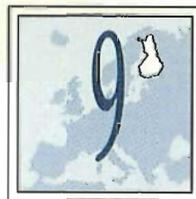


FINNISH  
DEFENCE  
STUDIES



# THE BALTIC – SEA OF CHANGES

*Mikko Viitasalo Bo Österlund*

*Finnish Defence Studies* is published under the auspices of the National Defence College, and the contributions reflect the fields of research and teaching of the College. *Finnish Defence Studies* will occasionally feature documentation on Finnish Security Policy.

Views expressed are those of the authors and do not necessarily imply endorsement by the National Defence College.

Editor:

Kalevi Ruhala

Editorial Assistant:

Matti Hongisto

Editorial Board:

Chairman

Prof. Pekka Sivonen, National Defence College

Dr. Pauli Järvenpää, Ministry of Defence

Col. Erkki Nordberg, Defence Staff

Dr., Lt.Col. (ret.) Pekka Visuri, Finnish Institute of International Affairs

Dr. Matti Vuorio, Scientific Committee for National Defence

Published by

NATIONAL DEFENCE COLLEGE

P.O. Box 266

FIN - 00171 Helsinki

FINLAND

# THE BALTIC – SEA OF CHANGES

*Mikko Viitasalo Bo Österlund*



*National Defence College Helsinki 1996*

ISBN 951-25-0812-5  
ISSN 0788-5571

© Copyright 1996: National Defence College  
All rights reserved

Oy Edita Ab  
Pasilan pikapaino  
Helsinki 1996

# CONTENTS

FOREWORD .....	5
1 INTRODUCTION .....	7
1.1 The change in Baltic naval strategy following the disintegration of the Warsaw Pact .....	7
1.2 Problematic issues .....	9
1.3 Importance of the Baltic Sea route for Russia .....	11
1.4 Literature on the Baltic Sea and definition of the topic of the present study .....	12
2 THE MILITARY GEOGRAPHY OF THE BALTIC .....	14
3 QUESTIONS OF TERRITORIAL WATERS IN THE BALTIC AREA .....	19
4 ROLE OF THE BALTIC SEA IN RUSSIA'S MERCHANT SHIPPING .....	22
5 NAVAL DEVELOPMENT IN THE BALTIC .....	28
5.1 General .....	28
5.2 The Russian navy in the Baltic .....	29
5.3 Navies of the Baltic states .....	36
5.4 The Polish navy .....	39
5.5 The German navy .....	41
5.6 The Danish navy .....	46
5.7 The Swedish navy .....	49
5.8 The Finnish navy .....	54
6 NATO IN THE BALTIC .....	61
7 THE BALTIC - A NUCLEAR-FREE INLAND SEA? .....	69
7.1 Nuclear and dual-purpose weapons in the Baltic .....	69
7.2 Nuclear-powered vessels in the Baltic .....	73
8 SIGNIFICANCE OF THE ÅLAND ISLANDS FOR FINNISH DEFENCE .....	77
9 CONCLUSIONS .....	85
NOTES .....	89
APPENDICES .....	97



# FOREWORD

It is difficult to say at what precise moment the idea of producing this volume was first raised, but the actual decision to go ahead with it was made some time late in 1993. The background to it was the long professional interest that both authors have had in the Baltic, as a result of which both have published - separately or jointly - a fair number of articles on the subject in various journals. This has been followed by numerous invitations to lecture or lead discussions in various forums in recent years, naturally on themes related to the Baltic.

The range of precise topics has been a vast one, extending from arms supervision arrangements to changes in the strategic situation and descriptions of the navies maintained by the various nations, not forgetting the pressures for a nuclear weapons ban. We have accumulated substantial archives on the subject in the course of time, and all this encouraged us to make use of the material in a more comprehensive form.

The Baltic Sea is both an interesting topic and a highly relevant one at this present moment, principally, of course, because of the disbanding of the Warsaw Pact and the collapse of the Soviet Union with all the consequences that arose from that event, affecting not only the Baltic Sea as such but also many of the countries and regions bordering onto it. This is a process of change that is still going on.

Finland has considerable interests at stake in the changes affecting the Baltic region. Her security has always been closely bound up with events and disturbances occurring in this region, and in the present case the situation is complicated still further by problems involving merchant shipping, the rebuilding of harbours and the redefinition of territorial waters. People in Finland thus have a great interest in monitoring the situation very carefully.

The subject of this publication is restricted to the sea area itself, the changes that have taken place in naval strategy and the way in which these are reflected in matters of security policy. If we had set out to examine the security of the countries of the Baltic as a whole the subject would have become unmanageable. Similarly we do not concern ourselves here with other

international arrangements that affect the Baltic area, although the most significant joint agreements are mentioned in the Introduction.

This publication has not been produced for any specifically defined purpose, although it was clear from the outset that it was likely to prove useful in research and teaching, and it is with this in mind that it has been provided with full references and details of sources. It was also hoped that it would serve the general needs of people interested in the Baltic for one reason or another. Attempts have been made to illustrate the text with tables, figures and maps wherever possible.

Helsinki, January 1996

Mikko Viitasalo

Bo Österlund

# 1 INTRODUCTION

## 1.1 *The change in Baltic naval strategy following the disintegration of the Warsaw Pact*

The disintegration of the Soviet Union and cessation of the Warsaw Pact radically altered the situation regarding naval strategy in the Baltic area, in that the spheres of strategic interest of the Soviet Union/Russia shifted from the southern part of the Baltic Sea to the north, close to Finland and her territorial waters, while the navies of the former Warsaw Pact countries bordering on the Baltic Sea and the doctrines governing them underwent profound changes. In particular, Russia has lost the significant bases, military harbours and maintenance depots which it once had in the Baltic states.

There had already been signs of reduction in the Baltic Fleet in the final years of the Soviet Union, with the year 1991 apparently marking the turning point. It was still gaining new vessels in 1990, which was in all respects a productive year in shipbuilding terms for the Soviet navy.<sup>1</sup> On the other hand, where the 1990/1991 issue of the prestigious yearbook *Military Balance* notes that the Soviet Baltic Fleet comprised some 350 vessels in 1990, the figure reported for 1991 in the 1991/1992 issue was only some 160.<sup>2</sup>

---

Dr. Mikko Viitasalo is on leave from the position of Director of Research at the National Defence College in order to serve as President of the Confederation of Unions for Academic Professionals in Finland (AKAVA). He has also been Secretary-General of the Scientific Committee for National Defence.

Captain (Navy) Bo Österlund has served as Chief of Operations at Naval Headquarters since July 1994. He worked earlier as an instructor in naval tactics and operations at the National Defence College and as Chief of its Naval Department.

Apart from the reduction in the number of vessels, they were also somewhat smaller in size. The Commander-in-Chief of the Baltic Fleet, Admiral Vladimir Yegorov, mentioned some time ago that the number of Soviet ships in the Baltic is due to decrease by almost 40%, evidently referring by this to the effects of the loss of naval bases in the Baltic states. According to Yegorov, the vessels taken out of service in 1993 were obsolete missile-carrying submarines,<sup>3</sup> so that recent information suggests that Russia now has approximately 15 submarines in its Baltic Fleet, of which three are fitted with cruise missiles.<sup>4</sup>

The reductions in the number and size of vessels in the Baltic Fleet are obviously linked to a change in doctrine, the most probable direction of development being towards the creation of some kind of combined training and coastal fleet, although still retaining substantial Russian military strength in the Baltic and, in the changed situation, bringing it closer to Finland.

On the other hand, it may only be a slight exaggeration to say that one entire navy, the Volksmarine of the former GDR, has disappeared from the scene completely. At the time of the unification of Germany in autumn 1990, the Volksmarine had some 130 vessels, including the smallest category, patrol boats. The largest were three Rostock-class frigates.<sup>5</sup>

The tonnage of the former Volksmarine has largely been sold to Indonesia, Tunisia, Turkey and Uruguay, while a few vessels remained in use with the unified German navy for the transition period. The fleet as a whole represented outdated technology and could not be converted to the systems used by the western German navy.<sup>6</sup> The new German navy has gradually begun to make use of the former East German naval bases, however, the easternmost of which is Peenemünde, close to the Polish border.

The Polish navy is also adopting a more lightweight character. According to the 1994/1995 issue of *Military Balance*, that country now has some 69 fighting ships, including patrol boats and 3 submarines. It has rapidly reduced its stock of heavy landing craft, which may originally have been intended for transport purposes in the service of the Warsaw Pact. At its peak in 1989, the number of Polish landing craft reached 46, whereas the current figure is 8. The Polnocny class has also entirely been withdrawn, and the 5 new landing craft are of the Lublin class.

The purpose for which they are intended has also altered, however.<sup>7</sup>

A general agreement to remove nuclear weapons entirely from the Baltic area has also been discussed in recent years. A news item in a Swedish daily newspaper in 1993 nevertheless drew attention to the numbers of Russian nuclear weapons in the area. Citing the Norwegian version of the 1992/1993 issue of *Military Balance*, it alleged that Russia had had 96 tactical nuclear weapons in the Baltic a couple of years earlier. The number had evidently dropped to 84 later, but increased again to 128.<sup>8</sup>

The published data and conclusions based on these should be approached with caution, however, as the tactical weapons listed in the above journal are dual-purpose ones, i.e. they may carry either nuclear or conventional warheads. Any increase in the number of tactical nuclear weapons in the Baltic Fleet would be a contradiction of Russia's avowed decision to withdraw such weapons from its fleet. The following news item was communicated by Itar-Tass on 4.2.1993:

'All tactical nuclear weapons have been removed from vessels and multi-purpose submarines, as well as naval aircraft, and placed in centralized storage in accordance with statements by the USSR president of the 5th October 1991 and president of the Russian Federation of 29th January 1992, the press service of the Russian Ministry of Defence reported.'

Although the report does not indicate when these tactical nuclear weapons had been removed, it would certainly seem that the trend in the Baltic area is towards nuclear-free naval traffic.

## *1.2 Problematic issues*

It is reasonable in connection with the present discussion to raise the following questions regarding major issues of naval strategy in the Baltic:

How substantial were the signs of changes and reductions in the Soviet Baltic Fleet in the last years of the Soviet Union? Were the changes due to a relaxation of tension internationally,

or to economic difficulties, or both? These aspects and trends in the strength of Soviet/Russian Baltic Fleet will be discussed in Chapter 5.

How will Germany act in these years of change? The focus in the development of its navy so far has been on the Atlantic, where it is now taking its own share of the responsibility for the security of merchant shipping, the foundations for which action were laid in the final years of confrontation between the major military alliances. The German navy with its air support is nevertheless the strongest naval force in the BALTAP area and the southern Baltic. So far no obvious attempts to strengthen its presence in the Baltic can be perceived in the German navy's construction and refitting plans, but any increase in the extent to which the German navy conducts exercises or deploys its vessels in the central parts of the Baltic, and even more so the northern parts, will naturally carry a political and military interest of its own.<sup>9</sup> In fact, there already are some signs of change in the interest shown by the German navy in the Baltic region, and this aspect will also be discussed in more detail in Chapter 5.

Changes are also taking place in NATO as regards its relation to the Baltic, in that its areas of responsibility are being defined more specifically. The Chief of Staff of BALTAP mentioned in an interview published in the magazine *Marine Rundschau* in the early summer of 1988 that these areas of responsibility also include the gulfs of the Baltic Sea. A new large-scale entity known as Allied Forces Northwest has been established, with its headquarters in Great Britain, representing a merger of the old English Channel Region with the Northwestern Region and bearing responsibility for an area covering Great Britain, Norway, the North Sea and the Baltic Sea, including the Gulf of Finland and the Gulf of Bothnia. This entity also includes the new Principal Subordinate Command (PCS) which replaces the Allied Forces Northern Europe Command located in Norway.

This new arrangement defines responsibilities for the Baltic area within NATO more specifically, so that vessels sailing under the NATO flag will be a common sight in the Gulf of Finland, and possibly even in the Gulf of Bothnia. This is nothing dramatic, of course, as it will obviously be necessary for the new forces to become familiar with their areas of responsibility. The joint naval manoeuvres between some NATO countries and countries

bordering on the Baltic, which were initially proposed by the United States and in the first round of which Finland also participated in summer 1993, should be seen against this background. The former Commander-in-Chief of the Swedish Armed Forces, General Bengt Gustafsson, has commented on the increased military and political interest shown by NATO in the Baltic Sea, but one must immediately add to this the evaluation of one Swedish expert that the increased visits by NATO vessels to the Baltic are not an indication of any "operative advance".<sup>10</sup> It is undoubtedly an indication of a change in the situation, however. Relations between NATO and the Baltic will be discussed in more detail in Chapter 6.

A further fact that we will have to face in the near future may well be that despite the drive for the exclusion of nuclear weapons, the Baltic will never become an entirely nuclear-free area. This means that nuclear-powered warships, mainly Russian ones, will evidently continue to sail through the Baltic, even though they may not be a permanent part of the Russian fleet there, and nuclear-propelled NATO ships may be seen in the area in times to come. We will go into these questions further in Chapter 7.

### *1.3 Importance of the Baltic Sea route for Russia*

The Baltic Sea still forms a vitally important outlet and security zone for Russia, for reasons that are so well-known that they do not need to be discussed here. In his speech to the sailors of the Russian navy at Baltisk on 15.3.1993, the Russian Foreign Minister Andrei Kozyrev pointed out that Russia must hold on to its powerful position in the Baltic in order to be able to protect the Kaliningrad area from any territorial claims that might be advanced by the Germans or other right-wing powers. He also announced that he was in favour of a continuous, effective Russian army presence in the Baltic area. It should be noted, however, that he later modified this statement at some points.

Russia's shortage of harbour capacity in the Baltic will be a permanent problem for many years to come. Commercial harbour statistics for the 1980's indicate that some 30% of all visits by Soviet ships were made to the harbour of Leningrad and the rest,

just under 70%, to harbours of the former Baltic socialist republics and the Kaliningrad oblast. This means that the number of vessels using the harbours of St. Petersburg and its nearby areas will now have to be increased substantially in order to ensure that all transport takes place via the country's own harbours. It is well-known, however, that these harbours are already severely overcrowded. The number of commercial visits to the Baltic ports of the former Soviet Union amounted to some 12,000 per year in the mid-1980's, of which 4000 were to Leningrad.<sup>11</sup> On the other hand, the quantity of goods passing through the latter port decreased in the early 1990's, so that having been 11 million tonnes in 1990 it was only some 5 million tonnes in 1992. Russian foreign trade still relies to a great extent on the ports of the Baltic states.<sup>12</sup>

The above serves as a background to the current Russian plans to build new large-scale harbours close to St. Petersburg.<sup>13</sup> Russia's commercial navigation and harbour projects in the Baltic area will be discussed in more detail in Chapter 4.

#### *1.4 Literature on the Baltic Sea and definition of the topic of the present study*

The literature for this work was compiled by means of the computer search system available in the library of the National Defence College, which yielded an extensive body of source material from the 1990's. In addition, manual files were consulted in order to examine the literature from the late 1980's, as the aim of this work was also to evaluate the events of the 1980's in the Baltic and to formulate conclusions on whether the aim of the Soviet Union to reduce the number of large vessels in its Baltic Fleet and alter the role of this fleet had already begun to be implemented in the last years before disintegration.

It should be mentioned here that a bibliography on the Baltic area was compiled for a meeting of parliamentarians from the Baltic states in Helsinki in 1991, comprising a total of 211 titles and including books and articles on security policy.<sup>14</sup>

Other arrangements regarding the Baltic area will not be discussed here, even though the above bibliographies contain an

extensive list of publications produced by the Commission for Environmental Protection in the Baltic which would enable the reader to examine the problems in this field in more detail. Similarly the work of the Council of Baltic States will also not be discussed here, since we have deliberately restricted ourselves to aspects of naval strategy and security policy, although some of the subjects dealt with here may touch upon such matters, as in the case of the alleged dumping of nuclear waste in the Baltic Sea.

Other matters of current interest are fishing,<sup>15</sup> the activities of the Nordic Council and the question of its possible expansion to include the Baltic states. These lie beyond the scope of the present study, however, for the reasons mentioned above.

As far as the Baltic topics that have been omitted here are concerned, the reader is referred to works such as 'The Baltic Sea Area - A region in the making', which contains scientific articles by a total of 16 experts that provide an extensive discussion of the Baltic and the surrounding area from a variety of viewpoints. The volume includes two articles on security policy and disarmament.<sup>16</sup>

## 2 THE MILITARY GEOGRAPHY OF THE BALTIC

The Baltic region is usually considered to comprise the sea area itself, its coastal areas and the channels, bays and canals leading to the sea area, e.g. the Straits of Denmark, the Gulf of Riga, the Gulf of Finland and the Gulf of Bothnia.<sup>17</sup>

Oceanographers do not regard the Baltic as either an ocean or a lake but as a large brackish water basin with a marked limnological stratification in terms of density which persists throughout the year. As a consequence of its highly complex geology, profound changes have taken place in hydrographic conditions and later in the biological features of the resulting sea over the last ten thousand years.<sup>18</sup>

The Baltic Sea is a long, narrow body of water with a surface area of some 200,000 km<sup>2</sup>, measuring some 280 km across at its widest point, between Sweden and the Baltic states, and some 40 km at its narrowest, between Denmark and the coast of the former GDR. Its average depth is 60 m, the deepest points, located to the east and north of Gotland, being 450 m. The shallow area west of Bornholm has a maximum depth of 55 m.<sup>19</sup>

The Straits of Denmark are not very deep: Öresund 8 m, the Great Belt 17 m, the Little Belt 13 m and the Kattegat 23 m.<sup>20</sup> More detailed information on this subject is available in scientific publications on the marine physics of the Baltic, one of which lists the following average depths for the various parts of the sea area: Baltic Sea proper 67 m, Gulf of Riga 28 m, Gulf of Finland 38 m, Åland Sea 77 m, Bothnian Sea 68 m and the Bothnian Bay 43 m. A depth chart with placenames is given in Fig. 1.<sup>21</sup>

The Baltic area is located between 54° and 66° N lat. and is characterised by major climatic differences. South-westerly winds prevail and temperatures fluctuate from one year to the next, which affect the extent of the sea ice in winter. Ships normally encounter no difficulties with ice in the Baltic Sea proper, nor in the Kattegat or the Straits of Denmark, whereas it is common for the Gulf of Bothnia, Gulf of Finland and Gulf of Riga to freeze over. Sea traffic can be maintained throughout the winter by the use of ice-breakers.<sup>22</sup>

Assessments of the extent of the sea ice on the Baltic have been carried out in Finland for decades. The smallest recorded extent was in the winter of 1988-1989, 52,000 km<sup>2</sup>, and the greatest established with certainty in 1941-1942, 420,000 km<sup>2</sup>. The Baltic Sea may also have been completely covered by ice in the winter of 1946-1947, but the data on this are somewhat uncertain.<sup>23</sup>

The maximum extents of the sea ice on the Baltic in 1720-1992 are classified in Fig. 2, which also shows the smallest recorded extent and the average for all winters.<sup>24</sup>

The temperature and salinity of the sea water affect the propagation of sound waves in it and are thus reflected in the measurement technology that can be used for underwater surveillance purposes. A large body of scientific data is available on salinity and temperature at various standard depths. These physical properties will not be discussed in any greater detail here, however, as the emphasis is on strategic matters, but the reader is referred to the literature on the subject.<sup>25</sup>

There are certain important canals that provide links with the Baltic, the most significant of which are the Kiel Canal, which is some 100 km in length and can accommodate vessels of up to 10,000 brt and with a maximum draught of 8 m, and the system that runs from the White Sea to the Gulf of Finland, which also gives access via Lake Ladoga to the waterways leading to the Black Sea. The latter involves 19 locks and stretches of open water on Lakes Onega and Ladoga, but its usefulness is moderated by the fact that it is frozen over for about 200 days a year. The maximum permitted tonnage is 3000 brt, maximum length 115 m and maximum draught 5 m.<sup>26</sup>

The important strategic role of the White Sea canal system lies in the fact that it enables naval technology, military equipment and vessels to be transferred from the factories and docks of the St. Petersburg area to the Severodvinsk in the Archangelsk area and to the Murmansk area unnoticed by outsiders by means of waterways lying entirely within Russia.

The tonnage restrictions can be overcome by means of pontoons and other technical arrangements.

All in all, in spite of its small size, the Baltic Sea can be regarded as a complex area in terms of its military geography. It should be remembered when evaluating time factors in military

terms that it takes 24 h for a rapid surface vessel to travel a distance equal to the length of the sea area but only 1-1.5 h for an aircraft to do the same.

As far as underwater operation is concerned, the narrow passages in the southern part of the Baltic lie in an area with fairly shallow water so that it would be difficult for submarines to operate there, whereas the deeper zones include areas which are suitable for submarines. It should also be remembered that stratification of the water in the Baltic means that operating at the boundary between two water masses with dissimilar physical properties can be particularly convenient for a submarine on account of the difficulties involved in locating a source of noise. The introduction of increasingly effective, mobile acoustical measurement devices backed up by airborne measurement of the magnetic interference caused by submarines may nevertheless restrict underwater operations in the Baltic area in future.

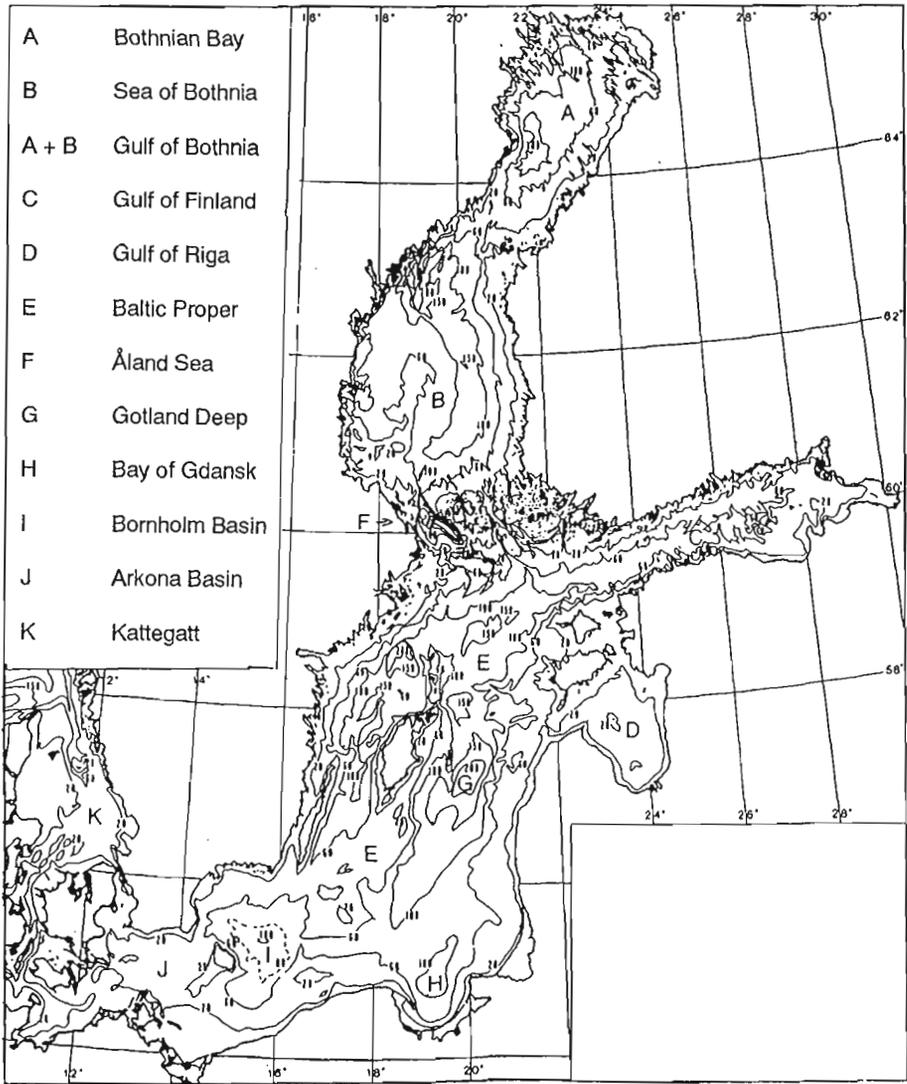


FIG 1 Depth chart of the Baltic Sea

SOURCE: P. Mäilki & R. Tamsalu, Physical Features of the Baltic Sea, Finnish Marine Research No. 252 (1985)

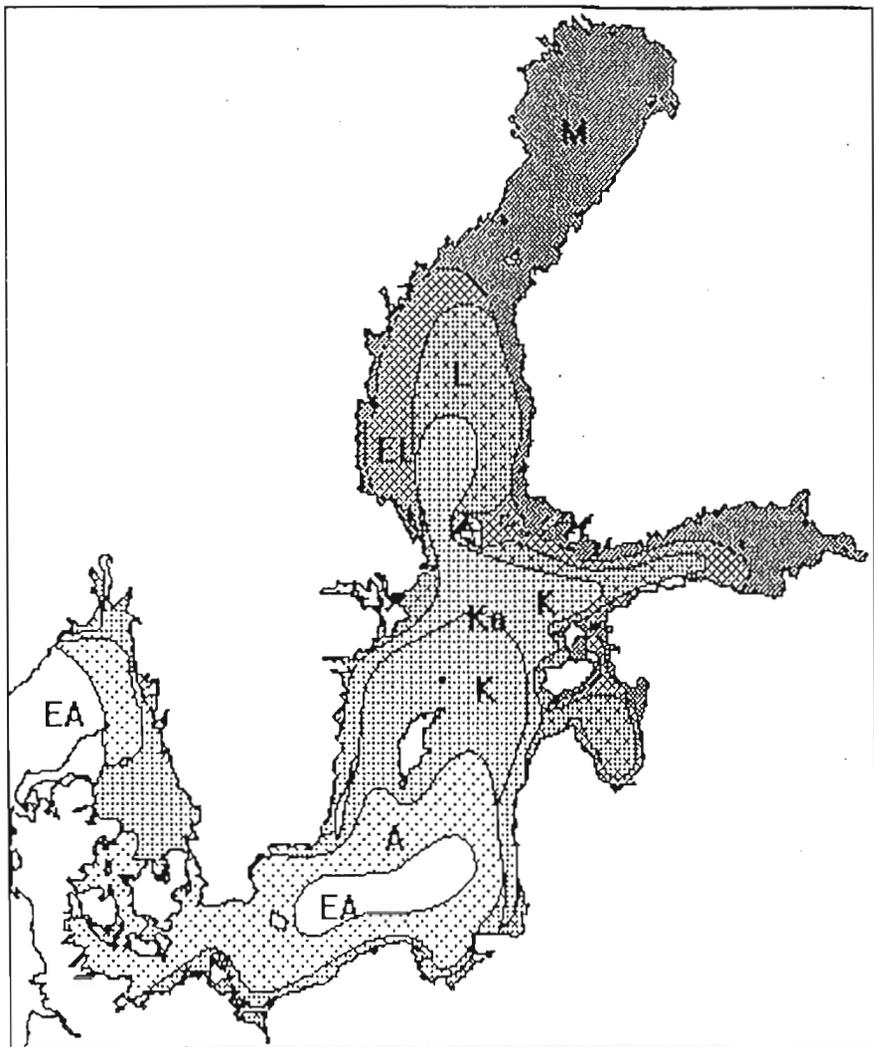


FIG 2 Maximum extents of sea ice on the Baltic in winter, 1720–1992

		Min (km <sup>2</sup> )	Max (km <sup>2</sup> )	Number	%
Minimum	(M)		52000		
Extremely mild	(EL)	52000	81000	29	11
Mild	(L)	81001	139000	60	22
Normal	(K)	139001	279000	91	33
Average	(Ka)		218000		
Severe	(A)	279001	383000	63	23
Extremely severe	(EA)	383001	420000	30	11
				273	100

SOURCE: A. Seinä & E. Palosuo, Classification of maximum ice cover on the Baltic Sea, 1720–1992, Meri No. 20, 1993

### 3. QUESTIONS OF TERRITORIAL WATERS IN THE BALTIC AREA

As laid down in the UN General Agreement on Marine Rights drawn up in 1982, all nations are entitled to extend their territorial waters to a maximum of 12 nautical miles from the basic coastline defined in accordance with this general agreement. Although the agreement has not yet been ratified, the above regulation can already be regarded as expressing an established right. Thus more than a hundred states already have territorial waters of this size, including Russia, Germany, Sweden, Poland, Latvia, Lithuania and Estonia, with some exceptions regarding areas such as the Gulf of Finland, for example. The territorial waters of Denmark are still 3 nautical miles in width.

