

Dudley Knox Library, NPS
Monterey, CA 93943

NAVAL POSTGRADUATE SCHOOL

Monterey, California



THESIS

THE NAVIES OF THE FEDERAL REPUBLIC OF
GERMANY AND THE GERMAN DEMOCRATIC
REPUBLIC: A COMPARISON AND ANALYSIS
OF STRUCTURES, ALLIANCE RELATIONS,
DOCTRINE, AND CAPABILITIES

by

John M. Tindall

June 1983

Thesis Advisor:

David S. Yost

Approved for public release; distribution unlimited.

T208955

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) The Navies of the Federal Republic of Germany and the German Democratic Republic: A Comparison and Analysis of Structures, Alliance Relations, Doctrine, and Capabilities		5. TYPE OF REPORT & PERIOD COVERED Master's Thesis; June 1983
7. AUTHOR(s) John M. Tindall		6. PERFORMING ORG. REPORT NUMBER
9. PERFORMING ORGANIZATION NAME AND ADDRESS Naval Postgraduate School Monterey, California 93940		8. CONTRACT OR GRANT NUMBER(s)
11. CONTROLLING OFFICE NAME AND ADDRESS Naval Postgraduate School Monterey, California 93940		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		12. REPORT DATE June 1983
		13. NUMBER OF PAGES 99
		15. SECURITY CLASS. (of this report) Unclassified
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited.		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) The Navy of the Federal Republic of Germany The Navy of the German Democratic Republic Warsaw Pact; North Atlantic Treaty Organization Naval capabilities; Naval structures		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Since 1967, when NATO adopted "flexible response" as the alliance strategy, reliance upon the conventional leg of the NATO triad has increased, including reliance upon the West German Navy. The West German Navy's principal mission is to implement the alliance's strategy of "forward defense" in the Baltic. During the same period of time, the non-Soviet Warsaw Pact naval forces in the Baltic, including the East German Navy, have also been strengthened.		

Thus, two well-equipped German navies of differing ideological and social systems face one another. This thesis which is not meant to be comprehensive, surveys the following topics in relation to both navies: German maritime traditions; origins of the present German navies; organizational structure and relationships to alliances; doctrine, strategy and missions; and capabilities.

Approved for public release; distribution unlimited

The Navies of the Federal Republic of Germany
and the German Democratic Republic:
A Comparison and Analysis of Structures,
Alliance Relations, Doctrine, and Capabilities

by

John M. Tindall
Lieutenant, United States Navy
B.A., University of Wisconsin-Parkside, 1973

Submitted in partial fulfillment of the
requirements for the degree of

MASTER OF ARTS IN NATIONAL SECURITY AFFAIRS

from the

NAVAL POSTGRADUATE SCHOOL
June 1983

ABSTRACT

Since 1967, when NATO adopted "flexible response" as the alliance strategy, reliance upon the conventional leg of the NATO triad has increased, including reliance upon the West German Navy. The West German Navy's principal mission is to implement the alliance's strategy of "forward defense" in the Baltic. During the same period of time, the non-Soviet Warsaw Pact naval forces in the Baltic, including the East German Navy, have also been strengthened.

Thus, two well-equipped German navies of differing ideological and social systems face one another. This thesis which is not meant to be comprehensive, surveys the following topics in relation to both navies: German maritime traditions; origins of the present German navies; organizational structure and relationships to alliances; doctrine, strategy and missions; and capabilities.

TABLE OF CONTENTS

I.	INTRODUCTION - - - - -	9
II.	HISTORICAL BACKGROUND- - - - -	13
III.	ORIGINS- - - - -	19
	A. THE WEST GERMAN NAVY'S ESTABLISHMENT - - - - -	19
	B. THE ESTABLISHMENT OF THE PEOPLE'S NAVY OF NVA- - - - -	24
IV.	STRUCTURES AND ALLIANCE RELATIONS- - - - -	29
	A. THE WEST GERMAN NAVY AND ITS RELATIONSHIP TO NATO- - - - -	29
	B. THE PEOPLE'S NAVY AND ITS RELATIONSHIP TO THE WARSAW PACT- - - - -	35
V.	DOCTRINE AND MISSIONS- - - - -	45
	A. THE DOCTRINE, STRATEGY AND MISSIONS OF THE WEST GERMAN NAVY - - - - -	45
	B. EAST GERMAN NAVAL DOCTRINE, STRATEGY AND MISSIONS - - - - -	53
VI.	CAPABILITIES - - - - -	60
	A. CAPABILITIES OF THE WEST GERMAN NAVY - - - - -	60
	B. THE CAPABILITIES OF THE EAST GERMAN NAVY - - - - -	68
VII.	COMPARISON AND CONCLUSION- - - - -	73
APPENDIX A.	STRUCTURE OF THE WEST GERMAN NAVY - - - - -	78
APPENDIX B.	NATO'S NAVAL COMMAND STRUCTURE- - - - -	79
APPENDIX C.	GERMAN/DANISH AREAS OF PRIMARY AND MUTUAL INTEREST- - - - -	80
APPENDIX D.	EAST GERMAN MINISTRY FOR NATIONAL DEFENSE - - - - -	81
APPENDIX E.	STRUCTURE OF THE EAST GERMAN NAVY - - - - -	82

APPENDIX F. THE DISPOSITION OF THE WEST GERMAN FLEET - 83

APPENDIX G. EAST GERMAN AND WEST GERMAN NAVAL BATTLE
ORDER- - - - - 86

FOOTNOTES - - - - - 89

BIBLIOGRAPHY- - - - - 95

INITIAL DISTRIBUTION LIST - - - - - 99

ABBREVIATIONS

NAC--North Atlantic Counsel

DPC--Defense Planning Committee

ACE--Allied Command Europe

ACLANT--Allied Command Atlantic

ACCHAN--Allied Command Channel

AFNORTH--Allied Forces Northern Europe

AFCENT--Allied Forces Central Europe

GERNORSEA--German North Sea Command

FOG--Fleet Officer Germany

FOD--Fleet Officer Denmark

BALTAP--Baltic Approached

NAVBALTAP--Naval Baltic Approaches

STANAVCHAN--Standing Naval Forces Channel

STANAVFORLANT--Standing Naval Forces Atlantic

ACKNOWLEDGEMENTS

This study has benefitted greatly from the counseling and assistance provided by Dr. David Yost, Coordinator, West European Studies, National Security Affairs Department of the Naval Postgraduate School. He greatly aided my research by providing source material and often needed encouragement. Also, I would like to thank Dr. Robert Bathurst, Professor of Soviet Studies, National Security Affairs Department of the Naval Postgraduate School for particular insight into the Soviet-East German relationship. Thanks is also incumbent upon Rear Admiral Willi Krauss of the "Bundesmarine" who expanded my knowledge of the situation in the Baltic from a West German viewpoint and displayed a candid overview of the West German alliance relationship. Finally, I would like to express my gratitude to the Hoover Institution, its Library staff and particularly retired Captain Ryan, U.S.N., who greatly facilitated the research for this study.

I. INTRODUCTION

The bay of Lübeck in the Western Baltic represents the maritime demarcation of East and West. There lies a nation divided into two separate states--the German Democratic Republic and the Federal Republic of Germany. These states, established after World War II, have since recovered from that war's devastation and now maintain positions of increasing prominence within their respective alliance systems. Their maritime capabilities have decidedly improved since the war and now provide for the possibility of these two fleets engaging one another within the context of a Warsaw Pact-NATO confrontation.

Only relatively recently, since both alliances began to place more emphasis on a possible conventional combat scenario with an unreinforced forces-in-being surprise attack, have the smaller navies of each alliance received increased attention. In the recent past the supposition of a probable nuclear conflict between the super-powers precluded the necessity to assign much responsibility to the smaller navies.

The possibility of a surprise, forces-in-being, non-nuclear attack in order to rapidly achieve a limited objective places particular pressure on the two German navies. Each is situated on the foremost front of its alliance

system and, most assuredly, would encounter the other in any naval action in the area. Their close proximity to the strategically important Baltic Approaches also underlines the importance of understanding more about the two German navies.

This thesis attempts to provide greater insight into the navies of the two Germanies so that we might work more effectively in cooperation with the naval potential of our NATO partners in the West German Navy, and so that we might better understand some of our possible naval opponents, the East German Navy and others in the Warsaw Pact's United Baltic Fleet. To do so, this thesis is divided into chapters on German naval history, the origin of the present German navies, their structures and alliance relationships, strategy and missions, and capabilities. Finally, a comparison analyzes similarities and differences.

No description of the present German navies could be undertaken without at least a brief look at their past. Chapter II considers the German Navy of 1848 and discusses why and how it was needed to be rebuilt three times because of war and misuse.

Chapter III examines the development of the two separate German navies. The limitations after the defeat in World War II in regards to disarmament are discussed. The alliance affiliations of each state are scrutinized, including methods to build a new fleet for each state that would be acceptable within each alliance.

Chapter IV surveys the West German and East German navies today and shows each navy's relationship to the alliance to which it belongs. The West German Navy's relationship to the North Atlantic Treaty Organization will be closely scrutinized as will be the East German Navy's relationships to the Warsaw Treaty Organization. These relationships are critical in establishing the ability of each navy to operate as a national force and each navy's contribution to the maritime forces of its respective alliance.

First, the West German Navy's structure is studied. Looking specifically at the chain of command both administratively and operationally, we determine what level of control is exercised over this naval force from within the West German Navy and what influence the maritime NATO structure of the NATO Alliance has. These relationships determine the degree of linkage between the Alliance and this naval force.

The East German Navy is approached in the same manner as the West German Navy. However, due to the secretive nature of Communist countries, naval exercises are analyzed in order to lead to conclusions about structure which in the West would have been readily published. The approach, however, is similar to that used in looking at the West German Navy. First, a look at the East German Naval structure helps to determine the indigenous control of this

navy as compared to outside influence from the Warsaw Treaty Organization and/or the Soviet Union. Then the East German Navy's structural integration into the Warsaw Pact is discussed, which leads to a determination of the freedom of action allowed the East German Navy.

Chapter V explores the doctrine, strategy and missions of both navies. This inquiry further elucidates the linkages between individual navies and the respective alliance or between individual navies and the alliance leaders, i.e. the United States and the USSR.

West Germany's doctrines and strategy are assessed in the light of current agreements and statements. Then the missions of this naval force are discussed within the context of naval strategy and structure.

East Germany's doctrine and strategy are discussed with insight derived from the linkages apparent through close scrutiny of exercises, proclamations, agreements, and daily operations. East Germany's naval missions are categorized on the basis of available information.

Chapter VI attempts to show the integration of alliance relationships, doctrine and strategy into a viable naval capability for each German navy to perform its mission. Emphasis is placed mostly on the modernization programs currently underway in each navy.

Chapter VII constitutes the comparison and the conclusion of this study. Each naval topic presented is compared to promote better understanding of the two German navies.

II. HISTORICAL BACKGROUND

Throughout the world it is difficult to find a country with a military tradition as pervasive as in Germany. The German emphasis on military prowess and on the militarist's way of life has greatly influenced their history and their psyche. So much so that the term Hessian, referring to an inhabitant of the German state of Hesse, is often used to describe a soldier or a mercenary. This emphasis on militaristic ideals has permeated German society. Thus the Germans have a particular respect for people who exude traits of strict discipline and loyalty to a cause. These virtues have repeatedly placed the German people among the most productive and efficient of nations of the world. However, paradoxically, these same admired strengths have at least twice in this century proved purpose for world despair--the German nation has been the focal point of two world wars.

Due to Germany's militaristic outlook and its geographical position, right in the center of Europe, it is understandable why Germany has had a preponderance for the maintenance of a strong army while at the same time neglecting the navy. After all, how often had she been attacked by sea or relied upon the sea for the conduct of her commerce?

Nevertheless, the German Navy might be traced as far back as to 1217 A.D. when the Frisian Navy aided the crusaders with one hundred ships. That naval force had reportedly been the largest naval operation to that date.¹ But the most often accepted birth of the first German Navy dates back to 1848 when the Frankfurt National Assembly granted the sum of six million thaler to form the first German Navy. The impetus for such action stemmed from the Danish Navy's blockade of the German harbors of the North German coastal states during the Danish-German War of 1848.²

This development was shortlived. In 1852 the German Navy was disbanded for lack of funding. It was not resurrected until around 1857, when a Prussian Navy came into existence to fight off the coast of Morocco and later for coastal skirmishes in the Franco-Prussian War. It was not until Wilhelm II that Germany really began to think of an expanded Navy in a modern sense. Wilhelm II was an ardent admirer of Alfred Thayer Mahan's theory of sea power and realized the political, military and economic advantages acquired by such an investment.

It would be a Navy to counter the Dreadnoughts of the Royal Navy and perhaps to help colonize distant lands. However, this vision was never to reach fruition, for World War I and the Treaty of Versailles which marked its end, was to interfere and force the scuttling of the then existing German fleet at Scapa Flow on June 21, 1919.³ The

First World War had seen little use of either the Royal or the German Navy. In fact, the Battle of Jutland was to be their only encounter at sea and it turned out to be indecisive. Thereafter, neither fleet ventured far from home waters; nor did either make a significant contribution to the outcome of the war.

During the Weimar period the German High Command began rebuilding the Reichswehr. Reverting back to neglecting the rebuilding of the Navy, they had failed to learn the decisive importance of sea power and how it might have altered the result of the last war. They also failed to see war against England as a possibility. Admiral Raeder, Chief of the German Fleet, on the other hand, began to lay the foundations for a small balanced fleet.

"Under the Versailles Treaty the German Navy was limited to fifteen thousand men and a very small number of ships."⁴ When Hitler came to power, realizing the potential power a nation relinquished without a sizable naval force, he decided to attempt to change these Versailles restrictions. He thought by completing an agreement with England he might overcome this restriction without openly repudiating the Treaty of Versailles.

On June 18, 1935 the London Treaty was signed between Great Britain and Germany. The treaty limited the German Navy to thirty-five percent of the British surface fleet, and later agreements allowed the Germans to extend U-boat building to one hundred percent of the British fleet.⁵

Hitler informed Admiral Raeder of his real intentions for Germany and "names England as a 'hateful enemy' on November 4, 1937."⁶ Hitler's war plans greatly altered Raeder's plans for rebuilding the Navy, even though "Hitler promised that there would be no war with England until 1944 or 1945."⁷ With that in mind Raeder, submitted "in February, 1939 the Z plan for the development of the fleet which was as follows:

6	Battleships	By the end of 1944
8	Heavy cruisers	By the end of 1943
4	Heavy cruisers	By the end of 1945
17	Light cruisers	By the end of 1944
13	Light cruisers	By the end of 1948
4	Aircraft carriers	By the end of 1941
2	Aircraft carriers	By the end of 1947
126	U-boats (all types)	By the end of 1943
95	U-boats (all types)	By the end of 1947

(Destroyers, etc., not included)

The completed fleet in 1948 would have consisted of:

13	Battleships
33	Cruisers
4	Aircraft Carriers
267	U-boats

and a large number of destroyers, auxiliaries, etc."⁸

Even with the Z plan completed the Germans lacked the sea power to match the English fleet ship for ship. With

the early declaration of war on the third of September, 1939, the German Navy was in no way adequately equipped for a great naval struggle with Great Britain. Admiral Raeder summarized the German Naval situation at that time as having a well-trained suitably organized submarine arm, but still it was much too weak to have any effect on the war. He considered the surface forces as "so inferior in number and strength to the British fleet that they could do no more than show that they knew how to die gallantly."⁹ Thus Raeder, knowing defeat to be the most probable naval outcome for Germany, still maintained those militaristic virtues of loyalty and discipline. He thought that the German Navy could sustain two or three years of war and possibly the Germans could win that quickly.

