carrier planes and a ring of escorts flying the White Ensign. These arrangements largely ignored atomic weapons and Britain's economic adversities. Thus the trend inspired by the Russian naval threat served to tie the Admiralty to its traditional strategy which was due to become increasingly irrelevant in the coming years.

The Fleet's Offensive Capabilities[64]

Throughout the early 1950's when the Admiralty was concentrating heavily on anti-submarine warfare there was some talk both in lay and professional circles of the Royal Navy becoming solely a "small ship" navy. Proponents of this scheme argued that Great Britain no longer had the resources to support a large variety of different type ships and that the Royal Navy should specialize in an area where it could make the most profitable contribution to the Allied effort. With this as a starting point they further reasoned that Britain's shipbuilding industry and naval skills could best be employed by concentrating on fast anti-submarine destroyers and frigates. It was in this field that the naval threat to the United Kingdom was the greatest, and NATO's seagoing forces the weakest. By devoting all of Britain's naval efforts to this one area it would presumably be possible to produce great numbers of escorts of high quality. In turn it would be up to the United States Navy to furnish any large ships which might be required such as cruisers, carriers, and logistics ships.

This argument, at least on paper, had some limited appeal in a nation constantly plagued with economic problems, and at various times it was discussed informally by the Sea Lords. However, "the Board of Admiralty never seriously entertained it."[65] For centuries the Royal Navy had been a "big ship" navy with strong traditions of independence, and the Sea Lords were not about to reject that heritage just because money

was scarce for a few years. They insisted that the country needed and could support a large well balanced Fleet to guard its sea communications. The carrier was now the new capital ship, and the Admiralty was convinced that it had an important part to play in meeting the Russian submarine and air threat. Its ASW planes would assist the smaller ships in hunting for submarines, and its fighters would furnish overhead protection to warships and convoys alike.

However, these were essentially defensive missions. The Navy's leaders were not ready to reject completely the offensive tradition handed down from the past. Perhaps the days of the "battle line" were gone, but many nations, including the Soviet Union, still possessed powerful cruisers and large numbers of destroyers. There was no assurance that they would not present a future threat and in that event would have to be dealt with in traditional style. The Navy's overlords had given up the battleship, but they were determined that the aircraft carrier should assume its offensive responsibilities.

For this reason, it was felt that along with fighters and aircraft the Fleet Air Arm should always have a number of first line strike aircraft configured to attack other naval forces. This capability combined with the Fleet's small cruiser force was intended to provide sufficient offensive power to meet any surface threat. Consequently, the Admiralty's aircraft replacement program in 1951 included the world's first operational turbo-prop airplane, the "Wyvern." It was to be a naval strike aircraft configured to carry either bombs or torpedoes. Like the other naval planes ordered in 1951, it had been in the design stage since 1945, but due to the lack of funds had never been fully proved. Nevertheless, it was put into production. Because of technical difficulties it didn't reach the Fleet until late 1955.[66] By that time it was obsolete as compared to other strike aircraft. Nevertheless, it demonstrated the Admiralty's intention to retain a significant offensive capability in the Fleet.

Despite the effort which was to go into modernizing the Fleet Air Arm it was clear that there had been no change in the Admiralty's basic reasoning with regard to the employment of aircraft. Fighters were still to be used to furnish the Fleet air cover and strike aircraft to attack surface ships. The same rationale which dominated the Sea Lords' thinking in the late 1940's inspired the aircraft procurement program during the rearmament period. However, these same years were to witness the Fleet Air Arm expand its horizons, and in turn the Admiralty modify its views considerably on the potential of carrier borne aircraft. This alteration in attitude was to have important implications for the future and therefore deserves attention. It was more an evolution than a distinct change and was brought about by an accumulation of pressures.

The first important event in this chain was further naval construction on the part of the Russians. This time it was surface ships. It was manifest by the outbreak of the Korean War that the Soviets intended to build more than submarines, and that they were modernizing their surface forces as well. In 1951 the "Sverdlov," the first of a new class of powerful cruisers, was launched, and it was to be followed by a succession of sister ships.

Although the exact number planned was not known, it was obvious that the Russian Navy intended eventually to renew its cruiser fleet of about twenty vessels. As the emphasis in the Royal Navy shifted to anti-submarine destroyers and frigates, the Board of Admiralty became increasingly concerned over this new surface threat. Its cruiser force was rapidly deteriorating, and with its demise the Fleet would lose its heavy guns. Operating on a tight budget the Sea Lords preferred to put their limited production funds available for large ships into aircraft carriers. They were a great deal more versatile than cruisers and appealed to the political overlords as well. The prospects for any future cruiser construction appeared dim.

By late 1951 the nation's atomic research program was reaching a critical stage and scientists were looking forward to the first test explosion. With a view to the future, building was commenced on a huge weapons research establishment at Aldermaston. The Admiralty began to take a deeper interest in the program and stationed a team of observers at this establishment to follow the program at first hand. It soon became obvious that in a few years atomic weapons would not be as expensive as originally estimated. This meant that it would be possible to produce them in quantity and perhaps a number of different types. Also there was some evidence that American scientists had succeeded in miniaturizing the components of atomic weapons.[67] These developments would soon make tactical A-bombs possible. It would be several years before such weapons would be in production, but they appeared to the Admiralty to be the answer to the Sverdlov cruiser. Somewhere around 1951 the Admiralty submitted a requirement and received approval for a tactical nuclear bomb to be delivered by carrier borne aircraft - to counter the Russian cruiser threat which was developing.

Surprisingly enough this move generated little opposition from the Royal Air Force. Although Britain had yet to explode its first atomic device, the RAF was already looking to the day of small atomic weapons and was trying to develop support for such a project. The Navy's request added weight to its case, and the two Services merged their request into a "joint" requirement for a small tactical A-bomb. At the same time, however, the Air Council insisted that strategic weapons must have first priority. The Admiralty readily agreed. This move served to dilute any Air Force opposition, and on the Navy's part it was merely a recognition of the "facts of life." This marked the Navy's rather inauspicious entry into the nuclear weapons field.

The next step followed logically. The Fleet needed a truly modern plane to carry this prospective weapon. The Admiralty soon laid down a requirement for an advanced jet to

carry an atomic weapon. Again there was relatively little opposition voiced. The Admiralty insisted that it required such an aircraft in order to protect the Fleet from the Sverdlov cruiser. This was in agreement with the Navy's current doctrine and was in line with the Royal Air Force's official view of the function of naval aircraft. The RAF's advocates conceded that carrier planes could be used profitably to furnish the Fleet and convoys air cover outside the range of land-based air. The Navy's initial requirement did not appear to threaten any of the Air Force's basic tenets, and was put in train with little fanfare.[68] Nevertheless, this was a turning point in the Navy's post-war thinking. Although this aircraft was originally designed to counter surface warships, it would be a versatile weapon system and would lend itself to a variety of missions.

Concurrently with these developments the Fleet Air Arm was in action in Korea and this experience was to have a profound effect on the Navy's doctrinal thinking. It served to impress upon many British naval officers the aircraft carrier's considerable capability as an offensive weapons-system and to excite the ambitions of the Fleet's aviators.

On June 15, 1950 when the North Korean Army stormed across the 38th parallel the British Fleet was "1,000 miles from its base doing a summer cruise."[69] Within five days it was in action off the North Korean coast. This force consisted of a light fleet carrier, two cruisers, two destroyers and three frigates - "a force numerically as strong as that which the United States Fleet could muster on the spot."[70] By July 5 these ships had been reinforced to make a total of seventeen British and Commonwealth units which were in action within a fortnight.

Although the Royal Navy's contribution did not match the U. S. Navy's in Korea, it nevertheless played a prominent part in the naval activities of that war and acquitted itself with distinction. Throughout the course of hostilities His

Majesty's ships operated in close cooperation with the U. S. Fleet and furnished support to the armies ashore. Its tasks were varied, demanding, and covered practically the whole spectrum of naval responsibilities.

However, its principal long term contribution in Korea was the carrier borne air support which it furnished to the troops operating ashore. A total of four light fleet carriers served at one time or another in Korean waters.[71] They flew off nearly 30,000 operational sorties, fired 16,000 rockets, and dropped some 4,000 bombs.[72] When hostilities commenced sixty sorties in one day was considered exceptional for a light fleet carrier. The Korean carriers very quickly pushed this figure higher. H. M. S. Ocean in a remarkable display of skill averaged 76.3 sorties a day for 79 days running. The highest for one day was 123.[73] H. M. S. Theseus established an outstanding safety record when it completed more than 1,300 consecutive deck landings without a failure or an accident.[74] These are only samples of the Fleet Air Arm's performance in Korea, but they are indicative of the high standards which characterized British operations.

While the operational record on the scene was a proud one, the overall picture was not so bright. As already noted the Admiralty had not envisioned troop support or interdiction work as one of the Fleet Air Arm's missions. Carriers arriving off Korea had very little training in this type of flying, nor did they have aircraft configured for such operations. There was not a jet in an operational squadron of the Fleet Air Arm. Korean carriers were employing Sea Furies for fighter protection and Firefly II's as strike aircraft. The Sea Fury had a top speed of 400 knots and was grossly inferior to the Russian MIG 15's used by the North Koreans. The Firefly II was a general purpose attack aircraft configured to carry anti-ship bombs and torpedoes. By definition it was slower and less maneuverable than the Sea Fury. Both planes were outmatched by the opposition and neither was designed for support work ashore.

Improvisation on the scene made up for many of these deficiencies. Initially the MIG's (when they chose to fight) took a rather startling toll. One carrier lost 25% of its aircraft in the first few days of action.[75] However, by adopting close formation tactics and hugging the ground carrier aircraft were often able to baffle their opponents. More important they selected tactical targets which were not normally protected by MIG's. Ground support techniques were learned on the scene through trial and error. It is a remarkable tribute to the skill and innovative abilities of the Royal Navy's pilots that they were able to make such a substantial contribution to the Korean effort with so little preparation and inferior aircraft. On the other hand the Korean War highlighted one of the most glaring voids in the Admiralty's planning. World War II had demonstrated the value of fast mobile carriers supporting certain types of land operations, yet the Royal Navy had failed to exploit these lessons.

Operations in Korea were bound to enhance the status of the Fleet Air Arm and influence the course of Admiralty policy and thinking. Many naval officers, both senior and junior, having witnessed or studied the Fleet's experience in the Far East were convinced that the Navy's Air Arm could play a larger role in Britain's defense strategy than had previously been assigned to it, and they were determined to improve its offensive capabilities. They believed that the Navy's planes should be capable of attacking either land or maritime targets and of penetrating to a target against land-based fighter opposition.

Not all the elements in the Royal Navy agreed on this philosophy and the next few years were to generate some dissension over what the exact place of the carrier was. Nevertheless, by the end of the Korean War the aviation branch had come into its own. Many of the more responsible staff billets were held by officers who had flown in combat in World War II. There were several flag officers who were career aviators, and one of them

was sitting on the Board of Admiralty. It was inevitable that they would have an increasingly strong voice in the affairs of the Navy, and Korea gave them an impressive precedent to cite which confirmed their arguments for a stronger and offensively minded Fleet Air Arm.

The Navy's major problem in Korea had been Communist fighter opposition, mainly the Russian MIG 15. Returning pilots took up the cause for faster and better fighters. It was clear that the jets due to come into service shortly (Sea Hawk and Sea Venom) would be obsolete by Russian standards almost as soon as they entered the Fleet. As a result new life was injected into the Navy's fighter development program, and the aviation branch of the Naval Staff turned its attention to the next generation of aircraft. Two planes - the "Scimitar," a day fighter, and the "Sea Vixen," an all weather interceptor - had been in development for sometime, but due to lack of money work had been discontinued. These projects were revived. The staff requirements were altered in order to make them competitive with land-based aircraft and capable of penetrating enemy territory. In addition the Scimitar was to be given an interdiction and ground support capability, and the Admiralty managed to get it tagged as a super priority project.[76] Unfortunately, it would be some time before these aircraft would see service, but this was a noteworthy step. The Admiralty was beginning to think in terms of fighters which could penetrate enemy territory, and at the same time hit tactical targets and support troops.

Korea had also indicated the need for a modern strike plane capable of carrying a large bomb load. In that war the Fleet Air Arm had depended on an aircraft which was originally designed as a torpedo bomber, the Firefly. It had proved grossly inadequate for hitting tactical targets ashore. The Wyvern which was the scheduled replacement, due to come in service around 1955, although configured to carry conventional bombs as well as torpedoes did not offer the improved performance

that was needed, nor was it capable of carrying the heavy payloads required for ground support. However, the picture was not so bleak. The atomic strike aircraft which the Admiralty was developing promised to be fully capable of meeting these needs. In essence the measures being taken to meet the Sverdlov cruiser promised to correct one of the most serious deficiencies spotlighted by Korea. It is interesting to note that many aviators began to look on the forthcoming "Buccaneer" more as an aircraft for striking land targets than as a counter to the Sverdlov cruiser. Nevertheless, it would be some time before the official justification for the Buccaneer was altered to expand its mission. Certainly, there was no reason to offend the Air Force unnecessarily.

Though the Sverdlov cruiser and the Korean War were instrumental in laying the groundwork for expanding the Fleet Air Arm's role, it was the Royal Navy's connection with NATO which exercised the largest influence in this regard. In 1951 as part of the allied military effort an American Admiral was appointed Supreme Allied Commander Atlantic with his headquarters at Norfolk, Virginia. He was to head a staff composed of naval officers from the North Atlantic countries, and his major task was to draw up plans for the collective employment of the naval forces available to NATO in the event of a general war. It was no secret that one of the British Government's major political objectives was to bind the United States to the defense of Europe irrevocably, and the Royal Navy enthusiastically supported this reasoning. By 1951 the Admiralty had come to the conclusion that in the event of a global war it must act in conjunction with the United States Navy if it was to succeed in securing Britain's sea communications.

Predictably the bulk of ships available to SACLANT were to be American, and the U. S. Navy's strategic thinking inevitably dominated NATO's naval planning. Starting in 1946 the U. S. Navy had gone to great efforts to develop a nuclear capability and after a series of clashes with the U. S. Air Force

had succeeded in wresting for itself a share in America's strategic deterrent.[77] To this end the American Navy was building a number of huge attack carriers of over 60,000 tons and planned to complement them with multi-engine bombers capable of carrying large nuclear weapons. U. S. Navy planners envisioned carrier borne aircraft sharing in the initial strategic attacks in a nuclear war, and strategic targets were eventually allotted to the U. S. carriers. In the Atlantic the U. S. Second Fleet based at Norfolk, Virginia was assigned to SACLANT. This gave him a potent group of attack carriers around which to organize his forces. In the event of a general war this Fleet was to be redesignated as the NATO Strike Fleet. In accord with U. S. thinking it was to deploy to the North Atlantic and attack targets in Northern Russia with atomic bombs and hopefully to support landings in the Scandinavian area. This mission was given number one priority among SACLANT's responsibilities.[78]

The U. S. Navy which was concerned over its own position in America's defense heirarchy was encouraging the Admiralty to commit its carriers to NATO Strike Fleet. Admirals in Washington believed that this would strengthen their hand in the fight to retain a share in the delivery of the American deterrent. The British naval leaders for their part did not wish to antagonize the U. S. Navy. On the contrary they were willing to go to great lengths to cement the tie between the two Services, however, the Board of Admiralty had never conceived of the Fleet as a vehicle for delivering atomic weapons against land targets. For reasons discussed earlier the general sentiment among the Sea Lords was that the Fleet was not suited to such a task. In fact they had never visualized the Royal Navy taking part in the initial nuclear exchange at all. Even those officers who believed that the Fleet should have an offensive capability against land targets were thinking in conventional terms and had in mind actions such as Korea.

However, there were some compelling reasons for accepting the American suggestion. Such a role would give the

Fleet another important general war mission and further emphasize its importance. Korea had illustrated that naval aircraft could be effective against land targets and could furnish effective support to troops. In addition, the Admiralty was making a vigorous effort to improve the calibre of its aircraft and expected in the not too distant future to have a tactical nuclear capability. This would vastly improve the Fleet's ability to participate in the type of operations SACLANT was planning. By 1952 this scheme did not appear as impractical as it had originally.

From the political standpoint participation in SACLANT's plans would give the Navy further justification for its carriers and strengthen its case with the political overlords. "There is no question that claims for funds to support NATO activities were less closely examined by the Government than those with strictly national purposes in mind."[79] From a purely parochial point of view this would facilitate obtaining new aircraft and creating the offensive capability toward which the Admiralty was beginning to work. By 1952 the Government had already begun to cut back the rearmament program, and there was every prospect that further reductions would be made in the future. Also attention was beginning to shift to nuclear weapons, and many naval officers reached the conclusion, with some justification, that conventional arms would have to defer to nuclear weapons.[80]

All these considerations encouraged the Admiralty to accept the American doctrine and to pledge its carriers to the Strike Fleet. This doctrine was publicly referred to in the 1955 Statement on Defense[81] and the First Lord's White Paper[82] of that year, but the commitment was made much earlier. Starting in 1952 the Fleet participated in NATO exercises with the Strike Fleet. However, it should be emphasized that there was considerable disagreement within the Navy over this strategy. A large number of officers didn't believe that this was the proper function of the Fleet, and they insisted that in an

atomic war an attacking naval force in close to an enemy coast would be a high priority target and too vulnerable.[83] Nevertheless, for both military and political reasons the Board of Admiralty chose to cooperate with SACLANT.

Even then the Admiralty never intended to acquire a strategic capability in the technical sense of the term. Britain's naval planes were not capable of carrying strategic atomic weapons nor were its carriers big enough to handle large bombers. The shortage of funds precluded any extensive program for constructing larger aircraft carriers. The Admiralty was still convinced that the Royal Navy should not compete with the RAF's V-bombers. Instead it intended to develop a tactical nuclear capability. This was much more in line with the Navy's previous strategical thinking and required very little change in terms of equipment. Practically, this meant that the Fleet Air Arm would eventually furnish aircraft to the Strike Fleet which could carry small atomic weapons and attack targets a few hundred miles from the parent carrier. These planes would strike specific tactical targets near the coast where accuracy would be a requirement. They were in no sense expected to penetrate the Russian heartland or to participate in saturation bombing. The intention was to give the NATO Strike Fleet an additional tactical atomic capability, which would complement its overall offensive power.

From the perspective of the Royal Navy the NATO commitment enlarged the Fleet's general war role and promised to exploit the full potential of its carriers. During this period Russia was consuming the bulk of the Government's attention. The military effort was largely directed toward countering the Soviet threat. The Admiralty hoped by this move to play a larger part in those preparations and to insure the future of the Fleet's carriers and offensive capability. It should be remembered that at the time (1951 to 1954) the Royal Navy had no atomic weapons. It would be a number of years before the Fleet had even an effective conventional strike capability.

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Nevertheless, this commitment signified a marked change in the Board of Admiralty's attitude. It was envisioning naval forces carrying the war to enemy territory, attacking land targets, and supporting troops.

It was this facet of the Admiralty's ambitions which revived the RAF-Navy tension that had characterized the pre-war years and was to mark the next decade. The Air Ministry had never quarrelled with the Navy's basic mission of securing the sea lanes and of escorting convoys. On the other hand it insisted that the Fleet should have a very limited air role. RAF leaders did not dispute the need for carriers to offer air protection to convoys and to perform ASW missions at long distances from land. However, they contended that all other functions could and should be handled by land-based aircraft. It was inevitable that they would object to the direction Navy planning was taking.

The argument over the proper role of aircraft carriers had continued for years. It was pushed with special vigour in the professional journals in the middle 'fifties. It was brought to the general public's attention by a spirited exchange of correspondence in The Times in 1955. For several weeks a number of very prestigious retired Air Marshal and Admirals carried on this verbal contest in the public press.[84] As with most such duels in the British press, it had little effect on Government policy, nor did it change the minds of the professionals on either side. On the other hand it accurately reflected the controversy which was gradually mounting behind Whitehall's public facade. As the Navy's plans became manifest, RAF leaders began to complain about the money which was being diverted to the carrier program and carrier aircraft, particularly those designed for strike missions. Their arguments reflected their own approach to problems of defense. They insisted that the prime need was for strategic bombers and that carrier aircraft did not lend themselves to this role and were therefore a poor investment. For several reasons, however, the

RAF attacks in the early 1950's had little effect on the Navy carrier program.

First, the Air Force's semantic offensive was remarkably restrained. This can generally be attributed to its rising affluence and pre-eminence in the post-Korean period. It was solely responsible for the deterrent and this was the priority program in Britain's defense establishment. Certainly at that point the Navy did not appear to threaten this position even though the Fleet Air Arm was presumably infringing on the RAF's area of operations. Actually, the Air Force was having difficulty spending the money at its disposal. The Aircraft industry could not handle the sudden demands which the Korean rearmament had placed upon it. This made it doubtful that diverting money from the Navy to the RAF would accelerate the modernization of the Air Force.

Secondly, and perhaps even more important the very nature of the defense organization before 1957 made it difficult for one Service to exert more than general pressure on another. The Minister of Defense was more a coordinator than a decision-maker. He possessed a very small staff and had to depend on the individual ministries to supply him with information and advice. It was certainly not customary for him to tamper with the detailed programs of each Service, and it was questionable whether he had the practical facilities to do so wisely. He could set the overall guidelines and control the broad allocation of resources, but he relied heavily on the Chiefs of Staff for recommendations on any major changes in the makeup or functions of the services. In this body the Navy had as strong a voice as the Air Force. As a result, policies were often compromises rather than logically coherent schemes,[85] but irrespective of that it made it difficult for the Air Force to impose its unilateral views on the Fleet. Within the general parameters set by the Government and the Chiefs of Staff Committee each branch was relatively free to pursue its own inclinations.

In essence this meant that up until 1957 the Navy was never forced to justify its carriers or the way it intended to employ them - except in very general terms.[86] It was hampered by its small total budget, but within that limitation it had a relatively free hand to develop the Fleet Air Arm as it saw fit - despite the Air Force's harassing and sniping. However, that argument resurrected the pre-war tension between the Admiralty and Air Council - of which more later.[87]

The Fruits of Rearmament

The Korean rearmament program enabled the defense establishment to tackle the obsolescence that was fast overtaking its equipment. However, the picture was by no means all bright, for it was during this same period that the post-war technical and economic facts-of-life were brought home forcibly to the military Services.

In the case of the Navy this can perhaps best be illustrated by briefly reviewing the Fleet's physical status. By 1955 the modernization and building programs initiated during the Korean crisis were having marked effects on the Fleet.[88] Five new or modernized carriers all capable of handling a new generation of aircraft had been commissioned, and one more was still in progress.[89] Eight new destroyers had joined the seagoing forces, and practically all the remaining destroyers which had been commissioned between 1945 and 1947 had been refitted with improved ASW weapon systems. Some twenty-seven World War II "tin cans" had been completely modernized and converted to ASW frigates to assist with the escort of either the Fleet or seaborne trade. Although no new frigates had joined the active fleet as yet, some twenty-three were in various stages of construction and were to start phasing into the active forces in 1956. Six more were to be laid down in the coming year. The bulk of the active submarine force had been modernized to include snorkels and high capacity batteries. Some 175 new

minesweepers had been completed allowing replacement of the active forces' entire complement and the strengthening of the reserve fleet in this category. These ships were configured to clear both contact and magnetic mines. Some modernizing had been accomplished on several cruisers, and a decision taken in 1954 to complete three new cruisers which had been on the stocks since 1945.

All the modernized ships and those building included extensive improvements allowing them to operate in the vicinity of atomic detonations and radiation. Considerable advances had been made in anti-submarine weaponry and sonar. Also the Royal Navy had made remarkable progress in propulsion machinery. An ambitious research program was being prosecuted to develop a sophisticated anti-aircraft shipborne guided missile (Seaslug) for combatting air attack. As to aircraft the Fleet Air Arm now had all jets in its fighter squadrons, and the interim replacement program initiated in 1951 had been practically completed. The Gannet ASW plane was as good as any in the world at that time. In many ways the British Fleet of 1956 was a rejuvenated force, and the next few years promised the addition of a host of new frigates. The Fleet was composed of the following units:[90]

Operational Status

4 Aircraft Carriers
9 Cruisers
29 Destroyers
28 Frigates
44 Submarines
37 Minesweepers
7 Landing Vessels

Trials and Training

3 Aircraft Carriers (2 employed in non-flying training)
1 Cruiser
1 Guided Weapons Trial Ship
3 Destroyers
24 Frigates
28 Minesweepers
1 Tank Landing Ship

Reserve Fleet

6 Aircraft Carriers
12 Cruisers
5 Battleships
44 Destroyers
110 Frigates
15 Submarines
190 Minesweepers

Construction

2 Aircraft Carriers
3 Cruisers
23 Frigates
2 Submarines
69 Minesweepers

However, the picture was not as bright as it superficially appears. The Navy's share of the total budget had been consistently smaller than either the Army or the Royal Air Force. Despite the greater amounts of money going into the naval program since 1951, it was still not sufficient. In this regard it should be recalled that the original Korean rearmament program was cut back twice in 1952. Also the years of drought from 1946 to 1950 had severely intensified the problem of obsolescence. On top of this, cost of equipment rose sharply and steadily along with salaries. Modern ships as a result of their complexity were much more elaborate and costly than their predecessors. Before the war a destroyer cost some £400,000; by 1955 it was £3,000,000. Pre-war submarines cost £300,000; new ones in 1957 were approximately £2,500,000. "The two Ark Royals most clearly demonstrate how naval costs have rocketed. The 1937 Ark Royal cost £3,216,000 and the 1955 one £21,500,000."[91] In addition modern ships require approximately 20% larger crews than their pre-war counterparts. Yet the personnel of the Royal Navy was steadily decreased from 1952 to 1956.[92] All this resulted in a marked reduction in the size of the active fleet.[93] Many of the Navy's ships were newer, faster, more powerful and better able to operate in a modern wartime environment, but in 1955 the number of operational units at sea was slightly less than in 1948. The reserve fleet had likewise shrunk, particularly in the carrier and cruiser categories. In addition, there had been no modernization of the reserve fleet with the exception of the minesweepers and a few frigates.

An increasingly larger share of the naval estimates had to be allocated to research.[94] Experimental and aircraft programs proved a great deal more expensive and complex than anticipated. The Admiralty had hoped to commence a class of guided missile cruisers or destroyers to follow the Daring class destroyer, but the Seaslug missile program was delayed due to development problems and was not available by 1956. Consequently construction had been postponed until the missile showed

better prospects. This meant that the Fleet would have to stretch the life of its destroyers for several years longer than planned. Costs on this missile project greatly exceeded the original estimates because of the scientists' unfamiliarity with missile development problems.[95] The frigate replacement program which commenced in 1951 showed promise of giving the Fleet an extremely high calibre escort. However, by 1955 it was clear that the most the Navy could expect was to replace the frigates in the active forces, and it would take several more years before that could be accomplished.

As to aircraft both research and procurement schedules were delayed and stretched out over longer periods than originally anticipated. This was necessary because of various factors, not the least of which was the priority awarded to the RAF's V-bomber force.[96] As a result it would be several years before the Fleet could get a fighter or strike aircraft capable of meeting its land-based counterparts. The Fleet still did not have atomic weapons despite the number of references to them in White Papers.[97] Also it did not have an aircraft capable of carrying them in 1955, although it was proceeding towards such a capability. Altogether, rapidly advancing technology had worked some encouraging changes in the Fleet's equipment, but economic conditions still severely restricted its size and strength. Moreover, there was no sign of relief. The Navy had passed through a period of emergency in which vastly increased funds were made available. But there was still insufficient money to create the type of Fleet which the Admiralty desired, and as the emergency subsided so had the funds. It was manifest that the Royal Navy would never again dispose the resources of old, even in a crisis.

These developments presented a rather depressing picture for the Admiralty in 1955. The Soviet Navy had taken giant strides. The Communists continued to expand their submarine force to some four hundred boats. Two hundred and fifty of these were long range ocean-going types equipped with snorkels

and high capacity batteries capable of ranging every ocean of the world.[98] This is an even more imposing number when it is realized that in 1939 Germany had only 57 operational U-boats.[99] The formidable Soviet force was supported by 18 modern Sverdlov type cruisers, over 120 first-line destroyers, and a shore-based naval air force of 2,500 planes.[100] The Soviets still had no carriers, but in the early 1950's the Russian Fleet had become the second largest in the world, and its ability to threaten Great Britain's supply lines had become most imposing.

The Royal Navy had by no means increased in the same proportion. Technically it had done reasonably well in keeping abreast of naval developments. British sonar, escort ships, and anti-submarine tactics were among the world's foremost. The major problem was one of quantity, not quality. When pitted against a determined submarine effort 29 destroyers and 28 frigates were too few. Of course the Admiralty counted heavily on the reserve fleet in an emergency, but most of these ships had not been modernized. They were rapidly becoming obsolete - with the possible exception of the minesweepers which would play little part in a war on the high seas.

Of course British naval planning envisioned a joint Allied effort in protecting the sea lanes. This brightened the picture, but it still left a great deal to be desired. It is true that the other NATO navies had numerous escort type ships which would go into the common defense effort. Again, the bulk of these were in mothballs and would have to be activated and modernized.[101] In a general war each of these countries would have had its own defense problems, and each participant would multiply the communication lines to be protected. Of all the NATO countries Great Britain relied the most heavily on sea transport and would be expected to contribute accordingly.[102] Yet, it seemed to be falling further behind in the numbers that it could provide to NATO, despite the Korean rearmament effort.

As to the Royal Navy's other general war duties its plans had yet to be implemented. Despite the ambitious claims

of Defense White Papers, the Fleet, at least in 1956, could not contribute to the NATO Strike Fleet's nuclear capability. It had no atomic weapons, and its only responsibility in a nuclear exchange would have been survival. This is typical of White Papers - they talk in terms of the present about devices and weapons that are still in the planning or development stage. The Royal Navy had made a sincere effort to prepare its forces to survive a nuclear war - within the funds available. Practically all of its ships were configured for defense against atomic radiation and fall-out. The four operational carriers were highly mobile and capable of keeping the seas for extended periods. Each of these embarked about sixty aircraft divided equally between fighters (also capable of carrying light bombs and rockets), strike aircraft (light bombers), and anti-submarine planes. They unquestionably represented an attack potential with a relatively good probability of surviving an atomic onslaught.

Nevertheless, the inferior quality of the British planes when compared to their Russian counterparts, and the lack of tactical atomic weapons would have reduced the Fleet's ability to defend itself and to project its power against shore targets even in a conventional conflict. The Admiralty's basic thinking had changed and strenuous efforts were being made to correct these deficiencies, but it would be several years before the Fleet's offensive capabilities would fit it for the general war role which the Admiralty envisioned for it. Again it should be recognized that in any general war, British strategy envisioned a union of the U. S. and Royal Navies. By 1955 the U. S. Sixth Fleet had expanded considerably and was the largest naval force in the Mediterranean.[103] The English fleet was well suited to complement America's task forces. Although generally smaller Britain's carriers and other units were equal to U. S. ships in all other respects. This was one of the general war virtues of the Royal Navy in 1956. It would have added materially to NATO's naval strength. However, the Fleet's very size raised

the question of whether this was a convincing rationale for its existence. At full strength the British carriers could have put a maximum of some two hundred fighter and strike planes into the air, and it was unlikely that the Fleet would be at full strength at the right time and place.

In essence, lack of funds had prevented the Royal Navy from keeping pace with the naval threat arising in the East and from implementing its own plans. Quite clearly, the official view exaggerated the Royal Navy's capabilities. Although its efficiency and quality had improved, the international military configuration had changed so drastically that its ability to fight a general war had seriously declined. It was still able to make a significant contribution to the free world's navies in a general war. However, in the mid-1950's still other developments were casting a shadow on the need for sea power and threatening the Admiralty's basic strategical rationale for the Fleet. It is appropriate now to look at these developments.

Thermo-Nuclear Weapons and Disillusionment

In the first few years after the war atomic weapons exercised little influence on British defense thinking. However, once the atomic energy program came to fruition and Britain had exploded its own fission weapon, one discovers an increasing sense of ambivalence about defense policy and an ever widening rift between the views of the three Services. The fundamental question at issue was: What type of war must the nation be prepared to fight?

It is a relatively simple matter to piece together the Admiralty's view. The Navy's Korean program emphasized anti-submarine ships, weapons, and planes. These were intended not only to protect the Fleet but also, just as important, cargo convoys. In addition an impressive effort was devoted to mine countermeasures and minesweepers. All these measures were tied to a vision of a global war with Russia where conventional

weapons would play a major role. This image justified a large reserve fleet and a reserve personnel organization which could be employed in times of crisis to expand the active forces and to provide a continuous stream of replacements for battle casualties.

These measures meshed comfortably with NATO's naval strategy. Although SACLANT planned to use atomic weapons to hit centers of Soviet maritime power, his plans "depended on the assumption that another Battle of the Atlantic would be fought, the object of which would be to bring supplies from North America across the ocean in order to support the armies and air forces operating in Europe and to feed the people of the countries engaged."[104] It was further intended to utilize the reserve fleets of the Allied countries to carry out this task. Essentially all of NATO's preparations were aimed towards a protracted war with the Soviet Union on the general pattern of World War II.

In 1950 when the Korean crisis broke out the Navy's thinking was by no means unique. Korea was generally interpreted to increase the prospects of a general war, and all three Services were still wedded to conventional war concepts. This was manifest in the rearmament period. The Army expanded and modernized its conventional weapons and continued to rely on its World War II organization. In addition it still depended on a large reserve organization to expand in emergencies and large numbers were called up for Korea. Concurrently the Air Force, although giving priority to its bomber program, embarked on a massive expansion in which all commands received a share. It also relied heavily on a reserve organization which was intended to be employed in a long global war.

However, with the British atomic explosion at Monte Bello and the gradual shift to deterrence initiated in 1952, the Air Council began to revise its views on the nature of a general war. The airmen contended that atomic weapons made a long war unlikely, and that victory would be decided by the

atomic onslaught, not by conventional weapons. Consequently the overwhelming emphasis should be placed on fission weapons.[105] Although all three Services had concurred in the decision to build up an atomic stockpile and strategic bomber force, the Navy and Army still gave little indication that they had lost faith in conventional weapons or that they detected any marked changes in the type of war to be prepared for. The Admiralty was convinced that the Fleet could operate in an atomic environment, and fission weapons would not in themselves decide the war. All the new British ships incorporated design features to improve their protection against fall out, radiation and blast effects. In addition the Admiralty's strategists "believed strongly that improved air defenses and dispersion would counter the bomb at sea."[106] Atomic weapons would complicate the problem of keeping Britain's supply lines open, but they would not eliminate the need for seaborne forces. In essence naval planners still viewed the atomic bomb as a "bigger and better bomb."

It should be emphasized that this concept was not too difficult to sell in Britain in the early 1950's - politicians and laymen alike sincerely believed that a general war would follow this pattern.[107] The British had little experience with or direct knowledge of atomic bombs. The thermo-nuclear weapon had not entered the arena as yet. There was a general feeling that although the atomic bomb had changed the scale of warfare, it had by no means eliminated the need for conventional forces. It would be several years even after Monte Bello before the armed forces would have fission bombs in any numbers, and radical changes should be made only as increased experience dictated them. Despite the factual information available on the devastating effects of such weapons, the patterns of World War II were deeply etched in British memories, and statesmen were slow to grasp the full implications of these new developments. Moreover, the great bulk of Britain's forces were conventional and it would have taken extraordinary courage and confidence, even rashness, for the leadership to discard them without a clearer picture of what the future held.

Actually the Services had reached a compromise, or more accurately a negotiated truce, among themselves in order to reconcile their differing views. About the same time the Chiefs of Staff Committee gave its approval to building up the strategic bomber force, it adopted the concept of "broken-backed" warfare. This theory postulated that in the event of global war, if no decisive results were reached during the initial nuclear exchange, "hostilities would decline in intensity, though perhaps less so at sea than elsewhere, and a period of broken-backed warfare would follow, during which the opposing sides would seek to recover their strength, carrying on the struggle in the meantime as best they might."[108] Obviously this reasoning justified the retention of conventional forces which could survive an atomic onslaught. In many ways this was a straightforward deal to allow all three Services to pursue their separate policies.[109] This doctrine, although formulated much earlier, did not appear publicly as official policy until the 1954 Defense White Paper.

It is difficult to determine where the broken-backed concept originated,[110] but it is rather clear that the Navy had the deepest interest in it of the three Services. Obviously deterrence offered the RAF a prime role. At the same time the nation's commitment to NATO in Europe, and cold war actions such as Malaya and Palestine assured the Army a significant place in the defense establishment. On the other hand the Navy's major preparations had been made primarily to counter the Russian submarine force in a conventional global war. If this war was to be short then the bulk of the Navy's efforts were superfluous. The theory of broken-backed warfare rationalized and vindicated the Navy's preparations. Consequently, the Admiralty throughout this period insisted that "deterrence" must go hand in hand with broken-backed warfare.

However, the concept of broken-backed warfare was to have a relatively short life, and it was never mentioned again in a defense White Paper. This can be attributed to the

dramatic appearance of the hydrogen bomb. On November 1, 1952 the United States detonated a thermonuclear device at Eniwetok atoll. Although this event was reported by witnesses, it was not officially confirmed for over a year. This history-making experiment was followed by two Russian explosions in August 1953 and further American tests in March 1954 which precipitated the famous "Lucky Dragon" incident.[111] Although there was a great deal of speculative information published on H-weapons it was the summer of 1954 before the U. S. Government released an official description of the stupendous area of destructive blast, radiation, and fall out associated with thermonuclear detonations.[112] This report dispelled all doubt as to the comparative power of A-bombs and H-bombs. Thermo-nuclear weapons were a quantum jump in destructive power. It was no longer credible to talk as if nuclear weapons were just a "bigger and better bomb"; the hydrogen bomb was a totally new breed of monster which required radically novel responses and adjustments.

The revelations as to the unprecedented power of thermo-nuclear weapons had a tremendous impact on the British Government. Above all "it removed most of the remaining doubts about the atomic revolution in warfare."[113] The British White Paper on Defense in 1955 examined at great length the import of hydrogen bombs and expressed the Government's decision to provide Britain with fusion weapons at the earliest possible date.[114] According to the document the brightest hope for peace lay with Western nuclear superiority, and it committed Britain firmly to a deterrent policy which would be pursued in conjunction with the United States. The White Paper accelerated the Royal Air Force's rise to ascendancy announcing that "increasing emphasis" would be placed on the deterrent and strategic air power.[115]

Nevertheless, the Government was obviously uncertain about the future of conventional forces. Just as it had done when introducing atomic bombs, it was deferring any radical readjustments until its own hydrogen weapons were available, and

the situation had developed further. This was clearly manifest in the passage that solemnly declared "the development of nuclear weapons does not mean that the use of naval and land forces in a major war is now obsolete or outmoded."[116] It went on to insist that the enemy would also have to be fought at sea and on the ground in the traditional manner. Despite these qualifying statements, however, the 1955 White Paper opened a new era and heralded the beginning of a period of deep and painful soul-searching within the British Navy.

Although it continued to present a brave and confident countenance to the public the introduction of thermo-nuclear weapons was to have a traumatic effect on the Royal Navy. This new development literally threatened the Navy's most cherished concepts, threw its strategical thinking into disarray, and threatened its very survival.[117] The root of the Admiralty's discomfiture was the enormous destructive power of the hydrogen bomb, and the influence that it would have on the nature of a global war. If it was employed in the early days of a general war, as British strategists at that point seemed to assume, there was little likelihood of a protracted conflict or war of attrition. Perhaps large numbers of ships at sea through dispersion, deception tactics, and passive defense measures could survive the initial holocaust. But with Britain and Europe razed, the likelihood of a long war would be remote and, in turn, the need for convoys would disappear. Similarly, super-bombs seemed to make mine warfare irrelevant. Mines could hardly match hydrogen bombs for making a large port unuseable. This struck at the very heart of the Royal Navy's post-war doctrine. It had rested its strategic case on Britain's reliance on exports and sea communications. Even if the war continued and the Navy was required to keep the ocean lanes open, the devastation of the initial exchange would make it impossible to activate reserve fleet ships or to depend on reserve personnel to step into the breach. In a general war involving thermo-nuclear weapons the Fleet would have to fight

with whatever was available and at sea before the first attack. This reasoning undermined two of the principal pillars of naval policy - the reserve fleet and the reserve personnel organization.

Thus far only the Fleet's defensive duties have been mentioned. What effect would these radically new weapons have on the offensive operations planned in conjunction with the NATO Strike Fleet? A considerable number of the Royal Navy's officers had been skeptical of this concept from the outset. They contended that a large fleet had no business concentrating in the early days of an atomic war and pushing in close to the enemy's shore for the purpose of mounting strike operations. It would be extremely vulnerable and invite destruction; the damage it could inflict would not justify its losses. The hydrogen bomb accentuated these arguments. Its astounding radius of destruction threatened to make any kind of naval concentration unduly hazardous and would, of course, severely complicate the problem of air defense. The enemy did not have to be accurate, he just had to drop his weapon in the vicinity of the target. The Admiralty instituted a series of behind-the-scenes studies to determine the effects of this new weapon on the NATO strike strategy and "these all pointed to the depressing conclusion that it was not viable if thermo-nuclear weapons were to be used against it with determination."[118] In essence thermo-nuclear weapons threw a shadow over practically all of the Royal Navy's basic concepts regarding the Fleet's contribution to general war.

Obviously the great destructive power of thermo-nuclear weapons added overwhelming weight to the Air Force's view of the nature of a general war, and this implication was fully appreciated outside the Navy. Both lay and professional military men were digesting the implications of hydrogen weapons, and many of them began questioning the general war rationale of seagoing forces. Published articles both attacked and defended the need for a Fleet.[119] There seemed to be little agreement as to how the Navy could best be utilized or whether it should

be employed at all in a general war. The most prestigious British critic in this verbal battle was Field Marshal Montgomery who in a speech before the Royal United Service Institution in late 1954 predicted that the role of navies would soon decline and that control of the seas would be exercised by land-based air forces.[120] From this date, it is possible to detect a continuously rising concern among the leadership for the Navy's future. This resulted in a campaign to broaden its role and shore up its flagging future.

In many respects the Admiralty was hampered by the very nature of its material problems. Ships that had commenced building in 1951 were just coming into the Fleet in 1955, and the physical character of these forces, at least for the immediate future, was already determined. In turn, any new changes would not be reflected at sea for several years. Nevertheless the Sea Lords made strenuous efforts to update the Fleet's public image and to tailor it to the demands of thermo-nuclear war. Increasing emphasis was laid on the Admiralty's future plans to exploit missiles, nuclear power, supersonic aircraft and to modernize the Fleet's organizational arrangements. The First Lord's Statement accompanying the Navy Estimates for 1955 was specifically devoted to the Royal Navy's role in the nuclear age. It insisted that "the latest inventions may affect maritime warfare and alter the character of the forces needed to wage it, but they do not diminish the need for navies."[121] He further envisioned "battle groups of carriers, guided missile ships, and their escorts"[122] to replace the fleets of past wars and explained that they would act as mobile offensive forces which could be quickly deployed wherever required. This expansive document went on to describe in some detail the Admiralty's plans to produce a new class of guided missile ships to support its carriers, and modern aircraft to enhance the Fleet's offensive capability. It also dealt briefly with the Royal Navy's contribution to the NATO Strike Fleet, and mention was made of the Fleet Air Arm's plans to develop an atomic capability.

From that point on no opportunity was missed to emphasize that the Fleet would soon have atomic bombs at sea. Within the year the Admiralty had accelerated work on nuclear propulsion and placed orders for the first two ships in a new class of general purpose frigates which could operate with the Fleet as well as merchant convoys.

In August 1955 the Admiralty initiated a comprehensive review of its ships, weapons and equipment for the purpose of determining how the Fleet could be given "maximum operational efficiency under the new strategic conditions."[123] Hopefully, this study was to recommend ways in which the Navy could better use the resources at its command and get more in terms of effective equipment for its investment. One of the guidelines laid down for this study was that in a future general war involving nuclear weapons the Fleet could not depend on shore-based men and equipment after the nuclear exchange. This study was supervised by a group of senior officers known as the "Way Ahead" committee and covered a wide range of subjects. Its recommendations were to be vitally important in streamlining the naval establishment and ushering it into this new era. The 1956 Navy Estimates reflected some of the more important conclusions. It announced the Admiralty's intention to reduce the size of the reserve fleet materially and to retain only those ships "which can be rearmed quickly for service on the outbreak of war."[124] In addition it announced the Admiralty's intention to cut back its dockyards and support activities drastically. It also expressed confidence that this could be done without injuring the Fleet's readiness. This would presumably release funds which could be devoted to equipment and projects more directly related to the Navy's operational tasks. The Way Ahead committee also reached the conclusion that the Royal Navy Reserve and Royal Navy Volunteer Reserve must be cut back markedly. Again it reasoned that only personnel who could be called to the colors at short notice with little training would be useful under the conditions of nuclear war. It

further stressed that the Navy should begin to modernize its afloat logistics support in order to make the Fleet more independent of shore bases. This was an important recommendation with vital implications for the Fleet's future. All of these suggestions were well received and in the next few years implemented. Certainly these efforts showed an increased sensitiveness to the demands of nuclear war and a willingness to progress with changing conditions.

However, as radical as some of these changes were, they did not fully meet the basic problem confronting the Admiralty. The 1954, 1955 and 1956 Navy estimates continued tenaciously to stress the Royal Navy's primary responsibilities vis-á-vis the Russian Fleet, protecting seaborne trade, and projecting Britain's power on the seas in a global war. Despite the willingness of the Sea Lords to make some alterations in material and personnel policies they had not altered the Fleet's basic capabilities. There was still no intention of the Fleet delivering strategic weapons and the atomic capability which was being emphasized was solely intended as a tactical one. Moreover, the Admiralty had lost faith in SACLANT's plan to use the Strike Fleet in the first few days of nuclear war, yet it remained officially wedded to this strategy and stressed it in public pronouncements. Although the Admiralty was deemphasizing the reserve fleet and post-attack expansion in a nuclear war it's spokesmen continued to stress the Russian submarine threat. Lack of funds accentuated the problem. By reducing the reserve fleet the Admiralty was conceding that it must rely on active ships, but it has already been noted how sparse these forces were.

Such inconsistency is characteristic of this whole period and reflects the ambivalence which was wracking Navy strategists behind-the-scenes. On one hand, the Admiralty was making preparations to survive and operate in a thermo-nuclear environment; on the other, it was planning to perform tasks that seemed to have little relevance to a genuine nuclear bomb war. It was becoming increasingly harder to envision an extended war at sea

once a hydrogen exchange had taken place. Vice-Admiral Gretton commenting on this period comments with great candor that:

> Many naval officers often wondered, if the truth be known, whether their airmen colleagues were not right and whether the Admiralty's views were really reconcilable with reality. . . . They played on, however, out of loyalty to their own Service and also because of an instinct which they could not support with sound logic that armies and navies were not out dated but were still essential for the security and well being of the country."[125]

Although the Navy was seemingly convinced that it still had a general war role, there were some signs that its thinking was gradually shifting. In 1955 the Admiralty seems to have inaugurated a vigorous campaign to remind the public that the Fleet could fulfill a variety of roles. In a series of speeches in 1955 the First Lord revived the Navy's Korean experience and emphasized the carrier's suitability for such a role. In addition he stressed the naval task force's potential for quelling brush fire wars, meeting civil unrest and showing the flag.[126] The 1955 Navy Estimates specifically recalled Korea where the "sea and air power of the Royal Navy" was brought to bear "quickly and effectively." It further listed one of the main functions of the Fleet as the provision "of direct air support for operations ashore and afloat in those areas where it cannot readily be given by shore based aircraft."[127] The 1956 Navy Estimates continued to stress "how quickly and effectively the sea and air power of the Royal Navy can be brought to bear in almost any part of the world."[128]

Slowly but surely under the pressures of technological advance, tight funds, and inter-Service competition the Fleet's strategical foundation was being shored up and widened. The first references to the Navy's limited war importance had crept on to the scene. At no time did the Navy's official statements go into great detail, nor did they indicate that this might possibly become the fundamental justification for the Fleet. The Country's attention was still riveted on fusion weapons, and the Admiralty still considered general war its primary concern. It was manifest, however, that the Navy's leaders no longer

considered the Fleet's general war functions sufficient in themselves to keep the Navy firmly in the defense picture.

In concrete terms there was something to be said for this new trend in naval thinking. The one area in which the Fleet was really capable of making a substantial contribution in the middle 1950's was that of conventional limited war. Korea had proved the Fleet Air Arm's ability to operate against shore targets and in support of troops. Profiting from the Korean experience the Board of Admiralty was making every effort to maintain and improve these capabilities in the succeeding years. Some of the specific steps taken have already been mentioned. Naval officers believed strongly that the Navy's mobility and flexibility were great advantages in carrying out Britain's world-wide responsibilities. There is no question that the Navy had never lost faith in its limited war capability.

While the forces which the Royal Navy possessed looked rather thin in regard to an East-West confrontation, they possessed a more impressive potential when considered in terms of a local action where only conventional weapons would be used. The Fleet was perfectly capable of establishing control of the sea in a specific area of limited size and of projecting its air power over small areas of enemy territory. Unfortunately many of the Admiralty's plans for increasing this capability had yet to crystallize. For example both the Fleet Air Arm's fighter and strike aircraft were lagging their land-based competitors. In the same vein the Admiralty's preoccupation with general war had led it to neglect seriously amphibious lift. A small operational amphibious squadron had been formed in 1950 consisting of some seven landing craft and moved to the Mediterranean. Its ships were slow and approaching obsolescence, and as had been customary since the war "it was completely neglected by higher authorities."[129] Nevertheless there was considerable merit in the assertions that the Fleet was ideal for meeting sudden brush fires and fighting limited

wars. Certainly the Royal Navy of that day was a great deal more suited for such a mission than it was for a general nuclear war where the burden would presumably rest on strategic forces.

Just as the pressure of events was gradually forcing the Admiralty to turn away from general war the Suez crisis erupted, and the Fleet was required to mount a conventional amphibious operation. This action was both to demonstrate the Fleet's usefulness for such actions and to teach the Admiralty some important lessons. Since this incident was to exert such a strong influence on the Navy's role it should be briefly examined.

Suez Crisis

From the conclusion of hostilities in Korea until the Suez operations commenced the Royal Navy had not been in action. Britain's overseas responsibilities had consumed a great deal of the peacetime Fleet's fuel and energy, but generally these operations had been showing the flag or providing logistic support for deployed troops. The Army and Air Force both had been actively engaged in Malaya, Kenya and Cyprus. All of these actions had proved costly, vicious and protracted. But they did make it clear that nationalist movements were beginning to be a prime source of concern to the nation and that the British would be withdrawing from many colonies much earlier than had been anticipated. In the early 1950's there were still ample bases from which British troops could reach the troubled areas. However, this situation was gradually changing, and as it did the Government would be forced to adjust accordingly. The Suez crisis brought these lessons home forcibly to the British, and also reminded the Admiralty that its traditional overseas responsibilities were still a vital part of its mission - perhaps even the most important.

On July 26, 1956 President Nasser of Egypt nationalized the Suez Canal and set in train a series of events which

culminated with the Anglo-Franco landing at Suez. The general history of this period is well known, and it is only the purpose of this study to trace those military events which illuminate the Royal Navy's relationship to the crisis. The British Cabinet was determined to reverse this decision and examined the whole spectrum of alternatives open to it. If at all possible it wished to act in league with its Allies and to exhaust the resources of diplomacy before resorting to a violent solution. Nevertheless, the services were alerted. On July 30 both France and England began jointly preparing "precautionary military measures."[130]

Despite Egypt's small size and slender resources these two countries discovered that their military position was a disappointing one. A quick effective jab either at the canal or Egypt would have been impossible. The Mediterranean Fleet was less than a week away, but there was only one carrier available and its aircraft, mainly Seahawks and turboprop Wyverns, were considered inferior to the Soviet Fighters, MIG 15's and 17's, possessed by Nasser's Air Force. Since Korea, the Fleet Air Arm had been pressing hard for aircraft more capable of competing with the Russian MIG, but their efforts had not borne fruit by 1956. The two French carriers in the Mediterranean had only propellor aircraft. The RAF had two squadrons of Canberra bombers in the Middle East both based in Arab countries which refused to allow Britain to use their bases for an attack on Egypt. There were no long range fighters stationed in the area, and it would take some ten days for them to arrive and settle. The only base available which was free of restrictions was Cyprus some 500 miles from the scene. Cyprus' airfields were not equipped to handle large operations. Even more discouraging than these facts was the inability to mount an invasion force. There were two battalions of army parachutists, two Royal Marine Commandos, and eight infantry battalions performing anti-terrorist duties in Cyprus. However, their state of readiness was hardly appropriate for this type

of requirement. Colonel A. J. Barker in his book Suez The Seven Day War described it thusly:

> . . . the parachutists had done no parachute training for months, the Commandos had not practiced amphibious warfare or co-operation with tanks for over twelve months. There were no transport aircraft and none of the base organizations or specialists required for an amphibious operation was readily available. There was in Malta an Amphibious Warfare Squadron of only two tank-landing ships (LST's) though both of these were equipped to carry eight assault landing craft (LCA's) each and two tank-landing craft (LCT's); this was totally inadequate for the size of an assault force required for a seaborne invasion of the magnitude necessary for an effective invasion of Egypt.[131]

It was painfully manifest that to apply effective military pressure would require considerable preparation. However, both the British and French governments were determined not to let Nasser's act go unchallenged and immediately turned their attention to the problem of mounting an assault force. A joint Anglo-Franco command organization was established and by the end of August the planning for operation "Musketeer" was well in hand. The proposed size of the Suez effort is usually not appreciated. An expeditionary force of some 80,000 men was planned with the accompanying air and sea support that such an organization requires.[132]

Shortages of transport aircraft, airfields and of parachute troops precluded a completely airborne operation The Egyptians were equipped with Soviet tanks, and troops, either airborne or seaborne, could not be left ashore for long without armoured support. There was no way to avoid a seaborne assault operation based on the World War II pattern. In this regard operating bases became a perplexing problem. British forces were stationed in Libya, but the Libyan Government would not tolerate its territory being used to mount an attack on another country. Cyprus could be prepared to handle aircraft, but its port facilities were pitifully inadequate. It had no harbours or beaches which could accommodate large ships. The only alternative was Malta which was approximately six days sailing from Suez for slow ships, and it was reluctantly

designated as the operational base for the seaborne assault force.

All these considerations imposed heavy demands on the Navy for amphibious lift and support ships. The first estimates called for over fifty LST's. There were only two in commission. Another twenty-eight were in mothballs and many of these were discovered to be unseaowrthy when they were reactivated.[133] After some effort sixteen LST's of the reserve fleet were made ready for sea and took part in the Suez operation along with the two LST's in the active fleet. Two light carriers were withdrawn from the training squadron in home waters and converted to troop carriers. In addition the Royal Navy was forced to contract with civilian concerns for transports, tankers, stores ships, reefers and other types to furnish the mobile logistic support required. Obviously the Royal Navy was in no sense prepared for the shipping and logistic problems which such an operation presented.

Large numbers of supporting aircraft would be required. Unfortunately Cyprus would be the main land base. This meant that the RAF's fighters and tactical support-craft could spend only ten to fifteen minutes over the target areas before their fuel supply would force them to return home.[134] Heavy and medium bombers would not be so handicapped, but they were not suitable for close support. The assault would have to rely heavily on carrier aircraft which would be deployed just a few miles offshore. H. M. S. Eagle with approximately eighty planes was already in the Mediterranean. H. M. S. Bulwark, the Fleet Air Arm training ship in home waters, was deployed to the Mediterranean and arrived on August 9. H. M. S. Albion which was in overhaul was rushed to completion and dispatched to Malta in mid-October. These three ships between them could put over one hundred fifty planes in the air. This was three-fifths of the air power available to the active fleet. There were some misgivings about pitting the Navy's planes - Sea Hawks, Sea Venoms and Wyverns - against Egyptian MIG's which

were theoretically superior to anything in the Fleet.[135] Nevertheless, the Fleet Air Arm was confident that its high state of training, its skilled pilots, and special tactics would allow it to overcome any opposition. The very fact, however, that the Egyptians possessed high performance jets forced the planners to take extra precautions, and this delayed the landings. In the last analysis it is difficult to overemphasize the value of up-to-date equipment. At any rate there was no alternative to carrier aircraft, and the Fleet Air Arm was to bear the main burden of the battle no matter what the handicap.

The preparatory stage had highlighted the voids in the Admiralty's thinking and exposed those areas where the Fleet was most deficient. However, once this period was past, the Royal Navy in action was another story. Starting on November 31 the Fleet Air Arm, French carrier aircraft, RAF and French planes from Cyprus launched a campaign to destroy the Egyptian Air Force. In less than seventy-two hours it was completely neutralized. The lack of effective opposition was due primarily to the poor state of training of Nasser's pilots.[136] Still this should not detract from the efficient and professional job which the French and English airmen did. Subsequent operations analysis paid special tribute to the Fleet Air Arm. RAF Canberras and Valiants were used with some effect, but high altitude bombing did not prove particularly suitable to a Suez type of operation.[137] The object was to destroy or damage specific tactical targets and to avoid hitting civilian installations. Strategic bombers often have difficulty locating such targets and are too inaccurate when they do.

On the other hand the tactical strike aircraft of both the Navy and RAF enjoyed significant successes. It was primarily their efforts which put the airfields out of commission, destroyed most of Nasser's planes before they got in the air, and razed the Egyptian Air Force's supply and ammunition dumps. The long distance from Cyprus severely reduced the time RAF strike-fighters could spend over the target, but they were very

effective while on the scene. Individual naval aircraft, on the other hand, were able to fly as many as four missions a day. Once the troops were ashore these planes were constantly on call and literally acted as artillery for the airborne troops which had to spend the first twenty-four hours without armour or artillery. The effectiveness of the seaborne aircraft exceeded all expectations. In seven days of action the Fleet Air Arm flew more than 2,000 sorties[138] and lost only one pilot. All things considered it was a remarkable performance and fully substantiated the claims which the carrier's advocates had been making for years.

The landing was carried out on November 5 and 6. The first day over two batallions of airborne troops parachuted in, and the next day the remaining forces were put ashore across the beaches. The landing on November 6 was marked by an innovation which was to change the character of amphibious warfare. A unit of the Royal Marines, Commando 45 (some 600 men), was put ashore by helicopters from H. M. S. Ocean and H. M. S. Theseus. It was landed, as soon as the beach was cleared, in less than an hour and a half.[139] The U. S. Marines had already begun to investigate the possibilities of "vertical assault," but Suez was the first time that helicopters had been employed in such a manner in action. As far as the British were concerned this was a makeshift development which had been conceived and implemented after the Suez preparations began. Colonel Barker labels it "without question the most outstanding feature of the operation."[140] These same helicopters ferried supplies, acted as messengers, carried out wounded, spotted artillery fire, picked up downed aviators, and performed a myriad of essential tasks. This was eloquent testimony to the Navy and Marines' ability to improvise on short notice.

There are many reasons to criticize the Suez operation, and in the public's mind it was a failure. Certainly the military, the Navy included, can be faulted for the lack of preparation for such an operation. Yet in view of military and

political thinking in the early fifties this unpreparedness is not so remarkable. Moreover, in the operations themselves the major deficiencies were lack of firm political guidance and some misjudgments at the high command level. It is difficult to criticize the conduct of operations and the performance of officers and men. The Navy performed extremely well. Without the Fleet the landing would have been impossible. Actually few realize how close the operation was to tactical success when it was abruptly canceled. It has been contended that the entire Canal Zone would have been secured in another thirty-six hours.