Sweden took the decision to expand its territorial waters to 12 nautical miles on 1.7.1979, with an additional provision in the form of an agreement concluded with Denmark on 25.6.1979 regarding Öresund, where passages of width 6 nautical miles were left on either side of the central line that constitute international waters. It was also agreed that the contracting parties would inform each other 12 months beforehand of any intention to expand their territorial waters in the area covered by the agreement. Sweden restricted its territorial waters to 9 nautical miles in this same area by a statute of 1.1.1980, evidently partly on the grounds of the difficulty of supervising the approach to the Straits of Denmark in view of the fact that some 100,000 vessels pass through what would otherwise be a projecting tongue of Swedish territorial water or the area adjacent to it in the course of a year. The current boundaries of territorial waters are depicted on the map of the Baltic Sea in Appendix 1.

The law effecting a change in the territorial waters of Finland passed in 1995 divides this sea area into internal and external territorial waters. The internal territorial waters comprise an area bounded towards the land by the shoreline and the estuaries of the rivers and towards the open sea by a broken line joining the outermost points of Finnish terrain, i.e. promontories, islands or skerries, given that the distance between two such fixed points should not exceed twice the width of the territorial waters, i.e. 24

nautical miles. The one exception to this is at Bogskär, where two consecutive fixed points are just over 27 nautical miles apart. The external territorial waters then constitute a zone beginning immediately at the outer limit of the internal territorial waters, an extending outwards for 12 nautical miles, i.e. 22,224 m, unless otherwise stated in the law.<sup>27</sup>

An agreement concluded between Finland and Estonia on 4.5.1994 to ensure the free passage of shipping in the Gulf of Finland requires that Estonia should restrict the width of its territorial waters so that it does not extend closer than three nautical miles to the central line. Likewise, Estonia is required to inform Finland at least 12 months in advance of any intended expansion of its territorial waters which deviates from the above agreement. The same requirement also applies to Finland.<sup>28</sup>

A comparable agreement concluded between Finland and Sweden on 2.6.1994 concerns the determination of the boundary between the continental shelf and the fishing zone in the Åland Sea and the northern part of the Baltic.<sup>29</sup> The agreement establishes the entire marine boundary between the two countries as far as the southernmost coordinate point indicated in it, a boundary that had previously remained undefined. The broken line laid down under the agreement passes south of Märket to terminate at a point south of Bogskär.

The sea area subject to Finnish law is further defined in the Customs Regulations, which specifies an additional customs zone extending 2 nautical miles outwards from the boundary of Finnish territorial waters.<sup>30</sup> Enforcement of the new law has meant a 1.7-fold increase in the area of Finland's external territorial waters and a 2.5-fold increase in terms of water volume.

Finland's extension of her territorial waters to 12 nautical miles conforms to the general practice followed by neighbouring countries in the northern and north-eastern part of the Baltic, and at the same time makes the territorial waters easier to control and easier for others to observe. Thus it substantially improves the ability of the authorities to monitor the entry and departure of people and vessels, and to prevent smuggling and the spread of other criminal activities across borders. It is also easier to differentiate between illegal immigrants and persons moving about legally in coastal waters if the authorities are able to stop and inspect vessels further out to sea. The extension of the

country's territorial waters also implies an extension of the customs zone.

This extension also yields a number of advantages in terms of defence. It is now more difficult for foreign vessels moving legally in international waters to carry out reconnaissance missions, since they are forced to remain further away from the coast and to use regular commercial shipping lanes. In addition, it will be easier to organize manoeuvres and defence measures without the threat of outside observers in a wider territorial sea area.<sup>31</sup>

A further advantage is that it will be easier to focus defence measures on the deep channels leading from the open sea to the coast, and in the event of a crisis it should be possible to use mines to force hostile surface vessels and submarines to use routes which from the Finnish point of view are of secondary importance. This will mean a significant improvement in Finland's possibilities for actively controlling the use of her territorial waters or for preventing this entirely.

The extension has no direct effect on the status of the Åland Islands as a demilitarized zone. The ability of the Finnish navy to operate in the direction of the Åland Islands will greatly improve, however, as the restrictions apply only to a zone of width 3 nautical miles in the territorial waters. The basic problem nevertheless still remains, that Finland has no sovereignty over the area as far as the establishment of defence arrangements in peace-time is concerned. The demilitarized area of the Åland Islands and its boundaries are depicted in Appendix 2.

As far as the Gulf of Finland is concerned, the extension of the territorial waters has been implemented symmetrically with Estonia, leaving a corridor of 3 nautical miles on either side of the central line (total 6 nautical miles). This will ensure the free passage of international shipping and air traffic to the area of Russia at the head of the Gulf.

#### 4. ROLE OF THE BALTIC SEA IN RUSSIA'S MERCHANT SHIPPING

The disintegration of the Soviet Union substantially reduced Russia's port facilities on the Baltic Sea and the Black Sea. The Baltic Sea has for centuries been the only sea route reaching close to the core areas of Russia, and thus this loss in shipping capacity cannot fail to have military as well as commercial and financial repercussions. Russia can, of course, still make use of the harbours in the Baltic states, but this will mean transit payments and will have to be based on the existence of good political relations. Use of the railways and harbours of these countries for military transportation would be much more problematic, as it would require negotiations and agreements between individual countries.

The most important Baltic ports for the Soviet Union's foreign trade in the 1980's were Leningrad, Tallinn, Riga, Ventspils and Klaipeda. Statistics on shipping in these ports are included in those published by the Baltic Pilotage Authorities Commission, from the figures for the early 1980's presented in Table 1 are derived.<sup>32</sup>

Table 1 Numbers of ships visiting Soviet ports on the Baltic in 1980-1984

Port	1 980	1 981	1 982	1 984
Leningrad	3 338	3 492	3 743	3 743
Tallinn	2 650	1 764	1 739	1 889
Riga	1 695	1 854	2 291	1 749
Ventspils	2 606	2 530	2 821	2 886
Klaipeda	1 688	1 619	1 573	1 605
Total	11 977	11 259	12 167	11 872

As indicated in Table 1, the total number of ships visiting these ports was approx. 12,000 a year, some 31% of which came into the port of Leningrad.

It may be mentioned for the purposes of comparison that a total of some 22,000 vessels per year visited the ports of

Finland in 1983 and 1984, which is almost twice the figure recorded for the Soviet ports on the Baltic.

The disintegration of the Soviet Union and the restoration of the independence of the Baltic states placed Russia in a difficult position, as 56% of its harbour capacity reverted to the possession of these new independent states.<sup>33</sup> The importance of these ports for Russia may be appreciated from Fig. 3.<sup>34</sup>

Russia announced in the early 1990's that it planned to construct new large-scale harbours close to St. Petersburg on the bays of Ust-Luga, Primorsk and Batareinaya<sup>35</sup> Estimates suggesting that these projects should be completed by the year 2000 must be approached with caution, however. If this timetable does hold good, it will substantially increase the volume of Russian merchant shipping on the Gulf of Finland, as it will enable the direct flow of goods to reach closer to the core areas of Russia and lead to savings in the costs of transit traffic. If one of the harbours were also designed for military purposes, this would increase military traffic as well, mainly in the area between the new harbour and that of Baltiski in the Kaliningrad area.

Russia's economic problems were also reflected in the country's foreign trade, in that where a total of some 90 million tonnes of goods passed through its Baltic harbours in 1989, before the economic crisis, the figure declined steadily in the early 1990's, to only 39 million tonnes in 1992, although an improvement took place in 1993, when the total was 46 million tonnes. These fluctuations are indicated in Fig. 4.<sup>36</sup>

It has been estimated that Russian trade through Baltic ports will increase to 55.5 million tonnes by the year 2000 and to as much as 98.0 million tonnes in 2005.<sup>37</sup>

These estimates clearly presuppose an increase in Russia's own harbour capacity, and the aim is evidently that the new port of Ust-Luga would concentrate on coal, chemicals, fertilizers and other dry bulk cargoes and that on the Bay of Batareinaya (see map, App. 3) on exports of liquids such as petroleum and

petroleum products, with an initial capacity of 7.5 million tonnes a year. The harbour to be constructed at Primorsk, which would also concentrate on the handling of liquid cargoes, would be larger, with a planned total handling capacity of 19 million tonnes of crude oil, 6 million tonnes of oil products and another 6 million tons of chemicals for export and import purposes.<sup>38</sup>

Although it is by no means a simple matter to predict the direction that Russia's merchant shipping may take, the routes that could most conveniently be used may be divided into three categories:

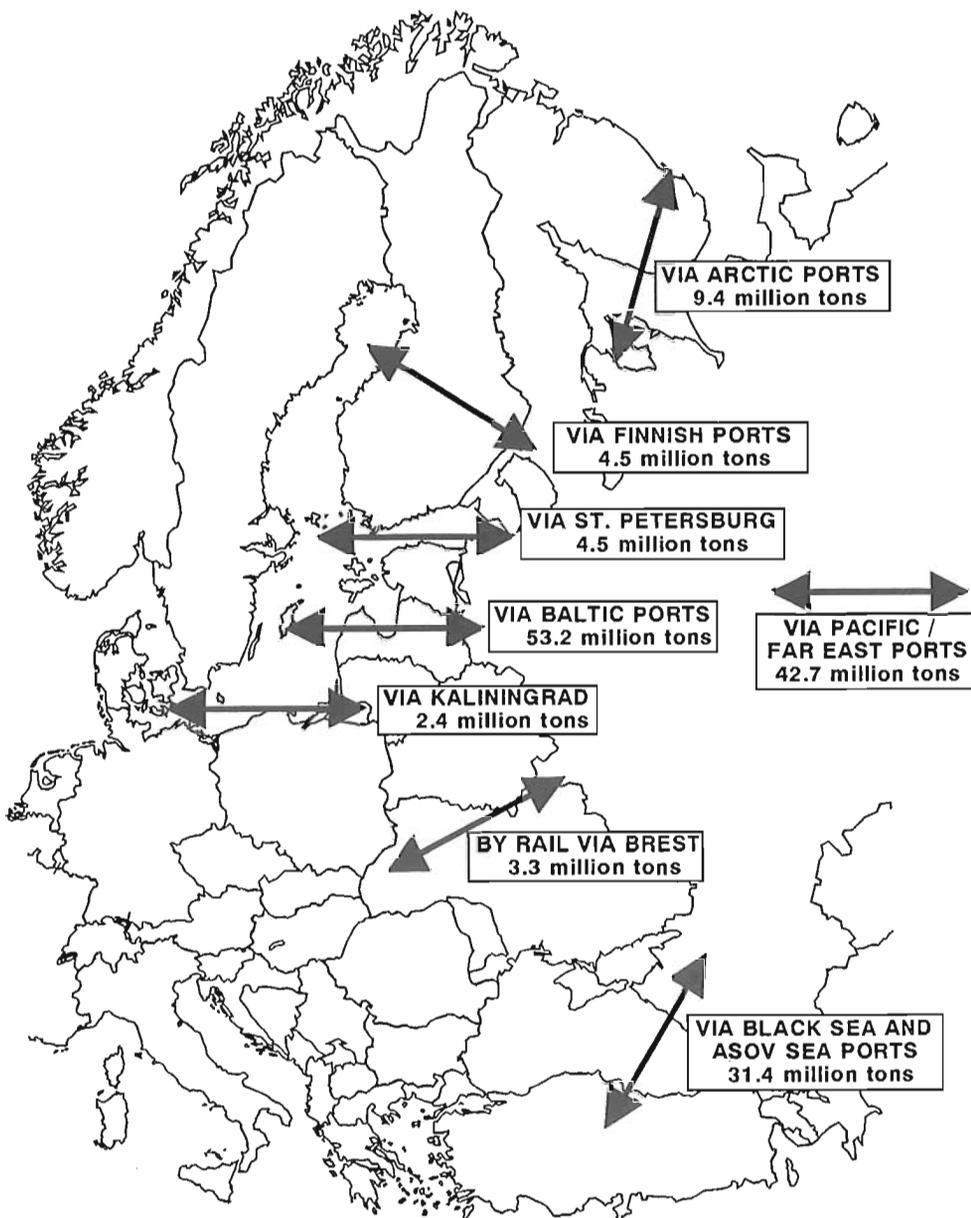
- direct deliveries to Russian harbours, including that of Baltiski in the Kaliningrad area,
- deliveries to harbours in the Baltic states and transport to Russia from there, and
- deliveries via Finnish harbours, primarily Hamina, Kotka and Kokkola.

An investigation has recently been completed by the Finnish Ministry of Transport on changes in the flow of goods to and from Russia on the Baltic Sea, providing an evaluation of these changes from Finland's point of view, and concluding, for example, that as much as 10 million tonnes of Russian exports and imports could be transported via Finland in addition to the current 5 million tonnes.<sup>39</sup> It is also stated in the report that competition between the harbours of Russia, the Baltic states and Finland will become more fierce. Improvements in infrastructure are being designed in the Baltic states, including the harbour of Muuga east of Tallinn in Estonia. All in all, shipments to and from Russia are expected to increase by 40-50 million tonnes a year in next few years.<sup>40</sup>

It is possible that in spite of political disagreements, the focus of Russia's goods traffic will be on via the Baltic states. Signs of this are already detectable, in that the Baltic states are being spoken of as a 'gateway' between Russia and Western Europe.<sup>41</sup> This scenario would mean that Finland was no more than a temporary diversion on the route. If the costs of transporting goods via the Baltic states remain low and deliveries run smoothly, the pressures upon Russia to build new ports at the head of the Gulf of Finland will be alleviated.

The maintaining of connections via the ports of the Baltic states is a justifiable alternative for Russia in both economic and strategic terms, as suggested in an investigation by Christian Willman, who argues the importance of the Kaliningrad area to Russia. He notes that from a military point of view, the Russian navy would be in a ready-made trap if it decided to base itself at the eastern tip of the Gulf of Finland, while it must be accepted that no harbour in the latter area would be free of ice all the year round.<sup>42</sup> It is thinking of this kind that emphasizes the strategic importance of the harbours and transport infrastructure of the Baltic states to Russia. This of course poses a danger to these countries as far as their security position is concerned, particularly in the case of a crisis in eastern Central Europe.

One extreme in statements regarding the importance of the Baltic countries to Russia is represented by Vladimir Zhirinovksi, Chairman of Russian Liberal Democrats, who in a recent interview stated that: "When we take over power in six months' time, the Baltic states will cease to exist." Referring to transit facilities via Finland, Sweden and Germany, he went on: '...and we will be using our own harbours, the new harbour of Tallinn and those of Klaipeda and Riga.'<sup>43</sup>

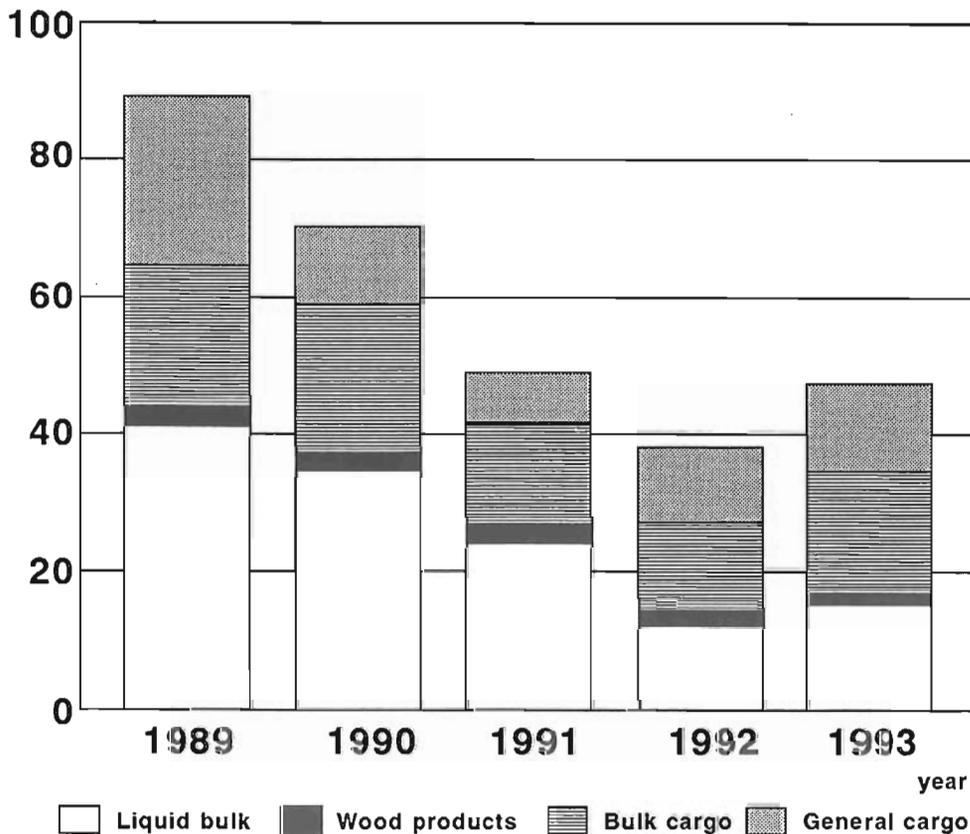


**FIG 3** Volumes of Russian foreign trade in 1991 and main routes.

**SOURCE:** Expert meeting on ports and maritime transport, Publication of the Maritime Research Centre of the University of Turku A 18, Turku 1995

## Trends in Russian foreign trade through Baltic ports

million tons



**FIG 4** Trends in Russian foreign trade through Baltic ports in the early 1990's.

**SOURCE:** Changes in the flow of goods to and from Russia in the Baltic area from the point of view of Finland, Publications of the Ministry of Transport 8/94, Helsinki 1994

## 5. NAVAL DEVELOPMENT IN THE BALTIC

### *5.1 General*

The circumstances which have led to current state of the naval affairs in the Baltic area have perhaps been influenced most distinctly by the deterioration in the Soviet Baltic Fleet, which comprised more than 90,000 men, at least 50 submarines, more than 10 destroyers, 3 cruisers, some 100 frigates and corvettes and 250 smaller combat vessels in 1989 but had declined to around 100 vessels by the beginning of 1995. This marks a substantial retraction of forces. The disengagement of the navies of Estonia, Latvia and Lithuania from that of their former mother country is now nearing completion, and all three countries have founded navies of their own using vessels purchased from other countries of the Baltic, exchanged or received as a form of aid.

The reduction of 9.5% made in the Danish defence programme in recent years will presumably restrict the number of their Stanflex 300 multi-purpose vessels to 14. These vessels are equipped in peacetime for patrol, combat, mine-laying and minesweeping duties, but would not be used for patrolling purposes in times of crisis, when the majority of them would be used as combat vessels.

Participation in the expanding UN naval activities has to a great extent shaped the development of the German navy. Both the country's extensive frigate programme and the new 212-class submarine programme are likely to be affected by financial cutbacks, and the fleet will evidently be reduced by half by the year 2005. Thus only four frigates, one submarine of the new class and two maintenance vessels are due to be completed in 1996-2005.

Sweden, Finland and Poland are all working towards effective, independent naval defence systems. The new Västergötland-class submarine Gotland launched by Sweden at the beginning of 1995 the engines of which operate entirely independently of any external air supply, marks a significant leap forward in the development of underwater weapons

technology for domination of the Baltic.

The outcome is that total number of naval vessels present in the Baltic has decreased by some 8% from the peak figure of approx. 760 in the late 1980's, i.e. to around 710 vessels, and the trend would seem to be continuing.

The number of submarines has declined by as much as 36% over the last four years, that of destroyers has remained unchanged, that of frigates is more or less unchanged, the number of combat vessels has declined by 16% and the number of minelayers and minesweepers has dropped by 27%. The only increase has been in landing craft, mainly attributable to the fact that the Swedish navy equipped six amphibious battalions with some 200 half-platoon landing craft. Trends in combined naval strength in the Baltic area are indicated in Fig. 5.

## *5.2 The Russian navy in the Baltic*

When attempting to predict the trend in Russian naval strength in the post-Cold War era one is apt to recall the words uttered by Sir Winston Churchill in his radio speech to his fellow countrymen in November 1939: "I cannot forecast to you the action of Russia. It is a riddle wrapped in a mystery inside an enigma; but perhaps there is a key. That key is Russian national interest."