The war lasted for over five years, and confirmed the Admiral's prediction that the German Navy was not prepared for such a long conflict. The German Navy was reduced to such an extent that by the final year of the war the only possible major German naval action was in the Baltic, where Vice Admiral August Thiele commanded the cruiser Prinz Eugen and the pocket battleships Lutzow and Admiral Scheer to provide additional artillery support for the German Army's rear-guard action.

Throughout the Second World War the German Navy had fought, courageously, often against terrific odds; and true to their German heritage, the virtues of loyalty and

discipline endured. Admiral Raeder had appraised the German Navy correctly.

Today's two German Navies have the same maritime heritage. The West German and the East German Navies originally included men with strong ties to the German maritime past. The following chapters attempt to describe in greater detail how these Navies compare after thirty-eight years of division.

III. ORIGINS

A. THE WEST GERMAN NAVY'S ESTABLISHMENT

The German Navy was completely disarmed after World War II. It was not until September 1950 that the Western powers considered possible West German remilitarization and its participation in the defense of Western Europe under the auspices of the North Atlantic Treaty. The North Atlantic Treaty had been signed in April of 1949 as a defensive alliance to offset the communist threat from Soviet-controlled Eastern Europe.

The Korean War provided the impetus for transforming the status of West Germany from a former enemy to that of a future ally. The desire of the Western Allies to rearm West Germany met with strong resistance from the opposition Social Democratic party within West Germany and from the Soviet Union. Only through the strong leadership of Federal Chancellor Adenauer did West Germany sign the Paris Agreements on October 23, 1954, making West Germany a member of the Western European Union. West German rearmament was finally achieved by the revision and expansion of the Treaty of Brussels of 17 March 1948 which officially announced the West German will to rearm. This West German action definitely proved West Germany's inclination toward

the Western allies and the Allied determination to make West Germany an ally.

After the signing of the Paris agreements by West Germany, the minister voted to admit West Germany into NATO and on May 9, 1955, at a conference of NATO foreign ministers in Paris, West Germany was formally made a member of NATO--just four days after having regained her sovereignty.¹⁰

West Germany was admitted to the Western European Union only after agreeing to restrictions placed upon the West German manufacture of certain weapons on its territory. Those weapons related to the West German Navy, as listed in the original text of Annex III to Protocol III of the Paris agreements, which could not be produced on German soil are: (1) Long Range Missiles and Guided Missiles; (2) Influence Mines (naval mines which can be exploded automatically by influences which are initiated by external sources); and (3) Warships, with the exception of smaller ships for defense purposes. The warships which could not be manufactured are (1) those of more than three thousand tons displacement; (2) Submarines of greater than three hundred fifty tons displacement; and (3) all naval combatants with propulsion systems other than steam, diesel or gas engines or gas turbines or by jet engines.¹¹ Despite these restrictions, West Germany could be authorized to manufacture these weapons upon the recommendation of the Supreme Commander of

NATO and upon the approval of the Council of the Western European Union by a two-thirds majority.¹²

The rebuilding of the German Navy as a West German Navy was first formally discussed between Chancellor Adenauer and General Eisenhower at the Petersberg near Bonn in January 1951. However, prior to this meeting, there had been a meeting of fifteen former German officers of the Army, Air Force and Navy which had drawn up a tentative military program for Germany. The proposed European Defense Community and its political ramifications delayed the implementation of any of these early ideas for a German Navy and left German rearmament only with a scarce beginning by 1956.¹³

The Paris Agreements obligated West Germany to rearm and to rebuild a navy. Shortly after admission to NATO in July 1955, the West German Parliament authorized the enlistment of six thousand officers and men to form the nucleus of a future half million men defense force.¹⁴

By the end of 1955 the West German Navy consisted of not more than eighty naval officers and petty officers. A year later, the West German Navy had eight thousand officers and men with seventy vessels. By the end of 1957 the numbers increased to fifteen thousand officers and men and one hundred ships. This naval posture equaled the personnel strength of the German Navy between 1920 and 1933, with the exception that the ships of this new navy would be smaller, but more numerous.¹⁵

Chief of Naval Operations of the new Navy of the Federal Republic of Germany was Vice-Admiral Friedrich Ruge. He was to lay the foundation for this new navy with the same determination and thoroughness Grand-Admiral Raeder had in 1935. Admiral Ruge determined the particular type of fleet he was to build largely by the particular waters in which it was to operate. Almost all German naval operational areas--the Baltic, the Danish Straits, the coastal waters of the Channel and the North Sea--are shallow, and have more than their share of fog, gales, currents and navigational hazards. These waters are particularly well-suited for mine warfare. Submarines find it difficult to operate because of stratification of the water and salinity fluctuations--due to the many large rivers entering these seas and their shallowness.

Taking the above into account and the restrictions placed on the German Navy by the Paris agreement, no ship larger than a destroyer had been planned for construction. Admiral Ruge, however, wanted "destroyers with excellent anti-aircraft armament, guns capable of firing at sea and land targets, good anti-submarine warfare gear, minelaying facilities, and some torpedo armament."¹⁶ These formed the backbone of the new German fleet. On the following page is the original list of types and numbers of equipment requested.

	Planned	Appropriated for as of September, 1957
Destroyers	18	8
Minelayers	2	2
Escort vessels	10	6
PT-boats	40	40
MSC's	24	24
Fast Minesweepers	30	30
Submarines	12	12
Landing craft	36	12
Harbor guard vessels	10	10
Planes	58	58*

*Plus trainers, helicopters, and reserves.¹⁷

Although the plans for the fleet had been drawn up and partially accepted, Germany still lacked the shipyards to make the German fleet a reality. All the former shipyards had been totally dismantled after the war and no design staff existed for warships. This difficulty was partially remedied by assistance from her now NATO partners and the consolidation of the Seegrenzschutz (a Coast-Guard-type force) with the new West German Navy.

Additionally, the Labor Service Unit at Bremerhaven (a unit used after the war by the United States to clear the mines along the North Sea Coast) converted over to the Navy in 1956 and along with it came a squadron of six large ex-German minesweepers of six hundred tons and another squadron of twelve ex-German motor minesweepers and one hundred forty

tons. Barracks well-suited for training purposes were also acquired at Bremerhaven. The Seegrenzschutz (Sea Frontier Police) provided twenty-six small vessels and approximately eight hundred fifty out of one thousand men who joined the new Navy. Along with these the Navy also acquired port installations at Kiel, Cuxhaven and Neustadt in Holstein. The Germans also received a squadron of PT boats from the British and a squadron of five ex-German minesweepers from the French.¹⁸

All of this, combined with the reestablishment of an indigenous shipbuilding industry, was indicative of the budding of a strong West German Navy to supplement the existing NATO maritime forces within the European Theatre. It also would provide more of the naval force necessary to defend West German territory.

B. THE ESTABLISHMENT OF THE PEOPLE'S NAVY OF NVA

The German Democratic Republic (GDR) was established in the Soviet zone of Germany in October, 1949. Initially this government used the "Bereitschaften" (Special Alert Units), created in 1948, as the nucleus for a military force. Most of its members had been former German prisoners in Soviet prisoner of war camps who had been indoctrinated in Marxism-Leninism during their internment. By 1950--long before the new West German state possessed anything resembling a military establishment--this military force, which was supplemented by sea and air police units, had reached a strength of fifty thousand men.

The East German Navy or People's Navy was spawned in February 1950 by a decision of the Politburo to form the "Verwaltung Seepolizei" (Sea Police Administration) and to build maritime Sea Police Craft.¹⁹ This Sea Police Administration became operational on June 15, 1950 under the direction of the Inspector General of the People's Police, Waldemar Verner. To this day the fifteenth of June is the recognized birthday for the navy in East Germany.

The newly formed Sea Police's mission was to secure the coastline. It had a modest beginning, with three old jeeps from the Wehrmacht. After the summer of 1951, they had one hundred fifty horses which the government gave them to increase their mobility.²⁰

At the second party conference of the SED in July 1952, the party members decided, according to Admiral Ehm, to improve the border security of East Germany by the deployment of military equipment at the side of the Soviet Army to protect against counterrevolutionary attacks and imperialist intervention. These decisions corresponded to the formation of the Kasernierten Volkspolizei (KVP) from which evolved in July of 1952 a Volkspolizei-See (People's Police-Sea). Also a Grenzpolizei-See (Border Police-Sea) division was formed to secure the coasts and was the sea contingent of the East German Border Guard; since May 1952 this has been under the direction of the East German Ministry for State Security. The Volkspolizei-See acquired an important

mission of clearing World War II mines from the sea lanes and fishing areas of East German waters. The Grenzpolizei-See received eight new coastal defense ships to enhance their mission of coastal defense.²¹ Both Volkspolizei-See and Grenzpolizei-See worked closely together to improve the protection of the East German coast.

Between 1952 and 1956 the East German shipbuilding industry had been rebuilt and had been producing ships for its navy. The People's shipyard at Stralsund and the Penne-Shipyard in Wolgast together built twelve units of mine-layers and minesweepers of the Habicht class. The mine-sweepers of the Kriegsmarine are still in use today. Forty ships of the Schwalbe class and approximately one hundred coastal defense ships of the Tumbler/Delphin class and the Sperber class strengthened the coastal defense forces.

The training and flag ship of the East German Navy was the Ernst Thalmann, a former Danish ship which had been confiscated by the Germans in 1940 and later confiscated by the Soviets from the Germans as war booty. It was later returned to the Volkspolizei-See and completely overhauled in 1952-53 at the Neptune shipyards in Rostock. This one thousand fifty ton ship could give the new East German naval officers practical seamanship experience. Those officers having previously undergone naval technical training at the Naval Academy in Stralsund, which was founded in January 1952, formed the nucleus for the emerging East Germany Navy.²²

The East German Navy was formed in March 1956. It was subordinate to the newly formed National Defense Ministry and the National People's Army, which were created by law in January 1956. This new German Navy incorporated the "Volkspolizei-See." The "Grenzpolizei-See" remained a part of the Border Police until 1961, when it merged with the People's Navy.

This new East German People's Navy was given the tasks to develop under the guidance of the Soviet Baltic Red Banner Fleet into an effective part of the United Baltic Fleet of the Warsaw Pact and to master the battle techniques unique to the Baltic.²³ The first joint exercise between the Soviet Red Banner Baltic Fleet and the People's Navy, according to Admiral Ehm, chief of East German Navy, took place during July 1956, with ten minelaying ships, eighteen coastal defense ships and forty-seven minesweepers.²⁴ This was followed by a Joint Baltic Fleet (Soviet, East German and Polish naval units) exercise the following June under the command of the Baltic Red Banner Fleet.²⁵ These two exercises initiated the many Joint Baltic Fleet exercises which continue to improve the coordination between the three Warsaw Pact Baltic Navies.

The present name of the East German Navy, the "Volksmarine" (People's Navy), was not used until November 1960. This name was chosen in honor of the Kiel Sailor's Rebellion of 1918.²⁶ It was an attempt to further

disassociate the East German Navy from the national German Navies of the past and to strengthen the binds of the East Germany Navy to the Communist Party, thereby strengthening the legitimacy of the East German regime.

The People's Navy has continued to improve its forces through the use of its indigenous shipbuilding industry, an economy slanted toward the military and close cooperation with the Soviet Red Banner Baltic Fleet. East Germany continued to build most of its own smaller ships, such as its landing craft and its minesweepers. However, larger coastal defense ships have been obtained from the USSR. In 1978, the original Soviet RIGA-class coastal defense ships began being replaced by the newer Soviet Koni missile frigates. This trend seems likely to continue. Thanks to the performance of the East German economy, the East German government has contributed more to defense than any other Warsaw Pact member. There is no doubt that the East Germans could build a more capable fleet than that which exists. However, within the context of their present political-military relationships with the other Warsaw Pact states, its present stature appears to represent the maximum that can be politically achieved.

IV. STRUCTURES AND ALLIANCE RELATIONS

A. THE WEST GERMAN NAVY AND ITS RELATIONSHIP TO NATO

Since its humble beginnings in May 1955 the West German Navy has developed into a very formidable naval force and a most welcome asset to NATO's maritime forces. The Bundesmarine is totally immersed within NATO's defensive strategy of "a flexible response and a forward defense capability as a basis of deterrence."²⁷ Its structure reflects this association.

West German control of the Armed Forces and, thus, of the Bundesmarine is specifically addressed in the Basic Law. In peacetime military command authority is vested in the civilian appointed to serve as Minister of Defense. In a time of crisis, however, this command responsibility is assumed by the Federal Chancellor.²⁸

The Chief of Staff Navy (also known as Inspekteur der Marine, or Inspector of the Navy) controls the Fleet Command (Flotten Kommando), the General Naval Office (Marineamt) and the Naval Support Command (Marineunterstützungs Kommando) which form the three main divisions of the Bundesmarine. (See Appendix A). The Commander-in-Chief of the Fleet Command exercises control over both the naval afloat assets and naval air forces, the commander of the Naval Support Command directs the logistic support and maintenance of all naval equipment and the General Naval Office oversees the recruitment and training of individual sailors, supervises

research and development efforts and controls the Naval medical program.²⁹

The Chief of Staff Navy also controls a command staff (Führungsstab) consisting of seven departments. These seven departments of the Führungsstab Bundesmarine command staff are: (1) personnel, (2) military intelligence, (3) operations, (4) organization, (5) logistics, (6) plans and (7) research and development. These directly assist the Inspector of the Navy in making command decisions.³⁰

"Das Flottenkommando"--the naval forces and naval air forces of the German Navy--form the bulk of Allied maritime defenses for the Baltic portion of the Northern flank of NATO. The Bundesmarine provides approximately one third of the naval assets immediately available in this area which includes about three-fourths of NATO's maritime forces for the Baltic.³¹

The Fleet Commander, with his headquarters at Glücksburg, represents in his national role the Commander-in-Chief of the German Fleet (CINCGERFLEET) and in his NATO role represents Flag Officer Germany (FOG). (See Appendices C and D) As Flag Officer Germany he is responsible to Commander Naval Forces Baltic approaches in Karup, Denmark. To assist in accomplishing his duties, the Fleet Commander is served by a staff consisting of the following departments: (1) personnel, (2) military intelligence, (3) operations, (4) NATO, (5) planning, (6) readiness, (7) sanitation, (8)

administration, (9) legal and (10) geophysics. The Fleet Commander and his staff work in close liaison with the Naval Command Staff at the Defense Ministry, the Staffs of the Army, Air Force, and the pertinent staffs of NATO.³²

The only West German National Naval contingent is the Ständige Einsatzgruppe der Flotte (SEF--Standing Fleet Operational Group). This West German naval contingent consists of three to five all weather capable units from the destroyer fleet, one fast-patrol boat and one minesweeper. Naval air contributes fighter, reconnaissance and ASW aircraft. Amphibious assets are also used as needed.³³

This West German Standing Operational Group is established quarterly to operate together from four to six weeks. These exercises allow the West Germans to measure their readiness and capability to combat the threat in the North Sea, the Baltic Sea, and the Baltic approaches. In that naval environment the Navy must be able to react quickly and in a well-coordinated manner to any attack or infringement upon West German territory by employing the tactics of "forward defense."

