THE CHANGING ROLE OF THE SOVIET NAVY

ITS EFFECT ON WARSHIP DESIGN OVER THE PAST TWENTY YEARS

BY

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Introduction

The maritime strategy of a Nation depends upon politcal considerations and upon the apparent threat; this strategy in turn dictates the number and types of ship needed. To ensure that these ships meet their requirements in the most effective way, the latest advances in technology must be developed and applied, correctly apportioned between armament, mobility, vulnerability and accommodation factors. The ships are built; individual roles and tactics are worked out and the side with the best team wins the game!

The above process sounds simple but in practice, it is long and complicated and each stage is probably dominated by considerations of cost.

This paper looks briefly at this process as it has occurred in the Soviet Union over the past twenty years. Because published material is limited, many interesting questions remain unanswered and the paper inevitably provides only a background guide to the process.

Firstly, the changing Soviet naval role is discussed and this is followed by the development of the ships which were designed to meet this role. Other factors influencing the shape and size of the Navy are then included.

THE ROLE OF THE SOVIET NAVY

The 1950's

Russia emerged from the war without a clear long-term naval strategy; she was a major land power, who had regarded naval forces simply as an extension of the army. However, as the post war chaos gradually polarized into the East-West conflict, she found herself faced by the world's most formidable maritime powers. In addition, she possessed a large seaboard and thought that any attack on her homeland would come from amphibious forces. She could not hope to challenge the Western Powers maritime supremacy and, because she lived under the shadow of the American nuclear monopoly, could not risk a show-down at sea. The only way she could bring pressure to bear on the United States was indirectly, through central Europe, which at that time was without doubt the focus of world events. The naval role therefore was:

(*a*) To defend the Soviet coast.

(*b*) To develop a capability for restricting sea communications between the United States and Western Europe.

(*c*) To act as an extension of the army's flank.

These roles would be met by packs of submarines backed by shore-based reconnaissance aircraft, destroyers, fast patrol boats and minefields. Priority was given to the construction of submarines, with destroyers and patrol boats a close second. The land-based naval air arm was expanded. At the same time a long term shipbuilding programme was initiated which suggested the development of a 'balanced' navy similar to those possessed by the USA and Britain. This would consist of a large number of surface ships including heavy cruisers and at least four aircraft carriers. This long term programme appears to have been influenced by Stalin's personal vision of Russia as a strong maritime power, rather than by any specific long term strategy. Naval critics of the programme at the time were 'purged'; but the strategy did not outlive Stalin himself.

Stalin died in March 1953 and it was not long before a major defence review took place. Apart from the demise of Stalin, the review was needed to take account of three other factors:

(*a*) A change in the threat as seen from Moscow.

(*b*) Recent major technological changes.

(*c*) Economic pressures.

The economic factor meant that all naval expenditure was carefully scrutinized; there were major manpower reductions in 1955 and 1956. Stalin's long-term programme of constructing large ships was terminated and it was announced, though not carried out, that existing cruisers would be scrapped. The fact that Khrushchev, at that time, hoped to influence world opinion by more liberal global policies by giving aid to under-developed countries and by impressing the world with Russia's advanced technology, suggests either that the economic factor at this time was dominant or that Khrushchev himself did not fully appreciate the influence and intervention value of sea power.

This was the era of 'massive nuclear response' and the amphibious assault threat was downgraded. Instead, the major maritime threat was considered to be a nuclear strike from carrier-based aircraft. To combat this threat, use was made of the new missile technology: it would be considerably cheaper partly to replace ship mobility by employing long range cruise missiles, guided if necessary by shore-based aircraft. The concept of operations as before would

be to carry out co-ordinated attacks on aircraft carriers approaching Russia with a mixture of surface ships, aircraft and submarines, some of which would be fitted with surface to surface missiles. The *Kynda* Class ships with their 200 mile range Shaddock missiles were one of the direct results of this strategy.

It is interesting to note that the inflexibility of a navy tailored so carefully to meet this task was questioned by Admiral Gorshkov, who replaced Admiral Kuznetsov as Commander-in-Chief in 1956. As the years passed, this inflexibility became more and more apparent.

The 60's

Throughout the late 50's and early 60's, the development of the navy was restrained by economic forces. However, the range at which it could conduct operations progressively increased. This was primarily a response to the increasing distance from the Soviet Union from which Western seaborne forces could launch nuclear strikes. But the advent of the Polaris submarine with its all round 'second strike' nuclear weapon capability, coupled with the ever increasing range of carrier-borne aircraft, finally forced the Soviet Union to extend her maritime defence zones deep into the world's oceans. About the same time, the Cuban crisis of 1962 underlined the inflexibility of a fleet, designed specifically to defend the Soviet coastline. The interaction of strategy, technology and reaction to American policies spurred on the development of Soviet ballistic missile firing nuclear submarines. The shift from coastal deterrent force to ocean strategy was now almost complete, but it implied a number of changes in ship requirements. Ships would now need to defend themselves without the help of shore based aircraft; they would need fuel and stores, greater endurance and better sea-keeping qualities. As a result, the construction of *Kynda* Class cruisers was terminated and new surface ships were given a more balanced armament, more fuel and less top-weight. The anti-submarine helicopter carriers *Moskva* and *Leningrad* were conceived at this time.