The inability of Britain to carry off, what some considered, a rather limited action against a third-rate military power had a traumatic effect on all Britons. It has often been referred to as the watershed for British affairs in the post-war era. For the first time the public and the Government appeared to realize fully the fundamental changes which post-war conditions had wrought in Britain's status. It had a similar effect on the Royal Navy. The Egyptian crisis highlighted serious deficiencies in the seaborne forces, and the Navy was to reap its share of criticism. Still the long range effects were not all adverse. The episode occurred at a time when the Navy's thinking was particularly confused, and when the Navy's leaders were casting about for a new rationale for the Fleet. Actually the Navy's combatant forces had performed rather well and the whole operation had illustrated the value of mobility and flexibility, a prime requisite of naval operations. Moreover, it accentuated the altered status of Britain's overseas responsibilities and focused attention on the increasing probability of limited wars. In the long run Suez was to play a vital part in assisting the Admiralty to find a viable post-war role for the Fleet.

CHAPTER IV

NOTES

1. Cmd. 7631, "Statement on Defense 1949," February 1949, pp. 13-14.

2. F. W. Mulley, The Politics of Western Defense (London: Thames and Hudson, 1962), pp. 20-21.

3. Art. iii, "North Atlantic Treaty reproduced in Lord Ismay," NATO The First Five Years (Amsterdam: Bosch-Utrecht, 1955), p. 17.

4. Cmd. 7895, "Statement on Defense 1950," March 1950, p. 1.

5. The best early evidence of Britain's intention to profit from U. S. naval forces was the enthusiasm with which it encouraged America to station a Fleet permanently in Europe after the war. By 1949 the United States was maintaining continuously a carrier task force known as the Sixth Fleet in the Eastern Atlantic and Mediterranean. Great Britain wholeheartedly welcomed this move after it withdrew from Greece and at least by implication considered it support for its own naval forces. It is interesting to note, however, that the Defense White Papers never mentioned these forces or hinted that the Royal Navy needed or desired peacetime support. A brief description of the British Government's attitude toward this step is found in Francis Williams, A Prime Minister Remembers (London: Heinemann, 1961), pp. 163-166. For American background on the origins of the Sixth Fleet see Dr. Stephen G. Xydis, "The Genesis of the Sixth Fleet," United States Naval Institute Proceedings, August 1958, pp. 41-50.

6. R. E. Osgood, N.A.T.O. The Entangling Alliance (Chicago: University of Chicago Press, 1962), p. 30.

7. For a more elaborate discussion of the political interests at work here see Ibid., chap. ii.

8. See Appendix II for more detail.

9. Osgood, 68.

10. 478 H. C. Deb. 699-714.

11. Cmd. 8146, "Defense Program," January 1951, p. 1.

12. Ibid., 4.

13. Cmd. 8475, "Statement on Defense 1952," February 1957, p. 1.

14. Woodhouse, 81.

15. One of the three was Mr. Harold Wilson, the present Prime Minister. He was the President of the Board of Trade at the time.

16. Andrew Schonfield, British Economic Policy Since the War (London: Penguin Books, 1958), p. 177-184. Here he discusses at some length the controls problem during this period.

17. This problem was mentioned in every Defense White Paper from 1951 to 1954.

18. 497 H. C. Deb. 433 & 447.

19. Ibid.

20. Financial Times, February 22, 1952.

21. 494 H. C. Deb. 2591, December 6, 1951.

22. At the time this percentage was exceeded only by the United States and Canada among the Western powers. For a table of comparative figures see Day, 59.

23. For example see Cmd. 1639, "Statement on Defense 1962: The Next Five Years," February 1962, p. 3. Many of the respondents in interviews expressed serious reservations about the British troops stationed permanently on the Continent.

24. Snyder, "Dissertation," 32.

25. Osgood, 72.

26. Ibid., 73.

27. Healey, 33; Schonfield, 90-91.

28. This would be 80,000 ground troops.

29. Sir Anthony Eden, Full Circle: The Memoirs of Anthony Eden (Cambridge: Houghton Mifflin, 1960), p. 186.

30. Cmd. 9075, "Statement on Defense," February 1954, p. 3.

31. Snyder, "Dissertation," 34.

32. 484 H. C. Deb. 420-21.

33. Goldberg, "Atomic Origins," 426.

34. Martin, 25. This is one of the most interesting events of post-war British military history. Surprisingly it has been mentioned in a few places but was more or less neglected by the popular British press at the time. For references to it see: Osgood, 89; Charles J. V. Murphy, "A New Strategy for NATO," Fortune, January 1953, pp. 80-85, 166-170; "Defense and Strategy," Fortune, December 1953, pp. 73-84; New York Herald Tribune, November 21, 1952, p. 21. The overall review made by the CSC and the policy of deterrence was heavily pressed by Sir John Slessor, Chief of the Air Staff, as the only suitable strategy for NATO and the West. Reportedly he took his case to Washington and was rejected by the Truman Chiefs of Staff, and the policy was later resuscitated under Eisenhower as the "New Look." B. H. Liddell Hart, Defense or Deterrence (London, 1960), pp. 18-20 and Alastair Buchan, "Their Bomb and Ours," Encounter, October 1958.

35. 512 H. C. Deb. 579.

36. Martin 25. This sentiment was echoed in numerous interviews.

37. Goldberg, "Military Origins," 616.

38. Cmd. 8768, "Statement on Defense," February 1953, p. 13.

39. Cmd. 9075, 3.

40. Ibid., 2.

41. Ibid.

42. Cmd. 9391, "Statement on Defense 1955," February 1955, pp. 1, 2 & 5.

43. One of the considerations which made these rumors disturbing was the well known fact that the Soviets had captured German submarine plans and were conscripting German scientists and technicians from the Russian occupation zone.

44. 478 H. C. Deb. 469.

45. Lieutenant Commander P. K. Kemp, R.N., "Foreign Navies," Brassey's Annual: The Armed Forces Yearbook 1951 (New York: The Macmillan Company, 1951), pp. 156-57.

46. The Russians have no carriers or seaborne aircraft. All military aircraft are assigned to the Soviet Air Force, however, there is a naval air arm which is a distinct organization and is assigned to the Navy for operational control. For an excellent but brief discussion of the organization of the Russian Air Force see William Green and John Fricker, The Air Forces of the World (London: Macdonald, 1950), pp. 244-59.

47. Those escorting convoys provided air cover in the immediate vicinity of the convoy. Hunter-killer groups were a group of warships operating independently and searching large areas of ocean in an attempt to flush enemy submarines on patrol.

48. Interview.

49. Cmd. 7897, "Statement of the First Lord of the Admiralty Explanatory of the Navy Estimates, 1950-51," February 1950, p. 6.

50. The Times, May 11, 1950.

51. Cmd. 7897, pp. 5-6.

52. Daily Telegraph, June 15, 1950.

53. 483 H. C. Deb. 583.

54. Cmd. 8160, "Statement of the First Lord of the Admiralty Explanatory of the Navy Estimates 1951-52," January 1951, p. 4.

55. Cmd. 8476, "Statement of the First Lord of the Admiralty Explanatory of the Navy Estimates 1952-53," February 1952, p. 5.

56. 497 H. C. Deb. 440.

57. See Appendix II.

58. This program is not discussed in detail because it has no significant bearing on the future policy of the Royal Navy. Every individual interviewed who had any connection with the Navy condemmed this program as a great mistake. Before it was completed over three hundred minesweepers had been built; the bulk of which went directly into the reserve fleet. Tens of millions of pounds were consumed. Each respondent said it was hard to explain in retrospect why a Navy that was so hard pressed for funds would devote so much effort and money to small coastal vessels. However, they insisted that in the context of the Korean crisis it seemed logical. There was a great deal of concern over atom bombs making the supply of Britain extremely difficult and that if the ports were blocked the nation would starve. This was compounded by memories of the German mining effort and the Russian reputation for mining. This particular program was heavily pushed by politicians, including Winston Churchill. Interestingly enough the one sector of the shipbuilding industry which was undersubscribed at the outbreak of Korea was that devoted to building fishing craft. These yards proved ideal for constructing wooden hulled minesweepers.

59. Green and Fricker, 143.

60. Daily Herald, November 3, 1952. This was the only naval aircraft in the super priority category until the mid-1950's. See The Times, January 7, 1953.

61. Cmd. 9388, "The Supply of Military Aircraft," February 1955, p. 4.

62. Interview.

63. Although the Admiralty is often criticized today for its failure to build new carriers in the early 1950's, there seemingly was little controversy at the time over the decision. The military and economic considerations left the Admiralty little choice.

64. Due to the nature of this section it rests very heavily on interview material.

65. Interview.

66. Cmd. 9388, p. 6.

67. Interestingly enough one respondent mentioned that he attempted to follow U. S. atomic research as closely as possible, because he was not confident of the Admiralty's liasion with Britain's own atomic energy program or that naval interests would be given enough consideration in this "independent" organization.

68. This aircraft later became to be known as the Buccaneer and is the Fleet Air Arm's number one strike aircraft today.

69. The Times, March 13, 1951.

70. Paul E. Garbutt, Naval Challenge 1945-1961 (London: Macdonald, 1961), p. 22.

71. H. M. S. Triumph, Theseus, Glory and Ocean.

72. Garbutt, 30.

73. Ibid. H. M. S. Ocean won the Boyd Trophy in 1952 for this performance. This is a trophy awarded annually in the Royal Navy to the individual or unit making the most worthwhile contribution to naval aviation in that year.

74. Ibid.

75. Interview. It should be pointed out that this was planes not pilots. Remarkably the Fleet Air Arm only lost 22 pilots in three years of fighting in Korea. Garbutt, 30. This was primarily attributed to the introduction of helicopters for search and rescue.

76. Interview. As far as the writer could determine the Scimitar was placed in this category around 1954.

77. For detailed comment on this subject see Davis, "Dissertation."

78. There has been very little written specifically on NATO naval doctrine. For a short discussion of the plans for deploying the Strike Fleet see Mulley, chap. ix. See also 601 H. C. Deb. 913-14.

79. Interview.

80. They turned out to be exactly correct. There is little question that British politicians were mesmerized by atomic weapons for a period, and some commentators would contend that they still are. This identical fear, of course, was what inspired the U. S. Navy's strenuous attempts to get into the strategic bombing game.

81. Cmd. 9391,"Statement on Defense 1955," February 1955, p. 8.

82. Cmd. 9396 "Statement of the First Lord of the Admiralty Explanatory of the Navy Estimates 1955-56," February 1955, p.2.

83. A number of senior officers mentioned the strength of this opposition in interviews. One in particular described in some detail his campaign against this strategy.

84. Letters to the editor in The Times from March 19, 1954 to April 2, 1954.

85. Martin, 24.

86. Perhaps this might appear to be a controversial conclusion, but there was practically unanimous agreement on this point whenever it came up in interviews.

87. For an account of the inter-service politics of the pre-war era see Robin Higham, Armed Forces in Peacetime: Britain 1918-1939 (London: G. T. Foulis & Co. Ltd., 1962). For an excellent bibliography on this period see Ibid., Appendix I.

88. Information on shipbuilding programs was taken primarily from the following: Cmd. 9079 "Statement of the First Lord of the Admiralty Explanatory of Navy Estimates, 1954-55," February 1954; Cmd. 9396; Cmd. 9697 "Statement of the First Lord of the Admiralty Explanatory of the Navy Estimates, 1956-57," February 1956; and Garbutt, Naval Challenge.

89. British research efforts to improve carriers for high performance aircraft were remarkably successful. The three most important recent developments in carrier devices are all of British origin. (1) The slanted deck which permits a plane in the process of landing to take off again if it misses an arresting wire. (2) The steam catapult which allows heavier and larger planes to be projected from ships. (3) The mirror landing system which allows the pilot to make landings without the aid of a "landing signal officer." All three are a tribute to British ingenuity.

90. For more complete information on non-combatant type ships see this reference. Cmd. 9697, pp. 4-7.

91. Raymond Fletcher, £60 a Second on Defense (London: MacGibbon & Kee, 1963), p. 96.

92. See Appendix II.

93. See p.67 for a comparison with forces in 1949.

94. Military atomic research was transferred to the Service budgets in 1954. Cmd. 9075 "Statement on Defense, 1954-55," February 1954, p. 7.

95. For a discussion of this project see David Divine, The Blunted Sword (London: Hutchinson, 1964), pp. 214ff.

96. Post-war aircraft production has been continually beset with problems. So much so that Dennis Healey referred to it as a scandal. See NATO, 215. In 1955 the Government conducted an official inquiry into aircraft production and the report discusses development problems at some length. See Cmd. 9388.

97. Cmd. 9396, p. 3; Cmd. 9697, p. 2.

98. Jane's Fighting Ships 1956-1957 (New York: McGraw-Hill Book Company, Inc., 1956), pp. 410-414. Also Vice-Admiral B. B. Schofield, "Foreign Navies," Brassey's Annual 1956 (New York: Macmillan, 1956), pp. 195-6.

99. Admiral Sydney R. Fremantle, R.N. (Ret.), "The Submarine Danger," The Contemporary Review, July 7-12, 1952, p. 9.

100. Schofield, 145-6.

101. There is very little information available that deals directly with NATO's shipping problems of that period. However, Jane's Fighting Ships 1958-59 (New York: The McGraw-Hill Book Company, Inc., 1960) gives the following figures for destroyers and escort types for the NATO nations: United States, 275, pp. 310-321; Canada, 48, pp. 74-76; France, 66, pp. 173-176; Netherlands, 24, pp. 242-243; Portugal, 12, p. 267; Norway, 16, p. 251. This includes mothballed ships and units in reserve, so these figures must be used circumspectly. It would probably be accurate to say that less than half of these were in commission and fully ready.

102. It is, of course, impossible to predict what Britain's exact tonnage requirements would be in wartime. However, there is no question they would be huge. At the blackest point of World War II the Government estimated that a minimum of 31,000,000 tons a year would be required. This averages out to more than 85,000 tons a day. See Winston S. Churchill, The Grand Alliance (Boston: Houghton Mifflin Company, 1950), pp. 128-129. This would agree roughly with the tonnage that actually came in during the war as given in Monthly Digest of Statistics, No. 2, February 1946, pp. 71-75. The peacetime traffic in 1956 greatly exceeded this figure, and it is logical to assume that in another war the requirements would be considerably greater. The average peacetime import tonnage in 1956 was 195,400 tons per day. This figure was derived from Table 133 in Monthly Digest of Statistics, No. 132, December 1956, p. 99. To illustrate Britain's problem one writer has estimated that over 3,000 British merchant ships are underway on any given day. Admiral Sir Gerald Dickens, "The Weakness of the Fleet," Brassey's Annual: The Armed Forces Yearbook 1960 (New York: The Macmillan Company, 1960), p. 100.

103. At this date there were always two U. S. attack carriers in the Mediterranean, sometimes three, and at regular intervals an additional ASW carrier. In addition there were supporting cruisers, destroyers and a large fleet train. Also there were some American amphibious ships constantly available with a battalion of U. S. Marines ready for landing on extremely short notice. See William H. Hessler, "Sixth Fleet Beefed Up for a Bigger Job," United States Naval Institute Proceedings, August 1958, pp. 23-30.

104. Gretton, chap. iii, 9.

105. For elaboration of the RAF's views see Murphy, Fortune.

106. Interview.

107. The United States went through practically an identical evolution of attitudes.

108. Cmd. 9075, "Statement on Defense, 1954-55," February 1954, p. 3.

109. Two of the senior RAF officers interviewed by the writer actually referred to the "broken-backed" concept as a concession made by the Air Force to get approval of priority for deterrence. However, in view of the facts this seems a little extreme. Even the RAF continued to put reduced but still sizeable sums into aircraft for delivering conventional weapons.

110. The writer received several varying versions from his interviews.

111. A Japanese fishing boat 175 miles from the scene was contaminated by fall out from the explosion, and two crew members later died from radiation effects. This tragedy was followed closely by the world press and drew attention to the tremendous power of this new weapon. For details of this incident see Christian Science Monitor, February 10, 1955.

112. In February 1954 Sterling Cole, chairman of the Joint Congressional Committee on Atomic Energy, released details about the thermo-nuclear explosion at Eniwetok. See New York Times, February 18, 1954. For later release see Ibid., February 16 and 22, 1955.

113. Healey, NATO, 217.

114. Cmd. 9391, p. 6.

115. Ibid., 4 & 5.

116. Ibid., 6.

117. This was a major theme of practically all the interviews with senior naval officers and Admiralty civil servants. There was no disagreement whatsoever on this conclusion.

118. Interview.

119. For some of the more enthusiastic obituaries on the Royal Navy see Daily Herald, December 14, 1954; Christian Science Monitor, January 20, 1955; and Manchester Guardian, October 12, 1955.

120. The Times, December 15, 1954. For entire text see "A Look Through the Window at World War III," The Journal of the Royal United Service Institution, Vol. XCIX, No. 596 (November 1954), pp. 507-523. It should be noted that after several years of predicting the demise of the Navy, Field Marshal Montgomery later reversed his stand and decided that Britain should build its strategy around the Navy.

121. Cmd. 9396, p. 2.

122. Ibid.

123. Daily Express, July 3, 1956.

124. Cmd. 9697, p. 4.

125. Gretton, chap. iii, p. 6.

126. See for example Daily Herald, January 7, 1955; Daily Telegraph, March 14, 1955; and Daily Express, August 12, 1955.

127. Cmd. 9396, p. 1.

128. Cmd. 9697, p. 2.

129. Interview.

130. A. J. Barker, Suez: The Seven Day War (London: Faber and Faber Ltd., 1964), p. 23.

131. Ibid., 26.

132. Ibid., 28.

133. Until Colonel Barker's book there was little accurate and detailed military information available on the Suez operation. The lack of landing craft, however, was widely publicized. See Paul Johnson, The Suez War (London: MacGibbon & Kee, 1957), p. 45; & 566 H. C. Deb. 211. For additional source material see Captain Cyril Falls, "Operation Musketeer," Brassey's Annual: The Armed Forces Yearbook 1957 (New York: Macmillan Company, 1957), pp. 74-83; Merry and Serge Bromberger, Secrets of Suez (London: Pan Books Ltd., 1957); and Lieutenant-Commander James Stewart, R.N., "The Suez Operation," U. S. Naval Institute Proceedings, April 1964, pp. 37-47.

134. Green and Fricker, 146.

135. Barker, 51; Johnson, 45.

136. Barker, 97-100; Bromberger, 105-111. In fact Nasser at one point ordered his pilots out of action to save them from complete annihilation.

137. This appears to be the conclusion of post-operations analysis and was acknowledged by several respondents. However, it has never been published. The writer was told that the RAF had fought any suggestion to disseminate this conclusion.

138. Cmd. 151, "Statement of the First Lord of the Admiralty Explanatory of the Navy Estimates, 1957-58," February 1957, p. 13.

139. Barker, Suez, 151.

140. Ibid., 197.

CHAPTER V

CONFUSION TO COHERENCE
1957-1963

The year 1957 was critical in the post-war history of the British defense establishment. Since the truce in Korea (1953) a number of pressures had been slowly building which called for a general reappraisal of military policy. The Suez crisis, Eden's resignation, and the formation of a new Government served as catalysts. In 1957 all three Services were subjected to searching scrutiny, and a vigorous effort was initiated to halt the steadily climbing defense appropriations. These events set the stage for intense inter-Service and military-political friction. In the Navy's case Governmental pressure forced the Board of Admiralty to do soul searching previously neglected. The result was a coherent, convincing and defensible rationale around which the modern Fleet could be built and organized. Though it still remained to implement this new policy, the Navy had a clearer idea of its proper role than at any time since World War II.

The Sandys' White Paper

Mr. Duncan Sandys, the Minister of Defense in the first Macmillan Government, is often given full credit for the radical modifications made in 1957. However, the seeds of change were planted in the previous administration. Anthony Eden came to office as Prime Minister firmly convinced that the nation's military posture was determined by the "annual exchange between the Treasury and the fighting services"[1] and that this procedure did not make for coherent defense policy. If the Government was

to control the "vested interests" of the Services, the Minister of Defense must take a more active part in policy-making. In October 1955 he expanded the Minister's role directing him to insure that the "composition and balance" of the Services conformed to the Government's policy.[2] This move was accompanied by the creation of an independent Chairman of the CSC who was to be a senior military officer and to act as the Minister's main contact with the heads of the individual Services.[3] Although the Government cited the demands on the CSC for representation in international bodies as the chief justification for this step, it was implied that this would improve the quality of the advice which the Minister received.

Certain substantive changes accompanied these organizational moves. Shortly after assuming office the Prime Minister directed the Minister of Defense, Selwyn Lloyd, to draw up budget projections for the defense establishment for a five year period. This study indicated that defense expenditures would rise approximately 30% by 1960. The Prime Minister was alarmed by this report, and in 1956 he ordered a small Cabinet sub-committee to undertake an elaborate examination of military policy. As a result of this reassessment, the Government determined to reduce gradually the share of the nation's resources being devoted to defense and immediately announced a cut-back in the total size of the armed forces from 800,000 to 700,000. "Privately the review of 1956 led Eden to plan for reduction to about 450,000 by 1960 or 1961 accompanied by the abolition of conscription. This was to be made possible by more wholehearted commitment to nuclear deterrence."[4] The major incentive here was quite clearly economic. The Government hinted at its behind-the-scenes thinking in the 1956 White Paper by noting that "the maintenance of British forces overseas involves heavy charges on the balance of payments" and that "the burden of defense cannot be allowed to rise to a level which would endanger our economic future."[5]

The Egyptian crisis intervened before Eden could set in train any further changes. The disillusionment and frustration

following Suez evoked public clamor for defense retrenchment. There had always been elements both inside and outside the Government who believed that less should be spent on defense, and they took advantage of this propitious moment to press their case. Suez had disillusioned many as to the state of the armed forces and raised doubts as to whether the nation had received full value for its defense investment. Judging from the newspaper reactions there was some consensus on the need for a cutback. The Financial Times contended that "the military budget must come down, or Britain would be ruined."[6] On the right it was joined by the Daily Telegraph and on the Left by the Daily Herald which demanded that "Britain needs a great transfer of energy to the export drive, and a big saving . . . on armaments."[7] It is impossible to say that this press campaign was the cause of the Government's actions, because ministers had commenced to think along these lines sometime before. On the other hand this public sentiment certainly facilitated Mr. Macmillan's task when he assumed office in late 1956 and decided to continue with Eden's plans for revamping the defense program. At the same time the public agitation made it appear that the new Prime Minister, who was trying to revive the Conservative Party's prestige after the Suez debacle, was departing radically from the policy of previous Governments and was genuinely innovating.

Mr. Macmillan had served as Minister of Defense for approximately six months in 1954 and had developed some definite ideas of his own on military policy.[8] He believed that defense policy in the past had often been more a compromise among vested interests than a conscious effort to tailor programs to the country's needs. He was convinced that the Minister of Defense needed more authority and the right to rule on details as well as to set overall policy. With this in mind he chose Mr. Duncan Sandys as Minister of Defense. Sandys, the son-in-law of Winston Churchill, was regarded as an energetic, forceful and determined "troubleshooter." There was general consensus that he would not be intimidated by the "brass." In addition the Prime Minister

announced to the House of Commons on January 24, 1957 that he had taken steps to define the Minister of Defense's power more broadly:

> I have entrusted the Minister of Defense with the task of formulating, in the light of present strategic needs, a defense policy which will receive a substantial reduction in expenditure and in manpower and to prepare a plan for reshaping and reorganizing the Armed Forces in accordance therewith . . . Subject, as necessary, to consultation with the Cabinet and the Defense Committee and the Treasury on matters of finance, the Minister of Defense will have authority to give decisions on all matters of policy affecting the size, shape, organizations and disposition of the Armed Forces and their equipment and supply, including defense research and development, their pay and conditions of service.[9]

This was a strong mandate despite the fact no formal legislation had been enacted changing the machinery. The Services still had their own ministers and control of their own administration. Nevertheless, it was manifest that the Prime Minister had in mind a genuine alteration in procedure and policy. His Minister of Defense was expected to effect that change and, in turn, he would have Mr. Macmillan's personal support. In the actual event the Prime Minister was true to his word and backed Mr. Sandys' decisions to the hilt. No matter what the legal situation there was clearly a new organizational structure being forged and one that was to cause much anguish among all three Services before they were reconciled to this new order.

Sandys took office concurrently with Macmillan and threw himself into the task. In order to give him the needed time the annual Defense White Paper, normally presented in February, was delayed until April 4.[10] It was no doubt the most anticipated of post-war White Papers. On close analysis it was not quite the "new look" that many had predicted, but nevertheless it was "truly a bold one, for the fresh cuts carried some force levels below the very minimum which the professional advisers would recommend, even with nuclear weapons, and thus finally accepted consequences which previous trends had only foreshadowed."[11] Essentially the Government argued that modern weapon developments

had changed the fundamental nature of warfare and that this called for a new approach to defense planning. This remarkable document laid down these basic premises:[12]

(1) A shattering nuclear exchange would most likely initiate a major war.

(2) There is no practical defense against such an attack and Britain probably would not survive it.

(3) "The overriding consideration . . . must be to prevent war rather than prepare for it . . . The only safeguard against major aggression is the power to threaten retaliation with nuclear weapons."

(4) Aside from a general war role, Britain's forces still must be prepared "to defend British colonies and protect territories against local attack, and undertake limited operations in overseas emergencies."

(5) Solid defense is built on a sound economic base and military expenditures must not be allowed to erode the country's financial strength.

From these premises the Government proposed to reduce the total strength of the military by 50% over the next five years and abolish conscription in 1962. All three Services were to suffer extensive reductions. The Royal Air Force's Fighter Command was to be materially reduced. Ballistic missile research was to be pressed, and the manned bomber was to be replaced eventually with missiles. The Army would be gradually reduced to 165,000 men, and British garrisons overseas would be cut back markedly. To compensate for these withdrawals a "central reserve" of troops would be established in Great Britain, ready on short notice for airlift to trouble spots. The Navy was likewise cut down on funds and personnel. It was to be reorganized to better support limited operations. Its role in total war was described as "uncertain." Overall, the estimates were £180,000,000 less than in 1956. While the Government would not estimate the amount, it predicted further savings in the future. The ultimate goal was to reduce materially the percentage of the Gross

National Product devoted to defense. This was the essence of the 1957 White Paper which was intended to set the guidelines for the coming five years.

The economic justification for this radical change in policy, however, requires a closer scrutiny. There is little question that military demands were competing with the need for exports; they always do. On the other hand, the 1957 Defense Statement may have exaggerated the burden of defense on the economy. It pointed out that in the preceding five years defense had on the average absorbed 10% of Britain's GNP and implied that this figure was more than the nation could bear. What it did not indicate was that the Gross National Product during this period had increased some four times as fast as British military expenditures and that the share of the GNP devoted to the military had been going steadily downward from 10.4% in 1952 to 8.5% in 1956.[13] Actually when the effects of inflation were taken into account the real purchasing power allocated to military purposes had possibly declined.[14] This would indicate that the Services were not quite the drain on the economy that the Government contended.

Moreover, cutting the defense budget was not the only way the Government could have strengthened its balance of payments position or the general health of the economy.[15] By 1957 most controls had disappeared. The country was enjoying a relatively new level of prosperity, and personal consumption had risen to some 52% of the nation's total goods and services. A. C. L. Day points out that it would have been perfectly possible from a purely economic standpoint to "raise taxes and/or to reduce other government expenditures to an extent sufficient to finance the defense effort without adding to the inflation or imposing additional pressure on the balance of payments."[16] The Economist agreed when it remarked "that there was no economic reason why, if people are willing, Britain should not adjust the level of consumption to a defense budget of £1,700,000,000 or more."[17] The truth was that the choice of priorities was not

merely that pointed out in the White Paper - between a strong economy and a large military program. In essence the real political priorities were public consumption and social services. The Government did not feel it politically prudent to cut down in either of these areas. Consequently, in order to stimulate the economy, it turned its attention to reducing defense expenditures. It is interesting to note that in 1958 and 1959 the extra resources made available by defense slashes were not channeled into investment which would have strengthened the economy but into consumption.[18]

The plain truth is that the politicians, and inferentially their constituents, after witnessing Suez did not consider the price they were paying for defense to be worth the loss of the amenities that they were having to forego. As a result the amount of funds allotted to the Services was slashed accordingly. In other words, the 1957 military program was dictated not so much by economic necessity as by the priorities assigned to the non-military sectors of the economy - in short, by political expediency.

The Admiralty and the 1957 White Paper

The Navy was to be drastically effected by Mr. Sandys' innovations. His appointment was viewed with apprehension in the higher circles of the Navy, and these fears were founded on tangible evidence. For example it was well known that he believed strongly in the future of ballistic missiles and nuclear warheads. It was assumed that, under his direction, these two items would assume a more important place in defense. Another subject on which he held firm convictions was the aircraft carrier. He had already gone on record as denying their usefulness in a nuclear war and as questioning the wisdom of spending such large amounts on a weapon system for any other purpose.

The Admiralty's fears soon materialized. Just before taking office Mr. Sandys had hinted privately that the Navy would

have to bear a large, if not the major, share of the impending cuts and that the carrier would be his prime target.[19] Practically his first official act in regard to the Navy was to intimate that he considered aircraft carriers excessively expensive, and that he intended to phase them out of existence unless the Board of Admiralty could convince him of their value. From the Navy's standpoint this was a grave threat. For the first time a Minister of Defense, one with newly increased authority and an aggressive temperament, was attacking the Fleet's cherished capital ships. He seemed to accept all the arguments the Air Force had been directing at the Fleet Air Arm for many years. Though the Admiralty had annually had to justify its plans and programs, never before had it been backed to the wall on this issue. This was a fundamental challenge, and to the Admiralty it appeared that the future of the Fleet rested on the outcome of this struggle.

The impact of thermo-nuclear weapons on the Navy's planning has already been noted. The Sea Lords were conditioned to believe in sea power and in naval airpower, but there were sincere doubts within the Navy itself as to exactly what role the Fleet should play in a Britain beset with economic problems and in a world plagued with fusion weapons. These doubts were no longer lingering in the background and merely cropping up in discussions behind closed doors. They were now being expressed openly by the highest political authority, and the Navy's leaders could no longer avoid meeting them face-to-face. The Board of Admiralty would have to scrutinize its doctrines and decide what course to adopt in the face of this threat. More specifically the problem was: How to save the carrier? For the Navy's senior officers were convinced that if they lost their capital ships the Fleet would eventually evolve into hardly more than a British Coast Guard - or at best a "small navy" on the Scandinavian pattern. This was an unthinkable prospect for a Service with the glorious traditions which are the heritage of the Royal Navy.

In reviewing the alternatives open to it the Board of Admiralty came to several fundamental conclusions. It was manifest that the total amount of funds devoted to the military would be drastically reduced, or at least contained, over the next few years and that every Service would have to accept unwelcome reductions. This was clearly implicit in the Prime Minister's program, and there was no reasonable prospect of thwarting this objective. Although the Admiralty was unhappy with the prospect of reduced funds this in itself presented no radical change from the past.

However, in 1957 the challenge went much deeper. For the first time the Minister of Defense had authority to determine not only the allocation of resources, but also the missions and equipment of each Service. The nuclear deterrent was clearly to be the foundation of Sandys' defense policy, and the device which presumably would make economies possible. The Admiralty had never opposed deterrence, and in 1957 the overwhelming majority of senior naval officers were still convinced that Britain should have its own deterrent. They believed that strategic nuclear weapons enhanced Britain's status militarily and politically. They also appreciated that the Government was irrevocably committed to the nuclear deterrent, and that the Admiralty could scarcely alter this policy; on the other hand, they opposed over-emphasizing nuclear retaliation and were convinced that the nation should retain strong conventional forces - particularly the Fleet. Wisely, the Navy's leaders took the position that instead of criticizing the role of other Services they must stress the Navy's positive values. This would be difficult to do in the face of Mr. Sandys' declared opposition. However, the Board of Admiralty is rooted in a long history of bureaucratic in-fighting, and its members automatically profit from this tradition. The outside observer cannot resist forming the impression that it operates better under pressure. At any rate the Admiralty rose to this new challenge, determined to retain a general purpose Fleet.

Mr. Sandys' main target was the carrier, and the Admiralty concentrated its efforts on justifying it. This vessel was the heart of the flexible and mobile task forces which it had been advocating and represented the Navy's offensive power. The most obvious justification, and one of the most cogent, for retaining carriers was the fact that they were already in existence. This is always a strong argument in a bureaucratic quarrel over military equipment. Who is to say with conviction that conflict will not break out tomorrow? In that case you must fight with what you have. The Admiralty stressed that its carrier force was at sea and had just been used extensively during the Suez crisis. Strictly on economic grounds it would be wasteful to phase out ships which represented such a large capital investment until they had reached the end of their useful lives. Fortunately due to the Korean rearmament program that was several years away. This argument was bound to carry weight with a minister whose first interest was to get the most value for the money spent. Nevertheless, the argument would not be sufficient in itself, and their Lordships set themselves the task of defining the military role of aircraft carriers in a manner more appealing to Mr. Sandys.

The new Minister had made it clear that he did not consider seaborne aircraft suitable delivery vehicles for strategic weapons nor their offensive power a significant complement to the Air Force's thermo-nuclear striking power. He believed strongly that the joint efforts of America's Strategic Air Command and the British Bomber Command would be of such a dimension as to make any other contribution inconsequential. The Admiralty had never contemplated a genuine strategic role for its strike aircraft. However, it had consistently stressed that it was developing an atomic capability and had committed its carriers to SACLANT's Strike Fleet. In line with NATO doctrine, the naval aviators contended that the Fleet Air Arm would offer a valuable support to the deterrent effort and play an important part in the early phases of a war against Russia.

Unofficially Sandys' views on this subject received a more than sympathetic hearing among the Navy's leaders. As already noted, the Admiralty had increasing doubts as to the viability of SACLANT's doctrine, and many senior officers did not really believe it practical in a thermo-nuclear war. If the Royal Navy had possessed more carriers or a capability for making a genuine contribution to the initial exchange then their attitude might have been closer to the U. S. Navy's. However, they had definite reservations about risking their few carriers close into an enemy shore in the early days of a thermo-nuclear war. In essence many of the Navy's leaders agreed with Mr. Sandys regarding the Fleet's contribution to NATO. On the other hand there was still reluctance to admit that the Navy's offensive aircraft would have no significant general war role. There seemed also to be political risk in such a course. It appeared that the Government was going to stress the deterrent even more than in the past, and those forces which could not contribute in the early days of a general war would possibly suffer over the long run from a lack of funds. In other words more than purely military considerations were involved. The Admiralty was determined to retain its carriers and any course which seemingly reduced their role was viewed with suspicion.

Of course a vital factor in these calculations was the expressed attitude of Mr. Sandys himself. It was clear that if the Admiralty chose to fight for its atomic strike role in a general war that it would meet heavy opposition. In the process there would be every likelihood of alienating the Minister of Defense and prejudicing him against other facets of the Navy's case. After intense deliberation and discussion the Board of Admiralty elected to deemphasize the carrier's attack capabilities in a nuclear war. In a sense the Admiralty had been forced to recognize formally the change in thinking which had been gradually developing in its own ranks. This was a momentous decision and marked the Admiralty's initial turn away from NATO and a general war role.[20]

Having discarded the carrier's strike role in general war the Sea Lords determined to emphasize two other functions of the naval task force. The Admiralty insisted that the Fleet had a critical place in the anti-submarine forces of SACLANT. This was a shrewd plea tailored specifically to the political realities which confronted Sandys, as well as to his personal views on the nature of general war.

A large portion of the Navy's efforts over the preceding years had been devoted to anti-submarine problems. New ASW ships and aircraft were joining the Fleet everyday as a result of the building program initiated in 1951. Here was an area where the Fleet could make a unique contribution, and one where there was no question about the competence of its forces. However, there were seeds of inconsistency in this argument. Just as there was some question about the ability of aircraft carriers to contribute in the midst of nuclear strikes, there were some misgivings as to the possibility of subsequent operations at sea after a thermo-nuclear exchange. It seemed possible that there would be no need for convoys or ASW operations in a genuine nuclear war. However, like every aspect of nuclear operations no one could say with certainty.

The Admiralty found it convenient to ignore this inconsistency. Although the Minister of Defense was firmly opposed to using naval aircraft in a strike role in nuclear war, it was soon clear that he was much more sympathetic to the Navy's ASW role. The Admiralty and Mr. Sandys agreed that it was impossible at that stage to predict with any accuracy what would happen at sea. It was conceivable that a period of conventional war would precede the nuclear strikes, or that the nuclear exchange might not prove immediately decisive. In either case the communication links with America would be vital, and there would be a need for ASW forces - at least for a short period. In essence Mr. Sandys was not willing to discard unequivocally the possibility of a war at sea or to ignore Britain's oceanic communications altogether. The Admiralty took full advantage of this attitude.

From the practical political standpoint the Admiralty knew there were some pressures pushing the new Minister of Defense to continue to emphasize ASW forces. In view of Britain's past experiences no politician could afford to ignore altogether the Soviet submarine menace. Sandys was no exception. In addition there was the problem of NATO. One of SACLANT's prime missions had been to protect the Atlantic sea lanes, and Britain had committed its ASW forces to NATO for this purpose. Ever since SACLANT was organized Great Britain had pressed hard to keep NATO's attention riveted on its ASW responsibilities. The British had expected to be the major beneficiary of this effort and had encouraged the Allies to contribute. Just as the NATO Strike Fleet had been U. S. inspired, NATO's ASW forces had been Britain's fond project. The Government could not suddenly withdraw from this commitment which it had supported so vigorously without dealing NATO a serious blow. Similarly it was obvious that Sandys' plan to withdraw Britain's carriers from the Strike Fleet would cause some resentment in the U. S. Navy. This would call for some sort of gesture of continuing loyalty to NATO. These pressures would be accentuated by the personnel cuts which the Government planned to make in the troops committed to SHAPE which were bound to irritate the other NATO countries. Consequently, the Navy heavily emphasized its ASW capabilities and responsibilities to SACLANT, all the while stressing the value of carrier aircraft in carrying out these functions.

The second mission, and even more important than the ASW argument, which the Admiralty chose to accent, was the carrier's role in fighting limited wars and quelling brush fires where strategic nuclear weapons would be largely ineffective. Both Korea and Suez had illustrated the Fleet's potential for conducting such operations. The increasing tendency of the Navy's spokesmen to stress mobility and flexibility have already been noted, however, this was to be the first time that the Admiralty elevated its conventional limited war functions to a position over and above its general war responsibilities.

Perhaps the Navy would have moved in this direction anyway, but there is little question that Sandys' relentless pressure on the carriers forced the Board of Admiralty to move officially away from a general war rationale more quickly than it otherwise would have. Again the Navy's case was carefully shaped to take advantage of the Minister's overall plans, and it was based on rather shrewd estimates of what the future held in store.

In 1957 the Navy's views on the importance of conventional limited wars in a nuclear era had by no means solidified. Nevertheless, Suez had turned attention in this direction and spotlighted a number of features of the British overseas position which the Admiralty turned to good advantage. As a public example Suez was a poor one, since the entire country wished to repress it. As a military and foreign policy guidepost it was more useful. It rather strikingly indicated that even though a government possesses nuclear weapons, limited conventional actions were still possible, even probable in Britain's case, and that to fight such actions properly the Government needed equipment specially designed for the purpose. Moreover, immediate readiness is crucial in dealing with such contingencies. Neville Brown in his book Strategic Mobility, cited Suez's main lesson as the need for mobile forces "constantly capable of being deployed with speed and flexibility."[21] The Admiralty argued that naval task forces offered the most promising solution to this problem and stressed the carrier's primary role in these task forces.

Moreover, the Sea Lords pointed with telling effect to the broader political lessons of Suez and their long term implications. "As nothing else had done since the days of World War II, the outcome of the Suez operation focused the attention of the nation upon defense policy and upon bases in particular."[22] It was painfully manifest that access to Suez was no longer assured. During the crisis British bases in Libya, Jordan, and Iraq had all proved unuseable for political reasons. Cyprus, Aden and Malta were helpful, but their handicaps were manifold.

In short, despite the nation's extensive chain of bases the Crown had to rely on seaborne forces. The prospects for the future were bleaker. Already the repercussions from Suez had accelerated British withdrawal from Ceylon.[23] There was no way to estimate how long British forces would be allowed to operate out of Kenya, Aden, or even Singapore. These same problems affected overflying rights. The states in Africa and the Middle East which would permit British warplanes to overfly their soil in a crisis were bound to become progressively fewer.

At the same time it was argued that Britain would have responsibilities East of Suez for many years to come. It was obligated to many of the Commonwealth countries in the area, and it seemed likely that the British government would insist on a self-imposed responsibility to oversee peace and order in former colonies, at least for a period. In addition the United Kingdom had extensive commercial interests from Africa to Singapore. The Admiralty argued that all these conditions enhanced the value of mobile naval task forces, and that to phase out aircraft carriers at that time would be a serious mistake.

It should be emphasized that these arguments meshed neatly with some of Sandys' other plans. He intended to abolish conscription and drastically decrease the Army's size. To do this he planned to reduce the overseas garrisons and to depend on a home-based strategic reserve which could be deployed to trouble spots. The Admiralty never missed an opportunity to point out that its task forces complemented this scheme. They would provide mobile strength which could be moved from place to place to show the flag in areas evacuated by the Army. At the same time they would supplement the strategic reserve's employment in a crisis.

The Minister of Defense was not easily convinced and the early weeks of 1957 were marked by a long series of tortuous discussions and papers.[24] Laurence Martin comments that due to the difficulty of getting the Services to agree to cuts the 1957 policy was "very much the personal achievement of the Minister"[2]

and that he relied primarily on his scientific advisors and personal confidants. However, the Navy through persistence and persuasion was at least partially able to divert Sandys from his original intention. Over vigorous Navy protests he vetoed the Admiralty's request to renew its cruiser force, accelerated the cut-backs in the reserve fleet, insisted on drastic reductions in the Navy's shore-support establishment, and initiated a reduction in the personnel reserve.[26] On the other hand he agreed to retain the five operational carriers in the Fleet - the most important issue from the Navy's standpoint. While Sandys' was by no means becoming a carrier advocate, he conceded that there was a need for naval aircraft in the Far East to bolster Britain's offensive potential and also for ASW aircraft in the Atlantic with NATO. These decisions were reflected in the Defense Statement for 1957 which stated that:

> On account of its mobility, the Royal Navy, together with the Royal Marines, provides another effective means of bringing power rapidly to bear in peacetime, emergencies or limited hostilities. In modern conditions the role of the aircraft carrier, which is in effect a mobile air station, becomes increasingly significant.[27]

In another relevant paragraph it was stated that:

> There is the possibility that the nuclear battle might not prove immediately decisive; and in that event it would be of great importance to defend Atlantic communications against submarine attack. It is therefore necessary for NATO to maintain substantial maritime forces and maritime air units. Britain must make her contribution, though, for the reasons explained earlier, it will have to be on a somewhat reduced scale.[28]

These passages accurately reflected the Admiralty's own interpretation of the Navy's role. Considering the original threat, this was considered a tactical victory.

Of course the victory was only relative. All three Services were extremely dissatisfied. The Army was to halve its strength in the coming five years and to withdraw from many of its overseas posts. The Royal Air Force was to lose the bulk of its fighters, and its manned bombers were to be replaced eventually by ballistic missiles. These drastic steps threatened

to change not only the size of the Army and Air Force but also their character. These decisions were, to say the least, bitterly received. The Navy likewise faced serious reductions. Its budget was cut £35 million that year, and its total personnel was to be reduced to 88,000 men by 1961, an unprecedented low for the modern Navy. Nevertheless, the Admiralty "was less dissatisfied than might have been expected,"[29] for it had managed to retain its carriers and had received approval for its mobile task force concept. The Admiralty had successfully survived a grave crisis and laid the foundation upon which to build a new role for the British Fleet.

Deterrence vs Limited War 1957-1959

The above interpretation of the 1957 White Paper was not shared by lay commentators. To them the great stress on deterrence combined with the determination to slash expenses signaled the decline of conventional forces. In the Navy's case this impression was strengthened by a clause in the 1957 Command Paper which pronounced "the role of naval forces in total war as somewhat uncertain."[30] A great deal of newsprint was devoted to lamenting the Navy's forthcoming demise and in some instances to protesting against such a policy. However, only time would reveal whether this interpretation was accurate.

The White Paper received a generally warm welcome, because of the economies it heralded and the seemingly bold attempt it made to fashion a policy appropriate to the times. However, as the critics had time to digest its contents, increasing doubts were expressed as to the wisdom of Britain maintaining and emphasizing a nuclear deterrent at the expense of conventional weapons. Essentially these observers contended that in an era of nuclear parity between the Soviets and Americans, the United Kingdom could better utilize its limited funds. They believed it unlikely that Britain would participate in a nuclear war without the United States. Moreover, they contended that the relative

size of the British deterrent seriously detracted from its value and credibility.[31] On the other hand they further argued that under the shelter of the nuclear umbrella the Government with its world-wide responsibilities could make a more meaningful contribution to Western defense by allocating its severely limited resources to conventional weapons. A deterrent would be fine if it could be had "on the cheap," but by 1957 it was apparent that this was not so and that concentration on nuclear weapons would consume a major portion of the defense budget. Without attempting to review this argument in detail - it is still raging today - it is important here to note that the 1957 White Paper soon excited non-governmental resistance which supported the Admiralty's basic reasoning and strengthened its official case.

As a matter of fact the Admiralty was not overlooking any channel for influencing the Minister of Defense. "It enlisted in its cause two senior servants both in key positions in the Ministry of Defense."[32] Foreign Office and Colonial Office backing was solicited. These important departments concurred in the need for strong naval forces East of Suez and threw their weight behind the Admiralty.[33] There is also some evidence that the Navy enlisted the Commonwealth's assistance. During Sandys' tour of the Far East in the summer of 1957 high ranking officials in a number of Commonwealth countries submitted pleas in the Navy's behalf.[34] Later in that same year Mr. Macmillan was urged by several delegates to the Commonwealth prime minister's conference to reconsider the Government's plans for the Navy.[35]

These tactics were paralleled by a subtle effort to widen the public arena of debate.[36] The Observer reported in early 1957 that "for weeks now senior members of the silent Service have been breaking their silence to remind journalists of the Russian submarine menace and the folly of slashing navies."[37] Retired senior officers bombarded the press with letters to the editor. Admirals assigned to NATO took advantage of their unique position to speak their minds on the Navy cuts.[38] Shortly after the 1957 White Paper was published the Admiralty sponsored a one-day orientation

conference at Greenwich for prominent industrialists and non-governmental leaders.[39] The object was to present the case for a strong Fleet. It caused little fanfare, but was well received judging from a letter to The Times by three industrialists who attended.[40] This step was bordering on the limits of propriety and is an indication of the lengths the Admiralty was willing to go in combatting Sandys' attack on the carriers.

There is no way to determine what influence these various maneuvers had, however, it was soon evident that the Government was not going to depend solely on nuclear weapons. The 1958 Defense Statement reiterated the fundamentals of its predecessor. It confirmed the nation's policy of deterrence, but likewise insisted that a deterrent "does not obviate the need for maintaining a substantial shield of land forces, with air and naval support, to defend the frontiers of the free world . . . a high proportion of Britain's military effort will therefore, of necessity, continue to go into forces of this kind."[41] In this same statement, the first mention is to be found of the "balancing fear of mutual annihilation" and the implication that this stalemate would tempt the Communist powers to concentrate on other methods than general war.[42] In addressing itself to the Royal Navy it set out three main tasks for the Fleet:[43]

(1) In peacetime, to help carry out Britain's responsibilities in colonies and protected territories, to defend British shipping, and generally to contribute by their presence to the maintenance of peace and stability.

(2) In limited war, to protect sea communications, to escort troops and supplies to the theatre of operations and to give them support in action.

(3) In global war, to make an effective contribution to the combined naval forces of the Western Alliance.

These statements hardly indicate that the Government contemplated abandoning its Navy. The terse and vague reference to global war unmistakably suggested that the character of the Fleet's role was changing. Air Marshal Sir Robert Saundby, in sarcastically commenting on this facet of a defense policy which

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presumably was going to reduce conventional forces, remarked: "Sea power is so bound up with our history that it has become part of our national character, and it is no doubt too much to expect that the Government would take the bold step of abandoning this particular form of preparation to fight."[44]

He was overlooking the fact that both technical and political developments were accentuating the importance of sea power after several years of neglect. During Mr. Sandys' short tenure as Minister of Defense from 1957 to 1959 the Admiralty's strategical case became visibly stronger. Not only had the nuclear stalemate increased the likelihood of brush fires, but economic and political problems were making Britain's military position more difficult. Shortly after Suez, Ceylon insisted on taking over the military bases on its soil. British forces were withdrawn from Jordan, and those in Libya were drastically reduced. The facilities in Cyprus were cut back. Malaya was rapidly approaching independence, and Britain agreed to assist in its external defense. In East Africa the Kenyan situation was still unsettled, and the future of British bases there uncertain. All of these developments were pressing the Government to look for ways to modify its traditional military posture overseas. The Navy's mobile task forces offered an attractive alternative.

The 1959 Defense Statement indicated little change in the Government's defense thinking. That same year Mr. Sandys departed office with the Royal Navy still intact and playing a vital part in defense strategy. The acid test, of course, is the amount of funds which the Admiralty received under the Sandys' administration. The absolute defense appropriation was cut severely during his first year and then commenced to climb very gradually. The amount of the Gross National Product devoted to defense dropped to around 7% by 1959. The Navy's appropriations climbed from £316 million in 1957 to £370 million in 1959.[45] In absolute terms this was a gradual increase, but it did not keep pace with the rise in prices. As a result the

Admiralty's purchasing power steadily declined. However, this was true of all the Services, and despite the supposedly increased emphasis put on deterrence the Navy's relative share of the defense budget rose from 23% to 25%. The Army's likewise climbed slightly to 29%. The Air Force's share and those in other categories declined accordingly. This hardly suggests that the Macmillan Government intended to scrap the conventional forces. On the contrary, it indicates that the Admiralty, considering the obstacles confronting it, had made a rather shrewd estimate of the overall political and military situation in 1957 and plotted a sound course.

The Transition to a Limited War Force

The Sandys era is always associated with retrenchment and reductions. Undoubtedly the policies which he set in motion allowed the Government to reduce the share of its total resources which went to defense. Concurrently his economies worked some impressive changes in the physical character of the Navy. From 1957 to 1959 the Navy's total manpower shrunk from 116,000 to 101,000.[46] Intense efforts were made to curtail the civilian support establishment. In two years that was reduced by 30,000 to a new post-war low of 152,000 employees.[47] The Royal Navy Reserve and the Royal Naval Volunteer Reserve were combined, and the air divisions of the reserve were disbanded. The total number of personnel attached to reserve organizations shrunk from approximately 40,000 in 1957 to 14,000 in 1959.[48] Contrary to previous practice these personnel were to be continuously trained and available for immediate service.

In addition to personnel reductions, extensive cut-backs were made in naval equipment and installations. Dockyards in Hong Kong and Malta were abolished, and two dockyards in England decommissioned. Five air establishments were closed down and a number of support facilities consolidated or cut back. These measures were accompanied by a general command reorganization

which allowed reductions of shore-based personnel and support establishments.[49] The basic character of the reserve fleet was altered to furnish not only ships for use in a crisis, but a smaller number of vessels at a higher state of readiness to be employed in peacetime "to replace those in the active fleet which are damaged or withdrawn for refit or modernization."[50] During the Sandys' tenure six aircraft carriers, four battleships, seven cruisers, twelve destroyers, sixty-four frigates and numerous smaller craft were scrapped or sold out of the reserve fleet.[51] The 1957 White Paper resulted in a smaller Navy, just as it foreshadowed a smaller Army and Air Force. However, most of the measures mentioned above concerned support activities, and this is where the Navy could best afford to cut. Many of these economies released funds which were plowed back into research and operational forces. In fact new emphasis was put on the active fleet and the missions which it was to perform. In evaluating Mr. Sandys' influence on naval policy, it is this area that must be examined most closely.

The Admiralty's post-Suez struggle was a critical episode in the evolution of naval policy. For centuries England had rested secure behind the bulwark of naval power. Just as Britons in general were experiencing difficulty in accommodating to the post-war era, it was not easy for the Navy's leaders to adjust to the Fleet's decreasing importance, or rather its changing role. However, in retrospect 1957 appears as the turning point. Once the Admiralty brought itself to concede that thermo-nuclear weapons were eroding the Fleet's usefulness in a general war, it was like casting off a great psychological burden, and the Sea Lords could turn their attention to other missions. Although the Admiralty had insisted that it still had an ASW role to play in the event of a general conflict, there is little question that commencing in 1957 its main efforts were to focus more and more on building up its conventional offensive capabilities for limited war situations. Concurrently, it was to turn away from NATO and Europe, and to concentrate on Britain's military problems in the Middle and Far East.

Unlike the case of the Army and Air Force the Admiralty had a number of good reasons to welcome this basic change in the character, if not the size, of the Fleet. Such a role called for general purpose forces capable of performing the entire spectrum of naval duties from minesweeping to attacking enemy targets on both land and sea. It would allow the Royal Navy to operate independently, and forestall the possibility that it would become an interdependent part of a huge Western navy. This concurred with the Admiralty's view of what a British Fleet should look like and do. Also, this new role would be more in line with economic realities. It was painfully clear to the Sea Lords that the limited resources available to the Royal Navy would become progressively more inadequate, if a protracted general war at sea was to be their main concern. On the other hand there was a much better prospect of building an adequate limited war force with the available funds. Of course only time would reveal whether this was actually possible. However, the Sea Lords intended to do their utmost to procure the modern ships and planes which the annual Defense Statements envisaged. It would require much ingenuity to achieve these goals in the face of rising costs and the Government's determination to contain expenditures. To this end major steps were taken during the Sandys' regime to inaugurate this transformation.

The first step related to deployments. Previously the Admiralty's general war strategy had dictated that the Navy's strength be concentrated in the Home Fleet and the Mediterranean Fleet. Control of the European seas was the main objective. In line with its new thinking the Admiralty recommended that one carrier task force be stationed permanently East of Suez. Once Mr. Sandys had accepted the Navy's strategical justifications for its task forces, this move followed logically and was confirmed in the 1957 White Paper.[52] This signaled a gradual build-up of the Fleet's equipment and support facilities in the Far East. It was the Admiralty's intention to keep another ready task force in the Mediterranean fully prepared to exert influence in the

Near East or to deploy to the Indian Ocean if necessary. From this point on, the Fleet's center of gravity was to shift steadily Eastward.

One problem arose simultaneously with the 1957 White Paper. The Minister of Defense informed the First Lord that since Britain was continuing to stress the Fleet's ASW contribution to SACLANT's forces the carriers assigned to NATO should carry air groups composed of predominantly ASW aircraft.[53] Mr. Sandys had several objectives here. Just after coming into office he had visited the United States and among other officials had called on Admiral Gerauld Wright, SACLANT, in Norfolk, Virginia. He had expressed his belief that the NATO Strike Fleet was not a viable concept. Predictably he made little impression on the Americans. By emphasizing the ASW functions of Britain's NATO carriers he hoped to make it clear that the Royal Navy would not support these plans. Nevertheless, just as the Admiralty had foreseen, he felt it necessary to make a positive gesture to demonstrate the Government's continuing interest in NATO. This decision was ostentatiously announced in the 1958 White Paper.[54] There is little question that the Royal Navy was moving away from SACLANT, but Mr. Sandys was determined to cushion the blow. The Americans were scarcely deceived, and Admiral Wright complained publicly about the British decision to withdraw from the Strike Fleet.[55]

The Minister of Defense also had an economic motive. He reasoned that by concentrating on ASW in the West he could put more naval effort into the Far East in terms of general purpose forces[56] and hopefully "cut down on the total number of aircraft which the Navy would have to purchase in the future."[57] This reasoning was certainly sound. It made it possible to concentrate certain types of aircraft in smaller geographical areas, reduce training facilities and personnel rather than spreading them in equal parts from Singapore to Spithead. Similarly, he hoped to cut down the total number of planes needed, and later actually made some cuts in aircraft production based on this reasoning.

However, this decision greatly disturbed the Naval Staff. Despite their recognition of the Russian submarine threat, the Sea Lords were beginning to think in terms of limited war, and this move did not mesh with their view of the carrier as a mobile weapon system available to respond quickly to any type of emergency. Those carriers in the Atlantic and Mediterranean would be tied to one mission. Before they could be used for other purposes their air group would have to be rotated, and a great deal of time expended in training and reorientation. From a readiness standpoint it seemed to be unwise and certainly did not accord with the balanced task force concept which the Admiralty was nourishing.

In the same light the Board took unkindly to any scheme that would specialize or unbalance its air stations ashore, its aircraft logistics and support facilities. In its eyes this was inviting future problems and degraded the ability of the supply organization to respond to unforeseen emergencies. Lastly, and perhaps even more significant, the Naval Staff opposed any plan which would make it possible to reduce the number of operational aircraft. The Navy believed these had already been cut to the danger level and that further reductions particularly in strike aircraft, would unduly endanger its capability.

Actually in the frantic rush to rescue the carriers the Navy's leaders had overemphasized the Russian submarine menace and had left themselves exposed to just such a maneuver. Alastair Buchan, in the Observer, described the Navy as being hoisted "with its own petard."[58] The Admiralty was in a weak position when it chose to contest Sandys' decision after all the stress it had previously laid on NATO's anti-submarine mission.[59]

The Board of Admiralty was unable to get the decision reversed, but the Naval Staff did succeed in foiling it temporarily. The Fleet Air Arm had already decided to replace its fixed wing ASW aircraft with helicopters and proposed that the shift in carrier complements be accomplished gradually as the helicopters were phased into service. This suggestion was

accepted. As a result when a new Minister of Defense assumed office in 1959 the helicopters had still not come into service, and the Navy's carriers were still carrying balanced aircraft complements. This is an outstanding example of bureaucratic "foot dragging." The Navy had fought desperately to change the decision and, when this failed, merely changed its tactics instead of acquiescing. The new intention was to delay the implementation of the decision as long as possible in the hope that in the meantime there would be a change of policy or ministers.[60]

Once this disagreement subsided the Admiralty turned its attention to other matters. It was manifest that although Mr. Sandys had agreed to retaining the carriers, he had done so with reservations, and it would be folly to press for more such ships. In fact the Admiralty made an informal, but nevertheless deliberate, decision to keep any further discussions of the carrier on a low key so as not to revive this crucial issue. The Board now wanted a period of relative calm in which to retrench and implement its plans for building balanced task forces. The Sea Lords were hoping to concentrate on obtaining modern equipment and vessels (other than carriers), which would improve the Fleet's limited war capabilities and in turn buttress the case for its new role.

The first significant step was taken in the area of amphibious lift. On May 26, 1957, Major-General J. L. Moulton of the Royal Marines announced in a speech at Portsmouth that the Government was considering the conversion of an aircraft carrier into a commando ship.[61] This vessel was programmed to carry a commando of marines[62] and sufficient helicopters to put them ashore wherever needed. The project was approved near the end of July 1957,[63] and subsequently the H. M. S. Bulwark was selected for the project. A number of forces had come together in 1957 to reverse the Navy's traditional disdainful attitude toward amphibious warfare. Bulwark's conversion was to mark the beginning of the effort to correct the Fleet's most glaring deficiency.