At Sengwarden near Wilhelmshaven is the headquarters of der Befehlshaber der Seestreitkräfte der Nordsee (BSN--Commander German North Sea Fleet). In peacetime he is subordinate to CIC Fleet Command at Glücksburg and has the responsibility for the naval units in the North Sea and those in foreign waters. In crisis situations his NATO role

as Commander German North Sea SubArea (COMGERNORSEA) (see Appendices C and D) subordinates him to COMNAVBALTAP. COMGERMORSEA will then be responsible for the protection of the transport of raw materials, reinforcements and resupply to the European continent through the North Sea ports. The operational difficulties in the North Sea will mostly entail minesweeping, anti-submarine warfare, and the escort of transport ships. NATO's naval command throughout the North Sea in wartime relies upon close cooperation and interoperability between the NATO navies of this geostrategic maritime area. COMGERNORSEA also provides reinforcement as necessary to strengthen the adjacent NATO sea areas to the North, West and Baltic approaches as necessary.³⁴

Besides being principally subordinate to Allied Command Europe through CINCNORTH and COMNAVBALTAP, the West German Navy is also represented within ACLANT and ACCHAN. In ACLANT the West German Navy has two liaison officers on the staff. One officer is assigned as the West German electronic warfare liaison officer and the other is assigned as the intelligence liaison officer. The Bundesmarine also annually sends approximately three destroyers/frigates for a four month tour with the Standing Naval Force Atlantic (STANAVFORLANT).³⁵ STANAVFORLANT was established by the North Atlantic Council in December 1967 and became operational on January 13, 1968 in Portsmouth, England.³⁶ It is subordinate to Supreme Allied Commander Atlantic (SACLANT).

STANAVFORLANT is a NATO naval task force of from five to six destroyers and frigates. Constantly contributing to this naval force are the United States, United Kingdom, Canada, the Netherlands and West Germany. Occasionally, Portugal, Norway and Denmark take part. This standing naval force can always be augmented to form a larger force of many different types of ships in national and international exercises, which shows the versatility and flexibility of such a battle group under NATO command. Some adherents have recommended the formation of a second STANAVFORLANT, but whether this will take place remains to be seen.³⁷

The command of STANAVFORLANT is constantly rotated among the major contributing nations to this naval force. However, only since 1980 has the Bundesmarine been able to share in this command rotation. This force attempts to upgrade the overall efficiency and effectiveness of NATO Tactical Procedures within the member navies and also provides a symbol of political and military solidarity within NATO which in peacetime is an aspect of the alliance which should not be overlooked.

The West German Navy is also represented in NATO's Standing Naval Force Channel (STANAVFORCHAN), which was formed in 1973 and is commanded by the Allied Commander-in-Chief Channel (CINCHAN) at Northwood, England. This force is a permanent multi-national naval squadron of mine counter-measures (MCM) vessels which normally has between five and

eight minesweepers and minehunters. STANAVFORCHAN continuously operates as a single unit and is commanded in rotation by a senior officer from one of four Allies--Belgium, the Federal Republic of Germany, the Netherlands and the United Kingdom. In May of 1982 Fregattenkapitän Fritz Jacobi became the first Bundesmarine officer to command STANAVFORCHAN.³⁸

STANAVFORCHAN strengthens NATO in four important ways. First, it shows NATO's unity wherever it sails by showing the NATO flag. Second, it improves multi-national naval teamwork within NATO by providing continuous mine countermeasures experience and training. Third, due to its high state of readiness, it is able to act as an immediate reaction force for CINCHAN in times of crisis and, finally, this naval force can form the nucleus of a more powerful naval force in the channel area, if the need arises.³⁹

Since its inception, the Bundesmarine has assumed much of the responsibility for the maritime defense of the Baltic, Baltic approaches and the North Sea areas within the operational control of NATO. Since 1967 the Bundesmarine has also been a constant contributor to STANAVFORLANT and since 1973 to STANAVFORCHAN. Additionally, in 1980, West Germany unilaterally increased its NATO operational capability by extending its Navy's operational area beyond the former restriction of sixty-one degrees North Latitude. This provides for a greater flexibility for West German maritime

assets within NATO's maritime forces. Almost simultaneously with the West German government's decision to extend its operational area, the Western European Union, at the request of SACEUR, eliminated all the restrictions on West German production of warships or any other naval weapons, except nuclear weapons. Clearly, this indicates a general NATO and a specific West German desire to increase the capability of the Bundesmarine to provide a greater capability to defend its territory and to improve its usefulness to NATO.

This close look at the West German Navy's structure shows a navy which operates within an alliance that is not supranational in character and which depends very much on West German contributions. Though the conditions that initially forged the alliance allowed very few alternatives to the West Germans, the present alliance structure gives the West Germans as much influence within NATO's maritime structure as any other member and in many cases, such as STANAVFORLANT and STANVFORCHAN, the West Germans have become constant contributors to joint NATO maritime assets in areas distant from its main area of responsibility.

B. THE PEOPLE'S NAVY AND ITS RELATIONSHIP TO THE WARSAW PACT

The People's Navy has developed into a very capable East German coastal defense force and a respected member of the Warsaw Pact's Joint Baltic Fleet. According to Thomas Forster, the People's Navy was fully incorporated into the

"First Strategic Echelon of the Warsaw Pact in 1967."⁴⁰

This meant that in case of war in Central Europe its forces would be immediately involved with the United Baltic Fleet in achieving certain coordinated objectives.

The structure of the People's Navy closely resembles that of the Soviet Navy. This resemblance has greatly facilitated relations between the East German Navy and the other navies of the Warsaw Pact. This command structure has allowed for a smoother interaction between the East German, Polish, and Soviet fleets in joint naval exercises and in day-to-day operations.

The People's Navy has an administrative structure (See Appendix IV) which originates from the National Ministry of Defense in Berlin/Strasberg. General of the Army Heinz Hoffmann has held the position of Minister of Defense since 1960. He is also a member of the Politburo and sits on the Defense Council of the Warsaw Pact. Through these organizations the Defense Minister has influence in every facet of the government and reinforces the East German Military as an instrument of the SED (Socialistische Einheits Partei). Colonel General Heinz Kessler emphasized this necessary overlapping of influence between the military and the party when he said:

"Like the Soviet Union's Communist Party, so also the Socialist Unity Party of Germany follows the Leninist Principle that the undivided leadership of the Army by the Party of the working class and its Central Committee is an objective law governing the construction of socialist armed forces."⁴¹

This Marxist-Leninist law of the party ruling the military permeates the structure of all Warsaw Pact fleets, with a marked emphasis on the Soviet example.

The Minister of National Defense is assisted by eight Deputy Ministers, which form the nucleus of a General Staff.

The members in 1980 were:

"Lieutenant General Klaus-Dieter Baumgarten, Chief of Frontier Troops; Admiral Wilhelm Ehm, Chief of the People's Navy; Colonel General Werner Fleissner, Chief of Technology and Weaponry; Lieutenant General Joachim Goldback, Chief of Rear Services; Colonel General Wolfgang Reinhold, Chief of Air Force/Air Defense; Colonel General Horst Stechbach, Chief of Ground Forces; Colonel General Fritz Streletz, Chief of the Main Staff and Secretary of the National Defense Council."⁴²

This General Staff is the most important staff of the Defense Ministry. It is responsible to the Commander of the United Warsaw Pact for all operational planning and for the military intelligence system. Additionally, it is responsible for organization, replacement of weapon systems, communications equipment, military transport, etc.⁴³ Within the Ministry of Defense the main political administration is unquestionably the most influential department. It directs and controls the political indoctrination of the military through the use of deputy commanders for political affairs who are responsible to the SED and the FDJ (Free German Youth Group, an exact duplication of the Soviet Komsomol). Colonel General Heinz Kessler has been in charge of the Political Main Administration since early 1979. The fact that Kessler has held the positions of Chief of the Air

Force and Chief of the Main Staff and had already been a Deputy Minister before he took over the Main Political Administration underscores the importance of this function within the East German Armed Forces.⁴⁴

The other main administrations within the Ministry of Defense are self-explanatory and equate readily to standard military usage of organizational structure. The Main Administration for Technology and Weaponry controls research and development of weapons equipment for example.

The Main Administration for Rear Services plans and coordinates supplies and troop logistics. Civil Defense as of 1977/78 has also come under the control of the Ministry of Defense and in all practical respects represents another Main Administration function. The other Main Administrations are the NVA-Army, the NVA-Air Force, the NVA-Navy and NVA-Border Guards.

The People's Navy is headquartered in Rostock/Gehlsdorf and is commanded by Admiral Wilhelm Ehm, who is directly responsible to the Ministry of Defense. The naval command structure resembles the Soviet model very closely and relies heavily on centralized command and control. Admiral Ehm emphasizes that the development of the People's Navy into a modern socialist navy was accomplished from "proven Marxist-Leninist principles of the German revolutionary battles and the international worker movement, and especially, on the knowledge of Soviet military science and the experiences of the already tested Soviet Army and Navy."⁴⁵

The close cooperation of the People's Navy with the Polish Navy and the Soviet Baltic fleet further enhances the benefits of this mutual command structure and is a more likely explanation for this duplication. The Volksmarine operationally is subordinate to the joint Warsaw Pact Fleet, which is headquartered in Leningrad.

Appendix E shows the administrative structure of the People's Navy. It can be divided into three major divisions: (1) Education and Training, (2) the Flotilla Division and (3) the Coastal Brigade force. It must be emphasized that these divisions are not controlled by a division or fleet commander but each unit is subordinate to Admiral Ehm, Chief of the Navy, in Rostock. For tasking, however, each division fulfills a major specific function of the overall mission of the Navy which is greatly influenced by the United Baltic Command in Leningrad.

The division for Education and Training includes undergraduate, graduate and the enlisted educational programs. The Karl Liebknecht Naval Academy in Stralsund trains young men to become Volksmarine officers. There are two curriculums--one for training seagoing officers and another for training engineering officers. These programs closely resemble the Soviet style of officer education. Karl Liebknecht offers a four year curriculum with time off only for practical training. Upon graduation the officers acquire the rank of lieutenants and receive the equivalent

of a civilian engineering degree. Post-graduate education prepares an officer for advanced assignments such as a flag officer on a staff. Officers can attend the Friedrich Engels Military Academy in Dresden and/or a Soviet military academy such as the Voroshilov Academy, the Frunze Military Academy in Moscow or the Grechko Naval Academy in Leningrad. Petty Officer training is primarily conducted at the Fleet School in Parow near Stralsund and at Kühlingborn.⁴⁶

The Flotilla division contains the main operational components of East Germany's naval force. The First Flotilla located at Peenemunde is equipped with minewarfare units, amphibious ship units and an anti-submarine warfare unit. The Fourth Flotilla at Warnemünde is equipped with minewarfare units, an anti-submarine unit and a coastal defense unit developed around the Soviet KONI class frigate. The Sixth Flotilla at Dranske-Bug on Rugen Island is assigned fast patrol and attack units such as the OSA I and II and the Shershen class. Another operational component is the Ernst Moritz Arndt 8th motorized rifle division at Prora which provides the Navy with its only naval infantry capability. The Naval Helicopter Detachment at Rostock with about twenty aircraft of the MI-8/HIP type forms the People's Navy only air forces. These are located at Rostock and are configured to perform transport, rescue and anti-submarine warfare missions. The Flotilla Division is supported by the Rear Services for its necessary logistical support.

The Coastal Brigade forms the Third Division of the People's Navy. It was transferred from the Border Guards to the Navy in November 1961.⁴⁷ This brigade has its headquarters in Rostock. Today it consists of approximately three thousand men divided into a sea unit of eight boat groups and a land unit of twelve battalions.⁴⁸ It continues to function as a maritime extension of the Border Guard troops.

The East German Navy continues to operate in a very centralized fashion, as mentioned above. The Soviet influence is undeniably ever present throughout this entire national command structure. The Soviets maintain approximately one hundred Soviet officers within the East German Ministry of Defense, apparently to oversee the reliability of this ministry within the Pact structure.⁴⁹ This duplication is most evident in both the military and the political administration sections of the East German Command.

Operational control over the East German Navy is exercised through the Joint Warsaw Pact Fleet with its headquarters in Leningrad.⁵⁰ Ultimately, Admiral of the Soviet Navy Gorshkov probably maintains control. Admiral Ehm, the Chief of East German Navy, in his writings about the East German Navy, continually emphasizes the need for this close cooperation between the socialist fleets against the "capitalist aggressor," NATO. He states that "since 1971-72 the combined Socialist Baltic Fleets have operated from a

common operational plan of 'Gefechtsdienst' with the purpose to fulfill the tasks of the party and government leaderships."⁵¹

From continuous monitoring of East German naval operations, it is evident that the cooperation of the three Baltic fleets has continuously improved since the first joint East German-Soviet tactical naval exercise in July 1956.⁵² Today we see an East German Navy that works daily with the other two fleets of the Baltic to defend "socialism's gains"--that is, to defend the coastline of the Baltic socialist states and to prepare for any eventual confrontation in the Baltic and surrounding seas.

Recently this cooperation has extended to the Soviet Northern Fleet. In the 1982 Joint Warsaw Pact naval exercise which was conducted in the Baltic, North and the the Norwegian seas, all four fleets, including the Northern Fleet's nuclear submarine assets and its long range naval air assets coordinated anti-submarine warfare (ASW), anti-air warfare (AAW) and replenishment at sea training.⁵³ Possibly this indicates the way the non-Soviet Pact naval assets would be used in a real war. They would be used to supplement the established Soviet Navy structure--a thesis the Scotts predict for the entire Warsaw Pact forces in such an all out war scenario.⁵⁴ Thereby, they would become more of an adjunct to the Soviet Navy than to the Warsaw Pact

and totally unable to perform as a national asset to defend their own territory.

In peacetime the command structure originates its authority from the Joint Pact Fleet Headquarters in Leningrad through coordination with the East German Ministry of Defense. In wartime, the possibility of the East German Navy becoming simply an adjunct of the Soviet Navy appears very real, when the coordination achieved in the various exercises is taken into account and past Soviet wartime organization is studied. In World War II, all Soviet armies were placed under the centralized command and control of the Soviet Military Staff. This would provide the Soviet leadership the ultimate in control centralization of the military forces at its disposition--a most necessary arrangement, according to Soviet Military doctrine.

The East German Navy then finds itself within the web of the Warsaw Pact, which ultimately appears as a means of Soviet control over the military forces of Eastern Europe. The existence of one hundred Soviets stationed within the East German Ministry of Defense; the evidence of all the higher echelons of command within the Warsaw Pact having always been occupied by Soviets, training of all of the higher military leaders within the USSR, the centrality of the Communist party to the Armed Forces of a Communist country and, finally, the placing of all East German forces directly under the command of the Warsaw Pact all indicate

a strong adherence to the Soviet will. The East German Navy can probably best be described as a coalition navy which sails in the wake of the Soviets.

V. DOCTRINE AND MISSIONS

A. THE DOCTRINE, STRATEGY AND MISSIONS OF THE WEST GERMAN NAVY

The terms doctrine and strategy have been used interchangeably in NATO to define the defensive posture which NATO takes to counter the threat from the Soviet Union and the Warsaw Pact. This strategy is composed of three elements--deterrence, defense and detente. Deterrence has been credited for the maintenance of peace in Europe since May 1945 and is considered the major component of NATO's three-pronged strategy. Until 1967 this deterrent strategy was called "massive retaliation." This policy maintained its viability as long as the United States held a decisive nuclear superiority vis-à-vis the Soviet Union. However, by 1967 the global nuclear strategic picture had been altered considerably and the Soviet Union was nearing nuclear parity with the United States. Therefore, NATO adopted the strategy which is in use today, the strategy of "flexible response." "Flexible response seeks to provide a whole spectrum of military capabilities which will enable NATO to meet aggression at any level with an appropriate response."⁵⁵ The aggressor must be unable to calculate the costs of aggression because of the risks of escalation to an all-out nuclear war. Flexible response permits NATO to respond to aggression on three basic military levels. This military

response can be achieved either by consecutive application or by simultaneous application of the three major responses.