The Baltic Fleet, the oldest detachment of the Soviet navy, was at its heyday on the verge of the Second World War, at which point it boasted two battle ships, four cruisers, 21 destroyers, 65 submarines, a number of smaller vessels and a powerful air wing of 656 aircraft.<sup>44</sup>

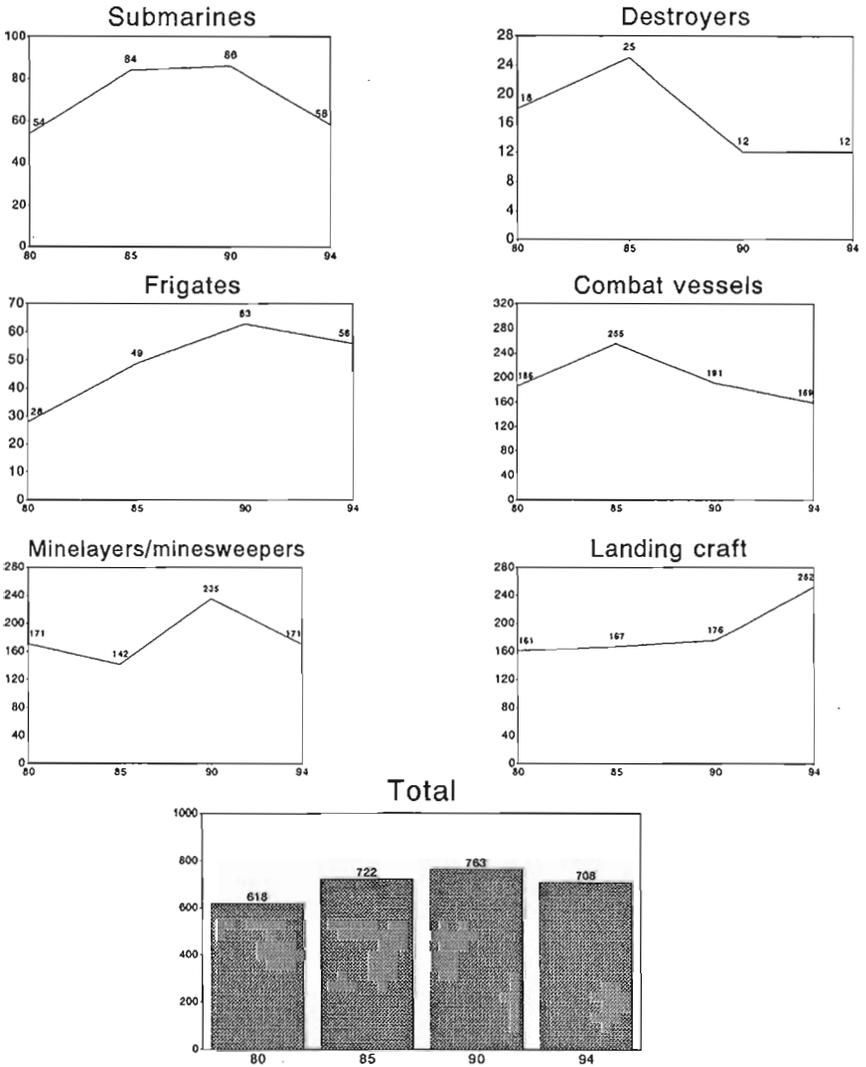


FIG 5 Total naval strength in the Baltic

SOURCE: Weyers Flotten Taschenbuch 1978-90, Jane's Fighting Ships 1993/94

As a result of the post-war reconstruction period, during which new cruisers, destroyers, frigates, submarines and smaller vessels were added to all the Soviet fleets, the Baltic Fleet exceeded its Czarist predecessor in size. It was also at that time that facilities were set up for the building of aircraft carriers. One of the aims was to create an instrument for showing the flag on the oceans of the world.

The year 1990 marked a turning point in the development of the Soviet navy, and the disintegration of the country it represented and the military alliance that had formed around it followed the next year. On the other hand, a total of 10 conventional submarines, one nuclear submarine and nine fairly large surface vessels were built during that year, making it the most productive in military shipbuilding terms since 1982.<sup>45</sup> By the end of the year, however, work had begun on the demolition of older tonnage, mainly from the 1960's, which meant that some 30 submarines, 50 surface vessels and more than 50 maintenance and auxiliary vessels had been taken out of active service within a few years. By the beginning of the 1990's, the first generation of diesel submarines, including the Hotel, Echo and November classes, had reached the age of 30 years which must be regarded as the upper limit for the profitable use of military vessels, and the same threshold was also achieved by the first Papa and Alpha-class nuclear submarines. Thus the situation at that stage was that over 100 surface vessels (some 10% of the total tonnage) and more than 150 submarines (40% of the total tonnage) were awaiting demolition.<sup>46</sup>

Some 20 military vessels were under construction at the time of the disintegration of the Soviet Union, of which the largest ones, still uncompleted, were the aircraft carrier Varyag (formerly Tbilisi) in the Ukraine and the cruiser Peter the Great (formerly Juri Andropov) in St. Petersburg. The shipbuilding budget for 1991 was reduced by as much as 21% relative to the previous year, and by 1992 all the Russian navy's shipbuilding programmes had been suspended, presumably due to a lack of finance and raw materials. In spite of this interruption, however, 6 submarines, 2 destroyers, a number of hovercrafts, 4 missile boats and 1 landing craft were completed during the year, together with 6 patrol vessels and 1 smaller patrol boat for coastguard duties.<sup>47</sup>

In addition to new ships, some 60 vessels were awaiting renovation or modernization in 1992, but as the result of the lack of financial resources, these were eventually moved to the reserves and then demolished. Funding was available during 1992 only for shipyards located in Russia proper, and no new shipbuilding projects were commenced. The last time a similar situation had prevailed was during the Civil War of 1917-1920.<sup>48</sup>

The number of vessels in the Russian Baltic Fleet has been declining throughout the 1990's. At the beginning of the decade it had a total of 6 nuclear-armed submarines (Juliette-class), 41 conventional submarines, 13 destroyers and 31 frigates, 155 patrol vessels, 119 minesweepers and anti-mine vessels and some 120 maintenance and auxiliary vessels. These were based at Tallinn and Paldisk in Estonia, Bolderaja close to Riga and also Ventspils and Liepaja in Latvia, and Klaipeda in Lithuania. The bases of Baltiski and Leningrad were backed up with reinforcement opportunities in Poland and to some extent in East Germany.<sup>49,50</sup>

The calendar data for 1991/1992 indicate that the number of vessels had declined from 350 at the beginning of the decade to 161 vessels, and the latest Norwegian edition of Military Balance, for 1994/1995, puts the figure at 109 vessels. The number of submarines had fallen to 15. There are still reported to be 4 dual-purpose Juliette-class submarines in the area.<sup>51</sup>

Other reasons for this decline in the fleet in addition to decommissioning are transfer to other fleets, especially that operating in the north, since Russia's strategic canal network leading from the Baltic Sea to both Murmansk and the Black Sea enables such transfers to be made discreetly.<sup>52</sup> The diminished possibilities for basing ships in the Baltic Sea area have thus led to a reduction in the numbers maintained there and altered both the composition and the duties of the fleet.

Given the new situation and the reorganized infrastructure, the Baltic Fleet has the following duties:

- to maintain a military deterrent together with the other arms of the defence forces, with the aim of persuading any putative aggressor to abandon all hostile intentions towards Russia or its allies,
- to defend Russia's independence, autonomy, territorial inviolability and national interests against any threats proceeding from the direction of the sea,

- to take action together with the other arms of the defence forces to intercept any attack on Russian or its allies by inflicting damage on the aggressor's military potential and to destroy his forces by means of a naval attack,

- to place naval forces at the disposal of the international community for the preservation of peace and security.<sup>53 54</sup>

Fulfillment of the above duties requires that the country's strategic nuclear forces should be kept in a high state alert. The destruction of enemy forces in the sea areas bordering on Russia necessitates the gaining of control over the narrow passages in the Baltic, and the Straits of Denmark and the Bornholm Basin are still decisive in this respect. The task of supporting the front on land has dropped down in the hierarchy since the Baltic states gained their independence, but more emphasis has inevitably come to be placed on support for operations in the St. Petersburg and Kaliningrad areas. Kaliningrad in particular, since it lacks any reliable land connection under its own control, places particularly high demands on sea connections and their protection along the whole length of its Baltic coast.

One consequence of this reduction in the number of surface vessels has been an increase in pressure for a high-performance air strike force in the area,<sup>55</sup> and it is now the case that the Russian SU-24 Fencer aircraft carrying a full weapon load are able to operate throughout the Baltic area. Thus the task of acquiring mastery of the sea, or seizing this from a potential enemy, will partly devolve upon the naval air detachment.<sup>56</sup>

Thus the future of the Russian Baltic Fleet will depend on the opportunities for establishing supportive bases in the area on the one hand and on the new shipbuilding programmes and the way in which these affect the development of naval vessels on the other.

The gaining of independence by the Baltic states reduced the length of the Baltic coast controlled by Russia, to the extent that the total length of the outer boundary of the country's territorial waters is now only just over 200 km. The role of the Baltiski base, which was estimated in 1993 to be used by 75% of the surface interception vessels, 60% of the anti-submarine vessels, 20% of the minesweepers and all the landing craft, seems likely to increase still further.<sup>57</sup> The area also has a vital shipbuilding and repairs industry, and the Jantar shipyard in Kaliningrad,

which builds the Udaloj and Neustrashimiy-class vessels, is of vital importance to the Baltic Fleet and to the Russian navy in general. Part of the significance of Kaliningrad to the Baltic Fleet lies in the fact that the harbours of that area lie on a stretch of coast where the sea very seldom freezes, so that the fleet cannot be prevented from setting sail by natural conditions. By contrast, the situation in the St. Petersburg area, which can be surrounded by ice for as long as 6 months in the year, can very rapidly come to resemble that during the Second World War, when the Baltic Fleet was caged in at the head of the Gulf of Finland for very long periods. Protection of the route from St. Petersburg to the Kaliningrad area, a distance of about 1000 km, may well become the primary task of the Baltic Fleet, at least at the initial stages of a possible crisis.

Russia's planning of its naval forces is largely governed by the decline in financial resources and the increasing age of its vessels. The previous shipbuilding programme terminated in 1990, and this has now been followed by a new one which will cover the 10-year period 1993-2003.<sup>58</sup>

One corollary of the ageing of the vessels is that the number of types of vessel in use is declining. Current shipbuilding programmes concentrate on one type of nuclear submarine and one type of conventional submarine, and it is likely that the main type of diesel-operated submarine, known so far as the Amur project, will be the successor of the Kilo class. This latter, of which as many as 24 individuals have been built to date, seemed to be establishing itself as the main type in the Baltic Sea in the 1980's, replacing the Foxtrot and Whiskey classes, but with a draught of 2500 tons, it probably proved too large. Naval calendars now indicate that there is still one of these left in the Polish navy and one in the Russian Baltic Fleet. Submarines of this type has been exported to China, for example, since 1995.<sup>59</sup> There is also a new nuclear submarine type which represents a more advanced version of the Akula class. The keel was laid for the first vessel of this class, the Severodvinsk, in 1993.<sup>60</sup>

The 67,000 ton flagship of the Russian navy, the Admiral Kuznetsov, which is continuing test cruises at the head of the Northern Fleet, may be the only one of the large surface vessels to remain in active service, as its sister ship the Varjag may well be destined for demolition in the Ukraine. The Peter the Great

which is still under construction in St. Petersburg, may in the end prove to be the only battle cruiser.<sup>61</sup>

The number of 8100-ton anti-submarine destroyers of the Udaloi class (Baltic Combatant, BAL-COM-3) may remain at 12, the last six of which were constructed at the Jantar shipyard in Kaliningrad. There is at least one Udaloi-class destroyer in service with the Baltic Fleet, while the fleet in its present form will probably not increase on its present complement of 17 missile destroyers of the 7800-ton Sovremennyi class (BAL-COM-2I). The last destroyer in this series was the Besstrashnyi, completed on 17th April, 1994. All the vessels of the class were built at the Zdanov yard in St. Petersburg, and there are at least two of them in the Baltic Fleet. It is likely that future shipbuilding programmes will include a modified missile destroyer.<sup>62</sup>

The Neustrashimyi (BAL-COM-8) antisubmarine frigate is another new class of vessel, the first of example of which entered active service in 1991. According to the commander of the Russian navy, this will become the main type of surface vessel in the future.<sup>63</sup> It has a draught of some 4000 tons and carries anti-aircraft missiles, anti-submarine missiles and mine-laying rails in addition to an anti-submarine helicopter. The use of stealth technology is clearly reflected in the form of superstructure used in these vessels. The first vessel is now in operation in the Baltic Fleet,<sup>64</sup> and a total series of 7 vessels is planned initially.

The decision to scrap most of the largest vessels may also be attributable to crew recruitment difficulties. Most of the vessels are 75% manned by conscripts.<sup>65</sup> It should be noted, however, that 84% of the 1993 intake of conscripts were not called up at all, so that those entering national service cannot even satisfy the navy's minimum needs. At the same time the crew of some 900 needed to man one cruiser of the Admiral Ushakov class would be sufficient enough to run three Udaloi-class vessels. One solution to the crew problems is of course to enlist sailors under paid contracts.

The new shipbuilding programme will also be accompanied by the assigning of resources to modernization, or at least plans exist to this effect. This modernization will mainly concern developments in missile technology. The intention is to equip frigates of the Krivak class with SS-N-25 missiles.

According to Admiral Vladimir Yegorov, commander of the Russian Baltic Fleet, existing development plans will provide the Baltic Fleet with two destroyers, two patrol vessels and one minesweeper in 1995. Admittedly it should already have received one destroyer in 1994, but there has not yet been any evidence of it.<sup>66</sup>

Reinforcement of the Baltic Fleet with the above vessels will not be sufficient to maintain its current strength, however, in view of the fact that 70% of the vessels have reached an age of 10-15 years. This means that their replacement will be essential at the latest when the current shipbuilding programme terminates, at the end of the millennium.

The main emphasis in the development of the naval air capacity force will be on anti-submarine helicopters, multipurpose helicopters and fighters. Given the probability that their number will be cut by half, this development will evidently be angled more towards qualitative aspects.<sup>67</sup>

In seeking to predict the future of the Baltic Fleet, it may be noted on the basis of existing plans that Kaliningrad will evidently retain its position as a major naval base, and that the Baltic Sea will continue to be used for the testing of new vessels for as long as military shipbuilding goes on in the area, either for Russia's own use or for export. It is quite natural in view of the reduction in the number of vessels and of bases in the Baltic that development measures will be focused on qualitative improvements as the expense of quantity, so that the size of the Baltic Fleet seems likely to remain at some 100 vessels.

A map of Russia's naval bases in the Baltic is provided in Appendix 3 and a summary of the vessel making up the Baltic Fleet in 1990-1995 in Appendix 4.

### *5.3 Navies of the Baltic states*

The disengagement of the states of Estonia, Latvia and Lithuania from the former Soviet Union has now almost been brought to completion, and all Russian troops have left those countries. It is true that the Skrunda space observation station and its staff will remain in Latvia until 1998 under an agreement concluded between the two countries, but the blowing up of the

radar installation on 3.5.1995 may in practice speed up the departure of the staff from the country. There are still Russian personnel at the older radar stations, however.

The navies of the Baltic states have taken over the bases left behind by the Russians, the most significant ones having been inherited by Latvia, those of Liepaja and Bolderaja outside Riga. The Russian troops took all the usable material with them, of course, leaving behind only debris and scrap that could best be classed as hazardous waste.

The development of a national navy has advanced furthest in Lithuania. The country purchased two Grisha-class antisubmarine frigates from the Russians, and these now form the backbone of their fleet. The vessels have been involved from 1992 onwards in the Baltops and Partnership for Peace (PfP) manoeuvres held in the Baltic. The country also has two Turja-class torpedo boats, a Storm-class torpedo boat from Norway and several smaller patrol boats.

The Latvian navy has also inherited vessels from the Russians, and addition to which it has been given two formerly East German Kondor-class patrol boats and some Osa-class missile boats by Germany, patrol vessels by Sweden and Denmark and a Storm-class torpedo boat by Norway. Operational problems have arisen particularly in the case of the former East German vessels.

Estonian naval operations have primarily been of a coastguard nature, employing vessels mainly obtained from Finland, Sweden and Norway. These old, but still usable vessels have enabled the country to create its own mobile surface control capability. The development of a navy is still in its early stages and, as in the case of the other Baltic states, is dependent largely on donations at the present time. Estonia was given unarmed patrol and missile boats that had previously belonged to the East German Volksmarine, and it also has some Kondor-class patrol boats, which will be used as minesweepers in order to ensure the safety of navigation in its coastal waters.

Like the other Baltic states, Estonia, will need support from neighbouring countries in order to develop its navy. This concerns all aspect of naval activity, including training, which Finland is best placed to provide for its neighbour on the southern shore of the Gulf.

Data on the naval strength of the Baltic states are compiled in Fig. 6.



### **ESTONIA**

NAVY  
 Minesweepers  
 2 x Kondor  
 Patrol vessels  
 AHTI (ex Mallempukken)  
**COASTGUARD SERVICE**  
 Patrol vessels  
 Koskelo class  
 KBV 236 class  
 Silmä class (Kõuts)  
 Viima class (Maru)  
 Storm class (Torm)  
 Smaller vessels  
 (RV, PV, trawler)

### **LATVIA**

NAVY  
 Minesweepers  
 2 x Kondor  
 Patrol vessels  
 KBV 236 class  
 OSA I class  
 Storm class  
 Trawler

### **LITHUANIA**

NAVY  
 Frigates F-11  
 (ex Grisha class)  
 F-12  
 (ex Grisha class)  
 Patrol vessels  
 KBV 236 class  
 Storm class  
 Trawlers

## 5.4 *The Polish navy*

The outstanding feature of the Polish navy up to the mid-1980's was its extensive fleet of landing craft, evidently part of the plans of the Warsaw Pact for the eventuality of having to mount an invasion in the Baltic area. Poland thus had the following landing craft in 1984: Polnocny-class 23, Marabat-class 4 and Eichstaden-class 15, i.e. a total of 42 ships.<sup>68</sup> Of these, the Polnocny-class landing craft were the most significant in many respects, being classified as capable of carrying a number of tanks and having its maximum tare of as much as 1200 tons.<sup>69</sup>

A number of naval development projects were going on in the late 1980's. Their missile destroyer (Kotlin class) had already become obsolete, as had the three W-class submarines. Meanwhile, more landing craft capacity was needed. The Kotlin-class destroyer disappeared from the lists in the handbooks in 1986<sup>70</sup> and the W-class submarines did so gradually, the final one being last mentioned in the statistics in 1989.<sup>71</sup>

The following general trends can be seen in development of the Polish navy as it approached the 1990's and the major change in military policy that took place at the beginning of the decade.

The submarine fleet was renewed, so that by 1990 the country had one Kilo-class submarine and two Foxtrot-class submarines of Soviet origin armed principally with 533 mm torpedoes.<sup>72</sup> The larger surface vessels were also being renewed at the same time.

The Kotlin-class destroyer was taken out of service in 1988 and the modified Kashin-class destroyer *Warszawa* was commissioned in that year. A Kaszub-class frigate is mentioned in the handbooks for the first time in 1987, but without any detailed information given on it.<sup>73</sup> The order for a second Kaszub-class frigate had to be cancelled, but the aim is evidently to supplement the series with four additional vessels, chiefly for antisubmarine use.<sup>74</sup>

It seems likely that missile cruiser *Warszawa* will be decommissioned in the near future due to its high maintenance costs and limited operative value, but the question of building the four new Kaszub-class frigates may well be revived, provided that they can be equipped with new western fighting command systems. Germany is said to be reluctant to sell the most recent types of equipment to Poland, however.<sup>75</sup>

The political and doctrinal changes were most clearly reflected in the fate of Poland's landing craft. The country had more than 40 of these by 1990, comprising 23 of the Polnocny class, two of the new Lublin class and 16 lighter craft. Construction of the Lublin class had commenced in the late 1980's and marine tests were performed in 1989. They have a tare of approximately 1700 tons when fully loaded.<sup>76</sup>

The shedding of landing craft began in 1991, and by the end of 1994 the country had only 8 left, of which 5 were of the Lublin class and 3 of the light Deba class. None of these was actually in service as a landing craft. Those of the Lublin class, for instance, can be used for minelaying purposes. The Polnocny-class vessels have been sold for commercial use or scrapped, except for two which are still in use, one having been converted to a command vessel.<sup>77</sup>

The number of corvettes and missile boats would seem to have remained more or less stable, the old Osa I missile boats having been replaced by Gornic-class (former Tarantul I) corvettes carrying longer-range SS-N-2C Styx marine target missiles. The Poles had 7 Osa I-class missile boats and four Gornic-class corvettes in 1994, although it may be that the number of vessels of the latter type will not increase any further in spite of certain plans to that effect.<sup>78</sup> Speculations have also been voiced regarding possible modernization of the Gornic-class missile corvettes and the Orkan-class (former Sassnitz-class) vessels currently being used for patrol purposes.<sup>79</sup>

A summary of trends in the complement of the Polish navy is provided in Table 2.

Table 2 Trends in the complement of the Polish Navy in 1986–1995

Class	1985 <sup>a)</sup>	1990 <sup>b)</sup>	1994 <sup>c)</sup>	Notes
Submarines	3	3	3	W class 3 (85), Kilo 1, Foxtrot 2 (90, 94)
Destroyers	1	1	1	Kotlin class (85) Mod-Kashin class (90, 94)
Frigates	0	1	1	
Corvettes	3	4	4	
Combat vessels <sup>d)</sup>	57	19 <sup>e)</sup>	28 <sup>e)</sup>	Missile boats 13 (85), 11 (90), 7 (94)
Minelayers/minesweepers	51	32	24	
Landing craft	41	41	8 <sup>f)</sup>	Polnochny 23 (85), 23 (90), Lublin 2 (90), 5 (94)

- <sup>a)</sup> The Military Balance 1985–1986, printed October 1985  
<sup>b)</sup> The Military Balance 1990–1991, printed August 1990  
<sup>c)</sup> The Military Balance 1994–1995, printed October 1994  
<sup>d)</sup> Classification used in the Military Balance and Jane's.  
This class also includes vessels carrying missiles, torpedoes or other weapons, e.g. such as patrol boats with artillery  
<sup>e)</sup> The figure for 1990 does not include Pilica patrol boats, whereas 11 are included in the figure for 1994  
<sup>f)</sup> No longer used for landing missions

## 5.5 The German navy

The development of the German navy has been governed by financial considerations and trends in military policy. The participation of the German navy in international operations, beginning with the sending of a German minesweeper division to the Persian Gulf in spring 1991, has introduced new features into this development and also set new requirements for the choice and use of vessels.<sup>80</sup>

The German navy reacted to the altered military situation as early as the end of 1991. As laid down in the defence resolution of 26.11.1992, the tasks of the German navy were revised and measures undertaken to reduce the number of vessels in the German navy as part of a programme known as MARINE 2005. Financial resources in any case no longer permitted the replacement of decommissioned vessels on a 1:1 basis.

In addition to fulfilling national needs, the German navy is required to contribute to the placement of multinational NATO naval units in various scenes of action.

The duties that may be involved in this are:

- maintenance of naval control in an area, with temporal and/or geographical restrictions where necessary,
- maintenance and protection of the Sea Lines of Communication (SLOC) between the United States and the continent of Europe
- backup for a land front or landing,
- protection of allied nuclear forces at sea.

These duties require the navy to be able to operate efficiently on the North Sea, the Atlantic and the Baltic, to be able to guarantee territorial inviolability and to protect sea connections and activities on and close to the coast. It should also be capable of intercepting any attack from the sea areas off Germany. One object of emphasis in the duties assigned to the German navy is the protection of sea connections on NATO's northern flank, i.e. close to the Norwegian coast.<sup>81</sup>

Other trends governing the development of the German navy in addition to the above are:

- The annual finances available during the planning period up to the year 2005 will be some 4200 million FIM, which will mean a reduction of some 20% relative to the 1990 level.
- The navy will decrease in size to 24,000 men, on account of a drop in the size of the conscript age class, an increase in the number of persons opting out of military service and a change in the population base.
- Replacement of the combat vessels acquired in the 1960's will have to be commenced during the next planning period at the latest.
- The availability of material to be placed at the disposal of a NATO multinational fleet must be guaranteed.
- Account must be taken of the vessels and aircraft in service, entering service or under design at the beginning of the planning period.<sup>82</sup>

In the light of the MARINE 2005 programme and the above

contributory factors, the German navy will be composed of the following vessels at the termination of the planning period 1990-2005:

#### *16-20 frigates*

The plans for building a minimum of 15 frigates constitute a precondition for maintaining 12 vessels on continuous alert. Weapon and command systems for three 124-class frigates to replace the Lütjens class, will be designed by the year 2002, and construction of the vessels themselves will commence by the end of the present millennium, so that they should enter service in 2004-2006.

The frigate fleet will thus consist of eight 122-class (Bremen class), four 123-class (Brandenburg class) and three 124 class frigates. The Lütjens-class destroyers will be based at Kiel for the rest of their service life, and the new 124-class frigates, in accordance with their sphere of operation, at Wilhelmshaven on the North Sea, the port which will thus become the main base for this class.<sup>83</sup>

#### *20-30 patrol boats/corvettes*

The existing 143 Albatross, 143 A Gepard and 148 Tiger missile boat classes will reach the age of 30 years by the end of the millennium, and work on replacement plans should commence during the period leading up to 2005. The dependence of missile boats on frequent visits to their bases means that the support system should be developed alongside the construction of the new class of vessels. The first eight of the new class of corvettes which can be regarded as one alternative replacement should be operative by 2005-2008 and the next seven from 2008 onwards. The corvettes will be stationed at the new base of Hohe Düne in Warnemünde, which will be fitted out specifically for vessels of this type.

Designed for use in second-order crises, the corvettes will be equipped with multisensors and integrated remote-control supervision and reconnaissance systems in order to create the overall picture of the military situation necessary to their task.

### *10-14 submarines*

The German submarine fleet is composed of six 205-class and 18 206-class vessels, 12 of the latter type, designated 206-A, having been modernized in the late 1980's. The existing submarines will reach the end of their service life during the next planning period at the latest.

By the end of the millennium the fleet will be composed of ten 206-A submarines and according to current plans at least four new ones of the 212 class. These will be equipped with air-independent fuel cell motors in addition to conventional diesel-electric motors. The total complement of 10-14 submarines indicated as corresponding to the needs of the German navy cannot be attained in the context of the current financial framework.

The submarines will be based at Eckernförde on the Baltic coast.

### *20-30 minesweepers*

The key element in the future of Germany navy's minesweeping capacity is the construction of 10 Frankenthal-class vessels, one of the most extensive projects it has undertaken. In addition, the Hameln-class minesweepers will be equipped for search duties and the integration of the Lindau-class minesweepers into the Troika remote-control system will also be completed during the current planning period.