Pressure to review its amphibious responsibilities had been rising within the Navy for some time. The deplorable state of the Amphibious Warfare Squadron was well known throughout the Fleet. Officers who had served in this squadron recurrently agitated for the Admiralty to either dismantle or improve it. Their complaints received little attention. In 1955 Lord Mountbatten assumed the office of First Sea Lord, and he was soon to become a rather effective spokesman for this small group. Admiral Mountbatten had been Chief of Combined Operations Headquarters during World War II and had been one of the early pioneers in developing Britain's amphibious craft and techniques. He later played a major role in the planning of the Dieppe landings, and unlike the majority of the senior naval officers he had developed a deep respect for amphibious operations.

Shortly after taking office he began to press for action in this field and encouraged his staff to study U. S. experience. After looking at the U. S. Marine Corps' new "vertical envelopment" concept and the U. S. Navy's plan to land troops from carriers by helicopter the Admiralty formulated in 1956 the first recommendation for a commando carrier. Before this could be acted on, Suez intervened and demonstrated the continuing need for an amphibious capability. Subsequently the Navy was submitted to severe public criticism for its lack of ready amphibious vessels during the Egyptian crisis. The Navy's leaders now saw an amphibious capability as a complement to the limited war role which they were fashioning for the Fleet. Also it was cogent justification for fixed wing aircraft which would be required to protect the commando carrier and to support troops. The experience of the Marines at Suez, who were put ashore by helicopter from Ocean and Theseus, had proved the feasibility of this technique and demonstrated the carrier's value as an amphibious vessel. It can transport a large number of men comfortably and has high speed which gives it considerable mobility. This was a decided advantage over the older type of landing craft. In addition the concept of vertical envelopment allowed the

assaulting troops a great deal more flexibility in choosing the time and place of landing. It promised to revolutionize the art of assaulting a hostile shore. All these considerations served to modify the Navy's attitude toward its amphibious warfare responsibilities, and there was little difficulty in getting the approval of the Board of Admiralty in early 1957 for the conversion of Bulwark.

However, after Mr. Sandys took office, all such projects came under close review right up to the level of the Defense Committee, and it was necessary to muster strong support for radically new concepts. Fortunately, in the case of the commando carrier there was an unusual degree of consensus. The Army was being cut down drastically and looked favorably on any scheme which would increase the nation's capability to lift troops. To insure Army support the Amphibious Warfare Headquarters, successor to Combined Operations Headquarters, had recommended that the Navy configure Bulwark to carry Army, as well as Marine, equipment and troops. This proposal was readily accepted. In addition, Army officers did not feel that the RAF had given enough attention to helicopters for carrying troops and were happy to see the Navy enter this field. Similarly, the RAF was not displeased because it would relieve some of the pressure to build transport helicopters and furnish airlift.[64] This assured the project strong support in the CSC.

From an economic perspective, the Navy by converting a ship already in commission could keep the costs to below £10 million. Considering the contribution it stood to make to the Fleet this was impressive and quieted opposition in the Ministry of Defense and Treasury. In the aftermath of Suez this seemed like an excellent and economical investment. In addition the ship was to be manned by Royal Marines and in a period of shrinking personnel this was important, since the Marines, unlike the Army, were oversubscribed and had no serious personnel problems. In addition, the Marines ever since World War II had been trying to carve out an amphibious mission for themselves which

would distinguish them from the Army. They were more than eager to take on this assignment. When combined, all these factors served to facilitate prompt approval of the first commando carrier and to return the Navy to amphibious warfare.

Late in 1958 the Admiralty made another significant gesture toward increasing the Fleet's amphibious capability. It laid down a requirement for a 12,000 ton assault ship. This was to be roughly similar to the U. S. Navy's "Landing Ship Dock." Since any landing craft which can carry a worthwhile load is too heavy to be lifted on board ship by davits or a derrick, the assault ship is designed with a large well deck aft, and the ship can be trimmed down, much like a floating dry dock, in order to float its landing craft. These small craft then lift the heavy equipment from the ship to the beach. Actually it offers the only practical method of carrying heavy equipment in ships with fleet speed and then discharging that equipment directly to shallow beaches where opposition may be expected. The assault ship which the Naval Staff proposed was to accommodate up to half a battalion of infantry, together with all forms of vehicles from tanks downward. In addition, it was to operate four LCA's, four LCM's, and two helicopters.[65] This would be a significant complement to the commando carrier, and the Admiralty hoped eventually to replace the Amphibious Warfare Squadron with two of these ships.

Again the Admiralty designed these ships for Army as well as Marine use and drew heavily on Army support in seeking approval for this scheme. The ships costed-out at less than £7 million. Considering their promise, this appeared to be a reasonable figure. The first assault ship was authorized in 1959, with good prospects of a second one being approved subsequently. This was another significant step in reshaping the Fleet for its new role.

Concurrent with these developments the Naval Staff was devoting considerable attention to other types of equipment. Since 1948 the Ministry of Supply and the Navy had been developing the surface-to-air Seaslug missile. It was the original

intention of the Admiralty's planners to start building a class of ships about 1954 to be armed with Seaslug and provide sophisticated anti-aircraft protection for the Fleet's carriers. This class would be radically new in design and gradually replace the World War II destroyers. Unfortunately, development problems exceeded expectations, and ship design was accordingly delayed.[66] It even appeared for a period as if the ships might have to be of cruiser size, and considerable effort was made to reduce the space requirements of the weapons system. The 1955 Navy Estimates expressed the Navy's intention of proceeding with this scheme, but the time schedule was still vague. Unpredictably, the Seaslug program began to advance rapidly in late, 1955 and by 1957 the dimensions of the missile and its supporting equipment had been firmed up. It was clear by then that these weapons could be accommodated in a 6,000 ton vessel, and a ship that small could be technically classed as a destroyer. This was considered important from a practical standpoint. However irrationally, politicians are convinced that destroyers are more economical than cruisers, no matter what their characteristics.[67] In late 1957 the Admiralty received permission to start work on plans for four such ships, and a year later was able to extract final approval from the Defense Committee to proceed with this class. Actually very little strife was involved in this decision, but that was attributable to unusual circumstances.

Guided missile ships had been programmed for some time, and the Government had been answering embarrassing questions in Parliament about them for years. Certainly the Minister of Defense had no intention of reneging on this promise, unless it was manifestly a poor military investment. In this regard the Navy had put over £70 million into the development of Seaslug.[68] After the initial technical problems had been solved and an administrative muddle had been straightened out, the Seaslug program moved ahead rapidly, and the final product proved to be extremely successful. It appeared to match or excel any foreign seaborne surface-to-air medium-range missile and displayed an

exceptional record of reliability. It promised the Fleet just what was needed - an effective defense against supersonic aircraft. This would afford the carriers more protection and allow them to devote more space to strike and anti-submarine aircraft. Once the Minister of Defense had approved the requirement for mobile carrier groups he could hardly turn down projects which promised to enhance their effectiveness.

From a more personal standpoint, Mr. Sandys had been the Minister of Supply during a rather crucial period in the development of Seaslug. He had supported it strongly and had had a part in ironing out its difficulties. The Navy was fully aware of this and was assured a sympathetic hearing because of his personal interest in missiles. Moreover, a few of the Minister's scientific advisers had been associated with Seaslug in the early days and put considerable effort into easing the way for this new class both in the Ministry of Defense and with the other services. These were important political factors during an era when economy was a crucial parameter. All in all this was the sort of project which meshed perfectly with the Navy's new task force concept, offered value for the money, and at the same time projected the image of a modern progressive Navy so dear to politicians.[69]

Another issue in this unusual period concerned atomic bombs. The Admiralty had had a requirement on the books for a small tactical weapon for some time and for a strike bomber to carry it. This, of course, was an integral part of the Navy's planning prior to 1957 when the Atlantic forces were slated to participate in NATO's Strike Fleet. Now the question of atomic weapons was reevaluated. The Admiralty desired to proceed with the original plan and still pressed its need for such a weapon. The Royal Air Force strongly questioned the Navy's requirement. It argued that if naval aircraft were to be employed solely in small "Suez type" actions that the demand for a naval atomic weapon had disappeared. Their Lordship's argued that there were no rules against using fission bombs in limited wars and that

NATO strategy actually called for the use of atomic tactical weapons in Europe. Certainly in 1957 the British Government had not excluded such arms in local wars. Even more important the Admiralty contended that the best way to prevent the Communists from employing small atomic weapons in a local war was to have fission bombs on the scene and a capability for delivering them. The emphasis in all these discussions was placed on the Far East and China. It was in this area that the Fleet would be instrumental in meeting aggression, and the Admiralty contended it would be a grave mistake to rule out any use of atomic weapons. Finally the Board pointed out that the requirement was a joint one with the RAF. Even if the Navy was to opt out, the weapons would still be produced for the Royal Air Force. Allowing the Navy to have them would not add a great deal to the total cost, but it would increase the armed forces' flexibility considerably. Mr. Sandys found these arguments persuasive and decided to arm carriers with small fission weapons.

This issue is related to the subject of aircraft. The Sea Vixen, an all-weather fighter, was due to enter service shortly after the Scimitar and would replace the Sea Venom. By the time it was due to reach the Fleet it would soon become obsolescent, and the Naval Staff had already generated a requirement for a successor. The Navy had two under development - the SR177, an experimental fighter to replace the Sea Vixen and the Buccaneer which was the long awaited supersonic atomic strike aircraft. There were cogent military requirements for both, but in this critical period research projects needed more than just military rationalizations.

The Minister of Defense cancelled the SR177 on the theory that it was in the early stages of development and the future of aircraft carriers was not firm enough to justify such an expensive project which would be in development for several years.[70] He insisted that the Fleet's current fighters could be stretched, if better performance was required. This decision was to cause

the Admiralty considerable distress in years to come. On the other hand, the Buccaneer was given the "go ahead." It was designed as a supersonic low level strike aircraft which would be able to penetrate under the enemy's radar coverage. It was expected to be ready in three to four years and would give the Royal Navy the jump on the rest of the world in this particular type of aircraft. It appeared to have some promise as an item for export, always an important consideration in export-conscious Britain. Not as important but still significant was the fact that the Buccaneer development had been aided by American funds, and there was a great reluctance to cancel out of a project on which the United States had assisted. There were even some misplaced hopes that the United States would place a sizeable order for it in Britain. In addition it had been designed for some time to carry the Fleet's atomic weapons and there was considerable pressure to get the best possible airplane for this vital job.

The foregoing review covers the Navy's main controversies with Mr. Sandys but, of course, does not include all the Admiralty's achievements in this period. A number of programs were continued or initiated which excited little opposition, yet materially enhanced the Fleet's capabilities and pointed it toward its new role. Prior to 1957 the Fleet Air Arm following an American lead had been experimenting with helicopters for ASW work. They possess a tremendous advantage over fixed wing aircraft in that they can hover and put a sonar transducer in the water to search for the offending submarine. At the same time they possess sufficient speed to cover large areas and counter any evasive maneuvers made by undersea craft. It had already been decided to replace the Gannets with helicopters in the late 1950's, and once the Minister of Defense elected to emphasize the Fleet's ASW role in NATO this plan was implemented without controversy. The same type of helicopters were chosen for this mission as were to be carried on the commando carriers. With some minor modifications, which can be made at sea, the ASW and troop carrying "whirlybirds" can be interchanged.

The escort program which had been initiated in 1951 was continued, and a new class was inaugurated. As previously noted, neither politicians nor the other Services seem to take the interest in small ship programs that they do in requests for larger ones or aircraft programs. This is an area where the Navy's need is considered unique and legitimate. As long as the general budgetary levels are not exceeded, little heat is generated. As a matter of fact the fundamental limit on escorts seems to derive not from external pressures but from the Navy's own diverse ambitions which require a great many different types of ships.

In this particular period the Navy was in an unusual position. Since Korea it had been constructing or modernizing two types of escorts. The destroyer was to accompany the Fleet, and the slower speed frigate was to protect merchant convoys. As already stated, the Navy's planners in the middle 'fifties were developing doubts about this policy. A new general purpose frigate, the "Tribal" class, which was an improved and cheaper version of the convoy escort had been on the drawing board for some time, and the Navy went ahead with laying down the first one in 1958. However, it was soon evident that what was needed in the Navy's new limited war role were general purpose escorts which could perform with the Fleet as well as with convoys. In 1956 the Type 12 ASW frigates, the "Whitby" class, began to commission, and much to the Admiralty's amazement they exceeded all expectations. Originally designed for twenty-six knots, they could make from twenty-nine and one-half to thirty knots and maintain top speed in practically any kind of weather. They were well suited to operate with the new task forces and took over the destroyer's old duties. More Type 12's were ordered, and the Tribal class program was cut back. To take further advantage of the Type 12's outstanding characteristics a requirement was generated for a new class to be built on this same basic hull form.[71] The steps taken during this period assured the British task forces for some time into the future a modern complement of general

purpose escorts. Combined with the guided missile destroyers due to come into service in the early 1960's they stood to improve substantially the overall effectiveness of the Fleet.

In addition the first of a new class of conventional submarines, the "Porpoise" class, undertaken in 1955 began joining the Fleet. These were the first submarines built since the war and were configured primarily for ASW missions. Also during the Sandys era the Admiralty initiated work on the Royal Navy's first nuclear submarine. This will be discussed in some detail in the next chapter. One other significant area was receiving attention - afloat support. The Way Ahead Committee had strongly recommended that steps be taken to improve the fleet train and its ability to operate independent of fixed bases. The 1957 Navy Estimates stressed the importance of these ships, and by 1958 three replenishment ships were being modernized. Considering the size of the task this was a rather halting step, but scarce funds prevented a greater effort. Nevertheless, it was clear that the Admiralty within the limits of available funds intended to complement its task forces with improved logistics support.

Mr. Duncan Sandys left the Defense Ministry near the end of 1959, and it is appropriate to assess briefly his influence on the Royal Navy. He left a definite stamp on the Fleet just as he had on all the Services. He willed his successor a smaller Navy. The Admiralty, relatively speaking, was receiving as large a share of the budget as it had before 1957. More important he left behind a different kind of Navy. With one exception every naval officer and Admiralty civil servant interviewed by the writer agreed that the reductions in the reserve fleet and support installations resulting from the 1957 economies were long overdue and eliminated unnecessary fat which tradition had precluded trimming. Few agreed that the size of the active forces was adequate, but this is a common complaint with professionals in every country. It is interesting to note that the size of the active fleet decreased only slightly from 1957 to 1959 and that it was becoming more modern every day. In short, during this

period many worthwhile projects were initiated which in time would materially enhance the Fleet's capabilities.

Certainly Mr. Sandys left a great deal of animosity behind him in the Navy's ranks, but this writer found a general consensus that he had performed a particularly valuable service for the Board of Admiralty. "He made it think about the Navy's role harder than it ever had before, and face up to the unpleasant realities of post-war British life."[72] By 1959 the Navy's leaders knew in their own minds what kind of role they wanted for the Fleet and had put in train the initial steps to build the necessary forces. Despite the economies forced on the Navy it still had its core of carriers and had taken some vital steps toward complementing these with modern planes, amphibious ships, guided missile destroyers, and general purpose escorts. It would be some time before the Fleet was actually composed of the truly hard-hitting task forces which the White Papers glowingly described, but the Admiralty had come to terms with the economic, political, international and technical realities. In the span between 1957 and 1959 the Navy had acquired a more clearly defined role which it was well suited to play, and was marching with some confidence in a new direction. The Navy and its leaders deserve considerable credit for this accomplishment, and likewise Mr. Duncan Sandys deserves at least a share of praise for his part in this drama.

The Fleet's New Role Confirmed

In 1959 Mr. Harold Watkinson assumed office as Minister of Defense. He was received with suppressed enthusiasm. His predecessor's regime was marked by strife and turmoil as he strove to contain defense costs and impose reduced manpower levels on the three Services. Each branch was confident that a change would be for the better. The new Minister commenced his tour with a number of advantages. He inherited a vastly stronger control structure than existed in 1957. The Minister of Defense's position had been considerably strengthened in 1958 when the

Prime Minister pushed through legislation confirming the powers he had already bestowed on Mr. Sandys by administrative fiat.[73] From that point on he was literally the commander of the whole defense establishment, rather than a political supervisor. In addition, this legislation established a new post "Chief of Defense Staff." This was to be a high ranking professional officer who would act as Chairman of the CSC and also as chief military adviser to the Minister of Defense. He would be responsible for communicating the views of the CSC on matters within their cognizance to the Minister and also his own personal views on these issues. In addition, the Joint Planning Staff was to be directly responsible to the Chief of Defense Staff, and he, in turn, was to assure that the three Services furnished the type of information and staff support that the Minister desired.[74] The object of these moves was essentially to strengthen the Minister's hand and to give him a powerful top level professional, who was divorced from his parent Service, to assist him. It has already been noted what a strong personal part Mr. Sandys played in detailed Service affairs, and this legislation guaranteed that his successors would continue to be instrumental in shaping the detailed policies of the individual branches.

Watkinson enjoyed another substantial advantage. By 1959 the Government had more or less arbitrarily decided that the defense establishment should receive from 7 to 7.5% of the Gross National Product,[75] and the military was well aware that barring crises this figure could not be raised. The main reductions necessary to reach that level had been taken earlier, and this took the pressure off the new Minister. Working within this economic parameter he could devote his attention to tailoring policy and forces to the new realities.

It was soon clear that the change in Defense Ministers heralded no drastic or radical revision in overall military policy. The 1960 Defense Statement indicated that although the means of delivery were constantly being reevaluated there was no intention to give up deterrent weapons. By this time deterrence

had become an article of faith with the Conservative Party, and it was manifest that the Administration did not intend any retreat in regard to nuclear weapons. Watkinson was hard pressed throughout his administration on this issue, and probably his most important single decision involved the deterrent - when he recommended cancelling Blue Streak and opting for the American Skybolt airborne ballistic missile. This will be discussed at some length in the next chapter in which the Navy's role in the strategy of deterrence is sketched.

The continued stress on nuclear weapons meant that a sizeable portion of the budget would continue to be diverted from conventional arms. There were nevertheless some subtle, and in a sense significant, changes taking place in the Government's attitudes toward limited war forces. Sandys' initial emphasis on deterrence very definitely assigned conventional forces a secondary role and awarded the highest priority to nuclear weapons. Although conventional forces were retained with a political flourish, the 1957 and 1958 White Papers had conveyed the distinct impression that this was being done mainly as a safety measure until the technical and strategical implications of nuclear weapons were clearer, and further that the future of conventional forces was definitely in doubt. This attitude had begun to change in the latter months of Mr. Sandys' regime, and it disappeared altogether in the early 1960's.

As early as 1958 Field Marshal Montgomery who had revised his strategical thinking considerably since 1954 warned that the nuclear stalemate "would be with us sooner than some of us think" and that in the future the main threat from Communism was likely to come from limited wars and subversion.[76] These sentiments were widely echoed by lay strategists, journalists, professionals, and Labor Party politicians.[77] Watkinson, although he accepted the need for the deterrent, subscribed to this philosophy, and during his regime the role of conventional forces was consistently upgraded.

It is worthwhile to trace this evolution very briefly. The 1960 Report on Defense made no reference to priorities, but

stressed that "because of the need to meet local emergencies which could develop into a major conflict, conventionally armed forces are a necessary complement to nuclear armaments."[78] A year later the Defense White Paper emphasized that "many of our most important responsibilities are not concerned with the direct deterrence of global war, but rather with the checking of small outbreaks."[79] This same statement emphasized that the Government was proposing to meet the whole spectrum of possible aggression, and actually discussed conventional forces ahead of nuclear ones. The 1962 Defense Statement specifically put deterrence and conventional forces on a par. It insisted that a balance between the two must be maintained and that "neither element must be so small as to encourage an aggressor to seek a quick advantage, or to risk a provocative local incident escalating into a major war."[80] It was during this period that the nuclear stalemate was genuinely recognized for what it was and that conventional forces again came into vogue, as a primary not secondary element of the defense structure.

Paralleling this development was a decided turn away from NATO towards the Middle and Far East. Sandys' emphasis on deterrence and NATO had been inspired by the threat of a general war with Russia. Now Britain's overseas responsibilities were again asserting themselves. The 1957 White Paper had expressed an intention to cut back on colonial bases and hopefully to reduce the nation's overseas responsibilities. This proposal had proved difficult to implement. The Government had accumulated a number of commitments and interests East of Suez which in the final analysis it was reluctant to neglect. Not only its treaty obligations as members of CENTO and SEATO, but also its ties with Malaya, New Zealand, Australia and the African colonies were compelling. Its commercial interests (primarily oil) in the Persian Gulf and the Middle East, likewise demanded political stability, and in turn military attention. On one occasion Watkinson actually stated that in his view "Kuwait was more important to Britain than Berlin."[81] Many Englishmen concurred with that view.

It is always difficult to distinguish genuine motivations from spurious verbalized ones, but there seems little doubt that notions of national prestige and vanity have also played a significant part here. It was one thing to recognize the harsh economic pressures which limited the Government's freedom of maneuver, but it was another to withdraw from the overseas responsibilities which Britain had shouldered for so many decades. Through its Commonwealth and colonial ties Whitehall has exercised extensive influence throughout the emerging areas of the world, especially in Africa and South Asia. This relationship is highly valued because it is a uniquely British phenomenon, and is not shared with other nations. It "symbolizes an independent and prestigious non-European leadership position"[82] which the decision-making elite is hesitant to relinquish. To withdraw completely from these overseas areas and duties is to abdicate responsibility and to forfeit an opportunity to exercise independent influence and leadership. Britain's part in NATO is neither as prestigious nor as distinguished as its role East of Suez. These are vital considerations for a nation with Britain's past reputation for world leadership.

By 1960 Britain was hardly in a position to pay full homage to NATO and look after these interests too. The manpower cuts instituted by Sandys were beginning to take full effect. The bases East of Suez which the nation had depended on traditionally had been gradually cut back as a result both of the pressures of nationalism and of the domestic economy. In addition, the shelter of the nuclear umbrella enhanced the likelihood of unrest, brush fire wars and Communist penetration in these areas. Neither NATO nor the United States had interests similar to those of Britain East of Suez. It was more than logical that if peace was to be maintained there the lion's share of the burden would fall on Britain. All these factors combined to increase the importance of the Indian Ocean area in the Government's eyes and to turn its attention at least partially away from the Atlantic. With this background the study can examine how the Royal Navy fared under these new circumstances.

The new Minister of Defense was very receptive to the Admiralty's plans to create balanced task forces which could deploy both troops and air power on short notice.[83] The initial steps taken in the late 1950's to configure the seagoing forces for a policing role were beginning to bear fruit as Watkinson came into office and just as the Government was becoming genuinely concerned about its military posture East of Suez. The Sea Lords promptly took advantage of his sympathies. A request, previously prepared, asking for a reappraisal of the policy requiring the aircraft carriers West of Suez to carry predominantly ASW plane complements, was submitted soon after Watkinson's installation. That decision was quietly reversed. It should be stressed again that the Fleet Air Arm had delayed implementing this policy with the express intention of seeking a review of it. The appointment of a new Minister of Defense was just the opportunity it had been awaiting - a graphic illustration of how bureaucratic inertia can be utilized to frustrate a transient political executive.

However, Watkinson took this move with full awareness of the Fleet's new relationship to NATO. It had been clear to the Americans for several months that the Admiralty was revising its strategical posture and that the profile of the Fleet was being altered. No longer were the Navy's leaders looking to SACLANT requirements for their guidelines. Rather they had their eyes fixed on Britain's specific responsibilities outside the NATO area. Although Sandys had gone to great lengths to demonstrate continuing support for NATO's naval forces, Watkinson believed that SACLANT had become accustomed to the new order of things and that the political circumstances no longer required this rather thinly disguised gesture. This step more or less formalized the Fleet's turnaway from NATO and made it clear that other considerations would govern the future composition and deployment of the British Fleet.

Actually, the Americans too were concerned about prospective trouble spots on the periphery of the Indian Ocean and

were not too averse to this new line of development. Watkinson insisted that the best contribution the British Fleet could make to Western security was to concentrate its efforts from Singapore to Suez, and there is little question that he received implicit if not explicit approval from his American counterparts in assigning the Fleet this new priority of responsibilities.[84] In fact the British Fleet is occasionally referred to by Englishmen who disagree with its policies as "McNamara's Navy," since they consider that it carries out its policing mission with American encouragement.[85] American diplomats and military men voice periodic objections about the failure of the British Navy to meet its NATO commitments in terms of ships, but these are perfunctory complaints, and it is well understood on both sides of the Atlantic that the Royal Navy's prime mission lies elsewhere. It is also appreciated that all the western Allies benefit from efforts to keep peace and order East of Suez.

It sould be emphasized that the Royal Navy still loyally subscribes to NATO, and its forces in the Atlantic and Mediterranean would be available to SACLANT in an emergency. However, the nature of these forces is dictated by the Fleet's limited war role with hardly a bow toward the Alliance. This does not mean that it cannot make a fruitful contribution. The great advantage that the Navy enjoys over the Army and Air Force is that most of its ships and weapons can be deployed for a range of missions, from showing the flag to atomic tactical strikes. Fortunately the Royal Navy's balanced task forces include a great deal of equipment which would complement SACLANT's forces and make them more effective in the event they were required.

The official decision to carry balanced air groups demonstrated the Minister of Defense's faith in the balanced task force. In turn, it paved the way for the Fleet's final doctrinal conversion to a limited war role. It is fair to say that by 1960 there was general consensus within both the Navy and the Government as to the Fleet's role. White Papers are not always the best guide in matters of this sort, but the first Lord's Explanatory Statement

on the Navy Estimates 1961-62 devoted a lengthy paragraph to limited wars and brushfires. It deserves quoting because it is both an official declaration and an accurate representation of the major strategic rationale of the modern Royal Navy:

> As weapons become more and more destructive it is more important than ever that local outbreaks of violence should not be allowed to develop into full scale war, with the attendant risks of nuclear conflict. Military power must be deployed quickly and effectively when trouble occurs, and this is a primary task of the Royal Navy. It may be to escort troops and their heavy equipment to the scene of action; it may be to give them air cover in operations until air bases can be established ashore; it may be, under the new commando carrier concept, to function as a fire brigade and to avert or extinguish small conflagrations unaided. In every case success depends on prompt intervention, made by the Navy's power of rapid movement.[86]

There has been no question since that declaration as to what the Fleet's role is. This, of course, is not to say that the Navy does not have other duties. The very nature of ships makes them versatile instruments of statecraft. The Royal Navy is still expected to show the flag, assist diplomatic missions, and to perform missions of mercy. At the same time the bulk of the Fleet is still committed to the NATO Alliance and would be an integral part of any combined Western naval effort. Still, the White Paper quoted above devoted only three lines to this "global war" mission. Throughout White Papers, parliamentary debates, press releases and official speeches, the trite references to the "Russian submarine threat," "oceanic communication lines," and "general war" have largely disappeared.[87] In their place, one reads of "moblie and flexible response," "tri-service operations," and "brushfire war." The absence of exaggerated assertions about the Royal Navy's ability to control the world's sea routes is candid and realistic. There is a recognition of the limited extent of the Fleet's power and a clear sense of direction which was missing for ten or more years after World War II. The Guardian caught the significance of this development when it commented on the 1961 Defense Statement:

> The period of cuts and uncertainties is past and those who are giving their lives to the naval Service have a much clearer idea about why they are there and the vital importance of their mission.[88]

Manifestly, setting a policy and implementing it are not the same things. Funds available are still less than the Admiralty would like. This malady continuously infects all three British Services, and there is no prospect of a cure in the foreseeable future. The decision to keep the military budget at 7½% of the Gross National Product severely limits expansion. As long as the Government chooses to retain a nuclear weapons system the amount which can be allotted to conventional forces will be further restricted. Nevertheless, considering the circumstances, the Navy has received increasing support from the Government in its new role. Its absolute appropriations rose steadily from £397 million in 1960 to £440 million in 1963. Sharewise the Navy's percentage of the total defense budget remained constant at 24%. However, this figure alone is misleading. As the Navy's portion percentage-wise remained constant, the Army and Air Force's shares were slowly decreasing, so that by 1963 the Army was receiving 26% and the Royal Air Force 27% of the total appropriated monies. Correspondingly the share of the defense estimates devoted to other agencies had been increasing steadily - Ministry of Defense, Ministry of Aviation, Ministry of Public Works, and Atomic Energy Authority.[89] In short the Navy was consistently improving its relative position.[90] This is an excellent indicator of the increased importance attached to the Navy's newly formed role, although the Admiralty has continued to have difficulty reconciling its ambitions with the available funds.

Another Carrier Fight

Mr. Sandys' successors created an environment more sympathetic to the Royal Navy's plans to build modern and mobile conventional task forces. However, the Admiralty must look not

only to the present, but also to the future. Although the early 1960's would witness fruition of many of the Sea Lords most important programs, they were already looking ahead to the seventies and eighties with a view to taking timely steps to keep the Navy actively in the defense picture. It was during the 1959 to 1963 period that the Admiralty fought a most crucial political battle to insure the Fleet's future.

In early 1959 the Board of Admiralty convened a committee to study the future of the Navy's carriers. At that time there were four fixed-wing carriers in the active fleet, one under construction, one being modernized and two in reserve.[91] The keels of every one of those ships had been laid before 1946. With the exception of H. M. S. Eagle every one of those ships had undergone at least one major modernization. This can perhaps add ten years of life to a carrier, but there is a definite limit to this procedure. The study group concluded that the oldest, H. M. S. Victorious, should be replaced about 1970-72, and that the remaining carriers should be systematically phased out and replaced approximately one every two years. The final recommendation was for five new carriers to join the Fleet by 1980. With this report on the books the Admiralty turned its attention to launching a campaign for new carriers.[92]

There is little reason to dwell on the Navy's case for the carrier, it has already been considered at length. In the Sea Lords' eyes carriers are the heart of balanced task forces and vital to the Fleet. However, this was the first time since World War II that the Navy had suggested building new carriers from the keel up. For a variety of reasons this request was bound to excite intense opposition. Arrayed against the Admiralty would be two groups.

First, there were those who contended that carrier aircraft cannot compete with land-based planes in either cost or effectiveness. Leading this group was the Air Council which had opposed aircraft carriers for years on these grounds. A new generation, unlike a modernization program, of aircraft carriers

would involve great expense and a number of major decisions involving the nation's military posture for several years in the future. Inevitably so important a request would offer the RAF a number of opportunities to publicize its views and, if possible, to slay this hated dragon.

Initially the RAF had not been too disturbed by the Admiralty's turn towards limited war. However, the future of the Air Force's deterrent role was becoming more precarious. Although the Skybolt missile promised to extend the life of the manned bomber, it was readily apparent that this project might collapse. If so the RAF's importance would decline accordingly. Obviously the Government was concentrating more attention on conventional forces, and the Air Council, looking to its own survival, was determined to carve out as large a role as possible for its tactical and ground support aircraft. It was convinced that it could best insure its own future by restricting the Fleet Air Arm's capability.

Allied with the land-based airmen would be a second group who oppose any single weapons system which involves large expenditures. This group is not as well defined as the former, but its spokesmen can be counted on to subordinate military arguments to economic arguments. Leading exponents of this view include Treasury officials. The carrier program naturally attracted such opposition. The cost of each proposed ship was most impressive. In 1960 designers were estimating £50 million without aircraft,[93] and with little doubt that the final cost would be higher. The economisers opposed laying out so much in a single piece of hardware that would be subject to the hazards of the sea and possibly be outdated by the time it was built. This group would have to be convinced of the long-term value of the carrier and that the RAF had no suitable alternative.

In typical Admiralty style the initial overtures were low pressure ones. The Sea Lords were convinced of the inherent strength of their case and that with persistence and patience they would win their point.[94] The first decision of the Board was

to ask for four carriers, instead of the five recommended by the Admiralty committee, and even this number was implicitly a bargaining figure. Actually the Navy's leaders were primarily seeking approval in principle for a new generation of capital ships rather than any specific number. In early 1960 the Admiralty submitted its plans to both the CSC and the Minister of Defense. Predictably the RAF voiced its disapproval in the Chiefs of Staff Committee. On the other hand Mr. Watkinson appeared to be impressed and indicated that he was sympathetic to the Navy's case. However, at this point a number of other issues intervened to delay any further positive action.

Ever since Mr. Sandys had canceled the Navy's experimental fighter, the SR177, early in his regime, the Fleet Air Arm had been concerned about a successor to the Sea Vixen, the Fleet's all-weather fighter, which was due to come into service in 1961. It was clear that both the Russians and Americans were going to supersonic fighters and that the Sea Vixen would be obsolete by those standards in the mid-1960's. Even more disturbing Russia had distributed great numbers of its older models to other countries such as Indonesia, Egypt, China and India.[95] This made it imperative that the Admiralty correct this deficiency at the earliest, and the Naval staff began to agitate for a new fighter shortly after Watkinson's arrival. This campaign happened to coincide with an RAF request for a successor to its current tactical support aircraft, the Hunter. The Minister of Defense saw an opportunity for major economies and instructed the two Services to investigate the possibility of developing a single type of aircraft that would meet their respective requirements. He further informed the Admiralty that its carrier program might well depend on its ability to meet this request. Essentially this was a power play on the part of the Minister to bring the requirements of the two Services together in the interests of economy. A number of the Navy's aircraft had been developed from basic RAF models, and the FAA had found this practice generally unsatisfactory. In each instance the seagoing version

seemed to be inferior to its RAF counter-part, and slow in going into production.[96] Only the Buccaneer had been developed from the outset as a naval aircraft. It had set a precedent which the Admiralty wished to continue. Consequently, the Navy's designers were reluctant to enter a joint program with the RAF. However, with the new carrier program in the balance, the Naval Staff began to study seriously the possibilities of melding their requirements with the RAF's.

As this stumbling block was being erected, the Air Council was concurrently conjuring an ambitious future alternative to carrier air power. This plan was to become known as the "island base scheme" and represented the RAF's major attempt to cut into the limited war role which the Navy had carved out for itself. Basically it was proposed to develop a chain of strategically located island air bases throughout the Southern hemisphere and to use them to deploy land-based air power as needed. Some dozen islands were tentatively suggested among which were Pitcairn, Gough, Christmas, Ascension, Gan, Scotia, Seychelles, Prince Edward, Trista da Cunha, and a number of others. All were British, and each was selected for its strategic value, either as a staging base or because it was in the vicinity of British interests. The Air Council argued that a string of such bases would make it possible to exert varying degrees of power and that in turn they would facilitate the rapid airlift of the Army's strategic reserve in the United Kingdom to any part of the world. Such a chain would solve the problem of overflying rights and offer Britain a method for retreating gracefully from its traditional colonial bases.[97] This was a rather belated recognition by the Air Force of the importance of the limited war role and of the fact that defense emphasis had shifted from Europe to East of Suez. An important implication of this plan, of course, was that it would obviate the need for aircraft carriers. This suggestion was pressed vigorously. Certainly it had some appeal, and it was considered at length by the Minister of Defense.

However, the plan had some major weaknesses, and the Navy took pains to stress them. In essence it was merely changing "new bases for old" and would leave the Government with many of the same problems it had before. If they weren't subject to local political pressure, they would certainly be subject to political pressure from adjacent countries which would not be any fonder of British bases close off shore than ones on their own territory. Even more significant was the projected cost. While some of the recommended islands already had air installations on them these would need considerable work to make them effective bases rather than just air stations. Others would have to be built from scratch. Manifestly large sums of money would be required. Economy was one of the main incentives for withdrawing from Britain's traditional bases, but the Air Council was now proposing to replace the old with even more costly installations. Lastly, each base would serve only a specific region, and if Britain's interests were to disappear in that area the investment there would correspondingly be degraded. On the other hand carriers could be shifted about as required without losing the benefits of the capital investment.

This was the bitterest kind of political battle and fully lived up to the popular version of inter-Service feuding with both sides clandestinely lobbying frantically for their views.[98] The 1962 Defense Statement reflected the Government's ambivalence when it stressed both air and sea mobility, but did not come down squarely for either the island base scheme or aircraft carriers. At the same time, however, the Minister of Defense did allow design work (and only design work) on a new carrier to go forward.[99] Before he left office in late 1962 Watkinson finally decided against the Air Force's proposal, primarily on grounds of cost. A few selected island air bases were to be improved, but nothing more.

During this period the ability of naval task forces to support British policy was demonstrated convincingly. On June 19, 1961 the sheikdom of Kuwait became fully independent and

announced its intention of joining the United Nations. Despite the fact that neighboring Iraq had in the past negotiated with the sheikdom on the basis of sovereign equality, Premier Kassem within a week made a speech reviving a claim that Kuwait was part of Iraq and implying that he intended to annex its territory. On the eve of its independence Kuwait had concluded a defense agreement with Great Britain and now looked to Whitehall for protection. This small sheikdom furnishes some 40% of Britain's oil and is one of the "interests" which Her Majesty's Government is constantly concerned about in the Middle East. Iraq's warning was followed by some warlike preparations. On June 29 the Chiefs of Staff alerted British forces in the Indian Ocean, and on June 30 the Ruler of Kuwait formally requested military assistance.[100] H. M. S. Bulwark, with No. 42 Commando embarked, was at Karachi, Pakistan enroute to the Persian Gulf. She sailed immediately for Kuwait and put her troops ashore on July 1 in order to secure the local airfield. The next day No. 45 Commando was airlifted from Aden and two squadrons of Hunters arrived to furnish ground support. The Amphibious Warfare Squadron based at Bahrein was soon on the scene with a squadron of tanks in LST's along with artillery.[101] H. M. S. Victorious and four escorts were off Hongkong and steamed steadily at twenty-two knots to arrive off Kuwait on July 7.[102] She had the only sophisticated radar on the scene and immediately assumed control of both naval and land-based aircraft. The British could not be assured of local air superiority until she arrived. She was soon joined by H. M. S. Centaur and her escorts.

The airlift which was set in motion on June 29 was delayed by Turkey's refusal to grant overflying rights. This was subsequently lifted and by July 6 there was a parachute battalion from the United Kingdom on the scene. The build up continued for nine days until over 5,700 men were in Kuwait from the United Kingdom, Cyprus, Kenya, and Aden. This force was ashore for over three weeks and was supported the whole time by an assortment of naval landing craft, frigates, carriers, helicopters and planes.

"Fueling, feeding and storing this force amounting to 3,500 sailors was the job of the underway replenishment ships, the R F A 's Tidereach, Reliant and Resurgent, who had to provide over 600 tons of fuel, stores and provisions for each day of the operation."[103] This was a remarkable demonstration of mobility and the Navy received its share of the credit both in public and behind the closed doors of Whitehall. A Daily Express leader expressed the general feeling: "If anybody thinks that the day of navies is over, Kuwait should make him change his opinion. For this police operation has been launched mainly by means of sea lift."[104]

With Kuwait in the background the Navy's leaders were optimistic in 1962 when the island-base proposal was finally rejected by the Minister of Defense. It was well known that the Navy's case would be closely examined probably at the Defense Committee level and that there would be some dissident voices. But the Admiralty was confident that it would receive authorization to commence building carriers. Before Mr. Watkinson decided the issue, a surprise shakeup in the Cabinet brought Mr. Peter Thorneycroft to the Ministry of Defense in mid-1962.[105] This presented the Navy with a completely new political situation.

There was now some urgency. Over two years had slipped past since the carrier campaign had commenced, and the Admiralty had very little to show for its effort except approval to proceed with preliminary design work. In the Sandys tradition the new Minister of Defense made it clear that he questioned the wisdom of investing in carriers.[106] The Royal Air Force took heart and renewed the attack. The Air Council even revived the island-base scheme. However, Thorneycroft did not act rashly. He appointed a civilian committee of scientists and other experts to make a study and report on the future role of the Navy with emphasis on the need for carriers. This was known as the Lindrew Committee and there were no military officers on it. The Board of Admiralty was genuinely perturbed by this omission, though its objections had little effect.[107] The Board had to stand aside while this

group of civilian experts examined the Royal Navy's mission and made recommendations concerning its future.

The committee's report was never made public, but much to Thorneycroft's surprise and the Navy's pleasure it came down solidly for the aircraft carrier. A naive observer might conclude that this was the end of the fight. In actual fact it was merely the first salvo. Having passed that hurdle the Navy was now allowed to pursue its case for the carrier a step further. Again the RAF and the Navy joined battle. The Chief of Air Staff had consistently refused as a member of the CSC to sanction the requirement for a new carrier, and the Navy was forced to carry its case directly to the Ministry of Defense without CSC support. Thorneycroft requested the Navy's views, and the Admiralty complied with a staff paper reviewing the whole spectrum of the Navy's requirements and illustrating how naval air power meshed into this picture.

In regard to the carrier, the standard arguments stressing mobility, lack of foreign bases, international political problems, and inability to obtain overflying rights were resurrected. However, a new wrinkle was inserted. The major emphasis was laid on the need for modern equipment. In the 1960's even some small Powers were accumulating sophisticated missiles, aircraft and submarines. Both the United States and Russia have gone to great lengths to assist their allies in this regard. This is particularly crucial in Southeast Asia where China, India, Pakistan and Indonesia all have some relatively modern ships, submarines and planes. For example, Indonesia has acquired some light Russian patrol boats which mount a surface-to-surface missile with a fifteen to twenty mile range.[108] Such a weapon can be a serious menace to naval and merchant ships, and the Admiralty was contending that it must be prepared to meet such threats in kind. In the Admiralty's opinion there were two choices open to the Navy if it was to be prepared to operate offensively against such forces. It could develop a variety of sophisticated guided missile ships or rely on carrier aircraft. In Britain's case

the lack of funds precluded pursuing both courses, and the Admiralty argued that carrier aircraft could be used for more purposes and offered the best return for the investment. In essence the Navy's leaders were asking for a modern general-purpose Fleet that could meet and overcome any opposition.

Thorneycroft was manifestly impressed with the Navy's case and indicated that he was inclining toward its position.[109] However, there was still some pending business. He had to dispose of the Air Force's island-base scheme and, after requesting cost estimates, again vetoed it just as his predecessor had done. With this out of the way he turned to the question of a common aircraft. Thorneycroft had just come from the Ministry of Aviation where he had concurred with Watkinson that the two Services should meld their requirements for the next generation of fighters. He now intended to pursue this project and asked the Navy to make a real effort to match its specifications with the RAF's.

This was asking a good deal. The Air Council was seeking a supersonic ground support aircraft with a vertical take off capability. This project was called the P1154, and the initial research had showed considerable promise. Unfortunately, the Navy wanted an interceptor aircraft which could patrol over the Fleet for extended periods and seek out intruding bombers and fighters. This required more fuel capacity and a great deal more electronics, than were designed into the P1154. In order to operate the radar and intercept equipment the Naval Staff felt that its plane must have a two man crew and for reasons of safety had specified two engines. If the P1154 was altered to include all these features, it would become a great deal heavier with a corresponding loss of speed[110] which was unacceptable to both the RAF and Navy. One alternative which the FAA found acceptable was to gain weight by eliminating the vertical take off feature of the P1154. This was the one feature which the RAF could not give up. In essence the politicians were asking the two Services to match irreconcilable military requirements for economic reasons.

It had been obvious to the Navy for some time that there was little likelihood of reaching agreement with the RAF. As early as 1961 the Fleet Air Arm had begun to look for other alternatives and had become interested in the U. S. Navy's new interceptor, the Phantom II. It was a mach-two fighter-strike aircraft which the U. S. Navy was developing for carrier use and promised to match any fighter in the world. It appeared to be the ideal solution to the Fleet Air Arm's problem, if it could be adapted to the Royal Navy's carriers. The Naval Staff proceeded to investigate these problems and to make some preliminary soundings as to the availability of this aircraft.[111] However, when Thorneycroft indicated that he was preparing to take the carrier question to the Defense Committee the Admiralty relaxed its opposition to the P1154 and renewed its efforts to reach agreement with the RAF. It was determined to do everything in its power to improve the prospects of obtaining approval for new carriers.

In the spring of 1963 the Minister of Defense informed the Admiralty that he was prepared to back the carrier replacement program, but that he was convinced he could never get the Defense Committee to authorize four. It was well known that there was considerable opposition in this body. The Treasury had indicated that such a large commitment would be opposed. Sandys who was then the Commonwealth Relations and Colonial Secretary also had a voice on the Defense Committee, and the Navy anticipated his opposition. The Air Minister too would be sitting, and was expected to resist the Navy's projected program with all the arguments at his command. Considering the circumstances, the Board of Admiralty reluctantly scaled down its request to two.

Before forcing the issue formally, the Defense Minister's office entered into discussions with the Treasury in order to lay the groundwork. Opposition in the Treasury Minister's office was deeply rooted. On one hand, the Admiralty was quoting £60 million for a new carrier; on the other hand, the Treasury was insisting that with aircraft and associated equipment one carrier would

cost over £100 million. The Treasury was reluctant to approve hardware involving such large sums, which would commit the defense establishment for the next twenty to thirty years. It was a well known fact that the Royal Air Force was furnishing anti-carrier material to the Treasury and to others. After a series of heated exchanges the Minister of Defense reported to the Board of Admiralty that the Chancellor of the Exchequer would agree to one new carrier and two modernizations in the late 'sixties in order to give the Navy a modern three carrier Fleet in the 1970's. He further indicated that this was the best political compromise the Navy could hope for at that time.

This was a severe set back for the Admiralty, and there was sentiment among the Sea Lords to reject this offer and to press the fight for two. After extended discussions, however, the Board conceded. The Navy's leaders concluded that the prime objective was approval for at least one new carrier. This would tie the Government to the Navy's mobile task force concept and justify a new generation of aircraft. Their Lordships were confident that the nation's foreign policy would continue to focus East of Suez and Africa, and that time was on their side. As Britain's overseas bases continued to disappear the requirement for a strong Fleet would expand and in turn the need for more than three carriers would become evident. Thus the immediate objective was to get approval for at least one new carrier and to commit the Government on a long-term basis to the Navy's limited war doctrine. Both the First Lord and the First Sea Lord were convinced that approval for one would be the wedge opening the door to a new generation of carriers.[112] This view prevailed and the Board of Admiralty threw its might behind Thorneycroft's efforts to lay the groundwork with his political colleagues. In the Defense Committee the Royal Air Force pressed a vigorous dissent, but it fell on deaf ears. By this time both the Chancellor of the Exchequer and, even more important, the Prime Minister had been converted.[113] After normal argument and delay Thorneycroft was authorized to announce approval of the Navy's plans for a new carrier to join the Fleet in the early 'seventies.

The Minister of Defense informed the House of Commons on July 30, 1963.[114] This was a critical victory for the Navy and its most crucial battle since 1957 when Sandys threatened the carriers with extinction. It firmly reestablished the Navy in Britain's future defense plans and offered the Admiralty the vote of confidence which it had been seeking. Undoubtedly this was a compromise which fell far short of the Board's desires. On the other hand, there was general confidence that one new carrier would in the end mean a new class of carriers. This was not the first time the Board of Admiralty had compromised with the express intention of continuing to press for its original program, a technique that had proved very successful over the years. This view was verbalized by the First Lord in the House of Lords on July 31 when he stated that this decision was only a first step toward an eventual class of carriers.[115] Such a step is always open to review and to political sniping from opponents. Both the Treasury and the Royal Air Force have continued to harass the carrier's progress. But the sounds of forensic battle have receded, and the Admiralty now considers the Royal Navy's role assured for another decade.[116]

At the same time the Minister of Defense announced approval for a new carrier, he declared that "the Royal Navy and the Royal Air Force had agreed on the characteristics of a common aircraft to replace the Sea Vixen and the Hunter."[117] The main objective here was apparently to make the carrier decision politically more palatable, but it was somewhat of an exaggeration. The two Services were intensively studying the problem and were making a sincere attempt to reach agreement. However, their respective positions were some distance apart and in fact were never reconciled. The Fleet Air Arm went so far as to agree to a single engine, a single seat, and the reduction of some electronic equipment, but weight was still too critical. If the plane was to be a supersonic interceptor it could not include the vertical take off and landing feature and still meet the Fleet's needs. The Navy did not require this because carrier

catapults and arresting gear make it unnecessary at sea. Once the two Services had reached a final impasse, Thorneycroft was again brought in for a decision, and he found the Navy's arguments persuasive. After a careful review, the pressure for a common aircraft was relaxed, and the Naval Staff was authorized to negotiate for the purchase of American Phantom II's.

The military arguments for this purchase were overwhelming. Once the decision to extend the life of the carrier was made there was an irrefutable need for a more modern interceptor. The Phantom II promised the British Navy its first truly up-to-date plane since the 1930's and would give it a capability of competing with any aircraft in the world. It has never been able to make that claim. By 1963 this aircraft was in service and could be available in two to three years rather than waiting for the long development period which would confront a solely British experimental project. The U. S. Navy was willing to make it financially attractive "by offering it at practically cost and including no development expenses."[118]

Such a foreign purchase always meets opposition. The aircraft industry objects to the Government going abroad. Purchase of American products endanger Britain's precarious exchange position. In addition, there is always a vocal group which deplores British dependence on America. This has never bothered the Royal Navy which has consistently argued for closer cooperation with the U. S. military establishment. In order to ease Thorneycroft's problem the Navy's Phantoms were to have Rolls Royce engines which would partially mollify British industry (and also increase performance).

When the purchase of American Phantoms was announced on February 26, 1964 it brought the expected storm of protest. However, there was general agreement that due to the small number which the Navy required it was on the whole a wise decision.[119] From a military perspective this decision cannot be faulted, and the Minister of Defense deserves praise for his political courage. There is always strong pressure in Britain for economies and in

turn for bringing the requirements of the RAF and Navy closer together. This is a laudable objective, but in the case of the P1154 it was sheer nonsense, since the two Services were trying to satisfy totally different requirements. Thorneycroft proved to be amenable to rational argument, and it is to his credit that he refused to yield to ill informed political pressure.[120]

These two decisions confirmed the Government's confidence in the mission which naval task forces are presently performing and insured the Navy's place in future British defense planning. Just as important they promise to correct the most glaring military deficiencies in the seaborne forces and to improve materially the Fleet's ability to carry out its assigned functions. It is difficult to overestimate the importance of these two political battles for they committed the country to a partial maritime strategy for at least two decades and probably longer.

The Balanced Fleet

At the same time as the Sea Lords were fighting desperately for a new generation of carriers they were making steady progress toward the modern general purpose Fleet which they desired. While the carrier dispute monopolized the debating forum, the Admiralty's other plans excited little comment or effective opposition. The Navy's leaders had a relatively free hand as long as they remained within the general financial parameters imposed by the Government. As a consequence the programs initiated under Mr. Sandys were brought to fruition and in many cases expanded. Altogether, the 1959-63 period witnessed a substantial strengthening of the Fleet in both quality and versatility, if not quantity.

The most remarkable and vigorous steps were taken in the area of amphibious lift. The first commando carrier, H. M. S. Bulwark, joined the seagoing forces in 1959. It was an immediate success and demonstrated its value at Kuwait. In 1960 a decision was made to convert H. M. S. Albion to a commando carrier. This

vessel included a number of improvements over Bulwark and was commissioned in 1962. These ships have materially increased the Fleet's offensive capabilities and at least one of these carriers is constantly deployed East of Suez.[121]

The assault ship, H. M. S. Fearless, was contracted for in 1960 and a year later the Admiralty obtained approval for a sister ship, H. M. S. Intrepid. Both of these ships were scheduled to be operational and in the Fleet by 1966. The Amphibious Warfare Squadron will eventually be replaced by these two 12,000 ton LSA's. Needless to say they will materially enhance the Fleet's ability to move troops and heavy equipment rapidly.

In 1963 the Admiralty commenced drawing up plans for converting its three cruisers to a new form of support ship. They would be modified to carry approximately 450 troops and a few helicopters for landing them. In addition they would furnish the task group with heavy gunfire support in the event an opposed landing was to be made. This is a typical example of how a navy short of funds can make its existing ships go further by performing a variety of duties. This project had not received the final "go ahead" by the end of 1963, but there was every prospect it would be approved shortly.[122]

These steps were complemented by one other interesting development. The Army has always maintained a number of ships under its own control for carrying and supplying its troops overseas. In the late 1950's it was considering taking steps to modernize this capability. The Joint Warfare Headquarters (successor to the Amphibious Warfare Headquarters) which was pushing enthusiastically for more amphibious lift recommended that any new vessels the Army bought or built be configured not only as regular transports, but also as amphibious vessels, much like the older LST's but more up-to-date. Studies were initiated to investigate the feasibility of such a class, and in August 1960 the Chiefs of Staff authorized the building of a new logistic ship, Sir Lancelot, for the Ministry of Transport.[123] It was

designed primarily as a transport for troops and heavy equipment. However, it was also configured as an amphibious assault craft and can land some 350 troops and their equipment directly on to a beach. Just as important, this ship can make seventeen knots which is a vast improvement over older types of amphibious vessels. A total of six of these craft were eventually ordered, and Sir Lancelot was completed in January 1964. A few of these ships are intended to be deployed in the same area as the Navy's Amphibious Warfare Squadron in order to furnish support on short notice.

By 1966 the Admiralty plans to have a constantly ready amphibious force East of Suez capable of putting approximately two battalions, their tanks and artillery ashore. "With any warning time this capability could be expanded to brigade size."[124] If further troops were needed the RAF's airlift and the United Kingdom's strategic reserve would be utilized to follow up the initial landing. Thus, by 1963, the Admiralty was making considerable strides in improving the Fleet's ability to respond to crises which required British troops.

It was during this era that the Sea Lords began to deal seriously with the problem of afloat support. From 1959 to 1963 seven maintenance and support ships were modernized and four new high speed tankers were built. Concurrently plans were put in hand for constructing a new helicopter support ship, two fleet replenishment ships and three tankers all equipped with helicopters to improve their capabilities.[125] It was the Admiralty's expressed intention to renew progressively all the ships which furnish stores, supplies, fuel and ammunition directly to the warships operating at sea, and by 1963 this program was well advanced.[126] As an indication of the Fleet's new mobility over half the fuel used by the Royal Navy ships is now supplied at sea as opposed to 10% in 1949.[127] Kuwait was an excellent example of the Fleet's new self-sufficiency. Some six hundred tons a day were supplied to the task force in the Persian Gulf. Supporting the fast replenishment ships are a train of depot and forward base repair ships. Due to the lack of funds the Admiralty has been forced

to rely primarily on modernizations to keep these ships updated. Nevertheless by 1963 the Fleet had more maintenance ships available than at any time since 1945. There is little question that the Fleet was developing a remarkable capability to shed its traditional shore base support.[128] The new Royal Navy is truly a "long legged" one.

The Fleet's combat strength had likewise materially improved in quality if not in quantity. In 1963 there were four guided missile destroyers in the active forces and two more building.[129] In addition there were some seventy-one smaller escorts in service that year and forty-nine of them had been built since World War II. They represented some of the most advanced ASW ships in the world. Of the remaining twenty-two all but two had been extensively modernized. At the same time there were nine frigates on the stocks. Over half the Fleet's forty submarines were less than ten years old, and there was one nuclear attack submarine at sea. The nuclear submarine program will be discussed at length in the next chapter.

By 1963 the Fleet's offensive potential was considerably improved. The Scimitar joined the seagoing forces in 1959. She was configured primarily as a fighter-strike aircraft with a capability for carrying conventional and small atomic bombs. Shortly after that the Sea Vixen took over as the first-line all-weather fighter and gave the Fleet an air-to-air missile capability. This aircraft likewise could carry small fission weapons. In 1963 the long awaited supersonic Buccaneer went into service furnishing the Fleet Air Arm a sophisticated low level attack capability and a genuine atomic capability. It is important to note, however, that by this time it had been decided to configure the Buccaneer for a suit of conventional bombs and rockets. This did not eliminate its capability for carrying nuclear weapons, but substantially improved its ability to contribute to the Fleet's conventional role. In 1960 tactical atomic weapons were distributed to the active carriers,[130] fulfilling an ambition the Admiralty had nourished since the early 1950's. Ironically

enough, by that time it was very unlikely that the Fleet Air Arm would ever use this enhanced capability. In addition the Royal Navy had contracted to buy the U. S. Navy's standoff bomb, Bullpup. This would make it possible for the Buccaneer to launch its bombs some distance from the target and substantially enhanced its effectiveness as a strike aircraft. This one move corrected one of the most glaring deficiencies in the FAA's inventory.

Despite these improvements, unquestionably the biggest weakness in the Fleet's array of weapons was in the Fleet Air Arm. Scimitar, Sea Vixen and, of course, Buccaneer all represented a respectable capability for attacking tactical targets, both at sea and ashore, and supporting troops. However, in any military situation where conventional weapons are to be employed the crucial item is control of the air, and this rests solely on fighters. Once a commander can either control the air completely or furnish adequate protection for his attack aircraft he can then draw on the full potential of air power. By the mid-1960's both Scimitar and Sea Vixen would be obsolete by the most advanced criteria. This weakness has plagued the Royal Navy off and on since World War II. Once the Fleet Air Arm obtains the American Phantom this deficiency will be corrected. However, until this aircraft joins the Fleet it must operate under an umbrella of obsolete fighters. Needless to say this depreciates its general effectiveness and would detract from its ability to support the U. S. Navy in any sort of altercation with the U.S.S.R.

All these steps were the fruition of many years of planning and each was part of the overall scheme to create the balanced task forces which were first mentioned in the 1955 Navy Estimates. They testify to the Navy's considerable progress despite the financial burdens imposed on the Admiralty, and to the serious efforts being made to fulfill the new role deliniated for the Fleet. The following is a tabulation of the combat forces available to the Admiralty in 1963:[131]

Type	Active Fleet	Trials and Training Ships	Reserve or undergoing long refit modernization, conversion, etc.
Aircraft Carriers	4	-	1
Commando Ships	2	-	-
Cruisers	2	-	4
Guided Missile Destroyers	4	-	-
Other Destroyers	13	1	22
Frigates	37	16	24
Submarines	36	2	11
Nuclear Submarines	1	-	-
Minesweepers	37	24	108
Landing Vessels	7	6	6

The 1962 Explanatory Statement accompanying the Navy Estimates dramatically portrayed the tactical roles which the Admiralty envisioned for the various elements of the Fleet:

> The commando ships and assault ships put ashore the spearhead of the land forces with their guns, tanks and vehicles. The aircraft carriers provide reconnaissance and tactical strike ahead of the landing; air defense for the seaborne force; and close support for the troops ashore - especially when this cannot be done, either adequately or at all, by land-based aircraft. Cruisers and escorts reinforce the air and anti-submarine cover, direct our aircraft and give warning of the enemy's, and use their guns for bombardment if required. Submarines provide additional protection against hostile submarines and carry out reconnaissance and minelaying. The minesweepers clear a way to the land. The Royal Fleet Auxiliary tankers and store ships keep the whole of the seaborne force supplied.[132]

Perhaps this statement slightly exaggerated the capabilities of the 1962 Fleet, it did accurately describe the forces which the Admiralty was fashioning. In turn there was little question that vigorous efforts were being made to correct the material deficiencies which remained. It is difficult not to be impressed with the material strides which the Admiralty has made since 1957 in the face of rather adverse economic circumstances.