The three responses are:

Firstly, Direct Defence with the intention of preventing an aggressor from reaching his objective, in fact at the level of military conflict chosen by him. Then either the aggression fails, or the aggressor is confronted with the risk of escalation. NATO does not preclude the use of nuclear weapons.

Secondly, Deliberate Escalation is intended to repulse an attack by changing the quality of the defensive operations through the use of nuclear weapons, or by expanding the regional scope of the conflict. The objective is to make the aggressor understand, through the politically controlled selective use of nuclear weapons, that the prospects of success are no longer in proportion to the risk he incurs. Moreover, the aggressor may be struck where he is most vulnerable, or with resources superior to his own.

Thirdly, General Nuclear Response is directed mainly against the strategic potential of the aggressor and implies the employment of strategic nuclear weapons of the Alliance. The threat emanating from these weapons is NATO's strongest deterrent, their use is NATO's most powerful military response.⁵⁶

Reliance upon the "flexible response" strategy increased the importance of the conventional NATO force posture within the NATO Triad. The NATO Triad had depended upon the theatre nuclear force arm and upon the strategic nuclear forces of the United States and the United Kingdom to the neglect of NATO's conventional forces. With "flexible response" as the new NATO strategy, NATO realized that all components of the Triad must complement one another and form an inseparable defensive structure. Each component must be credible by itself to provide an adequate deterrent capability throughout this entire strategy spectrum.

The Naval forces within NATO which form part of NATO's deterrent posture are of two types: the Standing Naval Forces (STANAVCHAN and STANAVLANT) which show NATO's commitment and solidarity and the Strategic Ballistic Missile Submarine Force which is an indispensable part of the strategic nuclear triad. Both types provide any potential aggressor with the incalculable risk of aggression.⁵⁷ The response of all member nations conventionally also must be taken into account and undoubtedly enter into the deterrence and defense equation for the aggressor.

If deterrence fails, the strategy to be employed, at least initially, is contained in the Tri-MNC Concept of Maritime Operations. This document has been approved by NATO's political leaders and developed by the Maritime Posture Task Group of the Long Term Defence Program of 1977. The Tri-MNC concept establishes NATO's maritime interests and evaluates possible threats to these interests. It also considers different scenarios of aggression and Allied priorities in meeting this aggression. The concept establishes the principles to be used by NATO forces and outlines the probable campaigns and the forces needed. The Tri-MNC concept establishes the principles of containment, defense in depth, and maintaining the initiative. Additionally, it is recognized that a change in assumptions requires a change in strategic priorities.⁵⁸

For the West German Navy, NATO's maritime strategy is a national naval strategy. The strategy of "flexible response" combined with strategy of "forward defense" allows the West German Navy to accomplish all the tasks of a national naval force with the assurance of the cooperation and assistance of the other alliance member navies.

Due to West Germany's strategic-geographical location in the center of Europe and bordering on the Warsaw Pact states, the only viable strategy is a strategy of "forward defense." The 1979 West German White Paper states that for the Federal Republic of Germany there can be no alternative to forward defense and any model of defense involving the surrender of territory is unacceptable.⁵⁹ Forward defense is defined as "a coherent defense conducted close to the intra-German border with the aim of losing as little ground as possible and confining damage to a minimum. This includes the recapture of lost territory."⁶⁰ This demands that NATO be capable and ready for a powerful and immediate retaliation in the event of an attack. The Navy also readily accepts the challenge of forward defense and its meaning for the Northern flank of Central Europe.

"Forward Defense" for the Navy implies reliance upon reconnaissance in the direction of the threat and the establishment of a forward barrier consisting of submarines, surface combatants and minefields. The West German Navy and NATO depend on this strategy to provide a maritime defense

in depth which will provide ample warning to allow for timely reinforcement for the coastal defense of Denmark and Schleswig-Holstein, along with the defense of the Baltic Approaches and the SLOC's (Sea Lines of Communication) for the North Sea.⁶¹

This strategy was greatly enhanced in July 1980, when the West German government removed its self-imposed restriction consisting of a twenty-four hour sailing time limit from the Baltic Approaches.⁶² This restriction had essentially restricted the German Navy's operational area to sixty-one degrees North Latitude and to the Dover-Calais line in the English Channel. The West German Navy can now apply the strategy of "forward defense" with increased flexibility toward the North Cape area and thus strengthen NATO's defense in this strategic maritime area. This decision by the Federal Security Council underlines the German view that the Norwegian Sea, the North Sea, the Baltic Approaches and the Baltic form one strategic and operational entity.⁶³

The missions of the West German Navy correspond primarily to its strategic-geographical location in Central Europe, to its relationship to NATO, and its increased standing within the international system. According to Vice-Admiral Ansgar Bethge, the mission of the German Navy is to contribute to Allied Maritime Defense in the sea areas of the European Northern Flank in order to prevent attacks at or across the sea against the Federal Republic.⁶⁴

The Navy's mission is to repulse aggression initiated at sea or across the sea to protect West Germany, its allies and the sea lines of communication so essential to NATO's and West Germany's viability. The Navy also provides a flexible political tool of use to diplomats when political tensions rise. Through port visits to foreign ports the Navy improves relations with other countries. It also strengthens the NATO Alliance's solidarity by participating in exercises, helps to maintain international law at sea, and supports the two standing NATO Naval Fleets. The Navy also supports marine scientific research and renders humanitarian aid through search and rescue.⁶⁵

The Navy works in close cooperation with the other NATO naval forces and with the air and land forces to accomplish its overall mission. The German Navy's defense mission focuses on NATO's Northern Flank, with special emphasis on the Baltic and the Baltic Approaches, where the German Navy provides seventy percent of NATO's naval forces and one hundred percent of NATO's naval air forces.⁶⁶ Because of the Baltic's proximity to the West German landmass, the West German Naval positions in the Baltic complement the forward defense posture of the land forces stationed in West Germany by protecting a vulnerable flank in any major East-West military conflagration. It also allows more flexibility for the other alliance maritime assets such as those of the United States and Britain to maintain the trans-Atlantic Sea Lines of Communication.

The sea area of NATO's Northern Flank is the major operational area of the West German Navy. The Northern Flank's importance to the whole of NATO in a conflict should not be overlooked. Central Europe is essentially a peninsula landmass, as is Northern Europe. Control of the surrounding areas in a time of confrontation is essential for NATO's resupply of Europe. The key to effective control of Northern and Central Europe lies in the Baltic Approaches and control of Denmark.

A clearer understanding of the importance of this sea area can be gleaned from the worth of the Danish Straits to the Soviet Union. The Soviets are at a severe disadvantage when it comes to the ability of their fleet to reach blue water. The Baltic Fleet must either seek passage through the Danish Straits, the Kiel Canal or the White Sea Canal to reach the major oceans. Recent exercises show the Soviet Navy's Northern Fleet and the United Baltic Fleet in joint maneuvers in the Baltic, North Sea and the Norwegian Sea. The constant surveillance of the straits by Warsaw Pact Navies and the continuing movement of the Baltic Fleet exercises to the Western Baltic region indicate the Soviet realization of the strategic importance of Denmark and its straits. The Russian desire to control the straits dates back to Peter the Great's time and his desire to make the Baltic a Russian lake.

The West German Navy and the Danish Navy have the responsibility for the control of the Baltic Approaches and the Baltic Sea (See Appendix C). They operate through the NATO command at Karup, Denmark (COMNAVBAJTAP) as FOG (Fleet Officer Germany) and FOD (Fleet Officer Denmark). The composition of their fleets positioned in these waters reflects the existing geographic realities and the potential threat.

The North Sea operational mission is also a combined alliance mission of the many peripheral states. It usually consists of several large naval contingents of the bordering coastal fleets. Their combined mission is to secure the use of the North Sea for NATO's own purposes and to prevent its use by the enemy.⁶⁷ A secure North Sea will permit NATO reinforcement of Europe from North America and allow the North Sea to be utilized by carrier battle groups. The Command for the West German Naval contingent for the North Sea also is at CONNAVBAJTAP. (See Appendix B)

The West German Navy also has naval contingents serving with the Standing Naval NATO Forces (STANAVFORLANT and STAVFORCHAN). Their respective missions are securing the Atlantic sea lines of communication and minesweeping. Obviously, their operational areas are for STANAVFORLANT in the Atlantic and for STANAVFORCHAN in the English Channel. The West German Navy takes a very active interest in these two NATO force groups.

The NATO strategy of "flexible response" with emphasis upon forward defense uses the West German Navy to maximum advantage. This strategy provides for the achievement of both national and alliance maritime goals with the maximum utilization of national resources.

B. EAST GERMAN NAVAL DOCTRINE, STRATEGY AND MISSIONS

The military doctrine, strategy and tactics of most of the East German military establishment emanates from the Soviet Union. With the possible exception of Bulgaria, no other state within this alliance is more closely linked to the Soviet Union than East Germany. This linkage has been achieved because of the post-war Soviet occupation of the eastern part of a divided Germany and the subsequent cultivation of the Communist party of Germany. Today the SED (Socialist Unity Party of Germany) controls East Germany. The SED and the CPSU (Communist Party of the Soviet Union) constitute the vital core of relations between these two countries. These two Communist parties "direct and coordinate the entire multifaceted and interlocking system of relations between both states and assure its functioning as a unified whole on the basis of the principles of Marxism-Leninism."⁶⁸ This social-political linkage has led to the "Brotherhood-in-arms" concept which attempts to further the Marxist-Leninist principle of the socialist-international. The socialist-international attempts to unite all Communists

under the idea of class war, as exemplified by the East German Minister of Defense Heinz Hoffmann in April 1982:

We will do everything in our power to fulfill our class mission with honor at all times. Shoulder to shoulder with our comrades-in-arms in the Soviet Union and the fraternal socialist countries, the GDR soldiers will protect the socialist order and peaceful life of GDR citizens and those of all states of the socialist community against any attacks by the aggressive forces of imperialism and reaction.⁶⁹

These ideals are constantly reiterated and form the nucleus for adoption of legitimizing the Soviet Marxist Leninist military doctrine for the entire socialist commonwealth.

Marxism-Leninism forms the foundation for Soviet military doctrine, and thus easily and naturally adapts to all Communist military structures. Marshall A.A. Grechko, Soviet Minister of Defense, described military doctrine in 1975 as "a system of views on the nature of war and methods of waging it, and on the preparation of the country and army for war, officially adopted in a given state and in its armed forces."⁷⁰ Marshall Grechko further states that military doctrine answers the following questions:

What enemy will have to be faced in a possible war?

What is the nature of the war in which the state and its armed forces will have to take part? What goals and missions might they be faced with in such a war?

What armed forces are needed to perform the assigned missions they might be faced with in such a war?

How are preparations for war to be implemented?

What methods must be used to wage war?⁷¹

The whole of military doctrine concerns future war.

The answers to these questions which are derived from the party form the foundation for the logical (scientific) development of a sound military strategy, and from this strategy the tactics and missions of each military force can be determined. This whole process is recognized to exist within a dynamic environment; and as the answers to the different questions change, so must certain factors within strategy and tactics change.

Accordingly, the Soviets and the East Germans answer these questions in concert with only minor deviations. Both see the enemy as the imperialist, capitalist countries. They view the next war as being unleashed by the "aggressive imperialist states" and consider nuclear weapons the main means of destruction. However, since the unveiling of NATO's "flexible response" strategy in 1967 the CPSU (Communist Party of the Soviet Union) has modified its doctrine to include the possible use of conventional weapons, because "world war might break out by growing out of a local conflict--a local war."⁷² It is interesting to note that Warsaw Pact exercises and maneuvers have followed this doctrinal adjustment. The 1965 exercise "Vltava" was totally nuclear whereas in 1967 "Dnieper" started with a non-nuclear phase which eventually went nuclear.⁷³ This doctrinal shift did increase the Soviet need for the Warsaw Pact forces and a new focus on their utility in this new doctrine.

The strategy of the East Germans assumes a coalition response to any aggression in order to maintain the integrity of the GDR and most importantly the survival of the Communist party. The Soviet Union's military strategy is duplicated by the East Germans and studied most diligently by the East German military elite, who are schooled in the Soviet Union at the Soviet military academies such as Voroshilov and Frunze.

Chief of the Main Political Administration of the Soviet Armed Forces, General A. A. Epishev, defines Soviet military strategy as coalition warfare:

Soviet military strategy considers a future world war, if the imperialists succeed in unleashing it, as a decisive conflict between two opposing world socio-economic systems--the socialist and the capitalist.

It is assumed that in such a war a majority of the states of the world would be drawn in simultaneously or consecutively.

This will be a global conflict unprecedented in extent and severity, a conflict of multi-million coalition armed forces which will be conducted with no quarter, with the most decisive political and strategic objectives.⁷⁴

This military strategy of coalition warfare is where the United Baltic Fleet with the East German Navy began to enter into the picture of Soviet military art and the strategic, operational and tactical utilization of such an asset for the defense of socialism. The East German Navy's membership in the United Baltic fleet with headquarters in Leningrad makes it almost totally influenced by Soviet naval strategy--a strategy which has seemingly gained

immense prestige relative to the other Soviet military branches (i.e., Army, PVO Strany, etc.) within the last couple of decades.

Admiral Gorshkov, in his series Navies in War and Peace, which appeared in Morskoj sbornik, improved the influence of the Navy within the scope of military strategy for both peace and war. He delineated the political advantages incurred by possessing a fleet that could place additional emphasis on any political adventure anywhere in the world just by its presence. Through his writings and naval leadership, he is credited with laying the foundation for the present Soviet Navy, which extends to both the United Baltic fleet and the United Black Fleet. Gorshkov, in his last article of this series, listed the three tasks which form the nucleus for the Navy's basic wartime mission as:

- (1) contributing to strategic strike,
- (2) blunting strategic strikes by enemy units, and
- (3) participating in the operations conducted by ground forces in the continental theatres of military operations.⁷⁵

The majority of naval strategy for the East German Navy evolves around the execution of this third mission. However, the East German Navy seems to be acquiring the capability to also help pursue the second mission as seen in the 1982 Warsaw Pact exercise which saw the East Germans in the Norwegian Sea conducting ASW operations.

Nevertheless, the East German Navy is primarily a Baltic Navy and has seldom sailed in any other sea. Within the context of the Joint Baltic Fleet the People's Navy's officially stated task in peacetime is

in close cooperation with the Soviet Baltic Red Banner Fleet and the Polish Naval forces to preserve peace in the Baltic Sea and protect the security of the maritime border of neighboring socialist countries and the inviolability of GDR territorial waters.⁷⁶

In a European war scenario the Baltic Sea is considered an inner zone. (Within the parlance of Soviet naval operations an inner zone is a sea area where superiority of force allows local command of the sea to be secured as compared to an outer zone, where command is actively contested.) The Baltic Sea must be totally controlled by seizing the strategic barriers, i.e., the Danish Straits.⁷⁷ The Joint Baltic Fleet is most readily prepared to mount such an operation with its preponderance of amphibious and assault forces.

In wartime then, the principal missions of the East German Navy would be:

- (1) Achieve control of the Western Baltic from NATO forces, primarily the West German Navy
- (2) Transport of amphibious Warsaw Pact Forces
- (3) Provide "Fleet to Shore" support of the maritime flank
- (4) Secure SLOC's and
- (5) Provide bases and support for the other Warsaw Pact Navies operating in the Western Baltic.⁷⁸

These East German naval missions would change with Warsaw Pact control of Denmark. Then the East German Navy would most likely emphasize securing SLOC's in the Baltic and support of the Soviet Baltic Fleet in the battle for the Norwegian Sea, as practiced during the Pact naval exercises of recent years.