By the mid 60's, the Soviet Navy had entered the Mediterranean to counter the threat from carrier-borne aircraft and Polaris submarines, but their military capability was severely limited by the lack of aircraft and base facilities. However, the publicity given to this small Soviet force, particularly by Western journalists, made an impact on World opinion out of all proportion to their military effectiveness and it was soon realized in the Kremlin that the forward deployment policy provided a significant peacetime bonus. In 1967, Russia took advantage of the Arab-Israeli conflict to acquire Mediterranean naval bases and it was about this time that Russian declarations could be heard that the Soviet Navy was henceforth prepared to operate 'wherever required to protect the State interests of the USSR'. Towards the end of 1967, the Israeli destroyer *Eilat* was sunk by a Styx missile fired from an Egyptian-manned *Komar* Class patrol boat and this event further enhanced the reputation of the Soviet Navy and its equipment.

The fall of Krushchev in 1964 and the change of emphasis in NATO to the more flexible approach and the idea that any conflict with the West would not necessarily be nuclear did not change the general pattern of development of the Soviet Navy. Although they had steamed into the oceans of the world in order to defend the homeland, the fact that they were there opened further options and it was inevitable that the Soviet leadership would take these up. The ships are still changing to meet the new requirements but the role is now clear. It can be summarized as follows:

(*a*) To defend the homeland against nuclear strikes from Polaris submarines or carrier-borne aircraft. The defence of the homeland

against submarine-launched ballistic missiles is not at the moment adequately covered. Despite the recognition by both Russia and the USA that the invulnerability of nuclear submarines provides a certain nuclear stability, it is likely that both these countries will go to great lengths to develop a means of detecting submarines at long range. Unless there is a significant technical breakthrough, however, this is unlikely to be achieved in the near future.

(*b*) To defend the homeland against attacks by amphibious or other maritime forces.

(*c*) To provide the maritime strategic deterrent as the principal 'second strike' capability.

(*d*) To support Soviet policy overseas. This covers a wide range of tasks. It covers the traditional uses of sea power which were so well known to Britain during the 19th and early 20th Centuries. Soviet sea power has been used to maintain stability in a foreign area, to support local administration against internal subversion and generally to increase Soviet influence and economic strength through trade, fishing and the spread of political and commercial interests. For the first time, Russia now has the option of neutralizing the West's intervention capability in some instances.

(*e*) To provide a maritime offensive capability. Apart from the ability to restrict the reinforcement of Europe from America, the Soviet Union can now think in terms of a local maritime supremacy. Maritime supremacy includes denying an enemy the use of a particular area of sea and posing a substantial permanent presence. Russia's ability to do this outside the range of her shore-based aircraft is still limited, but is improving each year with each new class of ship.

(*f*) To ensure access to and from the Baltic and Black Seas.

(*g*) To support the Soviet merchant fleet. USSR does not rely on its merchant fleet for food and raw materials in the same way as Britain, nevertheless, without naval backing, merchant ships could inadvertantly present themselves as hostages to Western naval power in the event of a crisis.

The current role must be viewed in relation to its historical development. In the past, Russian strategy has been very largely defensive and has reacted to changes in threat. As technology has increased the range of carrier-borne strike aircraft and then replaced them with Polaris submarines, it is almost as though the West has drawn the Soviet Navy out into the deep waters, until it became inevitable that Russia would see herself as a major maritime Power, needing a balanced navy. Now that the Strategic Arms Limitation Talks will cause the nuclear submarine building programme to ease, it is likely that the Soviet Union will turn her attention more to the surface fleet and make up the 'balance' by constructing a number of VSTOL aircraft carriers. As *détente* tends to stabilize the European area, it is also likely that more warships will be released from their primary, defensive roles, to become available for deployment in more distant waters to spread Soviet influence.

Another aspect of sea power today is concerned with the increasing awareness of the wealth of the seabeds: the oil, minerals, food and their significance for the future. Dr Alexander Lisitzin of the Moscow Academy of Sciences, at a conference at San Diego, described the oceans as a hidden treasure and it has been estimated that the USSR employs over 200 ships and 12000 people on oceanic research.

Soviet Naval Operations

To illustrate the widening scope of Soviet naval operations, this paragraph describes some of the more significant incidents and patterns of deployment over the last six years. 1967 was a turning point in this respect. The Arab-Israeli conflict opened the door to the Russian Navy and provided them with their first real foreign bases. This enabled them to establish and maintain a substantial presence in the Mediterranean. They wanted this ability mainly to counter the American 6th Fleet and the Polaris submarine, but at the time of the conflict, the presence of eight Soviet warships in Alexandra and Port Said also served to discourage Israeli forces from crossing the canal. These bases also meant that Russia would be well placed in the event of the Suez Canal reopening.

In January 1968, four North Korean patrol boats captured the 906 ton American Intelligence ship *Pueblo* and took her into Wonsan. This was the first American warship to be captured at sea since the 1812 war with Britain and many red-faced Congressmen were furiously demanding military action to release the ship and her crew. An American task force was despatched to the Sea of Japan but, at the same time, sixteen ships of the Soviet Pacific Fleet were sent to patrol the area between the American force and the North Korean coast. The President of the United States presumably did not consider that the recapture of *Pueblo* warranted a direct Russian/American confrontation with its inherent risk of escalation up to nuclear conflict, and *Pueblo* remained at Wonsan.

The year 1968 also marks the start of Soviet naval deployment into the Indian Ocean. Russia's primary military objective in the area is to counter the Polaris threat. This is important because nuclear submarines with Polaris or Poseidon missiles can cover the heart of Russia from the Arabian Sea or the area, South of India. She also wishes to gain experience and information about the areas in case a better means of detecting submarines at long range is developed in the future. It is an important area in which to extend Soviet influence, particularly as the risks involved are low. Greater influence would diminish Western standing with countries such as Iran and Pakistan and demonstrate support for India and Sri Lanka. It would also help to assert Russian leadership of world Communism, particularly in East Africa. A more recent political objective may be to make the Indian Ocean into a non-nuclear area. Such a policy would be popular with countries in the area and would have many advantages for the Soviet Union *vis-a-vis* the United States.