There is little question that the Fleet had been moulded into a compact and versatile limited war force with an impressive capability for projecting military power rapidly and effectively to a local trouble spot. Although the Navy's attention is now centered on limited war, its ships are still well suited to work with those of the Allies and of supporting NATO within the limit of its numbers. Although they could contribute only marginally to a strategic nuclear effort, Britain's general purpose task forces would be a welcome addition to any conventional naval effort which SACLANT might be required to muster. By 1963 it was clearly manifest that the Royal Navy would be a major pillar supporting British policy as long as there was a requirement for conventional weapons and limited war forces.

It should be emphasized that the foregoing account is no more than an overview of the Navy's technical capabilities and problems. The major focus of this study is on naval policy, and it is not possible to treat in any depth the Fleet's material condition. There has been some controversy over the efficiency of the Royal Navy's research, management procedures, and equipment choices.[133] However, this is true of every military organization. The choices and methods of the U. S. Navy are constantly being diagnosed and criticized by a variety of commentators often with considerable justification. The Royal Navy is continuously undergoing the same type of examination, and the professional officer can no doubt find a number of areas for criticism of or at least disagreement with the Admiralty's judgments regarding specific items of equipment. That is a separate subject and the great bulk of the literature concerning the post-war Royal Navy deals with just this class of problems. However, irrespective of such complaints there is a general professional consensus that the quality of the Royal Navy's ships and equipment is high, well suited to its limited war mission, and improving steadily. In other words, within the financial limits imposed upon it and within the confines of Britain's industrial base the Admiralty has made considerable progress in creating seagoing forces which can fulfill the role the Royal Navy has assumed.

In the final analysis, the prime military weakness of the Royal Navy lies not in the quality of its ships, planes and weapons but in its size. Often professional naval officers and lay strategists compare the Fleet with that of former years and denounce its reduced numbers. They claim that even in its new limited war role the Fleet is dangerously small and that there is a drastic need for more funds and ships.[134] Certainly these complaints have some merit. There is a definite limit to the power which the modern Royal Navy can exert. By 1963 the Admiralty could deploy a maximum of five fixed wing carriers in an emergency, and it is unlikely that all five would be available simultaneously - three is a more realistic number. Its amphibious capability from a readiness standpoint is restricted in size. There is, of course, no guarantee that the Navy's task forces will be in the right place at the right time, and the distances East of Suez can be formidable. Crises in two locations at once might be beyond the Fleet's capacity. Obviously in policing the area from Capetown to Singapore size might easily be the controlling factor.

However, a reasonable appraisal of the British Fleet must take into account the whole picture of national interests. There is no virtue in power or size for their own sake. They must be related to tangible goals and enemies. This study has noted that throughout the period 1945-63 Britain has been faced with adverse economic conditions. In fact the Admiralty's turn to a limited war role was largely dictated by the lack of funds. Considering this it is not realistic to argue for a vast Fleet which can cover any number of contingencies. The Admiralty must concentrate on forces which will give the most return for the money and plan to utilize its ships to the limit - just as it has been doing for the last decade. There is some risk in operating on the margin, but this is a fact of life in post-war Britain and one that shows little prospect of changing. In this regard it is instructive to note that since the Navy has turned its attention to a limited war role it has met the few tests put to it commendably.

Moreover, it is essential to keep in mind the type of challenge which the Navy is attempting to meet East of Suez. It is acting as a police force to put troops and planes on the scene before a local brush fire can spread. Britain's naval task forces are fully capable of dealing with any naval or air opposition which might be mustered in this area, unless Russia or the United States were to take a hand. In the same vein the Fleet's mobility and modern equipment give its amphibious troops a greater capability than their numbers suggest. If the threat is more than a brush fire, the Navy must work in conjunction with the Army and RAF, and its plans are drawn up on that basis. Similarly, in the event of a genuine crisis which threatened world peace there is every reason to believe that Britain could count on the United States for assistance.

All factors considered, the Admiralty's plans for keeping two carrier task forces East of Suez at all times and for developing a ready amphibious lift for at least a brigade do not appear too out of line with its declared role. This is not to say that the Royal Navy could not use more ships and planes; it could very well. Every increase in size would ease its task and make it more formidable. However, this would require additional appropriations which experience suggests is most unlikely. In essence the Admiralty's present objectives admit the real world and promise to give the nation a hearty return on its investment. More disturbing than the Fleet's present capabilities are the prospects for the future. There is some question as to whether the Admiralty can maintain the Fleet at its present strength in the coming years, however, this problem will be deferred to a later chapter.

The last three chapters have dealt with the "mainstream of naval thinking"[135] and traced the evolution of the Navy's role in the overall military picture. However, simultaneously with these events a number of political and technical pressures outside the mainstream were building up. These, in 1962, thrust the responsibility for delivering the nation's deterrent on to

the Royal Navy's shoulders. Needless to say this would further enhance the Navy's status and place it in a central position in the defense heirarchy. It is now time to examine this development in further detail.

CHAPTER V

NOTES

1. Eden, 415.
2. Ibid.
3. The first incumbent of this post was the senior officer on the CSC, Marshal of the Royal Air Force Sir William Dickson. The CSC was scarcely consulted about this modification, and there was some dissent among the Services. For a short discussion of this see Martin, 26.
4. Ibid. For the basis of this statement see Eden, 417.
5. Cmd. 9691, "Statement on Defense, 1956-57," February 1956, p. 3.
6. Sprout, "Britain's Defense Program," 64.
7. Daily Herald, February 5, 1957.
8. For references to his views see Martin, 27 and Divine, 14.
9. 613 H. C. Deb. 396.
10. The Manchester Guardian commented, "If it breaks no other records the year's Defense White Paper seems likely to go down as the most postponed one." April 2, 1957.
11. Martin, 27.
12. Cmd. 124, "Defense Outline of Future Policy," April 1957, p. 1ff.
13. Day, 58.
14. Sprout, "Britain's Defense Program," 66.
15. This brief discussion draws heavily on the articles previously cited by Harold Sprout and A. C. L. Day.
16. Day, 61.
17. Economist, April 13, 1957.
18. Day, 61.
19. This must rest on private sources, but it was more than adequately confirmed by a number of respondents some of whom were outside the Navy.

20. It should be noted here that such decisions in practice are not as clear cut or decisive as this analysis would make them. In this case the Admiralty was beginning to turn its attention to other areas besides NATO and to reject the Strike Fleet strategy. This does not mean that the carriers were immediately withdrawn and Britain's strike aircraft pulled out. It does mean that other considerations began gradually to control the manner in which monies were expended and forces deployed. The Fleet continued formally to be committed to SACLANT's Strike Fleet and is today. At the same time British and American planning continued to be closely coordinated in the event that any strike aircraft were available for work with SACLANT. However, the point here is that at this point NATO considerations began to be pushed into the background.

21. Neville Brown, Strategic Mobility (London: Chatto & Windus, 1963), p. 59.

22. Armstrong, 203.

23. Armstrong, 200-201.

24. One respondent described in great detail a typical meeting in Sandys' office during this period. The walls were lined with charts. The Minister leveled a continuous chain of questions at the Navy's advocates. Evidently nothing was taken for granted, and every statement had to be defended with facts. It was clear that the traditional and trite generalities concerning the merits of seapower did not impress him in the least. Many of his questions were extremely basic, but nevertheless had not been asked before, and the Navy was often caught unprepared. According to this respondent it was an excellent tonic for a Service that had depended too long on its reputation to support its statements, rather than on facts and well reasoned argument.

25. Martin, 28.

26. The Admiralty continuously cited its "Way Ahead" committee, and the measures it had initiated to streamline the Fleet's support activities. However, the new Minister was unimpressed and insisted that further reductions be made.

27. Cmd. 124, p. 6.

28. Ibid., 4.

29. Martin, 28.

30. Cmd. 124, p. 4. The Admiralty fought desperately to have this phrase deleted from the White Paper, but was unsuccessful.

31. It is interesting to note that the United States did not concur with this argument and at this point heavily encouraged Britain to build up its Bomber Command.

32. Snyder, Politics, 167.

33. Observer, July 28, 1957.

34. The Times, July 1, 1957.

35. Observer Foreign News Service, August 8, 1958.

36. It is commonly acknowledged that all three Services went to greater than normal lengths to enlist outside support during the Sandys regime, despite the strong cultural taboos forbidding such conduct.

37. April 7, 1957.

38. Economist, October 5, 1957, p. 24.

39. This was billed as the "Fairlead" conference.

40. They referred to it as "a brilliant survey of the complicated problems of defense" and credited the Admiralty with "thinking ahead on sound and imaginative lines." The Times, May 22, 1957.

41. Cmd. 363, "Report on Defense, 1958," February 1958, p. 7.

42. Ibid., 4.

43. Ibid., 8.

44. Air Marshal Sir Robert Saundby, "Defense in the Nuclear Age," Brassey's Annual: The Armed Forces Yearbook 1957 (New York: The Macmillan Co., 1957), p. 34.

45. See Appendix II.

46. Ibid.

47. Cmd. 674, "Explanatory Statement of the First Lord of the Admiralty of the Navy Estimates, 1959-60," February 1959, p. 16.

48. G.T.S., "The Royal Naval Reserve," Naval Review, January 1959, pp. 78-83.

49. For a full summary of these reductions see Cmd. 371, "Statement of the First Lord of the Admiralty Explanatory of the Navy Estimates, 1958-59," February 1958, pp. 6-10.

50. Cmd. 151, "Statement of the First Lord of the Admiralty Explanatory of the Navy Estimates, 1957-58," April 1957, p. 9.

51. The Manchester Guardian, May 7, 1959.

52. Cmd. 124, p. 4.

53. The writer was not able to determine the exact timing of this decision. The interviews were at variance over the date. One respondent insisted that it was made even before the 1957 White Paper, but this does not seem too logical. At any rate it wasn't made public until early 1958.

54. Cmd. 363, p. 9.

55. New York Times, March 20, 1958; Daily Telegraph, March 20, 1958; Manchester Guardian, May 12, 1958.

56. For elaboration of this theme see Alastair Buchan, Observer, February 16, 1958.

57. Interview.

58. "Sandys Hoists the Navy with Its Own Petard," Observer, February 16, 1958; For a similar interpretation see "New Priorities for the Navy," The Times, January 28, 1958. This latter article correctly anticipated the contents of the 1958 White Paper by three weeks.

59. This particular incident was mentioned in a number of interviews. However, it was never treated with regret. Each respondent admitted that the Navy had oversold the ASW case, but stressed that saving the carriers was the primary objective. Once that had been accomplished the Admiralty could then back off from ASW which is exactly what it did.

60. The writer was a little shocked by the frankness with which this issue was treated by respondents. In fact the interviewees appeared to take some pride in the Navy's cleverness in this instance.

61. The Times, May 27, 1957.

62. Approximately 600 troops. For short periods this vessel could carry up to 1,200 combat troops.

63. Manchester Guardian, August 3, 1957.

64. It must be borne in mind that this took place in 1957. At this time the RAF was mesmerized with its deterrent role and did not take a deep interest in limited war functions. In the early 1960's when its deterrent role showed signs of disappearing it turned its attention to limited war and fought every Navy scheme which competed with RAF airlift.

65. For a more detailed treatment see Commander T. S. Sampson, "The Assault Ship - H. M. S. Fearless," Brassey's Annual 1964 (New York: Macmillan, 1964), pp. 162-64.

66. The expense and production problems of this weapon system evoked considerable criticism, both official and unofficial. The most authoritative criticism was that leveled by Parliament's Committee of Public Accounts which investigated the entire guided weapons program in 1959-60. See Public Accounts Committee Reports 1959-60 (London: H.M.S.O., 1960), pp. xxx-xxxv and 282-324.

67. Sir Ian Orr Ewing the Civil Lord of the Admiralty at the time actually stated in the House of Commons that these vessels were classed as destroyers to make them more palatable to the politicians and Treasury. 635 H. C. Deb. 1772.

68. Divine, 215. David Divine further states that the missile was not ready for service by 1960. This is not technically true. Seaslug, as a missile, was ready for use as early as 1958, but there were no ships available to put it on. Consequently, trials were continued to improve the missile's reliability while the "County Class" ships were being built.

69. A great number of interviewees mentioned that it seemed to be much easier to push a weapons system by the Government as long as it had a futuristic flavor about it, irrespective of its military value. In fact one respondent characterized the politicians as being "missile crazy." He contended that as long as it was a missile they would buy it.

70. Interview. See also Daily Telegraph, September 17, 1958. This was a very unusual aircraft. It was to have a mixed power plant - both a conventional jet and a rocket engine for rapid acceleration and booster power at high speeds.

71. This was eventually to materialize as the "Leander" class.

72. Interview. For a similar analysis see the editoral section of The Manchester Guardian, February 24, 1959.

73. This legislation gave him virtually the same powers discussed on page 177 above.

74. For the White Paper describing these changes see Cmd. 476, "Central Organization for Defense," July 1958.

75. This figure was publicly proclaimed as the Government approved limit in the 1962 White Paper. Cmd. 1639, "Statement on Defense, 1962," February 1962, p. 6.

76. Lecture given at the Royal United Services Institution in October 1958. See "The Present State of the Game in the Contest Between East and West, and the Future Outlook," Journal: Royal United Service Institution, Vol. CIII, No. 612 (November 1958), pp. 468-87. Lord Montgomery's thinking had modified (a seapower advocate would say advanced) since 1954. In this lecture he emphasized the need for navies and advocated limiting Russia to a land strategy. For an excellent discussion of the evolution of Lord Montgomery's thinking on seapower see Gretton, chap. iii, pp. 16-21.

77. The most controversial utterance to this effect during this period was a lecture given at the Royal United Service Institution in 1959 by a serving officer, Major-General Sir John Cowley. See "Future Trends in Warfare," Journal: Royal United Service Institution, Vol. CV, No. 617 (February 1960), pp. 616-28. He deprecated the Government's stress on the deterrent and urged further emphasis on conventional weapons. This lecture caused quite an uproar in Parliament and the press. There were two issues: (1) his substantive arguments and (2) the ethics of an active officer openly opposing Government policy. After some hesitation the Secretary of State for the Army admitted that he had approved the speech beforehand and took some of the heat off the general.

78. Cmd. 952, "Report on Defense 1960," February 1960, p. 1.

79. Cmd. 1288, "Statement on Defense 1961," February 1961, p. 1.

80. Cmd. 1639, "Statement on Defense 1962," February 1962, p. 3.

81. "Compromise Likely Over Defense," Scotsman, February 10, 1962.

82. Snyder, Politics, 234.

83. Mr. Watkinson had served in the Navy during the war. However, this by no means assures a Service a sympathetic minister. It must be remembered that the closer a politician has been to a specific Service the more he knows about its weaknesses as well as its strengths.

84. This was mentioned in several interviews, but only in one did the respondent talk specifics. Occasionally a Minister has declared publicly that the Americans supported this policy. For example see a statement by Mr. Thorneycroft, when he was Minister of Defense: "Our commitments in the Far East are at least as important as those in Europe . . . an opinion shared by the American Administration." The Times, September 9, 1962. For a report of Secretary McNamara expressing similar views see The Times, February 16, 1962.

85. Daily Telegraph, January 13, 1965.

86. Cmd. 1282, "Explanatory Statement on the Navy Estimates 1961-62," February 1961, p. 3.

87. Unfortunately they have not entirely disappeared from unofficial articles and commentaries. One still finds a great many retired officers and laymen making exaggerated references to the Fleet's responsibilities and capabilities. This is one of the most impressive features of studying the English bureaucratic scene - the large void that often exists between strategists in the Government and those on the outside.

88. The Guardian, February 24, 1961.

89. See Appendix II.

90. It should be emphasized that the 1963 estimates had not begun to reflect the impact of the Polaris program. This is discussed in some detail in the next chapter, and no doubt the Navy's share will continue to expand because of this new commitment. Of course, how much it will increase is a crucial question which only time can answer.

91. In the active fleet Ark Royal, Hermes, Centaur and Albion - under construction Eagle - being modernized Victorious - in reserve Triumph and Magnificent.

92. The writer could discover no public references to this committee, although starting in 1960 there were numerous articles about the Admiralty's plans for new carriers. It was mentioned in several interviews.

93. The Times, October 26, 1960; Ibid, March 15, 1962.

94. It is interesting to note that the Sea Lords held off inaugurating this drive until Mr. Sandys had departed. However, the writer could find no tangible evidence that there was a direct connection here. One respondent did mention that the Navy's leaders were dreading the prospect of having to push new carriers by Sandys.

95. For detailed data on the air forces of these countries see Jane's All the World's Aircraft (New York: McGraw Hill Book Co.). This work is published annually.

96. The Navy's aircraft problems have been legion, and there is little question that common development with the RAF has been one of the sources of difficulty. For example the Sea Venom, Sea Vixen, and Scimitar were all offshoots of RAF models and were not perfected until the land-based version was first wrung out. In each instance the naval version was slightly inferior to its RAF cousin.

97. For newspaper discussions of this scheme see Chapman Pincher, "Defense Clearway Around the World," Daily Express, January 30, 1962; and The Times, August 22, 1961. Also for mention of the scheme see statement by Lord Mountbatten, The Times, December 7, 1962.

98. For editorial comment see The Times, October 21, 1962.

99. Cmd. 1629, "Statement of the First Lord of the Admiralty Explanatory of the Navy Estimates 1962-63," February 1962, p. 4.

100. For a brief but excellent summary of the military facets of this incident see Brown, 88-96.

101. Interestingly enough some LST's owned by the Ministry of Transport and leased to the Army happened to be in the Persian Gulf bringing relief equipment to the Amphibious Warfare Squadron at Bahrein. They were diverted to Kuwait, so both the Army and Navy had ships participating in the Kuwait operation. Major-General J. L. Moulton, "Mobility in Amphibious Warfare," Brassey's Annual: The Armed Forces Yearbook 1962 (New York: The Macmillan Co., 1962), pp. 166-67.

102. Brown, 90.

103. Naval Review, December 1961, p. 399.

104. July 10, 1961.

105. In July 1962 the Conservative Party's fortunes were at a low ebb due to overwhelming losses in a number of by-elections and a slow moving economy. In a surprise move, Prime Minister Macmillan purged his Cabinet and appointed a number of new ministers, Mr. Thorneycroft being one.

106. See Chapman Pincher, Daily Express, July 25, 1962.

107. The Lindrew Committee was appointed as a confidential group, and its existence was presumably an intra-governmental secret. However, it was reported in the press as "a top level team of scientists" along with some scathing criticism of the fact that there were no professional naval officers included in its membership. See Hampshire Telegraph and Naval Chronicle, September 17, 1962. Reportedly Thorneycroft was furious at this leak, but he himself publicly answered the charges, admitting its existence and assuring the public "that no decision on naval operational policy will be made by any scientific committee without reference to, and full consultation with, the Royal Navy." Hampshire Telegraph, October 3, 1962. He admitted that the committee's primary purpose was to advise him on a new generation of carriers and the advisability of building more nuclear submarines.

108. These are "Komar" class torpedo boats sold to the Indonesians by the U.S.S.R.

109. Interview. In this regard see "The Super Warships," Daily Express, February 11, 1963.

110. Surprisingly the writer found tens of articles written on the Government's fight to get the RAF and RN to concur on a common aircraft. The vast bulk of them spoke as if only short sighted vested interests prevented an agreement, but not a one discussed the technical problems involved. From the military standpoint there were pressing reasons precluding a joint aircraft, but no journalist chose to articulate them.

111. This rests solely on private information. The object here was to study the Phantom without tipping the Admiralty's hand. NATO operations were scheduled with U. S. carriers, and aircraft were exchanged under the guise of improving each Fleet's ability to operate with the other. However, the main purpose was to get a Phantom on board a British carrier in order to test its compatibility with British equipment.

112. This statement rests on the confirmation of a number of interviews.

113. In the final showdown even Sandys supported the carrier. One respondent attributed this to Sandys' interest in Malaya. As the Colonial Secretary he was in the process of negotiating the formation of the Federation of Malaysia and was interested in Britain being able to support its policies in that area.

114. 682 H. C. Deb. 237.

115. 252 H. L. Deb. 1060-62.

116. The new carrier has just recently been reviewed by the new Labor Government and approved. This was a substantial boost to naval spirits. One very high placed respondent expressed confidence that the Wilson Government would soon approve at least two more new carriers.

117. 682 H. C. Deb. 237.

118. Interview. The financial details of this exchange have never been released.

119. The number to be bought was never actually released. During the parliamentary discussion of the exchange the number fifty was suggested as approximately the correct figure. As long as no more than fifty were to be bought there seemed to be little protest. Then the persevering Mr. Chapman Pincher of the Daily Express reported the number as 140, December 14, 1964. This figure resurrected some opposition, but by then the deal seemed to be firm and besides the Government refused to confirm this number.

120. This decision has likewise been reviewed by the current Labor Government and approved. In fact it has gone even further. It now looks as if the Government will buy Phantoms for the RAF as well. The Admiralty has always feared this possibility. The naval aviators are convinced that the RAF would then get first call, and this would delay delivery to the Fleet of its Phantoms. It will be interesting to see if that is actually the case.

121. Subsequently it has been decided to keep at all times two fixed wing carriers and one commando carrier or two commando carriers and one fixed wing carrier constantly East of Suez. The Times, March 30, 1964.

122. This scheme has subsequently been approved. 690 H. C. Deb. 935.

123. This vessel and its sister ships will be operated by the Ministry of Transport for the benefit of the Army. For a detailed discussion of these ships see D. MacIver Robinson, "The Logistic Ship Lancelot," Brassey's Annual 1964 (New York: Macmillan, 1964), pp. 165-71.

124. Interview. Also see Sampson, Brassey's 1964, 164.

125. Cmd. 1170, "Statement on Defense 1964," February 1964, p. 14.

126. In this regard see remarks of Lord Mountbatten reported in The Times, December 7, 1962.

127. Naval Review, January 1963, p. 83.

128. For detailed discussion of progress with afloat support see Cmd. 1629, pp. 19-20.

129. Two more were ordered in 1964.

130. Daily Express, December 2, 1960.

131. Cmd. 2270, "Statement on Defense 1964," February 1964, pp. 25-26.

132. Cmd. 1629, p. 3.

133. For example the Admiralty has often been criticized for not developing surface-to-surface missiles, nuclear depth charges, and less sophisticated aircraft carriers. Similarly, it is often charged with not getting value for its money. The Seaslug missile is cited in this regard. See Divine, 214-17. He also attacks the other two Services. In this writer's opinion his complaints are neither documented or well reasoned. For a general and bitter protest against the amount of money being spent, presumably inefficiently, see Fletcher, £60 a Second.

134. Some critics, of course, still complain about the inability of the Navy to meet the Russian submarine threat, to contribute to NATO, and to protect Britain's sea communications. While they talk about the size of the Fleet they are essentially quarreling with the role which has been carved out for it.

135. This term was used by a number of respondents in referring to the Royal Navy's surface forces and its limited war rationale.

CHAPTER VI

ATOMS TO POLARIS

At the much publicized Nassau Conference, in December 1962, Great Britain acceded to the United States' request to cancel the Skybolt missile and in turn extracted a promise from President Kennedy to furnish Britain with Polaris missiles. As noted in the previous chapters the Admiralty had shown very little active interest in the deterrent. The Navy's leaders had studiously followed the U. S. Navy's experience with Polaris, but they never considered it an appropriate weapon system for the Royal Navy. However, the ways of politics have little respect for Admirals, and the Nassau Conference rudely thrust the Royal Navy into the deterrent business - against the better judgment of many Navy leaders. Today the Admiralty is proceeding at full steam on an extensive Polaris project. It plans to have the first ballistic missile submarine at sea sometime in 1968. This chapter will sketch the development of nuclear power in the Royal Navy and the marrying of this propulsion plant to the Polaris missile. These events, it should be remembered, were occuring simultaneously with those which have been previously discussed. They are treated separately here for two reasons. First, until very recently both nuclear power and Polaris have been outside the mainstream of British post-war naval thinking. Until about 1962, nuclear propulsion was still in the experimental stage in the Royal Navy. Moreover, the Board of Admiralty had deliberately steered away from participating in the deterrent. Secondly, treating nuclear problems separately facilitates analysis and allows the reader to place these important developments in better perspective.

Nuclear Propulsion[1]

Despite the Royal Navy's late entry into the nuclear field it has had a long standing interest in the maritime potentialities of reactors. As early as 1945 a paper was submitted to the Board of Admiralty discussing atomic propulsion for ships. In January 1946 the Navy assigned a scientist to the Atomic Energy Authority's installation at Harwell where all reactor research was to be conducted.[2] In 1948 two engineering officers were also assigned to work with the scientist. Their basic mission was to study the problems associated with nuclear power production and to determine the feasibility of applying this form of power to ships. By 1950 this group had actually made some sketchy design studies of various systems. These were very tenuous, but nevertheless encouraged the Admiralty. In June 1950 the Ship Design Policy Committee formed a sub-committee to carry out further studies.

This committee was successful in extracting an admission from the Defense Research Policy Committee that a nuclear submarine was an important project, but nothing more. The Navy was unable to get its staff enlarged at Harwell, but by 1951 it had managed through the DRPC to get a small sum from the Treasury for research. A design study was then made as to the feasibility of adapting a gas-cooled graphite-moderated low-enrichment reactor to a submarine. This was the type of reactor which had first been developed at Harwell by the Atomic Energy Agency, and it offered several advantages.[3] It had already demonstrated an ability to produce power. Practically all of the AEA's research efforts had been put into this type of reactor, and the results of this work were available to the Navy. More important it used low-enriched uranium as fuel which was more available at the time as well as cheaper. The study unfortunately showed that such a plant would require a huge submarine, of over 4,000 tons. This presented formidable technical problems. The main objection was the weight and size of the plant.[4] A shipboard installation

would have to be much smaller and more tightly constructed than was possible with a gas-cooled graphite-moderated plant. It was soon obvious to the scientists, and in turn to the Admiralty, that a feasible shipboard reactor would require a radically new approach. Inevitably this would involve an extensive research program oriented specifically toward a maritime reactor, a number of scientists, and a great deal of money. Moreover, in order to reduce the weight and size of the reactor the fuel would have to be highly enriched uranium, and this was in extremely short supply in Britain.

These factors combined to discourage the Admiralty. British scientists working in the reactor program were quick to realize the tremendous advantages which Britain could derive from power-producing reactors. The United Kingdom had traditionally depended on coal. But the easily accessible coal was rapidly disappearing. British mines could no longer meet all the nation's demands at an economic price. This was abundantly demonstrated in the fuel crisis of 1949. Great Britain has had to rely increasingly on imported oil. This makes the nation severely vulnerable to foreign pressure. Nuclear power appeared to be a way out of this dilemma, and from the very beginning Britain slanted its reactor research program toward developing a practical reactor for producing commercial electricity.[5] Throughout the early fifties the Ministry of Supply emphasized this aspect of the program and by 1953 practically the entire effort at Harwell was diverted into the design of Britain's first power-producing pile.[6] This emphasis had the full support of the Government.

Just as vital was the inavailability of enriched uranium. It was well known that Admiral Rickover, after investigating a number of approaches had gone to a reactor that employed highly enriched uranium. The Royal Navy's scientists were confident that future research would lead them in the same direction. However, there was only one plant producing this critical item. In the early fifties Great Britain was still working toward its first atomic bomb, and the entire output of enriched uranium was destined

for the weapons program. The Royal Air Force had made it clear that it would resist any attempt to divert this material. It was heartily supported by Viscount Portal (a retired Air Marshal) who was in charge of weapons production within the Ministry of Supply. Needless to say this combination of political influences also served to suppress the Admiralty's enthusiasm.

Within the Admiralty itself there was a rather remarkable apathy about overcoming these obstacles. The naval group at Harwell continued to follow the course of reactor research. A number of papers were generated at various points throughout the Navy stressing the advantages of nuclear power, particularly for submarines. However, the Admiralty, while generally endorsing these views, never assigned nuclear research a particularly high priority,[7] or pressed for it in the Defense Research Policy Committee. The general attitude of the Board was "wait and see." Of course, there were other factors at work here. Money was by far the most important consideration. The Admiralty was fully aware that this venture would be costly, and the Sea Lords were hesitant to divert such a large sum into a submarine program. Historically the British have looked with scorn at submarines. This springs from Britain's bitter experience with German U-boats in two great wars. The average Englishman has never considered it quite "cricket" to sink ships without warning.[8] Similarly the Royal Navy has traditionally consigned the submarine to small navies whose major aim is to destroy commerce instead of protecting it. The Board of Admiralty believed that it could get more for its money and better fulfill its post-war role by investing in escort-type surface ships and aircraft.[9] This attitude was further reinforced by the hope that with the passage of time and more experience with reactors the cost would come down. Also there were some indications that the Admiralty planned eventually to profit from U. S. experience.

The one element in the Royal Navy which was most interested in the development of nuclear power was the submarine branch. all submarine matters, both administrative and material, are handled

by the Flag Officer Submarines who has his office in Portsmouth. He has access to the Board of Admiralty, but does not sit on it as a regular member. He is considered the number one representative of submarine interests, and his advice is respected in the Admiralty. But his bargaining position is poor. There is not even a section of the Naval Staff specifically responsible for submarine matters through which he could exert daily influence on the Sea Lords. In the early 'fifties there were no submariners on the Board of Admiralty and "as a group they represented less than 2% of the officer corps."[10] All in all the submariners had very little influence in the higher councils of the Navy, nor were they in a position to organize an effective lobby. Although they could keep the issue of nuclear power alive, they were no match for the opposition.

In September 1954 the U. S. S. Nautilus was commissioned and naval attention was quickly riveted on its remarkable accomplishments. As has already been noted, it was about this time that the Royal Navy was becoming deeply concerned over its image and its place in British defense. The Admiralty began to cast about for new concepts. At the same time it appeared that enriched fissile material was becoming more available and that the land-based reactor program was now well in hand. Concurrently an exceptionally progressive First Sea Lord, Lord Mountbatten, took office. Although he was not a submariner by trade he was amenable to any scheme which stood to project the Fleet into the future. He was deeply impressed by the Nautilus and became a rallying point for those elements of the Navy which had been unsuccessfully pressing for action. These events all served to inject new life into the nuclear propulsion program.

In 1954 the Engineer in Chief of the Navy succeeded in increasing the Navy's staff at Harwell to a total of thirteen. In early 1955 a new Admiralty committee was formed to oversee the research and development program. In June 1955 the Board of Admiralty gave its blessing and authority to the development of a nuclear reactor and the building of one nuclear attack

submarine. A submarine was chosen for a number of reasons. First, this type of craft stood to gain more militarily than a surface ship. Second, it would only require a medium sized power plant,[11] and the Board reasoned that this would ease the research problems. Third, a submarine reactor could be easily adapted to surface ships while the reverse was not true. With surprisingly little difficulty, the Navy was able to get Treasury approval for a land-based prototype reactor and one submarine. The comparative ease with which the project went through indicates to some degree that one of the prime needs was a firm and persistent push from the Navy's leader. Of course, the Admiralty still had to run the gauntlet of the Atomic Energy Authority, but it would have that problem no matter when the program was initiated.[12]

In a matter of weeks the research group at Harwell was working at fever pitch. Almost immediately a decision was made to concentrate on a pressurized water reactor which was basically the same type as employed in Nautilus. This appeared to be the only feasible system in terms of compactness and completion within a reasonable time schedule. The initial target date aimed at achieving criticality of the submarine prototype plant by the middle of 1961. This was later adjusted to January 1960. The summer of 1962 was set as the target date for commissioning the submarine. By mid-1956 arrangements had been made with Vickers Nuclear Limited[13] to assist the Admiralty in this project and work was commenced at Harwell on a zero energy reactor called "Neptune" which was to furnish research data on the use of highly enriched uranium in reactor cores.[14] At the same time a location for the land-based prototype was selected at Dounreay, Scotland and work commenced on readying the site. In February 1957 the First Sea Lord approved the staff requirements for the first nuclear submarine and announced that he intended to stress its anti-submarine capabilities. He labeled it a "submarine killer."[15] This was in line with the submarine force's thinking which in the mid-1950's began to emphasize the submarine as the best counter to Russian U-boats. Though this was the strategic rationale used for the

nuclear program, there is little doubt that the First Sea Lord was primarily interested in getting into the field because of its potentialities for all naval ships. That same month Rear Admiral G. A. M. Wilson was appointed to a new post as head of the nuclear power program. Shortly thereafter the Queen approved the name "Dreadnought" for this revolutionary man-of-war, and by May the contracts for hull and machinery had been let.[16] Progress had been rapid up to this point, and the Royal Navy was firmly committed to building its first nuclear ship.

However, as with so many of Britain's research projects life was not to be easy for Dreadnought. On June 13, 1956 an amendment was signed to the June 15, 1955 agreement between Great Britain and the United States for cooperation on civil uses of atomic energy.[17] This was to allow a more detailed exchange of information on atomic reactors. The Treasury immediately asked the Navy to cut back its research program on the theory that it could then get U. S. information and no longer need to go through the lengthy process of experimentation. The Admiralty insisted that to get research data it must give some in return and that the research program was essential for this purpose. The Treasury was satisfied, but only temporarily. With the installation of Mr. Sandys in the Ministry of Defense all going projects came under intensive review. It was inevitable that Dreadnought would be scrutinized with care and by the fall of 1957 it was under fire. In September Admiral Wilson had submitted the Navy's requirements for enriched uranium fuel for the Neptune reactor, the land-prototype, and for the first submarine. He met immediate opposition. Although the supply of this material had steadily increased, it was still in great demand; the Atomic Energy Authority was reluctant to divert such large amounts at that time to a project which it did not consider vital.[18] The Royal Air Force was insisting that all this material should be channeled into weapons and argued that the airborne deterrent should take precedence over Dreadnought. The pressure was compounded by the Treasury which in the spirit of the Sandys era saw an excellent

opportunity to cut-back the program. By this time the Navy was estimating the cost from 1957 to 1964 as approximately £31 million. This appalled the Treasury.

Adding to the confusion was considerable interest among shippers and politicians in a nuclear merchant ship. On March 11, 1957, the Civil Lord was appointed head of a committee to study the feasibility of nuclear propulsion for commercial shipping. Both the Navy and British industry believed that tankers offered the best prospects of employing a nuclear power plant commercially. However, it was soon clear to the committee that considerable research had yet to be done before a ship could be built which would be economically competitive. The Admiralty had hoped to stimulate the shipbuilding industry's interest and inspire it to contribute financially to the research program. This rather ambitious scheme collapsed in late 1957 when the industry informed the Civil Lord's committee that it was attracted but would not place any money in the project. Ironically after this exchange the Government asked the Admiralty to reconsider the wisdom of building a submarine as opposed to a tanker.

By this time the Board of Admiralty was deeply committed to Dreadnought, and became rather alarmed in October 1957 when the program appeared to be in danger. The Admiralty moved to head off this threat, using techniques conspicuously resembling American gamesmanship. It had been previously arranged for U. S. S. Nautilus to visit the United Kingdom in October 1957. A trip was laid on for the Minister of Defense. With the cooperation of the Americans every effort was made to impress him with the phenomenal capabilities of this new ship. That same fall Nautilus participated with the Royal Navy in two training exercises with the colorful code names of "Strikeback" and "Rum Tub." Nautilus' extraordinary performance provided a cold-water shock to British anti-submarine experts. These exercises brought home the painful fact that nuclear submarines were vastly superior to conventional ones and presented a threat of a completely different order of magnitude. Detailed reports of the

exercises were circulated throughout the Ministry of Defense and particularly to the members of the Defense Research Policy Committee.[19] During this period the Russians launched Sputnik; the Admiralty was quick to link Dreadnought to the public pressure for more scientific efforts. However, these tactics had little visible effect, and the Treasury continued to withhold funds from the Dreadnought project. This was primarily due to a separate series of events which had been occurring simultaneously and which in the end avoided a direct interdepartmental clash between Treasury and Admiralty.[20]

Once the Royal Navy had commenced its nuclear submarine project in earnest, the U. S. Navy evidenced a desire to assist. A close rapport has always existed between the two navies, and with the formation of NATO the relationship has steadily continued to grow stronger. A number of American naval officers doubted the wisdom of the Royal Navy undertaking the Dreadnought research project which would involve such tremendous costs and technical problems. Nevertheless, when it was manifest that the Royal Navy intended to pursue this line of development there was a general feeling in the U. S. Navy that it should make some of the benefits of its research available.[21] In early 1957 when Mr. Duncan Sandys was visiting the United States Admiral Rickover, the head of the U. S. Navy's nuclear program, offered to release some information on nuclear propulsion. In June Admiral Rickover visited the United Kingdom and firmed up the arrangements for such an exchange. In late June a full British technical mission visited the United States. This was the beginning of a very profitable liaison, and the Admiralty scientists derived some very useful information from this initial visit. On October 5 (just as the Dreadnought program was coming under fire) the First Lord of the Admiralty was visiting Washington. In a meeting with Admiral Rickover it was hinted that the United States might be prepared to sell outright a nuclear submarine propulsion plant to the United Kingdom. This came as an unexpected shock to the Royal Navy, but it fell at a crucial time and cast the Dreadnought program in a new light.

Interestingly enough this exchange would require an amendment to the existing U. S. - U. K. Civil Bilateral Agreement and "Admiral Rickover informed the Admiralty that he could arrange U. S. agreement, if it could manage British approval."[22]

This, of course, presented the Admiralty with a completely new picture and perhaps a way out from under Treasury pressure. It would offer the United Kingdom a nuclear power plant several years before the current development program would produce one - a plant which was tried and tested. In addition it would assure Dreadnought getting to sea at an earlier date. Presumably the American reactor would supply British scientists with a great deal of advanced know-how which would allow them to take a giant step forward in their program. Not least important it would be an outright purchase and a great deal cheaper than the projected research program.

The case was not as one-sided as one might assume, and some opposition developed within both the Admiralty and the Government. A number of scientists and technicians were convinced that the contemplated purchase would halt or at least set back the Royal Navy's own reactor research program. They admitted that Admiral Rickover's offer would permit Dreadnought to commission at an earlier date, but insisted that this was not the most important consideration.[23] They argued that over the long term the Admiralty would be better advised to conduct its own research. In turn this effort would furnish the Navy a reservoir of knowledge and trained researchers. Presumably this would give the Royal Navy a broader base for future experimentation and "allow it to diverge from the American pattern and explore new areas."[24] The Navy's scientists at Harwell were developing some original ideas which showed considerable promise. Understandably some of them were concerned about losing their freedom of maneuver.

However, the Board of Admiralty was faced with more practical considerations. In its opinion the most important goal was an operational submarine in the shortest possible time. In addition the Sea Lords believed that overall the research program

would profit from American experience, although there was little doubt that the Treasury would resist putting funds into further research. A few professionals and politicians opposed this move on the grounds that it would make Great Britain even more dependent on the United States. The Royal Navy in general has never given much credit to this line of argument. If the United States can offer better equipment at a better price the professional British naval officer normally is agreeable. In this instance, however, there were a number of higher ranking officers who had come in contact with Admiral Rickover and had been aroused by his abrasive personality. It is difficult here to isolate the real reasons for the opposition generated by this group, but it is obvious that a number of highly placed persons were wary of this American Admiral who carried so much political weight in his own country. They argued that he would attempt to exert the same influence over the British maritime reactor program that he had over the American project. In their eyes the Royal Navy would be risking its freedom in a vital area. This was a tenuous argument at best, and the detached observer can hardly resist the conclusion that it was inspired by personal dislike rather than sober deliberation. Nevertheless, it was seriously pressed in the higher councils of the Government.

The majority of the Board and the Minister of Defense, however, were convinced that the American offer was sincere and that it would cut years off the Navy's entry into the nuclear submarine field. With this kind of support acceptance was a foredrawn conclusion. Within a relatively short time the opposition was pressed into the background. In February 1958 the Prime Minister approved the purchase of a U. S. propulsion plant. This assured the Navy a ready built reactor for Dreadnought and a supply of enriched uranium for fuel. The Atomic Energy Authority was no longer under pressure to supply fissile material. In turn the Navy guaranteed the AEA that its rights would be protected in the nuclear field. Predictably any opposition this office had to the Dreadnought program disappeared. The Treasury was assured

that the research program would be cut-back and that the rate of expenditure on the whole program would be slowed down - if not the total expenditure reduced. In essence a bitter intra-governmental fight was avoided and the Dreadnought's future insured.

Mr. Macmillan's decision to purchase a reactor from the United States signaled the start of protracted negotiations between representatives of the United States and Great Britain regarding this significant exchange. The arrangements to purchase an American plant required an amendment to the United States' Atomic Energy Act of 1954. Such an amendment was signed into law on July 3, 1958 in Washington.[25] This was followed by an Anglo-American agreement confirming the exchange of a nuclear submarine power plant.[26] Concurrently representatives of the two navies were meeting in order to iron out the details. The key figure throughout this period was Admiral Rickover who had very definite ideas on the manner in which this transaction should be consummated. To begin with he insisted that Rolls Royce be designated the prime contractor for the Royal Navy and that it deal directly with Westinghouse in the United States. This arrangement relieved the U. S. Navy of any responsibility for inspection or for the finished product. On the other hand it prevented the Admiralty from choosing its own firm. Vickers-Armstrong, the Royal Navy's principal contractor in the nuclear field, was heavily entrenched in the Dreadnought program. Rickover's choice of Rolls Royce required some extensive rearranging and essentially froze Vickers-Armstrong out of the important work on Dreadnought. Moreover Rickover insisted that Rolls Royce handle the manufacturing of all fuel elements connected with the reactor. By law the Atomic Energy Authority had sole manufacturing rights for uranium fuel elements in the United Kingdom. To accede to Rickover's demands would reverse government policy. For a while this issue threatened to deadlock the negotiations. In the end the Atomic Energy Authority conceded, and Rolls Royce was permitted to manufacture fuel elements.

Even more vital from the Admiralty's standpoint was the United States suggestion that the land-based prototype reactor

and research program be canceled. The Americans believed that once the United Kingdom had a complete U. S. reactor and accompanying information there was no longer any need for an independent British research program. The Royal Navy could make duplicates of the Skipjack reactor and save a great deal of money and effort. To the British representatives this seemed like a high-handed demand which would preclude the development of future British innovations. Moreover it would make the Royal Navy completely reliant on U. S. knowledge. The Admiralty refused to accede to this suggestion and made it clear that it intended to proceed with the land-based reactor at Dounreay which would include a number of purely British ideas.

Although the U. S. did not press this issue further it made one more important change which may have been connected with British insistence on reserving the right to continue their own research program. The Admiralty originally envisioned a contract between Westinghouse and Rolls Royce which would include a continuing exchange of information on reactor research and advances over the coming ten years. Essentially it would be an agreement licensing Rolls Royce to manufacture Westinghouse reactors and the associated equipment. Such a provision would assure the Admiralty of a continuing supply of U. S. information. The American representatives, however, insisted that the laws regarding the exchange of atomic energy information would not allow such an arrangement. After some discussion these provisions were deleted from the suggested agreement. This left only a contract for the supply of <u>one</u> reactor, propulsion machinery, spare parts, maintenance information, the necessary fissile material, and replacement cores for ten years. In short the exchange was only to be a single transaction involving one propulsion plant to be installed in <u>Dreadnought</u>. This left the British free to derive any benefits they could from the study of this one plant.[27] But it made no arrangements for a continuing transfer of information and there has not been any further exchange of data since these negotiations were completed.[28]

It is rather clear that the Americans did attempt to gain some measure of control over the British program. The United Kingdom representatives were forced to accept a number of conditions which they disliked, but nevertheless they accomplished their main purpose of obtaining a complete propulsion unit for Dreadnought. At the same time they retained their future freedom of maneuver. In February 1959 the final contract was consummated and by March 5 it had been fully approved by both governments. Although a great many technical and legal problems remained, the exchange moved forward from this date with relatively few serious interruptions. The Admiralty bent every effort to complete the exchange and to get its first nuclear submarine to sea. Dreadnought involved a propulsion plant which was totally new to the British, a hull form similar to the U. S. S. Skipjack which was unprecedented in the Royal Navy's experience, and a number of advanced sonar and weapons developments which had never been used in British ships. Essentially this meant that all of the major design parameters of this ship were novel and varying at the same time. The Royal Navy was trying to do in one step what the U. S. Navy had taken some ten years and a number of ships to do. This presented the Royal Navy's constructors with a unique set of problems and tested their skill to the limit. It is a genuine tribute to their ability that they were able to complete Dreadnought in a relatively short period. It was launched on October 20, 1960, and its commissioning two years later marked the Royal Navy's entry into the field of nuclear power.

Before leaving this subject, one may note certain other aspects of the program. In order to free funds for the purchase of the U. S. reactor the Treasury insisted that the Navy "go slow" with its other nuclear plans. As many of the scientists feared the research program at Harwell was virtually discontinued. The land-based prototype reactor at Dounreay was still to go forward, but at a reduced rate. There were a number of reasons for this. Not only was the Navy forced to reduce the rate of expenditure on research, but it hoped to build a totally new type of plant based

on experience with the American reactor in Dreadnought. It took some time to acquire this experience. The Dounreay reactor was to be more powerful and matched to British designed propulsion machinery rather than the American equipment in Dreadnought. It was soon obvious that before Dounreay could be completed a great deal more research would have to be done, and the Admiralty had to reactivate its research effort. This time Rolls Royce was asked to initiate the program since this company was also to operate the reactor at Dounreay. There is little question that in the final analysis both time and money were wasted by closing down the Harwell team and then within two years building up a new research effort in a different location with different people. This is an excellent example of how Treasury pressure, which often does not take into account the whole technical picture, may result in short term economies and long range waste. The Dounreay reactor is now operating and is a mixture of both American and British know-how. It is the prototype plant for all the nuclear submarines which are to succeed Dreadnought. There is little question that it includes a number of improvements over the plant in the first submarine. Moreover, the continuing research which is going into Dounreay will allow the Royal Navy to make independent contributions which would never have seen the light of day, if the Royal Navy had decided in 1959 to rely wholly on American research information.

Once the Dreadnought program had survived the 1957 crisis and the contract for the American reactor had been implemented, the Sea Lords made plans to expand the program. The Board of Admiralty approved plans for four nuclear hunter-killer submarines which would be designed to work with carrier task forces in an anti-submarine role. It was planned to complete Dreadnought's successor in late 1964, another near the end of 1966 and the last one in 1967. The First Lord's Statement for 1960 announced the decision to build the second submarine.[29] In August of that year a contract was concluded with Vickers-Armstrong Limited for the construction of H. M. S. Valiant.[30] It would have the same hull

design as Dreadnought, but a British designed propulsion plant would be installed, presumably identical to the Dounreay installation. The 1964 Statement on Defense announced that work had already commenced on the third which was to be H. M. S. Warspite.[31] Thus by 1963 the Royal Navy was well into the nuclear propulsion field and on its way to building a small but sophisticated force of nuclear hunter-killer submarines. It was primarily these developments which made it possible for the Royal Navy in 1962 to commence assuming responsibility for Great Britain's deterrent.

The Evolution of Polaris

The Sea Lords' attitude toward atomic weapons and their willingness to leave strategic bombing to the Royal Air Force has already been discussed. In essence they acknowledged the Air Force's monopoly on the delivery of strategic nuclear weapons. In turn the Admiralty's voice in regard to the deterrent was to be correspondingly reduced. The Navy's abdication was formalized in 1957 when the Board consciously diverted its attention to the problems of limited war and began to deemphasize its role in the NATO Strike Fleet. However, technological advance is no respector of organizations, even ones as august as the Board of Admiralty. It was to be only a matter of time until the developments of nuclear propulsion and solid fuel missiles were to thrust the Navy into the deterrence arena. The Admiralty's response to this chain of events is a fascinating story and in many respects the most difficult to comprehend of all its post-war actions.

As long as deterrent weapons were scheduled to be delivered by manned aircraft the Navy's position was logical and understandable. However, the introduction of ballistic missiles as delivery vehicles for nuclear weapons threatened the manned aircraft's predominance and opened up other possibilities. Though British scientists had been working on guided missiles since World War II, it was not until 1954 that they commenced serious research on ballistic missiles.[32] The United States and the U.S.S.R. had expended

considerable effort in this area. It was rapidly becoming clear that both of these governments intended to develop ballistic missiles as the primary delivery system for their deterrent weapons. Not to be outstripped the British Government decided to develop an "intermediate range ballistic missile,"[33] and in 1955 commenced the project which was later to become known as "Blue Streak." The project was mentioned publicly for the first time in the 1956 Defense Statement which requested funds specifically for this work.[34] Missile research was carried out under the auspices of the Ministry of Supply, and the Minister at that time was Mr. Duncan Sandys. It is well known that he was captivated by the potentialities of ballistic missiles and a prime supporter of the Blue Streak program. He was joined in his enthusiasm by a number of scientists within the Ministry of Supply and the Ministry of Defense. When Sandys took over as the Defense Minister it was widely assumed that one of his chief aims would be to integrade ballistic missiles into the Services' strategic plans.[35] Experience fully confirmed these predictions.

As Minister of Supply Sandys in May 1954 had negotiated an agreement with the United States for cooperation in missile development.[36] The British, having started late in the ballistic missile field, relied heavily on U. S. information. This was carried further in March 1957 when President Eisenhower and Prime Minister Macmillan met at Bermuda to concert their post-Suez views. Out of this meeting came a U. S. offer to furnish Great Britain with American missiles when they became operational. Presumably these were to be the medium-range Thors. They were expected to come into service in the late 1950's and to fill any missile gap which the British might have as opposed to the Russians. In addition the 1957 White Paper claimed that this agreement should "result in savings of time and money, and will enable work to be concentrated upon more advanced types."[37] This same statement indicated the Government's intention to rely on the ballistic missile as the primary delivery system of the future. In turn further development of manned bombers and fighters was to be

discontinued. Manifestly the Government were determined to maintain an independent deterrent and if possible to match the technological efforts of the other nuclear powers.

The 1958 Defense Statement announced the imminent conclusion of an agreement with the United States for intermediate-range ballistic missiles. It further stated that "a British ballistic rocket of a more advanced type is being developed on the highest priority, in close cooperation with the United States."[38] This missile was to be liquid fuelled and have a range in excess of 2,000 miles in contrast to the 1,500 miles of the Thor. It was to be fired from underground sites, thereby making it less vulnerable to attack than the American missile, which was to be launched from sheltered surface pads. The bulk of the country's missile development efforts were to be concentrated on the Blue Streak program.[39] By 1958 it was clear that the Government was heavily committed to this program as a successor to the V-bombers.[40] No matter how logical militarily this policy might have been it was destined to arouse controversy and opposition from the outset.

To begin with, the basic decision to convert from bombers to ballistic missiles brought the whole concept of an independent British deterrent under scrutiny. Fundamentally Blue Streak was to be the next generation of delivery vehicle, designed to keep the deterrent modern. It was painfully obvious that any such program would be extremely expensive in terms of money, talent and effort. Increasing pressure had been building up for some years against the policy of deterrence. Blue Streak gave these dissident elements a rallying point for voicing their doubts. Originally there had been little dispute about the building of atomic weapons and aircraft for delivering them. In fact the program was launched in a Labor Administration. Subsequently many professionals and laymen alike had begun to have second thoughts about the wisdom of Britain's deterrent policy. Nevertheless, once the aircraft and weapons were in existence and the initial capital expense had been met it was difficult to mount an effective case against maintaining nuclear weapons.

The announcement of Blue Streak changed the whole picture. The Government was not only planning to maintain the deterrent, but to spend a great deal more on a more advanced delivery system. In essence another tremendous capital investment was to be made in the deterrent. This led many to question whether Britain should not reject nuclear weapons, leaving the field to the United States and Russia. Although the left wing of the Labor Party has been in the vanguard of this anti-nuclear weapons campaign, it nevertheless cuts across party lines. Advocates for discarding strategic nuclear arms can be found in all sectors of British society. This controversy has raged ever since the 1957 Defense White Paper. It has become the most significant defense dispute in recent British politics. The Conservative Party has steadfastly refused to surrender the nation's nuclear independence. Deterrence has literally become an article of faith within that party.

Especially interesting here is the controversy which that posture evoked within the Conservative Government itself. "As early as January 1958, the cost of developing the Blue Streak had become a matter of concern to officials of the Government."[41] Members of both parties were sounding warnings of the accelerating costs. By 1960 when the project was finally canceled Defense Minister Watkinson estimated that the project had already consumed £100 million and that to finish it would cost between £500 million and £600 million.[42] However, cost was not the only objection. After the first Russian sputnik was launched in late 1957, fears grew that the accuracy of long range Russian missilery had advanced to the point that static missile sites would be fatally vulnerable to attack. Critics stressed the virtues of mobility and dispersion and in turn questioned Blue Streak's viability under these new circumstances. Certainly to protect Blue Streak would have required huge sums to be spent on hardening launching sites and fire control systems. All these criticisms were directed at Blue Streak, making its short life a remarkably controversial one.

However, just as important as the technical arguments were the vested interests and political pressures which swirled around Blue Streak. Although considerable political heat was generated by the Conservative Party's insistence on maintaining a deterrent posture, this was not the major issue within the Government. For the Minister of Defense and the Services the decision to have a deterrent was a given fact. The problem which concerned them was how best to meet this requirement. Sandys and his chief scientific advisers were convinced that a ballistic missile, and the Blue Streak in particular, was the best answer to keeping Britain's deterrent up to date and credible. With the new powers bestowed by the Prime Minister, Sandys was able to impose the development of the Blue Streak on the defense establishment. However, there was considerable resistance from the start. In the final analysis the Minister of Defense was never able to generate sufficient intra-governmental support for this decision, and it was destined to be reversed. At this point it is pertinent to examine the nature of the opposition and, of course, the Admiralty's stand on this crucial item.

Although the Royal Air Force was designated to take over the operation of land-based strategic missiles it was widely known to oppose a rapid transition to missiles.[43] The 1957 Defense Statement came as quite a shock to the old line air officers who could not accept the phasing out of manned aircraft. This image did not appeal to their deeply engrained "cavalry" instincts, and the Air Ministry fought Sandys' policy every inch of the way. This campaign was waged not only behind closed doors, but also in the public media as well. The most notable official attempts to influence opinion were "Conference and Exercise Prospect." This was a three day briefing session for a selected group of RAF officers and Air Ministry civil servants followed by a one-day performance held in the Royal Empire Society Hall on May 6, 1958 for selected correspondents and civilians.[44] Among other things these briefings stressed the importance of manned aircraft. "A second generation of strategic bombers, of tactical

bombers and of fighters were all held essential."[45] A call was also issued for an airborne cruise missile to improve bomber effectiveness[46] and to avoid reliance on fixed bases. The obvious conclusion, which the popular press easily drew, was that the Royal Air Force disagreed with the policy laid down in Government White Papers. This was certainly an accurate inference from the Air Force's attitude and maneuvers behind-the-scenes.

Allied with the Air Ministry in its struggle to obtain another generation of manned bombers and fighters was the aircraft industry. The day the 1957 Defense Statement was published, Sir Frank Spriggs, managing director of Hawker Siddeley Group, contended on the BBC that the envisioned changeover to missiles was much too rapid.[47] He argued that there should be one more generation of fighters and bombers or otherwise "this country is completely written off for a supersonic civil aircraft for the rest of its days."[48] This was to set the pattern of the industry's case against the Government. Aircraft manufacturers insisted that the future of British aviation depended on continuing governmental support in one form or another for aircraft research and development.[49] Defense contracts had always been an effective way of offering such assistance. The industry contended that to cut off military production would do irreparable harm at this crucial juncture. Strong backing for another generation of aircraft soon developed in the House of Lords, and in the semi-official Advisory Committee on Scientific Policy. This latter body reported that a too rapid shift to missiles instead of facilitating the shift of manpower to the civil sector of industry would cause dislocation and possibly "exacerbate the already sizeable emigration of scientists and engineers to the United States and Canada."[50]

At this point the industry was operating from a position of some strength. It was enjoying record levels of output and employment, and was contributing a large portion of its product to exports. There were strong reasons for insuring the industry's

continued prosperity, and there is little question "that the British aircraft industry successfully influenced government policy decisions"[51] during this period. In May 1958 the Government announced that it intended to support the industry both through defense research and direct contributions to research in "the expanding field of civil transport."[52] All this activity culminated in a Government order for three new military aircraft in early 1959. The Government's decision not to order more manned aircraft had been effectively reversed. It is not the object here to determine exactly how much weight the industry wielded in this decision, but rather to illustrate the political environment which was building up around Blue Streak. Certainly the industry was not so interested in defeating ballistic missiles as in assuring the continued ordering of aircraft. However, in the process it was bound to prejudice the prospects of any project which threatened the industry, and Blue Streak was definitely in that category. In short, some powerful groups were actively opposing the conversion to land-based missiles.

What was the Admiralty's stand on this issue? The Sea Lords had concurred wholeheartedly in the development of atomic weapons, but at the same time had made no attempt to participate in the delivery of the deterrent. Tradition, experience and lack of funds all predisposed the Admiralty against seriously attempting to claim a strategic bombing role for the Fleet Air Arm. Consequently, efforts had been concentrated in other areas, and the deterrent had been consigned to the Royal Air Force. This attitude evolved in the immediate post-war years when strategists were still thinking in terms of free falling bombs. But it was to condition the Board of Admiralty's approach to the deterrent throughout the 1950's and delay the Royal Navy' entry into the ballistic missile field.

Actually the Royal Navy had taken an interest in guided missiles as early as 1943 and shortly after the war had generated a requirement for a shipboard surface-to-air missile to counter the high-performance aircraft which were coming into service

throughout the world. This project soon became known as "Seaslug" and was to be developed under the joint auspices of the Royal Navy and the Ministry of Supply.[53] In addition the Fleet Air Arm had taken a deep interest in the air-to-air missiles being developed by the Ministry of Supply and had high hopes of arming carrier borne aircraft with these weapons when they were perfected. In both of these instances the work done in the Ministry of Supply was in response to a specific Navy requirement and was in the nature of development rather than basic research. The Navy followed these projects closely and eventually seconded officers and scientists to the Ministry of Supply to assist with them.

However, basic research, as opposed to development intended to meet specific requirements, was handled solely within the Ministry of Supply without assistance from the Services. Predictably it was more or less controlled by the scientists within that ministry. The Ministry of Supply endeavored to tailor its efforts to the needs of the military and through the Defense Research Policy Council each Service could express its views on various projects. Nevertheless, in matters of fundamental research, the Ministry of Supply had the predominant voice. If a particular Service disagreed with the MOS's views on basic research, the only recourse it had was to appeal the issue to the DRPC and to fight it out at that high level. As a practical matter vital interests had to be at stake to justify this procedure. Manifestly, this drastically reduced the power of the Army, Navy and Air Force to influence the direction of fundamental research.

In the case of ballistic missiles the Admiralty took very little interest. In the general view of the Navy's leaders the responsibility for development rested with the Ministry of Supply. Militarily this appeared to be a matter between the Air Ministry and the MOS. It was automatically assumed that these missiles would be assigned to the Royal Air Force and that the operational details concerned that Service, not the Fleet. In line with this attitude the Admiralty took no position in 1957

when Sandys announced the planned replacement of manned bombers with MRBM's. The Board of Admiralty did not consider delivery of the deterrent a naval function. The Board was concentrating on the problems of limited and brushfire wars, and ballistic missiles seemed to have little place in such operations.