In wartime and in peacetime the East German Navy looks to the Soviet Union for its leadership in the military sphere as it does in the political, economic and technological spheres. Soviet military doctrine and military science permeate the East German naval infrastructure and provide another tool for the close integration of the three Joint Baltic Fleet Navies. This integration has been repeatedly shown in the various exercises conducted since 1956 and in the daily operations of the People's Navy.

VI. CAPABILITIES

A. CAPABILITIES OF THE WEST GERMAN NAVY

The operational areas of the West German Navy have greatly influenced its size and design. West German naval modernization programs continue to improve the necessary maritime capabilities of a defensive force which is responsible for these sea areas. As discussed earlier, the West Germans are mainly responsible for the defense of the Baltic and the North Sea by the employment of an active "forward defense" strategy.

The command of all West German naval combat forces emanates from Glücksburg and stresses the coordination of land, air and naval power to achieve its missions in the Baltic and North Sea.⁷⁹ In wartime the entire navy will be placed under the direct command of the Commander Naval Approaches Baltic in Karup, Denmark. This places the requirement of interoperability with the other NATO maritime forces and particularly with the Danes as a necessity. The present capabilities and the ongoing modernization programs echo these requirements, which continue to enhance the stature of the West German Navy within NATO.

For a look at the disposition of the West German Naval forces see Appendix F. A look at West Germany's current modernization programs should convey a sense of the direction the West German Navy is embarking upon.

The observation of Vice Admiral Friedrich Ruge in 1957-- that most of the German shipyards had been dismantled, the others had been greatly reduced and that not one naval design staff existed--has changed dramatically.⁸⁰ Although West German naval shipyards seem to be presently suffering through the inherent poor economy of a worldwide recession, they still maintain a shipbuilding capability of world distinction.

The strategy of "forward defense" in the Baltic requires the use of submarines and therefore the indigenous shipbuilding industry has developed a formidable submarine construction capability. The West Germans have built more submarines since 1959 than any other country except the Soviet Union--mostly for export but, nonetheless, an impressive achievement. By the end of 1981, German shipyards had received orders for one hundred one submarines. Of these, fifty-two were designed and constructed to operate within the perimeter of the sea approaches such as the Danish Straits, the Baltic Sea and the North Sea. These types are 201, 205, 206 and 207. The Bundesmarine received eighteen submarines of the type 206 and six of the type 205. Type 205 were constructed by Howaldt-Deutsche Werke (HDW) in Kiel. They are also homeported there. Type 206 was built by HDW and Rheinstahl-Thyssen-Nordseewerken in Emden. The Danes also built two class 205 submarines which were constructed under license in Copenhagen.⁸¹

There is little doubt that the West Germans are building sleek, conventional submarines. The United States Navy was even considering a purchase. This submarine is built with a single pressure hull, maneuvers exceptionally well when submerged, has all equipment shock-mounted, attains a maximum speed of twenty-two knots under water, stays submerged for a relatively long time, has a passive-action sonar system, has eight torpedo tubes for steerable and unsteerable torpedoes (along with room for torpedo storage), and needs only a thirty man crew.⁸² The "Type 206" submarine can also operate effectively at approximately four hundred statute miles from its support facilities which would place its operational range from Kiel in the Baltic to approximately a line connecting North Gotland Island and Liepaja. This boat can minimize the danger of a minefield by its small size, maneuverability, and self-degaussing characteristics. It is also capable of transporting and laying mines without reducing the number of torpedoes or its maneuverability.⁸³ It is therefore a boat well-suited to the Baltic and capable of implementing the "forward defense" concept. The West German Navy expects during the middle 80's to modernize the Class 206 boats and to consider a possible new Type 208 boat with an air-independent propulsion system (probably a fuel cell) if funds can be appropriated.⁸⁴

The West German Navy also has an important frigate modernization program of the "Type 122" which follows the

standardized NATO frigate design. The "Bremen" is the first ship of this type. It began sea trials in May 1981. During sea trials the "Bremen" met all specifications and requirements. Particularly interesting is its low noise signature and its speed and acceleration. These frigates displace three thousand five hundred tons. The propulsion system consists of two LM 2500 GE gas turbines and two MTU diesel motors in a CODOG-arrangement (combined diesel or gas) allowing a speed of thirty knots and a range of over four thousand nautical miles (at nineteen knots). Armament includes eight surface-to-surface Harpoon missiles, eight Seasparrow surface-to-air missiles, 2X24 RAM-ASMD (Rolling airframe missile anti-ship missile defense), tubes for MD 46 MOD 2 ASW torpedoes, and one 76/62 millimeter Oto Melara gun.⁸⁵

Additionally, these ships will carry the FL 1899S (AEG-Telefunken) EWS and four Hycor SUBROC chaff launchers plus a NIXIE torpedo deception system. RAM and RL-188S systems are still under development. It is expected that "Karlsruhe" will be the first ship to be commissioned with this complete weapon suite. Sensor equipment includes the DA-08 air/sea surveillance radar, the WM 25 combined search and fire control radar, and the STIR fire control system. The bow-mounted DSQS 21 BZ sonar is a new development from Krupp-Atlas and the navigation radar is the 32RM20 from SMA. All ships carry two Westland Sea Lynx ASW helicopters equipped

with the AN/AQS-18 dipping sonar (Bendix) and MK. 46 Mod 2 homing torpedoes.⁸⁶

Initially it was planned to build twelve ships of this class to replace the six "Z" class destroyers and six Köln-class frigates, and the first six "Type 122s" were ordered in 1976. Since then the picture has been altered and the Navy now has retained hopes of building two more of this class, but procurement of the remaining four has been postponed until the 1990s, when a new NATO design, now under study, might be adopted. To extend the operational capability of the West German fleet into the Norwegian Sea and complement NATO units in the G-I-UK (Greenland-Iceland-United Kingdom) gap, as envisioned with the extension of the West German naval operational area in July 1980, requires additional frigates and possibly destroyers. To fill the gap, the four Hamburg class destroyers and three Lütjens guided missile will be modernized again, and the Köln class frigates will be retained, renamed as necessary, and converted to act as two hundred nautical mile economic zone patrol vessels.⁸⁷

The Bremen class frigates constitute the German Navy's largest shipbuilding program since the end of World War II and lend credibility to the German desire to protect their maritime interests in conjunction with their NATO partners.

An aviation acquisition which greatly enhances the capability of the "Bremen class" frigates is the Sea Lynx

helicopter. This is the first time in the history of the German Navy that ships will carry helicopters. Two Sea Lynx' will be aboard each frigate for anti-submarine warfare and to provide targeting data on vessels outside the target acquisition range of the frigate itself. The Sea Lynx carries a dipping sonar AN/AQS-18, a one hundred eighty degree radar, and weapon stations for two torpedoes and flares. The "bear trap" recovery system will be used in poor weather. Since six "Class 122" frigates are being built, twelve Sea Lynx are ordered.⁸⁸

The fleet air arm of the navy is awaiting the full outfitting of its air arm with the new Tornado combat aircraft. This is a joint NATO acquisition program. The first navy air wing in Jagel received the first of one hundred twelve Navy-Tornadoes to be deployed there during the first part of 1982. The second navy air wing in Eggebeck will receive its Tornadoes in 1985.⁸⁹ The ASW/Reconnaissance "Atlantiks" are being updated with new electronic suites as are the fleet's Sea King helicopters.

The fleet of "Type 143A" fast attack craft, of which thirty are now in service, will expand to forty and be outfitted with four MM38 Exocet missiles each, and the 76 mm Oto-Melara gun. They will also probably receive the RAM-ASMD (rolling airframe missile, anti-ship missile defense) for air defense. There is also much discussion about the replacement of their twenty "Type 148" units, but their replacement is not urgent.⁹⁰

The existing West German mine warfare fleet will be modernized beginning in 1987 with ten "Type 343" units capable of minelaying and sweeping. These will replace the Schütze-class (Type 340 and Type 341) fast minesweepers. Around 1991, the Lindau-class minehunters (Type-331) will be replaced by twenty "Type 332" minesweepers. The "Troika" minesweeping system is also due to be replaced, along with their command ships, by twelve "Type 335" (Ermiss) minesweepers.⁹¹ If these systems become operational for the West German Navy, the entire present Bundesmarine mine forces will have been modernized, with the exception of the "Type 393" and "394" inshore systems.

As the reaction time for an at-sea encounter has decreased over the years, the need to have automatic defensive systems has increased. For example, on November 1, 1914 the encounter between the German East Asian squadron under the command of Vice Admiral Maximilian Graf von Spee and a British naval group took one and a half hours between first sighting and the beginning of battle. In World War II on May 24, 1941 in the battle of the battleships "Hood" and the "Prince of Wales" against the Battleship "Bismarck" and the heavy cruiser "Prince Eugen" the time between first sighting and naval engagement was only seventeen minutes. However, in 1967 the Israeli destroyer "Elath" was sunk by the Soviet-built Styx missile with only about a minute and a half of warning time.⁹²

The Falklands war again emphasized the need for automatic quick reaction systems. Today's new West German ships incorporate these necessary technologically advanced systems. The main systems in use in the West German Navy are SATIR (System for Computation of Tactical Information for Destroyers) and AGIS (Automatic Battle and Information System). These systems are American systems which have been further developed to better suit the conditions prevalent to the West German naval operational area.⁹³ These electronic systems increase the reaction capability of the fleet and may promote the successful completion of their mission.

The West German Navy's thirty-eight thousand personnel, both officer and enlisted, provide the interface between this advanced technological naval equipment and its application for the completion of the naval mission. Their training and morale equal that of larger world navies and their decisions will determine the outcome of any West German naval engagement.

These major modernization programs show that the determination and the progressive spirit of the West German Navy should not be in doubt. Most of these programs were initiated by the West Germans. In the case of the construction of the Bremen class frigates and the Tornado aircraft, the West Germans worked together with their NATO partners, thereby increasing the cohesiveness and the viability of the NATO Alliance.

B. THE CAPABILITIES OF THE EAST GERMAN NAVY

The East German Navy, like all non-Soviet navies of the Warsaw Pact countries, is small. The Army's personnel strength is at 108,500 regulars, whereas the Navy's strength stands at 16,000. This numerical relationship seems to indicate the usefulness of the East German Navy to the Soviets as compared to the Army. (See Appendix F for a complete Naval Order of Battle.)

The East German Navy assumes responsibility, according to the Warsaw Pact, for defending the five hundred sixty miles of East German coastline, engaging enemy naval forces, protecting and maintaining sea communications and supporting land forces in coastal operations.⁹⁴ The naval forces required to assume these tasks are divided among three task forces and a coastal frontier brigade.

The People's Navy Command at Rostock controls 240 ships and boats, the Coastal Frontier Brigade, a Signals Unit, the Supply Units and a small helicopter squadron. The breakdown of operational forces is as follows:

First Task Force--Peenemunde
minelaying and minesweeping divisions
amphibious divisions
anti-submarine warfare divisions
auxiliary vessel divisions

Fourth Task Force--Warnesmundede
coastal defense division
minelaying and minesweeping division
anti-submarine warfare division
auxiliary vessel division

Sixth Task Force--Bug
missile patrol boats
motor patrol boats

Coastal Frontier Brigade--Rostock
eight groups of boats plus land forces
of twelve battalions and training units.

The main East German shipyards building naval ships are the Stralsund shipyard, the Peenewerft in Wolgast, and the Engelbrecht in Berlin-Kopernick. The larger ships, such as the minelayers, are built at Stralsund and Wolgast. Amphibious ships are primarily constructed at Pennewerft. Small coastal patrol boats are built at both Wolgast and Berlin-Kopernick. This indigenous shipbuilding capability could certainly produce larger and more capable ships if the need should ever arise.⁹⁵

However, the East German fleet is mainly comprised of vessels designed to operate in their coastal waters. Most, as described earlier, are older ships transferred from the USSR, with many of the smaller craft constructed in East German shipyards. The major transfers to the GDR Navy are: two Koni class (one delivered in 1978 and the other in 1979) and one Riga class frigate, twelve Osa I and three Osa II fast attack craft (equipped with the Soviet Styx cruise missile) and eighteen Shershen class fast attack craft (torpedo). Some of the East German built ships include twelve Frosch LST class, which are similar to the Polish Ropuchas. This amphibious landing craft carries four 57 mm. (twin) and four 30 mm. (twin) guns and space provided for

rocket launcher. The Libelle class fast attack craft (torpedo) constitutes another major design which first appeared in 1975. It is apparently intended for defense of naval bases, ports and their approaches. Besides carrying two 23 mm. (twin) guns and two 21-inch stern-launched torpedo tubes, it is believed capable also for minelaying and commando operations.⁹⁶

The People's Navy modernization program has its sequel to the West German Navy's "Bremen class" frigate in its "Parchim class" ASW Corvettes. The Parchim class displaces about twelve hundred tons, which makes it one-third the size of the Bremen class but it is a welcome addition to the East German Navy. This ship resembles the Soviet "Grisha" class small ASW ships. Its main armament comprises four sixteen-inch ASW torpedo tubes and two "RBU-6000" twelve tubed ASW rocket launchers. This class carries one twin 57 mm. dual-purpose and one twin 30 mm. anti-aircraft gun as well as two four-railed launchers for SA-N-5 "Grail" heat-seeking missiles. It is capable of minelaying and also has two depth charge ports in the stern. These ships are being built at the Wolgast shipyard in Peenemunde. The Parchim class will replace the unsuccessful and obsolescent Hai-III class combatants.⁹⁷ The Navy has received five of the twelve expected and expects the program to be completed by 1984. The Hai-III are being transferred to the Coastal Brigade division.

Further modernization began in the East German mine-sweeping fleet with the launching of the minesweeper "Tangermunde" in February of 1982. This is the first of an expected thirty "Kondor II type" minesweepers to be added to the fleet. The Kondor II is capable of deep water mine-sweeping operations. It displaces three hundred ten tons, is forty-nine meters long, seven meters wide and has a draught of two meters. This ship is powered by two diesel engines which can provide the Kondor II with a speed of twenty-one knots. Its weapons suite consists of six 25 mm. canons in twin gun mounts, with one in the bow and the other two in the stern. The Kondor I types are being transferred to the Coastal Brigade for special missions.⁹⁸

The naval air arm, the "Kurt Bartel" squadron, consists of the MI-8/HIP and the MI-14/HAZE helicopters. The MI-8 is a multi-purpose aircraft that has a gross weight of eight thousand pounds. It also can transport twenty-four fully-equipped combatants. At maximum gross weight the MI-8 has a maximum range of approximately one hundred thirty km. The MI-14/HAZE aircraft is equipped for anti-submarine warfare and is limited to coastal ASW employment because of the lack of East German capability to support this aircraft at sea.⁹⁹ Both aircraft add considerable depth to the coastal defense mission and are expected to increase in numbers in the future.

The overall capability of the East German Navy has increased significantly since 1956. The present East German Naval capability in no way equals the country's full potential. It does, however, allow for the ability to maintain its coastal defense mission and for its close integration with the United Baltic Fleet.

VII. COMPARISON AND CONCLUSION

This thesis reflects an attempt to better understand the navies of the German Democratic Republic and the Federal Republic of Germany. A comparison of these two navies must begin with an understanding that a direct comparison, for example ship-for-ship or weapon-for-weapon, would be inappropriate. Certain asymmetries in population, size and location, etc. lead to differing naval requirements.

There are certain disparities within the strategic geographical situation of the two German states. East Germany and West Germany share only the same approximate location and the same climate. The location of East Germany on the Baltic alone dictates different maritime requirements than West Germany, which has a coastline on both the North Sea and the Baltic Sea.