Deployment in a new area follows a set pattern: goodwill visits first test local reaction; then a permanent presence of fishing, research or missile tracking ships is established. Finally as information on the area is accumulated and facilities become available, a force of warships is deployed.

In 1969, periodic visits to the Caribbean started and exercises were held in the Gulf of Mexico. This was the first real occasion, since the Cuba crisis in 1962, that Russia had tested American reaction. Late in 1970, America did, in fact, ask Russia to confirm that the base she was building at Cienfuegos in Cuba would not be used to service nuclear submarines. Russia replied that she was not building a base there.

Before 1969, Soviet naval activity off the West Coast of Africa was infrequent and not related to events on shore. There is now an almost continuous presence. In 1968, Ghana impounded two Soviet fishing vessels. The usual diplomatic protests failed to affect the issue, but the vessels were released in March 1969 after a number of Soviet warships had spent a week hovering off the Ghanian coast. It also appears likely that the Russians have maintained a permanent patrol off the coast of Guinea to prevent a recurrence of the Portuguese-supported attack on Conakry at the end of 1970.

These minor incidents illustrate the ever-widening deployment and the increasing uses that the Soveit Union is finding for her navy. There is no doubt that, after a long period of purely defensive strategy, the Soviet Navy is now finding itself actively engaged in tasks traditionally undertaken by warships of the big maritime Powers.

FACTORS INFLUENCING THE DESIGN OF SOVIET SHIPS

Apart from the role, a number of other factors have affected the design, size and shape of the Soviet Navy. Traditionally Russia has regarded herself as a 'land' Power, but there have been many periods in her history when she has tried to build up her naval strength. Until now, these have always been thwarted for one reason or another. Stalin's grand designs for a large fleet did not survive his death in 1953. At the same time as his plans were scrapped, the separate Naval Ministry was abolished and the navy became dominated by army marshals who were in the majority in the Soviet Defence Ministry at that time. Stalin himself was blamed for encouraging the construction of conventionally armed warships and delaying the application of the newly acquired missile technology to the navy.

This was the start of a new age in Russia: the age of technology. Since that time, the Soviet Leadership has held technology in high regard and has placed great reliance on it for the future. For many years, Russia responded to scientific discoveries and developments in the West but her technological establishment is now such that she can take the initiative over a wide field. Unlike the West, she has given top priority to military aims, both with regard to research expenditure and to the industries concerned with the production of military equipment. For years in the field of naval design, Russia relied heavily on foreign technical knowledge, although there have been periods when her own naval constructors produced sound and original ideas. As far back as 1912, plans for a 4500 ton submarine-cruiser were produced which were far in advance of their time. Russia was also the first country to develop submarines as minelayers. It was not, however, until the mid 1950's that she first produced ships with real 'Soviet' characteristics. Certainly on the design side, the totalitarian regime does not seem to have killed initiative and originality, particularly in the important matter of converting the requirements of strategy into ship designs. The long-range cruise missiles and the fast patrol boats reflected the 'coastal' strategy of the late 50's, just as the newer, longer-ranged ships with more balanced armaments and RAS equipment, reflect the wider deployment now being adopted. Perhaps the Marxist-Leninist doctrine of the inevitability of conflict provides both the spur for technological innovation and the justification for spending such a high proportion of the National budget on military equipment. The priority afforded to military equipment extends also to the personnel field. Not only are many of the best scientists and technicians employed on military work, but the status of the Russian serviceman is also high by comparison with the West. Despite this, however, the proportion of the defence budget devoted to personnel, as opposed to material, is very much smaller; pay for conscripts (3 years in the Navy) is low, as also is the proportion of money spent in ships on living spaces and crew facilities.

Other factors influencing the design of ships and the size and shape of the Soviet Navy are evident when considering the development of both submarines and surface ships.

Submarine Development

Submarines have always figured prominently in Russian naval strategy. By 1939, the Soviet submarine force was the largest in the world: about 200