During this same period, however, another factor appeared on the scene. Unlike the Royal Navy, the U. S. Navy had fought since World War II to participate in the delivery of deterrent weapons and in the middle 1950's was hotly engaged in an inter-Service battle to obtain a ballistic missile capability. In late 1955 after a number of false starts the U. S. Navy received Administration approval to proceed with the development of a shipborne ballistic missile.[54] A separate organization, known as the Special Projects Office, was created for the specific purpose of developing a suitable naval missile. Rear Admiral W. F. Raborn was given complete responsibility for this task. After a year of trying to adapt the U. S. Army's liquid-fueled Jupiter missile to shipboard use, Admiral Raborn convinced the Administration that solid fuel would be much more effective, and that his office could develop such a missile despite formidable technical obstacles. He received permission to proceed on December 8, 1956. This was the birth of the Polaris missile and the Fleet Ballistic Missile submarine. Admiral Raborn's staff had conceived an exciting new concept which would revolutionize the role of seapower in the nuclear age. They proposed to marry the nuclear submarine to a solid-fuel medium-range ballistic missile and to create a radically new nuclear weapons system. The U. S. S. Nautilus was already in operation and had demonstrated the feasibility of nuclear propulsion. Admiral Raborn's engineers were well aware of the remaining obstacles. Although missile research in the United States was well advanced, a submarine borne missile presented a host of unsolved problems. The most imposing was that presented by solid fuel which had never been successfully employed in a large missile. In addition new methods of launching, guidance and navigation would have to be

perfected. Still, the U. S. Navy strongly believed that none of these hurdles was insurmountable. If successful, the rewards promised to be extraordinary. A nuclear submarine constantly submerged and continually changing position would be practically invulnerable to detection and destruction. It could roam huge areas of the ocean and still remain within range of its targets. There would be no entanglements with foreign governments or agreements over bases. Moreover, counter attacks would fall at sea not on the American continent. It was an exciting concept which offered its creator the nearest thing possible to the perfect deterrent weapons system. The U. S. Navy was firmly convinced that the potentialities of this project justified any amount of effort and went ahead at full steam.

In line with its customary practice the U. S. Navy soon informed the British Navy of its plans and invited it to station liaison officers in the Special Projects Office in Washington. By the middle of 1957 the Royal Navy's representatives in Washington were receiving a constant flow of information on the progress of the Polaris program. The Admiralty's original attitude was one of "wait and see." As yet the Royal Navy did not have a nuclear submarine,and this obstacle would have to be overcome first. In addition some of the leaders of the U. S. Navy were advising their British counterparts to avoid Polaris until the more difficult technical problems had been solved.[55] On the other hand, the American Admirals were at least by implication offering their support to a British request for Polaris if and when it came.[56] However, the British Sea Lords had yet to be convinced that their Fleet should be in the strategic missile business at all.

This ambivalence was forcefully manifested in 1958. By then the design parameters of the Blue Streak missile had been firmed up and a definite decision to proceed with liquid fuel was made. Research on solid fuel was virtually closed down; all effort was concentrated on liquid propellants.[57] The Royal Navy's scientists were well aware that liquid fuel was extremely

dangerous and unsuitable for shipboard use. However, the Navy did not register a complaint or officially question this policy.[58] It is true that the Minister of Defense was determined to press ahead with Blue Streak, and that an Admiralty objection might have been futile.[59] It is nevertheless clear that the Navy's leaders, who did not consider long-range missile research their affair, were not too disturbed by a decision which threatened to tie the British deterrent exclusively to land-bases.

Over the next few months reports from the United States on Polaris were increasingly optimistic. The American program became widely publicized. There is little doubt that a number of high ranking British officers, who were impressed with the potentialities of Polaris, would like to have seen the Royal Navy adopt it. Professional literature and the public press carried numerous references to the American missile. A number of retired officers went to the point of criticizing Blue Streak as well as lauding Polaris.[60] During this period the Board of Admiralty began to discuss Polaris frequently and seriously.

From currently available information, it is impossible to reconstruct the exact sequence of events, or to determine precisely when the Sea Lords' views crystallized. On the other hand it is possible to infer approximately what those views were. The majority of members of the Board of Admiralty were convinced that Polaris would be an extremely expensive undertaking, and no matter how militarily attractive it might be the Navy would not be allotted any additional funds to finance it. Presumably if the Royal Navy was to succeed in obtaining Polaris this would deny sorely needed funds to the remaining Navy programs; thereby jeopardizing the mobile carrier task groups which the Admiralty had pressed for so hard. To the Navy's leaders it was primarily a question of priorities. They believed that top precedence should be awarded to the Royal Navy's limited war role.[61]

Although one can perhaps question the order of priorities here, it is easy to follow the Board's reasoning. For over fifteen years the Navy had received between 23-25% of the military

budget and had found this figure grossly inadequate. The senior officers and civil servants contended that this figure would not be expanded materially to accommodate this one program. On the other hand, the Navy's leaders were ignoring some of the evidence. When the Royal Air Force took over responsibility for the atomic deterrent in the early 1950's its proportion of the budget had gradually increased largely at the Army's expense, and certainly there were no obvious reasons why a similar shift of funds could not be engineered if the Admiralty took over the responsibility for the deterrent. At any rate, the Board of Admiralty was not willing to gamble on Polaris at the risk of injuring what it believed to be the Navy's more important interests.

Reinforcing this fundamental fear were some lesser considerations. The Admiralty was naturally hesitant to involve itself in an expensive scheme which had yet to be proved practical. It could always fall back on the logical assumption that the United States would make these missiles available once they were operational and when the British had nuclear submarines. Just as when the introduction of nuclear power was being discussed, the outside observer detects a streak of "cavalry traditionalism" which prefers carriers to submarines as the backbone of the Fleet. Again, the fact that the submarine element in the Navy was not directly represented on the Naval Staff or the Board may have been crucial to these deliberations. However, in this instance even many submariners were lukewarm toward Polaris. Dreadnought was well along, and there were good prospects for more attack nuclear submarines. The submariners were also confident that the adoption of Polaris would monopolize the available funds thereby sidetracking the planned ASW boats. Many preferred to forego Polaris rather than confront this prospect.[62] The overall result was to destroy any effective support for Polaris in the higher circles of the Royal Navy.

In late 1959 escalating costs and increasing doubts about Blue Streak's immobility forced the Ministry of Defense to review its missile program. By that time there were two alternatives to

land-based missiles. The United States was producing Polaris missiles and in February 1960 decided to proceed with the development of Skybolt, an air-to-surface ballistic missile. The Minister of Defense in the 1960 Defense Statement noted that both of these possibilities were being investigated for British use.[63] The latter was favored by the Royal Air Force and aircraft industry for rather obvious reasons. Skybolt, a 1,000 mile solid fuel ballistic missile to be launched from aircraft, would hopefully be ready by 1964.[64] The Air Ministry proposed to mount it on the later models of V-bombers. This offered the Government considerable savings since the air bases and aircraft were already in existence. The missiles themselves, since they were relatively short ranged and launched from great height, would presumably be much cheaper than either Blue Streak or Polaris. From the Royal Air Force's standpoint this scheme offered the manned bombers a new lease on life. There was little doubt that if this proposal proved successful there would be further generations of Skybolts and correspondingly advanced versions of the delivery aircraft.[65] In addition the airmen contended that these bombers would always be available for conventional tasks as well as nuclear ones. These were telling arguments.

The disadvantages of Skybolt were significant. There were formidable technical hurdles to overcome. Methods for launching from an airborne platform which is pitching and yawing had yet to be worked out. Fire control and navigational problems, just as with Polaris, were imposing. In order to fire a ballistic missile properly the operator must know the exact location of the launching platform. In 1960 aircraft navigation left something to be desired in this regard. However, the RAF was confident that time and U. S. money would find solutions to these difficulties. Even more damaging was the fact that aircraft just like fixed-site missiles are tied to land bases which can be pinpointed and attacked by enemy missiles with very little warning. The airmen discounted this argument insisting that radar warning and a high state of readiness would allow the aircraft to become

airborne before they could be neutralized. In periods of tension a certain number of planes could be kept in the air at all times making them virtually invulnerable to enemy missiles. Despite these objections the RAF's case, from a British perspective, was impressive. The financial advantages offered by Skybolt were particularly attractive to a Government which was continually pressed for funds.

In the United States the USAF was likewise very concerned over the life of its manned aircraft and had thrown all its weight behind Skybolt. In order to bolster its case, it was very eager for the British to adopt Skybolt. In turn it initiated a sustained campaign to involve the Royal Air Force in this new missile. In fact the USAF was not only furnishing the Air Ministry with encouraging data on Skybolt, but also with skeptical assessments of Polaris which could be used in defeating any Royal Navy bid to promote seaborne missiles.[66] In essence the two air forces were mutually supporting the political objectives of each other much in the same manner as the U. S. Navy and Royal Navy had attempted to do with the NATO Strike Fleet.

The Admiralty was now forced to take a formal stand on Polaris. It was increasingly obvious that Blue Streak's days were numbered. The Admiralty would soon be asked for assessment of a seaborne successor to Blue Streak. About 1959 the Board of Admiralty ordered a short study done on Polaris with the intention of firming up its views. Three major findings emerged.[67] First, there was every prospect that Polaris would be carried to a successful conclusion by the American Navy. Second, from a purely military perspective it would be the best deterrent weapon available. This conclusion was based primarily on its mobility and the protection offered by underwater concealment. Third, it would undoubtedly be very expensive. These findings generally confirmed the Board's instinctive feelings about Polaris. There was still general agreement that if the Navy took on Polaris it would draw critical funds away from the rest of the Fleet and divert the Navy from its more important conventional mission.[68]

By this time a number of senior officers in the Navy were developing serious doubts about the wisdom of Great Britain attempting to maintain an independent deterrent. This doctrinal conversion seemed to correspond very closely to the Navy's shift to a limited war rationale. In their eyes the cost of nuclear weapons and modern delivery systems was putting deterrence out of Britain's price range. They also considered Britain's "contribution to the Western deterrent insignificant alongside America's."[69] They could not conceive of an instance where the United Kingdom would engage in a nuclear war without the United States and did not share the politicians fear of being deserted by the Americans. These naval officers considered Britain's conventional forces a more meaningful contribution to the Western Alliance and hence a more effective use of the limited defense funds available. They were coming more and more to look at nuclear arms as a "political gimmick and not proper military weapons"[70] for Great Britain. Though the Board of Admiralty never took an official position against deterrence, this opinion was widely held, and many individual officers made their views known behind closed doors. These opinions inevitably conditioned the Royal Navy's approach to Polaris.

Sometime in 1959 the Ministry of Defense began to reassess the missile program. In the process of this review Mr. Sandys was succeeded by Mr. Watkinson. With Sandys' departure Blue Streak lost its most influential advocate. The Royal Air Force responded with a high pressure campaign for Skybolt. It was clear that the Air Ministry felt the very character of its future hinged on the outcome of this argument. In contrast to this fanatical line, the Admiralty chose a very restrained course. The Board clearly was unenthusiastic about Polaris, but at the same time recognized its responsibility to assess realistically the characteristics of the seaborne system. The results of the Admiralty study were communicated to the Defense Committee and the Cabinet. The First Lord fully informed these bodies of the reports which the Admiralty was receiving from the United States on Polaris and

recommended that it be considered seriously as a successor to Blue Streak. The Royal Navy "did its duty and nothing more."[71] No pressure was applied and the Admiralty made no attempt to push the case for Polaris or to point out the weaknesses in Skybolt. Unofficially, of course, the politicians were well aware of the Navy's reservations about Polaris. In fact many of them concurred that deterrence fell outside of the Navy's proper role.

Unlike Skybolt which was pressed enthusiastically by the aircraft industry, Polaris enjoyed no tangible outside support. The shipbuilding industry, an ineffective lobby at best in Britain, was confident in this case that a contract for ballistic missile submarines would merely replace one for nuclear hunter-killer boats. In terms of overall business there would be no change. As to the Polaris missiles, they would no doubt be manufactured in the United States. The lay strategists who saw in Polaris the only truly invulnerable delivery system for strategic weapons were its only enthusiastic advocates.[72] Yet they could hardly supply the political strength necessary to carry a program involving such heavy capital investment and long range strategical commitment.

In the end it was primarily a matter of weighing the political support. Solely as a missile, Blue Streak demonstrated every prospect of being successful. However as a liquid fuel missile it was immobile and considerable cost was going to be involved in preparing underground launching sites, which would still be vulnerable to a direct hit. Even so, it might still have won out, if backed by any influential group. However, Blue Streak's main advocates, Mr. Sandys and Sir Frederick Brundrett, the Chief Scientist of the Ministry of Defense, had moved to other departments and their successors took a neutral stand. At the same time, Polaris too had few active advocates in the Government. The Admiralty, which would normally be expected to press for this system, gave it only token approval. On the other hand, Skybolt enjoyed powerful and sustained support. The Guardian

commented that, from the day Mr. Sandys announced Blue Streak would replace manned bombers, "its days were numbered."[73] The result was foreordained.

In the early spring of 1960 the Minister of Defense made a trip to the United States and conferred with Secretary of Defense Gates. He went to look at both Polaris and Skybolt.[74] He was assured that Britain could participate in the development of Skybolt and share the operational missile with the United States. On April 13, 1960, the British Government abandoned the Blue Streak project and announced its intention to rely on Skybolt. Mr. Watkinson justified this decision on the ground that the Blue Streak's launching sites would be vulnerable to attack by highly accurate Russian missiles and that mobile systems were more appropriate to modern conditions.[75] This choice involved the United Kingdom in an expensive and questionable development program which never came to fruition. More significantly, it delayed for over two years the eventual adoption of Polaris. Certainly the Board of Admiralty must accept some of the blame for this decision which wasted both time and money.

However, Polaris did not fade into the background. The Government was forced to keep a weather eye on it. Skybolt was still experimental. The Ministry of Defense was clearly apprehensive over its future. In addition, this airborne missile was expected to be adequate only for a short period. By 1970 a more sophisticated system would be required. Reinforcing these considerations, the first operational Polaris was fired from a submerged submarine in July 1960. This event enabled its proponents to bombard the Government with reminders of the many advantages of seaborne missiles. During the parliamentary debate on the Skybolt decision, Mr. Watkinson told the House of Commons that "he had asked the Admiralty to put in hand an urgent study of the requirements for British-built submarines capable of carrying the Polaris type missile."[76] Later in the year a committee composed primarily of scientists and representing all three Services was formed within the Ministry of Defense to look at "deterrent weapons systems for the 1970's."[77]

Meanwhile, the Admiralty's attitude toward Polaris was gradually changing. It was rather clear that irrespective of the feeling of professional officers the Government was determined to maintain an independent deterrent. In the opinion of many of the Navy's scientists the technical problems confronting Skybolt were immense and the probabilities of failure were excellent. They were convinced that Skybolt was too vulnerable to compare with Polaris militarily. They were convinced too that Skybolt had been adopted primarily to extend the life of the V-bomber force. This did not impress the Admiralty as a tenable reason for expending so much money on a second rate system. Also in the process of justifying the Skybolt decision a great many misleading statements had been made both in the press and in Parliament[78] which discredited Polaris and in turn annoyed the Sea Lords. Even though they had not pressed for Polaris, they disliked seeing the capabilities of seapower undersold. All these considerations led the Admiralty to change its position. Although their Lordships still disliked assuming responsibility for building a missile submarine force, they determined to keep the record straight as to the virtues of Polaris. If the politicians insisted on further modernizing the deterrent, the Admiralty would press on them the superiority of a seaborne system over an airborne one. It is difficult for the outside observer to grasp why the Admiralty was so long in coming to this posture.[79]

The committee appointed to study future delivery systems was to experience the results of this new approach. For the first time the Navy's representatives took a firm stand, pressing hard for the abandonment of Skybolt and the adoption of Polaris if the Government was determined to continue the deterrent into the 1970's. The Committee, due to basic disagreement between Air Force and Navy, was unable to concur on any weapon. Nevertheless, it did draw two significant conclusions. Whatever system was adopted the committee insisted that it should be mobile and constantly ready to fire. The report then stated that only two systems presently in sight would meet these criteria - Polaris or an

improved version of Skybolt carried on a new generation of V-bombers which would be deployed in a continual airborne alert.[80]

This was the first time that the Admiralty had openly and directly disagreed with the Royal Air Force on the issue of deterrent weapons. It was not the last. This was only the first salvo in a bitter argument which was to stretch over a number of months well into 1962. Using the above recommendations as a guide, the Minister of Defense appointed another study group to make comparative cost analyses of Polaris and an advanced version of Skybolt. This group was composed of civil servants from the Air Ministry and the Admiralty.[81] Its deliberations were based on a complex set of assumptions concerning the number of targets to be covered, reliability of equipment, strategy, and a variety of other considerations. Neither these assumptions nor the group's exact estimates have ever been published. Again, however, the general frame of the controversy can be sketched. The RAF estimated that its system would require about 10,000 men, a reasonably low capital expenditure on a small force of bombers, and rather high operating costs. The Navy estimated it would need some 2,500 men, a large capital investment in ballistic missile submarines and missiles, and much smaller amounts for operating costs. Actually any direct financial comparison was inconclusive. The group was presumably to look at the ten year period of the 1970's. Staying solely within that frame of reference the Air Force's estimates appeared to be much lower. On the other hand the Navy contended that once the submarines were built they would have a useful life of twenty years and on that basis a shipborne system would be cheaper since its running costs were lower. The Air Force countered that twenty years was too far ahead to plan. The result was an impasse. Again no definite conclusions were reached and the group merely submitted the opposing cost estimates without interpretation. Although the Admiralty was still not enthusiastic for Polaris, it was now determined to defend the Polaris concept and to insure that the Government received an accurate portrayal of its potentialities.

No action was taken on the basis of this report for it was overtaken by events out of the control of the Ministry of Defense.

Sometime around the middle of 1962 the British Government was informed that the United States was considering canceling the Skybolt project. The prospects of success did not appear to justify the escalating cost. Needless to say the reaction was traumatic. This came as no shock to many individuals who doubted all along that it would succeed. The Royal Navy's liaison officers in Washington had been sending back pessimistic reports on the progress of Skybolt, so the Admiralty was not taken by surprise.[82] After recovering from the initial shock and conferring with the Royal Air Force, the Minister of Defense asked the Board of Admiralty for advice on the proper course. The First Lord outlined three alternatives to the Board. First, it could recommend that the Government discard the nuclear deterrent - advice that the Prime Minister was not interested in receiving. Second, the Admiralty could propose a force of hybrid nuclear submarines which would carry six to eight Polaris missiles and also possess an anti-submarine warfare capability. Third, it could suggest that the Government adopt the U. S. Polaris submarine design intact. This ship would mount sixteen Polaris and be assigned solely to a missile carrying role. The days of being reluctant were over. The Fleet was being thrust into a deterrent role by forces beyond its control. The object now was to carry out this mission with competence and elan.

The Board of Admiralty had confidence in Polaris as a deterrent weapons system even if it perhaps did not fully share the Government's affection for the concept of deterrence. It was more difficult to decide how Polaris should be integrated into the Royal Navy. The "hybrid" submarine had been suggested "as early as 1958 and due to the Royal Navy's lukewarm attitude toward Polaris was never given serious consideration."[83] Now it became more attractive. By combining the ASW and deterrent roles, the Admiralty could hope to obtain more nuclear submarines and to insure the future of its anti-submarine forces. Otherwise

there was little doubt that the nuclear "hunter-killer" program would be pushed back until the Polaris submarines were completed, and the Admiralty wished to circumvent that outcome.

On the other hand, there was a serious question about the wisdom of combining the two functions in one submarine. Certainly a hybrid boat, because of its size alone, would lose speed and maneuverability. In turn this would reduce its effectiveness as an ASW vessel. At the same time it would carry a smaller cluster of missiles. This meant that it would sacrifice performance in both roles, and probably do neither well. Economy also dictated against this alternative. The more missiles in a single ship the smaller the cost of placing a specific number of missiles on station. This was a vital consideration, since the capital cost of nuclear submarines is high. In the end the Board of Admiralty deferred choosing between the two schemes. It advised the Minister of Defense and the Prime Minister that Polaris would be an eminently satisfactory weapons system and that the Royal Navy could carry it off. It further reported the two schemes it was considering, but suggested that a final decision be delayed until after further negotiations with the United States.

By late fall 1962 it was public knowledge that the Skybolt program was likely to be canceled.[84] In December Prime Minister Macmillan and President Kennedy met at Nassau. At this well publicized conference Her Majesty's Government concurred in the cancellation of Skybolt, and the United States offered the Prime Minister Polaris in its stead. The Nassau agreement has been discussed at great length, and it would add little here to resurrect the political pros and cons. From the standpoint of the British Navy it was a momentous decision which envisaged an entirely new role for the Fleet. Although the Admiralty adopted Polaris with reluctance, Nassau was the turning point. Thereafter, all those charged with implementing this decision devoted themselves to this new task with determination and dedication.

Once the public clamor died down and the Board examined the Nassau agreement it was clear that the hybrid submarine was

ruled out. The Admiralty felt that the clause in the agreement committing the Polaris submarines to NATO, except in cases of "grave national emergency"[85] would preclude the use of such ships for practically any duties other than carrying deterrent missiles.

The Board then addressed itself to alleviating the costs, for years the root of the Admiralty's reluctance to accept Polaris. The Board argued that the Navy was assuming a new and distinctive task which justified increased funds. It even urged for a time the establishment of a new and separate category of defense funds for deterrent weapons.[86] It reasoned that the Air Force had been originally responsible for the deterrent and now the Navy was. There was no way to predict which Service would take it over in the future. The best way to avoid disruption and to facilitate the transferring of this function was to appropriate specific funds for deterrent weapons. This was a rather ingenious argument designed to assure the Admiralty a large portion of the Air Force appropriation. It was clearly so recognized, and was soon dropped. However, after some urging the Ministry of Defense took up the matter of additional funds with the Treasury. The latter abruptly responded that the shift to Polaris would not justify raising the defense budget. If the Minister of Defense wished to transfer funds between the Services that was his affair. Thereupon the Minister of Defense made an executive decision that the costs of Polaris would be equally shared by all three Services. It is too early to determine how fully that directive will be obeyed and exactly what effect the Polaris program will have on the rest of the Navy. But certainly this decision has modified the Admiralty's original fears. There is general consensus that this was a rather remarkable victory under the circumstances.

On April 6, 1963 a sales agreement for the exchange of Polaris missiles and accompanying information was signed between the U. S. Navy and the Royal Navy.[87] Concurrently the British Naval Ballistic Missile System Program was created, along the lines of the U. S. Navy's Special Projects Office, to supervise

all the details of getting British Polaris submarines to sea. Four such submarines have been authorized.[88] An ambitious building program has been scheduled. The first two boats were laid down in January 1964, two more in early 1965. The first is scheduled to be deployed on station by June 1968; the next three are due to join her in six month intervals. The Royal Navy is promoting this program with vigor. There is every prospect that the projected target dates will be met. But the program is an extremely demanding one, generating serious personnel problems throughout the Fleet. The difficulty is not so much the total number as the number of high calibre people required to man ballistic missile submarines. The capital expenses are estimated at approximately $300 million.[89] Thus far the funds laid out have not gravely hurt the remainder of the Navy. But the peak of this expenditure will fall about 1967-68. It will be impossible to predict the long range effects of Polaris on the rest of the Fleet until the program is further along. Unfortunately, the cost promises to escalate, and a number of authorities believe that, true to the Admiralty's original predictions, it will detract in the end from the Fleet's conventional mission.

Irrespective of this, the Nassau agreement has restored the Royal Navy to a pivotal position in the British defense picture somewhat similar to that of earlier years. It is now engaged in assuming the prime responsibility for the British deterrent and in building up a small but sophisticated force of nuclear submarines. At the same time the Admiralty is fiercely determined to retain and strengthen the Fleet's conventional limited war capabilities. For nothing has happened to downgrade the importance of that mission in the eyes of the Navy's leaders. One can legitimately ask whether the available resources will permit the implementation of such an ambitious scheme. Nevertheless, in 1963 the future of the Royal Navy was brighter than it had been at any point since World War II. There is little question that it has assured itself a position of prominence for some years to come and that it has carved out two vital roles for the modern day Fleet.

CHAPTER VI

NOTES

1. Much of the data in this section came from three extensive interviews with individuals who were connected with the early days of this program and unfortunately cannot be confirmed in public documents. In addition the writer was given access to some notes taken in an unclassified lecture by a scientist who was at Harwell in the middle 1950's which described in some detail the historical development of the nuclear propulsion effort. Again the writer was asked not to cite the source. For a very brief historical treatment of the early effort see R. V. Moore and J. Goodlet, "Harwell Design Study," The Journal of British Nuclear Energy Conference, Vol. II, No. 2 (April 1957), pp. 58-59; Christopher Hinton and R. V. Moore, "The Nuclear Propulsion of Ships," Ibid, Vol. IV, No. 1 (January 1959), pp. 39-50. In view of all that has been published on nuclear reactors it is shocking that there is so little available on the history of the naval reactor effort in Britain.

2. There is an interesting official account published describing the establishment at Harwell. Harwell: The British Atomic Energy Research Establishment (London: H.M.S.O., 1952).

3. For the reader who would like some technical, but at the same time understandable, background on these type of reactors, see Hinton and Moore, Nuclear Energy Conference.

4. Its large size and the graphite core would have also made it peculiarly vulnerable to shock. This is an important consideration in a submarine where every item must be built to withstand depth charge attack. In the same vein helium would be more difficult to contain than a liquid coolant.

5. For general information on Britain's extensive power program see Cmd. 9389, "A Programme of Nuclear Power," February 1955, (London: H.M.S.O.); Britain's Atomic Factories (London: H.M.S.O., 1954); John Cockcroft, "The United Kingdom Atomic Energy Authority and its Functions," The Journal of British Nuclear Energy Conference, Vol. I, No. 1 (January 1956), pp. 3-12; "Britain's Third Fuel," The Guardian, December 2, 1964, pp. 11-18.

6. Calder Hall was the first commercial nuclear power station built in Britain, and it went into operation in 1956. For general information see Calder Hall (London: U.K. AEA, 1958).

7. In 1953 the Ship Design Policy Committee assigned it a Class II priority - this was the lowest available category. Theoretically this meant that the program should receive resources to match the rate of progress expected, but to give way to more urgent demands. Practically the DRPC only considered Class I projects. This lack of support meant that the Defense Research Policy Committee asigned it no priority at all. In turn it was impossible to convince the AEA's scientists at Harwell to devote time, money or energy to a maritime program.

8. This attitude of the British people was mentioned in several interviews. It should be mentioned that the Royal Navy employed submarines in both world wars, and several compiled remarkable records. However, the British submarine effort in neither case was extensive enough to draw attention from the German U-boats or to make submarine warfare in general respectable.

9. There were naturally some dissident views on this subject. However, the bulk of the senior officers were in agreement that submarines did not offer the return on the investment to justify the huge expense that a reactor research program seemed to involve. This was before the Royal Navy came to the U. S. view that submarines were ideal for combatting other submarines.

10. Interview.

11. The British scientists foresaw a 15,000 to 20,000 shaft horse power installation. The Nautilus had a 15,000 SHP plant.

12. Many senior officers are rather sensitive on the question of whether the Admiralty was apathetic about nuclear power. Inevitably professionals justify the delay by stressing the emphasis put on land-based power producing reactors. For example see speech by Rear-Admiral G. A. M. Wilson reported in Naval Review, April 1958, p. 225; and speech by First Sea Lord, Admiral Mountbatten, reported in The Times, January 18, 1957. Nevertheless, in every interview where this subject was discussed at length the respondent agreed that one of the prime reasons for the Navy's late entry into the field was the failure of the leaders to push for nuclear power earlier.

13. This was a special company formed specifically for this job. It included elements from Vickers Armstrong, Rolls Royce and Foster Wheeler.

14. A zero energy reactor is built specifically for research and not to furnish power or produce fissionable material. For an excellent description of Neptune see Journal of the Royal Naval Scientific Service, January 1958, pp. 28-33.

15. Interview.

16. Contracts were signed with Vickers-Armstrong Ltd. (Barrow) for the hull and with Vickers-Armstrong (Engineers) Ltd. for the machinery.

17. Cmd. 9789, "Agreement between United Kingdom and United States for Cooperation on Civil Uses of Atomic Energy for Mutual Defense," June 1955. For details of amendment see The Times, June 15, 1956.

18. Both the Atomic Energy Authority scientists and production people were constantly lukewarm to the Navy program. The reactor scientists disliked seeing any money or manpower diverted from land-based reactor research, and also it meant that their control over the experimental program would be fractured to a certain extent. The production group was heavily oriented towards the weapons program and just could not generate any sympathy for what it considered a secondary requirement.

19. It is by no means customary for the Admiralty to circulate reports which throw its own equipment in a bad light. However, the Minister of Defense had just accepted the Navy's contention that the Fleet's anti-submarine capability was vital to SACLANT, and the Admiralty felt it more important to save Dreadnought than to keep its ASW image unblemished.

20. For newspaper articles published during this period on the threat to Dreadnought see "Atomic Sub Plan May be Scrapped," Evening News, October 23, 1957; Daily Telegraph, October 26, 1957; "Check to British A-Ship Plans," Sunday Times, December 1, 1957; "Navy to Lose its A-Sub," Daily Express, October 25, 1957.

21. Translating this general feeling into positive action was rather difficult since the U. S. Navy's nuclear propulsion program is under the control of Vice-Admiral H. G. Rickover. Until he personally was convinced that information should be given to Britain, it was unlikely that an exchange could be arranged. For reasons yet unknown and speculated on at great length in Britain, Admiral Rickover eventually reversed his earlier stand and in 1957 decided that the time had come to extend assistance to the Royal Navy's submarine reactor program.

22. Interview.

23. It was interesting to note the different estimates which respondents gave as to the time the American reactor saved the British in commissioning Dreadnought. They no doubt correlated with the interviewee's perspective. The minimum estimate was six months given by a scientist in the British program. The maximum was five years given by a high rankinng officer who was on the Board of Admiralty at the time and instrumental in driving through the exchange.

24. Interview.

25. Obviously Admiral Rickover made good on his word.

26. For summary see The Times, July 9, 1958. For the verbatim agreement see Cmd. 470, United States, No. 2 (1958).

27. Although the British preferred a continuing exchange there were some compensatory advantages to this arrangement. They did not have to pay royalties on any future work based on knowledge derived from the American plant. The initial contract would have required continuous royalties.

28. A number of respondents suggested that this change in the arrangements, which the British had originally hoped to formalize, was inspired by the Admiralty's refusal to cut back its research program. However, there is certainly no tangible evidence of this. Despite the tension and difficulties associated with the negotiations the writer detected nothing but gratefulness for the reactor exchange, although several people interviewed who actually participated in the negotiations were visibly guarded in their comments. The writer was able to discover only two references in the press to any tension between the Royal Navy and Admiral Rickover. See New York Times, October 21, 1960 and Daily Telegraph, October 22, 1960.

29. Cmd. 949, "Statement of the First Lord of the Admiralty Explanatory of the Navy Estimates,1960-61," February 1960, p. 13.

30. Daily Telegraph, September 1, 1960.

31. Cmd. 2270, "Statement on Defense 1964," February 1964, p. 16.

32. Thomas F. Field, "Blue Streak Missile," NATO Journal, February-March 1962, p. 27.

33. Mr. Duncan Sandys has claimed that the British decision to proceed independently was taken only after the Americans had refused to supply ballistic missiles to Britain. This is extremely difficult to credit. The United States in March 1955 offered to supply Corporal missiles to the British Army and in the late 'fifties the medium range Thor. In addition there was close collaboration with the U. S. on the development of Blue Streak. The sense of the interviews conducted by the writer was that Britain did not want to abandon this field to the Americans and decided to concentrate on the one weapon which seemed the most important under the circumstances.

34. Cmd. 9691, p. 15.

35. For public references to Mr. Sandys' deep personal interest in Blue Streak see "Sandys Faces his Vital Battle," Daily Express, February 12, 1960; "Nearly £100 Million On Blue Streak," The Guardian, April 14, 1960; Comment of Mr. George Brown in 622 H. C. Deb 211-14 and 215-18.

36. Field, 27.

37. Cmd. 124, p. 9.

38. Cmd. 363, p. 7.

39. Field, 28. It was certainly not as advanced as implied. Actually it was modeled after the U. S. Atlas and was essentially a copy of U. S. hardware, although it was hoped to stretch out the performance to exceed the Thor.

40. For a fervent defense of Blue Streak by Mr. Sandys see 622 H. C. Deb. 240-96 and 330-42.

41. Field, 31.

42. 621 H. C. Deb. 1267.

43. For a strong view by a highly placed official see remarks of the Chief of Air Staff, Air Chief Marshal Sir Dermot Boyle in Flight, February 22, 1957, p. 229.

44. See Air Power, Summer 1958, pp. 283ff. This was very similar to the Navy's Fairlead Conference held at Greenwich in early 1957. However, it was much more elaborate and highly publicized.

45. Martin, 32.

46. This was not Skybolt but a subsonic predecessor.

47. The Times, April 9, 1957.

48. Flight, April 19, 1957, p. 501.

49. For articles and comments on this issue see Flight, April 12, 1957, p. 462; Flight, March 22, 1957, p. 355; The Times, August 15, 1957. The best overall review of the pressure exerted by the aircraft industry in this fight is found in Snyder, "Dissertation," 329-68.

50. Flight, November 15, 1957, p. 786.

51. Snyder, "Dissertation," 346.

52. Ibid., 357.

53. For the only account the writer could locate on the early development history of Seaslug see E.M.E.L., "The Start of Guided Weapons in the United Kingdom," Naval Review, XLII, No. 1 (February 1954), pp. 9-10. See p. 85 above.

54. The following comments on the background of the Polaris program rest largely on James Baer and William E. Howard, Polaris (New York: Harcourt, Brace and Company, 1960).

55. Martin, 28.

56. There is no public confirmation of actual offers, but it is more than clear from interviews that the close rapport established between the Royal Navy and U. S. Navy regarding Polaris carried with it the full backing of the Navy section of the Pentagon, if and when the British chose to adopt this weapon system.

57. Field, 28. For perhaps the most authoritative account of the thinking that went on behind the scenes see Sir Frederick Brundrett's remarkably frank comments before the Royal United Service Institution. He was the Chief Scientist in the Ministry of Defense and a strong supporter of Blue Streak. In fact it is generally assumed that he left MOD because of strong differences of opinion over Blue Streak. Journal: Royal United Service Institution, Vol. CV, No. 610, (August 1960), pp. 332-43.

58. On the other hand the American Navy took a vigorous interest in the course of basic missile research and fought determinedly for solid fuel. See Baer and Howard, 18-76.

59. This was mentioned in a number of interviews as one of the main reasons the Admiralty shied clear of this issue.

60. The most interesting exchange during this period occurred in the Observer. Two articles appeared under the pseudonym "Nucleus" criticizing airborne missiles and generally decrying the need for a British deterrent. He went on to contend that if a deterrent was essential then Polaris was the only viable answer. See Observer December 7 and 28, 1958. It was widely rumored that "Nucleus" was a recently retired high ranking naval officer who had the full backing of the Admiralty in this effort. For the reaction see letters to the editor in Observer, December 21, 1958. For the best discussion of the trend of strategic thinking outside the Government regarding Polaris see Armstrong, 253-57.

61. There is little doubt that the bias of the professional officers toward carriers and surface ships played a part here. An early shift to Polaris might have torpedoed the carrier. Snyder makes quite an issue of this, see Politics, 128-29. However, this writer is convinced that Snyder overrates the fervor of this controversy within the Admiralty. There were some ardent individual advocates within the Navy for an all submarine Fleet, but they never received much of a hearing, and the Board never considered seriously downgrading surface ships.

62. Comparing an ASW attack submarine with a Polaris boat is much like contrasting a fighter and a bomber. Attack boats are considered much more glamorous by the men who man them. A Polaris submarine is tied closely to the chain of command, and its first responsibility is to avoid enemy forces, so it does not hold the appeal for aggressive submariners that the smaller ships do.

63. Cmd. 952, p. 5.

64. Financial Times, March 1, 1960

65. For an excellent discussion of the implications of this program see The Guardian, April 1, 1960.

66. Martin, 28.

67. These three findings were pieced together from several interviews.

68. This theme was constantly reiterated by respondents both within and without the Royal Navy. One of the arguments employed against the adoption of Polaris was that it would necessitate the formation of a small elite group within the Navy and that this was not desirable. These proponents cited the U. S. nuclear program which has been handled in such a manner and unquestionably has caused some serious personnel problems within the officer corps of the U. S. Navy. However, the writer could find no evidence that this point carried any weight with the Board. For mention of this see Snyder, Politics, 129.

69. Interview.

70. Interview. The writer found this attitude widely shared by senior retired naval officers.

71. Interview.

72. There is little question that the bulk of the journalists, lay strategists, and politicians who seemed to have no allegiance to any particular Service favored Polaris. This was manifest both from the popular press and interviews. On this see Armstrong, 253-57.

73. The Guardian, April 14, 1960.

74. For description of this trip see Daily Telegraph, March 18, 1960. A number of respondents thought that possibly the United States actually offered Polaris to Great Britain during this visit, but this writer could find no one who professed actually to know or any tangible evidence to this effect.

75. 621 H. C. Deb. 1265; 622 H. C. Deb. 243-47.

76. Ibid.

77. Interview. For a very general reference to this study see "Rocket Subs Only," Daily Herald, October 13, 1960.

78. In the debate on the Skybolt decision Polaris was mentioned a number of times and a number of speakers attacked its effectiveness. For example see speeches by Mr. Woodrow Wyatt (Bosworth) 622 H. C. Deb. 290-91 and Sir A. V. Howey (Macclessfield) Ibid. 303-04. Interestingly enough no one in the Government saw fit to rise to Polaris' defense.

79. A number of interviewees who had participated in the Navy's higher councils during this period frankly admitted that in retrospect they considered the Navy's failure to get behind Polaris a mistake - from the perspective of national, not Navy, interest.

80. Two interviewees mentioned that the Royal Air Force fought desperately to keep this report confined within the defense establishment. Evidently the Air Council did not consider it favorable to the Air Force's case.

81. Unfortunately the comments on this committee must rest on only two interviews.

82. There is no doubt whatsoever that the Government was informed considerably in advance of the Nassau Conference of Skybolt's imminent demise despite the outcries of righteous indignation at the time. Interestingly enough when the Government was asked by the U. S. what its reaction would be to the Skybolt cancellation it did not inform the Admiralty for several weeks while it first sounded out the Air Force reaction. The Admiralty knew full well what was going on and bided its time until it was notified formally.

83. Personal correspondence with a high ranking retired naval officer.

84. For example see Sunday Times, December 9, 1962; Guardian, December 7, 1962; Daily Telegraph, November 16, 1964.

85. For the text of the agreement reached at Nassau see New York Times, December 22, 1962.

86. See the letter to The Times from Sir Frederick Brundrett, the former Chief Scientist at the Admiralty and, later, at the Ministry of Defense, on January 15, 1963.

87. "Agreement Between the United States of America and the United Kingdom of Great Britain and Norther Ireland," Defense Polaris Sales (Wash: Supt. of Documents, 1963).

88. This program was reviewed with care by the new Labor Government and despite its strong campaign talk about canceling this program a decision was made to go ahead with these four. See New York Times, February 23, 1965.

89. Interview.

CHAPTER VII

POLICY PROCESS

The preceding chapters record the impressions of an American naval officer, with regard to the evolution of the British Navy and of its supporting structure of ideas and doctrines since 1945. In essence, this has been the story of how the pressures of foreign affairs, domestic politics and technical advances all acting through the nation's governmental machinery have continuously and inexorably reshaped naval thinking and policy. However, to better understand these forces and their consequences, one needs to investigate with some care the decision-making process as opposed to the substantive product. There are two reasons for doing so.

First, the political groups which participate in the formation of policy and the administrative arrangements governing the relationships between these groups often inject an autonomous input into the process which in itself influences the outcome. To appreciate the course of post-war defense policies it is essential to examine how officials working within the organization interpret events and translate their desires into action. Secondly, an analysis of the policy-making machinery will serve both to test the hypotheses of other political studies of the British system and perhaps to suggest new generalizations. Political structure is central to a political community's ability to exploit opportunities and to overcome obstacles present in its milieu. Economic trends, technical developments, and foreign pressures may be beyond a government's power to manipulate. On the other hand a national community may have wider effective choice regarding organizational arrangements for formulating

policy and the people who conduct its affairs. In this area meaningful generalizations can perhaps be drawn and applied in the future.

With this in mind, it is the intention in this chapter to look critically at the overall political milieu within which the Admiralty operates and to examine how the structural arrangements, both political and administrative, influence the final product. Once that is completed the next chapter will then focus on the Admiralty itself as the governmental structure most specifically concerned with naval affairs, and especially to examine its role in the policy process.

The Focus of Power

One striking feature of British defense policy is how removed it is from everyday political pressures. At least an American, familiar with his own pluralistic government, is apt to be impressed with the strong position of the Cabinet and ministries vis-a-vis Parliament and other groups external to the executive structure. This is especially evident in the area of defense. Military policy is largely the result of a dialogue between the politicians in the Government and the involved departments. The many outside elements which are presumably interested in defense matters can exercise at most only an indirect influence on policy. This feature of British rule is well known to students of comparative politics. The intent here is to examine it in the specific context of the Royal Navy, for it is basic to understanding the formulation of naval policy.

The essential nature of the British political system normally assures the Government a tight control over a wide range of policy. Parliament lacks the independent role played by the U. S. Congress.[1] The Prime Minister dominates the House of Commons primarily by means of the harsh weapon of party discipline. He is not only Chief Executive, but also a member of

Parliament and leader of the majority party. His ministers are likewise chosen from the predominant Party in the House of Commons. The Prime Minister sponsors all major legislation, and an adverse vote on one of his bills is likely to evoke a dissolution of the House of Commons, and a general election. The spectre of dissolution combined with other facts of British politics give the Government great influence over most of their party colleagues in Parliament, and operates as a powerful deterrent against defection. Dissolution is a two edged sword, but generally the "back-bencher" stands to lose a great deal more than the leaders themselves. Not only does a defector injure the party's political reputation which inevitably reflects on him, but if he insists on flaunting the leadership he risks losing the support of his party. This may entail the loss of campaign funds, organizational support and endorsement by the party's leaders. In Britain which is much more nationally oriented than the United States, this is practically tantamount to defeat. The casualties in an election are normally concentrated among the back-benchers. Needless to say, most Members of Parliament desire to retain their seats, thereby tightening the Government's control of their voting behavior. As a result "normally it is certain that any Bill introduced by the Government will pass, substantially in the form in which first submitted, whatever splendid oratory, indisputable facts, and tight logic may be advanced against it in the Chamber."[2] In essence the focus of political power lies not in the legislature but in the Cabinet.

Buttressing this pattern are both cultural and administrative considerations which enhance the Government's power. The Cabinet enjoys a great deal of authority and autonomy partly because of the widespread British belief that once leaders are chosen it is their business to govern and they should be given the latitude to do so. This is characteristic of British political behavior in general.[3] From a practical standpoint, the parliamentary time available is severely limited, and the

legislative schedule must be carefully coordinated in order to get the necessary business done. This function logically falls to the leadership and no matter where public Bills originate they are normally sponsored by ministers. Thus the Government controls the substance of legislation and the time that is devoted to it. Ministers together with leaders of the Opposition even determine who is to speak and how much time is allowed to each. It should be stressed that this authority is rarely used to stifle criticism, but nevertheless it gives the Government far more control over the deliberative process than is the case in Washington. Just as important, the rules require that the House cannot amend Government Bills without ministerial approval in principle. This device, by preventing significant changes, further tightens the Government's control.[4] In essence Parliament deliberates and debates, but it does not truly legislate, at least not in any sense familiar to Americans.

Although Bills are often debated at great length, Parliament has never developed an investigative function at all comparable to that of the American Congress. Individual members outside the Government both in the Majority and in the Opposition, are deprived of one of the most important means of obtaining information about the administration of government. They are isolated from the non-political members (i.e. civil servants, military officers, etc.) of the Government by custom.[5] Similarly, they are not entitled to classified data unless the Government chooses to release it. MP's do have the privilege of addressing queries directly to Ministers about matters for which they are responsible. The first hour of every sitting day (except Friday) is set aside for this purpose, and these questions cover a wide range of governmental activity. Unquestionably, this device is helpful in exposing missteps in the executive branch, and keeps the Government on their toes. However, the questions must be submitted ahead of time, and Ministers are still not required to divulge any information which they choose to withhold. Obviously this device is not designed to probe deeply into administrative

matters or to substitute for investigating committees. Needless to say lack of essential information drastically reduces the individual legislator's opportunities to exercise his initiative or to originate policy. This is particularly the case with regard to such matters as the military defense budget, broad strategic concepts, force deployments, etc. where the issues are without exception complex and in many cases involve classified information. Only the Government is in a position to amass the necessary data, to weigh it, and to initiate an overall program. These are regarded as essentially executive functions unsuitable for Parliamentary determination, and, in any case, beyond the average MP's probable range of information.

This asymmetrical distribution of influence is demonstrated annually when the House of Commons and House of Lords consider the defense estimates. Early in each calendar year the Government submits a Statement on Defense (popularly called the Defense White Paper) which outlines its strategic thinking, the suggested size and composition of forces, proposed budgetary levels and some general commentary on the state of each Service. It is formally debated at some length and then humbly approved without modification.

The defense debate is characteristic of the way in which Parliament is largely excluded from direct participation in the policy-making process. The Government may take major strategical decisions without even informing, much less consulting, the House of Commons. Parliament was not consulted on the commitment of forces to NATO, on the building of a nuclear deterrent force, or on the acceptance of Polaris. Perhaps the most significant example was the decision to build atomic weapons, a decision never referred to the House of Commons for approval. In the United States, Congress can and does make independent judgments on the manpower and money requirements of the Services. The House and Senate often alter the Government's recommendations. To a rather large degree, they serve as power centers which can oppose the executive branch's decisions and even legislate in defiance

of the President's stated policies. This simply cannot happen in Great Britain. Policy-making is a virtual monopoly of the Government.[6]

However, to contend that most MP's do not centrally participate in policy formulation is not to argue that they are unimportant or that they have no voice in public affairs. "Parliament is both a source of influence, which is frequently accommodated by a Government, and a part of the network of intellectual activities by which an articulate public external to the Government attempts to influence policy decisions through commentary and criticism."[7] Although the Cabinet may be able to assure itself the necessary votes on a division, at the same time it cannot afford too hostile and sustained criticism from its own rank and file. The Government operating in a context of political consent must always concern themselves about the acceptability of their actions. For this purpose, Parliament is one of the prime indicators of the nation's political pulse. Parliamentary action is primarily limited to debate of major policies, but this device serves to publicize the views of the parties, to criticize governmental policies and to illuminate areas of disagreement. Debates reveal the strength of the Government's support and lay the groundwork for the public reception of the legislation under discussion. Needless to say the Prime Minister and his Cabinet are always interested in reducing criticism within Parliament and in tailoring their policies to the majority consensus. It is from this source that Parliament derives its strength. Nevertheless, this is an indirect type of influence which relegates parliamentarians to the role of an important critic. In essence Parliament is only "one force in a great complex of forces that press upon and limit those who do govern."[8]

The same factors that inhibit Parliament's participation in the policy process apply to other groups interested in defense - only more so. The primary difficulty is the "lack of access to information needed to make valid assessments of the strategic

situation, most especially with respect to technology."[9] One problem here is the complexity of the technological information, and the other is the secrecy which necessarily surrounds sensitive areas. Moreover, the same ethics which restrict contacts between Parliament and the professional, both officers and civil servants, apply to other groups as well. As a result of these restrictions few private organizations in Britain study security problems. There are no equivalents to the Rand Corporation and to the similar private and semi-private organizations in America, which concentrate on the analysis of current military policy. The closest analogues are a number of non-governmental institutions, such as the Royal Institute of International Affairs, and the Royal United Service Institution. However, these have practically ignored contemporary politico-military matters. The Institute of Strategic Studies was founded in 1958 as a private research organization for the purpose of studying current defense problems, but its efforts thus far have been confined mainly to international relations.[10] There are no university centers specializing in the study of military policy and very few university courses dealing with current defense problems. "Individual scholars with an interest in security problems are only slightly more numerous; the fifteen or so books dealing with current security policy, published in Britain between 1946 and 1960, were the product of half that many authors."[11] The fact is that the intellectual community dealing with military problems is very small and includes even fewer "individuals competent in the technical aspects of military policy."[12]

There is fairly broad press coverage of defense problems, but it seems to be generally agreed that the press has very little influence on military planners and administration. Again, lack of essential information is the key factor. Thus the press can do little more than comment on policy after it is made, not during the process. Furthermore, most press commentary is polemical. This type of advice can hardly carry great weight with the official strategist who has wider information and heavier

responsibilities. There is a strong tendency for both the intellectuals and the press to address themselves to generalities and easily comprehended principles and to neglect the crucial issues - such as the technical details of various alternatives, the concrete benefits each offers, and above all detailed cost comparisons.[13]

Again, as in the case of Parliament, this is not to say that the views of intellectuals and the reporting of the press are not important - they are. Such commentary is both a source of some information and a forum for extending the type of criticisms which are voiced in Parliament. Many individuals interested in defense affairs have to rely solely on the press for information. There is little question that the press plays some role in shaping attitudes. Even MP's and civil servants, who are not directly concerned with defense affairs, depend on newspapers for their basic information and impressions of the public mood. That the press does play a significant role is best evidenced by the effort which the Government puts into influencing reporting and into rebutting the criticism of commentators. Again, however, this acknowledges the press' power to shape opinion, not its ability to influence policy-making directly. Undoubtedly, an occasional suggestion made by a strategist outside the Government wends its way into official policy, but this does not refute the basic thesis that outside commentators are primarily important as critics and not as policy initiators.

In illustrating the Government's powerful position in the policy-making process perhaps another source of influence should be mentioned - pressure groups. Undoubtedly pressure groups are an important feature of the British political scene, and in many areas of public policy they exercise a potent influence.[14] There are several organizations and groups outside the formal structure of government which lobby on issues related to defense. However, the nature of the channels of influence and of military problems furnishes the Government, at least by U. S. standards, considerable

control over, and immunity from, those particular groups interested in defense policy.

There are three ways that a pressure group may seek to sway policy decisions.[15] It may: (1) concentrate on creating public attitudes favorable to the group's interests hoping that political leaders will in turn be influenced; (2) lobby in Parliament in the expectation that sympathetic MP's can influence ministers; and (3) consult directly with the appropriate governmental departments. The first two channels are at best inefficient. As already noted, the individual member has little opportunity to influence policy formulation. This fact alone places any pressure group working through public opinion or directly on Parliament several stages away from the actual decision-makers. This does not deter pressure groups from attempting both to create favorable public images and to gain support in Parliament. However, organizations relying solely on these channels can rarely exercise a strong influence on policy.

Compared to the American system, this arrangement reduces the impact of pressure groups. In the United States government, where power is more diffused, pressure groups enjoy numerous alternative channels for making their presence felt. By gaining a firm foothold in a political party, a Congressional committee, or in Congress itself, they can sometimes secure decisions opposed to the Administration's desires. Since these channels in Britain offer such poor prospects, the quickest and most effective method of swaying decision-making is to consult directly with the appropriate government agency. To say the least, this puts the Government in an excellent position to deal with and assess the outside organization's influence before acceding to its demands.

Nevertheless, in some areas there are pressure groups which exert effective pressure directly on the Government and are deeply involved in the policy process.[16] But the principal private organizations interested in strategic policy do not

enjoy these advantages. Perhaps the most prominent groups concerned with defense are the Service associations - the Navy League, Army League, Royal Air Force Association and the Air League of the British Empire. These organizations are composed of retired officers, civilians interested in military affairs, a few politicians and some active officers. They have nothing to offer in the way of expertise or information which is not otherwise available to the Government. Nor does the Government have to depend on them to build public support for its policies. Consequently, their influence is generally slight, and they concentrate their efforts primarily on the public and Parliament. One respondent, a member of the Navy League, was most candid about it:

> Around the turn of the century we could actually shape policy when some of our adherents were influential members of the aristocracy and carried great weight in the Government's higher councils. That is no longer the case. We reflect policy, not make it. Our primary function is to keep the Navy image before the public and Parliament, and to see that they are properly informed about the Royal Navy.[17]

This opinion was more or less echoed by officials interviewed in the Admiralty. "We don't pay too much attention to the Navy League, unless there is a crucial fight in progress. In that case we make sure that it adopts the right line, but there is no evidence whatsoever that this has actually helped us."[18] In short the service associations are in no position to exert significant pressure.

A number of economic groups are concerned with defense policies. The most prominent are those representing industries which produce military equipment. However, their influence on policy is likewise limited. In the great majority of cases strategic policy is not at issue, but they are lobbying for one system as opposed to another both of which perform the same tactical function. In other instances, groups are pressing for contracts to be let in one area as opposed to another, because of the economic benefits to local residents. Perhaps the aircraft

industry is interested in changing the specifications on a military plane to make its design compatible with civilian requirements. This may alter performance characteristics, but it seldom changes the basic strategical policy. Again industry has very little expertise that is not available within the government, and the competition between industrial concerns likewise weakens their position.

It is very possible that the aircraft industry, in its campaign to convince the Government to continue building manned military aircraft, heavily influenced the decision to cancel Blue Streak and in turn shaped the nation's strategic policy. "However, even this is controversial and cannot be documented."[19] In this instance the aircraft industry was in a particularly strong position, because of its size, affluence and importance to the economy as a whole. Also it was one of the few times that the aircraft companies could reach any agreement among themselves on a common goal.

As to the Navy specifically, industrial groups have had little impact. Guns, armor, and ammunition are produced in government-owned Royal Ordnance Factories. This bypasses private lobbyists altogether. Until 1957, the shipbuilding industry was oversubscribed and had a continuous backlog of orders. Naval work has never been more than a fraction of the total output, and since World War II it has remained fairly constant. As a result the industry in general has taken relatively little interest in pushing Navy programs. The few yards which cater to the Navy have been kept occupied. Since 1960 shipbuilding orders have tapered off and there is some evidence that the picture is changing. However, the shipbuilders have never taken Government subsidies, nor "have they been as involved in politics as the aircraft industry; consequently they have little voice where it counts."[20] Aircraft manufacturers, due to a small number of planes which the Navy buys, have been more concerned with the Royal Air Force and on occasion have supported the RAF in arguments against the Navy. For example they opposed the

Admiralty in its fight for the American Phantom. In essence the Admiralty has neither found economic groups of great assistance in promoting its programs nor has it been subject to a great deal of pressure from them.

In summary it would appear that pressure groups are less important in defense matters than they are in most other areas of British public policy, and that this is particularly true in the case of the Royal Navy. Like both Parliament and commentators outside the Government they are important factors which must always be taken into account, but they are in no sense a direct participant, and rarely an important one, in the decision-making structure.

Finally, it is appropriate to say a brief word about the role of unorganized public opinion. In most political systems, but especially in those with democratic processes, public attitudes if firmly enough held can significantly influence government decisions. Illustrative of this is the frequently heard statement that politicians are limited by "what the public will stand." How much of a factor has this been in British naval policy-making?

The British public has been polled regularly since World War II on the major defense issues such as conscription, nuclear weapons, disarmament and the magnitude of the defense effort. In general, these opinion surveys indicate that public attitudes place few limitations on defense decision-makers.[21] For example throughout the Korean rearmament period the public decisively supported the Government's large expenditures on defense. In September 1950 at the outset of Korea 78% "agreed" with the Government's increased spending. A year later 64% indicated that they favored continuing the program even if the Korean War ended. As the Government began to advocate defense cut-backs public opinion responded accordingly. In 1955 32% of those polled favored reductions in defense. By 1957 this figure had risen to 50%, and by 1959 an overwhelming consensus (71%) had developed for the existing level of expenditures. Public

attitudes in these instances corresponded closely to Government policy and seemed to be little effected by the counter currents of criticism.

The pattern was generally the same on the question of conscription. In September 1950 a majority of 55% approved an extension of National Service from eighteen months to two years, and only 33% objected. Public attitudes generally continued to approve this policy throughout the early 1950's. In 1954 59% indicated that they favored retaining conscription while 35% disagreed. By 1956 when leaders of both parties were calling for an end to conscription a minority of 38% supported it in a British Gallup poll.

Attitudes on nuclear weapons likewise indicate that the Government plays a heavy role in shaping opinion. Polling commenced in 1955 and since that date support for unilateralism has ranged from 19% to a short time high of 33% in mid-1960. This figure soon receded to around 20%. At no time have the polls suggested heavy or sustained opposition to the possession of nuclear weapons. The evidence is not as complete as one would like, but it strongly suggests that public attitudes toward defense policy are "weakly held, and mass opinion tends to shift rapidly following changes of policy to support government decisions."[22]

There have been no questions posed in polls relating to strictly naval questions. This is to some extent unfortunate, because there is a widely held belief that the Royal Navy enjoys a special position in the hearts of Englishmen, which protects it from the vagaries of politics. Lacking objective data, I have had to rely strictly on subjective opinions elicited in interviews. Perhaps such evidence is unreliable, but at least it has been consistent. There was complete unanimity among respondents both in and outside the Admiralty that since World War II public attitudes had not effected the Navy's fortunes one way or the other. Some attributed this to a decline in the Navy's general reputation and status within the nation,[23] but

the great majority insisted that although Britons by nature were sympathetic to the Navy this did not have anything to do with defense policy. That was a matter for politicians and the Government, and sentiment played no part in the process. This was reiterated by the practical professionals in the Admiralty. They could not cite one instance of public affection helping the Navy in its post-war struggles. On Admiralty civil servant put it bluntly:

> I have always been taught that the public favors the Royal Navy,but it is not obvious at the policy-making level. In the hard-headed world of British politics it is impossible to translate sentiment into achievement. Not once has the public objected in any strength to post-war cuts in the Navy nor has there been any noticeable public support for the Navy in its fight with the Air Force. I am confident that the public would raise its voice if the Government was to put us out of business, but for no other reason. When we advertise our case outside Whitehall, we are really hoping that it will influence a minister or important advisers, not the public.[24]

Looking at the policy process as a whole, it appears to be largely isolated from the criticisms and pressures of domestic politics. The Government as opposed to the non-official groups and individuals, enjoys considerable independence in making strategic judgments and formulating defense policy. To an American observer the decision-making structure in this area seems relatively autonomous.

Nature of the Policy Dialogue

The foregoing discussion has demonstrated that the Government and its supporting administrative organization enjoy considerable autonomy, at least by American standards, in fashioning strategic policy and in shaping the basic roles of the three Services. However, this is not to say that political chiefs are the sole originators of policy or that decisions are made by an immaculate heirarchical process where ministers direct and the pieces fall into place. It is manifest from the preceding

chapters that strategic decision-making although taking place within the confines of Whitehall is nevertheless the resultant of a continually varying set of pressures which may reinforce or contradict each other and are brought together through various channels within the administrative structure. Now, let us look more closely at this process.

From certain perspectives the administrative structure of a government appears as a corporate entity with power relationships carefully delineated and authority flowing in one direction from top to bottom. At first look, the British defense structure seems to fit this image.[25] At the top of the hierarchy stand the Prime Minister and his Cabinet, collectively responsible for the conduct of governmental affairs and the choice of a national strategy. At the next level is the Minister of Defense who oversees the Chiefs of Staff Committee, the Defense Research Policy Committee and the political Ministers of the three military departments.