Population and size also differ. The population of West Germany is sixty-one million, whereas East Germany is less than one-third that size at seventeen million. West Germany is also larger than East Germany, with an area of approximately ninety-six thousand square miles for West Germany and approximately forty-two thousand square miles for East Germany. These basic differences should be mentioned in any comparison of the navies.

These navies share a common historical maritime tradition which dates back to before Wilhelm II and still forms part of each German Navy today. The new ships of the Koni class acquired from the Soviets for the East Germans were named the "Berlin" and "Rostock." These names also had been used in the Kaiser's fleet. Such parallels also exist in the West German Navy. Maritime history seems to have been a similar uniting factor in both navies.

The internal structure of the West German Navy resembles that of a democratic state and finds its foundation in the West German Basic Law. The East German internal structure, on the other hand, is an exact mirror-image of the Soviet structure which provides for an efficient linkage with the United Baltic Fleet. The United Baltic Fleet is mostly controlled by the Soviets under the auspices of the Warsaw Pact, while the West Germans are only totally immersed within the NATO command during wartime. These differing structures and alliance relationships show that the East German Navy might at all times be an extension of the Soviet Red Banner Baltic Fleet, whereas the West German Navy is a national navy, which in specified crises, could come under the control of NATO.

The doctrine and strategy of these navies basically reflect the doctrine and strategy of their respective alliances. The East Germans readily admit the complete acceptance of Soviet military doctrine and strategy. This is

further reinforced by the fact that all East German military forces are permanently assigned to the Warsaw Pact Command and all the East German military elites have attended at least one of the advanced military academies in the Soviet Union. Many interrelationships between the Soviet Union and East Germany solidify the acceptance of Soviet leadership in doctrine and strategy.

West German naval doctrine and strategy is tied closely to the NATO strategy of flexible response. This is a strategy that West Germany helped to develop for the NATO alliance. The West Germans have also influenced the acceptance of the idea of "forward defense" throughout all of NATO. The West German Navy and other West German military branches have strongly supported this strategy and rely upon it for the successful defense of West Germany and NATO.

The incorporation of these doctrines and strategies provides a further indication of the relationship of each Germany to its respective alliance. The East Germans, for a number of reasons, simply adopt Soviet doctrine and strategy, whereas the West Germans actively engage in the development of their alliance's strategy.

The missions of both navies strongly reflect the nature of their geographical positions astride the Baltic Approaches. The East Germans basically provide for coastal defense, intelligence collection, amphibious warfare capability and some anti-submarine warfare in concert with the

other Baltic Warsaw Pact navies within the confines of the Western Baltic and the Baltic Approaches. The West Germans provide seventy-five percent of the NATO naval capability in the Baltic and their mission there must be to counter the United Baltic Fleet by employing the concept of forward defense. The West Germans, however, also have missions in the North Sea and with the two NATO Naval Standing Forces in the English Channel and the Atlantic Ocean. Both navies have responsible missions within their alliances. However, due to a number of political, strategic and geographical factors, West Germany maintains a larger share of the NATO maritime defensive responsibility than East Germany does in the Warsaw Pact.

The capabilities of both navies are more than adequate to meet their missions' requirements. The lack of submarines and a capable naval air force by the East Germans is well augmented by Soviet submarines and Soviet naval land-based air support. The West Germans have built a very capable fleet which integrates well within NATO.

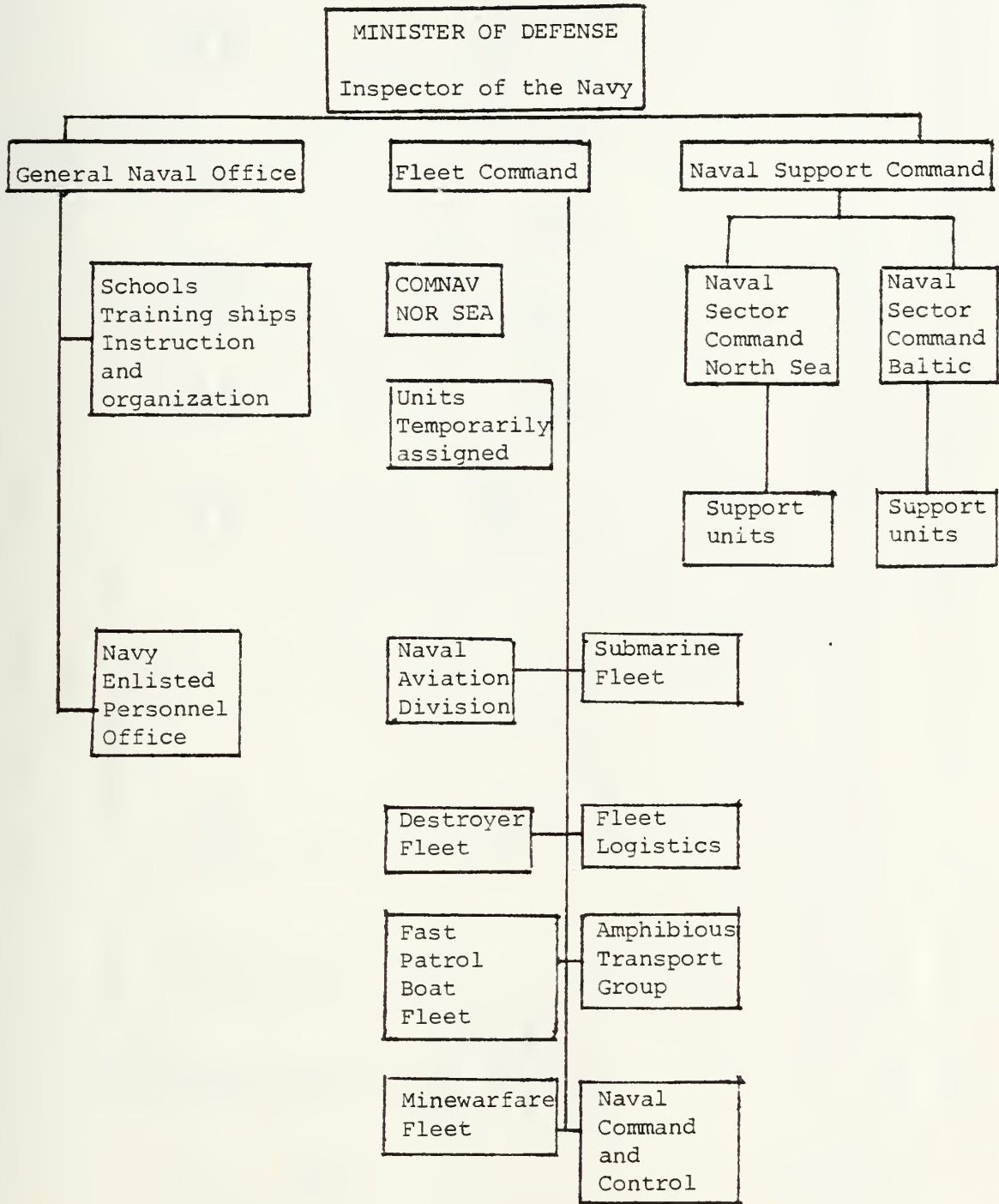
The removal of the West German government's sailing restriction of its fleet and the deletion of the Western European Union's restrictions (all except those concerning nuclear weapons) have created a new freedom of movement for the West German Navy. A navy that already provides a large contingent for the defense of NATO can now be expected to expand to other areas and increase the flexibility of the

maritime defense of NATO. There can be no doubt that the West German Navy is and will be a strong NATO asset.

The East German Navy has also shown steady growth within the structure of the United Baltic Fleet. Until last year an East German vessel had never conducted naval exercises upon the high seas. Last year, however, one of its Koni class frigates took part in an ASW exercise in the Norwegian Sea. There are indications that the East Germans will be acquiring more Koni class frigates from the Soviet Union, and therefore East German participation in joint exercises in the Norwegian Sea or any other sea might become commonplace. Militarily, this would enhance the capability of the East German Fleet but politically (probably the most important reason) it would provide evidence on the world's oceans that the concept of "brotherhood-in-arms" works. In short, each German navy has developed into an efficient naval arm of its respective alliance.

APPENDIX A

STRUCTURE OF THE WEST GERMAN NAVY

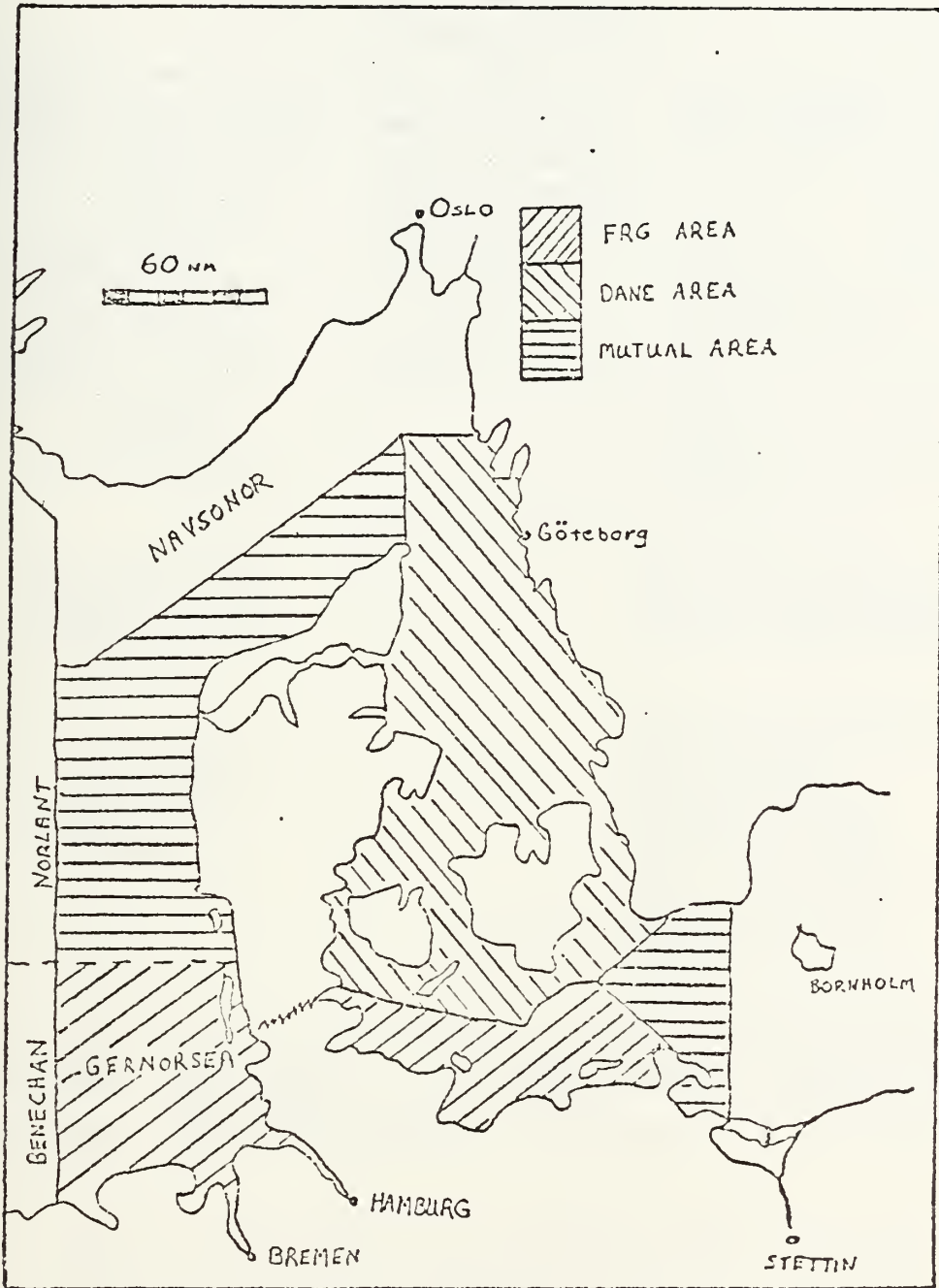


Legend

Wehr Technik
May 1977
page 25

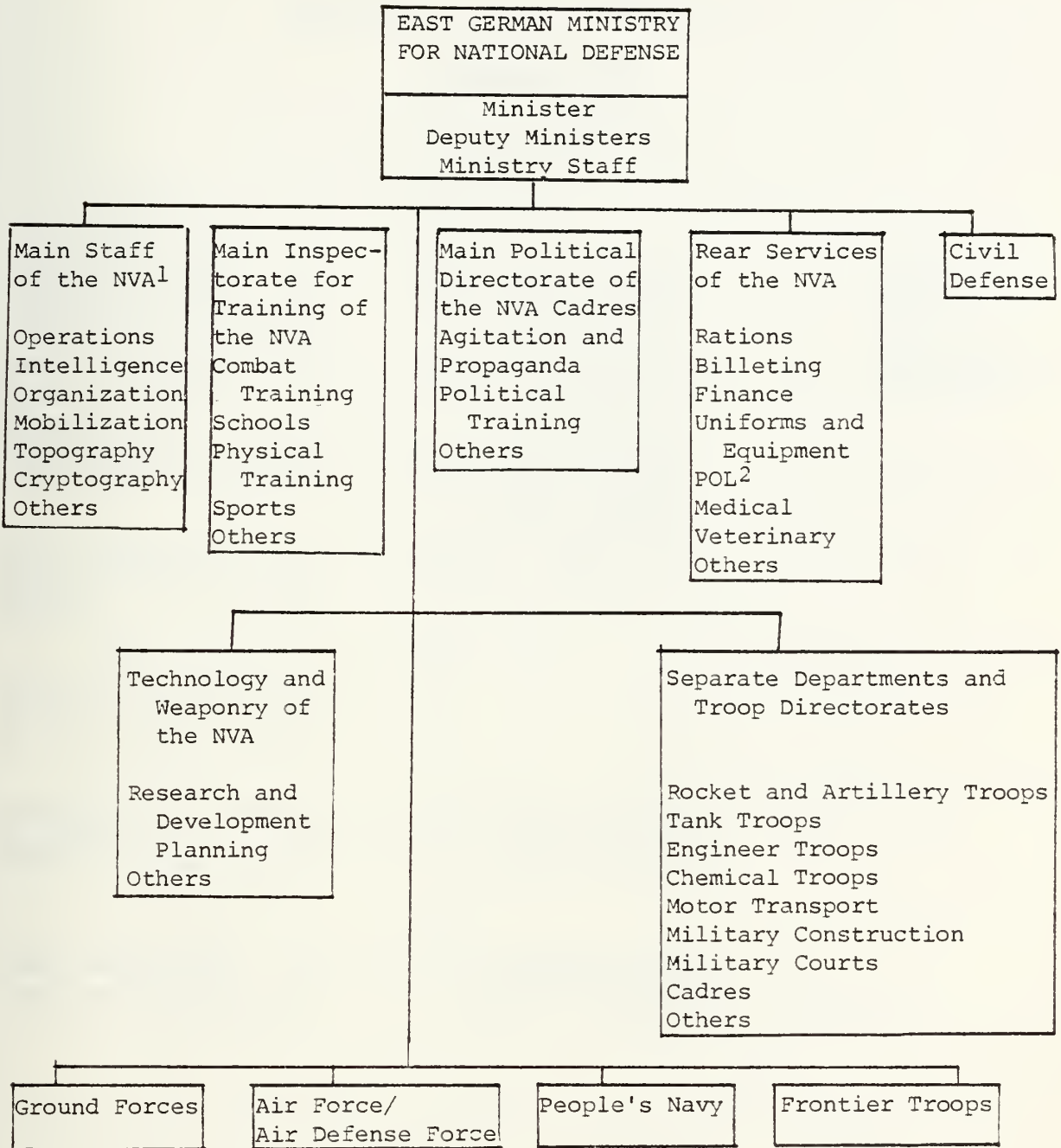
APPENDIX C

GERMAN/DANISH AREAS OF PRIMARY AND MUTUAL INTEREST



Source: Division of the Federal Minister of Defense, Information and Press Office, Bonn, November, 1979

