

THE RUSSIAN NAVY

A HISTORIC TRANSITION







Table of Contents

Executive Summary	iii
Preface	v
Introduction: Russian Naval History: From the Kievan Rus' to Today's Russia	xiii
Chapter One: Strategy – Fulfilling National Missions	1
The Evolution of Naval Strategy.....	1
Soviet Navy Roles and Missions	2
Chapter Two: Russian Navy: Structure and Leadership.....	7
Organization	7
Admiral Viktor Chirkov	9
Future Leadership	11
Chapter Three: Procurement: Shift to Quality Over Quantity.....	15
Procurement.....	15
Quality	15
The Future Fleet.....	17
Naval Aviation	30
Chapter Four: Personnel – Movement Towards a Professional Force.....	39
Outlook	43

Additional resources:

Posters of the Russian Navy Major Forces by Fleet, Russian Navy New Construction, and the Russian Federation Navy (map) are located inside the back cover.



Published by the
Office of Naval Intelligence
December 2015

Cleared for public release by Defense Office of Prepublication and Security Review (DOPSR Case 16-S-0274)

This report contains copyrighted material. Copying and disseminating the contents are prohibited without the permission of the copyright owners. When feasible, copyright permission has been sought for those pictures where copyright was known, and attribution to those sources, when known, has been given.



Executive Summary

This publication, *The Russian Navy – A Historic Transition*, is intended to provide the reader with a basic introduction to the Russian Navy and an appreciation of current developments that will shape Russia's navy and its operations in the 21st century.

Because the U.S. Navy operates worldwide and the Russian Navy is an advanced, globally capable force, its history, capabilities, missions, and role within the Russian state and armed forces should be clearly understood. The new technologically advanced Russian Navy, increasingly armed with the KALIBR family of weapons, will be able to more capably defend the maritime approaches to the Russian Federation and exert significant influence in adjacent seas. This multi-purpose force will be the forward-layered defense of Russia and its maritime exclusive economic zone and will be able to promote Russian diplomatic interests, advance maritime science, combat piracy, and provide humanitarian assistance.

It will also provide a flexible platform for Russia to demonstrate offensive capability, threaten neighbors, project power regionally, and advance President Putin's stated goal of returning Russia to clear great power status.

Over its 320-year history, the Russian Navy has been instrumental in securing Russia's maritime access to the world, periodically

battled to maintain that access, directly supported Russia's land forces in times of imperial expansion and in the expulsion of invaders, been part of the strategic nuclear deterrence triad, and demonstrated a global presence in the national interest. Political and military strategy and the role and mission of the Navy evolved as the Russian state grew, faced challenges, was transformed into the Soviet Union by revolution, repelled invasion, and encountered disintegration.

"The Russian Navy is being equipped with the newest; including precision long-range strike weapons, and has big nuclear power. Naval forces today are capable of operating for a long time and with high combat readiness in operationally important areas of the global ocean."

*- Admiral Viktor Chirkov
Commander-in-Chief, Russian Navy*

Throughout, the navy retained, with some adjustment for the passing years and events, many of the basic organizational, procedural, and personnel practices that were laid down by its founder, Peter I (the Great), at the beginning of the 18th century. As the years passed, Russia's naval activity and the shipbuilding and weapons



production capabilities required to advance it became ever more sophisticated and varied. In addition to production for its own needs, foreign sales shifted from selling masts, caulking pitch, and rope to a variety of highly capable ships, submarines, and related weapons systems today sold to or co-produced with a number of foreign states.

As Russia asserts itself on the world stage, it is giving priority of effort and funding to recapitalizing its navy, which is going through a major transition from the legacy Soviet Navy to a Russian Navy that should reflect the latest achievements of Russian advances in science and technology.

On the basis of currently available data it is projected that the Russian Navy will retain its core missions. Although the national defense mission of the strategic and general purpose navy has remained, today's fiscal realities require that the decreased number of major naval platforms be multi-mission capable and armed with the latest capabilities in weapons; sensors; and command, control, communications, computer, intelligence, surveillance, and reconnaissance (C4ISR) systems. Russia has begun, and over the next decade will make large strides in fielding a 21st century navy capable of a dependable national defense, an impressive but limited presence in more distant global areas of

interest, manned by a new generation of post-Soviet officers and enlisted personnel.