The minesweeper fleet was reorganized in 1994, and most of the vessels were moved to a single base at Olpenitz.

Alongside with development of minesweeping facilities, the Troika system and five Frankenthal-class vessels will be modernized and refitted by the year 2000. Both the diver company attached to the minesweeper division and the combat diver company have also been developed further.

All minesweeping functions will be transferred to the base at Olpenitz close to the Straits of Denmark in the course of the present decade.<sup>84</sup>

### *38-42 naval helicopters*

### *60-65 naval fighter-bombers*

### *12-14 naval patrol aircraft*

The powerful air component of the German navy, which will supplement and guarantee navigation by naval vessels throughout the area of operations, will continue to comprise both conventional aircraft and helicopters. The naval assault planes will carry Kormoran sea target missiles.

The naval air component has undergone a profound organizational changes in the last few years, and is expected to have the following complement by the end of the planning period in 2005:

Number	Type	Remarks
54	Naval combat aircraft MRCA Tornado	
12	Antisubmarine and naval reconnaissance aircraft BR 1150 Atlantic	To be replaced by MPA 2000 at the end of the planning period
4	Naval reconnaissance aircraft EW BR 1150 Atlantic	
38	Helicopter Sea Lynx Sea King	To be replaced by the NATO helicopter NH 90
2	Oil pollution surveillance aircraft, Dornier 228	

The bases for these types of aircraft will be distributed evenly amongst the three support areas.

The MARINE 2005 programme will reduce the number of vessels from 189 in 1990 to 135 in 1995 and to just over 80 vessels upon its completion in 2005. The fleet of 62 combat vessels allowed for under the MARINE 2005 programme is approximately a half of the number that existed at the beginning of the present decade.<sup>85</sup> One feature of this development plan for the German navy is an orientation towards vessels of the size which would enable operation on the open sea, a trend governed both by the MARINE 2005 programme and by NATO requirements regarding the use of such vessels and the maintenance of a continuous state of alert, since the contribution of the German navy to the discharge of the alliance's responsibilities is constantly increasing. The maintenance of a crisis management capability covering the whole

of Europe will also require the development of a system for servicing at sea alongside that of the fleet itself.

According to current plans, the German navy is required to place the following equipment at NATO's disposal:

- 50% of its frigates;

12 of the existing vessels have been estimated to be in continuous operation with NATO, leaving six to perform national duties.

- 65% of its missile boats;

Evaluation of the existing complement sets out from the assumption that 16 boats can be placed in continuous operation with NATO, which leaves 4-5 boats to safeguard national interests.

- 50% of its submarines;

Since the continuous availability of one submarine requires the existence of 2.5 of them, it can be estimated that the entire submarine fleet will be assigned to NATO.

The operations of the German navy seems to be centred on three strategic areas, each with an operative command of its own, one or more military academies and a principal base with a full range of services.

With the emphasis in the network of bases and the location of vessels on the Baltic coast, there is no evidence until now to suggest any shift in emphasis towards open sea or ocean areas.

Information on development of the German navy is provided in Appendix 5 and a description of the bases and their infrastructure in Appendix 6.

## *5.6 The Danish navy*

The tasks of the Danish defence forces, as defined in a law passed on 1.1.1994, take account of change in the strategic situation and emphasize international operations and humanitarian interventions. They are further governed by their country's obligations to the NATO alliance with respect to the defence of the Straits of Denmark, i.e. the Danish navy must be capable of participating in NATO's multinational fleets in the various areas and activities under the organization's jurisdiction.

In this capacity, the Danish navy must contribute to:

- protecting NATO's north-western seaboard,

- ensuring connections via Danish territorial waters between NATO's North-Western and Central Forces
- closing of the Straits of Denmark to traffic or protecting navigation them.

As laid down in Denmark's national objectives, the main task of the navy during peacetime is to supervise sea traffic through the Straits of Denmark and to control the country's sea and fishing areas around the Faeroes and Greenland. It also has the following support duties:

- supervision of fisheries,
- prevention of environmental damage and supervision of territorial waters,
- icebreaker services,
- safeguarding of Denmark's national interests in the surrounding sea areas, and
- providing support for actions by the authorities<sup>86</sup>

The fleet developed for execution of the above tasks has declined in strength from some 60 vessels in 1990 to slightly over 40 vessels in 1994.

The network of Danish bases was reduced at the beginning of the 1990's to two main bases, of which Frederikshavn in Northern Denmark is responsible for vessels operating in the surrounding sea areas and on the North Sea and Korsör for those operating in the Straits of Denmark.<sup>87</sup> The navy's total complement comprises the control vessel fleet, minesweeper fleet and submarines based at Frederikshavn and an escort vessel detachment and combat fleet operating from Korsör.

The present attempts to develop the Danish navy commenced in the latter half of the 1980's, when practically all its extensive fleet of surface vessels reached the end of their service lives at more or less the same time.<sup>88</sup> Altogether it had become reasonable or essential to replace a total of 22 vessels around the mid 1980's. In spite of the state of confrontation that prevailed during the Cold War era and the major importance of the Straits of Denmark to the western allies, neither national nor allied resources were adequate for a one-to-one replacement of the vessels.<sup>89</sup> The development plans therefore led to a programme of building a type of multipurpose vessels which would involve attaching specialised combat equipment and armaments to one and the same design of hull as required. The vessels, known as STANFLEX

300 on account their design and draught, can be used for anti-submarine purposes, minelaying, surface combat exercises and anti-aircraft operations. The first vessel in a series of 16 was completed in 1989 and the eleventh at the end of 1994. The programme is still going on and the last vessel is estimated to be launched in 1997. Six of the vessels will be used for patrol duties, five for surface interception, four as minesweepers and one for minelaying.<sup>90</sup>

As the series advances the vessels can be fitted out differently, the basic scheme being five vessels armed for surface combat duties, four for minesweeping and seven for minelaying, while a total of 12 vessels will be convertible to surface combat use, three for minesweeping and one for minelaying in the event of war.<sup>91</sup>

It is possible that the rapid modular interchanging of functions that originally inspired the Stanflex scheme will never fully be achieved, and that such changes can only be made in connection with major refits, annual servicing or the like. The Stanflex scheme is indicated in diagrammatic form in Appendix 7.

The four Falster-class minelayers, which are already over 30 years old, may be replaced with a Stanflex-class version once they have been taken out of service. So far, at least, the current naval programmes are not known to include any large minesweepers.

Modernization of the five submarines which constitute the underwater capability of the Danish navy commenced in the 1980's and will be completed by the end of the millennium. They will then be equipped with new communications, command and combat control systems.<sup>92</sup> Denmark is following with interest the Submarine 2000 project taking place in Sweden, as this could offer an alternative to the modernization of the Nahrvalen class, at least. The main component in the protection to be provided for minelaying operations and any subsequent interception of landing attempts consists of three Niels Juel-class corvettes, which it is intended to modernize from the middle beginning of the current decade onwards, principally with respect to their anti-aircraft missile system.

Denmark's coastal defence system comprises a few positions intended to protect the approaches from the Baltic to the Straits of Denmark. Two mobile four-missile naval interception batteries

have been formed using Harpoon missiles obtained as a result of the scrapping of the Peder Skramm-class frigates. Since the missiles have a range of 100 km, each battery can cover an area of some 30,000 km<sup>2</sup> and the two combined enable all the passages from the Baltic to the North Sea to be protected.<sup>93</sup>

It seems that the role of the Danish navy in the new division of responsibilities - and command structure - of NATO is increasingly becoming concentrated in the Straits of Denmark area. In addition to the planned Stanflex vessels, modernization of the navy's remaining vessels will ensure that it can respond appropriately to any threat proceeding from the sea. A second field of emphasis is the development of vessels for use in the waters around Greenland and the Faeroes.

The command structure of the Danish navy will gain in importance in the new NATO organization, in which all naval functions in the Baltic will be subordinated to the commander of the German navy or commander of the Danish navy based at Aarhus.

The Danish navy will have a more prominent role in both BALTOPS and Pfp manoeuvres, but it remains to be seen whether this will increase the number of Danish vessels in the northern Baltic.

Trends in the complement of the Danish navy are detailed in Appendix 8 and its bases in Appendix 9.

### *5.7 The Swedish navy*

The guidelines governing the development of the Swedish navy are based on government defence decisions. The current development plan extends to the year 1997, at which stage the next defence decisions will be made. The rationale behind the guidelines may be summed up in six performance levels based on potential threats to the country's security.

The first of these is peace-keeping, which requires that the armed forces should be available for use as an instrument of crisis management. The second is the prevention of the outbreak of war, which requires an ability to set the threshold for an offensive in any given situation sufficiently high that the planned offensive would not be profitable relative to the resources

available. These two performance levels involve air defence and anti-aircraft functions before the commencement of actual hostilities, the maintenance of the inviolability of the country's sea area and the protection of shipping.

The task of repelling a surprise attack also extends to the third performance level, at which the interception of an attack by specialized troops may increase the demands made on the defence forces. In this case the deployment of troops involves the filled out of the peace time operations developed to ensure territorial inviolability and the threat of a submarine attack to cover the entire length of the coast. The duties specified at this level also include the repelling of a surprise attack or attempted invasion and the defence of Northern Sweden.

The aim at the fourth level is to prevent the enemy from gaining a foothold on the Swedish mainland, and those of the fifth and sixth levels to maintain the capacity to continue military operations in order to defeat the invader on one or two fronts.<sup>94</sup>

The following naval tasks can be derived from the above scheme of performance levels:

- reconnaissance and control of the sea area by means of penetrative air and submarine operations and other reconnaissance units to explore deep into the target area -
- ensuring of territorial inviolability at sea and on the coast
- repelling of attacks from the sea and
- protection of shipping.<sup>95</sup>

The repelling of attacks involves extending operations to international waters and commencing action before the potential invader enters Swedish territorial waters. Any prevention of or interference with the invader's forward or supplementary supply lines will have the effect of interrupting or slowing down any attempt to capitalize on a bridgehead position.

The aim is as far as possible to restrict the invader's freedom of action at sea temporally or spatially with respect to certain focal points and to secure that of the country's own troops as far forward and as early as possible. An engagement at sea is looked on as a means of gaining time for the mobilization of the national defence system.

In terms of the scope of the defence system, it has been necessary on account of developments in naval warfare, the nature of potential threats and the equipment and technology

available, and also on account of declining resources, to compromise continuously on the declared aims of the 1950's and 1960's of extending preliminary warning reconnaissance up to the shore from which the attack commences. The trend towards moving the scene of action closer to the Swedish coast is well reflected in make-up of the navy, with the accent shifting from cruisers to destroyers and frigates and eventually to coastal corvettes.

This has meant a change in the basic organization of the navy, from a purely peace-time training system to a system which is constantly on the alert and operates even in peace-time in terms of units that corresponding to a war-time organizational model. The vessels of the coastal fleet in the peace-time organization of the Swedish navy are divided between an anti-submarine unit and a surface interception unit, while the aim of the long-term planning of the navy's war-time organization, which already extends to the year 2011, is to establish three helicopter detachments, three surface interception detachments, a submarine detachment, three minesweeper detachments and six coastal brigades with both fixed and mobile weapon systems.<sup>96</sup>

The main naval development projects in the ongoing five-year period, up to 1997, are:

#### *Command structure*

The fixed regional command system of the Swedish navy is composed of four command sections, located at Härnösand, Muskö, Karlskrona and Göteborg, and a separate naval district centred on Malmö. The navy's "mobile leadership resources" are being used to create points of emphasis in command, while concentration of the command sections of the navy and coastguard service is being continued at the regional level. The reconnaissance and command systems will be developed to meet modern requirements.

#### *Helicopter organization*

The maritime surveillance aircraft, one from the navy and one from the coastguard service, will be maintained on the alert for anti-submarine missions. The number of helicopters will probably remain at the present level of 14 until the end of the millennium, at which point the process of replacing them will

commence. They will be equipped with a new anti-submarine torpedo and new detector systems.

### *Surface defence units*

Surface defence will be organized in the form of three detachments. Four Göteborg-class coastal corvettes will be assigned to the "wartime" organization by 1.7.1997, and both of the Stockholm-class coastal corvettes will be retained and their lifespan increased by modernization before the end of the millennium. Two four-vessel detachments equipped with Norrköping-class missile boats will be maintained up to end of the millennium and one until 2010. Eight Hugin-class patrol boats have been modernized and their service life extended, four will be maintained at their current standard and used for their existing tasks, and four were decommissioned in 1994. Work will continue on the development of a new surface vessel class, and steps have also been taken towards acquiring a new type of vessel with a glass-fibre hull (surface combat vessel YS 2000) on the basis of the experiences with the experimental ship Smyge constructed by the camouflage technique, although differing from the latter in that it will be constructed on the single hull principle.

### *Submarines*

12 submarines will be maintained throughout the planning period. Three Gotland-class vessels with air-independent Stirling engines based on the closed circulation of liquid oxygen and "city" diesel fuel, enabling submersion for as long as a week at a time, will be acquired and taken into operation by 1997. These will replace three Sjöormen-class boats by the end of the millennium, the first one having been launched in 1994/1995. The Näcken class will be modernized as far as its weapons system and technology are concerned, and the Västergötland class will similarly be modernized and its lifespan increased to cover the period 1997-2002. In addition, both heavy and light torpedoes will be introduced in 1997-2002 and work on the Submarine 2000 development project will continue.

### *Minelaying and minesweeping*

The minesweeping function will be organized into three regional units, one unit for each fleet, i.e. for those operating off

the western, southern and eastern coast of Sweden. In addition, a separate minesweeper unit will be established in the Gulf of Bothnia. Steps have already been taken to acquire the first four-vessel series of YSB-class minesweepers, single-hull glass-fibre vessels with a conventional propulsion system, automatic machine-gun weaponry for self-defence and highly advanced mine searching equipment.

The minesweeper *Älvsborg*, so familiar to the Finns in its role as a training ship, has been decommissioned, and the war-time coastguard organization will be integrated into the minelaying and minesweeping units.

#### *Fixed coastal defence units*

The emphasis in the developing of coastal defences is on the creation of six coastal brigades in Stockholm, Southern Sweden, Gothenburg and Gotland. In addition, one mobile command section will be established in the brigade. The organization's 12 interception battalions will be maintained and their anti-aircraft capacity developed. The anti-submarine units will be organized into three companies in the archipelagos of Stockholm and Southern Sweden.

#### *Mobile coastal artillery units*

The operative coastal artillery units will be organized into three coastal artillery batteries, heavy naval interception missile batteries equipped with RBS-15 missiles, and six amphibious battalions, three of which will receive their transport and vessels by 1.7.1997.<sup>97</sup>

In accordance with the changes taking place in the security policy environment, the Swedish navy was provided in 1994 with the capacities required for international cooperation, in which the main emphasis is regarded as being on surveillance, escort and minesweeping duties.<sup>98</sup> It is the requirements imposed by activities of this kind that will increasingly determine its complement and direct its development. The minesweepers are designed for action far away from their home bases, as support vessels and hospital ships.<sup>99</sup>

The development of the Swedish navy from the early 1980's to 1994 is depicted in Appendix 10.

It should be noted when evaluating this situation that the boats of the Stridsbåt 90 amphibious battalion are included in the number of landing craft equipment (each ship being capable of transporting some 20 men fully equipped). A total of just under 200 boats of this type have been ordered, allowing the transport of slightly less than 4000 men.

An evaluation of the complement of the Swedish navy in terms of ships at the end of the planning period in 2011 is given in Appendix 11.

### *5.8 The Finnish navy*

The continuous process of change in military policy in the area close to Finland has not yet achieved a state of equilibrium in all fields or with respect to all factors. The withdrawal of the Russian Baltic Fleet to the head of the Gulf of Finland has increased the navy's dependence on the shipping lane leading from St.Petersburg into the Baltic via the Gulf of Finland. It is vital to Russian interests that this passage should be kept open under all circumstances.

Statistical data for 1994 indicate that slightly over 90% of Finnish foreign trade takes place by sea, and in addition to Finland's own trade, amounting to approx. 74 million tonnes in that year, the harbours are also used for international transit traffic, which amounted to 5.6 million tonnes. Commercial shipments take place into and out of 53 harbours during the open-water period and 23 in winter with the assistance of ice-breakers.<sup>100</sup>

Finland's commercial sea traffic entails some 22,000 harbour visits per year<sup>101</sup>, which may be calculated to imply that an average of some 50 vessels of 3500 rt enter the country's harbours daily. Although this theoretical calculation does not offer an accurate picture of the volume of foreign trade carried on by sea, it does serve as some kind of guideline.

On account of the extent of Estonian territorial waters, sea traffic in the Gulf of Finland is concentrated in a narrow lane which is no more than six nautical miles across at its narrowest, in the eastern part of the Gulf of Finland, off Helsinki and in the sound off Porkkala. In addition to the utilization of territorial

waters, the reorganization of maritime boundaries also affects the warning times available for initiating military defence measures. The estimated volume of sea traffic on the Gulf of Finland is some 100 vessels of average size per day.

The above factors together with the extension of Finnish territorial waters and the fact that the country's maritime boundary in the Gulf of Finland also constitutes the outer limit of the European Union and its customs boundary, place demands of their own on the organization of naval defence. At the same time, the fact that the Gulf of Bothnia constitutes an internal sea within the European Union, the control and domination of the narrow channels leading into that area must occupy a prominent position in Finnish naval defence strategy. From this point of view the Åland Islands can be regarded as having increased in importance in terms of Finnish naval defence policy.

Naval defence is that part of Finland's defence system which is responsible for supervising her territorial waters, preventing violations of her maritime boundaries, repelling attacks in the sea or coastal area and protecting vital sea routes. These duties are mainly undertaken by the navy and coastal artillery units, relying mainly on artillery power, and these may be supported by other ground forces, the air force, and the coastguard service, which is part of the National Border Guard.

The core of the fixed component of the naval defence system is formed by the coastal artillery units, and its mobile element the navy's weapon systems.

The duties of the Finnish navy, which are derived from those laid down in law for the armed forces in general, are the following:

- to direct surveillance of the sea areas and carry out marine reconnaissance,
- to ensure the territorial inviolability of the Finnish sea areas, by force where necessary, in cooperation with other branches of the defence forces and the border patrol institution,
- to combine with other branches of the defence forces to intercept any attack taking place from the sea,
- to direct and implement the protection of sea traffic,
- to maintain a marine defence capacity, develop tactics and naval fighting equipment and take responsibility for

- servicing all equipment,
- to train the necessary naval personnel,
- to offer assistance to other authorities as prescribed by law.<sup>102</sup>

The first three of these tasks place major requirements for the maintenance of a naval defence capacity even in peacetime, while the last-mentioned is mainly connected with rescue operations and management of oil slicks. The general aim is that the navy, in combination with the fixed component of the marine defence system, should maintain at all time as sufficient threshold that its mere existence will deter any potential enemy from launching any action against Finland from the sea and will at the same time enable the country to use the sea for its own purposes. In cases of emergency, Finland must be capable of safeguarding the shipping necessary for its own foreign trade and also vessels belonging to foreign powers navigating in its waters.

The interception of an attack will include attempts to gain time for activating the country's total defence system by causing losses to the aggressor by the use of the navy's principal weapons systems.

When the Finnish Armed Forces adopted its new administrative and command system on 1.1.1993, the Finnish navy became part of a new organization which better supports regional operative directions. The aim of this procedure was to focus administration and rationalize the use of staff. This meant that the Turku Naval Base and the main part of the Coastal Fleet, i.e. its units stationed in Turku, were combined to form the Archipelago Naval Command and the patrol unit of the Coastal Fleet based at Upinniemi together with the Helsinki Naval Base formed Gulf of Finland Naval Command.

The Archipelago Naval Command, the jurisdiction of which extends to the southern boundary of the area covered by the Gulf of Bothnia coastguard service, is a regional command subject directly to the Commander-in-Chief of the Finnish Navy. It is responsible for all naval action in its area, and for the maintenance of a defence capability and the training of personnel in peacetime. Manoeuvres for the vessels of the Finnish navy are arranged over the whole length of the Finnish coast and throughout its sea area, irrespective of the above areas of jurisdiction.

The fleet's ships are distributed between two divisions. The gunboats Karjala and Turunmaa together with the Helsinki-class missile boats constitute the missile division, and the minelayers Hämeenmaa and Uusimaa and the minesweepers of the Kuha and Kiiski classes a mine division, while transport section and the headquarters at Pansio form a naval battalion which provides support and base services.

The Gulf of Finland Naval Command is responsible for operations throughout the Gulf of Finland, is likewise directly subordinate to the commander of the Finnish navy. The fleet's combat vessels are again organized into two divisions, the Rauma-class missile boats and R-class patrol boats constitute a patrol division, and the Pohjanmaa, minesweeper ferry Porkkala and two Tuima-class vessels converted into rapid minelayers a mine division.

Basic military training for conscripts is provided at the Naval School. Once the conscripts have obtained the basic combat skills, they are attached to the units of the navy's land and marine organizations and receive their further training, including the "blue line" petty officer's training, while in service. The training of conscripts involves three intakes annually, i.e. a total entry of 1500 men per year, which guarantees adequate crews for all the ships. This system is also an optimum one as far as deployment is concerned, as a maximum of one half of the crew of each vessel can be changed at a time. This is partly achieved by virtue of the "in service training" provided. National service on board and for those receiving reserve officer or petty officer training is 330 days and that for persons engaged in rank and file tasks in the ground organization 285 or 240 days. The Naval Academy, housed on the historical island of Pikku-Mustasaari at Suomenlinna, is responsible for providing training for officers, reserve officers and NCO's.

The navy's peacetime fleet comprises 30 combat vessels, as listed in Appendix 12, in addition to which a quite extensive auxiliary fleet exists for transport and servicing purposes. A considerable proportion of the latter, some of which are used by the coastal artillery, possess minelaying facilities.

The primary weaponry used by the navy in the last war were mines, artillery and torpedoes. Partly on account of the

Peace of Paris and partly because of the more restricted role played by naval artillery nowadays as a result of the development of missile systems for the interception of surface targets, missiles, the trend is now for the main weapons used by the navy to be mines and missile systems.

The mine weapons system enables exploitation of Finnish territorial waters to be prevented in areas which are beyond the range of the coastal artillery, and is designed to provide an adequate response to either a slowly or a rapidly developing state of emergency. The fundamental element in the system is the issuing of the decision to mine the territorial waters in good time, as the best cost-benefit ratio in creating the attack threshold can be achieved if most of the mines can already be laid before commencement of the actual attack.

The mines currently in use are variable in origin, ranging from contact mines of the type already used in the Second World War to impulse mines containing the most advanced information technology. The use of a variety of types of mine is also an advantage as it makes the aggressor's minesweeping task all the more laborious and time-consuming.<sup>103</sup>

The mine fleet is built up around the Pohjanmaa, commissioned in 1979 and currently stationed with the Gulf of Finland Naval Command, and the Hämeenmaa and Uusimaa, operating in the Archipelago Sea, which were completed in 1992. These are supplemented by mine ferries, rapid mine boats and servicing and auxiliary vessels also capable of laying mines. The total fleet of 14 vessels is capable of laying a protective shield of mines covering on the main approach channels from Kotka to Turku within 24 hours.<sup>104</sup>

The Finnish navy took its first steps in the use of missile systems in the 1960's, with its MTO-66 naval missile system, purchased from the Soviet Union. The system was adopted for operative use in the mid-1970's, when four Tuima-class missile boats were acquired. The missile system was later removed and the first two missile boats, the hulls of which are still in good condition, have been converted to fast minelayers. Work may also commence on converting the

remaining two to minelayers in the next few years.

The navy entered its second missile generation when it introduced the new Swedish naval missile system, the RBS-15, in the late 1980's. A detachment of four Helsinki-class missile boats carrying eight missiles each was based at Turku, and another of four Rauma-class boats carrying six missiles and capable of operating in shallower water was introduced in the early 1990's. This latter detachment, the draught of which is better suited to the conditions prevailing off the Gulf of Finland coast and among the islands, is stationed at the main base at Upinniemi.

The preconditions required for effective use of this naval interception missile system developed specially for use in Finnish coastal waters are:

- a real-time picture of the situation and correct information on targets,
- a cross-checked firing system, and
- an ability to protect the missile boats.

Target data are verified electronically, and the missile boats are able to find the target themselves if necessary. Depending on restrictions imposed by the area concerned, the range of the current missiles, which is over 70 km, will be exploited either by shooting along the coast or directly outwards from it towards the open sea. The tactical concept governing the use of missile firepower is quite definitely: shoot far - and from far away.

The emphasis in naval fighting is created by subordinating the combat unit command, the mine and missile units and their servicing and support to the fleet operating in the main direction of hostilities. This emphasis is achieved by focusing the effects of the use of mines and missiles both temporally and spatially. In addition to protecting sea traffic, the use of minesweepers makes it possible to carry out the changes to be made required in order to adjust the emphasis of the combat units.

Peacetime manoeuvres extending throughout the operative area serve to create the conditions necessary for controlling or contesting the use of sea areas close to Finland.