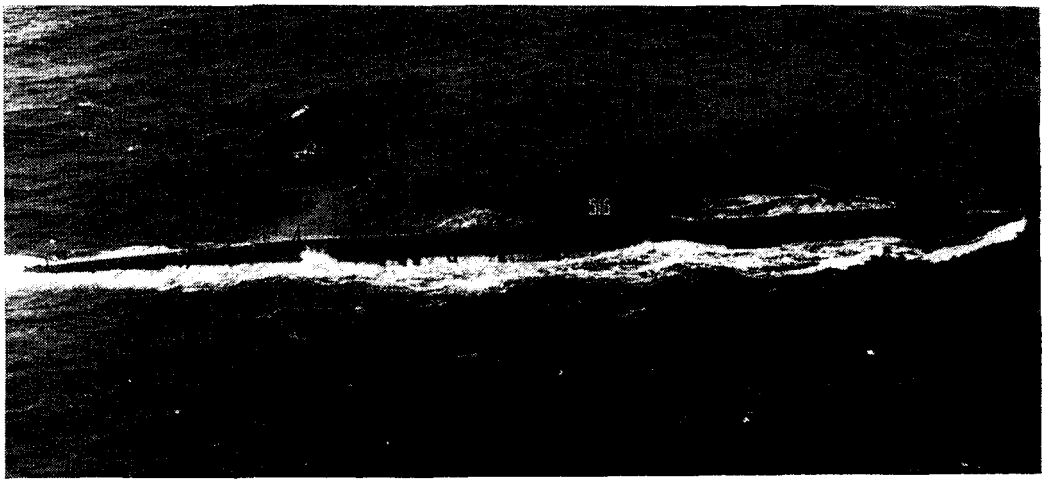


FIG. 1—F CLASS A/S DIESEL/ELECTRIC SUBMARINE

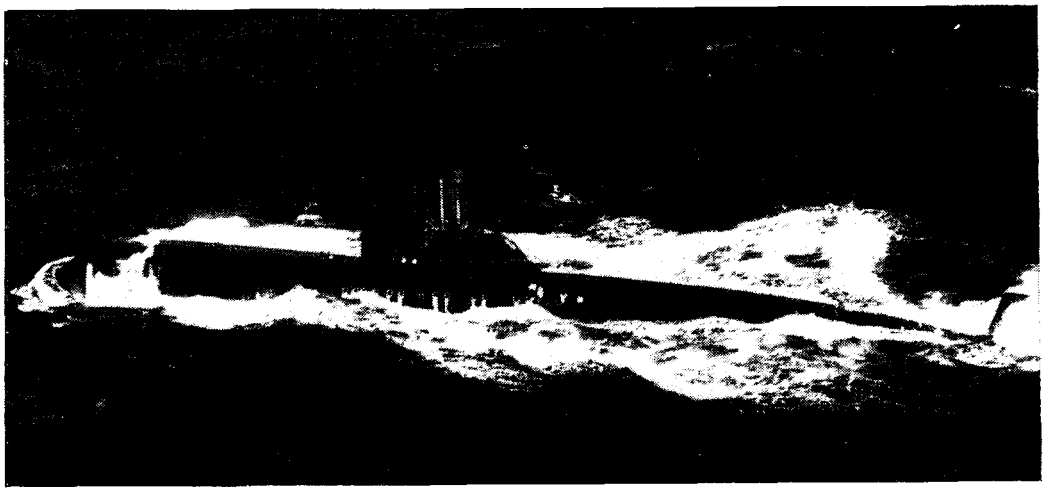


FIG. 2—C CLASS CRUISE MISSILE-FIRING NUCLEAR SUBMARINE

boats compared with Italy's 98, America's 96, France's 79, Britain's 62, Japan's 60 and Germany's 45. The Russian boats incorporated many Italian, British and German ideas and were robust and reliable. Despite the large numbers and the keenness of their crews, however, they were not successful in World War II due to poor strategic concepts and lack of flexible, co-ordinated control. At the end of the war, the Russians made the utmost use of German military research and technical facilities. A special committee, led by Malenkov, was set up to dismantle German war and scientific Institutes and to send back equipment, information and key personnel to the Soviet Union. By the end of 1945 about 60 000 such Soviet agents were operating in Germany. A number of partly-built advanced design German submarines were completed by conscripted German labour at Danzig and, in addition, the Russians acquired many useful documents concerning German submarine operations. By the end of the 50's, about fifty new submarines had been completed, despite the fact that during this period most of the industries supplying components and most of the shipyards themselves were being re-equipped and rebuilt.

The first post-war design was the W Class. This was a successful design with a marked German influence. In the mid 50's, the design was enlarged and modified to form the Z Class, originally torpedo-armed ocean-going vessels, but later some were modified to operate surface-to-surface missiles. This was also the result of the continuation of a Second World War German

project aimed at launching V2 rockets from the sea. The rockets were fitted into watertight containers and towed by submarine to the firing position. Two men rowed over to the containers, ballasted them, topped them up with fuel and returned to the submarine, from whence they were fired via an electric cable. This system was then developed so that the missile containers were fitted to the outside of the submarine casing. These were modified Z Class submarines, fitted with SS-N-4 missiles and the first successful firing probably took place towards the end of 1955. These in turn were replaced by designs in which the missile launchers were an integral part of the hull. The new techniques were applied to both cruise and ballistic missiles (in Y, G and J Classes). About the same time, a number of Z Class were converted to the 'hunter-killer' role as the American Polaris threat became clearer. These formed the R Class. Further development of the Z Class into the F and J Classes probably represents the end of the line in conventionally-powered submarines. The J Class, in fact, were probably experimental and were used primarily to test and develop the weapon system which was later incorporated in the E Class nuclear submarines. Russian nuclear submarines first appeared in the late 50's. Many development problems were encountered and it seems likely that with the coastal defence strategy, the Russians did not at first consider it worthwhile to divert a large proportion of their development resources into this field. The first nuclear powered boats were the N Class. Their purpose was to detect and attack enemy submarines, but the propulsion machinery was really too noisy to enable this to be done effectively. This class has now been further developed to cover the roles of hunter-killer, firing anti-ship missiles and ballistic missiles. The latest designs are quieter and faster and the ranges of the missiles have been increased. The Soviet submarines now operate in packs and, as a consequence of the wider deployment, exercise with replenishment ships and air forces in more distant waters. The large Soviet Fleet of oceanographic ships collect and process the necessary data for these submarines.

Surface Ships

The replacement of the immediate post-war Russian surface fleet took longer to gain impetus than the underwater fleet and it was obvious where the priority lay. In 1950, the surface fleet was small by comparison with Western nations. There were two old battleships one of which was ex-Italian, and one aircraft carrier under construction. This was the ex-German *Graf Zeppelin* which was later reported to have sunk under tow in the Baltic, her hangar and flight deck having been overloaded with war booty. There were also about fifteen assorted cruisers, most of which were either ex-German or ex-Italian or were very old, and some fifty destroyers, many of which had also been taken over at the end of the Second World War.