The research, technical development, and production enabling the achievement of these goals have and will continue to be accompanied by a robust program of naval arms sales to other countries. The quantity and quality of the ships, submarines, and armaments sold will transform the current capabilities of recipient states and, in some cases, potentially enable them to improve the quality of indigenous arms production.

“Thanks to the bravery of sailors, the talent of shipbuilders, and the daring of explorers, pioneers, and naval leaders our nation has held fast as a great maritime power. This status is a huge responsibility for us as we face history, our ancestors who created Russia’s maritime glory, and, of course, future generations to whom we must pass a modern and strong Navy.”

*- Vladimir Putin, President
Russian Federation Navy Day, 26 July 2015*

NOTE: The contents of this publication reflect information gathered from a broad range of publicly available source material that is considered to be effectively accurate and authoritative.



Preface

After the disintegration of the Soviet Union in December 1991, Russia inherited the majority of the former Soviet Navy, including its afloat assets, naval bases, and an extensive network of shore facilities.

The immediate post-Soviet period was fraught with major difficulties as the Soviet Navy first became the Commonwealth of Independent States (CIS) Navy and finally transitioned to the Russian Federation (Russian) Navy (RFN). These early years were marked by

organizational disarray and financial neglect as the Russian leadership focused on the priorities of national transformation from the framework of the totalitarian and socialist Soviet state into a fledgling democracy embracing a market economy. During this “time of troubles,” most naval programs were either suspended or halted altogether. Only efforts to improve command and control systems and less-expensive new design work continued to be pursued.



Admiral Kuznetsov at anchor Severomorsk



Russia inherited virtually all of a huge legacy Soviet Navy, however—largely because Fleet Admiral of the Soviet Union Sergey Gorshkov, Commander-in-Chief of the Soviet Navy for almost 30 years, wanted to keep what he had built—many of the Soviet Navy’s submarines, surface ships, and auxiliaries had long outlived their usefulness, but were retained to maintain impressive numbers. The post-Soviet naval leadership faced daunting decisions to triage this legacy. Once assessments were made and decisions taken, fully three-quarters to five-sixths of the Soviet-era inventory was written off. Even some submarines and surface ships that were both combat-capable and had service lives remaining were removed if deemed no longer cost-effective to maintain (about one-third had long expired service lives; another third was composed of units deemed no longer combat-effective under current warfare conditions). Difficult decisions

were justified on the basis that it was better to concentrate limited funds and effort and save some of the best and most useful ships and submarines rather than attempt to save all and thereby save nothing.

Since 2000, as Russia’s governmental order and economy have stabilized, there has been a focused and funded effort to revitalize the Russian military—including the Navy. Suspended construction programs are now moving toward completion and new construction programs are beginning to provide the Navy with 21st-century submarine and surface platforms.

Another issue, dividing the Black Sea portion of the Soviet Navy with newly independent Ukraine, was settled only in 1997. As part of this process, Russia concluded a base lease agreement with Ukraine under which Russia retained use of more than 100 naval facilities on the Crimean Peninsula through 2017. The lease agreement provided for the possibility of bi-laterally agreed extensions, and in 2010, it was mutually agreed to extend the agreement for 25 years through 2042 with a possible additional five years (through 2047) through the Russian-Ukrainian naval base for gas agreement, or Kharkiv Pact.

In March 2014, Russian military actions led to its annexation of Crimea, an act which abrogated the lease agreement. The United States does not recognize Russia’s annexation of Crimea.



Russian Naval Infantryman participating in an amphibious landing



Ministry of Defense

The Russian Federation Ministry of Defense website addresses the missions of the Russian Armed Forces. These have evolved due to the changing foreign political situation of recent years and new domestic priorities to ensure national security. These missions are structured along four basic directions:

- Deterrence of military and military-political threats to the security or interests of the Russian Federation
- Ensuring the economic and political interests of the Russian Federation
- Conducting operations by armed forces in peacetime
- Use of military force (wartime)

The peculiarity of the development of the world military-political situation makes it possible for the execution of one mission to grow into another, because the more problematic political situations—from Russia's point of view of its security—have a complex and multi-dimensional character.