APPENDIX D

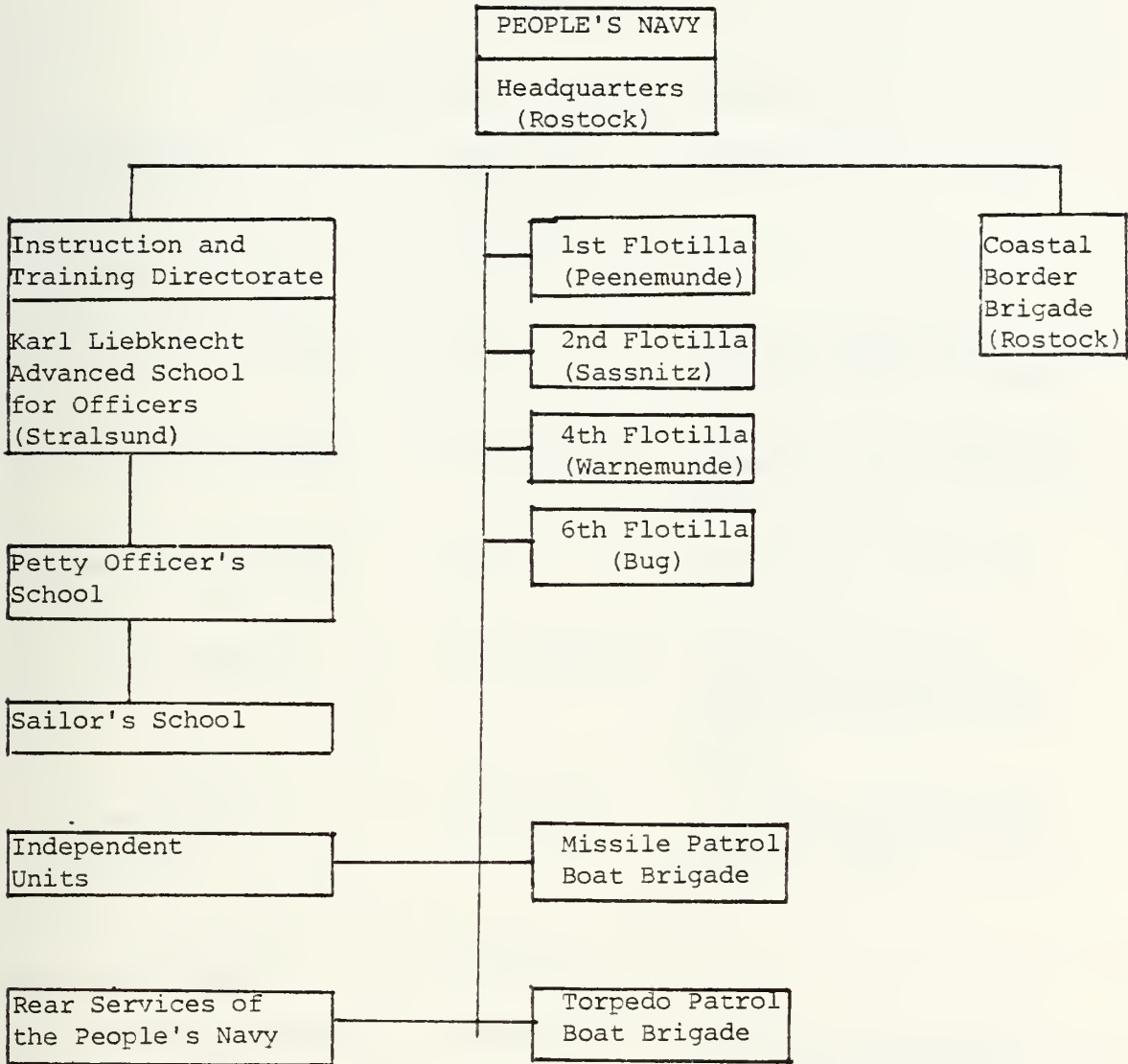


¹Nationale Volksarmee (National People's Army).

²Petroleum oil, and lubricants.

APPENDIX E

STRUCTURE OF THE EAST GERMAN NAVY



Source: Based on U.S. Department of Commerce, Office of Technical Services, Joint Publications Research Service, "The GDR People's Navy," Marine Rundschau (Stuttgart), August, 1980.

APPENDIX F

THE DISPOSITION OF THE WEST GERMAN FLEET

<u>Staff/Unit</u>	<u>Home Port</u>	<u>Ships/Aircraft</u>
Fleet Command	Glücksburg	
<u>Destroyer Fleet</u>	Kiel	
1. Destroyer Squadron	Kiel	3 FK-Destroyers Z103A (Lutjens, Rommel, Molders)
2. Destroyer Squadron	Wilhelmshaven	4 FK-Destroyers Z101A (Hamburg, Schleswig-Holstein, Bayern, Hessen)
3. Destroyer Squadron	Kiel	4 Destroyers class 119 (Z2, Z4, Z5)
2. Escort Squadron	Wilhelmshaven	6 Frigates class 120 (Köln, Emden, Karlsruhe, Augsburg, Braunschweig, Lübeck)
Fleet Service Squadron	Flensburg	5 U-Jagdboote Class 420 (Theseus, Triton, Najada, Hermes, Thetis)
<u>Fast Patrol Fleet</u>	Flensburg	
2. Fast Patrol Squadron	Olpenitz	10 FK-Fast Patrol Boats Class 143, 2 Tenders (Elbe, Donau)
3. Fast Patrol Squadron	Flensburg	10 FK-Fast Patrol Boats Class 148, 1 Tender (Rhein)
5. Fast Patrol Squadron	Olpenitz	10 FK-Fast Patrol Boats Class 148, 1 Tender (Main)
7. Fast Patrol Squadron	Kiel	10 FK-Fast Patrol Boats Class 142, 2 Tender Neckar, Werra

<u>Mine Warfare Fleet</u>	Wilhelmshaven	
1. Minesweeper Squadron	Flensburg	10 Fast Minesweepers Class 341 2 Mine Transporters (Sachsenwald, Steigenwais) 1 Tender (Saar)
3. Minesweeper Squadron	Kiel	8 Inland Minesweepers Class 393
5. Minesweeper Squadron	Olpenitz	11 Fast Minesweepers Class 340 1 Tender (Mosel)
7. Minesweeper Squadron	Neustadt	10 Inland Minesweepers Class 394
Mine Countermeasures Squadron, North Sea	Wilhelmshaven	18 Minehunters Class 331 (8 of the above are Class 320) 1 Tender Lindau
<u>Submarine Fleet</u>	Kiel	
1. Submarine Squadron	Kiel	6 suba Class 205 6 suba Class 206 1 Tender (Lahn)
3. Submarine Squadron	Echernforde	12 suba Class 206 1 Tender (Lech)
<u>Naval Aviation Division</u>	Kiel	
1. Naval Aviation Squadron	Jagel	60 F-104G (fighter bomber)
2. Naval Aviation Squadron	Eggebeck	30 F-104G (fighter bomber) 25 RF-104G (Reconnaissance)
3. Naval Aviation Squadron	Nordholz	19 BR1150 (Atlantic ASW and Reconnaissance)
5. Naval Aviation Squadron	Kiel	20 Sea Kings (Helicopters) 20 Skyservant (D028) Trans- ports
<u>Amphibious Group</u>	Emden	
Support Fleet	Cuxhaven	19 Landingcraft Class 520

1. Support Squadron	Kiel	5 Boats (Coburg, Offenburg, Munsterland, Wittensee, Spiekeroog)
	Flensburg	4 Boats (Luneburg, Westewald, Harz, Walchensee)
	Olpenitz	4 Boats (Meersburg, Saarburg, Ammersee, Langeroog)
	Neustadt	1 Boat (Fehmarn)
2. Support Squadron	Wilhelmshaven	10 Boats (Freiburg, Glucksburg, Nienburg, Odenwald, Frankenland, Eifel, Tegernsee, Westensee, Wangerooge, Hilgaland) 9 Fuel Transporters 5 Tugs

Source: Die Marine Der Bundersrepublik Deutschland, Entwicklungsstand und Entwicklungsmoglichkeiten by Daglef Gerhardt, (Haus Eggenberg), September, 1980, pp. 71, 72, 73.

APPENDIX G

EAST GERMAN AND WEST GERMAN NAVAL BATTLE ORDER

EAST GERMAN--NAVAL BATTLE ORDER

Manpower: 16,000 (includes 10,000 conscripts).

Reserves: 25,000

Conscripts service period: 18 months.

FLEET

Frigates 1 ex-Soviet Riga class
 2 ex-Soviet Koni class

Corvettes: 4 USSR built SO-1 class

Light Forces: 15 ex-Soviet Osa class FAC's with STYX missiles
 18 ex-Soviet Shershen class FAC's
 30 Libelle class FAC's
 154 Ilits class FAC's
 14 Hai class large patrol boats
 18 KB 123 class coastal patrol craft

Amphibious forces: 3 Robbe class
 2 Labo class, a Frosch class and
 1 under construction

Mine warfare forces: 51 Kondor I and II class coastal minesweepers
 2 Kondor class I intelligence ships
 Various miscellaneous craft, including
 service ships (28), icebreakers (2), and tugs.
 The Association of Sport and Technical Science
 maintains some of the training ships.

Naval aviation: 1 squadron with 8 Mi-14, 5 Mi-8 helicopters

Major naval bases: Peenemunde, Rostock, Sassnitz, Stralsund,
 Warnemunde, Wolgast, Dranske-Bug Tarnowitz.

WEST GERMAN--NAVAL BATTLE ORDER

Manpower: 36,500; and about 4,800 officers; 11,000 conscripts.

Reserves: 25,000

Conscripts service period: 15 months.

FLEET:

Destroyers: 3 modified Adams class DDG (with Tartar missile)
4 Hamburg class (with Exocet missile)
4 ex-US Fletcher class

Frigates: 6 Koln class

NB: 12 Fl22 frigates ordered by the West Germany Navy are expected to be armed with Raytheon Sea Sparrow point defense missiles, McDonnell Douglas Harpoon anti-ship weapons and Lynx helicopters. Deliveries are expected to begin in 1981.

Corvettes: 1 Hans Burkner A 1449
5 Thetis class

Submarines: 18 new construction Type 206
6 Type 205
2 Type 206
1 converted Type XXI

NB: A new larger submarine (up to approximately a displacement of 1,800 tons) is being constructed and will be ready in the late 1980s. 6 new submarines of Class 210, with a displacement of 750 tons, will be received over the next few years.

Light Forces: 10 Type 143 A (with Exocet MM 38 missile)
10 Type 142 (with Exocet MM 38 missile)
10 Zobel class (with torpedoes)
20 Type 148 (with Exocet MM 38 missile)

Amphibious forces: 28 LCM type
22 LCU type

NB: It is planned to obtain 10 Type 162 hydrofoil FAC from the U.S.

Mine Warfare forces: 18 Lindau class
22 Schutze class
10 Frauento class
1 Holnis class
2 Niobe class
8 Aridne class
SAMs: Roland II, Seacat
AAMs: Sidewinder

NB: A new class of minehunters, Type 342, is planned. The Navy hopes to receive three complete Md.86 naval gunfire systems. Also Class 143 FAC scheduled to be procured.

Various miscellaneous service and regular ships, launches, tugs, icebreakers, survey ships, auxilliary ships, coast guard vessels, etc.

Naval Aviation: 2 LRP squadrons (15 Breguet Atlantique)
3 fighter-bomber squadrons with 85 F-104G (re-equipping with 22 Sea King Mk-41s for SAR duties)
1 reconnaissance squadron with 30 RF-104s (updating with Panavia Tornados from 1979) SAR duties with 21 Westland Sea King Mk-41s.
MR squadrons with 19 Atlantique.
There are 20 Do-28 liaison aircraft with Kormoran ASM.

NB: 15 Lockheed S-3A Vikings are on tentative order from the US, and 110 Tornado FGA, 12 Lynxs and 4 Westwinds ordered.

Major naval bases: Bremerhaven, Hamburg, Kiel, Wilhelshaven
Glucksburg.

Source: Defense and Foreign Affairs Handbook, (Copley and Associates, S.A.), Washington, D.C., 1982.

FOOTNOTES

¹Gerhard Everwyn. "The Development of the Superport and the Oil Industrial Complex at Wilhelmshaven, West Germany," The South African Mechanical Engineer, (January, 1977), p. 3.

²Dr. -Ing. Horst Geffers. "The 'Marineamt' (General Naval Office) of the Bundesmarine," Marine Rundschau (November, 1981), p. 579.

³William L. Langer. An Encyclopedia of World History, Fifth edition, (Boston: Houghton Mifflin Company, 1972) p. 978.

⁴Anthony Marienssen. Hitler and His Admirals, (New York: E.P. Dutton & Co., Inc., 1949), p. 10.

⁵Ibid.

⁶Ibid, p. 11.

⁷Ibid, p. 12.

⁸Ibid, p. 13.

⁹Ibid, p. 21.

¹⁰William L. Langer, An Encyclopedia of World History, Fifth edition, (Boston: Houghton Mifflin Company, 1972), p. 978.

¹¹Western European Union, Modified Brussels Treaty, Annex III to Protocol III, (1954).

¹²"Western German Navy," United States Naval Institute Proceedings, January, 1956, p. 119.

¹³Vice Admiral Friedrich Ruge, "The Postwar German Navy and its Mission," United States Naval Institute Proceedings, October, 1957, p. 1037.

¹⁴William L. Langer, op. cit., p. 1196.

¹⁵Vice Admiral Friedrich Ruge, op. cit., p. 1037.

¹⁶Ibid.

¹⁷Ibid.

¹⁸Ibid.

¹⁹Admiral Wilhelm Ehm, "Die Entwicklung der Volksmarine der NVA," Mitilargeschichte, 18 1979 Heft 4, p. 406.

²⁰Dr. Peter Joachim Lapp, "30 Jahre Seesteitkräfte der DDR," Die Nationale Volksarmee der DDR im Rahmen des Warschauer Paktes, (München: Bernard & Graefe Verlag, 1980), p. 146.

²¹Admiral Wilhelm Ehm, op. cit., p. 407.

²²Dr. Peter Joachim Lapp, "Die Volksmarine der DDR," Marine Rundschau, August, 1980, p. 476.

²³Ibid.

²⁴Admiral Wilhelm Ehm, op. cit., p. 408.

²⁵Dr. Peter Joachim Lapp, "Die Volksmarine der DDR," op. cit., p. 476.

²⁶Dr. Peter Joachim Lapp, "30 Jahre Seesteitkräfte der NVA," op. cit., p. 147.

²⁷Federal Minister of Defence, The White Paper 1979, (Bonn: Federal Ministry of Defence, 1979), p. 175.

²⁸Federal Republic of Germany, Basic Law of the Federal Republic of Germany, (Bonn: Federal Republic of Germany, 1979), pp. 41, 78.

²⁹Dr. -Ing. Horst Geffers, "The 'Marineamt' (General Naval Office) of the Bundesmarine," Marine Rundschau (November, 1981) p. 579.

³⁰"Der Führungsstab der Marine," Wehr Technik (May, 1977), p. 21.

³¹Vice-Admiral Ansgar Bethge, "The Role of German Navy in the Northern Flank Area," NATO's Fifteen Nations (Special 2, 1982), p. 42.