The increasing international marine activity will place

further demands on the deployment of equipment and the training and preparation of staff. The Finnish navy has been participating in the Baltops manoeuvres in the Baltic since 1993, and its mineships have occupied a prominent role in this. The Pohjanmaa took part for the first time in 1993, the Hämeenmaa in 1994 and the Uusimaa 1995. This naval exercise which forms part of NATO's Partnership for Peace programme was extended to the Baltic in 1995, and the mineship Pohjanmaa flew the national pennant in the manoeuvres held in the Straits of Denmark in October 1995.

## 6 NATO IN THE BALTIC

The North Atlantic Treaty Organization, the agreement marking the foundation of which was signed on 4th April, 1949, constitutes a collective defence alliance as provided for under §51 of the United Nations general agreement, serving to unite 14 European countries, the United States and Canada, representing the "western" countries of the Cold War era.

The NATO alliance comprises two operative command sectors. The first of these, Allied Command Atlantic (ACLANT), with its headquarters at Norfolk in the United States, is responsible for a sea area extending from the North Pole to the coastal waters of the United States, Europe and Africa. This in turn has several subordinate levels of command with particular areal or functional responsibilities, one of which is Striking Fleet Atlantic, composed of an aircraft carrier unit, an anti-submarine unit and a landing unit, operates in the western Atlantic.

The Atlantic fleet, STANAVFORLANT (Standing Naval Force Atlantic), is a permanent naval component subordinate to ACLANT which was established in 1967 and comprises destroyers, frigates and protective forces. It currently includes ships from Canada, Germany, the Netherlands, Great Britain and the United States, with occasional participation from Belgium, Denmark, Norway and Portugal.<sup>105</sup>

The second command sector is Allied Command Europe (ACE), which has had its headquarters in the town of Mons, Belgium, since 1966. This is responsible for an area extending from the northern border of Norway to the eastern border of Turkey, comprising a land area of almost two million square kilometres and a sea area of some three million square kilometres, containing a population of more than 320 million people. ACLANT and ACE belong to the group Main Command (MC) in the Organization's command structure.

In accordance with NATO's most recent strategy, the task of the troops assigned to the NATO operative command in Europe is to protect the territorial inviolability of the member countries. Fulfillment of this task requires the development and deployment of a force which is capable of repelling any threat posed by the

strategic environment. The duties of the ACE troops have been defined separate for times of peace, crisis and war.

Their peacetime duties place emphasis on the use of military power to guarantee the security of the member countries. The accent in practice is on the importance of cooperation and actions designed to increase mutual confidence, in order to increase the force's mastery over complex situations and to alleviate or remove any factors constituting a military threat. The emphasis under exceptional conditions, which depending on how the situation develops, could escalate into an open military conflict, is on maintaining the ability to mobilize troops rapidly. Although the danger or possibility of an pan-European war has decreased on account of the developments which have taken place in the last few years, this eventuality cannot be excluded from the Organization's evaluations or defence preparations entirely.

Troops of the NATO member countries are basically placed under their national command in peacetime, but are subordinate to NATO's Supreme Allied Commander in Europe (SACEUR) in wartime.

NATO's operative command controls the following crisis management troops in peacetime:

- ACE mobile ground forces (AMF, Mobile Force, land)
- NATO's Airborne Early Warning Force (NAEAWF, NATO)
- most of the air defence troops and some communication units.

Under NATO's new organization and division of troops that came into operation on 1.7.1994, Immediate Reaction Forces (IRF), composed of troops of the air and ground forces of the AMF and regional naval units, have been formed under the command of SACEUR, and also Rapid Reaction Forces (RRF) working on the same principle but under national command in peace time.<sup>106</sup>

The command organization of the NATO troops in Europe is composed of three regional sub-commands coordinated by SACEUR: Allied Forces Northwest Europe (AFNORTHWEST), Allied Forces Central Europe (AFCENT) and Allied Forces Southern Europe (AFSOUTH), all of which belong to the group Main Subordinate Command (MSC).

Allied Forces Northwest Europe (AFNORTHWEST) covers Norway and Great Britain and related sea areas. The headquarters

is at High Wycombe in Great Britain and the forces are under the command of a British general. AFNORTHWEST is further divided into three branch commands: Naval Force Northwest (NAVNORTHWEST), Air Forces Northwest (AIRNORTHWEST) and Allied Forces North (PSC NORTH), responsible for ground action. These belong to the Principal Subordinate Command (PSC) in the command structure.

Allied Forces Central Europe (AFCENT) cover an area which extends 800 km southwards from the southern boundary of AFNORTHWEST, as far as the border with Switzerland and Austria. The headquarters is at Brunssum in the Netherlands, and the troops are led by a German general. AFCENT is further divided into two branch commands: Land Forces Central Europe (LANDCENT) and Air Forces Central Europe (AIRCENT).

There are two IRF naval units attached to ACE. The first is Standing Naval Force Mediterranean (STANAVFORMED), established in 1992 to replace the Naval On Call Forces Mediterranean (NAVOCFORMED), which had been operating since 1969, in the Mediterranean, i.e. the area of AFSOUTH. This comprises destroyers, frigates and corvettes from Italy, Greece, Turkey, and Great Britain and the United States, and thereby provides a framework for creating a multinational fleet under the command of SACEUR at times of crisis. The US 6th Fleet constitutes a permanent element in the fleet, while the others vary on an annual basis.

Standing Naval Forces Channel (STANAVFORCHAN), established in 1973, operates in the area of AFNORTHWEST and constitutes a multinational anti-mine unit with permanent participation from Belgium, Germany, the Netherlands and Great Britain and attendance by ships from Denmark, Norway and the United States on occasions. Parts of this fleet have been in operation under national command in the Persian Gulf, for example, during the current decade.<sup>107</sup>

The Straits of Denmark, located on the north-western flank of the NATO region, are vital for control over the movement of shipping between the Baltic and the Atlantic, and thus still occupy a strategically important position. 65% of the sea traffic of the Baltic states, which are dependent on their foreign trade, passes through the Straits of Denmark each year.

When NATO extends its operations to the Baltic area, this will take place under the command of AFCENT as far as ground and air forces are concerned, while AFNORTHWEST will be responsible for naval and naval air operations. The deployment of naval forces in joint exercises will be coordinated by AFNORTHWEST.

The operative command responsible for the Straits of Denmark, Baltic Approaches (BALTAP), will be in command of both AFCENT and AFNORTHWEST troops when directing exercises in the area. This apparently problematic situation means in practice that powers are delegated to commander from the Danish or German navy. The command centres of both countries exchange situational reports daily, and thus maintain an immediate command capacity.<sup>108</sup>

Experiences in recent years have led to a separate command structure being created for each NATO naval exercise arranged in the Baltic. The BALTOPS manoeuvre arranged in 1995 was designed and led by the commander and staff of the aircraft carrier unit of the 2nd Fleet, which is part of the permanent naval force in the Atlantic. The command infrastructure was provided jointly by the headquarters of Danish and German navies.

It was decided at the NATO summit held in Brussels in January 1994 that open cooperation arrangements should be offered to countries outside NATO under a scheme to be known as Partnership for Peace (PfP). The aim as expressed in the initial documents was to create an arrangement for Europe which would promote cooperation between NATO, the countries of Central and Eastern Europe and other CSCE countries, giving them an opportunity for cooperation at the practical level.<sup>109</sup>

Cooperation is concentrated in the following major fields:

- peacekeeping,
- search and rescue services,
- humanitarian aid.

The Partnership for Peace programme also has political aspects, including promotion of the spread of democratic government to the countries engaged in it.<sup>110</sup> A total of 24 European states entered the programme in 1994, including Finland and Sweden, which did so on 9.5.1994.<sup>111</sup>

Manoeuvres at three levels have been organized within the scope of the programme and will continue to be organized in the future:

- manoeuvres under the Pfp programme proper,
- multinational manoeuvres arranged by one Pfp member,
- other manoeuvres following the principles of Pfp.

Two Pfp naval exercises and two exercises on land were organized in 1994. The first naval exercise, known as POMOREX, took place on the Norwegian Sea in spring 1994, involving the NATO countries and a unit from the Russia's Northern Fleet. The manoeuvres were designed by the staff of the Norwegian navy headquarters and involved convoy escort, search and rescue and trade embargo training. Finland, Sweden, Poland and Denmark attended in the capacity of observers. The tactical instructions used in the manoeuvres were distributed to participants which were not part of NATO in order to ensure a joint operative capacity in the future.

The next naval manoeuvres under the Pfp programme, held on the North Sea in early autumn 1994, were designed by the naval section of the Eastern Atlantic sub-command of the permanent Atlantic Fleet. These largely followed the same programme as the previous ones. Finland again attended in an observer capacity.

The Pfp programme moved to the Baltic in autumn 1995, with an exercise named 'Cooperative Jaguar', which involved most of the countries of the region, including Finland, with one minesweeper. Thus international naval manoeuvres have moved into the Baltic area on a permanent basis, i.e. they are being arranged close to Finnish territorial waters. The aim of these exercises is to improve the capacity for cooperation in the fields of operation covered by the Partnership for Peace programme.

One striking element in this concerns the exceptional NATO command structure arrangements in the Baltic area, since the BALTAP group representing the Principal Subordinate Command (PSC) is subordinate to AFCENT, and the responsibility for naval operations within it is shared, the BALTAP commander coordinating his naval action together with the commander of AFNORTHWEST and through the mediation of the naval commander of the latter.<sup>112</sup> This means that responsibility of

naval operations in the Baltic lies partly with the commander of AFNORTHWEST.

As far as NATO's relation to the Baltic is concerned, no additions to its naval fields of responsibility have taken place as such. Under the loose definition contained in the Washington agreement, the scope of naval responsibility covers the Mediterranean and the Northern Atlantic north of the Tropic of Cancer.<sup>113</sup> What is new is that professional articles and interviews connected with NATO's new command structure and the retreat of Soviet Russia towards the east have clearly suggested and specified the Baltic Sea as part of this area of responsibility. This is being symbolized further by the fact that manoeuvres held in the Baltic and visits of ships sailing under the NATO flag to the area are now looked on as a matter of course.

NATO's new command structure is depicted in Fig. 7. and the areas of responsibility of its various headquarters in Europe in Fig. 8.

The exceptional arrangements of shared responsibility are attributable not only to military factors but also historical and political ones, in that the assignment of the Baltic area solely to BALTAP, which is subordinate to AFCENT, could have given the latter an over-inflated position in NATO's command structure. The influence of Germany in the AFCENT command is also prominent, as that country holds a number of key posts, and Russia is sure to keep a watchful eye on this situation. The transfer of BALTAP to AFCENT took place specifically at Germany's request,<sup>114</sup> and the signal being conveyed by the sharing of responsibility may concern the crucial role of the Baltic as an area lying between Northern and Central Europe and the desire to take effective measures to ensure its stability.

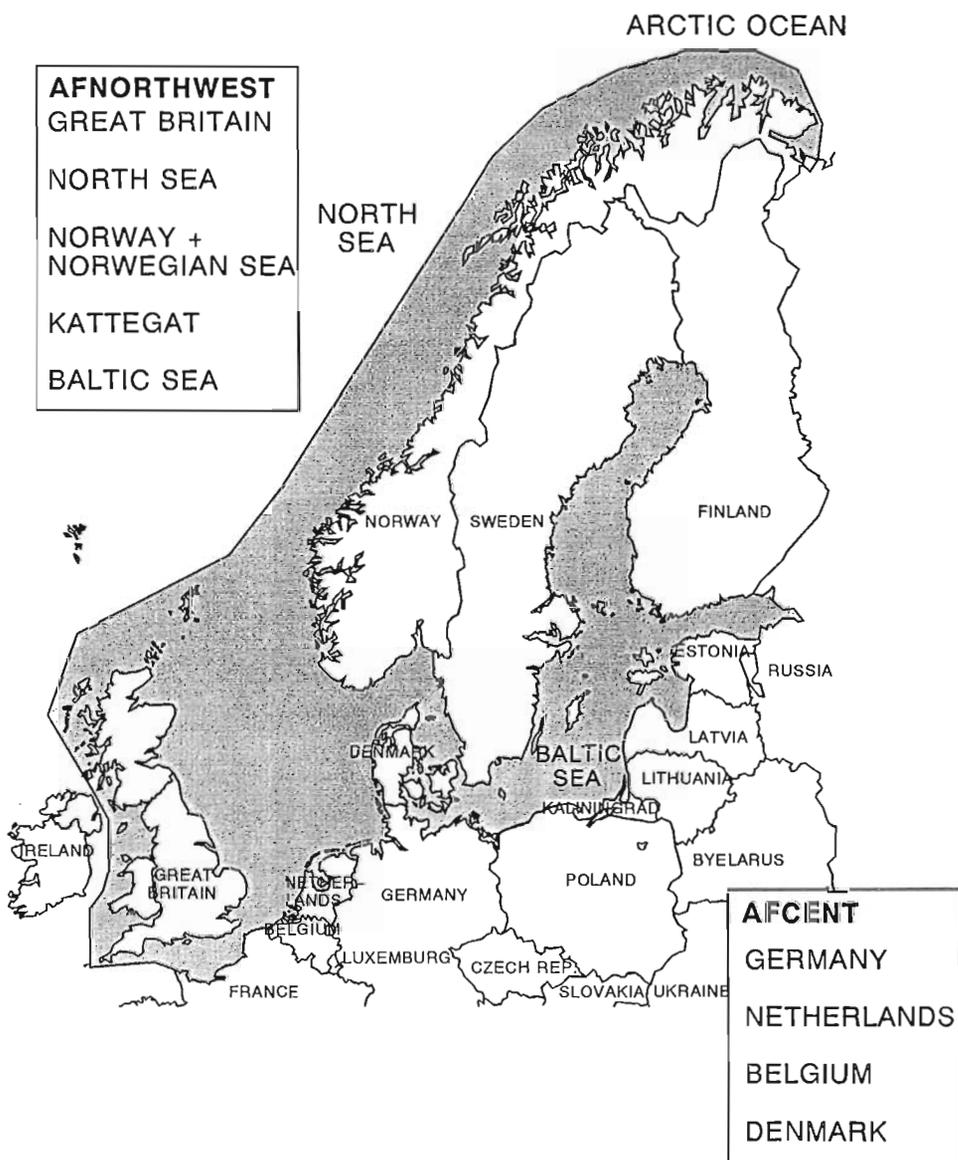


FIG 7 NATO areas of responsibility in Northern Europe

SOURCE: The Military Balance 1993-1994



## 7. THE BALTIC - A NUCLEAR-FREE INLAND SEA?

### *7.1 Nuclear and dual-purpose weapons in the Baltic*

One field of naval operations which is brought up for discussion from time to time is the handling of nuclear weapons and nuclear material in the Baltic. This problem culminates in three issues, the tactical nuclear weapons alleged to be carried on ships of Russia's Baltic Fleet, the construction of nuclear-powered vessels in Russian shipyards on the Baltic and their test runs, and the alleged sinking of nuclear-powered vessels in the Baltic.

In the terminology of international agreements, 'nuclear-free' means more than simply 'nuclear weapon-free', for the establishment of a nuclear-free sea area usually presupposes not only the total exclusion of nuclear weapons but also restrictions on the dumping of nuclear material and use of nuclear-powered vessels.

In a discussion of Russian nuclear weapons in the Baltic at the beginning of 1993, on the most recent Norwegian version of Military Balance, that for 1992-1993, a Swedish daily newspaper announced that Russia was alleged to have had 96 tactical nuclear weapons in the Baltic a couple of years previously, the number of which had then dropped to 84 but had risen again to 128 the year before publication.<sup>115</sup> One should approach these claims and the conclusions derived from them with caution, however, as the tactical weapons listed in that journal are dual-purpose ones, i.e. they may carry either nuclear or conventional warheads. Any increase in the number of tactical nuclear weapons in the Baltic Fleet would be a contradiction of Russia's avowed decision to withdraw such weapons from its fleet. The following news item on this topic was communicated by Itar-Tass in February 1993: "All TACTICAL NUCLEAR weapons have been removed from vessels and multi-purpose submarines, as well as naval aircraft, and placed in centralized storage in accordance with statements by the USSR president of the 5th October 1991 and president of

the RUSSIAN Federation of 29th January 1992, the press service of the RUSSIAN Ministry of Defence reported.<sup>116</sup> The news item does not mention when the tactical nuclear weapons were removed, and any evaluation of trends towards a nuclear weapon-free zone is hampered by the fact that no data are available on the distance between the centralized store for such nuclear weapons and the Russian harbours on the Baltic coast. It would in any case seem that the trend in the Baltic, as elsewhere, is towards the exclusion of nuclear weapons from naval vessels.

Note should also be taken in this connection of NATO's policy statement confirmed in Rome in November 1991, which states that vessels or aircraft should not carry tactical nuclear weapons in peacetime. It can thus be assumed that NATO's own ships, possibly excluding those belonging to France, do not carry tactical nuclear weapons "in normal circumstances".<sup>117</sup> This may mean, of course, that the vessels do not carry nuclear warheads in peacetime but that they may be equipped with them if international tension increases or there is a danger of war.

In addition to European naval units, NATO's Standing Naval Force in the Atlantic (STANAVFORLANT), also contains ships from the United States. Alternative armaments for the new Arleigh Burke missile destroyer class (DDG 51 Aegis) include Tomahawk cruise missiles carrying nuclear warheads, from which the warheads have now been removed in accordance with the above principle.<sup>118</sup>

The following is a summary of the state of the Russian Baltic Fleet and the dual-purpose weapons carried by its vessels, which can be equipped either with tactical nuclear warheads or with conventional warheads. The largest vessels of the Russian Baltic Fleet have normally been cruisers and destroyers. One cruiser each of the Kresta I, Kresta II and Kynda classes was located in the area in 1986, forming the smallest of all the cruiser detachments in the four fleets of the Russian navy. Manoeuvres held in the Baltic have occasionally involved vessels from the other Soviet fleets, however, the largest landing manoeuvres ever organized there, under the name Zapad in 1981, having been marked by the first appearance of the aircraft carrier Kiev and the helicopter carrier Leningrad in the area.

It would seem in the light of the most recent sources that there is now only one cruiser of the Kresta I class in operative use

in the Baltic. Various lists also contain a light cruiser of the Kynda class, but this is included among the destroyers on the grounds of its tonnage.<sup>119</sup> It is uncertain to what extent these light cruisers of the Kynda class are suitable for operative use, however and they have probably now been taken out of active service.

Trends in the vessels of the Russian fleet in the Baltic and their main weapons systems over the last few years are shown in Appendix 13.

Apart from the reduction in numbers, the most prominent feature is an improvement in quality as far as the new classes are concerned, including the new cruiser of the Admiral Ushakov class (former Kirov class) with nuclear weapons capability to be constructed at St. Petersburg, the anti-submarine frigate Neustrashimy constructed in Kaliningrad and the Sovremenny-class missile-equipped destroyer built in St. Petersburg.

The Russian navy has a wide variety of nuclear weapons available to it, a total of some 30 weapon types which can be used with a nuclear warhead:

- there are 10 types for use by surface vessels, including torpedoes and other anti-submarine weapons,
- 8 weapons systems fired from combat submarines,
- 7 weapons systems fired from strategic submarines,
- 6 weapons systems for use by the naval air wing.

Western sources indicate that some 20% of these weapon types are available to the Baltic Fleet.

The first torpedo with a nuclear warhead was taken into service in the Russian navy as early as the 1950's, for use in 'strategic attacks' on coastal towns and ports in the west, and later the range of weapons was expanded to include anti-aircraft, anti-submarine, surface interception and coastal weapons systems. It has been claimed that the Whisky-class submarine U-137 which ran aground off Karlskrona in Sweden in October 1981 was carrying torpedoes with nuclear warheads, and torpedo boats were also shown on a programme broadcast by the Finnish TV2 on 28.5.1993 which dealt with the nuclear waste generated by the Russian Northern Fleet.

According to unconfirmed information which has emerged from time to time, Russia at least at one time, was using nuclear mines at sea.

There are a number of calibres of torpedoes that can carry a nuclear warhead: 650 mm, 533 mm, 450 mm and 400 mm, all launched from torpedo tubes. The range of the 650 mm torpedo which entered service in the 1980's is 50 km at a speed of 50 knots and as much as 100 km at 30 knots. This is fitted only on strategic nuclear submarines, however, so that it is not present in the Baltic at all. The dual purpose weapons of the Russian Baltic fleet are listed in Appendix 14. Any nuclear weapons that may be carried by this fleet are tactical in nature.

The Juliette-class submarines carry a total of 20 Shaddock SS-N-3A sea target missiles with nuclear or conventional warheads. The missile is variously quoted as having a nuclear warhead of 10-350 kT with a range of 180-450 km, which suggests that it could be used to dominate the entire southern and central Baltic. The missiles are always launched in pairs from the surface, and also exist in a coastal artillery version.

The Admiral Ushakov-class cruisers carries a total of 20 Shipwreck SS-N-19 sea target missiles with an charge of 500 kT and a range of 500 km. The missile is evidently controlled by satellite.

The Kresta I-class cruiser carries four Shaddock SS-N-3B dual-purpose sea target missiles capable of delivering a nuclear warhead of 10 kT over a range 75-100 km. The Shaddock was the first over the horizon (OTH) missile to be commissioned by the Soviet Union. The three destroyers of the Sovremenny class carry 24 Sunburn SS-N-22 sea target missiles each, which can again be equipped with either nuclear or conventional warheads. The former has a charge of 200 kT and a range of 100 km. According to western handbooks, these three vessels, possibly carrying nuclear weapons, entered the Baltic during 1992. Ships of the Sovremenny class are being constructed at the northern shipyard in St. Petersburg at a rate of approximately one per year.<sup>120</sup>

The six Krivak-class frigates carry a total of 24 Silex SS-N-14 anti-submarine missiles with nuclear or conventional warheads. The nuclear warhead is of size 1-5 kT and has a range of 55 km. The six corvettes of the Nanuchka class carry a total of 36 10 kT Siren SS-N-9 nuclear or conventional sea target missiles with a range of 75-100 km.

The total number of possible nuclear weapons would thus indeed have risen from 96 to 128 in a couple of years between

1991 and 1993, but it should be kept in mind that the weapons have a dual-purpose capacity, as stated earlier. It should also be noted for comparison purposes that Russia's Northern Fleet has a total of some 612 warheads. Since in addition to these, Russia has some 1300 ground-based tactical nuclear weapons and some 1600 installed in aircraft, the dual-purpose weapons present in the Baltic are of minor significance quantitatively.

The nuclear arsenal present in the Baltic will be affected in the near future by:

- the planned division of the Black Sea Fleet between Russia and the Ukraine will increase their quantity,
- the reduction in bases in the Baltic, until port facilities are available on the Bay of Luga and in the Primorsk area at the head of the Gulf of Finland, which will reduce their quantity. It is anticipated that the port on the Bay of Luga may be opened by the end of the decade, although this should be approached with some caution.

## *7.2 Nuclear-powered vessels in the Baltic*

According to a survey conducted by Greenpeace, the Soviet Union had a total of 170 nuclear-powered ships and submarines in spring 1991, containing a total of 324 nuclear reactors and accounting for 60% of the world's marine nuclear reactors.<sup>121</sup>

The Russians also had a training centre with nuclear reactors at Paldiski, on the Estonian coast west of Tallinn, which they vacated at the end of September 1995.

The nuclear-powered vessels of the former Soviet Union and Russia are located in the Northern and Pacific Fleets, however, and there are none in use with the Baltic Fleet, although there are shipyards in St.Petersburg which construct nuclear-powered military vessels and icebreakers, notably the Admiralty Yard (No. 194) and the Baltic Yard (No. 189). The former has been specializing in the construction of Victor-class nuclear submarines since the 1960's, these vessels then being transferred via the Karelian canal network to Severodvinsk on the coast of the White Sea for fitting out and testing.

The Admiralty Yard has so far been building Victor III-class nuclear submarines, which are powered by two pressurized water reactors with a thermal capacity of 100 MW. There are a total of 25 Victor III-class submarines in use in the Northern and Pacific Fleets, mainly armed with SS-N-21 cruise missiles with a range of 3000 km and a 200 kT nuclear warhead for striking ground targets. It also has anti-submarine missiles of types SS-N-14 and SS-N-15, the former of which is a dual-purpose model for either nuclear or conventional warheads. There is no detailed information available on the extent to which the nuclear warheads have been removed from these.

Work at the Baltic Yard at St.Petersburg is currently focused on an Arctica-class nuclear-powered icebreaker and a fourth nuclear battle cruiser of the Admiral Ushakov class (formerly the Kirov class), a ship known earlier as the Yuri Andropov, currently Peter the Great. This is also powered by two pressurized water reactors connected to oil-fired boilers to provide a combined system known as CONAS (Combined Nuclear And Steam). Not all the details of the system are known to western sources.

The cruiser will be assigned to the Pacific Fleet upon completion, and it would seem from the Swedish news item cited above that it will carry dual-purpose weapons, which would account for the increase in the number of nuclear weapons in the Baltic, i.e. 20 SS-N-19 sea-target missiles with 500 kT warheads and a range of over 500 km, which would make them formidable weapons anywhere, even in the Pacific Ocean. It is difficult to estimate at what stage the vessel will be armed completely or partly with these warheads, or if it will ever carry them.