It was about this time that Stalin's emphasis on cruisers began to be felt. Four partly-constructed *Chapaev* Class cruisers were completed and the first of fourteen *Sverdlov* Class cruisers followed in 1951. Twenty-four of these ships were projected but by the end of the 50's, Stalin was dead and the requirements had changed. 1950 also saw the launching of the first *Skoryi* Class destroyer; eighty-five were eventually completed and many are still in service today. All the major ships completed during this period were conventional warships, powered by steam turbines and armed conventionally with guns and torpedos. *Skoryis* were the first Russian all-welded construction.

It is noticeable that from this point on Russian constructors and designers became sufficiently confident to dispense with foreign ideas and to follow up their own. In 1955, an attempt was made to produce a 40-knot destroyer, incorporating all the latest technological innovations for which the *Skoryis*

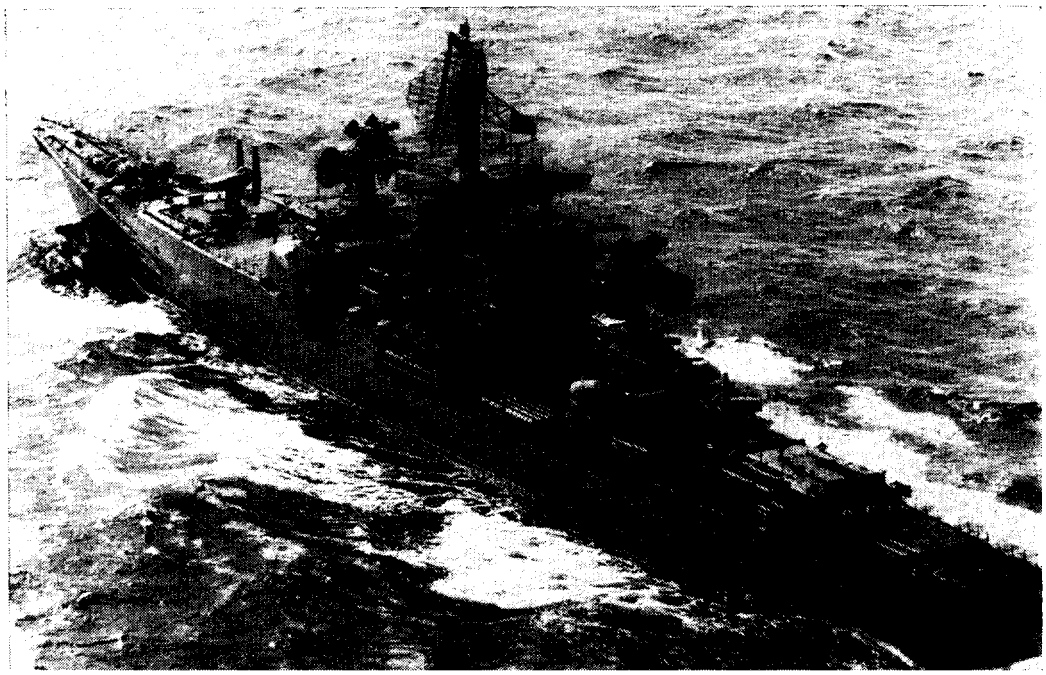


FIG. 3—KRESTA II GUIDED-MISSILE CRUISER

FIG. 4—KRIVAK CLASS GUIDED-MISSILE DESTROYER

were too small. The result was the *Tallinn*. Her general appearance and flush-decked hull pointed to the future, although *Tallinn* herself was probably not very stable. She was quickly followed by the *Kotlin* Class which incorporated the best features of *Tallinn* and the *Skoryis*. With the coastal defence strategy still in force, emphasis was placed on speed rather than endurance. The main engines used low-pressure steam, probably to make the operation and manufacture easier because of shortages of both skilled manpower and advanced industrial capacity at that time.

It was in 1957 that the application of the new missile technology began to show itself at sea. This was the first fruit of the defence re-appraisal following the death of Stalin. It was also the result of Khruschev's determination to impress the non-aligned nations with Russia's newly-found advanced technology. At first, emphasis was placed on surface-to-surface missiles and four *Kotlin* Class destroyers (renamed *Kildin* Class) had their main gun

armament replaced by missile launchers (Strela). A short evaluation programme was carried out by these ships in readiness for the completion of the first of twelve *Krupni* Class destroyers. These were similar to the *Kildins* but were purpose-built as missile destroyers. They carried more missiles, more advanced guidance equipment and a helicopter. In 1962, the *Kotlin* Class design was also modified to carry out trials on GOA surface-to-air missiles and this system appeared about the same time in the new *Kashin* Class destroyers. A second generation surface-to-surface missile (Shaddock) was seen in 1961 in a formidable new design of missile cruiser, the *Kynda* Class. Four were completed, followed shortly afterwards by two *Kresta* Class: slightly larger ships, with more advanced weapon systems. Using shore-based aircraft for in-flight missile guidance, the 200-mile range of the missiles greatly extended the area covered by the 'coastal defence strategy'. This was necessary to counter the increased range of Western carrier-based aircraft. However, about this time the Polaris threat and the requirements of the more outward looking foreign policy brought about the change to an ocean strategy. The long-range cruise missiles of the *Kyndas* and *Krestas* were less suitable for this role: they required shore-based aircraft and the large missiles brought their own penalties in terms of stowage, handling and reduction in self-defensive weapons. Hence the construction of *Kyndas* was halted and a modified *Kresta* Class appeared, with the twin long-range missile launcher replaced by two quadruple short-range launchers. The surface-to-air missile launchers were also replaced by a more advanced design. In common with the *Kresta I's*, these new ships were also fitted with anti-submarine weapon launchers, torpedo-tubes and dual-purpose guns. The most recent descendants of this line are the *Kara* Class cruiser, about which little has yet been published, and the *Krivak* Class. The *Krivaks* look like a smaller version of the *Kyndas*, but with some of the characteristics of the *Kashin* class. They have a general purpose armament consisting of the latest short-range surface-to-surface and surface-to-air missiles, A/S missile launchers, torpedo-tubes and four dual purpose automatic guns.