This structure furnishes the organizational framework for conducting military operations, administering the Services and formulating strategic policy. The first two functions lend themselves to a heirarchical arrangement, for the flow of authority is strictly in one direction. The Cabinet, often represented by the Defense Committee, sets policy guidelines which control the budget, composition, and deployment of the armed forces. It is the duty of the Minister of Defense to translate these directives into hardware and ready forces which are at the right place at the right time. Operationally he acts through the CSC which issues operations orders, directs strategic deployments, and is responsible for the conduct of combat operations. In administrative matters the chain of command runs from the Minister of Defense to the appropriate Service department where they are handled through regular military routines. This sketch applies only to operational and administrative affairs. In these cases the general guidelines have already been decided and the remaining problem is to implement the policy. A heirarchical structure

is well suited to these tasks, and in essence they dictate the form of the organization.

However, the focus of this study is neither operational or administrative on the main, but rather the evolution and making of policy. Although the same structural framework is employed for formulating policy, the process itself is basically different than that which applies to operational and administrative matters. In fact it is more legislative in character than executive. Samuel P. Huntington in discussing American policy-making comments:

> Legislative and executive processes of policy-making do not necessarily correspond to the legislative and executive branches of government. A policy-making process is legislative in character to the extent that: (1) the units participating in the process are relatively equal in power; (2) important disagreements exist concerning the goals of policy; and (3) there are many possible alternatives.[26]

This summary also well characterizes the British policy-making machinery. We have noted that Parliament does not legislate national strategy. This process is a function of the Government. National goals are by no means fixed and immutable. They are constantly changing and are determined by officials and groups with different amounts of influence, different interests, and different perspectives. In the British Government the number of groups and officials concerned with defense policy include the three military Services, the Treasury, the Foreign Office, the Ministry of Aviation, and various groups pushing competing programs. Conflict is inevitable, and the practical range of choice may be narrow or wide. The result is shaped by persuasion, bargaining, and political pressures on the interested parties.

The Prime Minister and his Cabinet are responsible for shaping strategic programs. As previously emphasized, this is one of the principal differences between the British and American systems. Final executive authority rests not in one man but in a body which is comprised of the Government's leading ministers. As the head of the Government, the Prime Minister admittedly

exerts more authority than his colleagues. He even has the final word in the appointment of ministers and determines which ones will sit in the Cabinet. In its deliberations his voice carries the heaviest weight, but this may vary considerably with different personalities.[27] Nevertheless, the Prime Minister's primacy is by no means absolute - Cabinet decisions are taken jointly and responsibility for them is shared collectively.[28]

Constitutionally, the Cabinet is the locus where the many strands - economic, political, international, military - which form the woof and warp of major policies, are brought together and woven into the final product. Cabinet ministers legally have the final say on policy matters. In practice, they actually participate in many of the major strategic decisions. But the complexity of modern government requires delegated and diffused authority. Many of the same factors that have eroded Parliament's power over the Government have likewise diminished the Cabinet's control over the bureaucracy.

A century ago the Government was concerned almost solely with collecting and expending revenues, keeping the peace, waging war if necessary, and conducting diplomacy. Cabinet members were knowledgeable on practically all aspects of governmental activity. It was possible for them to make policy on the basis of their own knowledge, to supervise and coordinate governmental affairs closely and to make all of the important decisions. This state of affairs has changed dramatically. Today the Cabinet sits at the apex of a huge pyramid. The Cabinet presides over thirty government departments and a number of public corporations that perform a wide range of functions.[29] The civil service grew from 20,000 in 1832 to over 700,000 in 1950.[30] Today the Cabinet has neither the time nor the specialized expertise to supervise the details of administration, to coordinate closely the activities between departments and to settle all disputes. It has been gradually forced to delegate more and more of its authority to lesser bodies. Unlike the United States where political appointees occupy many of the top posts, a British department has

relatively fewer political appointees, normally only a single minister, and one or two parliamentary secretaries.[31] Increasingly, responsibility for supervision and administrative guidelines has overflowed from ministers to civil servants or high ranking military officers. Likewise, responsibility for coordinating departmental activities has come to rest on the departments themselves. This accounts for the many inter-departmental committees, boards, councils and study groups throughout the British government. The Cabinet's role has been effectively narrowed to laying down "high policy" and acting as "a high court of appeal settling such disputes as are brought to it."[32]

The complexity of modern political government has likewise altered the Cabinet's character and attenuated its authority. Members have neither the time nor the ability to research issues personally and to become expert on all the varied activities of the Government. They must look to sub-committees, statisticians, economists, scientists, and other experts for detailed information and technical advice. This inevitably means that the questions which they decide are normally initiated, researched, and framed at the departmental level, and then refined as they proceed through inter-departmental coordinating groups and Cabinet sub-committees on their way to the highest level. The final decision is normally no more than approving what has been agreed to and recommended by the subordinate groups which possess the technical expertise. In some instances, when the interested departments develop major differences of opinion which they cannot settle among themselves, the problem is taken to the Cabinet for resolution. Even in these cases though, it does not really initiate policy, but chooses among alternatives on the basis of data developed at the lower echelons.

Choice is further limited by the administrative dependence of ministers on other professionals. Policies are implemented not by politicians, but by civil servants and military officers acting with minimal political supervision. If they are to be executed effectively a high degree of consensus within the

government is required. The Cabinet's programs must not only have the desired content, but also demand the respect and support of the bureaucracy. This considerably enhances the influence of the departments and the non-political administrators.

Though ultimate responsibility rests with the Cabinet, this diffusion of function results in a decision-making process that is a multi-faceted political dialogue between competing departments, groupings, and officials, all pressing their particular ideas of policy. Each participant seeks support for his case among the other parties, and ultimately the Cabinet. The more allies he can muster, the more the final product is likely to reflect his views. This process involves bargaining, compromise, persuasion. In this manner the many pressures which forge strategic policy make their presence felt, and the consensus which is necessary to assure effective implementation is reached.

The nature of this dialogue is well illustrated by the Admiralty's post-war maneuvers. The Royal Navy is one of many organizations within the Government constantly pressing for attention, enhanced prestige, and above all funds. The Fleet both performs a service for the Government and makes demands on it. The Navy's advocate in Whitehall and the focus of all its efforts to manipulate events in favor of the seagoing forces is the Admiralty. It is the only group within the executive heirarchy with a primary interest in naval affairs. Certainly Admiralty civil servants and professional officers have an over-riding loyalty to the country and Government, but even a cursory look at its post-war activities suggests that the one fundamental and unvarying policy objective of the Admiralty is to insure the Navy's survival.[33] It is manifest from the foregoing chapters that every problem is approached in that frame of mind. This was illustrated most dramatically during the 1954-57 period when many Navy leaders were developing genuine personal doubts about the Fleet's future usefulness. However, "we never put the question that way. Instead we were constantly asking: What must be done so that the Navy can make a major contribution to defense?"[34]

In turn the Admiralty plays a central role in stimulating and shaping naval policy. It has been the Sea Lords who have continuously evaluated technical developments, foreign threats, and the domestic political parameters. It is the Sea Lords who have initiated changes in the Fleet's strategic rationale. Only rarely have outsiders directed the Navy to fulfill a certain role. Instead it has been a key function of the Admiralty to prove the Fleet's usefulness and to tailor it to the demands of the times. The general war role which the Admiralty was striving to fulfill in the early 1950's was fashioned by the Navy's professional leaders and not the political chiefs or the Cabinet. Even after 1957 when the Minister of Defense took a greater interest and a stronger hand in the details of Service policy, the Admiralty's basic function did not change. Mr. Sandys did not direct the Royal Navy to alter its thinking. Instead he informed the Sea Lords that economy was the order of the day and subjected their demands and arguments to searching scrutiny. If the Navy was to survive it was incumbent upon the Admiralty to reorient its thinking and to evolve a revised role for the Fleet in the light of these realities. In short, it is the Navy's own professional leaders who carry primary responsibility for delineating naval policy, and no one else.

The concept of mobile task forces which could project both land and air power and which were ideally suited to meet the threat of brushfire actions and local outbreaks was injected into strategic policy by the Admiralty. All the appurtenances for making these task forces effective entered the British defense picture via the Admiralty. These developments were not initiated to meet a specific national requirement. The process was more involved than that. They were evolved by an Admiralty that was striving to keep the Navy in the defense picture, and they in turn helped alert the nation to the problems of limited war. There was considerable controversy over the proper balance between nuclear and conventional forces. This issue involved many considerations - national prestige, the intentions of the

Communist powers, the money and manpower costs involved, the state of nuclear weaponry, and others. The Sea Lords' recommendations were an important element in convincing the Government not to discard conventional forces and to retain a military posture East of Suez. This is an excellent example of the Admiralty's role in defining national goals as well as in providing means for achieving them.

In only one instance in the period covered was a significant naval project initiated outside the Admiralty. That was Polaris. In this case the political leadership believed that its future rested on the continuance of the deterrent and that it had a clear mandate for this policy. Even so the Government looks to the Admiralty to initiate naval programs and the lack of support among the Sea Lords unduly delayed the turn to Polaris. By the time of the Nassau Conference the Navy's leaders had altered their position on this weapon system, a change that facilitated its adoption. Undoubtedly the Government could have forced Polaris on the Fleet against its will, but it is an indication of the way the policy process functions that without Admiralty support the other alternatives were tried first. Without the Sea Lord's change in attitude it seems unlikely that the Polaris program could have been implemented as successfully as it has been.

Initiating ideas, projects and strategic concepts is only part of the Admiralty's function. If it is to represent the Navy effectively, the Admiralty must shepherd its projects through the political labyrinth and convert them into approved national policy. At this point the Navy's leaders assume the role of legislators. They must cultivate sufficient support among the concerned departments and ministers to convince the Cabinet that their recommendations should be adopted as policy. The techniques employed and the point of focus vary with each case. Depending on the gravity of the issue, efforts may be concentrated at any one of a number of levels - the CSC, the Ministry of Defense, the Defense Committee. Likewise, a variety of political techniques ranging from mere persuasion to bargaining may be

employed. Nevertheless the objective is always the same - to build an effective consensus within the executive structure.

The groundwork for less controversial programs can normally be laid at the CSC level and more often than not it is only a matter of seeking agreement. Throughout the post-war era,as previously noted, the Navy has experienced little difficulty in pushing through ASW frigates and destroyer programs. There was general concurrence among all three Services that this was a vital function and one unique to the Navy. As long as the projects did not require an increase in Navy appropriations, the CSC has approved these requests with little dissent. In most cases the support of the three military departments has been more than sufficient to make the approval of the Minister of Defense and the Defense Committee a mere formality.

In other areas the Navy has had to bargain and compromise to insure the support of the CSC. In the case of the commando carrier and assault ships the Navy changed a number of the original specifications to insure that these ships would be suitable for transporting army troops and thereby met the Army's desires. As a result CSC support was soon forthcoming. Often the CSC is the scene of hard bargaining as well as mild negotiation. Perhaps the clearest example was the Navy's insistence on approval of the concept of broken-backed warfare before it would give its blessing to deterrence. In both of the above cases the approval of the CSC was the crucial step in creating the necessary support.

Of course, the more dramatic examples are those where the Admiralty cannot achieve consensus at the Chiefs of Staff level and must carry its case further up the chain. Perhaps the most illustrative was the carrier fight of the early 1960's. The Royal Air Force refused to endorse the need for a new carrier. It rejected the Admiralty's case on both military and economic grounds. The Navy's leaders were then forced to appeal to the Minister of Defense for support, and once this was won to seek additional allies on the Defense Committee. This is an excellent example of the political technique of asking for more than one

can expect so that there is room to bargain. The Board's original request for four carriers was steadily pared in return for wider support. In the end it was the Treasury which proved to be the critical stumbling block. In order to get that vital support, the Admiralty settled for one ship.

Throughout this long struggle, the Admiralty used every technique available. The emphasis was on the logic of the Navy's case. Meanwhile, however, the Navy's leaders were carrying on private campaigns presenting arguments to their contacts in the Foreign Office, Treasury and Commonwealth Relations Office in the hope of gaining the support of these departments. Several scientists in the Ministry of Defense were enlisted in the Navy's cause and used as "impartial" ambassadors. Discreet attempts were made to build a favorable case for the carrier in Parliament and the press. Each of these steps was designed to woo the Defense Committee's approval. In the end the Admiralty's "legislators" were successful in pushing through their program.[35]

These examples suffice to indicate the nature and importance of the Admiralty's role in the governmental structure. In addition to their many duties concerned with operating and administering the seagoing forces the Navy's leaders - political, professional, civil servants - also play an essential role as legislators in the national policy process. They consider themselves the custodians of the Navy's future, and in this capacity they bear the responsibility not only for originating new policies involving the Fleet, but for legislating them into being. Their success in this endeavor rests not only on the logic of their arguments and their skill in presenting them, but also on their political influence and their ability to muster meaningful support within the Executive.

Criticisms

The security structure has been the object of considerable criticism since 1945. Even today this controversy shows few signs of abating. Both policy-makers and non-governmental commentators have consistently decried the lack of a unified policy. Normally they blame this on the lack of inter-Service consensus. Although one is led to suspect that most of this criticism reflects more a disagreement with the policy itself than with the machinery, it has struck a responsive chord among lay and professional strategists who seem to share the belief that any problem can be solved by rearranging an organization's structure. This fetish has been reflected in the Government's continual puttering with the defense machinery.

The first significant post-war step was taken in 1946 when the new post of Minister of Defense was established and the Defense Committee was created to act on or at least screen policy matters for the Cabinet.[36] The formal objective was a "unified defense policy for all three services."[37] This arrangement did not live up to the hopes of its designers, and it was only a matter of months before the machinery was under fire. Field Marshal Montgomery in writing of his experience as Chief of the Imperial General Staff between 1946 and 1948 insisted that he could recall "only one case of real unanimous agreement in the Chiefs of Staff Committee . . . in all other cases agreement was reached by compromise."[38] This was just the type of comment that stimulated critics. They called for a reappraisal of the structure citing both failure of the Services to agree and resort to solution-by-compromise as evidence of the system's failure.

With the onset of Korea and the increased availability of funds, attention was diverted from organizational matters. However, by the mid-1950's these were back in the center of the arena. The progressive cuts that Churchill made in Labor's rearmament program had stimulated Service opposition. The explosion of a British atomic bomb had generated some basic

differences among the military planners as to the character of another major war. It was well-known that the broken-backed concept was the result of a significant compromise between the Services and that the introduction of fusion weapons had aggravated inter-Service tension. In the 1955 defense debates no less than seven speakers saw fit to criticize the administrative structure. Even one of the Navy's own, Vice-Admiral Hugher-Hallett, speaking as a Conservative backbencher denounced the inter-Service competition and advocated unification of the Services as the only means of ending the "interminable and sterile arguments that have gone on so many years between the champions of the Navy and the champions of the Royal Air Force."[39] There was almost a consensus that firmer political control of the decision-making process was needed.

Starting with Mr. Eden and culminating with the 1958 reorganization a number of steps were taken to strengthen further the position of the Minister of Defense and to expand his role in the policy process. These steps have been described earlier.[40] Again the objective was to increase the control of the political chiefs over Service relationships. It is well known that the military departments considered these changes a grave threat to their autonomy and bitterly resisted them.[41] It was heralded by others as a great stride towards eliminating inter-Service rivalry and policy-making by compromise.[42]

However, these organizational changes did not eliminate the discontent. Under Mr. Sandys, defense policy evoked just as much if not more criticism than that of his predecessors and precipitated the first genuine post-war split on defense issues between Labor and Conservative parties - the controversy regarding the relative balance between nuclear and conventional forces. Fuel was added to the flames by the cancellation of Blue Streak, the subsequent abandonment of Skybolt, the argument over a common fighter aircraft and the Navy's struggle for a new carrier. Predictably the defense critics turned their attention once again to security organization. By the early 1960's their

demands ranged along the usual scale from more power for the Minister of Defense to complete unification of the Services.[43] Throughout the entire period 1945 to 1963 there was a tendency among commentators to blame policy weaknesses on either organizational structure or Service rivalry, and to advocate more centralized control as the remedy. These views were shared to a great extent by the policy-makers themselves as witnessed by the consistent trend within the Government toward tightening political control of the military.

However, the organizational changes effected have yet to eliminate the symptoms, which suggests more profound structural weaknesses. One is moved to query whether the cure fits the disease. It is my intention to select the two major criticisms normally leveled at the policy process and to examine them in the light of the data in the preceding chapters in an effort to test their validity. Such an analysis should help to indicate the limitations of organizational reform.

(1) Service self-interest and Service rivalry are the basic causes of policy inadequacies. In one interview with a prominent British journalist and author, the Royal Navy was castigated at great length for its partisan approach to defense policy. This respondent said in substance:

> The Admiralty always begins by asking what is the Navy's role in the defense picture. This is a misguided question. The basic query should always be: what does the country need for its defense? If the answer leaves the Fleet with nothing to do, that is too bad, but every problem should still be approached in that fashion. Unfortunately, if you ask the wrong questions, you are bound to get the wrong answers.

This comment, in my experience, rather accurately represents a large sector of informed opinion in Great Britain. There are, of course, other ways of putting the same point. One critic will condemn "vested interests" and another the "inter-Service competition." Looking at the Navy's post-war experience, what can be said about this issue?

First and foremost it is true that the Admiralty is primarily motivated by self-interest. It is the Navy's official

advocate and the Fleet's guardian. Its every thought and action is designed to promote the Royal Navy. In this sense the Admiralty is a vested interest. It has all the characteristics of any large organization dedicated to staying in business, and these are intensified by the emphasis which is placed on loyalty, tradition and discipline. Correspondingly this means that the Admiralty will use all the devices available to it in advancing its projects, recommendations and ideas. The political and legislative character of the policy process in the British Government has already been noted at some length. Decisions and policies are the product of compromise, and there are unquestionably instances of the Navy's influence and intransigence injecting ill advised elements into British policy. However, this does not necessarily validate the critics' claims. The crucial question is whether organizational self-interest makes for a better or worse overall defense policy.

The Navy's experience is most emphatic in this regard. There is no question whatsoever that the inter-Service competition and self-interest have improved the quality of the Admiralty's contribution, and in turn the final policy product. The most illustrative example is the conversion which took place in the Admiralty's thinking from 1954 to 1957. The introduction of hydrogen weapons, the emphasis on the deterrent, and the Air Force's ascendancy stimulated a serious reappraisal which had several beneficial results. The Navy's rather desperate search for a new and meaningful role led to its conversion to a limited-war philosophy and the subsequent tailoring of the Fleet to fulfill this role. A number of noteworthy individual developments followed - the commando carrier, assault ships, guided missile ships, aircraft configured for troop support, afloat logistic support. All these were progressive naval steps inspired by the Navy's interest in surviving as an important element of British defense.

Irrefutably the Navy benefited; did the nation too profit from this chain of events? The Navy's search for a new role was

one of the important pressures calling attention to the nation's overseas responsibilities, the problems of limited war and the need for conventional forces. In this respect its arguments played a vital part in the fight over the balance between conventional and nuclear forces and contributed to the shaping of a vital political goal - the decision not to withdraw from the responsibilities East of Suez. Similarly, the Admiralty's initiative offered the Government a choice of instruments for carrying out this policy. Combined with the strategic reserve the concept of mobile task forces was to make this policy feasible. No matter how strongly the Government desired to play a role in the Middle and Far East the traditional methods were no longer practical, and it could not carry out such a policy without new military concepts. The Admiralty's mobile task forces made it possible for the Government to retain a military presence in the area and at the same time to reduce its reliance on fixed bases. There are those who no doubt contest the wisdom of Britain's commitment East of Suez, but the fact remains that it has grown steadily among British priorities and is today supported by both parties, the public, and by most lay strategists. The Admiralty played a key role here. Although the primary incentive was self-interest the nation benefited.

For purposes of illustration it is instructive to approach this train of events from another perspective. The analysts who were condemming the Admiralty's obstinacy in 1954 had in mind primarily the problem of general nuclear war. They were criticizing the Fleet's ability to contribute in such a conflict. They argued either explicitly or implicitly that if the Admiralty would view the problem from a national perspective it would leave the field to the Royal Air Force and Bomber Command. What would have been the result if the Admiralty had heeded this advice? No doubt the carriers would have been phased out of commission, and the Fleet Air Arm most likely eliminated. There would have been no naval planes available for Suez and very little incentive for the sweeping review of Admiralty thinking which took place

in the middle 1950's. Perhaps Suez or other events would nevertheless have demonstrated the need for amphibious craft, aircraft carriers and conventional naval forces. However, to rebuild such forces from scratch and to recruit and train the necessary personnel would be prohibitively expensive and would require years of effort.

This is an excellent example of vested interests counter-balancing in some degree uncertainty of national thinking, and preventing a sudden change of policy which might have been harmful in the long run. Certainly nuclear weapons were significant and destined to assume an important place in British defense, but there were too many unknowns in the situation to justify a total commitment to deterrence as later events have demonstrated. Yet the only thing that prevented such a decision was the combined resistance of those elements of the government that, for whatever reasons, did not believe in it. If by a coherent or unified policy the critics mean a single minded policy which allows all the effort to be channeled toward one goal and implies full agreement among the interested parties, then Britain did not have one, and the Navy was partly responsible. On the other hand the nation did have a policy which acknowledged that the way ahead was not altogether clear, and left some freedom of maneuver if nuclear weapons did not prove to be the sole answer.

In retrospect, a number of Admiralty projects can be justly criticized. The vast expenditures during Korean rearmament on minesweepers, the insistence on retaining a huge reserve fleet into the late 1950's, and the failure to pare down the shore installations are the most prominent. However, these were rarely the object of criticism, and the first two projects had a great deal of support throughout the executive among political leaders. Perhaps the Admiralty's most serious errors were ones of omission not commission. The Navy was late in entering the nuclear propulsion field, in pressing for high performance aircraft to attack land targets and, of course, Polaris.

However, these mistakes can be attributed to the failure of the Sea Lords' to appreciate their importance and not to the Admiralty's unprincipled drive for self-enhancement. In fact it was the Admiralty's fear for its future that did push it into the nuclear propulsion field eventually - again primarily a question of self interest - and this development subsequently made the adoption of Polaris possible.

Polaris deserves separate mention. As pointed out in Chapter VI the Ministry of Aviation was responsible for ballistic missile research, for which the Navy took no responsibility and exhibited little interest. About 1958 a crucial decision was made to discontinue research on solid fuel propellants and to concentrate on the liquid fuel Blue Streak. This decision, closing out any possibility of developing a British shipborne missile, proved to be a costly mistake. It is interesting to speculate what would have happened if the Royal Navy's scientists had been more closely identified with this research or if the Admiralty had had its own ballistic missile program. Great Britain might possibly have had a seaborne missile much earlier and have avoided the Blue Streak and Skybolt fiascoes. The United States government went through much the same evolution, and only the persistence of the U. S. Navy avoided a similar mistake. The only persons with a deep concern in making a solid fuel missile work were those interested in sending missiles to sea - U. S. Navy scientists and technicians. Under their guidance the problems were overcome and the result was Polaris. This was a clear-cut case of self-interest working in America's national interest.

A balanced appraisal seems to indicate that Service rivalry may facilitate adjustment and improve the quality of policy by injecting into the decision-making process a degree of competition and diversity. Separatism assures that problems will be looked at from varying perspectives. It likewise promotes full discussion and criticism within the defense establishment. In addition, it encourages the individual Services to seek

continually for new roles and methods. This in turn offers the Government a wider range of alternatives and increases its freedom of action in formulating policy. At this point it should be strongly emphasized that these comments apply only to the policy-making aspects of the security establishment. To say that the inter-Service competition improves the quality of security policy is not to say that there are no valid reasons for encouraging an amalgamation or closer coordination of the three Services. It could perhaps be argued with some justification that operationally and administratively there is a great deal to be gained by further unification. However, this study has not concerned itself with those aspects of the military picture. The major interest here is in policy formulation, and from that perspective there is something to be said for Service rivalry.

Before proceeding to the next subject I shall comment briefly on a subsidiary assertion that always goes hand-in-hand with the criticism of vested military interests. This is the argument that centralized control will eliminate rivalries within the defense establishment. Experience refutes this proposition. Since Mr. Sandys first asserted his newly-granted authority in 1957 the focus of the defense dialogue has shifted from the CSC to the Minister of Defense, but this has not moderated the inter-Service conflict. On the contrary both the amount and intensity of wrangling has increased. In 1957 the Air Force went to great efforts to undermine the Navy's case for naval aviation and to encourage Mr. Sandys in his threat to phase out the carriers. As long as the CSC was the major arena, the Air Force was never able to exert the pressure it desired and, despite its well known hostility to Navy carriers, never pressed its case to the limit. However, Sandys offered it another lever, and the campaign was vigorously accelerated.

On the Navy's part there is clearly no evidence that the Minister's increased supervisory powers attenuated its partisanship. Finding its channel through the CSC less effective, the

Admiralty not only made every effort to persuade Sandys with logic and persistence; it went to great lengths to enlarge the debating forum and to put outside pressure on the Minister - even to the point of violating the time honored taboos prohibiting professionals from going outside the heirarchy. The Fairlead Conference held at Greenwich to brief industrialists on the Navy's future plans was a thinly disguised attempt to enlist civilian support. During the Sandys regime there is little doubt that the Sea Lords used Commonwealth governments, press leaks, the prestige of retired officers, and a variety of techniques to bolster their case.[44] Here was a Service fighting for its own interests harder than it ever had before.

The Navy was by no means unique. The Sandys era was characterized by intense bickering. All three branches cast aside many of their traditional inhibitions in order to promote their own self-interest. George Brown, Labor's chief spokesman on defense at the time, commented: "We . . . have had almost every member of the Services' team making quite sure that their particular angle on what was happening was well known and well publicized."[45] A few years later, referring to this period, Brown observed that "the Service Chiefs spoke in public, against all traditions, taking that risk in order to get around the Ministers whom they could not persuade in private."[46] Not all this activity was provoked solely by the Minister of Defense's increased power or intended to obstruct him. No doubt some could be traced to accident, personal reasons and even to the Government which launched an occasional trial balloon. However, there is practically unanimous agreement that this period was marked by extreme partisanship.

It was a time of cut-backs and retrenchment that no doubt contributed to the competition. Still, that in itself is not a sufficient explanation. Starting about 1959, the proportion of the GNP allotted to defense has remained relatively fixed, but there has been no significant reduction in inter-Service tension. In fact two of the bitterest policy struggles since World War II

were those concerning Polaris and the Navy's new carrier. There are no doubt a number of factors which contribute to the intensity of the policy-making process, but one conclusion seems irrefutable - increased executive control neither eliminates such bickering nor does it convert Service leaders into docile non-partisans.

This conclusion is reinforced by a quick glance at the Navy itself. Even with its deeply rooted traditions of loyalty and heirarchical discipline, there are strong divisions of opinion within the Admiralty, and continued struggles take place between these elements. Conflict is just as characteristic of the Admiralty as it is of the structure as a whole. For the first few years after the war the aviators waged an intense fight for a stronger voice in the Navy's affairs. Despite the fact that the Admiralty was late in entering the nuclear propulsion field there were nevertheless a number of individuals within the Navy pressing hard for atomic submarines. The same was true of Polaris. Today the situation is reversed; there are a number of individuals who would prefer to have the Navy withdraw from Polaris. The Admiralty is admittedly more successful at keeping its struggles within the confines of its own organization. But this does not rebut the fact that there are contradictory vested interests within the Navy which compete with each other constantly. As strong as the command structure is it has not eliminated such in-fighting. Moreover, it has not been as concerned over it and has chosen instead, as far as policy-making goes, to give voice to the various interests in the Navy through the device of collective leadership. It would be folly to contend that the Navy structure is as loose as the Government's. It is just as foolish, however, to argue that centralized control will successfully repress vested interests and eliminate inter-Service competition. Experience suggests that conflicts of this nature will be present no matter what the form of the organization.

(2) Compromise is an unsatisfactory way to make policy and should be replaced by heirarchical control. To argue that

self-interest and competition play a positive role in the policy process is not necessarily to condone unrestricted bargaining. Needless to say this has been one of the major complaints of outside observers. John Strachey, Labor MP and a former Secretary of State for War, expressed it succinctly: "If we divide up those limited resources fundamentally in such a way that no admiral, general, or air marshal is offended, we shall not get a very happy result."[47] Strachey was primarily directing his attack at inter-Service rivalry, but the above statement refers not to the interests themselves, but the manner in which they are translated into policy. He is objecting to a policy-making system that depends purely on compromise and bargaining between the three Services for its military inputs.

Does the Navy's post-war experience affirm or disaffirm Strachey's charges? It is more difficult to evaluate this aspect of the policy process than the proposition discussed above, because the evidence is not so clear cut. Nevertheless, it is possible to make certain fruitful observations. The first few years after World War II are not very instructive in this regard. All three Services continued to rely on wartime equipment for several years. Strict economy was the order of the day and precluded any significant changes. Moreover the energies of all three branches of the military were absorbed by demobilization and the conversion to a peacetime status. Surprisingly it was a period of little controversy. However, with the release of funds in the early 1950's and the introduction of atomic weapons the military was presented with difficult policy choices. In turn Service friction increased. It is useful to examine the Navy's maneuvers in this period.

The defense reorganization in 1946 was intended to provide an additional level of political control for the three Services as a whole in the person of the Minister of Defense. He was assigned three main responsibilities: (1) administration of inter-Service organizations; (2) resolution of questions of general administration on which a common policy for the three

Services was desirable; and (3) "apportionment in broad outline, of available resources between the three Services in accordance with the strategic policy laid down by the Defense Committee."[48] On paper this mandate appeared more than adequate; in practice, it proved somewhat illusive. The Minister had a very small staff and no planning or information gathering services of his own. He was forced to rely almost entirely on the combined advice of Service minister and Chiefs of Staff, each of whom had his own organizational and information resources. Outside of very general guidelines or a specific decision on a particularly significant issue the Minister had little control over policy. His authority was exercised mainly by laying down budgetary restrictions. Due to the lack of detailed information his decisions tended to be arbitrary with little consideration for the dovetailing of Service programs. For example fiscal cut-backs would be split equally across the board without attempting to determine what this would do to each department or if one branch could afford it more than another.[49]

The result was that the focus of the decision-making was the CSC. It was there that projects were debated; facts compared; and the overall strategy formulated. Its decisions and advice with rare exceptions were approved by the Minister and formed the military basis for Defense Committee decisions. The Minister's mandate did not permit detailed interference in the affairs of the individual Services, and his own facilities did not allow him to compete with those of the CSC. The result was foreordained. The great bulk of decisions were the result of bargaining, negotiation, and compromise hammered out within the CSC. Throughout the early 1950's considerable criticism was leveled at this procedure, usually by individuals who were dissatisfied with policy content and preferred to direct their complaints at the machinery. Those who agreed with the nation's defense policy, and there were a great many, could find little wrong with the mechanisms. However, in examining the Navy's experience it becomes obvious that there was some merit in these criticisms,

and there was a pressing need for stronger political leadership at the inter-Service level.

This is graphically illustrated by the Navy's approach to the NATO Strike Fleet and subsequent conversion to a limited war strategy. When NATO was formed, the Admiralty was in full accord with its objectives and eager to cooperate in every way. Once SACLANT began to organize his forces the Royal Navy contributed enthusiastically. Although there was considerable debate in the Admiralty over SACLANT's plans for developing a strike fleet to participate in the initial nuclear attacks, the Sea Lords concluded that on balance it was a viable scheme and committed their forces to it. This decision was approved by the CSC and in due course became national policy. From that date the Admiralty was beset with ever increasing doubts as to the wisdom of a large seaborne force closing the enemy's coast in the early days of a nuclear war. Many of the Navy's planners believed that the Fleet would be running an undue risk, considering that it could make only a marginal contribution to the nuclear exchange. They contended that the Fleet should be saved for broken-backed operations and the protection of the sea lanes. With the introduction of the hydrogen bomb this thinking soon became predominant. By 1955 there were few senior officers in the Royal Navy who subscribed to NATO's strike philosophy.

A feeling of uneasiness pervaded the Admiralty and, as previously noted, the leadership began a vigorous search for a new role. As early as 1954 and 1955, the Navy's operations analysts were encouraging the planners to turn toward limited war and to deemphasize the Fleet's general war role. By Suez there was considerable sympathy within the Navy for this view. In retrospect it seems probable that the Admiralty would eventually have adopted these recommendations whether Mr. Sandys had appeared or not. Still the crucial question is: when would the Admiralty have acted? Due to the strong position it held in the CSC it was able to avoid any penetrating criticism of its carriers and was never forced to justify them in any detail.

Ironically, the Admiralty was extremely concerned over its future, but no other element in the Government, not even the RAF, was evidently able to lay bare these problems and to force the Admiralty to defend its position. Despite doubts about NATO, the Admiralty made no move to withdraw from the Strike Fleet nor did it suggest that the nation change its policy. In the same vein, it did not stress the limited war potential of naval forces until it was backed to the wall in 1957. In essence the Admiralty was content to go along with the accepted policy as long as it offered the Navy an important role, although the Admiralty was developing grave doubts about that policy. As one respondent put it: "We had no intention of rocking the boat until the future was clearer, and we could initiate changes with some confidence that they wouldn't hurt the Navy."[50]

Of course, this was only possible because the Navy held a strong bargaining position, and policy was being decided by negotiation between the three military departments with little interference or stimulation from the outside. Sandys' ascendancy to power in 1957 altered this situation substantially. He forced the Admiralty to justify its programs in detail, to review its entire range of activities, and to adjust to the nation's new political goal of increased economy. A surprising number of the persons interviewed admitted that "Sandys made the Navy do the thinking it had neglected to do since World War II and to relate itself to the new conditions that prevailed."[51] Buttressed by increased authority, the Minister of Defense was the catalyst which accelerated the Navy's turn away from NATO and its general war role. Moreover, the reduction of the reserve fleet, the streamlining of the naval reserve organization, and the cut-back in logistics facilities were all moves which the Admiralty had been contemplating, but found it difficult to take.[52] Under pressure from Sandys the Navy carried out these reforms, and the writer found complete unanimity among interviewees that in retrospect these steps were both wise and long overdue.

The conclusion is obvious. A policy process which was virtually controlled by inter-Service bargaining was slow to

respond to change and hampered by inertia. This is not a complete condemnation. As the previous discussion has illustrated competition has numerous benefits, and the alterations wrought under Sandys were already in process. Even after 1957 the original thinking was still done by the individual branches. What was needed, however, was some outside catalyst which was concerned with the overall military picture rather than just that of an individual Service, and with sufficient authority to overcome the strong tendency of the individual departments to rest on their oars. Certainly Parliament was in no position to supply this impetus nor was any group outside the Government.

Mr. Macmillan's grant of increased authority to the Minister of Defense and the reorganization of 1958 went a long ways in meeting this need. There is certainly little question that, since 1957, the quality and originality of the Navy's thinking and of the general policy dialogue has improved.[53] One Admiralty civil servant caught the spirit of this new development when he remarked that "no longer will vague generalities about the 'island race' and the merits of 'seapower' suffice, the Navy now has to build its case on facts and logical argument and to compete with the Air Force on common grounds."[54]

However, it should be emphasized that the experience under Sandys was by no means an endorsement for unqualified centralized supervision. In the surge to assert his new-found power and to impose economies the Minister of Defense demonstrated the limits as well as the advantages of heirarchical control in the policy process.

The Minister of Defense's main tasks were to cut down the national resources consumed by defense and to oversee the end of conscription. These policies had strong implications for the military forces, but nevertheless were basically political decisions. They were taken with the full support of the Prime Minister and the Cabinet. In turn they received the approval of both parties and the electorate, although they were vigorously

opposed by the Services. However, these were the type of decisions which are considered the rightful business of the political leadership. As a result neither of these policies has been strongly denounced although certain elements criticized the end of conscription.

On the other hand it is well known that a number of decisions regarding primarily military matters were taken by Sandys on his own initiative with little consultation among the Services and despite the strenuous objections of the military. For example, it was his original goal to orient British defense policy firmly towards deterrence and gradually to deemphasize the conventional forces. This line was taken without extensive interchange of views among military departments and with very little real study of its implications.[55] Sandys' intentions sparked a genuine controversy within the Government over the balance between nuclear and conventional forces. The 1957 White Paper, which outlined the Sandys approach with some reservations, stimulated a public debate which paralleled the controversy within Whitehall. The Army and Navy brought all the pressure to bear which they could muster. They were joined by both politicians and commentators in their criticism of too heavy a reliance on nuclear weapons. The next two years witnessed Sandys' gradual retreat from deterrence and a turn back toward conventional forces.

An integral part of this plan had been the Blue Streak missile which was to replace manned aircraft. Again the basic decision was not the result of a policy dialogue among the interested groups so much as a decision made by Sandys and his personal advisers. In the end it proved impossible to implement Blue Streak, since it did not have the support of the very organization which was to be responsible for it, the Royal Air Force. Similarly, his stress on nuclear weapons implied a policy oriented toward NATO and the deemphasis of Britain's overseas responsibilities. Again this did not suit the temper of the nation or the majority of participants in the policy

process, and the Minister was eventually forced to adjust his policy accordingly. In essence Sandys had not read the political and international signs correctly and made a number of politically untenable decisions. As Laurence Martin describes it, a "less wholehearted plunge into strategic nuclear weapons would have been more consonant with the probable future development of British defense policy."[56]

A number of conclusions would appear in order. This chain of events indicates the main weakness in policy-making by one man. The decision-maker may be wrong. Anthony Head, a former Minister of Defense, in commenting on these decisions phrased it well:

> My right honorable friend (Sandys) has great qualities of strength of character and determination. He is known for it inside and outside the House. They are fine qualities in a Minister provided he is right. If, however, he introduces a policy which may lead into danger, such qualities can be calamaitous.[57]

In operational matters a single commander is essential and often a decision, even though not the wisest, may be preferable to further delay and consideration. At higher policy levels this may not be so. The variables are greater and strategic programs involve tremendous expenditures of talent, time and money. The results of error can be disastrous and long continued. It is often better to go with a compromise until the situation clarifies than to put all of the nation's effort into a possibly wrong channel. In 1957, there seems no doubt that, if the Minister of Defense had elicited further exchange of views and given more weight to the arguments of the Army and Navy, he would have put more stress on conventional weapons. This in the end was the policy adopted after several years of heated controversy. A number of respondents expressed the opinion that Sandys soon learned these lessons and that the longer he was in office the more receptive he became to Service views. Similarly, the more he compromised in order to reach a consensus among the military departments.

One of the main problems here was the staff and facilities available to the Minister of Defense. It soon became painfully clear that if the Minister was to inject himself into the "nuts and bolts" of defense policy, he would require independent information services and a greater number of personal advisers with technical expertise. The reorganization of 1958 attempted to achieve this by enlarging his staff, upgrading the role of scientists and putting the Chief of Defense Staff in charge of the joint planning groups. These actions put the CDS in a better position to obtain the information the Minister required.

The Blue Streak incident reemphasized the politicians' reliance on the cooperation of the professionals. The leadership can inject political considerations and in the end has the final responsibility for national strategy. Nevertheless, it must depend on the military to implement those decisions and to support the Government. This puts very definite limits on the politicians's freedom. It is not solely a matter of superior and subordinate. The Services themselves command a certain amount of political support both within and outside the Government. Their desires are very definitely one of the factors that must be considered in policy calculations. A minimum amount of consensus is essential to the successful consummation of any decision, and the minister who ignores this does so at his own risk. This was certainly the situation with Blue Streak.

Moreover, it was demonstrated that although the Minister of Defense wielded increased powers he was still forced to rely on the skill and originality of the military departments for the bulk of his policy ideas. He could lay down the guidelines, but he was in no position to prescribe the details. It was an Administration goal to economize and if the Services did not respond with ways and means Sandys could threaten to make cuts arbitrarily. Facing this threat it was the Sea Lords who suggested reductions in the reserve fleet, logistic facilities and reserve personnel forces. By careful study and planning these

steps were effected without materially reducing the strength of the operational fleet. In the same manner it was the Admiralty which most forcefully called the lessons of Suez to Sandys attention and recommended that mobile task forces would allow withdrawal from many of the overseas bases. In fact the Admiralty played a major part in changing Sandys' mind about the importance of limited war forces. In the final analysis firm executive control cannot eliminate the need for skillful and dedicated professionals in the military departments, nor can it exclude them from the policy process.

This suggests another serious problem which overzealous political heads can create. The morale of the Services and their willingness to participate in the process is linked to the general policy-making pattern. If there is a free flow of ideas and the military leaders are convinced that their views are receiving full consideration, they are more likely to contribute their best efforts. On the other hand, over-control and arbitrary decision-making will encourage apathy and inertia. It has been noted that when the process rests solely on bargaining it tends to be too slow. The same may be true in the reverse situation. The political leader's dogmatism can make "for undue rigidity in reacting to later information and ideas."[58] There is some evidence that this was occurring under Sandys. Many individuals interviewed who had served in the Admiralty from 1957 to 1960 were frank to admit that the Navy wished to avoid requesting a new carrier under Sandys. If at all possible this campaign was to be delayed until his departure - and it was. Perhaps more illustrative was the question of Polaris. The Sea Lords were convinced that if the Admiralty accepted responsibility for Polaris it would not receive additional funds. In their minds, the political leadership had decided the share of the available resources which each Service would receive and was too inflexible to change its position, no matter what the evidence or how important Polaris was. There was general agreement among naval respondents that Sandys' dogmatic attitude toward

carriers and Blue Streak had been one of the major factors in generating this attitude. This was an instance where the Admiralty's reluctance to participate in the policy process worked against the nation's best interests. There is certainly no question that throughout the Sandys era there was a general distrust of the Minister of Defense and a consequent reluctance to make recommendations or argue with him unless forced to. This attitude was bound to have an adverse influence on the policy process.

These conclusions are borne out by the conduct of subsequent Ministers of Defense. Although centralized planning seems to have become a permanent part of the policy process, both Mr. Watkinson and Mr. Thorneycroft have made genuine efforts to increase consultation among all three Services and to solicit their views. In addition more civilian experts, both scientists and civil servants, have widened the base of the policy process, furnishing the Minister of Defense with necessary data and advice to evaluate military recommendations and in turn to make meaningful suggestions. This was evidenced by the Navy's carrier and fighter plane struggle. The Admiralty was forced to put a tremendous effort into this controversy, but it was given full and fair consideration and in the end its case prevailed. These decisions were in no sense arbitrary and were made after intense study and a full exchange of views between all the parties involved. It should be noted here that the Air Force carried its opposition right up to the Defense Committee, although the Minister of Defense had already indicated that he favored a new carrier. Laurence Martin believes as a result of these organizational changes and new attitudes that "there is a freer flow of ideas, a more trustful atmosphere and a better blend of a variety of views and interests than at any time since 1945."[59]

In examining defense organization as a whole it would seem that the main problem is to reach a <u>proper balance between heirarchical control and diffused authority</u>. Every effort should be made to take advantage of inter-Service rivalry rather than

to try to stamp it out. In fact it is unlikely that it could be eliminated. On the other hand, there is a definite need for political leadership which evaluates each department's contributions in terms of overall military policy. The Minister of Defense should act first as a stimulant requiring each department to justify fully its concepts and prodding them to originate alternate solutions to military problems. At the same time he must not stifle the initiative or morale of the subordinate departments, because it is from these sources that policy truly originates. The ultimate objective is to harness the driving force of the political leaders without losing the benefits of the professional staff.

It should be stressed that administrative arrangements can never eliminate the need for wise and competent leadership, nor can they overcome the basic problems which confront the policy-maker. Post-war Britain has been faced with heavy commitments, dwindling resources, rapid technological advance, and a drastically altered international milieu, which have required major adjustments both psychological and material. Under rush conditions national goals and policies are likely to become blurred and vacillating. No amount of tampering with the government's administrative structure could have altered the essential conditions of Britain's altered world position. Nevertheless, it may be contended that the shape of the decision-making structure can play a significant part in the way these new problems are met, and in turn exercise an important influence on policy.

CHAPTER VII

NOTES

1. For a brilliant and at the same time understandable diagnosis of the British governmental machinery see Harry Eckstein, "The British Political System," Patterns of Government (New York: Random House, 1962), (ed.) Samuel H. Beer and Adam B. Ulam, pp. 69-169.

2. Eckstein, Patterns, 135.

3. Professor Eckstein has written a most stimulating monograph which discusses at some length the administrative arrangements of British institutions and demonstrates how this same cultural pattern which prevails in government is found throughout the society. Theory of Stable Democracy (Princeton: Center of International Studies, 1961).

4. Eckstein, Politics, 135.

5. Civil servants and military officers alike are governed by a code of conduct which insists on absolute loyalty to the Government and forbids official or unofficial contacts with politicians outside of the Government. Theoretically any information passed to Parliament must come from or through Ministers. Non-political members of the Government are encouraged to voice their views behind the facade of Whitehall, but it is considered very unethical for them to take their complaints outside the Government. This does not mean that it isn't done, but the offender risks both condemnation and official disciplinary action. At any rate the contact between these groups is much less in Great Britain than in the United States.

6. The differences between Parliament and Congress are perhaps not as great as one might think. Recent research indicates that Congress has a great deal less influence over strategic policy than domestic programs and that the executive branch is exercising a stronger voice in this area than is commonly realized. See S. P. Huntington, Common Defense (New York: Columbia University Press, 1961); and Roger Hilsman, "Congressional-Executive Relations and the Foreign Policy Consensus," American Political Science Review, Vol. LII, No. 3 (September 1958), pp. 725-44.

7. Snyder, Politics, 66.

8. Eckstein, Patterns, 157.

9. Armstrong, 56.

10. There is some evidence that the Institute's attitude is changing and that it is taking a greater interest in national defense problems. For example see Neville Brown's Strategic Mobility which was sponsored by the ISS. There is a movement afoot in Britain today to develop some government sponsored organizations equivalent to Rand Corporation. Both the Institute of Strategic Studies and the Royal United Service Institution have been suggested for this task. For an interesting lecture concerning this movement see Lieutenant-Colonel Alun Gwynne Jones, "The Organization of Defense Studies," Journal: Royal United Service Institution, Vol. CIX, No. 634 (May 1964), pp. 99-110.

11. Snyder, Politics, 72.

12. Ibid., 73.

13. For more extended discussions of the role of the press and private commentators in the defense process see: Armstrong, 46-58 and 132-35; and Snyder, Politics, 72-79.

14. British pressure groups have been the object of some study. For a few very useful references see S. E. Finer, Anonymous Empire (London: Pall Mall, 1958); Samuel H. Beer, "Pressure Groups and Parties in Britain," American Political Science Review, Vol. L, No. 1 (March 1956), pp. 1-23; Samuel H. Beer, "The Representation of Interests in British Government: Historical Background," American Political Science Review, Vol. LI, No. 3 (September 1957), pp. 613-50. For a theoretical treatment, Harry Eckstein, Pressure Group Politics: The Case of the British Medical Association (Stanford: Stanford University Press, 1960).

15. Snyder, Politics, 82.

16. For example the British Medical Association works hand-in-hand with the Government on all aspects of its medical program. It could hardly be otherwise. The Government could not formulate policy in this area without the expertise of the nation's doctors nor could it administer the program without their cooperation. In the same manner farmers, labor unions, and various professional societies wield considerable leverage within the Government.

17. To accomplish these aims the Navy League publishes a magazine, The Navy; maintains an information service for the benefit of members of Parliament; sponsors public events honoring the Navy; and administers a Sea Cadet program for boys. Its governing body meets with the Board of Admiralty every six months, but needless to say most of its information comes through unofficial sources.

18. Interview. The fact is that the Navy League and Admiralty have not always been of one mind. The Navy League continued to push hard for cruisers for several years after the Sea Lords had lost interest. The retired officers in the League refused to go along with the Admiralty on this issue. In commenting on this, one civil servant remarked "it didn't matter one way or another."

19. Interview. Snyder seems to believe that the aircraft industry has been the only effective defense lobby, "In sum, with the exception of the aircraft industry, pressure group activity is rather limited." Snyder, "Dissertation," 80.

20. Interview.

21. This very brief discussion is based on Snyder's treatment of public opinion in Politics, 53-62.

22. Ibid., 54.

23. There is little question that it no longer enjoys the tremendous prestige of former years. This was mentioned time and again in interviews, although the majority of non-military respondents insisted that naval officers as a group were more respected than either the Air Force or Army. The Royal Navy's own research on recruiting patterns revealed that as a career the Navy was still considered a "manly and adventurous" profession, by the great proportion of young men, but at the same time it had acquired a reputation as an organization "technically backward and behind the times." In passing it is interesting to note that John Gunther in his 1939 edition of Inside Europe Today (New York: Harper & Bros., 1939) listed the Royal Navy as one of the most influential groups in the "Establishment." In his 1961 edition of the book the Royal Navy was not mentioned in any capcity.

24. As an indicator of how little stock the Royal Navy puts in the influence of the general public there are only twenty officers and civilians in the entire Royal Navy involved in public relations work. In contrast the U. S. Navy has some seventy-five specially qualified public information officers to say nothing of the host of officers temporarily assigned to this work. In addition there are a great many enlisted men and civilians associating with public relations throughout the world-wide U. S. Naval establishment. The above figure was taken from Register of Commissioned and Warrant Officers of the United States Navy and Marine Corps and Reserve Officers on Active Duty (Navpers 15,018), January 1, 1965.

25. The formal organization structure was discussed in some detail in Chapter II. I do not believe it necessary to repeat these arrangements at any length here. See pp.39-48.

26. Samuel P. Huntington, The Common Defense (New York: Columbia University Press, 1961), p. 146.

27. Contrast for example Mr. Churchill's wartime performance with the more subdued Mr. Attlee, the first post-war Prime Minister.

28. Eckstein points out that even during the war Churchill when negotiating with President Roosevelt kept in constant contact and faithfully cleared important decisions with his colleagues. Eckstein, Patterns, 118.

29. Eckstein, Patterns, 165.

30. Ibid., 158.

31. The one or two parliamentary private secretaries in each department are usually limited in authority and explicitly outside the chain of command. Only the minister can overrule a top civil servant.

32. Eckstein, Patterns, 244-45.

33. I found a rather candid agreement among both naval officers and Admiralty civil servants on this point. It was heartily confirmed by those respondents outside the Admiralty.

34. Interview with a senior retired naval officer.

35. It should not go unnoticed that here again was an instance where an Admiralty project vitally influenced national goals. The approval of a new carrier implies, at least provisionally, that the nation will continue to stress limited war forces and a maritime strategy for possibly another twenty years.

36. For more detailed discussion of the formal organization see Chapter II above, pp. 39-48.

37. Cmd. 6923, p. 1.

38. Montgomery, Memoirs, 438.

39. 537 H. C. Deb. 1921.

40. See Chapter V, pp.174 to177. For official description see Cmd. 476.

41. For a brief but excellent description of the Service opposition in the years 1957-59 see Martin, 30ff.

42. Michael Howard characterized it as the "transition from a defense organization based on co-ordination to one based on control." "Organization for Defense in the United Kingdom and the United States, 1945-1958," Brassey's Annual 1959 (London: Macmillan, 1960), (ed.) H. G. Thursfield, p. 74.

43. Another reorganization was carried out in April 1965 which further unified the command structure in Whitehall and expanded the Minister of Defense's staff and power. For the formal description of these changes see Cmd. 2097, "Central Organization for Defense" (1963). For a diagnostic description see Snyder, Politics, 151-59.

44. Refer to Chapter V, pp.

45. 592 H. C. Deb. 971.

46. 622 H. C. Deb. 221.

47. 537 H. C. Deb. 2070-72.

48. Cmd. 6923, p. 7.

49. For a rather candid description of this arbitrary cutting of Service department budgets by a former Minister of Defense, Emanuel Shinwell, see 592 H. C. Deb. 2070.

50. Interview. This general attitude was confirmed in a number of interviews, although in all fairness very few put it this strongly.

51. This does not mean that he was liked. The same respondent who would credit him with making the Navy do its homework, would then launch into a general denunciation of his high handed methods and arbitrary decision-making. The writer found this ambivalent attitude toward Mr. Sandys throughout the Admiralty.

52. One senior civil servant in explaining the Navy's hesitation to act in these matters repeated a statement made by a senior naval officer testifying before a Public Officials Accounts Committee on the reserve fleet. It went something like this; "If you have a beautiful treee in your garden you don't cut it down until there is a good reason for doing so, although it may be performing no positive function. The reserve fleet is like a tree in the Navy's garden."

53. This was mentioned time and again by respondents. Naturally different interviewees attributed it to different causes. Nevertheless, there was considerable agreement that the increased power of the Minister of Defense had been an important factor.

54. Interestingly enough these are the same kind of comments one finds in the Pentagon since Mr. McNamara began to expand his authority and to intervene in the detailed affairs of the American services.

55. There appeared to be general agreement on this point among respondents. For a published account see Martin.

56. Ibid., 40.

57. 592 H. C. Deb. 994

58. Martin, 40.

59. Ibid., 39.

CHAPTER VIII

THE ADMIRALTY

The previous chapter dealt with the governmental decision-making milieu. It was evident there that the Admiralty plays a central role in formulating strategic programs. The Navy's leaders are not only expected to command and administer the naval forces, but they also are responsible for initiating and, in effect, legislating naval contributions to the nation's military posture. In this capacity they have borne the primary responsibility for shaping the Fleet's role and relating it to the nation's strategic requirements. Early in the study, I provided a brief sketch of the Admiralty organization, the patterns of collective responsibility within the Board of Admiralty and the routines of policy formulation.[1] I now return to the Admiralty organization, to investigate it not so much as a formal body, but as a participant in the policy process. This entails an examination of the leadership's skill in foreseeing technological trends, in interpreting the strategical environment, and in translating its recommendations into action. Hopefully, this diagnosis will highlight some of the more significant conclusions to be drawn from the Admiralty's post-war participation in the political arena.

Decision-Makers

Before discussing substantive policy it is pertinent to look briefly at the Admiralty's decision-makers and the respective roles they play in the policy process. Three separate professional groups - political leaders, naval officers and civil

servants - staff the key policy posts. Each group will be considered briefly.

Political Leaders

Unlike the United States, where political officials perform a large share of the decision-making duties, the average British governmental department has only a single minister who is chosen from the majority party and sits either in the House of Commons or House of Lords. He may have one or two assistants, parliamentary undersecretaries, who are politicians, but they are normally outside the heirarchical chain. The minister assumes responsibility for all the activities of the department. He is solely accountable to his political superiors, ultimately the Cabinet. In keeping with the Government's collective character the Cabinet in turn assumes responsibility before Parliament and the people for the activities of the minister and his department.

During the period under investigation the Navy Minister, the First Lord of the Admiralty,[2] did not sit in the Cabinet.[3] He reported instead to the Minister of Defense who represented all three Services. On the other hand the First Lord sat on the Defense Committee, and in addition had direct access to the Prime Minister if he so desired. For the first few years after the war there were two other political appointees in the Admiralty organization - the Parliamentary and Financial Secretary, and the Civil Lord. The former acted as advisor to the First Lord on financial matters and as a coordinator in compiling the Navy's annual estimates. The Civil Lord supervised the Navy Works Department (erection, maintenance and repair of Admiralty buildings) and the Admiralty's responsibilities for merchant shipbuilding.[4] Both of these subordinate ministers sat on the Board of Admiralty in their capacity as advisors to the First Lord, but neither was in the chain of command between the Minister and his professional assistants. In 1959 the Navy's responsibilities for merchant shipbuilding were transferred to the Ministry of Transport, and the Civil Lord absorbed

the Parliamentary Secretary's duties leaving only two political ministers in the Admiralty.

As the above discussion would indicate, Britons unlike Americans, do not consider political control of the armed Services a serious problem.[5] Military officers stand in the same position to the Minister as civil servants. They are expected to advise forthrightly and, in turn, to support the Minister's decisions. Also, custom dictates that they remain anonymous in the process. The long-standing tradition of civil control is reinforced by the essential similarity of social background among political leaders and military officers. Although they may disagree on specific decisions they share more or less the consensus on basic issues which has long characterized the British elite. Not since Cromwell's day has the military been considered a serious threat to the Government.

Nevertheless, the practical result of this system where politicians occupy so few posts is to limit their impact on policy-making and to enhance the influence of professionals - military and civil. It is not a question of legal or political authority. The minister can accept, qualify or reject the recommendations of his advisors; he does, and his authority to do so is carefully respected. Still there are important constraints on the political leaders. This is particularly true in the military departments. Many of the issues before the Admiralty turn on technical matters of which the First Lord may have little or no authoritative knowledge. He can hardly be expected to be as familiar with warships and tactics as senior naval officers, or with the intricacies of cost analysis as civil servants specializing in this area. The permanent departmental staff is experienced, able, and numerous. Normally every problem is worked over by experts who are familiar with both the technical and bureaucratic environment. To overrule their advice is to risk a poor decision; to disregard their views repeatedly may generate resentment, discourage initiative and lower morale.[6] In addition the Minister's political duties as a member of

Parliament and the Government restrict the time he has to devote to departmental affairs and correspondingly increase his dependence on his senior advisors.

In the final analysis the First Lord finds that his freedom of action is severely circumscribed and that he must share decision-making with others. The Board of Admiralty is tangible, if tacit, acknowledgment of this state of affairs. The Admiralty's policy recommendations are hammered out in that body and decisions taken collectively. Formally the power of decision rests with the First Lord, but over the years the political ministers have seen the utility and wisdom of this system which brings the resources of the whole Navy to bear on a policy problem. The First Lord plays an important role in these proceedings; in many instances his is no doubt the predominant voice. The Board looks to him for a crucial political input into its deliberations. He is expected to consider every question in terms of its impact on his political colleagues and to temper the demands of the professionals in the light of what the political market will bear. Likewise, it is the First Lord who leads the assault on the political battlements when the Admiralty is pressing for a policy change. This fact alone strengthens his hand in the Board and assures him a respectful hearing. In short the First Lord plays an important role in the Admiralty's policy deliberations, but he is only one of the many decision-makers who shape Admiralty policy.

During the years 1946 to 1963 there were five First Lords - one Laborite and four Conservatives.[7] A few notes about their background will give the reader a clearer picture of the type of political leadership the Navy has enjoyed.[8] In every case since 1945 this was the first ministerial post held by the individual, which reflects the fact that the First Lord did not sit in the Cabinet, and that the post has come to be considered a relatively junior one.[9] Nevertheless, every incumbent had previously held several lesser offices in the Government. Two had served in the Admiralty as Civil Lord. They all shared one characteristic - considerable experience in public affairs.

Viscount Hall who served as First Lord from 1946 to 1951 - an unusually long period for a political minister - was in many respects unique. He was sixty-five years old when he assumed office and at that time had been in Parliament since 1922. He came from a working class background with an elementary school education. He had worked his way up the Labor Party ladder, serving as Civil Lord in 1929 to 1931 and in the Government throughout the war. On the other hand, the four Tory ministers who succeeded him follow more closely the stereotype of a British political leader. All four came from the upper class or aristocracy, three holding hereditary peerages and entering the Government through the House of Lords. The fourth was a member of Parliament for twenty years before assuming the leadership of the Admiralty. Their educational background was relatively uniform - three from Eton and one from Rugby. All four had received prestigious higher education - three at Oxford and one at Sandhurst. The university group had studied liberal arts, and two had achieved first-class honors. These same two had subsequently entered the practice of law. It is noteworthy that none of the four had any formal engineering or technical training. All four served in the armed forces during the war, but only one in the Navy. Their average age on appointment as First Lord was forty-seven, and they held the office for an average of three years which is considerably longer than is normal for senior ministers.