The Peter the Great is of a size that it will have to be transferred to the ocean via the Baltic, and test runs of some kind can also be expected to take place close to Finnish territorial waters, although no notices to this effect have yet appeared in the military journals. Another possibility is that Russia does not possess the resources for completing the vessel and equipping it with weapon and control systems at the present time. Most military journals assumed that it will eventually be completed and fully equipped, but doubts have been expressed by the American Armed Forces Journal, which suggested as far back as its issue of June 1991 that the vessel would be stripped down and that the costs of this alone at that time would amount to 12

million roubles. The journal had obtained this information from the Central Television of Moscow. It seems likely, however, that the vessel will be completed, and that it may commence test runs very soon, in view of the time invested in its construction.

It is also unclear whether the Victor-class submarines will use the Baltic shipyards for repairs and servicing, as this can equally well be done at the Severodvinsk yard or at Komsomolsk (Yard No. 199) some 450 km south of the mouth of the River Amur on the Pacific coast.

Voices have been raised in Russia as well in favour of the development of an entirely nuclear-free area in the Baltic. One point of view is that it is in the interests of Russia to develop good neighbourly relations in the region in such a way that no Baltic country would enter a military alliance designed to operate against any other. It has even been suggested that the creation of a nuclear-free zone to the extent that no nuclear-powered vessels or ones carrying nuclear weapons would operate in the Baltic or pass through it may be in the best interests of Russia.<sup>122</sup>

The German weekly magazine *Der Spiegel* wrote in mid-February 1993, on the basis of limited information gained from the German federal government, that the former Soviet Union had sunk at least two vessels containing nuclear reactors in the Baltic Sea. Archives of both the German and Russian intelligence services were also quoted as sources. This speculative news item contained the conjecture that one of the vessels may have been a submarine and the other a civilian ship. The magazine had no information on where and when the vessels had sunk or had been sunk.

The news item persisted in the public eye, however, and information communicated by the Helsinki daily *Helsingin Sanomat*, suggested that the permanent secretary at the Ministry of the Environment in Estonia, Rein Ratas, had confirmed the sinkings, stating that the Estonians had found confirmation for this in a Russian environmental document.<sup>123</sup>

The Finnish authorities have been cautious in their assessment of the situation, and have contented themselves with noting that nothing unexpected has been found in the measurements of radioactivity in the Baltic. Reference was made in their statement to the case of a Komsomolets-type submarine that sank in the North Atlantic in 1989, emissions from which

contained the radioactive isotope cesium-137, for example. Thus, if radioactive material had been sunk in the Baltic, this should be reflected in corresponding measurements. It should be noted here that the dumping of radioactive substances in the Baltic is prohibited by an international agreement signed by all the countries bordering on the Baltic Sea in 1974, to become effective in 1980.

## 8. SIGNIFICANCE OF THE ÅLAND ISLANDS FOR FINNISH DEFENCE

The province of Åland comprises some 6500 islands and skerries distributed between 16 local government districts, from Eckerö in the west to Kökar in the south-east. The islands cover a total area of some 500 km<sup>2</sup> and have a population of some 25,000 inhabitants, of whom 10,000 live in Mariehamn. The main island is 50 km long and some 40 km wide at the most.

The islands have an excellent road network, with all the main roads surfaced, and connections between them take place via bridges or ferries. The port of Mariehamn enables vessels of a large draught to be loaded and unloaded, with immediate access to the road network, and the airport, located north-west of Mariehamn, has facilities for large transport planes.

The outer boundary of Finland's inner territorial waters coincides with the national boundary on the island of Märket in the Åland Sea. Since the area does not have any customs route extending from the Åland Sea to the Gulf of Bothnia on the Finnish side, foreign vessels are effectively prevented under existing navigational rules from sailing through the Finnish sea area at this point. The waters around the Åland Islands are in any case extremely demanding and difficult to navigate, so that sea traffic is compelled to use the recognized channels and shipping lanes.

The Åland archipelago contains a number of large islands which can also be regarded as significant in military terms. The island of Kökar, for instance, provide immediate control of the network of channels leading to Turku to the Archipelago Sea via Utö.

Similarly, the islands of the Föglö group lying west of Kökar govern the routes leading to the inner islands via Lemland, while the main channels leading to the mainland that run east of Åland can be controlled from the islands of Kumlinge and Sottunga. At the same time the narrow but occasionally quite deep passages in the archipelago that forms the northern part of Åland offer well-protected routes for sea traffic passing through and into Swedish territorial waters.

More than 85% of Finland's foreign trade passes takes place via sea, and it is essential to the country's security that sea traffic should be maintained under all foreseeable circumstances at times of crisis. Likewise some 90% of our telecommunications with the outside world takes place through the Åland Islands, which thus have occupied, and always will occupy, a prominent position in protecting out communications towards the west.

Similarly, the islands serve as the 'lock to the Gulf of Bothnia', offer an opportunity to maintain freedom of operation and free use of the sea in the Gulf of Bothnia with the smallest possible expenditure of resources.

The question of the neutrality of the Åland Islands and prohibition of their use for military purposes was first raised in connection with the Treaty of Paris that ended the Crimean War of 1853-1856. An annex to the actual peace treaty was concluded between France, Great Britain and Russia on 30.3.1856 which provided that the islands will not be fortified nor will they carry or hold any military or naval establishment.<sup>124</sup>

The agreement does not cover the maintaining of troops on the islands nor the movement of troops via them, nor does it apply to the territorial waters of the area, or restrict naval operations carried out in these waters.

The issue of the Åland Islands has been raised in various forms on a number of occasions since 1856. It was above all Russia's aim to free herself from the regulations of 1856. The outbreak of the First World War in 1914 heralded a whole new phase in the discussions, however, when France and Great Britain, as signatories to the Crimean peace treaty, gave Russia a free hand in the question of the Åland Islands. Following the German advance on the eastern front, Russia commenced the construction of fortification on a planned line running across the Archipelago Sea to the Åland islands,<sup>125</sup> which was intended to function together with fortifications on the Saaremaa-Hiiumaa line to protect the useful base available in the archipelago against attacks directed towards either the Baltic Sea or the Gulf of Bothnia. The primary aim of this chain of fortresses was to keep the islands in the possession of Russia against any German attack and at least restrict the activity of the German navy in the northern part of the Baltic. Possession of these islands was also important for the Russians with respect to protecting their own navy. The

unfavourable course of the war as far as Russia was concerned and the lack of materials prevented such operations from being carried out, however.

The construction of these forts aroused much unrest in Sweden, of course, as they greatly undermined Swedish defence prospects. Most of all it was feared that the chain could be used as a base for launching a naval operation against Sweden.

The question of the Åland Islands progressed to yet another new era with the Russian Revolution of March 1917, which aroused demands for their incorporation into Sweden.<sup>126</sup> With the rise of the White troops against the Russians in Finland, and with the increasing hostility of the Russian troops stationed on the Åland Islands, to the extent that it was feared that the situation would become totally out of hand, the inhabitants of the islands together with the Swedes resolved to take advantage of these developments. Thus a popular movement grew up for the separation of Åland from Finland and its association with Sweden. The movement even submitted a petition to this effect to the King of Sweden.

As the result of the dispatching of a Swedish expeditionary force to the islands on 13.-14.2.1918, both the Russians and the Red and White troops retreated leaving Sweden in sole control. The situation changed again when German 'Sonderverband Ostsee' naval detachment reached Åland on 3.3.1918. Although Colonel von Bonsdorff, the new Governor appointed by the Finnish government, arrived at his post on 9.3.1918, the Swedish troops remained on the islands until the end of May.<sup>127</sup>

An addition was made into the First World War peace treaty signed at Brest-Litovsk on 3.3.1918 under which the forts constructed on the Åland Islands should be destroyed and other military questions pertaining to them resolved by means of a separate agreement between German, Russia, Finland and Sweden, to the other countries of the Baltic could also be signatories.<sup>128</sup>

The ensuing agreement on the destruction of all the forts on the Åland islands was concluded between Finland, Sweden and Germany in the spring of 1919, and Sweden sent a torpedo cruiser to the islands, for example, to supervise the demolition work.<sup>129</sup> This active role played by Sweden has later been evaluated as having prolonged discussion of the Åland question,

which was evidently the main purpose of the Swedes' presence on the islands.

As a result of discussions in the League of Nations on 27.6.1921, in which it was concluded that Finland had sovereign control over the Åland Islands and that the question of neutral status and the prohibition of fortifications should be solved separately, a meeting was summoned in Geneva at which authorized representatives of Finland, Sweden, Germany, Denmark, Estonia, Latvia, Poland, Great Britain, France and Italy were to conclude an agreement regarding the islands. The final agreement was signed in Geneva on 20.10.1921 and ratified by Finland on 28.1.1922.<sup>130</sup>

The agreement defines a zone for the Åland Islands in which the sea boundary is to run three nautical miles from the coast, and the third article, prohibiting fortifications on the islands, states that no military or naval establishment or base or any other device to be used for military purposes should be maintained or constructed within the zone defined in the agreement. Demilitarization of the area also applied to the sea areas, although the territorial waters of three nautical miles were defined only for the purposes of demilitarization and neutral status and did not affect Finland's right to enforce its general principle of territorial waters of width 12 nautical miles.

As far as the neutral status of the islands is concerned, the agreement lays down that no foreign ground, naval or air forces shall enter the area or remain there, and the manufacture, importation, transit conveyance and export of weapons and military supplies shall be specifically prohibited.

It does state, however, that Finland shall be entitled to keep a regular police force in the zone in peacetime in order to maintain general order and security. In addition, Finland may move armed troops there in cases of emergency and station them there temporarily if they are essential for maintaining law and order.

Furthermore, Finland retains the right to send one or two light naval surface vessels to the islands from time to time for inspection purposes, in which case they may temporarily anchor in the coastal waters. In addition to these vessels, Finland is entitled to use other surface vessels of a total tonnage not exceeding 6000 tonnes in the coastal zone and maintain them there temporarily if particularly pressing factors require this.

Finnish air force planes are allowed to fly over the zone, but landing is prohibited except in an emergency.

The agreement was concluded at a time when anchoring could be regarded as denoting both anchoring off harbours and landing points and also attachment to a quay, as anchors were almost used almost without exception in the latter situation as well.

An article by Erik Castrén discusses the possibility of using one or two light naval vessels for inspection purposes (Article 4 in the agreement): "Finland has the right to inspect the neutral area from time to time in peacetime using one or two surface vessels which may call in at the harbours of the islands and anchor temporarily in other places as well. These inspections are also necessary so that the crews of naval vessels can become familiar with these dangerous waters and thereby be in a position to defend the islands' neutrality effectively. Light vessels may be taken here to denote ships other than combat vessels."<sup>131</sup>

Castrén also discusses the condition regarding visits by larger vessels, referring to the well-known legal expert Rafael Erich who considers in one constitutional work what the nature of these 'particularly pressing factors' might be. Erich writes that: "Such pressing circumstances may arise from important naval manoeuvres, a visit by the President of Finland to the islands or some visit of an a highly official nature, etc. The Finnish Government may even grant a foreign power permission to send one naval vessel into the neutral zone for a limited period of time, whereupon the agreement does not impose any restriction on the size of such a vessel."<sup>132</sup> Erich's interpretation has been considered too liberal in more recent commentaries, particularly as far as demilitarization is concerned.<sup>133</sup>

It is indeed specifically stated in Article 4 that the Finnish Government shall not be entitled to grant permission for more than one naval vessel belonging to a foreign power to enter the islands within the zone or anchor there temporarily.

Finland's rights in the case of war are discussed in Article 6, which lays down that the zone mentioned in the agreement shall be regarded as a neutral area in the case of war and shall not be used either temporarily or directly for any purposes connected in any way with military action. Should the Baltic become the scene of war, however, Finland shall be entitled to mine the

territorial waters of Åland temporarily and to take such naval measures as are absolutely essential in order to safeguard the neutrality of the zone. Should any sudden attack made on the Åland Islands or on the Finnish mainland via them endanger the neutrality of the zone, Finland shall take all the measures within the zone that are required in order to stop or intercept the aggressor.<sup>134</sup>

Of the signatories to the 1856 treaty, Russia was not among the original parties to the agreement of 1921, for the reason that the agreement was concluded at a stage when Russia was not yet a member of the League of Nations. Although the Soviet Union did not become a party to the agreement even at a later stage, it was compelled to attend discussions of the Åland question once it had become a permanent member of the Council of the League of Nations.

As political tension increased in Europe in 1939, Finland made an attempt to annul the prohibition on fortifying the Åland Islands,<sup>135</sup> as demilitarization and the absence of fortifications were regarded as weakening Finland's opportunities for taking the necessary defence measures in the Åland area. A document known as the Stockholm Plan was drawn up in January 1939 as a result of negotiations with Sweden,<sup>136</sup> which would have permitted Finland to take all necessary military action in an area south of a parallel passing through the southern tip of the main island. The plan was submitted to the signatory states of 1921, who all indicated their approval. The Soviet Union was opposed to the defence arrangements implied by the plan, however, and prevented its acceptance by the Council of the League of Nations early in 1939, exercising the right of veto that it had by virtue of its permanent membership. This led to the plan being abandoned completely.

Finland was compelled to mine the waters of the Åland Islands itself during the Winter War of 1939-1940 and to fortify and equip the individual islands under the agreement of 1921. Proper notification was given both to the League of Nations and to the signatory states, all of which indicated their approval.

The Soviet Union took up the question of the Åland Islands after the Winter War, in June 1940, suggesting that they should be demilitarized or the fortification work continued jointly with Soviet forces. Finland decided to demolish the fortifications,

rejecting all suggestions of military cooperation with the Soviet Union.

The Russians devised a plan in autumn 1940 for capturing the Åland Islands. This document, known as the Plan of Rear-Admiral Panteleyev and dated 10.9.1940, contains data on a landing detachment of the size of a division to be reinforced with support units. The intention was to land three battalions, a total of 2661 men, by means of a paratroop operation and bring in all the necessary support arms by means of transport vessels. The two other landing detachments were to be transported by sea, the second consisting of a total of 11 transport vessels and some 6500 men, and the third one primarily of support weapons. The landing would place a total of 16,300 men of the Soviet armed forces on the islands.<sup>137</sup>

An agreement on "the Åland Islands Zone" was signed between the Soviet Union and Finland on 11.10.1940.<sup>138</sup> Under it the Soviet Union was granted the right to maintain its own consular office on the islands, which in addition to normal consular duties was to supervise compliance with the demilitarization and fortification regulations. The agreement ensured the preservation of military restrictions.

During the Continuation War, Finland again mined the territorial waters of Åland and fortified its islands, duly reporting these measures to the signatories to the agreement of 1921.

According to Article 9 of the Interim Peace Treaty concluded between Finland, the Soviet Union and Great Britain in Moscow in 1944, all the conditions of the agreement of 1940 were to be enforced, and under Article 5 of the Paris Peace Treaty of 1947 the Åland Islands remained demilitarized in accordance with the practices prevailing at that time.

The ongoing process of change in the current military situation has given rise to new uncertainty factors in the area adjacent to Finland. The loss of Russian naval bases in areas close to Finland and the low standards of naval defence in the Baltic countries are variables which help to shape the naval and military environment in which Finland finds itself. This means that any pressure for change emanating from the Baltic area will affect first the southern coast of Finland and the Åland Islands.

The Åland Islands are gaining in importance in terms of the task of guaranteeing the freedom of movement of the Finnish

navy and of merchant shipping, while at the same time the end of the confrontation between the military alliances and the political changes that have taken place in the southern Baltic have shifted the interface between the parties in a possible conflict in the region northwards to the mouth of the Gulf of Finland and the Åland Sea.<sup>139</sup>

As Finland's permanent peacetime defence system does not extend to the area of Åland entirely or in a sovereign manner, apart from the coastguard service, mobile systems will continue to play a prominent role. Surveillance and defence of the Åland area can be most rapidly intensified by means of air force and naval units.

The role and significance of Finland's naval defence in the area of the Åland Islands, to which the country's fixed defence system does not extend in peacetime, is a matter of undeniable importance. The islands could be defended much better with a greater centralization of resources, of course, but this would presuppose a preliminary deployment of troops to be effected in peacetime, which is not possible under current agreements and with their present interpretations.<sup>140</sup>

The status of the Åland Islands may begin to arouse interest once more should a new security policy situation emerge in which Finland's independence of all military alliances is likely to alter as the defence dimension of the European Union gains in depth and moves towards a joint defence goal mentioned in the Maastricht agreement. Should this trend carry Finland towards membership of the defence pillar of the European Union, the Western European Union (WEU) and of NATO, the position of the Åland Islands would have to be evaluated from points of departure which differ quite radically from the situations on which the agreements of 1921, 1940, 1944 and 1947 were founded.

## 9. CONCLUSIONS

The current strategic situation in the Baltic resembles to some extent the situation that existed prior to the Second World War as far as Russia is concerned, with the exception that the Kaliningrad oblast is now part of the Russian Federation, and not of Germany as was Eastern Prussia. One common element is the existence of a regional uncertainty factor.

The Baltic Sea and the area of the Baltic states in particular can still be regarded as being of vital importance for Russia on political, economic and military grounds. As indicated above, the Baltic and the harbours of the Baltic states and Finland occupy a prominent position in her foreign trade, just as the Baltic states and the Baltic Sea also form the outermost zones of the military defences protecting the core areas of Mother Russia.

It is for these reasons that Russia will continue to maintain a military presence in the Kaliningrad area and a fleet in the Baltic which, although lighter than earlier, is sufficient in relation to the balance of naval power in the area. The decrease in numbers will be compensated for by more efficient vessels and naval air forces.

The fact that decisions regarding the reduction in the number of Russian vessels in the Baltic and the use of lighter vessels were made before the radical changes in the Soviet Union/Russia is due to the long planning and manufacturing times involved in the shipbuilding programmes. The trend was simply accelerated by economic factors and the rapidity with which the changes have taken place.

The overwhelmingly military interests of the Russians in the Kaliningrad area do little to promote the development of civilian industries or infrastructure. On the other hand, there are signs that the shipping of goods via the old export harbours in the Baltic states is developing, which will reduce the pressure on Russia to build harbours in the eastern part of the Gulf of Finland. It should also be noted from this trend that the golden "transito" era for the Finnish harbours will not last indefinitely, as transit traffic via Finland will decrease in the medium and long term as Russia's own harbours and the developing harbours of the Baltic states begin to operate at full capacity.

It will be particularly interesting to observe Germany's policy in the Baltic, as any demonstrable attempt by that country to focus its maritime interests towards the northern part of the Baltic would be of major importance in terms of naval strategy. Germany has so far pursued a very cautious line in the Baltic, however. She acquired possession of military harbours and servicing facilities upon reunification, of course, and the development of one of these, Warnemünde, as a corvette base may be taken to indicate some kind of movement towards the east, but even so the emphasis in the naval activities of the united Germany cannot be said to have shifted or be clearly shifting towards the Baltic area, in spite of the fact that some 2/3 of the country's bases and support systems are located on the Baltic coast. The attachment of the naval command in the Baltic area to NATO's AFNORTHWEST group is also an indication of the political caution being exercised by Germany in its role in the Baltic.

The increasing interest being shown in the Baltic by NATO can be regarded as a natural consequence of its more clearly defined command structure relations and fields of responsibility in this region, and also of the termination of the Cold War and the expansion of NATO's territorial responsibility eastwards along the south coast of the Baltic. The naval manoeuvres organized for various purposes as part of NATO's Partnership for Peace programme will continue to take place on a regular basis. A change in the political climate and the entry of Finland and Sweden into membership of the EU will also make western vessels a more natural and common sight in manoeuvres organized in the Baltic.

Poland has frequently expressed a clear desire in recent years to join NATO and receive security guarantees from this organization. This would in many ways be difficult and complicated, however, as NATO and its leading country the United States do not want to impose any additional strain on their relations with Russia, which has frequently expressed its dissatisfaction with NATO's expansion, especially since any provocation of this kind would make President Yeltsin's internal policy position more difficult by allowing his opponents to point to weakness on his part and a threat to Russia's interests.

On the other hand, NATO cannot afford to give the impression that Russia can exercise some kind of power of veto over its expansion decisions. NATO has also clearly communicated this point of view to Russia. Polish membership of NATO would change the military balance of power throughout the Baltic significantly, as it would give NATO a land frontier with Russia in the Kaliningrad area, an area which in any case contains a major concentration of military forces.

This change in situation would also be dramatic in terms of naval strategy. The headquarters of the Russian Baltic Fleet would be immediately adjacent to an area occupied by NATO forces, and both Kaliningrad and the Baltic states would fall into the area covered by NATO short-range operations. The situation would be problematic for the Russians even in a mild international political climate, and perhaps quite intolerable. The incorporation of Poland in NATO as a full member against Russia's will would introduce new tensions into the central Baltic.

Another fact connected with the expansion of NATO towards the east is that it would be difficult at this stage to extend the security guarantees which automatically follow membership to the Baltic countries, at least. The lack of a military infrastructure makes the area difficult to defend without any preliminary preparations.

As the focus of naval strategy shifts to the northern Baltic, the position of the Åland Islands will become more crucial. Its demilitarized status has both an international political dimension and a military dimension, and these are connected one with the other.

Although recent discussions have clearly indicated that the Åland Islands have gained in military importance as the situation in the Baltic has altered, the Finnish government feels that there is no international political need to alter the official status of the islands.

Although Finland's extension of her territorial waters has increased the area falling under the self-government powers invested in Åland, this will not at least directly affect the position of the demilitarized zone, at least not directly. Indirectly, however, it may have some impact as the zone will now occupy a smaller proportion of the Finnish sea area, which will extend outwards for 12 nautical miles.

What would be the position of the Åland Islands in Finland if the latter were a member of NATO and WEU? In its current form, the province would be an anomaly in any defence union, as it would house the consulate of a foreign power which has a contractual right to supervise the maintenance of the islands' demilitarized status, an heirloom from the Second World War.

The people of Åland Islands have fairly openly aimed at emphasizing the independence of action on the international scene. They have received unreserved support from Russia in the maintenance of demilitarized status, to the extent that a delegation from the islands has visited Russia to discuss questions of security policy pertaining to the islands. Representatives of foreign countries and their minorities have also visited the islands to learn about the position that they occupy.

There are still some open questions in the Baltic in the aftermath of the Second World War, such as the future of the Kaliningrad area and the position of the Åland islands. Possible NATO membership for Poland on the one hand or Finland and Sweden on the other would raise these questions at least to a level above that of mere discussion. A difficult situation would arise, for instance, if the national interests of Finland, expressed in a desire for membership of a defence union, were to prove incompatible with the demilitarized position of the Åland Islands. In this case the national interest would presumably be paramount.