It is noticeable that considerable design effort has been directed at reducing topweight in the later classes. This is consistent with the new deep-water strategy: it would tend to improve stability, compensate for the helicopter hangar (not fitted pre-*Krestas*), and allow for the stowage of more fuel without the need to ballast. The proportion of weight and space taken up by weapon systems in these recent guided-missile ships appears to be very high for the size of ship. The explanation is partly historical: with a coastal strategy, the crews did not expect to spend long periods at sea and hence the accommodation spaces and crew facilities were decidely sparce. A recent report of a visit to *Groznyj* (*Kynda* Class) states that there are very few single cabins for officers and that crew accommodation consists of little more than sleeping compartments. The number of sanitary facilities is low and there is hardly any air conditioning. As experience in the Royal Navy has shown, it takes a long period without National Service and with recruits in short supply before crew facilities start to displace guns in warships! The Soviet Union is still a long way from this stage.

With the increasing significance of nuclear submarines, it is not surprising the Russians constructed two large 'helicopter missile cruisers', *Moskva* and *Leningrad*! The first of these completed her sea trials in 1967. Their primary role is to carry anti-submarine helicopters, but they also possess the capability of assisting in commando-type operations or of supporting VSTOL aircraft. The ships are fitted with surface-to-air missiles, guns, torpedo-tubes and A/S weapons. *Jane's Fighting Ships* reports that a third ship of this class is under construction, in addition to a larger aircraft carrier (*Kiev*). If this report proves

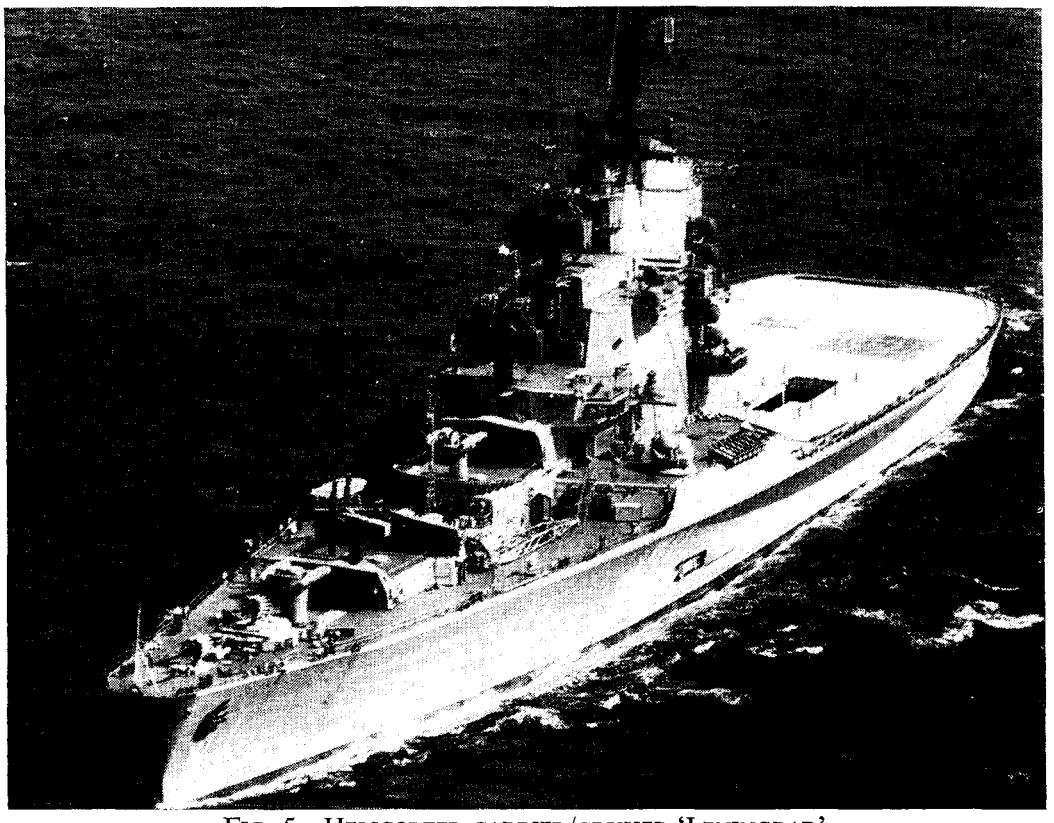


FIG. 5—HELICOPTER-CARRIER/CRUISER 'LENINGRAD'

to be correct and the current strategy suggests that it is, then it is likely that VSTOL aircraft would be employed. This would save the development costs of the carrier-borne equipment such as arrester gear and catapults, which would be necessary for conventional aircraft.

Amongst the more interesting small Soviet vessels are the six *Nanuchka* Class missile corvettes fitted with both surface-to-air and surface-to-surface launchers and the *Mirka* Class A/S escorts, which have an interesting CODAG machinery layout with the gas turbines situated in the stern of the ship. The air intakes, hopefully salt free, are right aft, and the gas turbine exhaust goes out through the stern via flaps. Russia has had a large number of fast patrol-boats since the Second World War and many of these have been supplied to other countries. They provide a cheap and easy-to-run method of coastal defence. More recent Soviet FPB's are fitted with hydrofoils and, apart from their missile firing role, are also being developed as submarine chasers.