The general pattern suggests that the typical First Lord is chosen for his political, and possibly social, connections and for his general knowledge of public affairs. There is no indication that he is selected because of abilities that particularly fit him to deal with the Navy. The consistent Tory tendency to choose younger men and often non-parliamentarians reflects the fact that the Admiralty's prestige has steadily declined as the Minister of Defense has gradually monopolized the political spotlight. The predominance of peers also suggests that the Admiralty is not considered a particularly good training ground for higher political office.

Naval Officers

Undoubtedly, the senior officers in the Admiralty wield the strongest influence on policy of any of the three groups of decision-makers. Their strength stems from a variety of sources. They are professional seamen, and as such are considered the experts on the training, equipping and deployment of seagoing forces. As a rule these officers come directly from operational duties and are expected to bring to the Admiralty a fresh viewpoint and an up-to-date knowledge of the needs of the Fleet. They represent a vital type of experience and expertise that neither the politicians nor the civil servants possess. "No matter how much formal authority the minister has in the Service departments, practically every policy recommendation rests on a host of military and technical judgments which only the professional is qualified to make."[10] This belief is mirrored in the composition of the Board of Admiralty. From 1945 to 1957, seven, and since that date six,[11] of its members were senior naval officers drawn from the key administrative posts in the Admiralty.

The naval membership of the Board illustrates the influence of the senior naval officers.[12] The First Sea Lord is the professional head of the Royal Navy and is specifically charged with the duty of furnishing not only the First Lord, but H. M. Government, advice on naval aspects of security policy. He heads the Naval Staff which is composed primarily of naval officers and is responsible for strategic planning, drafting the Fleet's requirements, developing tactical doctrine, and issuing operational orders.[13] He is assisted by a Vice Chief of Naval Staff and a Deputy Chief of Naval Staff both of whom sit on the Board. These three officers, by virtue of the nature of their duties and their position in the heirarchy, wield a strong influence in policy deliberations.

The other three Sea Lords are not concerned with the Fleet's operations and deployment, but direct the three main divisions of the Admiralty - personnel, material, and supply.[14] These divisions provide the men, ships, aircraft, bases and

supplies required by the Royal Navy. They employ by far the largest staff within the Department, including naval officers of each specialization, naval constructors, scientists, civilian engineers, civilian Stores officers and technical grades. Obviously these organizations encompass a vast range of activities. It is their major function to bring the many available skills to bear on the needs of the operating forces. More important to this study it is through the heads of these divisions that scientific, technical, material, and logistical considerations wend their way into the policy councils of the Navy. In these ways the Admiralty's senior naval officers filter and, in essence, control many important inputs into the policy process.

In view of the important role senior officers play in the Admiralty, it is important to analyze the characteristics of this group of decision-makers. Unlike the United States there have been no extensive sociological studies on the career military officer in Great Britain.[15] The object at this point is not to fill this void, but simply to record certain impressions regarding the background of the average senior officer serving in the Admiralty during the post-war years.[16] It should be continually borne in mind that post-war decision-makers are largely the product of the pre-war era, and that the many changes in recruiting and education procedures since 1945 have had very little effect as yet in the higher councils of the Navy.

The first feature which impresses the observer is that most of the Navy's senior officers have much in common with the leaders in other sectors of public life. Prior to World War I military commissions went mainly to members of established upper and middle-class families.[17] The Great War altered this pattern somewhat and opened up commissions to a larger group, but this was a slow process and most naval officers continued to come from the traditional sources. In general the same social strata that provided the bulk of the political leaders and civil servants furnished the Fleet its leaders. The fact is that even though entrance requirements were liberalized after 1918, and most of

the Navy's post-war leaders entered the Service between 1910 and 1930, social position and an outside income were still definite assets to a professional naval officer. Colonel Armstrong writing in 1960 stated that "during the next decade there will be extremely few officers in senior and responsible positions who were born in families in the lower 95% of the nation, on the socio-economic scale."[18] This accurately describes the post-war naval leadership.

In essence this means that most of the senior officers brought with them into the Service many of the attitudes and connections that characterize the civilian leadership in Britain. From an early age, he was indoctrinated with a deep sense of loyalty for things British and equipped with a built-in respect toward service to the nation - usually in the direction of public affairs. By American standards public service carries high prestige in Great Britain, and "for members of a status-conscious class within a status-conscious society, this is another force of some power in the same direction."[19] As a member of the leadership group he has always identified his own interests with those of the nation and has been taught to revere his nationality above all else. He inherited the sense of history which is so typical of educated Englishmen, and he believes that the past is the best guide for the future. In many instances it is this quality which has attracted him to the Royal Navy for there is no institution in Britain which has played a greater part in the nation's "heroic" epic. Certainly to his father the Royal Navy was a symbol of Britain's imperial grandeur, and the leadership group has been traditionally indoctrinated with the importance of the Fleet to the "island race."

He normally has relatives who are in the professional world. Very likely he will have one or more close family contacts in the foreign service, in the administrative civil service, or in politics. The writer's sample indicated that almost 80% of the senior naval officers were so connected, a statistic that might vary considerably with different samples. Unquestionably

these relationships benefit him socially and increase his opportunities for asserting and exchanging opinions. In turn, they may very well give him access to other groups, possibly influencing his professional promotions at the higher rungs of the ladder. These general characteristics derive from the British social environment and, as previously noted, are widely observed throughout the leadership group no matter what the individual's profession. More significant for this study are the characteristics which distinguish naval leaders from their contemporaries in other walks of life.

Practically without exception the naval officer has less formal education. In line with the traditional practice of the early 1900's every officer in the sample entered the Service before the age of fifteen. Thus they missed the "public" school and university experience so dear to the upper class Englishman.[20] Instead they underwent training at Dartmouth and Osborne - the Royal Navy's equivalent to the U. S. Naval Academy. The curriculum consisted of alternate periods of classroom work and service at sea, where the midshipman was brought face to face with the realities of shipboard life. Their education was more practical than theoretical. The aspiring officer was introduced to the fundamentals of seamanship, gunnery, naval tactics and those skills needed to make him a competent shipboard administrator. Above all he was indoctrinated with the fighting heritage and traditions of the senior Service. One officer interviewed referred to British midshipmen as "acolytes" preparing to take on a "way of life." This is perhaps exaggerated, but nevertheless it captures the spirit of the process. Numerous times the writer heard senior officers refer with pride to the Navy's training system. In a similar manner several criticized civilian universities and the over-emphasis put on degrees.[21] They did not take issue with the quality of the education so much as the attitudes which they believe civilian institutions cultivate. As one respondent candidly put it, "we teach them to decide; a civilian university teaches them to discuss."[22]

Irrespective of the merits of these opinions, there is little question that the Navy's training system instills in its officers a deep rooted belief in the Royal Navy and the merits of sea power. The fledgling is taught that Britain must live by the sea in order to survive and that the requirement for a strong Fleet transcends individual types of ships and tactics for their use. Methods may change but the basic need is constant. This gives him an intense Service loyalty which, it is generally agreed, is stronger than in the other two Services.[23]

Career patterns up to World War II were likewise stereotyped. The emphasis was placed on service afloat and "line" duties. Even engineering was a specialized branch whose officers could not aspire to command. "Never let an engineer on the bridge"[24] was a standard joke among line officers. It expressed their disdain for those who perform duties of a supporting or administrative nature. The road to success lay through combat commands, and every young officer strove to prepare himself for this responsibility. This does not mean that he received no technical training. Pre-war line officers were expected to combine seamanship with fighting skills. They were encouraged to develop expertise in any one of a number of fields - gunnery, torpedoes, communications or navigation. Aviation was not recommended since it came under the auspices of the Royal Air Force.[25] Officers following this pattern received additional training in Navy schools and obviously acquired some technical expertise. Again the orientation here was more operational than theoretical. The individual was expected to ply his skills at sea rather than in the laboratory, on the drawing board, or at the factory. Approximately 25% of the writer's sample listed such specialities in their press biographies. It is only fair to note, however, that even the non-specialist due to the very nature of naval armaments and ships was likely to acquire a modicum of engineering knowledge; and it would appear that British naval officers of the pre-1939 period were generally much better grounded technically than their counterparts in other Services.[26]

As the officer advanced in grade, tours at sea were increasingly broken by short spells on staffs and possibly a period at a senior war college. A few officers attended the Imperial Defense College where they had the advantage of meeting and working with officers and civil servants from other sectors of the government.[27] However, it has only been in the last few years that this training has begun to tell at the higher ranks. Prior to 1950 very few senior officers had any cross-Service experience; similarly only a small number had had any tour of duty outside the naval establishment. While staff tours may have been profitable, the prime objective was always to return to sea, preferably in a command billet.

The typical senior officer serving in the Admiralty after 1945 was about fifty-five years of age and on his second or third Whitehall assignment, each tour being two or three years. The bulk of his early career had been spent at sea. He had had considerable combat duty due to World War II and more command experience, either of ships or task forces, than his pre-war antecedents. Needless to say, he had survived an exceptionally rigorous promotion system and represented the cream of the crop within the officer corps. Very likely at one time he had acquired a technical specialty and might possibly have served in a staff billet requiring his specialized skills. Generally, however, by the time he reached senior rank his attention had turned away from strictly technical matters; he was more concerned with the administrative, strategical and political problems which confront high command. At the same time he had an abiding faith in England's need for seapower and was thoroughly dedicated to the Royal Navy's past and future.

It is not a novel observation that military men tend to be conservative. The British naval officer is no exception. However, he is still admired by Englishmen in general. Practically without exception respondents characterized him as courageous, staunch, reliable, honest - the ideal type to lead men into battle. At the same time he was inevitably pictured as

"traditionalist," "hidebound," "conservative."[28] There is some question as to whether this is an accurate image. The following discussion will subject this charge to careful scrutiny, but there is little question that it prevails throughout the British political community.

Civil Servants

Working shoulder-to-shoulder with naval officers in the Admiralty are the civil servants. In a sense they are the mortar that joins the military officer and the politician together. Of the three professional groups this is the only one that is not transient. The civil servants remain permanently in Whitehall and contribute heavily to the Admiralty's stability and continuity. There are three classes of civil servants - the administrative class, executive class and clerical class. The focus here is on the administrative class officials. The members of this class hold the posts of higher responsibility. In general the senior civil servants specialize in budgetary, costing and other administrative functions. In the Admiralty's case, the Permanent Under-Secretary has always been the Accounting Officer of the Navy. As such he has an important concern in practically every phase of the Navy's operations. In addition he is responsible for the general coordination of Admiralty business on behalf of the Board and administers the entire civil staff of the headquarters organization. On policy matters he is expected to advise the department "from the aspects of continuity and Government policy as a whole and in the light of the interests of other Government departments."[29] To accomplish this he is assisted by a Secretariat which is an integral part of the Admiralty and staffed by civilians.

The senior civil servants do not hold as many strategic positions or impressive titles as their military colleagues, and at the higher rungs of the ladder they are greatly outnumbered. Nevertheless, their importance and influence is considerable. The civil servant's skill as an advocate, his

knowledge of the bureaucratic labyrinth, and connections throughout the other departments of the Government are essential to the Admiralty. These qualities greatly enhance his position vis-à-vis the naval officers who are stationed only temporarily in Whitehall. Policies must be meshed with past decisions, coordinated with other departments, articulated in a form acceptable to bureaucrats, and sold in the political forum. It is here that the civil servants make a vital contribution. Inevitably military officers rely heavily on their advice and assistance. Similarly, the increasing interdependence of military policy, economic conditions, international relations and domestic political considerations has made the seagoing officers even more dependent on civilians, for the bulk of the Navy's expertise in these areas rests with the civil servants. The reinforcing effect of all these factors has been to upgrade the civil servant's position in the Admiralty heirarchy. As one observer expressed it: "Although the Service Officer's influence may be more in evidence, it is more fleeting and in the long run only secondary."[30]

What can be said about the Admiralty's civil servants as a group?[31] Just as with the professional officers, the great majority of them come from upper-middle or middle class backgrounds. On the other hand, about 20% could be classed as coming from working class families, which suggests some slight variation from their military counterparts. This may be accounted for by the fact that over one-fifth of the Admiralty's administrative class entered the civil service as executive or clerical class employees and were promoted after several years of service. Both the executive class and clerical class take entrants at a younger age and with less academic background than the more prestigious administrative class.[32] Over half claim fathers who were university educated and members of a profession. Despite the slightly greater range in background it is eminently fair to say that the large majority were raised in the environment of the nation's leadership group and acquired many of the same attitudes which characterized the early life of the senior naval officers of that period.

The educational pattern of the typical civil servant reflects both his socio-economic background and the high regard in which public service is held. The vast majority are university graduates. In the writer's small sample over half had attended Oxford or Cambridge, and three the University of London. Practically without exception those with university degrees had made impressive academic records. In the sample, ten listed first-class honors and seven won double firsts. In general the University graduates were those who had attended a public school. Two of the non-university graduates were products of Service-academy education and the remainder were promotees from the executive or clerical class.[33] This rough profile seems to confirm the basis for the popular public-school-university-honor stereotype of the civil servant, but it also indicates that there are other inputs as well. However, there is general agreement that the performance criteria are shaped primarily by the university entrants, and those outside this group have had to conform to these standards. "Unquestionably, the small public school group absorbs those who come into important posts from other sources and successfully transmits its attitudes, values and fashions to them."[34]

The high calibre of the civil service, as suggested by the educational pattern, is beyond dispute. Armstrong mentions that in his research several respondents credited the civil service as including "the best men in Britain."[35] Although this writer interviewed some who would disagree with this, the overall consensus among respondents was that they were an exceptional group. Air Vice-Marshal Kingston-McCloughry in describing the civil service pays tribute to its high level of intelligence but insists that its major strength lies in its character:

> It is suave, prone to moderate or under-statement, unruffled, thorough, reliable, of great integrity, content to wait its time and to allow other people to think they may claim the credit while it works very much with the same precision as a machine. This characteristic in the conduct of things is neither written nor recorded anywhere. It results from a genius of the English which in

> time evolves from breeding over many years a belief of superiority in themselves. It is no coincidence that this is the very quality which is built into character at the English public schools.[36]

There is little to query here. The English system has awarded public service a status that it has in no other country. As a result it attracts highly intelligent, perceptive, broad minded and honest civil servants who are genuinely dedicated to the nation's welfare. These qualities combined with a tradition of anonymity have made them probably as apolitical as a governmental group can be. Although the writer heard some strong views voiced by civil servants on a number of issues, he was unable at any time to detect a political motivation for these views. On one hand respondents outside the Admiralty consistently attributed political bias to naval officers, but not a one suggested that the Navy's civil servants were guilty of this vice.[37] This is not to say that the civil servant does not advise on political decisions; he does constantly. It is to say that he is prepared to serve with equal skill and devotion under either political party.

On the debit side, the homogeneity of the civil servant's educational and social background may very well inhibit change (or as some would say, progress). Just as with the Navy's officer crops it is a cohesive group with a strong tendency to perpetuate its manners and values. The standard complaint that the civil service is hampered by the strong Oxbridge emphasis on the classics and amateurism is not just an academic criticism. An American observer can scarcely fail to sense the civil servant's stereotypical references to mythology, history, literature, and Victorian England. It appears almost impossible for him to answer any question, no matter how simple, without painfully tracing its historical origins. He seems to respect precedent even more than does the tradition-oriented culture as a whole. Moreover, the civil servant is often inclined to look down on the engineer or scientist. To the typical Oxbridge mind government seems to be concerned primarily with personal relationships, and what is needed

most is an administrator with a "sense of the complexity of human affairs,"[38] rather than technical knowledge. It is undoubtedly true that the civil service in the past has exhibited this bias, and it came through in numerous interviews. On the other hand, it is just as true that this perspective is weakening. The tremendous importance of research and technology in this modern age has been graphically impressed on the British civil service just as it has on other professional groups.

Admiralty Performance

Keeping in mind the role and general profile of each of the significant policy-making groups within the Admiralty, it is pertinent to attempt a broad assessment of their post-war performance. It should be stressed that the underlying objective here is not merely to judge a specific case, but to draw appropriate generalizations from the record of performance which might cast light on either the Royal Navy as a whole or on military organizations in general.

In order to facilitate analysis I have chosen to examine the Admiralty's activities from three different perspectives - from that of a bureaucrat, a scientist and technician, and a strategist.[39] Hopefully this approach will accurately convey some sense of the complexity of the Admiralty's policy-making role, but at the same time make the subject manageable.

As a Bureaucrat

This facet is examined first intentionally. It is in this area that all three groups of decision-makers work most effectively together and that the strengths of the Admiralty system are displayed to best advantage. The writer found a number of respondents who criticized various aspects of the Navy's performance, but there was an impressive consensus that the Admiralty was the most successful of the three Service departments in getting its proposals adopted in Whitehall.[40]

It is widely respected as a skillful advocate, a clever negotiator and a tough opponent. This opinion was forcefully supported by Emanuel Shinwell, a former Minister of Defense, in a speech before the House:

> The trouble with the Navy, the Silent Service, is that it gets away with murder. I remember when I was Minister of Defense and had to preside over the Defense Council the Navy hardly said a word. It always got its own way without saying anything, whereas the Army and the Royal Air Force had to fight for what they wanted. There the Navy's representatives sat, with all the gold braid at their command. Even the present supreme authority at the Ministry of Defense, Lord Mountbatten, never said a word, but the Navy always got what it wanted.
>
> The Navy is like the Russians. It does not have to go to war because it always gets what it wants without a struggle.[41]

In a system so addicted to secrecy it is difficult to substantiate the Navy's superiority with concrete evidence. Nevertheless, the Navy's post-war experience testifies to the Admiralty's skill in discerning the direction and force of the political winds. Perhaps the most obvious indicator of the Admiralty's strength has been the constant proportion of the budget which has been allocated to the Navy.[42] The division of the expenditures of the Ministry of Aviation among the three Services is unknown, and this makes an exact comparison impossible. Nevertheless, throughout the period 1945-63 the Navy continuously managed to capture about one-quarter of the defense appropriation. Admiralty "expenditures have held closely around 24% of the total defense budget, with the maximum variation only 1½% either way."[43] At the same time, the shares of both the Army and Air Force have fluctuated with alterations in defense emphasis.

It is true that the Navy's portion throughout this period has been smaller than the other two Services. Some observers might interpret this as suggesting less rather than more skill than its competitors. On the other hand, when one considers the traumatic changes that have been wrought in British defense thinking, it is rather remarkable that the Navy has managed to

retain consistently a stable proportion of the budget. This was the general sense of the interviews. Most respondents stressed that in view of the heavy commitments made to SHAPE and deterrence it required considerable political acumen to keep the Navy firmly entrenched in the defense picture throughout the early post-war years.[44] They further pointed to the Navy's current importance and to the fact that today the Army and Air Force claim only a slightly larger share of the budget.[45] This latter view appears to be sound and certainly a further look at the Navy's achievements supports the thesis that it is rather adroit politically.

The first major post-war challenge to the Navy developed with the introduction of the hydrogen bomb and the Government's turn to deterrence. Not only was the emphasis shifting dramatically to the Air Force, but in the three years from 1954 to 1957 many people within the Navy were developing serious doubts about the Fleet's future. From the Navy's perspective this was a period of genuine crisis. It is in such periods that the Admiralty seems to function best. Behind closed doors an intensive re-examination of the Navy's posture and doctrine commenced, but there were no outward indications of this disarray. The leadership presented a united front to Government and nation alike. In fact the rethinking process was successfully represented as a sign of progressiveness rather than frustration or concern. Long before the Navy had refashioned its strategical doctrines, its public advocates took the offensive and began to talk of modern task forces powered by nuclear reactors and armed with sophisticated guided missiles. These descriptions were inevitably vague, and the developments they pictured a long ways off.[46] Nevertheless they portrayed a Fleet moving with the times and concealed the confusion in the Navy's own ranks. It is illuminating to note that during those three years the Navy was probably more vulnerable to criticism and attack than at any time during the post-war period.[47] Yet none of its detractors were successful in seriously impairing its image or reducing its appropriations. This was an instance

where skill in the political environment gained the Admiralty the time necessary to rethink its position.

Perhaps the acid test of the Admiralty's competence in this area was the challenge offered by the Macmillan Government starting in 1957. Here the Navy leadership was able to navigate safely through rather formidable political shoals. The Admiralty's case rested not only on new strategical concepts, but also on rather shrewd estimates of Mr. Sandys' personal views and the political pressures that were impinging on the Minister of Defense. Throughout this difficult period the Admiralty was able to present a unified front to the Minister and Government. There were few outward signs of any internal conflict or confusion. In retrospect this was a rather amazing administrative achievement, because there was considerable wrangling within the Navy as to the proper approach to Sandys and more than a few doubts about the new stress on limited war.

Concurrently the Navy's spokesmen, primarily its civil servants, were developing support in the other departments for the Navy's case and bringing indirect pressure to bear on the Minister of Defense. Both the Foreign Office and Colonial Office backed up the Admiralty's plea for limited war forces East of Suez. There is some evidence that the Navy also enlisted the Commonwealth Governments in its campaign. During Sandys' tour of Asia in the summer of 1957 a number of his hosts stressed the Navy's importance to Commonwealth defense.[48] In August 1947 at a Commonwealth Prime Minister's conference Mr. Macmillan was likewise urged by a number of visiting politicians to reconsider the reductions planned for the Fleet.[49] The Admiralty was overlooking no channel for bringing influence to bear.

Another mark of the Admiralty's skill in this environment is the manner in which it widened the arena of debate. By custom the professional military in Britain is expected to confine its campaigns for policy changes to government channels. Appeals to groups outside the Government are considered improper

and unethical. However, in early 1957 when the fight with Sandys was at its peak, it is common knowledge that all three Services were straining against these limitations.[50] They resorted to a variety of devices ranging from subtle news leaks to sponsored conferences. In this game "Pendennis" in The Observer labeled the Navy "as the most cunning propagandist of the three Services."[51] Perhaps the best example was a one-day orientation conference held by the Admiralty at Greenwich for a number of influential industrialists. A "Madison Avenue type" presentation was made of the Navy's case for a strong Fleet. It was well received and drew a letter to The Times from three prominent men, who attended, complimenting the effectiveness of the presentation.[52] A year later the RAF held a similar affair, the Prospect Conference, which lasted three days and was considerably more elaborate. It drew extensive press coverage and, in turn, loud Parliamentary and public criticism for exceeding the bounds of propriety. This is rather typical of the Navy's more subdued but more effective approach.

One cannot help but be impressed with the Navy's performance during this period. There is little question that Sandys entered office determined to downgrade naval air power and to deemphasize the seagoing forces. In the end the Admiralty was able to preserve its carriers and to delineate an important role for the Fleet. There is little question that the Navy was more successful than the other two Services in weathering the 1957 onslaught. Time and Tide referred to this as "The Battle of Storey's Gate" and suggested that the Sea Lords should be awarded the highest "battle honors" for their victory.[53] This was due in no small measure to the Admiralty's competence as a bureaucrat.

This same feel for the bureaucratic environment was witnessed in the fight for the new carrier from 1960 to 1963. The Navy's approach was controlled and low pressure, but every obstacle was met with a combination of logic, tenacity and compromise. The Navy's leaders were always confident that in the

end their arguments would prevail. However, eventual success just as in 1957 depended on a carefully waged campaign to develop support throughout the government. This entailed the Navy scaling down its demands - eventually to only one carrier - and careful management of the negotiations with the Air Force over a common aircraft. At the same time it was necessary for the Admiralty to defeat the Air Force's "island-base" proposal. "Throughout this battle the Admiralty always seemed to know just when to push and when to lay back."[54] Again the Navy displayed a remarkable ability to thread its way through the Whitehall labyrinth.

These are only a few examples, but they illustrate the Admiralty's talent as a bureaucratic legislator. It has been consistently responsive to change in the political environment and eminently successful in shaping the Navy's policy recommendations to take account of those shifts. It is its performance as an advocate which prompts observers such as Snyder to comment: "There is little doubt that the Admiralty is the most effective of the three Service headquarters."[55]

It is profitable to consider briefly the sources of the Admiralty's relative superiority in this area. As previously noted the civil servants are considered the experts on bureaucratic matters. To them falls the major burden for taking the pulse of the other departments, drafting the Navy's arguments in terms acceptable to bureaucrats and for steering proposals through the political structure. All the Service departments, however, have civil servants performing these tasks. There must be additional reasons explaining the Navy's excellence in the political arena. Fundamentally, the Admiralty's success in this area derives from the fact that it has so successfully capitalized on this expertise, and merged the efforts of the civil servants with those of naval officers.[56] There is a remarkable harmony between the two groups which "is the envy of the other Services."[57]

There are a number of reasons for this harmony. The most significant is the organizational structure which carefully

integrates civil servants and naval officers in each branch of the Admiralty.[58] They work side by side on the whole spectrum of naval problems. There is a constant dialogue between the two groups, meshing their views and bringing their especial skills to bear in a coordinated manner throughout the policy process. The Permanent Secretary's position on the Board of Admiralty insures that the civil servants as a group are represented at the highest level. By virtue of his rank, experience and competence the senior civil servant would wield heavy influence in the Admiralty no matter what the organizational arrangement, but the tradition of collective responsibility which governs Board decisions gives him even a stronger voice in policy matters.

This integrated arrangement is a source of pride to the Admiralty and depends on the personal relationships between the two groups. There are several favorable pressures at work here. The similar common backgrounds of both groups of decision-makers tends to lubricate the machinery and draw civilians and officers together.

Moreover, the visible symbol of the Navy's spirit is the Fleet, and it likewise is a source of strength to the Admiralty. It unifies the headquarters organization and gives both the naval officer and civil servant a single object of attention, a single criterion against which to measure recommendations and new projects. And because the Royal Navy has been, over the years, so closely associated with the nation's fortunes, the Admiralty assumes that what benefits the Fleet benefits Britain. This is the one issue on which there is absolute consensus between naval officers and civil servants in the Admiralty. Unquestionably it strengthens the Navy's hand.

Even more important is the pervasive influence of the Royal Navy's hallowed traditions.[59] A deliberate effort is made to pass on to new administrative-class recruits a deep feeling for the Navy's past exploits, customs and sacred mission. The civil servant adopts his military colleague's reverent

approach to ships, Nelsonian traditions, and sea power in general. The two groups share a fierce pride in the Fleet. Admiralty civil servants readily admit this, and most insist that such attitudes set them apart from their colleagues in other departments.[60] The outside observer cannot help but stand in awe at the way Britain's naval heritage captures those who are exposed to it. It is a spur and incentive to all who work in the Admiralty, and it demands a high standard of performance. Moreover it serves to promote the civil servant's confidence in the officer corps and to develop a shared sense of dedication. Air Vice-Marshal Kingston-McCloughry describes it with admiration:

> Even today the Admirals often carry more prestige and influence with their civil servants and the Treasury than corresponds with the Generals in the War Office or the Air Marshals in the Air Ministry. One reason for this is that most civil servants in responsible positions learned at school the traditions, glories and power of the Royal Navy and this learning still remains inherent in their minds . . . These factors are so strong that they still influence the Admiralty Civil Servants, even if unconsciously, when dealing with Admirals. In fact the Admirals are very largely masters in control and the Civil Servants work with them as servants in great mutual trust and confidence.[61]

This relationship allows both to play their proper roles and to contribute meaningfully to the decision-making process. This same spirit of cooperation is what makes collective responsibility in the Board work so well. Within the Admiralty the various elements argue vigorously for their position, but they confront the outside world with one mind and voice.

As a Scientist and Technician

As previously mentioned the Navy has a public reputation for conservatism. Right or wrong, this includes the conviction that it has been slow in adjusting to the pace of post-war technological advance. The writer's interviews with non-naval respondents elicited frequent remarks to this effect. These general charges are vigorously denied by naval officers and many

civilians close to the security scene. Both Snyder and Armstrong in their work on the British defense establishment concluded that this was a distorted image and that contrary to the popular impression the Admiralty had demonstrated an impressive ability to innovate technologically.[62] What does this study suggest in regard to the Admiralty's skill in responding to scientific and technical developments?

The outside observer is inevitably struck with the modern state of today's Fleet. British task forces bear little resemblance to those which fought World War II and include some of the most advanced equipment afloat. The Sea Lords can boast a formidable air-borne striking power which ranges the spectrum from small tactical weapons to A-bombs, a covey of guided missile destroyers, some of the most sophisticated anti-submarine ships in the world, commando carriers with a helicopter assault capability, nuclear submarines and in the near future Polaris submarines.

Unquestionably the Royal Navy has made some remarkable contributions to naval technology.[63] It is generally acknowledged that British hull design and ship propulsion equipment are outstanding. The Royal Navy's gas turbines probably lead the world.[64] The three most important developments in the handling of carrier aircraft since the war were of British origin - the slanted flight deck, the steam catapult, and mirror landing system.[65] All three of these innovations were instrumental in making it possible to send high performance aircraft to sea and have been adopted by the U. S. Navy. Likewise British research on sonar and ASW weapons has been both original and excellent. In the submarine field they have succeeded in producing some of the quietest conventional boats afloat,[66] and have done extensive research on propulsion reactors. Such facts scarcely suggest an organization which refuses to recognize change or to look ahead.[67] No doubt it is the results of these efforts which inspired Armstrong and Snyder to question the popular stereotype of the Royal Navy as hidebound and dogmatic.

However, the picture has another side. To say that the Royal Navy has made some remarkable technical strides is not to argue that it has always reacted expeditiously or with unusual foresight. In fact the post-war Royal Navy has often been hesitant to enter new fields until the ground has been broken by others. There seems to be a built-in reluctance to conduct pure research for its own sake or to attempt development of new concepts until they can be firmly related to a tangible military requirement. In short the changes in strategic policy do not seem to have come from the laboratory, but rather modifications in overall policy have stimulated the Navy's technical progress. This can best be illustrated by reviewing some of the more prominent technical developments, described more fully in earlier chapters.

The first significant post-war example of the Admiralty's halting approach to basic research was its reaction to nuclear weapons. It is true, of course, that this work was being conducted under the auspices of another department. It is also fair to say that the Admiralty in all likelihood could not have changed the general direction of the program, nor could it have challenged the RAF's pre-eminent position, no matter how much interest it took in atomic weapons. Nevertheless, once the Admiralty concluded that the Air Force should have first priority the RN hovered on the periphery and evinced only a minimum of interest in the detailed research.[68] Even when weapons production commenced, the Admiralty made no determined effort to carve out a naval role in the program. The point here is that the Navy's leaders were leaving an important area of research to another organization and exerting very little pressure on it to cater to the Fleet's needs. In time the Admiralty expressed some interest, and the Atomic Energy Authority did turn its attention to tactical A-weapons, some of which were eventually slated for deployment on carriers. However, the Admiralty's failure to establish an early foothold in the program weakened its bargaining position and delayed the Navy's entry into the

field. It is significant to note that the first atomic weapons did not join the Fleet until approximately 1959. Even then the Royal Navy did not plan to use atomic explosives with missiles or for ASW. It is perhaps unfair to say that this delay was attributable solely to the Admiralty's failure to inject itself into the early work, but there seems to be no doubt that this was an important factor.[69]

An even more significant example was nuclear propulsion. The Admiralty expressed an early interest in the possibilities of this phenomenon. Admittedly resources were scarce at the time, and there were formidable obstacles inhibiting such research. Still the writer found a rather surprising consensus among respondents, both naval and non-naval, that a vital consideration here was the Admiralty's apathy. It is true that in 1948 there was some question as to what part submarines might play in navies of the future and in the Royal Navy in particular. Still nuclear propulsion held considerable promise, although the ways it could be used were not entirely clear. It was not until 1955 when the Admiralty was developing serious doubts about the Fleet's future and had witnessed the successful performance of the Nautilus that this program was given any intensive naval support. In this case the Dreadnought did not get to sea until 1963, eight years after Nautilus, and several years after the first Russian nuclear submarines.[70] This delay not only held back general submarine development, but no doubt was partly responsible for the Admiralty's delayed adoption of the missile firing submarine.

The Polaris story of course follows a similar pattern. Basic research on ballistic missiles was conducted by the Ministry of Aviation, and the Navy assumed the attitude of a neutral observer. Although the Admiralty's scientists were following the course of this research, the Navy's leaders could not relate it to the Fleet's major missions. It remained for the U. S. Navy to pursue this project and to bring it to fruition. It seems scarcely credible to the outside observer that the Royal

Navy not only stood aloof from these weapons, but did not see fit to complain when the Ministry of Aviation cut back work on solid fuel ballistic missiles. This effectively ruled out sea-borne weapons, and if any administrative agency in the government was to keep this door open it had to be the Admiralty. In the final stages it was the Conservative Party's commitment to the deterrent which thrust Polaris on the Royal Navy. Then it was necessary to turn to the United States for the missiles.

These are the most prominent examples of the failure of the Admiralty to stress basic research and technology which would insure its future. The Royal Navy eventually entered all three of these areas, but its reluctance to pursue such work aggressively without tangible goals in sight meant that it was consistently behind both the United States and Russia in important areas. On the other hand the Admiralty has been rather prompt to respond to more practical stimuli. The first sophisticated post-war experimental project initiated was an anti-aircraft missile program which was launched in 1947. This was motivated by the fear of high performance aircraft which were coming off the drawing board. Research on the anti-submarine problem was rapidly accelerated as soon as the Admiralty was confident that the Russians were building up their submarine force. Again the response lagged the threat, but when it came it was positive and vigorous. Once the Fleet Air Arm digested its experience in Korea there was a remarkable surge in aircraft research which resulted in the carrier developments mentioned earlier. In the same manner the Navy's soul-searching of the mid-1950's and after Suez resulted in some remarkable developments in Fleet equipment - commando carriers, assault landing ships, guided missile destroyers, Buccaneer aircraft - being the most prominent examples. However, these were specific responses to explicit challenges and were initiated as a result of policy decisions to direct the Fleet's development in a certain direction. Throughout the post-war period, once the Admiralty has acknowledged a threat or a need its scientists

and engineers have been more than equal to the task of designing weapons and equipment to meet the requirement. Nowhere has this been better illustrated than in the nuclear submarine and Polaris program. Once the Admiralty elected to enter these areas its technical skills proved more than equal to both of these tasks.

Thus it would appear that there are some grounds for the charges of traditionalism that have been leveled at the Admiralty. On the other hand, the criticisms have distorted the picture. The Admiralty has responded to certain stimuli. If it is at fault, it is in its reluctance to sponsor and to take a deeper interest in longer range, exploratory research.

This conclusion should be read in the light of parameters. It is impossible to lift out technical judgments and examine them with no reference to the economic background. As has been repeatedly noted, throughout the 1945 to 1963 period the Sea Lords were operating within severe budgetary restrictions. It was necessary to cut back in many areas. It may well be that this was the single most important determinant in shaping the effort invested in technical development. It is an irrefutable fact of modern life that experimentation requires large expenditures, and in military research a Government practices parsimony at its own risk. Nevertheless, a great deal of money was spent and equipment produced, so this by itself does not explain the Admiralty's actions.

As noted in the foregoing discussion senior naval officers presided over the technical departments, and it was through them that scientific advice was injected into the Admiralty's policy deliberations. It is obvious that the Sea Lords were hesitant to divert resources to projects which did not promise to meet an immediate and tangible need. There is little question that professional military officers, if nothing else, are practical men and theirs was, all things considered, a pragmatic approach. But their reluctance to engage in fundamental research worked to the Navy's and and the nation's disadvantage in the long run.

Past experience of the Sea Lords no doubt effects technical programs. Ship design, propulsion machinery, gunnery,

communications, ASW equipment - all items common in the Fleet and with which senior officers were familiar - consistently received support. Moreover, some remarkable advances have been made in those fields. As aviators made their way to the higher rungs of the command structure, aircraft research and development received increasing support. In this instance the Ministry of Supply (now Aviation) was responsible for the actual work. The Board's initial post-war attitude was that the Navy was merely a customer, and that the Navy should leave the details to the MOS. It was soon evident, however, to the men actually flying the planes that naval aircraft were not receiving the attention they deserved. Models designed for the Fleet were always forced to defer to RAF aircraft, were inferior to their land-based counterparts and were inevitably delayed in reaching the production stage. After several years of dissatisfaction the Fleet Air Arm succeeded in changing the Navy's approach and moved its own people into the Ministry of Supply to oversee naval projects. The result was a stronger voice for the Navy in the Ministry of Supply and better aircraft for the seagoing forces. It should be stressed, however, that these steps were taken only after aviators began to wield a strong voice in the Board.[71] The main lesson here is that the technical programs reflect the experience of the decision-makers.

The conclusion is obvious. There is a need for better representation at the higher levels of the technical interests in the Navy. The elements besides the line officers with a strong voice at the decision-making level are the politicians and civil servants, and neither group is equipped either by training or experience to supply this need. The increasing complexity of naval warfare has consistently upgraded the importance of scientists, engineers and naval officer specialists. The number of such individuals employed by the Royal Navy since 1945 has increased dramatically. Many of them hold heavy responsibilities. However, they still have not gained the place in the decision-making structure that the civil servants have.

Also, the custom of having "line" officers as heads of the technical departments has been persistently adhered to.

From 1945 to 1963 not even the Navy's Chief Scientist sat on the Board.[72] The bulk of the Navy's ship-building, weapons development, and electronics work is supervised by naval officers specialized in various phases of engineering[73] and a highly competent corps of civilian naval constructors. However, none of these has ever been promoted to a top post in the Admiralty. None has sat on the Admiralty Board. In the early 1950's a group of the Navy's scientists were pushing aggressively for more effort to be put into nuclear research, but their arguments were blunted by the time they reached the higher councils. Essentially the story was the same with the Seaslug missile program, jet aircraft research, and solid fuel propellants. It is hard to resist the conclusion that, in our time when military success rests so heavily on science and technology, that the collective leadership of the Admiralty should include at least one or two experts in this area, either officers or civilians. This suggestion is not a novel one and has received some support among outside commentators. The writer also found considerable agreement among respondents that there was a need for such a change.

One other observation is in order. It is significant to note that the Admiralty has performed better in the areas where it has control of the research effort, and its own scientists are engaged. For example atomic research has always been under the jurisdiction of the Atomic Energy Authority. Similarly aircraft and missile development is the responsibility of the Ministry of Aviation. There has been a marked reluctance on the Admiralty's part to interfere or inject itself into the work of these agencies. This can always be rationalized by pointing out that these other departments bear the responsibility, not the Admiralty. The fact remains, however, that other agencies are not necessarily interested in developing or producing items specifically for use at sea. Until the Admiralty asserts an

interest and invests its own people and money it will not get the products it wants. Britain would not have a nuclear submarine today if the Admiralty had left it entirely to the Atomic Energy Authority. In the end the Navy seconded scientists and technicians to Harwell and took over the development of a maritime reactor. The same was true in naval aircraft and missile research. It was not until the Admiralty took a detailed interest in these programs and injected its own people into the Ministry of Aviation that it began to get the planes and missiles it wanted.

In the final analysis, no matter what the Administrative arrangements, the Sea Lords cannot abdicate their basic responsibility for the welfare of the Fleet. Only the Admiralty has a primary interest in adapting scientific development to the needs of the seagoing forces, and it cannot safely depend on other agencies to take over this responsibility. At the same time, the Government should recognize the risk when it creates departments which conduct development work, but are divorced from the users. There are often pressing reasons for such moves, such as tighter control and more efficient utilization of resources. However, the final product to be effective must satisfy the consumer. This suggests that both politicians and military officers have a duty, which does not always seem to have been recognized in the post-war era, to press aggressively for the closest kind of cooperation between the Services and such agencies. Under no circumstances can the Admiralty abdicate its responsibility for the advancement of sea-borne ships, planes, equipment and weapons.

As a Strategist

In the final analysis the most important aspect of the Admiralty's decision-making role is its responsibility for relating sea power to the nation's security requirements and for devising ways to use the Fleet in promoting the country's interests. In the next few pages the study will review briefly the Admiralty's post-war performance as an initiator of strategy.

For the first few years after World War II the Admiralty experienced some difficulty in adjusting to the changing conditions which were plaguing all British life and in finding a suitable role for the seagoing forces. However, around the mid-1950's the Sea Lords began to cast aside some of their more traditional perspectives, and to fashion a radically new strategic case for the Fleet. Today it is generally conceded that the Royal Navy has achieved an eminently satisfactory accommodation with the post-war military and political environments and that is due in no small part to the Admiralty's ability as a strategist. This can best be illustrated by some brief references to the events described more fully in previous chapters.

The turn in the Fleet's fortunes can be traced to the judgment of their Lordships who, starting in the early months of the Sandys regime, gradually directed the Navy away from its traditional general war role and elected to develop its limited war potential. However, this rather dramatic change in the course of the Admiralty's thinking was by no means a desperation move. It was the result of some careful deliberation and was based on a reading of the military and international realities.

In retrospect there is little question that the Sea Lords acted wisely. They predicted that the possession of nuclear weapons would soon make general war less likely, and correspondingly enhance the probability of small conventional wars. While various commentators had been arguing this thesis for some years the Royal Navy was one of the first (if not the first) military organizations to face up to this new order and to risk its future on what it believed would be an increasing stress on limited war and correspondingly a deemphasis of general war.[74] The Board, citing Korea and Suez, was confident that British naval task forces could still make a meaningful and unique contribution in this area. In its eyes the mobility of warships and their capacity to project both land and air power on short notice would be a valuable asset for some years to come. Time has confirmed this reasoning.

This significant shift in naval thinking likewise rested on some shrewd political judgments. In the mid-1950's, a strong element in Great Britain argued that the country could no longer afford its traditional overseas posture and advocated progressive withdrawal from these responsibilities. The Navy's leaders believed that the country would find it extremely difficult to abdicate its commitments from Capetown to Singapore. They further reasoned that the Fleet's task forces would allow Great Britain to maintain an effective presence in the area, while at the same time facilitating a reduction of bases, manpower and expenses. Again they estimated correctly. Despite some half-hearted gestures at withdrawal, treaty obligations, economic interests and the desire for international prestige have all combined to keep Britain heavily committed East of Suez. As a result the Fleet's role has steadily expanded, and the nation has willingly committed itself to a maritime strategy for some time to come. On the strength of this performance the Navy is generally considered "the most successful of the three Services in adjusting to the new conditions of the post-war period."[75]

However, it is equally true that it was some ten years before the Admiralty broke out of the doldrums that followed World War II. In fact the transformation wrought in the Admiralty's attitudes towards the Fleet's strategic role has been one of the most interesting aspects of this study.

The early post-war period was marked by a disturbing sense of self-satisfaction and a reluctance to alter the Navy's basic strategic concepts. Throughout these years the Navy's leaders made little effort to profit from the experience which the Americans had accumulated in the Pacific or to exploit further the Royal Navy's own association with amphibious warfare. The Fleet was deployed in much the same manner as it had been in 1939 with the emphasis on Europe's narrow seas. The Navy's planners still envisioned a protracted war at sea on the World War II pattern. The carrier had replaced the battleship as the Fleet's main fighting unit, but otherwise there was very little

change in tactical thinking. The Royal Navy's plans took little account of many of the newest developments - atomic weapons, the carrier's potential for attacking shore targets, amphibious techniques, or the ability of ships to operate without shore support. Unfortunately, this meant that the Royal Navy entered the 1950's not only with out-of-date equipment but also with obsolete strategical doctrines. The failure to exploit fully the lessons of World War II would later plague the Royal Navy in both Korea and Suez, and defer for over a decade the development of the carrier task forces which make up the current Fleet.

The Communist menace riveted Britain's attention on Europe and, in turn, the Admiralty prepared to counter the Soviet submarine force. In the eyes of the Sea Lords this threat confirmed their opinion that the next war would involve a protracted struggle for control of the sea lanes. Nevertheless with the onset of Korea one discovers a developing awareness of the changing environment as other challenges diverted the Admiralty from its traditional frame of reference. Korea convincingly demonstrated the contribution which the aircraft carrier could make to land warfare. It was not long before officers returning from the Far East were insisting that the Fleet develop a modern offensive capability for striking land as well as maritime targets. Concurrently, the aviators were asking for a tactical atomic capability and supporting the Navy's participation in NATO's Strike Fleet. These innovations marked the first halting steps toward today's carrier task forces.

These developments were shortly followed by the introduction of hydrogen weapons which literally threw the Admiralty's previous thinking into disarray. Faced with what it considered a genuine challenge to the Navy's future, the Navy's leaders commenced a serious reappraisal of the Fleet's strategic posture. This resulted in a streamlining of the reserve fleet, the personnel reserve, the logistic structure, and the operational forces. Added to these efforts the Suez crisis demonstrated once again the Fleet's potential in combatting brushfires and set the sate for the Admiralty's final casting off of its World War II shackles.

In examining the Royal Navy's strategic responses for the first decade after the war, the observer is indelibly impressed with the slowness of change and the inability of the Admiralty to adopt new concepts. Various considerations fostered this conservatism and inhibited flexibility. Until Korea the Royal Navy was hampered by a severe lack of funds, and even after 1950 its appropriations although larger were extremely limited. In such a situation there is a tendency to forego new schemes, to fall back on existing equipment, and to wait for a better day. Their Lordships always had the problem of being prepared to fight at the moment as well as looking to the future. In addition the first post-war years presented a number of unanticipated problems which both complicated and confused the strategical situation. Unprecedented technical advances have characterized the military scene since 1945, and made long range strategical planning hazardous. Similarly, the fluid international situation muddied the entire security picture and correspondingly the Admiralty's view of the future. Nevertheless, an important factor here was the difficulty in altering the deep seated views of the Navy's leaders on the nature of war and the Fleet's role. Rather than anticipating problems the Sea Lords were reacting only when some outside force challenged their traditional concepts. The Russian submarine force, Korea, Suez, hydrogen weapons in turn, prodded the Admiralty into action and contributed to the evolution of its strategic thinking. In each case, however, the Admiralty reacted after, not before the events.

I suspect that this to some extent is a characteristic of all large organizations - government or commercial. Unfortunately, the military works under some additional handicaps. Unlike a business organization which is tested annually when its profit and loss statement is issued, the proof of an army or navy is conflict, and between wars the incentive to change often subsides to the danger level. Similarly, the rigid command heirarchy which is designed to direct military operations is not as well suited to generating policy changes. In the latter case a free

flow of ideas and the clash of wills is essential. It is difficult to create an environment in which individuals are expected on one hand to obey orders unquestioningly and on the other to speak their minds freely. To say the least, these considerations complicate the military's policy-making problems and make it necessary to combat constantly the spectre of inertia.

The remarkable thing, however, about the Admiralty's post-war experience is that it did eventually shake off its dogmatism. Starting in the mid-1950's, it displayed an increasing capacity to face unpleasant facts and to cope with them. Today it is widely conceded that it has made an effective post-war adjustment, and in consequence the Royal Navy enjoys an enviable reputation for its strategic innovations. What factors, outside direct military challenge, such as Korea and Suez, have contributed to this transformation?

First and foremost, British politicians have played an important part here. Mr. Sandys' confrontation with the Navy was in every sense a genuine challenge to its existence. His increased power put him in a position to question the Navy's arguments and to demand a Navy attuned to the nation's international and economic realities. In a sense he served to prod the Navy's thinking just as war or battle would. The Admiralty had already developed some self-doubt about its general war role. However, the leadership was reluctant to "rock the boat" as long as it continued to receive appropriations and was not required to fight for its policies. Once threatened by outside pressure from the Minister of Defense it proved fully capable of meeting the challenge.

Since 1957 the Minister of Defense's powers have continued to increase, and his staff assistance has been expanded and broadened. Moreover, these moves have kept the pressure on the Admiralty to stay abreast of the times and to support its recommendations with convincing evidence. Irrefutably the quality of its thought and performance has improved since then. This is perhaps the most important lesson which the Admiralty's

post-war experience suggests. Military organizations function better in peacetime if they are stimulated externally. The politicians (or the Ministry of Defense) cannot be expected to do the Admiralty's thinking for it, but they can perform a useful service by acting as catalyst, critic and skeptic. They must continually demand quality performance and, in turn, cast out those programs which cannot be supported. Huntington in his excellent book Common Defense suggests this when he asserts that "over the long run, alternating periods of expansion and contraction may well produce a 'better defense' than a fixed high-level military effort."[76] Like any governmental department the Admiralty must enjoy an environment stable enough to enable it to carry out long term projects. Nevertheless, the Admiralty's post-war history suggests that a military organization requires outside challenges if it is to move with the times, and the political leaders can to a certain extent provide that challenge.

However, outside stimulation by itself does not adequately explain the Admiralty's effective adjustment to the post-war milieu. All three Services have been subjected to these pressures, yet the Navy is generally acknowledged to have succeeded better than the others. The writer found considerable agreement among commentators that the steadily improving quality of the Navy's leadership had accounted in large measure for its success over the last decade. The inevitable question arises: What accomplished these internal changes? Were they merely good fortune, or the result of the system?

There seem to be a number of internal factors which have facilitated the Admiralty's adjustment. A few pages earlier, the harmonious relations between the civil servants and naval officers was noted. This state of affairs has not only aided the presentation of the Navy's case, but has also contributed to its substantive quality. As previously emphasized, the growing interrelation of economic, diplomatic, political and military policies has steadily upgraded the civil servant's role. His knowledge of economic matters, contacts with the Foreign Office and political

astuteness have given him an important voice in formulating strategic policy. Again the close working relation of the civil servants and naval officers has served to bolster the Admiralty's strategic judgment, just as it has its political skill.

Good fortune also seems to have played a hand. In 1955 when the Navy's prospects were at their nadir, a rather remarkable flag officer was appointed First Sea Lord - Admiral Lord Louis Mountbatten. He was destined to lead the Navy through its most crucial post-war trials. By every criterion he was a most unusual leader. Not only had he come from an old line Navy family - his father was First Sea Lord before World War I - but he was a prominent member of the aristocracy with close family ties to the monarchy. In addition he had served in a number of posts outside the Navy, and assumed high responsibility at a relatively young age. During World War II he had for two years been the Chief of Combined Operations in which post he sat on the Chiefs of Staff Committee. Shortly after being relieved of that responsibility he was assigned as Supreme Allied Commander in the Burma-India theatre.[77] In the latter post he was temporarily promoted to the rank of Admiral at the age of forty-three and had elements from all three Services and the Allied countries under his command. After the war he served for one year as the last Viceroy of India and was instrumental in engineering the political independence of that nation.

Although not overly popular in some naval quarters, he is nevertheless credited with leading the Royal Navy out of its post-war doldrums. He brought to the First Sea Lord's post an enviable combination of political know-how, influential connections, inter-Service experience, and a mind unusually receptive to new ideas. He brought together, and served as a leader for, those individuals pressing for the nuclear submarine. He personally played a key role in negotiations concerning the Dreadnought reactor. In the same manner he saw the possibilities of amphibious warfare and set the Navy on this road even before Suez.

His political acumen and influence were crucial in meeting the Sandys attack and steering the Fleet toward its new-found limited war role. He insisted that the Navy's future lay in closer cooperation with the other military branches rather than in assuming an independent role. He strove tirelessly to mesh the Fleet's equipment and tactics with those of the other Services. Even in the Polaris argument Mountbatten fought hard to project the Navy into this field, but he could not carry the Board. It is certainly the general consensus in and out of the Royal Navy that his leadership was instrumental in revitalizing the Admiralty and the Navy as a whole at the critical point in its post-war evolution. His career well exemplifies the value of broad experience, an inter-Service viewpoint, and familiarity with the political milieu.[78]

Vital as Lord Mountbatten's leadership indubitably was, it is at best only one factor in the Navy's adjustment. The Admiralty structure, although not as responsive as many of its critics would like, has nevertheless proved well suited to accommodate to long-term change and to transmit pressures from the Fleet to the policy-making levels. In interviews where the subject was discussed, respondents were in strong agreement that the Navy's leadership in the early post-war years had been remarkably conservative and deaf to change. They likewise insisted that this was not typical of the British Navy, but was more of an "aberration"[79] due to rather unusual circumstances.

The question immediately arises: what were these abnormal conditions? A number of factors seem to be involved. Prior to World War II the Fleet was composed predominantly of surface ships; equipment was simple; there was complete agreement within the Navy on Fleet doctrine; and for that matter a national consensus on the proper role of the Navy. With the onset of World War II normal administrative procedures were suspended. Rapid promotion was the order of the day, and many regular officers found themselves in high command at a relatively young age. Once the initial surge was completed the entire war was fought with essentially the same leadership.

Unfortunately, the nature of the Royal Navy's wartime experience did little to alter the thinking of this leadership. Prior to 1938 the Fleet Air Arm had been a part of the Royal Air Force and had only been transferred to the Admiralty just before the outbreak of hostilities. This essentially meant that 1945 found no career aviators at the senior ranks. Amphibious warfare had been ignored by the pre-war Fleet, and unlike the American Navy, the Royal Navy had taken it on more as an extra curricular activity. Consequently amphibious techniques had made little impression on the senior officers. Similarly, the British high command had little opportunity to profit from the lessons learned by the Americans in the Pacific - for example the contributions made by submarines and an extensive fleet train. Essentially the high command emerged with its pre-1939 strategic views still intact.

Accelerated promotions in wartime meant that after the armistice officer advancements, if not frozen, were considerably throttled down. Many of the wartime commanders remained in power well into the post-war period. This inevitably inhibited change. The world was changing, but for several years the Navy's high command was not. It was to be some time before the Navy could return to its normal administrative patterns and replace the leadership with younger blood which had a more adequate understanding of the post-war world.

Gradually but surely, however, significant changes were wrought in the personnel and character of the Admiralty which brought to the decision-making level fresh perspectives and more imaginative thinking. This transformation was wrought by the system which may be hampered by an abnormal situation such as that described above, but which nevertheless assures long-term change and under normal peacetime conditions works rather well. Officers are frequently rotated between the Admiralty and the operating forces. This ensures that the Navy's many activities are represented in Whitehall. Moreover this practice furnishes the Admiralty with continuous knowledge of problems in the field

and a constant supply of new ideas. In short it offers the Fleet a channel into the headquarters organization. As the Royal Navy's post-war activities have grown more complex and diverse these developments were reflected in the Admiralty and eventually at the policy-making level. Hopefully, the system allows not only for the leadership to transmit its orders and views down the chain, but simultaneously for pressure gradually to well up from the lower echelons. Over the long run this arrangement facilitates change and revitalizes the leadership.

This process is best illustrated by the rise of aviation in the Royal Navy. In the inter-war years the Fleet Air Arm was a branch of the RAF. In 1939, as the result of a major defense study, it was transferred to the Navy. Its pilots were small in number and junior in rank. While the Fleet Air Arm's size increased during World War II, it was still several years before naval aviators began to reach positions of prominence.[80] Nevertheless, after 1945 their influence was to increase rapidly. By the early 1950's several aviators had attained flag rank, a section of the Naval Staff was devoted to aviation matters, a great many career-pilots were serving in the Admiralty, and an aviation Admiral was Fifth Sea Lord. Throughout the mid-1950's the moves toward expanding the Fleet Air Arm's role were not only inspired by aviators, but were shepherded through the Admiralty, including the Board, by aviators. By the very nature of their experience this group brought to the Admiralty fresh perspectives, a more adventurous frame of mind, and a receptiveness to new concepts. In addition many of these individuals, unlike the pre-war surface officers, had served with other organizations - the RAF, the Ministry of Aviation, the U. S. Navy.[81] They had a deep appreciation of the possibilities of air power in general, of the capabilities of other military branches, and the need for inter-Service cooperation. This was a refreshing stream of new talent flowing into the policy mechanism.

In the same manner, although not so obviously, other factions and groups within the Fleet have made their influence

felt. Although the Navy sadly neglected amphibious warfare after 1945, its proponents at the junior ranks were continually improving their position, and in 1955 when a new First Sea Lord, who was sympathetic to their case, assumed office they greatly facilitated the build up of an amphibious capability. Since the establishment of NATO the Royal Navy has had officers serving with a variety of international staffs, foreign navies, and other Services. Gradually this type of talent has been cycled through the Admiralty to enrich its deliberations and, in turn, eventually to reach policy-making positions. The importance of this process can likewise be illustrated in a negative manner. As the preceding discussion indicated the Admiralty has been slow in co-opting scientific and technical talent at the decision-making level. This has adversely affected the Admiralty's adjustment to the necessity for basic research. Similarly, the submarine force which, in accordance with its own desires, enjoys a separate administrative organization has had difficulty in influencing policy. Only with the advent of the Dreadnought and Polaris has it really assumed a strong position in the heirarchy. It is interesting to note that the Polaris program is administered by an organization physically located in the Admiralty, not in Portsmouth where the submarine force has been traditionally administered.

Unquestionably all organizations change with time, but the point to be made here is that the British Navy has developed a system which gives time an assist and tends to reflect at top levels the character and thinking of the Fleet. In response to a more complex world it has diversified the composition of the Navy's top command and given the Board of Admiralty a more diffuse personality than it ever had before 1939. This can be quickly portrayed by a reference to the last four First Sea Lords. Lord Mountbatten (1955-59) was an amphibious expert and had spent considerable time in duties outside the Navy. Sir Charles Lambe (1959-60) was a surface ship officer with an unusual amount of staff duty behind him. Sir Caspar John (1960-63) was the first

aviator to serve in the post. He had served an extended period in aircraft production and development billets rather than operational posts.[82] Sir David Luce, the present First Sea Lord, is the first submarine officer to serve in the billet. This diverse composition is repeated at the lower levels.

It should be stressed at this point that it is not only the rotating representation within the Admiralty which has served to facilitate change, but also the Board's practice of collective responsibility. This device has increased the number of channels of influence and the probability that the major factions and opinions within the Navy will receive a hearing. It facilitates the interchange of ideas and the dialogue which is as essential to good policy-making in the Admiralty as it is in the government in general. As the Navy's post-war composition has diversified it has allowed the Admiralty to take better advantage of these fresh currents and viewpoints.

Thus far the discussion has dwelt only on the ability of assignment policies and collective responsibility to broaden the source of perspectives, ideas and people. The writer has no intention of claiming that this system is either clairvoyant or quickly reactive to changing conditions. All it can do is to insure that over the longer run the leadership revitalizes itself and reflects the complex nature of the Navy as a whole. However, it seems to have had a bonus effect. Although it is difficult to document, more than one respondent asserted that the calibre of the individual leader in the Navy had improved during the last few years. Without exception they credited this to the increased exposure of the Navy's leaders to a variety of stimuli ranging from participation in the political environment to the mechanics of nuclear weapons. The uniformity of experience and views which characterized the pre-war Navy is gone, and this is a change for the better. One respondent phrased it this way:

> Today the average flag officer is head and shoulders above his pre-war contemporary. He still has much of the pre-war training and background in him, but he is otherwise the product of a different environment. He has not only had command at sea, but more often than not he has brushed up against the scientific community, the diplomatic world and the political environment. His decisions no longer concern just military factors, but the whole range of military considerations. In addition his confederates now represent a variety of views - instead of one standard Navy line. He has had to argue his case in an Admiralty where aviators, submariners and destroyer men are constantly in conflict. It has given him a broader perspective and made a better man out of him.

It is difficult to test the validity of this statement, but it certainly accords with my own impressions. The very fact that the Navy deals with the whole military spectrum - air power, land power, and sea power - gives it an advantage in developing officers with a broader comprehension of the background against which the military operates. At any rate the independent evidence - the Navy's effective post-war adjustment - lends support to the conclusion that the Navy's leadership has improved in quality and is proving itself psychologically adaptable to changing conditions.