# NOTES

- 1 U.S. Naval Proceedings/Naval Review 1991, p. 184
- 2 The Military Balance 1990/1991 and 1991/1992. The International Institute for Strategic Studies (IISS).
- 3 Admiral Vladimir Yegorov, Helsingin Sanomat 3.3.1993
- 4 The Military Balance 1993-1994, p. 103.
- 5 Jane's Fighting Ships, 1989/1990.
- 6 Jane's Defence Weekly, Vol. 14, no. 15, 13.10.1990, p. 690. Soldat und Technik 11/1990, pp. 64-68. Maritime Defence, 8/1992.
- 7 Morten Bomholt Nielsen, Sovjetmarinen i Östersjön, Institut for Forsvarsstudier 4/1991. The Military Balance 1994/1995.
- 8 Sydsvenska Dagbladet, 20.1.1993.
- 9 Reference is made to the issue in a wider context, e.g. by Pekka Visuri in his article 'Sicherheitspolitische Konsequenzen der Vereinigung Deutschlands - Eine Bewertung aus nordischer Sicht' in Nordeuropa und die deutsche Herausforderung, Nomos-Verlag, 1994, p. 107, see also an article by Mikko Viitasalo and Bo Österlund entitled Itämeren meristrateginen tilanne muuttuu (A change in the strategic situation in the Baltic Sea), Ulkopoliittikka 4/92, p. 44 (in Finnish)
- 10 Svenska Dagbladet, 26.3.1993. The article contains an evaluation of the visits of NATO vessels to the Baltic, provided by Colonel Jan Blomqvist, a Swedish intelligence expert.
- 11 Report of the Meeting of the Baltic Pilotage Authorities Commission in Lübeck 23.-24.5.1984. Contained in Osmo Tuomi: Itämeri ja sen lähialueet Varsovan liiton turvallisuusjärjestelmässä (The Baltic and its nearby areas in the security system of the Warsaw Pact), Aseidenriisunnan neuvottelukunta (ARNEK) 1986, A/4, p. 11 and Appendix 6.
- 12 Helsingin Sanomat 27.7.1993. An article in Finnish referring to a survey carried out by the Technical Research Centre of Finland.
- 13 Lecture given by Dr. Georgy A. Levikov: The Russian Port Policies and Future Plans in the Baltic Sea Area, at seminar on sea traffic in the Baltic held in Naantali on 8.-9.9.1993, contained in the report The Baltic Sea in International Bulk Transport, Publications of the Centre for Marine Studies of the University of Turku, A 13, Turku 1993, pp. 81-83.
- 14 Publications on the Baltic Sea Area, A Selected List, Compiled by Riitta Siunala, Library of Parliament, Helsinki 1990.
- 15 Fishing in the Baltic aroused discussion among Finns in July 1994, particularly in connection with the meeting of Nordic prime ministers at Kerimäki in Finland. The basic agreement governing fishing in the Baltic (and the Belts) is the 'Convention of 1973 on Fishing and Conservation of Living Resources in the Baltic Sea and the Belts' concluded in Gdansk in 1973. Contract series 40/1974 of the Finnish law collection.
- 16 The Baltic Sea Area, A region in the making, Contributions from 16 authors, Editors Sverre Jervell, Mare Kukk and Pertti Joenniemi, Sarpstorg,

- November 1992. The work includes articles by Ola Tunander: The strategic significance of the Nordic-Baltic region, pp. 211-229, and Pekka Visuri: The changing political and strategic status of the Baltic region, pp. 230-238.
- 17 Flådestrategier og nordisk sikkerhetspolitikk, Bind 1, Det sikkerhets- og nedrustningspolitiske utvalg (SNU) 1986, Ko/benhamn 1986, p. 64.
  - 18 Voipio, Aarno (editor), The Baltic Sea, Elsevier Oceanography Series, 30, Amsterdam 1981, p. V
  - 19 SNU (see note 1), p. 64
  - 20 Ibid. p. 64-65
  - 21 Mälkki, Pentti and Tamsalu, Rein, Physical Features of the Baltic Sea, Finnish Marine Research No. 252, Helsinki 1985, pp. 9-10. The publication contains more detailed and accurate data than the SNU report regarding aspects such as sea depths.
  - 22 SNU, p. 66.
  - 23 Seinä, Ari and Palosuo, Erkki, Itämeren suurimpien vuotuisten jääpeitteiden laajuuksien luokittelu 1720-1992 (Classification of the maximum annual extents of sea ice on the Baltic in 1720-1992), Meri No. 20, Maritime Research Institute, Helsinki 1993, p. 5 (in Finnish). In the case of the winter of 1946-1947 reference is made in the above publication to an investigation by H.Simojoki entitled 'Eisverhältnisse in den Finnland umgebenden Meeren in den Wintern 1946-50' (Publications of the Maritime Research Institute no. 154, Helsinki 1952), in which it is stated that 'Ende Februar dürfte die Ostsee zum grössten Teil mit dünnem Eis bedeckt sein' (Most of the Baltic Sea could easily be covered by thin ice at the end of February)
  - 24 Ibid. pp. 9-10.
  - 25 For temperatures and salinity of the Baltic, see e.g. Haapala, Jari and Alenius, Pekka: Temperature and Salinity Statistics for the Northern Baltic Sea 1961-1990, Finnish Marine Research No. 262, Helsinki 1994, pp. 51-121.
  - 26 SNU, p. 66
  - 27 Amendment to the law regarding the boundaries of Finland's territorial waters (981/1995).
  - 28 Agreement concluded by an exchange of notes between the Estonian embassy in Helsinki and the Finnish Ministry of Foreign Affairs, 4.5.1994.
  - 29 Agreement concluded between the Republic of Finland and the Kingdom of Sweden on 2.6.1994 regarding the determination of the boundary between the Finnish continental shelf and fishing zone and the Swedish economic zone in the Åland Sea and northern Baltic Sea.
  - 30 Customs Law (573/78) §1. Printing office of the Finnish Council of State 1978.
  - 31 Law 981/95, see reference 1.
  - 32 Report of the meeting of the Baltic Pilotage Authorities Commission in Lübeck, 23.-24.5.1984. The source mentions that data for 1982 were not available, nor do the statistics specify vessel sizes and tonnages, for example.
  - 33 E.M.Mahlin, Development of Russia's Foreign Trade Cargo Flows through Baltic Sea Ports, Expert Meeting on Ports and Maritime Transport, November 14-15.1994, Council of the Baltic States, Publications of the Maritime Training Centre, University of Turku, A 18, Turku 1995, pp. 4-12

- 34 Juhani Vainio, Vladimir Segercrantz, The role and objectives of research, Sheets of ongoing research projects of Baltic region, Expert Meeting on Ports and Maritime Transport, November 14-15, 1994, Publications of the Maritime Training Centre, University of Turku, A 18, Turku 1995, pp. 97-108
- 35 Levikov, see reference 13 in the Introduction
- 36 Mahlin, see above.
- 37 Mahlin, see above.
- 38 Mahlin, see above.
- 39 Changes in the flow of goods to and from Russia in the Baltic area from Finland's point of view, Publications of the Ministry of Transport 8/94, Helsinki, 1994, p. 7
- 40 See above, pp. 7-8, see also p. 28
- 41 Matthew Kaminski, Baltic ports search for new role as gateway to Russia, Financial Times, February 17, 1995. See also Helsingin Sanomat of 28.3.1995 'Baltia lastaa länteen' (The Baltic loads up for the west).
- 42 Christian Wellmann, Market Place or Garrison? On the Future of the Kaliningrad Region, Projektverbund Friedenswissenschaften Kiel, Kiel, Juni 1994, p. 24
- 43 Kauppalehti, OPTIO, no. 6, 23.3.1995, pp. 46-47
- 44 Norman Polmar, Guide to the Soviet Navy 1991. Fifth Edition.
- 45 U.S. Naval Proceedings, Naval Review 1991/1992
- 46 Morskoj Sbornik, 7/1992
- 47 U.S. Naval Proceedings, Naval Review 1992/1993.
- 48 U.S. Naval Institute Proceedings, July 1993, October 1993
- 49 Naval Forces VI/1994, The Withdrawal of the Russian Baltic Fleet.
- 50 Captain (Navy) Victor Potvorov, Naval War College Review II/1994, National Interests, National Security and the Russian Navy.
- 51 The Military Balance 1994-1995 in Northern Europe, The Norwegian Atlantic Committee, 1995.
- 52 Vårt Försvar, 2/1989, pp. 8-10.
- 53 Morskoj Sbornik 7/1993, Admiral Valentin Selivanov, Head of the Russian Naval Headquarters.
- 54 Naval Force IV/1993, Admiral Felix Gromov, Commander of the Russian Naval Forces, Reforming the Russian Navy.
- 55 U.S. Naval Proceedings/Naval Review 1991.
- 56 U.S. Naval Proceedings, The Soviet View, December 1991.
- 57 Marin Nytt 1993, Ryska Östersjöflottan utvecklar sina baser.
- 58 Jane's Intelligence Review, April 1994, The Russian Navy in Transition.
- 59 U.S. Naval Proceedings, March 1995, World Navies in Review: Russia.
- 60 Ibid.
- 61 U.S. Naval Proceedings, March 1995, July 1993
- 62 Ibid.
- 63 NAFO IV/1993.
- 64 U.S. Naval Proceedings/Naval Review 1991.
- 65 U.S. Naval Proceedings, August 1993, The Russian Naval Review.
- 66 Marineforum no. 9/1994, Interview with Admiral Vladimir Yegorov, Die baltische Flotte.

- 67 Ibid.
- 68 The Military Balance 1984-1985, International Institute for Strategic Studies (IISS), London, The Alden Press, Oxford, 1994, p. 27
- 69 See Jane's Fighting Ships 1992-1993, edited by Richard Sharpe, pp. 466-473
- 70 The Military Balance 1986-1987, p. 53
- 71 On this, see Military Balance 1989-1990, p. 44 and p. 50 and 1990-1991, p. 51
- 72 The Military Balance 1990-1991, p. 51
- 73 On this, see The Military Balance 1987-1988, p. 46 and p. 52
- 74 Jane's Fighting Ships 1994-1995, edited by Richard Sharpe, pp. 501-512
- 75 Jane's Defence Weekly (JDW), Vol 22 No. 16, 22 Oct 1994, p. 10
- 76 The Military Balance 1994-1995, p. 97, see references 26 and 29 above.
- 77 See references 26 and 31 above.
- 78 See references 31 and 32
- 79 See reference 32
- 80 Marineforum no. 10/1994, Die Flotte, Wandel, Einsatz, Entwicklung.
- 81 Soldat und Technik 3/1993, Die Marine auf dem Weg in das nächste Jahrhundert, Vice-Admiral Hein-Peter Weyher.
- 82 Soldat und Technik 11/1991, Flotte 2005, Die Marine auf dem Weg in die Zukunft, Fregattenkapitän d.R. Volker-Herbert Burggraf.
- 83 Marineforum 10/1994, Die Flotte, Wandel, Einsatz, Entwicklung. Marineforum 3/1995, Unsere Marine auf Kurs 2005.
- 84 Truppenpraxis 4/1993, Die maritime Dimension unserer Sicherheit ist gewachsen.
- 85 Marineforum 3/1995, Unsere Marine auf dem Weg in das nächste Jahrhundert, Vice-Admiral Hein-Peter Weyher.
- 86 Naval Institute Proceedings, March 1992, Flag officer Denmark, Rear-Admiral Knud Borck.
- 87 Navy International, Modernising Denmark's Navy, April 1992.
- 88 Naval forces NAFO 1987-1989, Jane's Defence Weekly, May 1990
- 89 International Defence Review, 1/1993, Denmark's naval modernization, survival through innovation.
- 90 Standard Flex, The Future Multi-role Ship, Operating a Fleet of Standard Flex Units, Rear-Admiral Knud Borck, pp. 14-15 in a dock brochure of March 1992.
- 91 See reference 47, p. 15.
- 92 Maritime Defence, May 1992, The Danish Stanflex 300, p. 147.
- 93 Jane's Defence Weekly, September 1994, Danish Defences get land-based Harpoon, p. 5
- 94 Operative plan drawn up by the Commander-in-Chief of the Swedish Navy, entitled 'Nya Hårda Bud', see separate appendix to Marin Nytt 6/1992, publication of the information section of the Swedish Defence Headquarters.
- 95 Head of the Swedish Navy headquarters Major-General Lars Persson, The Swedish Navy Today, Navy International, January/February 1993.
- 96 As reference 51.
- 97 Revised operative plan drawn up by the Commander-in-Chief of the Swedish Navy, entitled 'Försvarspropositionen', November 1993, Marin

- Nytt 1/1994, Publication of the information section of the Swedish Defence Headquarters.
- 98 Marinen i Försvarsmaktsplan 1995, Marin Nytt 6/1994, Publication of the information section of the Swedish Defence Headquarters.
- 99 'Marinen och internationell verksamhet': statement made by Rear-Admiral Frank Rosenius, Commander of the Swedish Coastal Fleet, in Marin Nytt 6/1994, Publication of the information section of the Swedish Defence Headquarters
- 100 Sea traffic between Finland and foreign countries 1994, Maritime traffic statistics published by the Maritime Institute 5/1995.
- 101 See above.
- 102 Mariner's Handbook 1993, The Finnish Navy, Tasks of the navy.
- 103 Visa, Sakari, Vice-Admiral, Commander-in-Chief of the Finnish Navy, Our navy relies on mines and missiles, *Kylkirauta* no. 2/1993, p. 25
- 104 Visa, Sakari, Vice-Admiral, interview with the Commander-in-Chief of the Finnish Navy, entitled 'Finland's secret weapon', *Suomen Kuvaletti* no. 46, 18.11.1994, p. 29 (in Finnish).
- 105 North Atlantic Treaty Organization 'NATO HANDBOOK', Nato Information and Press Office, 1110 Brussels, Belgium 1992.
- 106 Allied Command Europe, ACE Backgrounder, Public Information Office, B-7010 SHAPE, Belgium 1994.
- 107 *Tidskrift i Sjöväsendet*, Östersjöns strategiska betydelse från NATO:s synvinkel, Kungliga Örlogsmannasällskapets publikation, 157. årgången, 2. häftet 1994.
- 108 Norwegian Defence, The Way Ahead in the Northern Region, General Sir Garry Johnson, CIC Allied Forces Northern Europe, Review published by the Norwegian Defence Association, 1993
- 109 Building a Partnership for Peace, Gebhardt von Moltke, *NATO Review* No. 3, June 1994, p. 3.
- 110 NATO Partnership for Peace, Publication of the NATO Information and Press Office, NATO Summit, January 1994, pp. 1-3.
- 111 *Soldat und Technik, Sicherheitspolitische Umschau*, 1/1995, p. 7.
- 112 David Miller, in his paper *New Look for European Command*, *International Defence Review* 5/1994, p. 31.
- 113 The North Atlantic Treaty, Washington D.C., 4.4.1949, Article 6: 'The North Atlantic area north of the Tropic of Cancer'. The treaty has been published in a number of collections and manuscripts, see The North Atlantic Treaty Organization, *Facts and Figures*, 11th edition, Brussels, NATO 1989, p. 377.
- 114 See Miller above, p. 30.
- 115 *Sydsvenska Dagbladet*, 20.1.1993.
- 116 *Itar-Tass* 4.2.1993.
- 117 The Alliance's Strategic concept, Part IV, Section 57. The document was approved in a NATO meeting in Rome on 7.-8.11.1991. The passage reads: "Sub-strategic nuclear weapons will, however, not be deployed in normal circumstances on surface vessels and attack submarines."
- 118 *The Military Balance 1993-1994*, International Institute for Strategic Studies (IISS), Brassey's, Amersham, Bucks, 1993, p. 237.

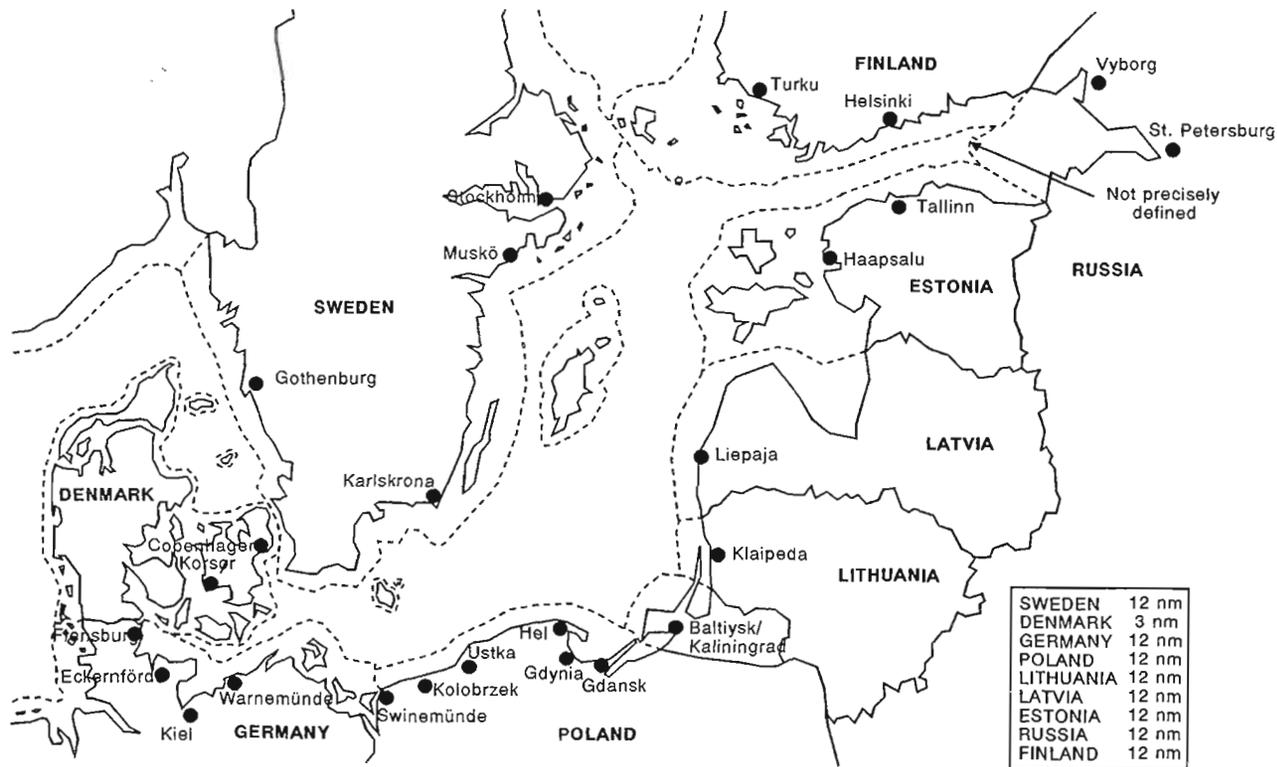
- 119 See above, p. 103  
See also Militaerbalansen 1993-1994, Norsk utgave ved Den norske Atlanterhavskomiteé, Aurskog, 1994, p. 47, pp. 211-213.
- 120 Jane's Defence Weekly, Vol. 21, No 17, 30 April 1994, p. 3.
- 121 Christensen, Hans, Soviet Nuclear-Powered Ships and Submarines, Greenpeace, Nuclear Information Unit, Stockholm, September 1991.
- 122 Potvorov, Victor, National Interests, National Security and the Russian Navy, Naval War College Review, Vol. XLVII, No. 4, Autumn 1994, pp. 62-63, The author is a Captain in the Russian Navy (Captain First Rank).
- 123 Helsingin Sanomat 27.4.1993.
- 124 Agreement concluded between France, Great Britain and Russian regarding the Åland Islands on 30.3.1856 (pp. 1-2, Finnish translation), Printing office of the Finnish Council of State, November 1926.
- 125 Stjernfelt, Bertil 1991: Ålands hav och öar - brygga eller barriär? (pp. 16-17), Svensk-finsk försvarsfråga 1915-1945, Marinlitteraturföreningen, No. 72, Karlskrona.
- 126 Sauramo, L.J. 1938: Fortification of the Åland Islands and the agreement of 1921 (pp. 11-12), Publications of the Coastal Artillery Officer Association, Printing Office of the Association of Rural Councils.  
B. Stjernfelt was not referring only to Swedish activity. As far as the contribution of the inhabitants of the Åland Islands is concerned, the reader is referred to the article "Freedom for Finland - the Åland Islands for Sweden", published by the activist Julius Sundblom in December 1917 (pp. 18-19).
- 127 Sauramo, L.J. (p. 13) and Stjernfelt, B. (pp. 28-29).
- 128 Sauramo, L.J. (pp. 14-15).
- 129 Stjernfelt, B. (pp. 40).
- 130 Agreement No. 1 regarding the non-fortification and neutrality of the Åland Islands, Statutes of Finland, 1922, No. 64, Printing Office of the Finnish Council of State, Helsinki. The Åland Agreement is usually referred to as the agreement of 1921 after its year of signing, but sometimes as the agreement of 1922, after its ratification. The expression 'agreement of 1921' would seem more justifiable.
- 131 Castrén, Erik, Non-fortification and neutrality of the Åland Islands, Lakimies no. 3/1939, p. 269.
- 132 Erich, Rafael, Finnish Constitutional Law, Part I, Helsinki, 1924, p. 183.
- 133 See Björkholm, Mikaela & Rosas, Allan, Ålandsöarnas demilitarisering och neutralisering, Åbo 1990, p. 70.
- 134 Agreement No. 1 regarding the non-fortification and neutrality of the Åland Islands.
- 135 Memorandum no. 334/7 g/Sot/D3/24.1.1983, of the Department of Military Affairs of the Finnish Ministry of Defence, pp. 8-9.
- 136 Stjernfelt, B. (p. 112-113).
- 137 Manninen, Ohto, Compilation based on material published in the Military Magazine in 1993.
- 138 Bill placed before Parliament by the Finnish government for an agreement to be concluded with the Union of Soviet Socialist Republics regarding

demilitarization and non-fortification of the Åland Islands. Parliamentary session of 1940, No. 105. Helsinki, 3rd November 1940. Printing office of the Finnish Council of State, Helsinki.

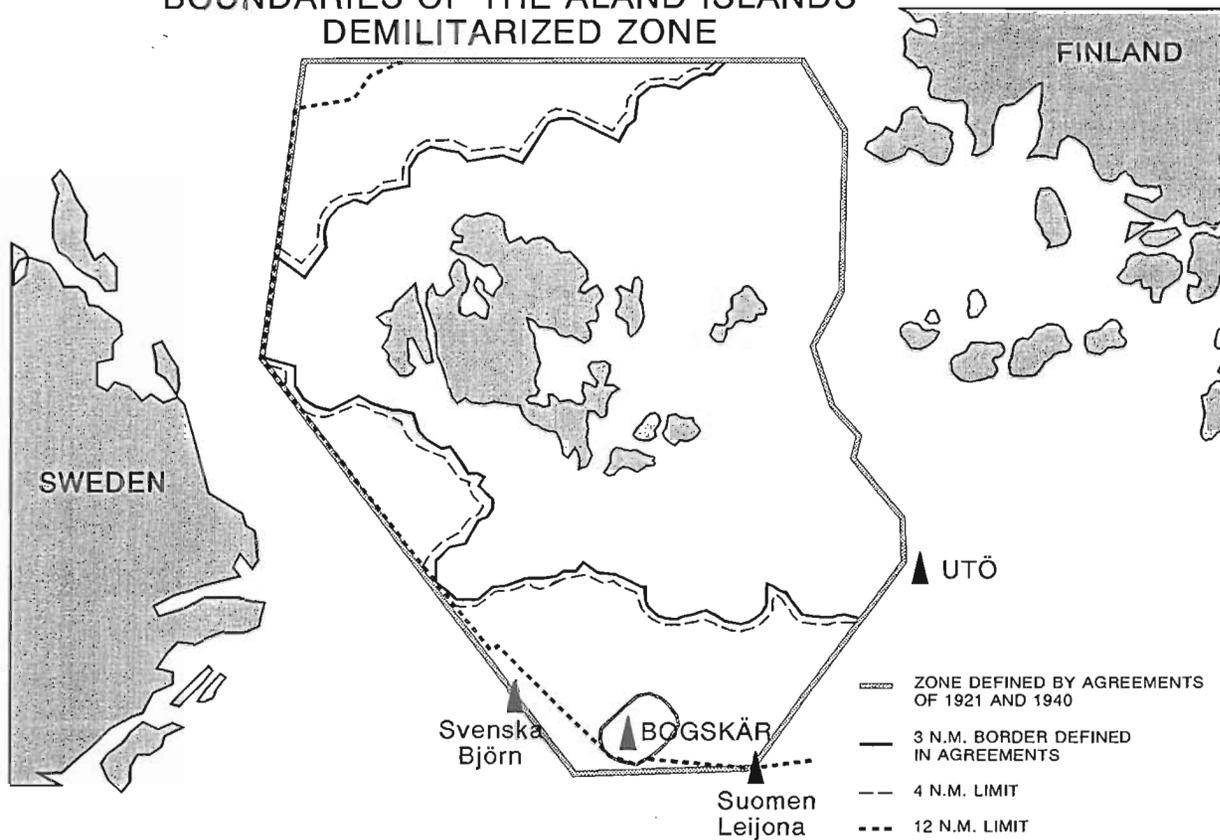
- 139 Hägglund, Gustav, interview in *Nya Åland* 22.32.1994. "Ni ska vara tacksamma..."
- 140 The reader is referred to the recently published paper by Anders Gardberg, *Åland Islands, A Strategic Survey* (Finnish Defence Studies, 8, 1995). In view of the existence of this work devoted entirely to the Åland Islands, we will not enter here into any more extensive discussion of the islands as an operational area nor of their significance to military strategy.