Russia has traditionally emphasized the importance of mine warfare and it is perhaps surprising that she has neither developed a modern fleet of mine-sweepers, nor fitted her new surface ships to lay mines. Whether the American mining of Haiphong harbour during the Vietnam war will reverse this trend remains to be seen. It is perhaps a symptom of her outward looking naval policy.

Whilst resources were short, converted merchant ships were used both for amphibious operations and as fleet support ships. Since the 1960's however, these have gradually been replaced by purpose-built ships. The Black Sea Fleet now possesses a sizeable assault capability, which could be deployed to secure the exit to the Mediterranean or in support of operations against NATO, CENTO or Israel. As Soviet warships have extended their field of operations, so the number of support ships has grown to meet their needs. There is now a large fleet of specially-designed submarine supply ships, tenders, missile support ships, fleet replenishment, repair ships, etc.

Soviet Merchant Fleet

The changes that have taken place in the Soviet Navy over the past twenty years have been matched by equally significant changes in the merchant fleet. As this is controlled by the Government, any major changes are likely to reflect Government thinking. In contrast to normal Western trading conditions, Soviet political objectives or their desire for foreign currency could override commercial forces, and there is a danger that a large Soviet fleet, by undercutting Western shipping rates, could establish itself on the main routes of the world. This could upset established trading patterns and result in Russia placing herself in a position where she could deny strategic materials to a potential enemy in a period of tension. Foreign flags already carry more than 95 per cent of strategic materials imported by the United States.

Some time ago, complaints were made by British shipowners to the UK Government when a Soviet ship, having carried supplies to North Vietnam, proceeded to Australia, embarked a cargo of wool on behalf of a British Company and shipped it to Britain at reduced rate. The Government's answer to the complaint was that, in the long term, the commercial pressures which act on Western shipping will also apply to the Soviet merchant fleet and no action would be taken. Since that incident, however, Russia has adjusted to established shipping practices and gained admittance to some of the international shipping organizations.

In 1954, a Ministry of the Maritime Fleet was established in Russia. At the time, the merchant fleet ranked 21st among its competitors and the fishing fleet was unable to satisfy domestic needs. The ships were old and inefficient. Today the Soviet merchant and fishing fleets are among the largest and most up to date in the world. The present objectives can be summarized as follows:

(*a*) To meet Russia's own shipping requirements and eliminate reliance on foreign ships.

(*b*) To earn foreign currency.

(*c*) To exert influence and promote political ideology around the world. The requirements of sea-borne trade justify the setting up of consulates which can act as centres of influence and propaganda.

(*d*) To serve the Soviet military establishment. Tasks range from carrying military cargoes, such as missiles to Cuba in 1962, to missile tracking and oceanographic research. A significant minelaying capability also exists.

(*e*) The collection of intelligence data. This applies particularly to specially-equipped fishing vessels, which can monitor electronic and sonar emissions and machinery characteristics as well as carry out simple intelligence gathering duties. It has even been suggested that the only economical way to track the positions of large numbers of Polaris type submarines would be to form a world-wide system of fishing vessels, each equipped with sonar, which would be automatically linked to a central plot. The cost however would still be very large.

Research and Development

Over the past twenty years, the resources, facilities and trained manpower available to the R and D Establishment in Russia have expanded significantly. They are still expanding. Soviet technologists have tended to specialize in narrower fields than is usual in the West. Their research has been concentrated in fields where the greatest benefit could be expected. Having selected a line of development, the maximum use is made of the equipment produced by standardizing through the three Services. This is particularly noticeable with missles and guns, for example the 57-mm AA gun is fitted in *Kresta* Class