Conclusions

Overall the Admiralty as an organization has performed well in the post-war period. This performance must always be graded against the background of Britain's declining world position and an unprecedented period of change technologically. These changing conditions, political and economic as well as military, have severely complicated the policy-making problem. Not only have they made some past experience irrelevant, and the future more difficult to foresee, but they have forced British statesmen and military leaders to make some rather traumatic psychological adjustments. It has been not only a matter of accommodating to technological and economic pressures,

but also to a different political position on the international scale of power. In retrospect it is perhaps surprising that the Royal Navy has done as well as it has both for the country and for itself. Admittedly, the Navy's leaders are basically conservative, and at times this delays adjustment to change. "On the other hand, the (Navy's) tradition is such a fine one there is a profit element in it as well."[83] The Admiralty would appear to have reached a generally satisfactory balance between the two poles of tradition and change.

This conclusion should not obscure the Admiralty's mistakes, or convey an impression that there is no room for improvement. The Admiralty exhibits the characteristics of all bureaucratic organizations, and there are lessons to be learned from its post-war experience. These can be summarized as follows:

(1) The Royal Navy like any large bureaucratic organization is susceptible to inertia and finds it particularly difficult to cope with rapid change. It is unlikely that any such organization which is charged not only with policy-making responsibilities but also operational and administrative ones, can be structured to change direction on short notice. Indeed there is some merit in a system which demands continuity at the same time it responds to new pressures. Only a judicious push and pull between these two tendencies can produce sound politics and at the same time allow long term projects to be implemented. The danger in the case of a military organization is that the pressures of inertia will completely overcome those contending for progress. Generalizing from the Royal Navy's experience the best insurance against this is outside challenge and stimulus which tests the organization's goals, recommendations and doctrines. It is here that the political leadership has a crucial role - indeed an obligation - to act constantly as a critic, catalyst and judicious commander. Successful political supervision can reap large rewards. No longer can security problems be adequately handled from a purely military perspective.

The professional officers must take into account the entire political spectrum in making his recommendations. In turn, the politician must assess the military judgments which go into the policy process. Similarly, the politician also must be given the resources and authority to allow him to carry out these functions in a competent manner.

(2) The Admiralty's employment of civil servants has proved eminently successful. They give the Navy a permanent link with Whitehall, provide continuity, bureaucratic expertise, and competent managers for engineering proposals through the political maze. However, it is the Navy's relationships with its civil servants which distinguishes the Admiralty from the other military departments. This seems to depend primarily on administrative arrangements which integrate the naval officers and civil servants throughout the headquarters organization and distributes the responsibility between the two groups. Similarly, the Navy's leaders have gone to great lengths to instill in the Admiralty's civil servants the same pride in the Fleet which characterizes officer corps. There is little question that these measures have brought the civil servants more closely into the Navy fold and inspired improved performance. In fact from a policy-making standpoint the Royal Navy's great traditions have probably paid their greatest dividends in this area.

(3) At the same time the Admiralty's policy of counter-balancing the permanent civil servants with a continuous stream of officers from the operating forces strengthens the policy-making side of the organization. It insures that the headquarters organization reflects the general composition of the Navy and that there is a channel for the lower echelons to exert influence. In essence the Admiralty system provides for long-term change.

It should be emphasized that this practice insures only that the Admiralty will react to alterations in the Fleet. It in no sense guarantees that the Navy will foresee or act ahead of time to meet challenges. This remains a prime function of the political and military leadership. No organizational device

can replace competent leaders. This weakness is amply illustrated by the period of stagnation which beset the Royal Navy for the first few years after World War II. Still it is instructive to note that as the organization gradually emerged from the post-war doldrums and fresh blood was introduced, the quality of leadership has concurrently been improved. There is little question that over the last decade the Navy's leaders have been more adaptable and skillful in meeting outside challenge.

(4) The Board of Admiralty with its custom of collective responsibility has likewise met the post-war test reasonably well. It brings to bear on policy problems a sufficient variety of perspectives and abilities to give policy recommendations a high grade substantive content. At the same time wide representation assures that its decisions embody a sufficient consensus to make them viable. This conciliar arrangement is typical of British institutions and in the Admiralty's case has proved both effective and adaptable over the years. Again the prime danger is that some important group may not have a voice on the Board. The important lesson here is that collective responsibility seems to be well suited to making policy decisions, but it is essential that all the important interests are represented. This is one area where the First Lord can wield a tremendous influence. It is within his power to scrutinize continually the Board of Admiralty and to exercise a strong voice in controlling its composition and selecting Sea Lords. The same inertia which threatens the organization as a whole often precludes changes in the Board's pattern of operation, and it may well be that only a detached observer can diagnose the difficulty.

(5) One thing stands out through the course of the entire study, the greatest voice in the higher councils of the Navy is wielded by the senior naval officers and the quality of the Admiralty's proposals to a large extent depends on their judgment. In short the Admiralty's performance depends greatly on the officer corps pushing up high grade leaders. Setting

aside the first few years after the war, the professional leadership seems to have been remarkably flexible and to have improved consistently with the passage of time. This speaks highly of the Navy's recruiting and training system. At the same time, however, leaders in today's military environment need an unprecedented breadth of knowledge and abilities. Throughout the post-war period the Navy's leaders have been faced with challenges which demanded diplomatic, military, economic, scientific and political skills. This problem can partly be met by drawing on the advice of experts in various fields, but at the same time the quality of the final decisions depends on the competence and judgment of the men at the top. It is manifest from the Navy's post-war experience that as the Navy's senior officers broke out of the narrow frame of reference which confined their pre-war and World War II counterparts the Navy's responses to post-war conditions correspondingly improved. Today's senior officer is still deeply dedicated to the Royal Navy, but as a result of the variegated world in which he has had to operate he possesses a wide-range of experience and knowledge outside of the strictly naval field. The lesson here is an important one. The Navy must constantly be on its guard to see that its recruiting patterns, educational institutions, personnel assignment policies and promotion criteria are geared to the times and are producing adaptable officers. It is essential that the officer who arrives at flag rank will have accumulated the type of knowledge and experience that is relevant to decision-making in this complex and fast moving age.

CHAPTER VIII

NOTES

1. See pp. 39-54.

2. For a brief account of the origins of the traditional offices in the Admiralty and the Board of Admiralty see O. & M. 150/5/61, chap. ii. For a more elaborate treatment refer to Sir Oswyn Murray, The Admiralty (London: Putnam's, 1939). The reorganization which took effect in April 1965 eliminated the title of First Lord. The Navy's minister is now the Minister of State for Defense (Royal Navy). The Board of Admiralty has been discontinued and the governing group is now the Navy Board of the Defense Council. See Cmd. 2097.

3. Before World War II all three Service ministers were normally included in the Cabinet. During the war Prime Minister Churchill assumed the title of Minister of Defense and represented the military in the War Cabinet. The reorganization carried out in 1946 formally removed the Service ministers from the Cabinet.

4. It should be noted that if the First Lord is in the House of Lords the Civil Lord is intentionally chosen from the House of Commons and represents the Navy in that body.

5. When the issue of General Walker and "muzzling" of the military were receiving so much attention in the United States, British officers and civilians were thoroughly puzzled by the issues and could not comprehend why Americans were so concerned. For a British viewpoint on civil-military relations see Robert Blake, "Great Britain: The Crimean War to the First World War," in Michael Howard (ed.), Soldiers and Governments (London: Eyre and Spottiswoode, 1957), pp. 27-50. For the historical roots of the British tradition see Cecil Woodham Smith, The Reason Why (New York: Dutton, 1960). For a look at civil-military relations during World War I see Wolff, Flanders.

6. Eckstein points out that ironically the more ambitious ministers are, the more likely they may become "puppets in the hands of officials," since they depend on them for their ideas, speeches, briefings, and all the things that make a minister appear brilliant. Eckstein, Patterns, 160.

7. Lord Hall (1946-51), Lord Cilcennin (1951-56), Lord Hailsham (1956-57), Lord Selkirk (1957-59), Lord Carrington (1959-63).

8. The following information is taken primarily from the appropriate edition of Who's Who (London: Adam and Charles Black).

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8. The following information is taken primarily from the appropriate edition of Who's Who (London: Adam and Charles Black).

17. Roy Lewis and Angus Maude, The English Middle Classes (New York: Knopf, 1950), p. 45.

18. Armstrong, 65.

19. Ibid., 66.

20. There were two officers in the sample who attended universities for a short period under the auspices of the Royal Navy. This was as a result of a short-lived program after World War I to bolster the educational level of a few picked younger officers. One of these was Lord Mountbatten, the present CDS.

21. Unlike the American Service academies Dartmouth does not award academic degrees.

22. It is interesting to note in passing that the Royal Navy does not publish statistical data on the educational background of its officers. I was told that there were policy reasons for this, but respondents varied widely on what they were.

23. See Armstrong, 94-105.

24. Anthony Sampson, Anatomy of Britain (New York: Harper & Row, 1962), p. 251.

25. Before World War II the Fleet Air Arm was part of the Royal Air Force, and there was a period when those naval officers who entered the Fleet Air Arm actually held two commissions simultaneously - one in the Royal Navy and one in the Royal Air Force. Interview.

26. For a writer who agrees with this conclusion see Snyder, Politics, 115-16.

27. It was difficult to compile data on war college attendance since it was not always mentioned in the press biographies or in Who's Who, and overall figures are not available.

28. For a contemporary and humorous reference to the Navy's traditionalism see Sampson, 254-55. He cites the fact that the senior Service's two exhibitions at the Royal Tournament in 1961 were "cutlass fighting and hornpipe dancing at the time of Nelson, and field guns at the time of the Boer War."

29. First Report, 240.

30. McCloughry, Global Strategy, 168.

31. For purposes of this study the writer examined a random sample of some twenty civil servants, selected from the administrative class, who served in the Admiralty during the period under consideration. Background information was not as easy to obtain as in the case of senior military officers. To a large extent the necessary information was obtained in interviews. Again the writer does not contend that his sample mirrors perfectly the Admiralty civil servants as a group. There has been a great deal written on the British civil service. For full texts devoted to the subject see, H. E. Dale, The Higher Civil Service of Great Britain (London: Oxford University Press, 1942) and Frank Dunnill, The Civil Service: Some Human Aspects (London: Allen and Unwin, 1956). For a brief but excellent presentation of the relationship between ministers and civil servants see Eckstein, Patterns, 158-64.

32. The executive and clerical classes furnish personnel for the more routine tasks and non-supervisory posts; consequently the initial entrance standards are less rigid than for the more prestigious administrative class.

33. The Permanent Secretary of the Admiralty from 1947 to 1961, Sir John Lang, started his career in the clerical class and advanced through all three classes to the topmost position in the Admiralty. This is indeed rare in the British civil service, but it amply illustrates that there is a great deal of opportunity in the civil service for exceptional individuals.

34. Interview. For a similar opinion see Armstrong, 122-23.

35. Ibid.

36. McCloughry, Global Strategy, 168.

37. This accords with the conclusion of all the research on the British civil service which this writer has seen.

38. Dale, 93.

39. It should be stressed that these are artificial distinctions drawn purely for diagnostic purposes. Normally it is impossible to separate out political, strategical and technical decisions. In the great bulk of cases specific responses rest on a variety of considerations which do not fit neatly under these headings. There is certainly no intention to imply here that decision-makers think in these explicit categories. At the same time I do not believe that this device will distort the general lessons which the Admiralty's experience offers.

40. One interviewee, a member of Parliament, derided the Navy at great length for foisting off aircraft carriers on the British Government. He then abruptly switched to the subject of Admiralty organization and spent an equal amount of time lauding its skill in framing its case and shepherding it through the governmental labyrinth.

41. 613 H. C. Deb. 665.

42. For the exact data see Appendix II.

43. Snyder, Politics, 171.

44. Snyder likewise interpreted these figures as an indicator of the Admiralty's political skill. Ibid., 170-71.

45. There is every likelihood that as the capital expenses on Polaris come due the Navy will get an even larger share than either the Army or Air Force.

46. This offensive commenced in earnest in 1955. It should be recalled that the nuclear research program was just being revived in that year, and the missile destroyers had not even been laid down.

47. This is readily conceded by naval officers and Admiralty civil servants. See Observer, July 28, 1957.

48. The Times, July 1, 1957.

49. Observer Foreign News Service, August 8, 1958.

50. This was mentioned in a number of interviews. For short discussions of the methods the different Services employed in circumventing this restriction, see Martin, 31-33; Armstrong 103-04; and Observer, July 28, 1957.

51. Observer, April 7, 1957.

52. The Times, May 22, 1957.

53. "The Battle of Storey's Gate," Time and Tide, March 1, 1958, pp. 246-47.

54. Interview with a civil servant in the Ministry of Defense.

55. Snyder, Politics, 124.

56. In fact it is so successful in this regard that it is sometimes humorously referred to as the only Service department run by civilians.

57. Interview.

58. The War Office has separate heirarchies of army officers and civil servants. The Air Ministry has a mixed system somewhere between the War Office and Admiralty.

59. This is difficult to document, but anyone exposed to the Admiralty atmosphere senses it immediately.

60. The writer was conducted on a tour of the Old Admiralty Building by a civil servant. This gentleman's respect for the Royal Navy's past was implicit in his every statement. When we came to the Admiralty Board Room which since April 1964 is no longer in use, he spent some time criticizing the defense reorganization which had changed many of the traditional titles and moved the Board to another building. He was ever bit as attached to the Royal Navy as any officer or seaman.

61. Air Vice-Marshal E. J. Kingston McCloughry, Defense: Policy and Strategy (New York: Praeger, 1960), p. 118.

62. Armstrong, 94-105; Snyder, Politics, 128-29.

63. The Royal Navy has maintained control of its own research with the exception of that concerning aircraft, missiles, and atomic weapons. Aircraft and missile research and development comes under the auspices of the Ministry of Aviation (The Ministry of Supply until 1958). Atomic energy research is supervised by the Atomic Energy Authority. All Air Force research is done by the Ministry of Aviation, and up until 1958 the Ministry of Supply handled the bulk of the Army's research and procurement.

64. The Royal Navy was the first to employ gas turbines in operational warships of frigate size or larger.

65. For a brief description of these developments and their origin see Garbutt, 34-35.

66. Noise reduction is important in submarine warfare, since many submarine detection devices rely on picking up sounds generated by the submarine.

67. It should be emphasized again that this study is not commenting on the efficiency of management or research techniques. This is a subject in itself. In the same vein a reader could possibly quarrel with these conclusions if he compared the Royal Navy's equipment item by item with the U. S. Navy. It is this writer's belief that this is not a valid test. The Royal Navy is operating on a different scale of effort and has been fulfilling a basically different mission. The American industrial base gives the U. S. Navy many advantages which the Royal Navy does not enjoy, and it can hardly be expected to compete in every way with its wealthier cousin.

68. This is in contrast with the U. S. Navy which evinced an early interest in atomic weapon research and made a considerable contribution to the American effort.

69. I found considerable support for this conclusion among respondents.

70. It is not publicly known exactly when the Russians commenced operating nuclear submarines, but around 1960 is the best estimate.

71. No doubt many commentators would point out that the Fleet Air Arm has continued to be inflicted with aircraft problems right up until the present day. While the quality of naval planes has undoubtedly improved, development and production delays have prevented new models from coming into service until they are on the brink of obsolescence. However, these are problems that plague all three Services. They are by no means unique to the Royal Navy. They are due in part to the state of British industry in general and in part to the unusual arrangement whereby the Ministry of Aviation handles aircraft research and procurement for the whole government. This is a subject in itself and beyond the scope of this study. I am convinced that once the Admiralty recognized its full responsibilities for naval aircraft and moved its own officers into the MOS that the bulk of the problems which were limited to strictly naval aircraft disappeared.

72. In April 1964 when the new defense organization became effective the Chief Scientist was included on the Board.

73. A number of these individuals are flag officers.

74. Huntington points out that Britain has lagged the U. S. technologically, but strategically has been more willing to adopt new strategical concepts than the Americans. Common Defense, 118. As to the Royal Navy's shift toward a limited war rationale it is interesting to note that the U. S. Navy seems to be following this pattern today in regard to its surface task forces. This alone compliments the Admiralty's foresight.

75. Snyder, Politics, 128.

76. Huntington, Common Defense, 118.

77. He was forty-one years of age when appointed to Chief of Combined Operations.

78. For a fascinating account of the Mountbatten family see Alden Hatch, The Mountbattens: The Last Royal Success Story (New York: Random House, 1965).

79. Armstrong uses this term in commenting on the Navy's leadership in the immediate post-war period, p. 99.

80. The U. S. Navy enjoyed a tremendous advantage here. It had control of its own aviation activities from the start, and in World War II several career aviators reached flag rank. As a result it was only a short time after World War II until the naval aviators reached a position of ascendancy in the U. S. Navy.

81. Off and on from 1944 to 1951 the Royal Navy depended on the U. S. Navy to supply some of its aircraft needs. This required considerable cross-contact between the aviation branches of the two Services, and some British naval pilots were posted to Washington at various times to conduct these negotiations.

82. For a short but interesting sketch of Sir Caspar John see, Sampson, 155-56.

83. First Report, xxiii.

CHAPTER IX

AN OVERVIEW

Traditionally, Britain's security policy was designed to defend the home islands against attack, to maintain the Empire's sea communications, and to insure security and British domination in the overseas colonial areas. These objectives combined with the United Kingdom's unique geographical position dictated a maritime strategy, and from the time of Queen Elizabeth I, until the early 1900's Great Britain possessed the world's foremost Navy. As long as there were no important powers outside Europe the Fleet's control of the European narrow seas "automatically resulted in a virtually world-wide command of the sea."[1] This primacy was further buttressed by overseas bases which flanked every major trade route and facilitated the protection of Britain's links with the Empire. Similarly, these bases and the Royal Navy made it possible for Whitehall to project force throughout its various areas of interest at time and places of its own choosing. All in all it was a most enviable arrangement which not only offered nineteenth century Britain an unprecedented degree of security, but underwrote the nation's remarkable economic and political achievements.

Around 1890 the pre-eminent role of the British Fleet began changing - some would say declining. The twentieth century witnessed a number of significant developments which progressively undermined Britain's world position and in turn her traditional strategical posture. As the industrial revolution spread to the Continent and overseas, Britain's predominant commercial position was gradually eroded. Similarly, strong centrifugal tendencies developed within the Empire which

eventually led to autonomy for the colonies. The rise of the American and Japanese navies drastically altered the distribution of sea power and marked the end of the Pax Britannica. Similarly, the introduction of submarines, internal combustion engines, torpedoes, and aircraft were gradually revolutionizing the nature of war and more to the point the traditional role of fleets.

However, the broader implications of these trends had little influence on British thinking up through the inter-war period. The nation had emerged from World War I a member of the victorious coalition and with burgeoning confidence. The Crown still commanded at least the formal allegiance of a vast Empire. London remained the financial capital of the world. Whitehall's diplomats continued to wield a most respected voice at the council table. Britons still relied on the Fleet to defend the homeland, to secure the Suez-India-Australasia lifeline and to support the overseas garrisons. In fact the average Englishman continued to think in terms of Pax Britannica and to endow his Navy with exaggerated capabilities.

It took a second world war to reveal the extent to which time, technology, and the changing configuration of power had had eroded Britain's historic world primacy. She emerged from that conflict in dire economic straits with vast physical damage, her invisible sources of income depleted and over one-third of her overseas investments liquidated. Furthermore, the international distribution of power had altered radically, raising the United States and the Soviet Union to positions of undisputed ascendancy. Militarily World War II witnessed the phenomenal rise of air power and the end of the British homeland's immunity from destructive attack. Salt water and a navy could no longer insure Britain's defense or her international position. As the post-war era unfolded all these developments were to require a series of traumatic adjustments. In essence British post-war Governments have had the unenviable task of presiding over a gradual retreat from Great Power status and of making the process as painless as possible.

This study has focussed on the impacts of these pressures on British naval policy from 1945 to 1963. Like all facets of British life the Royal Navy has undergone some rather profound changes since Germany and Japan capitulated. It was the Attlee Government's original intention to concentrate on the nation's economic rehabilitation and to relegate defense to the background - a normal peacetime procedure. This plan was abruptly terminated by Communist aggressiveness and the outbreak in Korea. Once again Britain was forced to look to its defenses.

The Government soon discovered that it no longer had the resources to go it alone. Even when devoting 10% of its GNP to defense Britain was still falling behind Russia and the United States.[2] The Government's solution was to seek security in the military and political strength of the North Atlantic Treaty Organization. In short it linked Britain's defense to that of western Europe and turned to an "alliance" strategy. This was a striking departure from the country's traditional maritime strategy and graphically illustrated that the Fleet no longer occupied its historic central position in the defense establishment. The Admiralty spent the first decade after the armistice seeking to formulate a viable role for the Fleet in the face of these new circumstances. Needless to say it was reluctant to cast aside its general war strategy that it had followed so long.

In the Government's eyes the NATO commitment demanded a heavy consignment of air and ground forces to the Continent. Not only were Britain's statesmen hoping to bolster SHAPE's ability to fend off the Soviets, but also to demonstrate the sincerity of their commitment and thereby to insure meaningful American support for the defense of Europe. Needless to say this diverted resources from the Fleet, and, by its very nature, the Navy could contribute little to countering Russia's land power. Still the Soviet threat was not solely confined to land. Russia was rapidly expanding its submarine force, and the NATO powers were gravely concerned about the sea communications between North America and Europe. Here was an area where the Fleet

could contribute, and the Admiralty set its sights on the Russian submarine menace.

The formation of NATO was followed shortly by the explosion of a British atomic weapon, and the Royal Air Force soon achieved, at least temporarily, an undisputed ascendancy in the defense heirarchy. Once the Government became convinced that there was no tactical defense against nuclear weapons, a strategy of deterrence seemed irresistibly attractive - particularly since there was some hope that a deterrence strategy might permit cut-backs in manpower and conventional arms. The turn to deterrence again reduced the funds available to the Navy and its importance in the security picture. When SACLANT was formed the Americans planned to use NATO's Strike Fleet offensively in the event of a general nuclear conflict, and the Royal Navy had hoped to exploit this opportunity to expand its overall significance. However, the Admiralty's ambitions were soon frustrated. The introduction of hydrogen weapons, at least in British eyes, seriously discredited SACLANT's intentions to use naval forces in a nuclear exchange. It no longer seemed convincing to argue that a Fleet without a strategic capability could play a major role in a thermo-nuclear war. This development likewise threw a cloud of doubt over the whole concept of a protracted war at sea. Considering the nation's economic difficulties, it hardly seemed profitable to invest huge sums in a Fleet which was being prepared to meet a questionable threat. With its basic doctrine losing credibility and as ever confronted by severe financial limitations the Admiralty turned elsewhere for its strategic rationale.

Just as the cold war has complicated the defense of western Europe, the post-war era has presented Great Britain with unanticipated problems overseas. The rise of nationalism and the spread of Communism not only accelerated the retreat from Empire, but also threatened Britain's economic interests and political influence in these areas. This, in turn, has required a heavy military commitment outside of Europe which

is shouldered in the main without the assistance of the NATO powers. It was here that the Admiralty found a convincing justification for its mobile task forces which could project both land and air power on short notice. Since 1957 the Admiralty has been successful in fashioning effective political support for this role and has bent every effort toward obtaining the necessary hardware. Today the Navy has a small general purpose surface Fleet which is primarily configured to deal with limited wars and disorders. Geographically it is concentrated East of Suez where the bulk of Britain's overseas interests are located. Its general mission is to furnish a British military presence in the area and, if this is insufficient to maintain stability and order, to act quickly in suppressing disturbances before they can escalate into major conflict.

The greater part of the Admiralty's post-war efforts have gone into carving out a viable role for its surface forces, however, today the Fleet has one other significant mission. In the early post-war period the Sea Lords willingly assigned the delivery of strategic weapons to the RAF and, in turn, abdicated from any responsibility for the airborne deterrent. Just as the advance of technology had seriously eroded the Navy's importance, it was eventually to reduce the significance of manned aircraft. By the mid-1950's both the Soviet Union and the United States were seriously experimenting with ballistic missiles, and the British were soon to follow suit. It was manifest that, as a delivery agent for nuclear weapons, missiles far surpassed manned aircraft both in delivery time and vulnerability to counter attack. Once attention turned to such systems the possibility of surface ships and submarines carrying deterrent weapons invited examination. Strangely enough, once the Admiralty had decided to emphasize the Fleet's limited war role, it was reluctant to consider a deterrent mission for its men-of-war. Nevertheless, the Royal Navy was to be overtaken by events beyond its control.

In 1960 the Government cancelled the Blue Streak missile which was originally intended to replace manned bombers in

delivering British nuclear warheads and contracted with the United States Government for the Skybolt missile, to be operational in the late 'sixties. Escalating costs and the remarkable success of the American submarine launched Polaris dictated the cancellation of Skybolt. In place of this abortive project President Kennedy offered Prime Minister Macmillan Polaris. Being deeply committed to the doctrine of deterrence, the nation's political leaders accepted the offer despite the Admiralty's reluctance. By 1970 the Royal Navy will have FBM submarines at sea and is expected to carry prime responsibility for the British deterrent weapons system. These Polaris submarines combined with the limited war task forces have given the Fleet two major missions and restored the Royal Navy to a central position in the British defense establishment.

Examining the post-war period as a whole, it is evident that those responsible for British naval policy, Admiralty officials in particular, have adjusted rather effectively to altered political, economic, and technical military conditions. These adjustments have been achieved despite the fact that the post-war era has been characterized by an unusual amount of instability and uncertainty. Today's Fleet is taking full advantage of the many new seaborne equipment and techniques which engineering science has made available since 1945. There is little question that modern naval forces are well suited to the two roles which the Admiralty has delineated for the Fleet. The FBM submarine has no peer as a launching vehicle for nuclear ballistic missiles. Similarly, from a military perspective the general-purpose carrier task-force is well suited to bring force to bear quickly and effectively in a troubled coastal area. Its mobility and self-sufficiency are particularly valuable East of Suez where Britain's bases have steadily diminished; where the forces available are necessarily limited; where trouble may occur in widely spread locations; and where the British presence must be as politically inoffensive as possible. Considering Britain's post-war limitations such a mission is more realistic

from a military standpoint, than a general war role which would put the Fleet in direct competition with Russia.

Even more important, the Navy's policy adjustments have closely corresponded to the prevailing notions regarding the role Britain should and can play in international politics. Above all the Navy's leaders have had to make a rather traumatic psychological adjustment to Britain's new position on the international scale of power - this is no mean feat in itself. In this sector the Admiralty not only has responded to political pressures, but has often been an important actor in shaping national goals. The Navy's skill in the nuclear propulsion field made it possible for Britain to continue its strategy of deterrence which, in the eyes of many, has enhanced Britain's international prestige and influence. The Admiralty's strategy has likewise made it possible for Britain to protect its interests overseas, and, in a sense, to prolong the retreat from Empire. These achievements reflect a sensitive responsiveness to political, economic, and technical realities. When the military is inflexible and finds itself incapable of accommodating to the changing moods and conditions of the nation, it not only weakens the Government's external influence, but may very well become a source of serious domestic discontent.[3] In short Britain's naval policy seems to exhibit the virtues often associated with most public policies in the United Kingdom - it has evolved slowly but constantly, has consistently rested on a broad consensus, and has managed to reconcile conflicting objectives.

This is not to say that the Admiralty's decision-makers have had no serious problems. One dominant theme of the foregoing study has been the lack of sufficient funds to fulfill the Navy's ambitions. Throughout the post-war era the Government has been continuously under heavy pressure to reduce the resources allocated to military purposes. At the same time, the Government has been reluctant to scale down its national objectives. Throughout this period, successive Governments have attempted to play a Great Power role hardly justified by the nation's economic capabilities.

Despite the fact that post-war Britain has devoted considerably more of its GNP to defense than has been traditionally customary, and that the Government has turned to an alliance strategy which calls for merging its effort with other like minded Powers, it has still been overcommitted militarily since the late 1940's. That is to say, commitments have persistently exceeded the available military capabilities. In consequence, all three Services have been hard pressed throughout the period. This pressure has been evident in a number of post-war crises. In practically every instance where it has been called upon to use force the Government has had to improvise, sometimes on a large scale - Korea, Malaya, Suez, Jordan, Berlin, Kuwait, Cyprus and Indonesia are cases in point. Fortunately, serious threats have not often occurred simultaneously, and Whitehall was usually able in the period studied to juggle its forces without serious military consequences.

The basic reality has been that the major national goals are competing for resources. The security establishment not only requires money, but also draws heavily on industries and manpower which are needed desperately to stabilize the nation's balance of payments. Likewise troublesome has been the Government attempts to provide some sort of military response at every possible level of conflict. Originally, it was hoped that the strategic nuclear deterrent, which is generally estimated to consume between 10 and 15% of the defense budget, would permit reductions in conventional force levels and the phasing out of some traditional weapons. This has proved to be illusory. As the nuclear stalemate developed, conventional arms once again came to the fore, and today Britain has committed non-nuclear forces both to NATO and to cover its responsibilities East of Suez. This wide spectrum of commitments requires a broad-based research and development program which severely taxes Britain's limited resources. Similarly, the declining force levels of all three Services means that smaller numbers of any particular item are needed and, correspondingly, makes it impossible to obtain

the economies associated with large scale production. All these factors aggravate Britain's defense problems.

This has been graphically demonstrated by the Royal Navy's post-war experience. It was primarily the scarcity of resources which precluded the Admiralty from attempting to fashion a strategic bombing role for the Fleet Air Arm. The required investment in new carriers and planes would have been prohibitive. One of the main reasons for the Admiralty's turn away from a general war mission was the inability of the Royal Navy to match the Soviet and American navies in size. By the mid-1950's it was manifest that Britain's disposable resources would not permit building the large numbers of anti-submarine vessels and other types which would be required to meet the Russians weapon for weapon or to match the American contribution to Western defense. In an effort to reconcile economic, technological and political realities, the Admiralty turned to a limited war strategy. It was sincerely believed that this mission would be within the country's financial capacity. From a detached perspective it is notable that the Navy's leaders adjusted their thinking to these limitations in a manner that maximized the Navy's role in British statecraft. This in itself is a tribute to the quality of today's naval leadership.

At the same time, one still must record doubt as to whether the political Government has faced squarely the basic problem of balancing commitments and resources, and in the Navy's case whether the Sea Lords can in the long run fashion as effective a Fleet as they desire. As has already been noted the Navy's limited war role and deterrent mission possess considerable political appeal in Britain and are consistent with modern concepts of the proper use of sea power. Similarly there is little question as to the high quality of RN equipment, the skill of its leaders, or its ability to fight. Irrefutably, the Admiralty has made considerable strides in shaping the seagoing forces to fulfill their new functions. Moreover, with the approval of a new carrier, Sea Lords have succeeded in committing the Government at least in a qualified

sense to a limited naval strategy for some time to come. However, the Fleet's overall strength continues to be a source of serious concern to the Navy's leaders and to many others who follow naval affairs.

In regard to surface task forces the Admiralty's present objectives - which are considered the minimum acceptable - are to keep three carrier task forces (preferably two fixed wing and one commando) East of Suez and to develop a modern amphibious capability for lifting a brigade-size force of ground troops on a moment's notice. Many strategists would contend that forces available to carry out these missions are inadequate, considering the area from Capetown to Singapore. There is no guarantee that forces will be in the right place at the right time, and the distances in that part of the world are formidable. Even more disturbing, crises in two locations at once might be beyond the Fleet's capacity to cope at all. There is some merit in these arguments. But considering Britain's economic circumstances it is not realistic to argue for a vast Fleet which can cover any number of contingencies. Some risks must be accepted, and the Navy's leaders must resign themselves to the fact that the Fleet will always be operating at "full stretch."[4] Thus far the Fleet has proved itself capable of meeting the type of military threats which develop on the littoral of the Indian Ocean. There is no reason to believe that it will not be just as adept in the future at accomplishing much with little. In this regard it is reasonable to expect that in the event of grave trouble the United States would extend assistance. This is a constant factor which alleviates the necessity for any great increase in British force levels. In essence the Admiralty's overall objectives, while involving some risk, nevertheless appear militarily realistic.

However, the Admiralty is hard pressed to meet even these limited aims and to insure that the Fleet will not fall below a minimal level in the future. There are indications that this is a formidable task. It is too early to predict all the effects which the Polaris program will have on the Navy's limited war

plans. But there is little doubt that it will reduce the resources available for surface task forces. Even if the expenses for the FBM submarine force are shared equally by the three Services, as promised, this will still consume a sizeable portion of the Navy's appropriation. Polaris will not make itself really felt until 1966 and after, but it has already begun to pose personnel problems for the Admiralty, by diverting a disproportionate share of skilled manpower. Similarly, FBM submarines will consume time, effort, and logistics support which are not taken into account in the appropriations. In fact the writer found many officers and civil servants who were sincerely convinced that eventually the Polaris project would severely restrict the Admiralty's plans for its limited surface forces.

Likewise, the carrier fight of the early 1960's suggests that the Admiralty is heading into other troubled waters. Although approval was obtained for one new carrier, the Treasury's agreement was based on a three-carrier Fleet for the 1970's, composed of one new and two modernized carriers. There is unanimous consensus among naval commentators that this would be inadequate to implement the brush fire role which the Admiralty envisions. Due to the time consumed by maintenance, overhauls and training, even today's seven carriers are barely sufficient to keep three East of Suez.[5] All of the Navy's fixed wing carriers are approaching the end of their useful life. It may be questioned whether further modernization of these ships is practical. If the Fleet is to obtain the next generation of aircraft now in the test stage, larger flight decks, more powerful catapults, and stronger retrieving equipment will be needed. These requirements may well dictate new instead of modernized carriers. Aside from the fixed wing carriers, the commando carriers are also of World War II vintage and are rapidly reaching the end of their useful lives. In this case perhaps the older fixed wing carriers being phased out could be converted and modernized,[6] but eventually the Admiralty will have to fight for one or more new commando carriers. Recent experience indicates that obtaining these replacements may

be a prolonged and difficult process. Spiraling costs will continue to play an important part. "The cost of replacing an obsolete (weapons) system tends to rise anything up to ten times faster than the Gross National Product,"[7] and warships are no exception. A carrier today costs over fifteen times as much as one built in the 1930's.[8] Under such conditions the Navy's leaders will have to fight hard just to keep the Fleet's strength at what they consider its minimum effective size - much less increase it. Altogether, the signs suggest that, although the Admiralty has achieved a convincing strategic rationale for the seagoing forces, further challenges lie ahead.

In looking to the future the most appealing solution from the Navy's standpoint is to seek an increase in the total size of the defense effort - or at least in the funds devoted to the Navy. However, this does not seem too promising. The Government has settled on a policy which devotes 7 to 8% of the GNP to the security effort, and despite the flood of criticism from military commentators there seems to be a rather remarkable consensus on this policy among all major parties and factions. There is little question that, if Britons were so inclined, the nation could devote more of its limited resources to weapons. However, this would require a cut-back in welfare and other public services and probably an increase in taxes. Not since 1951 has the Government seen fit to reduce social-welfare expenditures in favor of armaments. Barring an alarming rise in the temperature of the cold war the Services can hardly expect to increase the overall size of the security effort.

The Admiralty has also found it difficult to expand its budget. Since 1957 the Navy's position has improved steadily relative to the Air Force and Army, but the losses of the other two Services seem to have gone to the Ministry of Defense, the Ministry of Aviation, and other agencies which have been absorbed into the Defense Estimates rather than to the Navy. Although the full extent of this help is still unknown, the Sea Lords were allegedly successful in extracting funds from the other Services

to support the Polaris commitment. Moreover, the Admiralty contends that as the RAF's V-bomber force is phased out the funds to support it should be transferred to Polaris. Experience suggests that before that date the Air Council will have discovered other pressing commitments which will preclude such a transfer. In essence the Admiralty cannot count on making any serious inroads into either the Army or Air Force monies. On the other hand, while the appropriations of the other two Services have undergone considerable fluctuation, the Navy is relatively better off than at any time since 1945. If the Admiralty can successfully continue to relate its military mission to the Government's political goals, it may very well further improve its financial position at the expense of some other departments.

Aside from expanding its financial estimates the only alternative available to the Admiralty, if it finds it impossible to reach the necessary force levels, is to reduce its commitments. It must constantly review its missions in the light of the nation's economic circumstances and try to show that it is giving the country value for its investment. The fewer the available resources the more important it is that the Navy's performance reaps tangible benefits. In Britain's case it is manifest that it should not be supporting military projects which give a questionable return. With this in mind it is appropriate to look briefly at the Fleet's two major roles and their alleged utilities.

Ironically the Navy's most recent obligation - Polaris - is most vulnerable to criticism. When the Government first adopted nuclear deterrence as a basic military policy the predominantive opinion both in Britain and America was that it was a wise decision. Western defense hinged on the United States' nuclear lead over the Soviets, and it was naively hoped to prolong that superiority. The British contribution was enthusiastically welcomed. At the same time, British statesmen and military leaders believed that atomic weapons were a symbol of Great Power status and would insure their nation an influential voice in world affairs along with the United States and Russia. Today all such assumptions are open to serious questioning.

From a purely military standpoint, there is general agreement on the basic situation. The United States still possesses a relative superiority of fission and fusion weapons. However, the Soviet Union's nuclear strength is increasing, and the American edge is no longer particularly relevant. Both sides have sufficient missiles and intercontinental bombers to raze the other. Hence the nuclear stalemate. In the case of the Western Alliance this arsenal consists of over 1,000 intercontinental ballistic missiles and some 1,500 to 2,000 long range bombers.[9] With the exception of the United Kingdom's force of some 180 V-bombers, Western retaliatory strength is composed solely of American forces. The British contribution has little military impact on the balance of terror. It is simply too small in relation to the total power involved. This basic fact will not be altered by the replacement of the obsolete V-bombers with Polaris missiles. Certainly, the FBM submarines will give the Government an up-to-date weapons systems, which will be relatively invulnerable. However, with the entire force deployed on station the British contribution will be only 64 missiles.[10] Granted this represents a respectable nuclear punch, but in terms of deterring Russia it is probably insignificant.

Its proponents insist that the American commitment to Europe is not necessarily reliable.[11] They contend that Britain must possess nuclear weapons to avoid nuclear blackmail and to give Europe an independent means for deterring a Soviet attack. These arguments have an unrealistic ring about them. To begin with there is considerable opinion that nuclear war is an unlikely contingency; the Western Alliance, including Britain, has been steadily moving toward this position since the late 1950's. Moreover, it is not credible that Britain could face this threat without American support. It defies reason to suppose that the British would be willing to risk total extinction in return for the damage sixty-four, or less, Polaris missiles could do on Soviet Russia. In turn it appears unlikely that, with the risks balanced in such a manner, a <u>determined</u>

Kremlin would be deterred. On this point the British Government appears to agree. As Prime Minister Macmillan said in Ottawa in May 1963: "A Russian missile threat against Britain would be so colossal that it would be deterred only by the combination of United States and British nuclear power."[12] It would be inaccurate to contend that the British deterrent makes no military contribution, but at best it seems to be a marginal one.

British statesmen have been frank to acknowledge that they cling to the deterrent primarily to enhance the nation's international status and to expand their influence at the conference table. It is impossible to determine with any assurance whether this is so or not. It does appear that Britain's nuclear force has raised her prestige in the eyes of the average man - both British and foreign. She has as a result established a unique relationship with the United States and Canada on the exchange of information regarding nuclear energy both for warlike and peaceful uses. Certainly in the mid-1950's when the United States considered Bomber Command's contribution to the Western retaliatory forces a significant one, the British Government enjoyed a close military collaboration with the Strategic Air Command and had some voice in targeting matters.

Similarly, Britain's possession of nuclear weapons has made her a key figure in the negotiations pointing toward disarmament. Both in the United Nations and elsewhere the United Kingdom has played an active role in seeking an effective agreement. This was graphically illustrated in the recent test-ban negotiations which were carried out directly between the United States, the U.S.S.R. and Great Britain. In fact British leaders, due to their unusual status, have often been able to pose as sort of a "third party" seeking to facilitate agreement between the two super powers. One might claim that this is evidence of Britain's enhanced status.

Even more significant, if Europe evolves in the direction desired by General de Gaulle, the United Kingdom might well choose to draw closer to a unified Europe. In that event a national

nuclear force (and the related scientific and technical facilities and skills) might have considerable bargaining value to facilitate Britain's entry into such an arrangement. One of the major objectives of such a scheme is to build a viable and credible third force in the world, and Britain could make a meaningful contribution in this regard. Certainly this is in the minds of British statesmen.

On the other hand there is evidence that Britain has not reaped all the political rewards she had anticipated when she entered the nuclear field. To begin with the deterrent, to a certain extent, is undermining other important national policies. The Government is solidly committed to attaining a rapprochement between the East and West, and eventually disarmament. Many critics contend that Britain's insistence on remaining in the nuclear field threatens the strategic balance between American and Soviet forces, increases the opportunities for catalytic war, and severely complicates disarmament negotiations. Moreover, by maintaining her own small atomic forces Britain may very well be encouraging other European nations to seek a similar independence, further obstructing an eventual agreement with the Soviets. These arguments have furnished the motivation for examining means of putting Britain's nuclear weapons under the control of the Alliance. As yet, however, nothing has come of these schemes.[13]

Furthermore, what evidence is available suggests that although Britain has fashioned an enviable relationship with the United States it has not gained the voice in world affairs it desires. In the Suez crisis of 1956 President Eisenhower, after careful deliberation literally made it impossible for them to complete the takeover of the Canal. Significantly, Whitehall was informed but not consulted by Washington prior to the Cuban ultimatum of 1962. There is a general consensus that in direct confrontations between the two "super powers" where the full might of American power might possibly be brought into play Britain can hardly count on having an influential voice - whether or not she possess nuclear weapons. Clearly, this is hardly what British statesmen hoped to achieve.

In the final analysis the significant question is one of priorities. The arguments for maintaining a deterrent capability seem to offer a few rewards in terms of international prestige and diplomatic leverage. Realistically or not, they are regarded as a symbol of Great Power status and as a relevant instrument for conducting foreign policy. Discarding nuclear weapons would be an important political retreat. Such a step would require major psychological adjustments as well as material ones. These considerations would be more persuasive if Great Britain were not so hard pressed economically. However, in view of the British economy's well known limitations it may well be difficult to justify the capital expense which the Government is preparing to invest in Polaris. However, before reaching this conclusion, the deterrent should be compared with the other demands on the Navy's resources.

The Fleet's other mission is to act as a police force in the overseas areas where Britain previously had colonial interests. Despite the post-war withdrawal from Empire and the steady loosening of Commonwealth bonds, the Government has insisted on maintaining a military presence East of Suez and has retained its traditional responsibility for maintaining order in this area. As in the case of deterrence, Whitehall's motives are complex involving a mixture of political and military considerations. Formally the Government contends:(1) that it has vital political and economic interests in the area which require stability; and (2) that it can make a unique contribution to world peace by policing the unstable areas East of Suez. These two objectives require scrutiny.

It is true that Britain still has extensive economic interests throughout the littoral of the Indian Ocean. British subjects retain important investments from Malaya to South Africa, and the British economy is heavily dependent on oil from the Middle East. In addition, Britain carries on an important trade with the Commonwealth and her former colonies. Unquestionably, stability and order work to Britain's advantage throughout the

area. However, when British statesmen comment glibly about the nation's interests East of Suez they are talking about more than commerce and investments. Although the direct political ties have been severed, there is little question that Whitehall is striving to preserve or fashion some sort of special relationship with its former colonies which will allow it to retain political influence in these areas. If successful this will help to preserve Britain's unique place in the international community and enhance its prestige accordingly. In short the Government is attempting to make the retreat from power as painless as possible.

It is extremely difficult to determine with any accuracy how relevant military force is to these objectives. But the evidence suggests that it does play an important part. Practically every colony which has gained independence has continued to rely at least temporarily on British assistance. For example, one of the conditions governing the use of the Singapore base is that England will provide external defense for the Federation of Malaysia. Similarly, the Commonwealth, SEATO and CENTO states have consistently complained when the British Government contemplated cut-backs in the Far Eastern naval forces. In the recent disturbances in Abadan, Aquaba and Kenya Whitehall was explicitly asked to intervene, although these were internal security matters. Kuwait was a case where the Crown was tied by agreement to a former colony's defense, and was specifically requested to come to the local government's assistance. While there is no guarantee that this type of assistance will reap permanent rewards, experience thus far indicates that it will allow Britain at least to prolong its influence East of Suez.

However, the Government does not base its case for naval task forces solely on national interests. It further contends that the main danger to peace and to the Western Alliance is not likely to come from a direct confrontation between East and West, but rather from local wars in the newly developing areas which attract Communist attention and threaten to escalate into major conflicts. Again the formal argument covers various unstated considerations.

There is doubtless some rationalization here. In other words British statesmen have what they believe to be solid reasons for diverting forces from NATO and are anxious to frame their case in a manner which will make this policy more palatable to their Allies. Similarly, the Government would prefer to delineate a unique role for Britain within the framework of the Western Alliance, rather than merely contribute forces to the defense of Europe. This would give Britain greater latitude for independent action, a stronger voice in NATO, and enhanced prestige. At the same time it furnishes Britain's overseas forces with a more acceptable rationale than strictly national goals can supply. The Government is constantly accused of practicing imperialism in a new form. By linking its overseas responsibilities to supra-national objectives it can hope to remove some of the stigma of this charge.

But despite the fact that Britain stands to gain in a number of ways, there is still a great deal of merit to the basic argument. The free world is discovering daily - in Latin America, Africa, the Near East, Viet Nam - that political unrest, civil war and local conflicts are fertile ground for Communist subversion, and hold the seeds for a potential conflict between Russia or China and the West. The British have witnessed this in Malaya, Cyprus, Kenya and are presently faced with such a prospect in the Indonesian crisis. As a result of their colonial background and their post-war experience maintaining order in a variety of trouble spots, British military forces may be exceptionally qualified to shoulder a brush fire role East of Suez.

While many of the NATO countries remain unimpressed with non-European problems, it is manifest that the United States has come to recognize the danger that lurks in the unstable areas of the world. It is equally clear that Britain has American encouragement in policing the Indian Ocean area. Although the Pentagon has considered seriously extending its commitments to the Indian Ocean it has never felt it possible to do so. U. S. Forces are fully extended. Both America's political and military leaders

are happy to see Britain attempt to fill this gap. They have given their blessing to the British policy while being fully aware that it is detracting from NATO. This suggests that Britain has been at least partially successful in integrating its overseas mission with the thinking of its Allies and in acquiring a larger voice in the Alliance.

From a purely military perspective, U. S. recognition of the importance of the underdeveloped areas has opened up new avenues for cooperation between the American Navy and the Royal Navy. For a number of years the former has pressed for a fleet to be deployed in the Indian Ocean. The British naval commitment has relaxed the pressure on its American counterpart, and has facilitated a workable division of the overall security mission between the two navies. More significantly the U. S. Navy has gradually adopted the British limited war doctrine. As Polaris boats come into service Secretary McNamara has decided there is no longer a requirement for the American carriers to support SAC in its deterrent role. In essence, the U. S. surface task forces will be primarily configured for limited wars and brush fires, just as their British equivalents are today. This has brought the equipment demands of the two navies closer together. It may well lead to an even greater exchange of information, equipment and doctrine than prevails today. The RN's adoption of the Phantom aircraft is a major step in this direction. In the past, NATO governments have had difficulty practicing genuine interdependence, yet there is every reason to believe that these two navies can successfully achieve this goal. The financial advantages to Britain can be significant, as witnessed by the American reactor purchased for Dreadnought and the Phantom aircraft contract.[14]

It is always difficult to weigh competing missions whose value depends so heavily on intangible political goals. Nevertheless, this analysis suggests that if in the future the Admiralty is forced to look for further expedients its limited war role promises the nation more return for the money invested.

In the long run Britain's commitments on the periphery of the Indian Ocean accord with the nation's conception of the role it should play, and at the same time offer tangible prospects of enhancing Britain's international position. Just as important there is an undeniable security challenge in the overseas areas which it is to the free world's advantage to meet. Britain can make a vital contribution in this regard. As opposed to this the overall value of the nuclear deterrent would appear to be dubious. Probably it has enhanced the Britain's position somewhat, but at best it has been a marginal utility. A country faced by severe economic problems should demand more of a return on its investment.

Certainly the abandonment of nuclear weapons would release funds which could be profitably employed elsewhere. In the Royal Navy's case it would also free sorely needed manpower, and facilities. The capital investment estimated for the four nuclear submarines is £300 million, irrespective of operating costs. Just one-third of this impressive figure would go a long ways in assuring that the Fleet could adequately meet its policing responsibilities. Ironically the Admiralty's unofficial position from the late 1950's to Nassau was that the country would be better advised to discard her deterrent policy. However, now that the Navy is heavily involved in the Polaris program and a large segment of the officer corps has a vested interest in its success, there is some evidence that support is building within the Navy for deterrence.[15] This could be unfortunate in the long run. The Fleet's limited war role can continue to be viable and effective only if the Admiralty believes in it and is willing to fight for it. No other group can assume this responsibility. Still judging from the experience of the last decade the Navy's leadership is fully capable of adjusting the Fleet to the country's goals and making whatever painful accommodations new conditions may dictate. There is every prospect that the Royal Navy will continue to play a significant role in British security policy and the defense of the free world.

CHAPTER IX

NOTES

1. Sprout, New Order of Sea Power, 283.

2. For a comparison with previous peacetime expenditures, annual defense costs between 1890 and 1938, with the exception of World War I, averaged 3% of the GNP.

3. For example France's defense policies have been a source of serious difficulties since World War II. The Army's dissatisfaction with Government goals and inability to adjust to the national mood was an important contributory factor to the fall of the Fourth Republic.

4. This expression is taken from a recent article by Vice-Admiral B. B. Schofield which briefly describes the status of the current British Fleet and laments its overcommitment. "At Full Stretch," U. S. Naval Institute Proceedings, April 1965, pp. 36-45.

5. This includes five fixed wing carriers and two commando carriers.

6. It would be easier to modernize an older carrier to serve as a commando carrier than as a fixed wing carrier, because the former do not require heavy flight decks, catapults, and much of the sophisticated equipment that is essential for operating modern day jets.

7. Denis Healey, "The Opposition View: A Fresh Look at Priorities," Defense: A Financial Times Survey, March 23, 1964, p. 13.

8. Raymond Blackman. "The Change in Sea Strategy, Ibid., p. 46.

9. For detailed figures see Institute for Strategic Studies, "The Military Balance 1964-1965," (London: 1964).

10. It is very unlikely that all four would be at sea at once due to the necessity for overhauls, maintenance, and replenishment. In addition one must always take into account the possibilities of misfires, malperformance, human error, and enemy counteraction. All these factors would further degrade the British contribution.

11. Not one military man interviewed agreed with this. It seems confined to politicians and some non-governmental commentators.

12. Cited in Healey, Financial Times, 13.

13. Interestingly enough this was essentially the position of the Labor Party prior to its election to office in 1964.

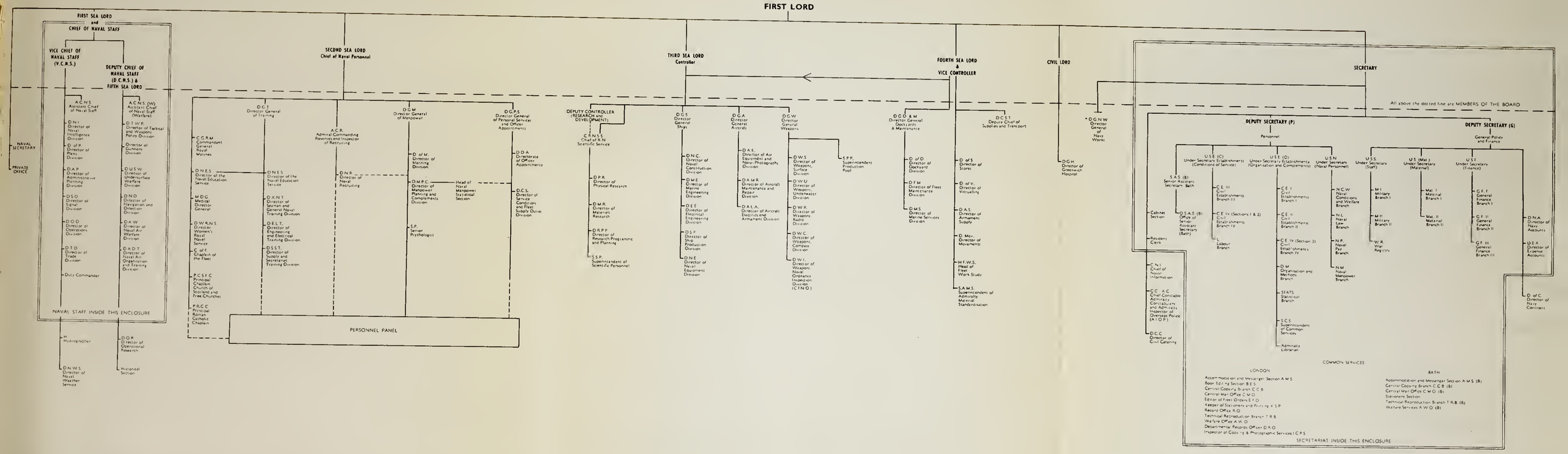
14. For a contemporary comment on the advantages of Britain buying American military aircraft see Mary Goldring "Why Must F-111 Replace TSR 2?," The Illustrated London News, April 17, 1965, pp. 1-3. This article discusses the next generation of fighters which will come into service in the early 1970's and estimates that Great Britain will save over £300 million by purchasing the American F-111 rather than developing its own TSR 2. This despite the fact that considerable monies have already been invested in the TSR 2.

15. This came up in a number of interviews with naval officers and Admiralty civil servants. As a general statement the retired and older officers were opposed to the nation having a deterrent. However, many of the younger individuals appeared to favor strongly the Royal Navy's Polaris program.

APPENDIX I

ADMIRALTY ORGANISATION

This chart shows only the main lines of administrative responsibility of Departments to members of the Board



*The Superintendence shown for D.G.N.W. is a temporary arrangement

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January 1960
C.B.M. 35120

APPENDIX II

Allocation of Defense Estimates[1] and Manpower[2] 1946-1964

(E-Estimates in millions; %-Percentage of total;)
(M-Manpower in thousands)

	Navy	Army	Air Force	Ministry of Supply (Aviation)[3]	Ministry of Defense[4]	Ministry of Public Works[4]	AEA	Total
1946/47								
E	255.00	682.00	256.00	474.00				1,667.00
%	15.3	40.9	15.3	28.5				100.0
M	492.8	2,950.0	760.0	----				4,202.8
1947/48								
E	196.70	388.00	214.00	100.30				899.00
%	21.9	43.3	23.8	11.0				100.0
M	192.6	1,210.0	370.0	----				1,772.6
1948/49								
E	153.00	305.00	173.00	61.00	.60			692.60
%	22.1	44.0	24.9	8.8	.2			100.0
M	145.0	534.0	261.0	----	---			940.0
1949/50								
E	189.25	304.70	207.45	57.75	.71			759.86
%	24.9	40.1	27.3	7.6	.1			100.0
M	144.5	415.7	224.9	----	---			785.1
1950/51								
E	193.00	299.00	223.00	65.00	.82			780.82
%	24.7	38.3	28.6	8.3	.1			100.0
M	140.0	376.0	202.4	----	---			718.4
1951/52								
E	278.50	428.80	330.50	81.5	12.2			1,131.50
%	24.6	37.8	29.2	7.2	1.2			100.0
M	138.2	433.2	237.8	----	---			809.2

	Navy	Army	Air Force	Ministry[3] of Supply (Aviation)	Ministry[4] of Defense	Ministry[4] of Public Works	AEA	Total
1952/53								
E	360.30	556.50	467.60	111.80	17.30			1,513.50
%	23.8	36.7	30.8	7.3	1.4			100.0
M	145.2	446.7	270.8	----	---			862.7
1953/54								
E	364.50	581.00	548.00	123.75	19.51			1,636.76
%	22.5	35.3	33.4	7.4	1.4			100.0
M	145.6	448.4	277.1	----	---			871.1
1954/55								
E	367.00	561.00	537.00	151.00	23.90			1,639.90
%	22.6	34.2	32.7	9.1	1.4			100.0
M	133.8	446.9	265.1	----	---			845.8
1955/56								
E	347.00	484.00	540.40	147.50	18.30			1,537.20
%	22.6	31.5	35.1	9.6	1.2			100.0
M	128.4	437.0	258.2	----	---			823.6
1956/57								
E	351.00	479.00	517.50	185.00	16.20			1,548.70
%	22.7	30.8	33.4	11.9	1.2			100.0
M	122.1	408.0	242.6	----	---			772.7
1957/58								
E	316.15	445.50	506.15	197.60	17.63			1,483.03
%	22.3	30.0	33.1	13.3	1.3			100.0
M	116.0	375.2	227.9	----	---			719.1
1958/59								
E	339.40	441.40	474.55	193.35	16.75			1,465.45
%	23.2	30.1	32.3	13.2	1.2			100.0
M	106.6	328.4	191.0	----	---			626.0
1959/60								
E	370.70	441.35	492.80	191.80	17.48			1,514.13
%	24.5	29.2	32.5	12.6	1.2			100.0
M	101.6	303.9	173.2	----	---			578.7

	Navy	Army	Air Force	Ministry[3] of Supply (Aviation)	Ministry[4] of Defense	Ministry[4] of Public Works	AEA	Total
1960/61								
E	397.50	487.45	529.46	198.85	16.57			1,629.83
%	24.5	29.9	32.4	12.2	1.0			100.0
M	97.8	264.3	163.5	----	---			525.6
1961/62								
E	413.20	506.90	526.67	190.20	18.63			1,655.60
%	25.0	30.6	31.8	11.5	1.1			100.0
M	95.3	231.3	158.2	----	---			484.8
1962/63								
E	422.27	523.92	552.15	204.30	18.42			1,721.06
%	24.5	30.4	32.0	11.9	1.2			100.0
M	94.3	202.7	148.9	----	---			445.9
1963/64								
E	440.96	491.03	503.20	230.47	19.98	146.66	5.40	1,837.70
%	24.0	26.7	27.4	12.5	1.1	8.0	.3	100.0
M	95.8	190.6	143.8	----	---	----	---	430.2
1964/65								
E	496.20	525.41	503.80	274.96	25.97	165.58	6.80	1,998.54
%[5]	24.8	26.3	25.2	13.7	1.3	8.3	.4	100.0
M[5]	98.2	189.9	136.1	----		----	---	424.2

[1]The sources for these data were the various Defense White Papers and associated statistical data. The budgetary estimates are those given in the annual Defense White Paper and do not include supplementary estimates except for the years 1951-53 when those amounts were sizeable (due to the Korean War) and were actually noted in the succeeding year's White Paper. They likewise have not been adjusted to take account of U. S. grants in aid.

[2]The manpower figures are the number of men and women actually in uniform at the beginning of the British fiscal year, April 1.

[3]The Ministry of Supply was deactivated in 1959. Its research and development activities concerning aircraft, missiles, and electronic equipment were taken over by the newly created Ministry of Aviation. The allocation of expenditures within these two agencies among the three Services is not published.

[4]Amounts for the Ministry of Public Works and Atomic Energy Authority were not included as separate items in the Defense Estimates until 1963 and thereafter.

[5]These figures are estimates, rather than actual figures, and were taken from the 1964 Statement on Defense.

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