## TERRITORIAL WATERS OF THE COUNTRIES AROUND THE BALTIC



# BOUNDARIES OF THE ÅLAND ISLANDS DEMILITARIZED ZONE



# BASES OF THE RUSSIAN BALTIC FLEET



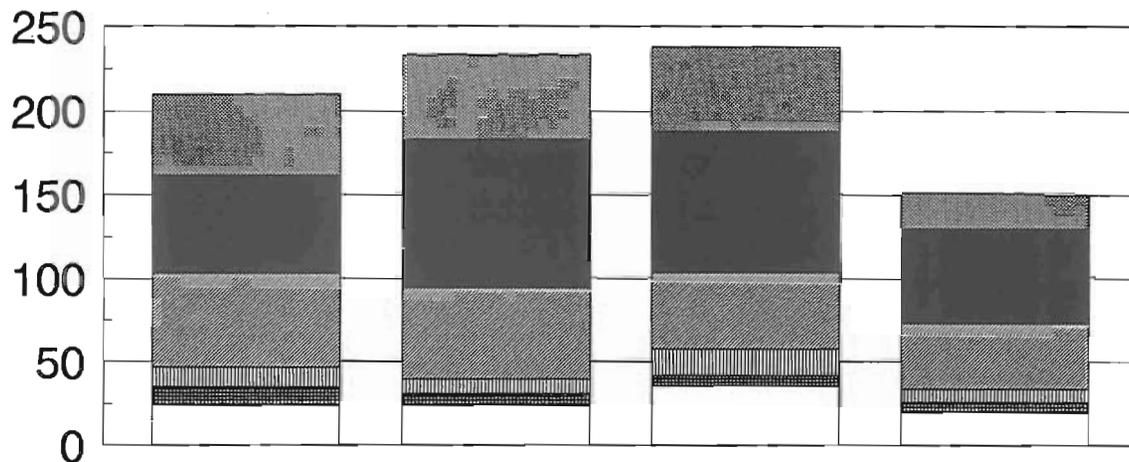
## RUSSIAN (SOVIET) SHIPS MAKING UP THE BALTIC FLEET

Source: The Military Balance in Northern Europe 1990-1991, 1993-1994 and 1994-1995

	1 990	1 993	1 995
<b>Cruisers / battleships</b>	<b>1</b>	<b>2</b>	<b>2</b>
Sverdlov-cl.	(1)		
Kirov-cl.		(1)	(1)
Kresta I		(1)	(1)
<b>Destroyers</b>	<b>4</b>	<b>5</b>	<b>3</b>
Kynda	(1)	(1)	
Kashin mod	(1)	(1)	
Kildin mod	(1)		
Kashin	(1)		(1)
Udaloy II			(2)
Sovremenny		(3)	
<b>Frigates</b>	<b>33</b>	<b>32</b>	<b>21</b>
Krivak II	(1)	(1)	(1)
Krivak I	(5)	(5)	(5)
Grisha I-V	(4)	(4)	(2)
Grisha II	(2)		
Mirka	(7)	(3)	(3)
Petya	(1)	(4)	(4)
Riga	(1)		
Parchim II	(12)	(12)	(12)
Neustrashimyi		(1)	(1)
Koni		(2)	
<b>Missile boats / corvettes</b>	<b>46</b>	<b>42</b>	<b>42</b>
Tarantul I-III	(12)	(13)	(14)
Nanuchka I-II	(9)	(11)	(11)
Matka	(10)	(8)	(7)
Osa I-II	(15)	(9)	
<b>Minesweepers</b>	<b>60</b>	<b>32</b>	<b>23</b>
Natya I-II	(4)	(4)	(3)
Yurka	(10)	(4)	
T-43	(4)		
Andryusha	(2)	(2)	(2)
Sonya	(18)	(22)	(17)
Gorya			(1)
Zhenya	(2)		
Sasha	(2)		
Vanya	(18)		
<b>Landing craft</b>	<b>21</b>	<b>20</b>	<b>9</b>
Ivan Rogov-cl.	construction (1)		
Alligator-cl.	(2)	(2)	(2)
Popucha-cl.	(7)	(6)	(6)
Polnocny-cl.	(12)	(3)	(1)
<b>Submarines</b>	<b>28</b>	<b>20</b>	<b>16</b>
Juliett	(2)	(5)	(4)
Tango	(3)		
Foxtrot	(5)	(13)	(9)
Whiskey	(16)		
Kilo	(2)	(1)	(2)
Lima		(1)	(1)

# The German Navy

## Numbers

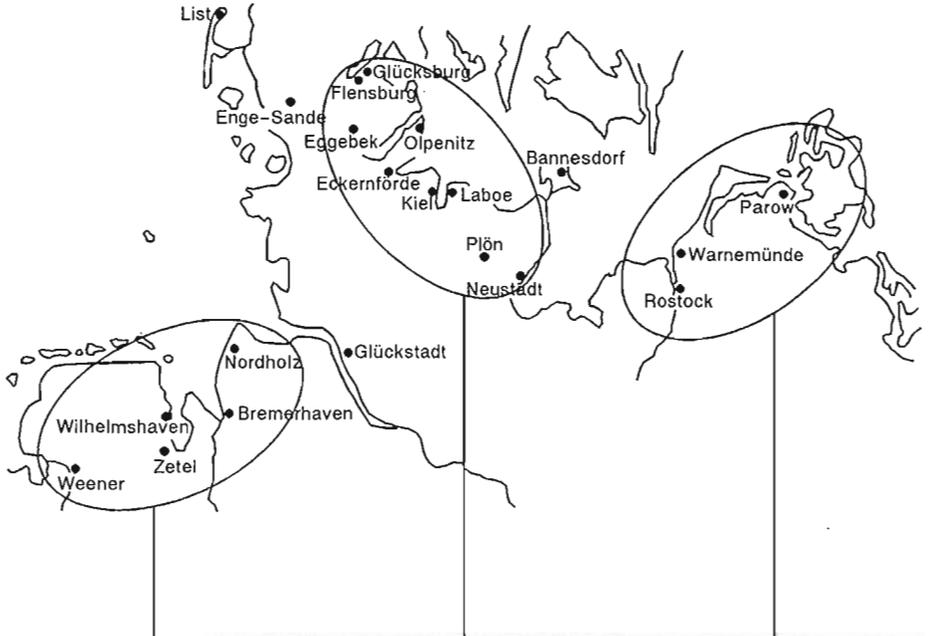


Year	80	85	90	94
Submarines	24	24	36	20
Destroyers	11	7	6	6
Frigates	12	9	16	8
Combat crafts	56	54	45	38
Minesweepers	59	89	85	57
Landing craft	48	50	50	21

Source: Weyers Flotten Taschenbuch 1978-90 and Jane's Fighting Ships 1993/94  
 Compiled: 9.11.1994

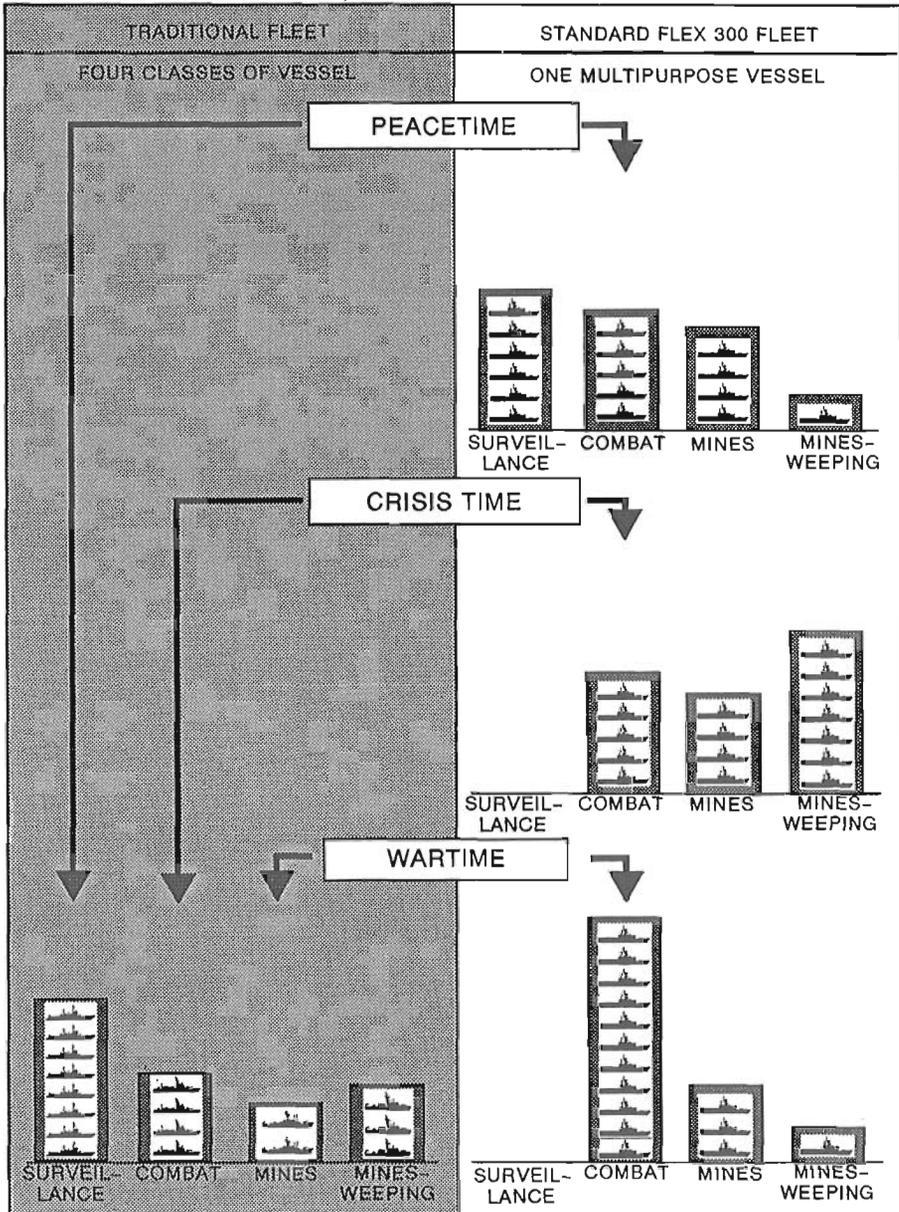
# GERMAN NAVAL PLAN "MARINE 2005"

## BASES AND COMMAND STRUCTURE



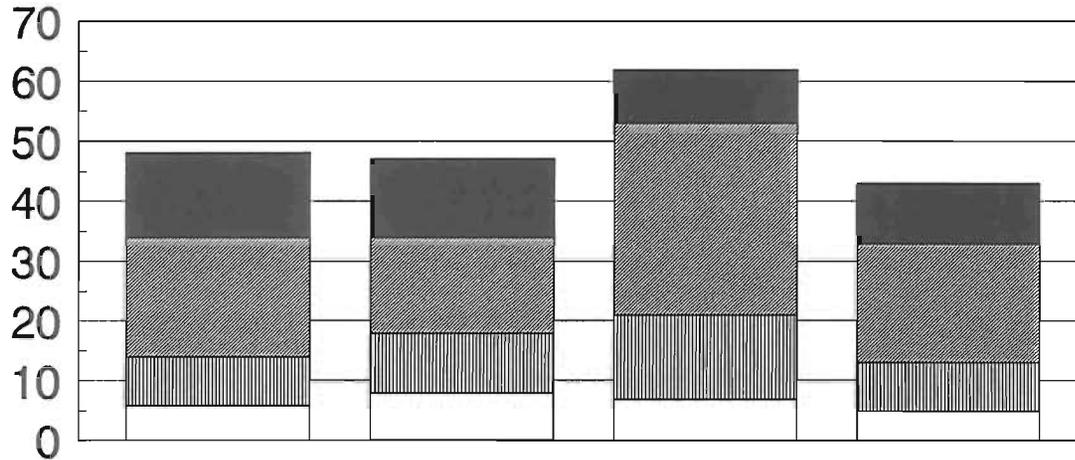
<b>Maintenance Wilhelmshaven</b>		<b>Naval H.Q. Glücksburg</b>		<b>Materials H.Q. Rostock</b>	
Wilhelmshaven	Operative Command West	Kiel	Operative Command North	Warnemünde	Operative Command East
Bremerhaven	Naval Operations College	Flensburg	Naval Training Centre	Parow	Naval Technical College
		Plön List/Sylt	Naval NCO's School Naval Maintenance College		

# STANDARD FLEX 300 MULTIROLE VESSEL, ARMAMENT AND EQUIPMENT MODULES INSTALLED AS REQUIRED



# The Danish Navy

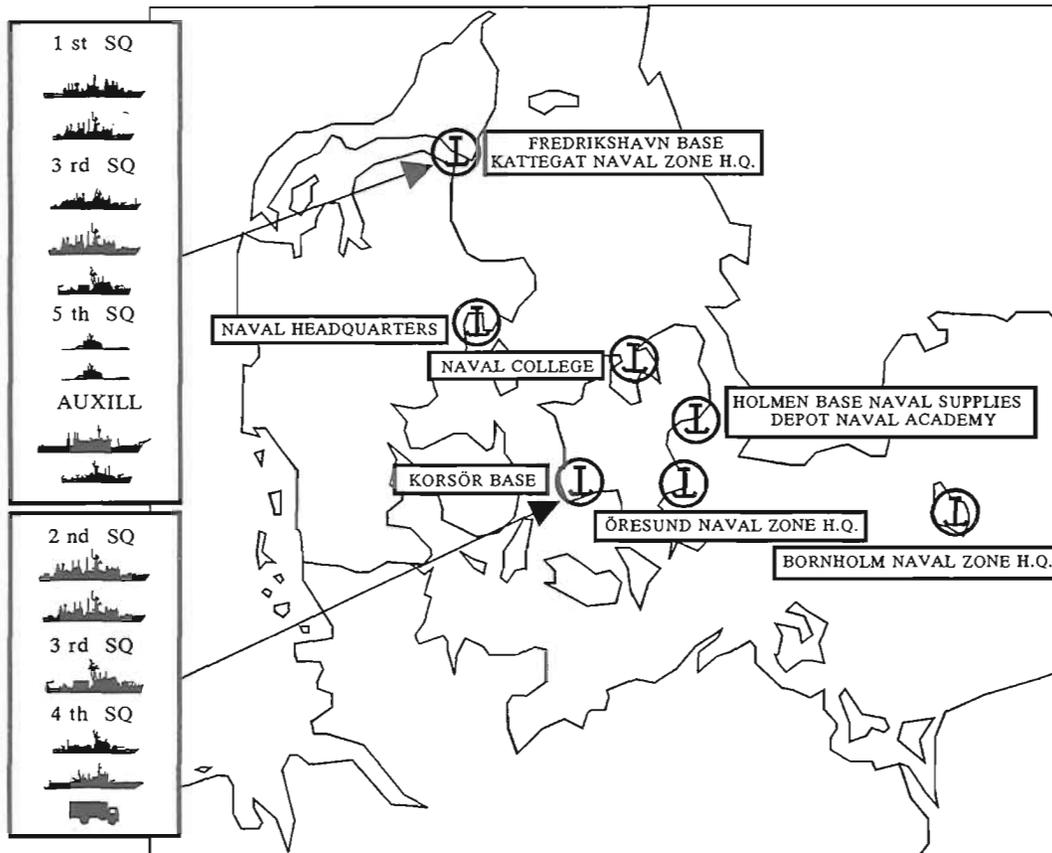
## Numbers



Year	80	85	90	94
Submarines	6	8	7	5
Destroyers				
Frigates	8	10	14	8
Combat crafts	20	16	32	20
Minesweepers	14	13	9	10

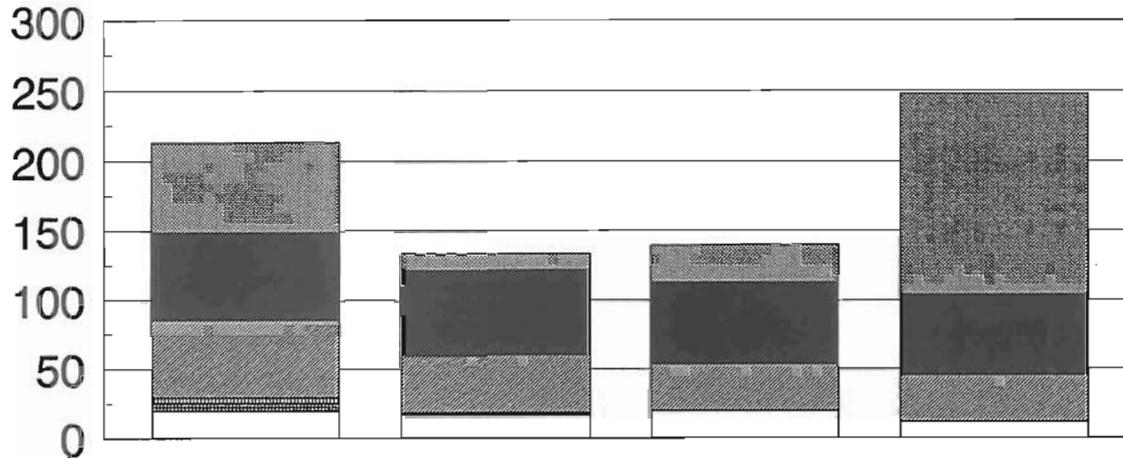
Source: *Weyers Flotten Taschenbuch 1978–90* and *Jane's Fighting Ships 1993/94*  
 Compiled: 9.11.1994

# THE DANISH NAVY



# The Swedish Navy

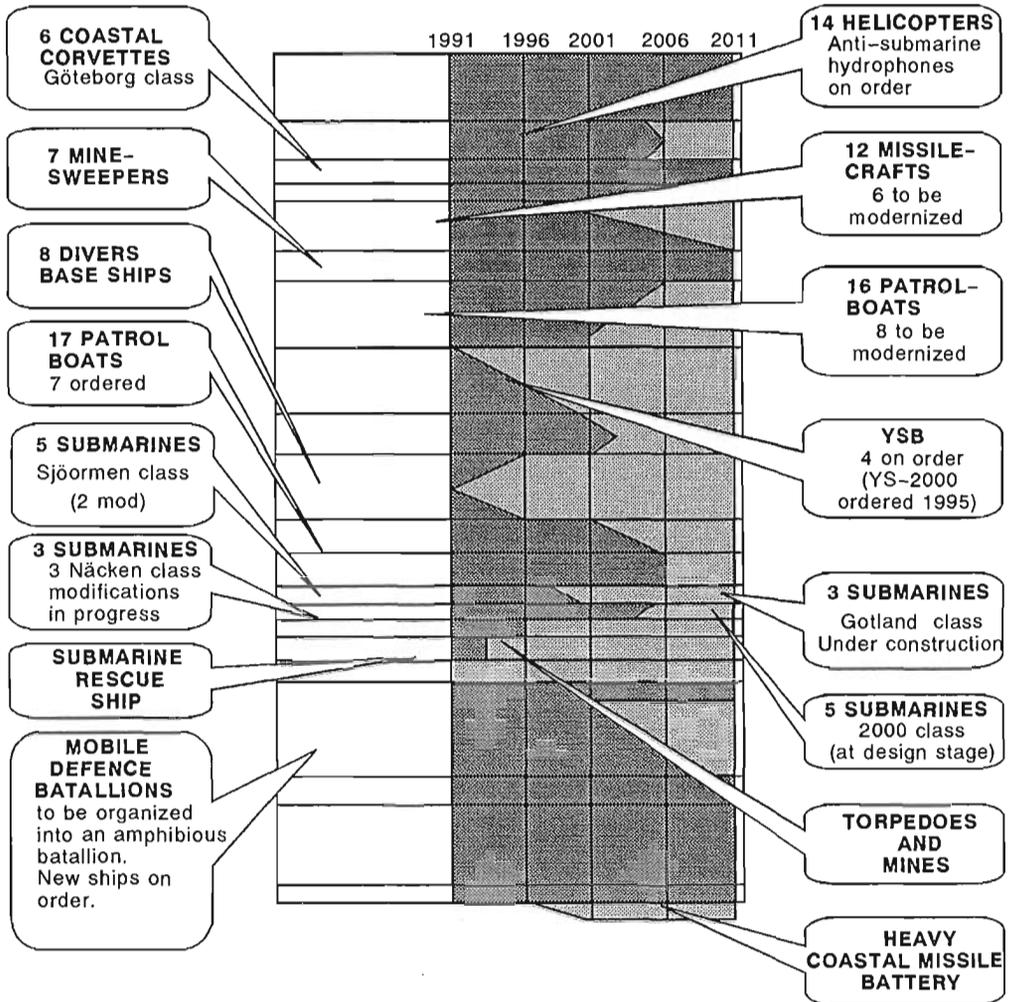
## Numbers



Year	80	85	90	94
Submarines	20	17	20	12
Destroyers	6	2		
Frigates	4			
Combat crafts	57	42	34	34
Minesweepers	63	62	60	59
Landing craft	64	11	26	143

Source: Weyers Flotten Taschenbuch 1978-90 and Jane's Fighting Ships 1993/94  
 Compiled: 9.11.1994

# DEVELOPMENT PLAN FOR THE SWEDISH NAVY



Service life  
 Acquisition

## FINNISH NAVAL COMBAT VESSELS 1995

### COMMAND SHIPS



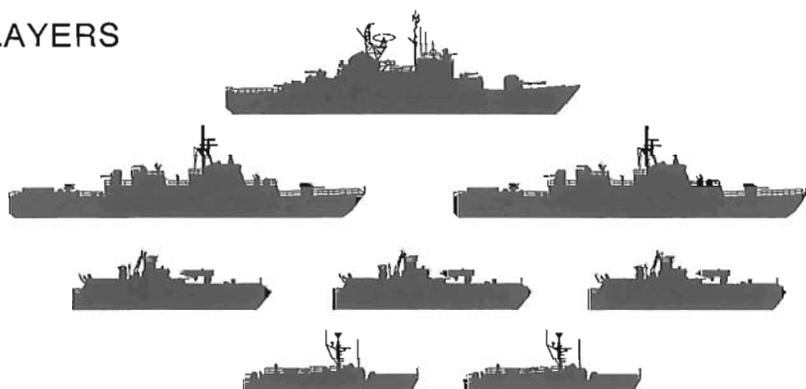
### MISSILE BOATS



### PATROL BOATS



### MINELAYERS



### MINESWEEPERS



**COMPLEMENT OF THE RUSSIAN BALTIC FLEET IN THE 1990 s  
AND MAIN WEAPONS SYSTEMS ON BOARD**

VESSELS TYPE	1991-1992	1992-1993	1994-1995	Armaments *)
<b>SUBMARINES</b>				
* Juliett SSG	5	5	4	SS-N-3A
* Kilo SS	1	1	2	
* Foxtrot SS	13	13	9	
* Lima SA	1	1	1	
<b>Total</b>	<b>20</b>	<b>20</b>	<b>16</b>	
<b>CRUISERS</b>				
* Kirov CGN	1	1	1	SS-N-19 SSM / SS-N-14 ASW SS-N-3B SSM
* Kresta I CG	1	1	1	
<b>Total</b>	<b>2</b>	<b>2</b>	<b>2</b>	
<b>DESTROYERS</b>				
* Udaloy II DDG	1	-	1	SS-N-14 / ASW RL SS-N-22 SSM SS-N-3B SSM
* Sovremennyj DDG	2	3	2	
* Kynda CG	1	1	-	
* Kashin DDG	1	1	-	
<b>Total</b>	<b>5</b>	<b>5</b>	<b>3</b>	
<b>FRIGATES</b>				
* Krivak II FFG	1	1	1	SS-N-14 ASW
* Krivak I	5	5	5	
* Neustrashimy	-	1	1	AEW QL
* Koni FFG	-	2	-	
* Grisha FFL	2	4	2	
* Mirka FFL	-	3	-	
* Petya	-	4	-	
* Parchim (ASW)	12	12	12	
<b>Total</b>	<b>20</b>	<b>20</b>	<b>21</b>	
<b>CORVETTES AND MISSILE SHIPS</b>				
* Tarantul ASUW	12	13	14	
* Nanuchka ASUW	12	11	11	
* Matka PHM	10	8	7	
* Osa I-II PBM	10	9	-	
<b>Total</b>	<b>44</b>	<b>41</b>	<b>32</b>	
<b>MINELAYERS AND MINESWEEPERS</b>				
<b>Total</b>	<b>32</b>	<b>32</b>	<b>23</b>	
<b>LANDING CRAFT</b>				
<b>Total</b>	<b>32</b>	<b>11</b>	<b>9</b>	

**KEY:**

ASUW	Anti-submarine
CG	Missile cruiser
CGN	Cruiser carrying nuclear missiles
DDG	Missile destroyer
FFG	Missile frigate
FFL	Light frigate
PBM	Patrol boat armed with missiles
PHM	Missile ship
SA	Supply submarine
SS	Conventional submarine
SSG	Submarine carrying nuclear missiles

**SOURCES:**

The Military Balance in Northern Europe 1991–1992, 1992–1993, 1994–1995  
The Naval Institute, Guide to the Soviet Navy, 5. edition, 1991  
Jane's Fighting Ships 1992–1993

\*) For key, see Appendix 14

## DUAL-PURPOSE WEAPONS USED BY THE RUSSIAN BALTIC FLEET

VESSELS	Number			Weapon type	Armament	Total Warheads 1992-1993
	1991-1992	1992-1993	1994-1995			
Juliett SSG	5	5	4	SLCM	4 * SS-N-3A	20
Kirov CGN	-	1	1	SLCM	20 * SS-N-19	20
Kresta I CG	-	1	1	SLCM	2 * 2 SS-N-3B	4
Sovremenny DDG	-	3	2	SLCM	2 * 4 SS-N-22	24
Krivak FFG	6	6	1	SLCM / ASW	1 * 4 SS-N-9	24
Nanuchka ASUW	12	6	11	SLCM	2 * 3 SS-N-9	36
						<b>Total 128</b>

**KEY:**

Number of nuclear warheads as of 1993.

- ASW      Antisubmarine warfare  
 QL      Quadrupole launcher  
 RL      Rocket launcher  
 SS      Surface to surface  
 SLCM    Sea launched cruise missile  
 SSM      Surface to surface missile

**SOURCES:**

- The Military Balance in Northern Europe 1994-1995  
 The Naval Institute, Guide to the Soviet Navy, 5. edition, 1991  
 The Naval Institute, World Naval Weapons Systems 1991-1992  
 Jane's Armour and Artillery 1992-1993





## FINNISH DEFENCE STUDIES

---

- 1 *Evolution of the Finnish Military Doctrine 1945-1985*  
Pekka Visuri, 1990.
- 2 *Flank or Front: An Assessment of Military – Political Developments in the High North*  
Tauno Nieminen, 1991.
- 3 *Non Offensive Defence: A Criteria Model of Military Credibility*  
Arto Nokkala, 1991.
- 4 *Development of Military Technology and its Impact on the Finnish Land Warfare Doctrine*  
Markku Koli, 1992.
- 5 *The Impact of Arms Technology on Military Doctrines*  
Pertti Salminen, 1992.
- 6 *The Baltic Republics: A Strategic Survey*  
Erkki Nordberg, 1994.
- 7 *Finlands Security in a Changing Europe: A Historical Perspective*  
Risto E.J. Penttilä, 1994.
- 8 *Ålands Islands: A Strategic Survey*  
Anders Gardberg, 1995.