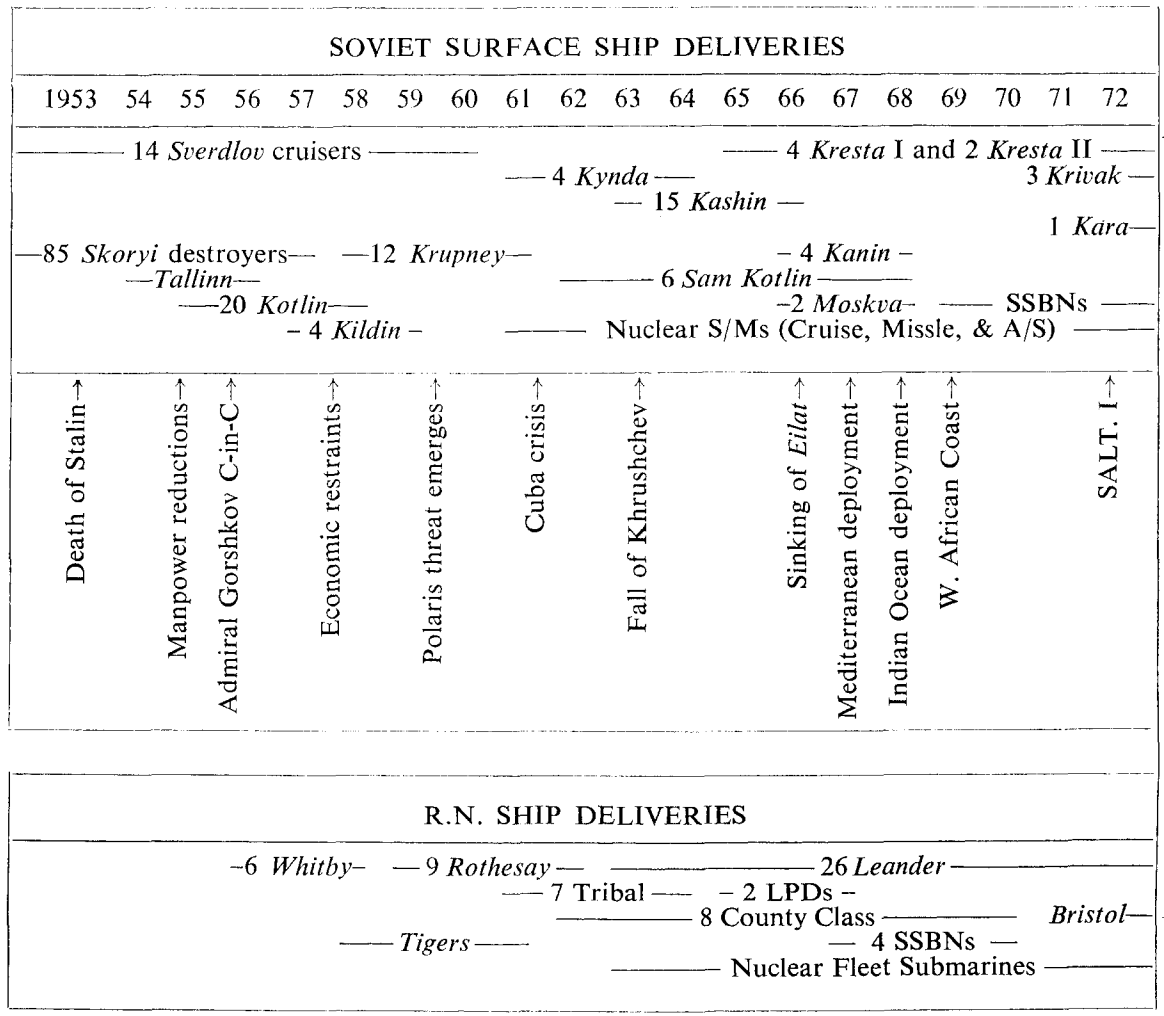
cruisers, *Moskva* Class helicopter carriers, *Poti* Class submarine chasers and *Ugra* Class support ships as well as in tanks and field guns. By employing two independent teams on the same development project, it has sometimes been possible to miss out an evolutionary stage; new weapons have been sent straight to sea as prototypes. It is by these aggressive R and D methods that such rapid progress has been made in certain areas. It is likely that the Russian leadership believes that the outcome or prevention of any future war between super-Powers will be decided in advance in the research establishments. They do not appear to subscribe to the theory that technology has reached a plateau. This 'plateau' theory has been fostered by American and British operational analysis teams, who can show that it is usually more cost-effective to develop an existing weapon system than to embark on the more nebulous and expensive business of designing a new one. Despite the Soviet belief in technology, however, there are still large areas where the sophistication of their equipment lags behind that of the West and where the traditional Soviet reliance on robustness and superior numbers still applies.

In the immediate future, the Soviet Union is likely to concentrate in fields where she lags behind the United States, such as long-range sonar or quiet submarine machinery. The wider naval deployment will encourage the development of better logistic support ships and a means of providing air cover for forces far away from their bases. The seaworthiness, range and speed of missile-firing or anti-submarine FPB's are also likely to be areas of interest. As missiles become smaller and faster, these ships could provide a cheap method of controlling even larger areas of sea. Lasers will become more widely used for range-finding, measurement of missile speeds, bombing accuracy and to increase the capacity of communication nets. The Soviet Union already makes use of reconnaissance satellites and these are likely to be further developed. The use of holograms for producing three-dimensional pictures for use by satellites is also probable. In common with other advanced technological countries, the Soviet Union is already spending sizeable amounts of money on new energy sources, such as controlled fusion reactors and on new composite materials using fibres in a surrounding matrix.

All these advances and other unforeseen ones will influence the design of warships in the future and there is no doubt that one of the most important means of ensuring success in war is to forestall technological surprise. This can only be done in the research establishment.

CONCLUSIONS

From its meagre start, the role of the Soviet Navy has developed over the past 20 years as the attitude to sea power of the leadership has changed. Now that nuclear parity with the United States has been achieved, conventional forces have become more important and the traditional peace-time uses of sea power have regained their former relevance. The Soviet Navy is now exercising its power in a most effective way in support of an active foreign policy. She has a modern, sophisticated fleet and is likely, within the next few years, to be capable of deploying a balanced force, with its own air cover, anywhere in the world. Over the years, the size and shape of the Navy have been influenced by historical attitudes and by economic constraints, but there is no doubt that the Russians have been able to develop a high degree of self-confidence, initiative and originality in design. The fact that they regard technology as a cornerstone of their political, military and economic power suggests that they will continue to improve their ships by large investment in R and D projects. Despite a few mistakes, they have been highly innovative in adapting new technologies. Changes in the threat or in strategic concept have been quickly reflected in their ships.



In Service 1972
1 *Kara*
2 *Kresta II*
4 *Kresta I*
4 *Kynda*
11 *Sverdlov*
3 *Krivak*
5 *Kanin*
3 *Krupney*
4 *Kildin*
17 *Kashin*
40 *Skoryi*
112 Escorts
250 Coastal Escorts
6 *Nanuchka*
147 FPBs
250 MTBs
180 Fleet M/S
125 Coastal M/S
105 Landing ships
Submarines:
34 Nuclear Fleet (C, V, N)
210 Diesel (B, F, R, Q, Z, W)
26 Nuclear Missle (E)
25 Diesel Missile (J, W)

Note: This chart is for comparison only and does not give a complete list of ship deliveries.

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