³²Freidrich Kuhlen, "Das Flottenkommando," Wehr Technik, (May, 1977), pp. 39-40.

³³Ibid, p. 41.

³⁴Ibid.

- ³⁵ Daglef Gerhardt, Die Marine Der Bundesrepublik Deutschland Entwicklungsstand und Entwicklungsmöglichkeiten, (Ebenhausen, Haus Eggenberg, 1980), p. 23.
- ³⁶ NATO Information Service, NATO Handbook, (Brussels: Nato Information Service, 1980), p. 85.
- ³⁷ Daglef Gerhardt, op. cit., p. 23.
- ³⁸ Martin Horseman, "STANAFORCHAN," Armed Forces, (February, 1983), p. 64.
- ³⁹ Ibid., p. 66.
- ⁴⁰ Thomas M. Forster, The East German Army, (London: George Allen & Unwin, Ltd., 1980), p. 84.
- ⁴¹ Heinz Kessler, "Die Historische Leistung der SED Bei der Entwicklung der NVA zu einer modernen socialistischen Armee," Militargeschichte, (January, 1979), p. 6.
- ⁴² Eugen K. Keefe, ed., East Germany, a country study, (Washington, D.C.: U.S. Government Printing Office, 1982), p. 220.
- ⁴³ Gunter Lippert, "Die Nationale Volksarmee der DDR," (October, 1980), p. 50.
- ⁴⁴ Ibid.
- ⁴⁵ Wilhelm Ehm, "Die Entwicklung der Volksmarine der NVA," Militargeschichte, (18, 1979, Hft 4), p. 406.
- ⁴⁶ Peter Joachim Lapp, "Die Volksmarine der DDR," Marine Rundschau (August, 1980), p. 483.
- ⁴⁷ Wilhelm Ehm, op. cit., p. 410.
- ⁴⁸ Thomas M. Forster, op. cit., p. 120.
- ⁴⁹ Ibid., p. 111.
- ⁵⁰ Milan N. Vego, "East Germany's Navy," Navy International, (March, 1981), p. 145.
- ⁵¹ Admiral Ehm, op. cit., p. 408.
- ⁵² Ibid., p. 414.
- ⁵³ Milan Vego, "East European Navies," Proceedings, (March, 1983), p. 44.

⁵⁴Harriet Fast Scott and William F. Scott, The Armed Forces of the USSR, (Boulder, Colorado: Arms and Armour Press, 1981), p. 205.

⁵⁵North Atlantic Treaty Organization, NATO Handbook, (Brussels: NATO Information Service, 1980), p. 22.

⁵⁶Federal Minister of Defence, White Paper 1979, (Bonn: Federal Minister of Defence on behalf of the Federal Government, 1979), p. 125.

⁵⁷Admiral Harry D. Train, II, "Challenge at Sea: Naval Strategy For the 1980s," NATO's Fifteen Nations, Special 2/1982, p. 17.

⁵⁸Ibid.

⁵⁹Federal Minister of Defence, op. cit., p. 126.

⁶⁰Ibid.

⁶¹Rear-Admiral Niels Fergemann Lange, "Naval Control of the Danish Straits," NATO's Fifteen Nations, Special 2/1982, p. 39.

⁶²John Vinocur, "Bonn Moves to Lift Curbs on Fleet, Opening Way to Wider War Roles," The New York Times, July 18, 1980, p. A4.

⁶³Vice-Admiral Andgar Bethge, "The Role of the German Navy in the Northern Flank Area," NATO's Fifteen Nations, Special 2/1982, p. 44.

⁶⁴Ibid.

⁶⁵Federal Minister of Defence, op. cit., pp. 175-176.

⁶⁶Ibid., p. 24.

⁶⁷Gunter Luther, "Die Marine in Bundeswehr und Bundnis," Marine Rundschau, June, 1976, p. 344.

⁶⁸Melvin Croan, "The Development of GDR Political Relations with the USSR," GDR Foreign Policy, (New York, 1982), p. 219.

⁶⁹Foreign Broadcast Information Service, Daily Report Eastern Europe, (Washington, D.C.: United States Government, 27 April, 1982), p. E5.

⁷⁰Harriet Fast Scott and William F. Scott, op. cit., p. 37.

⁷¹Ibid.

⁷²Ibid., p. 52.

⁷³William F. Scott, "Changes in Tactical Concepts Within the Soviet Forces," The Future of Soviet Military Power, (New York: Crane, Russak & Company, Inc., 1976), p. 77.

⁷⁴Christopher D. Jones, Soviet Influence in Eastern Europe, (New York: Praeger Publishers, 1981), p. 159.

⁷⁵Michal MccGwire, "Soviet Naval Doctrine and Strategy," Soviet Military Thinking, (London: George Allen & Unwin, 1981), p. 139.

⁷⁶Milan Vego, "East German Navy," Navy International, (March, 1981), p. 146.

⁷⁷Michael MccGwire, op. cit., p. 147.

⁷⁸Milan Vego, op. cit., p. 146.

⁷⁹Gunter Luther, "Die Marine in Bundeswehr und Bundnis," Marine-Rundschau, (June, 1976), p. 344.

⁸⁰Vice-Admiral Friedrich Ruge, "The Postwar German Navy and Its Mission," United States Naval Institute Proceedings, (October, 1957), p. 1038.

⁸¹Wolfgang Flume and Jurgen Rohwer, "U-Bootbau in Deutschland," Marine-Rundschau, (September, 1982), 79, Jahrand, Heft 9, p. 485.

⁸²Ibid., pp. 476-477.

⁸³Gunter Luther, "Rustungsplanung der Marine, Seekriegsmittel-Heute und morgen," Wehrtechnik, No. 6, (June, 1975), p. 228.

⁸⁴Stephen S. Roberts, "Western European and NATO Navies," United States Naval Institute Proceedings, (March, 1983), p. 37.

⁸⁵"German Navy Commission First F-122 Frigate," NATO's Fifteen Nations, Volume 27, No. 4, (August-September, 1982), p. 98.

⁸⁶Ibid.

⁸⁷Stephen S. Roberts, op. cit., pp. 37-38.

⁸⁸"Navy," Jane's Defence Review, (London, Volume 2, No. 5), p. 450.

⁸⁹Ibid.

⁹⁰Stephen S. Roberts, op. cit., p. 37.

⁹¹Ibid.

⁹²K.F. Fruh, "Seegefecht als Echtzeitprozeb," Regelungstechnische Praxis, (Volume 18, no. 1, January, 1976), p. 3.

⁹³Ibid., p. 5.

⁹⁴Thomas M. Forster, The East German Army, trans. Deryck Viney, (Boston: George Allen & Unwin, Ltd., 1980), p. 222.

⁹⁵Eugene K. Keefe, editor, East Germany, a country study, (Washington, D.C.: United States Government Printing Office, 1982), p. 225.

⁹⁶Louis J. Andolino, "Warsaw Pact Sea Power Assets," The Warsaw Pact, (Wilmington, Delaware: Scholarly Resource, Inc., 1982), p. 197.

⁹⁷Milan Vego, "East European Navies," United States Naval Institute Proceedings, (March, 1982), pp. 43-44.

⁹⁸"NVA-Volksmarine: Minensuch- und Raumschiffe der Kondor II Klasse," Wehr Technik, (October, 1982), p. 84.

⁹⁹Hubschrauber der NVA: Mehrzweck- und Kampfhubschrauber Mi-8/HIP," Wehr Technik, (February, 1983), p. 78.

BIBLIOGRPAHY

- Alves, Dora, "The German Army Moves Out," United States Naval Institute Proceedings, January, 1981, pp. 96-97.
- Andolino, Louis J., "Warsaw Pact Sea Power Assets," The Warsaw Pact, Wilmington, Delaware: Scholarly Resource, Inc., 1982.
- Basic Law of the Federal Republic of Germany, Bonn, Federal Republic of Germany, 1979.
- Behtge, Vice Admiral Ansgar, "The Role of the German Navy in the Northern Flank Area," NATO's Fifteen Nations, Special 2/1982.
- Bekker, Cajus, Hitler's Naval War, Garden City, New York: Doubleday & Company, Inc., 1974.
- Bonds, Ray, editor, The Soviet War Machine, London: Hamlyn, 1976.
- Copley, Gregory R., Defense Foreign Affairs Handbook, Washington, D.C.: Copley & Associates, 1982.
- Coran, Melvin, "The Development of GDR Political Relations with the USSR," GDR Foreign Policy, New York, 1982.
- Ehm, Wilhelm, "Die Entwicklung der Volksmarine der NVA," Militar Geschichte, 18, 1979, Heft 4, pp. 406-418.
- Everwyn, Gerhard, "The Development of Superport and the Oil Industrial Complex at Wilhelmshaven, West Germany," The South African Mechanical Engineer, January, 1977, pp. 3-23.
- Flume, Wolfgang and Rohwer, Jurgen, "U-Bootbau in Deutschland," Marine Rundschau, September, 1982, pp. 475-485.
- Foreign Broadcast Information Service, Daily Report Eastern Europe, Washington, D.C.: United States Government Printing Office, 27 April, 1982.
- Forster, Thomas M., The East German Army, translated by Deryck Viney, Boston: George Allen & Unwin, Ltd., 1980.
- Fruh, K.F., "Seegefecht als Echtzeitprozess," Regelungstechnische Praxis, Volume 18, No. 1, January, 1976, pp. 2-9.

- Geffers, Dr. -Ing Horst, "The 'Marineamt' (General Navy Office) of the Bundesmarine," Marine-Rundschau, November, 1981, pp. 579-588.
- Gerhardt, Daglef, Die Marine Der Bundesrepublik Deutschland Entwicklungsstand und Entwicklungsmöglichkeiten, Ebenhausen; Haus Eggenberg, Stiftung Wissenschaft und Politik, September, 1980.
- "German Navy Commissions First F-122 Frigate," NATO's Fifteen Nations, August-September, 1982, pp. 97-98.
- Germany, (Federal Republic, 1949-), Zur Sicherheit der Bundesrepublik Deutschland und zur Entwicklung der Bundeswehr, Weisbuch, 1975/1976.
- Horseman, Martin, "STANAVFORCHAN," Armed Forces, February, 1983, pp. 64-68.
- "Hubschrauber der NVA: Mehrzweck- und Kampthub schrauber Mi-8/HIP," Wehr Technik, February, 1982, p. 78.
- Jones, Christopher D., Soviet Influence in Eastern Europe, New York: Praeger Publishers, 1981.
- Keefe, Eugene K., ed., East Germany, a country study, Washington, D.C.: United States Government Printing Office, 1982.
- Kessler, Heinz, "Die Historische Leistung der SED bei der Entwicklung der NVA zu einer modernen socialistischen Armee," Militar Geschichte, January, 1976, p. 6.
- Kuhlen, Freidhelm, "Das Flottenkommando," Wehr Technik, May, 1977, pp. 39-62.
- Lange, Rear Admiral Niels Fergemen, "Naval Control of the Danish Straits," NATO's Fifteen Nations, Special 2/1982, pp. 37-39.
- Langer, William M., editor, An Encyclopedia of World History, Boston: Houghton Mifflin Company, 1972.
- Lapp, Peter Joachim, "Die Volksmarine der DDR," Marine-Rundschau, August, 1980, pp. 475-484.
- Lapp, Peter Joachim, "30 Jahre Seestreitkräfte der DDR," Die National Volksarmee der DDR in Rahemn des Warshauer Paktes, Munchen: Bernard & Graife Verlag, 1980, pp. 145-151.

- Lippert, Gunter, "Die Nationale Volksarmee der DDR," Wehr Technik, October, 1980, pp. 49-60.
- Luther, Gunter, "Die Marine in Bundeswehr und Bundis," Marine-Rundschau, June 1976, pp. 341-350.
- Luther, Gunter, "Der Führungsstab der Marine Seekriegsmittel-Heute und morgen," Wehr Technik, June, 1975, pp. 227-232.
- Martienssen, Anthony, Hitler and His Admirals, New York: E.P. Dutton & Company, Inc., 1949.
- McCWire, Michael, "Soviet Naval Doctrine and Strategy," Soviet Military Thinking, London, George Allen & Unwin, 1981.
- NATO Handbook, Brussels: NATO Information Services, August, 1980.
- "Navy," Jane's Defense Review, London, Volume 2, number 5, pp. 450-452.
- "NVA-Volksmarine: Minensuch -und Raumschiffe der Kondor II Klasse," Wehr Technik, October, 1982, pp. 84-85.
- Roberts, Stephen S., "Western European and NATO Navies," United States Naval Institute Proceedings, March 1975, p. 37.
- Ruge, Vice Admiral Friedrich, "The Postwar German Navy and Its Mission," United States Naval Institute Proceedings, October, 1957, pp. 1035-1044.
- Scott, Harriet Fast and Scott, William F., The Armed Forces of the USSR, Boulder, Colorado: Arms and Armour Press, 1981.
- Scott, William F., "Changes in Tactical Concepts Within the Soviet Forces," The Future of Soviet Military Power, New York: Crane Russak & Company, Inc., 1976.
- Train, Admiral Harry D., II, "Challenge at Sea: Naval Strategy for the 1980's," NATO's Fifteen Nations, Special 2/1982, pp. 23-26.
- Vego, Milan, "East Germany's Navy," Navy International, March, 1981, pp. 143-146.
- Vego, Milan, "East European Navies," United States Naval Institute Proceedings, March, 1983, pp. 42-46.

Vinocur, John, "Bonn Moves to Lift Curbs on Fleet, Opening Way To Wider War Roles," The New York Times, July 18, 1980.

"Western German Navy," United States Naval Institute Proceedings, January, 1956, pp. 119-120.

Western European Union, Modified Brussels Treaty, Annex III to Protocol III, 1954.

White Paper 1979, Bonn, Federal Minister of Defence, September 4, 1979.

Wolfe, Thomas W., Soviet Power and Europe 1945-1970, Baltimore: The Johns Hopkins Press, 1970.

Wyman, Captain Robert D., "Their Baltic Fleet," United States Naval Institute Proceedings, October, 1982, pp. 156-159.

INITIAL DISTRIBUTION LIST

	No. Copies
1. Defense Technical Information Center Cameron Station Alexandria, Virginia 22314	2
2. Library, Code 0142 Naval Postgraduate School Monterey, California 93940	2
3. Department Chairman, Code 56Bc Department of National Security Affairs Naval Postgraduate School Monterey, California 93940	1
4. Center for Naval Analyses 2000 North Beauregard Street P.O. Box 11280 Alexandria, Virginia 22311	1
5. Professor David S. Yost, Code 56Yo Department of National Security Affairs Naval Postgraduate School Monterey, California 93940	1
6. Professor Robert B. Bathurst, Code 56Zt Department of National Security Affairs Naval Postgraduate School Monterey, California 93940	1
7. Navy Field Operational Intelligence Office, Code 31 4501 Suitland Road Washington, D.C. 20390	1
8. LT. John M. Tindall, USN 493 Lavell Court Marina, California 93933	5

201722

Thesis

T5135 Tindall

c.1

The navies of the
Federal Republic of
Germany and the German
Democratic Republic: a
comparison and analysis
of structures, alliance
relations, doctrine,
and capabilities.

12 MAR 84

29484

201722

Thesis

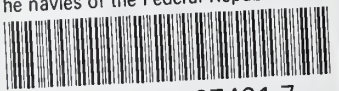
T5135 Tindall

c.1

The navies of the
Federal Republic of
Germany and the German
Democratic Republic: a
comparison and analysis
of structures, alliance
relations, doctrine,
and capabilities.

thesT5135

The navies of the Federal Republic of Ge



3 2768 001 07491 7

DUDLEY KNOX LIBRARY