One of the forms of resolving political, national-ethnic, regional, territorial, and other conflicts is using armed warfare when the state (or states) participating in military actions does not transition to the particular condition called war. As a rule, the parties pursue individual military-political goals in armed conflict.

The Russian Armed Forces train for direct participation in the following types of defined* military conflicts:

Armed conflict. An armed conflict can have an international character (involving two or more states) or an internal character (with the conduct of armed combat within the borders of one state's territory).

An armed conflict can be the consequence of the growth of an armed incident, a border conflict, armed actions, and other armed collisions of limited scale, in which means of armed combat are used to resolve the conflict.

Local war. A war between two or more states, limited in political goals, in which military actions are conducted, as a rule, within the boundaries of the belligerent states and dominantly touch only the interests of these states (territorial, economic, political, etc.).

A local war can be conducted by groups of troops deployed in the conflict region, with possible reinforcement by the deployment of supplementary forces from other axes and with the conduct of a partial mobilization. Under certain conditions, local wars can grow into a regional or large-scale war.

Regional war. A war with the participation of two or more states (groups of states) or a region with national or coalition armed forces, using both conventional and nuclear means of attack on a territory defined by the bounds of one region and its adjacent maritime or oceanic waters, air, and outer space, in the course of which the parties will pursue important military-political goals.

**these are Russian definitions*



The full deployment of the armed forces, economy, and the great intensity of all of the forces of the participating states are necessary for the conduct of regional war. In case states or their allies having nuclear weapons participate, a regional war is characterized by the threat of transitioning to the use of nuclear weapons.

Large-scale war. A war between coalitions of states or major states of the world community that can be the result of the escalation of armed conflict or a local or regional war by the involvement of a significant number of states from various regions of the world. In a large-scale war, parties pursue radical military-political goals, and the mobilization of all available material resources and spiritual forces of the participating states is required.

Russian Military Planning

Contemporary Russian military planning is based on a realistic understanding of the current resources and capabilities of the Russian Federation. It assumes that the Russian Armed Forces, together with other troops, must be ready—together with the strategic deterrent forces and the maneuver of the permanent ready forces—to:

- repulse an attack and to attack the aggressor,
- conduct active operations (defensive as well as offensive) under any variant of the unleashing and conduct of war and armed conflict with the enemy, massively using current and future means of attack, including all types of weapons of mass destruction.



Russian Naval Midshipmen in parade formation

In doing the above, the Russian Armed Forces must be able to:

- In peacetime and in emergency situations, while preserving the potential for strategic deterrence and fulfilling the missions of maintaining combat readiness by permanent ready troops without conducting supplementary mobilization activity, successfully execute missions in two armed conflicts of any type, and also conduct peacekeeping operations both independently and as part of a multinational coalition.
- Were the military-political and military-strategic situation to become more acute, ensure the strategic deployment of the Russian Armed Forces and deter an escalation of the situation.
- In wartime, use available forces to repulse an enemy aero-space attack, and after a full-scale strategic deployment, execute missions in two local wars simultaneously.



The Armed Forces

The Armed Forces structurally comprise three services:

- Ground Forces
- Air and Air Defense Forces
- Navy

and three branches:

- Strategic Missile Troops (Strategic Rocket Forces)
- Aerospace Defense Troops (Space Troops)
- Airborne Troops

Navy

The Navy is the Russian Armed Forces' service whose mission is the armed protection of Russia's interests and the conduct of combat operations in maritime and oceanic theaters of military operations. The Navy is capable of delivering nuclear and conventional strikes against an enemy's land facilities, destroying enemy naval formations at sea and in base, interdicting enemy maritime and oceanic sea lines of communication while protecting its own shipping, cooperating with ground forces in continental theaters of military operations, making amphibious landings, repelling enemy landings, and fulfilling other missions.

The Russian Navy is composed of interconnected components, spanning the gamut from combat forces to all elements of supporting infrastructure:

- Command staff
- Submarine forces
- Surface forces
- Naval auxiliaries
- Naval aviation

- Naval Infantry and Coastal Missile and Artillery Troops
- Naval shore establishment (headquarters, communications, intelligence, maintenance and repair, education and training, etc.)

The Navy's peacetime missions are:

- Deter. Maintain strategic nuclear deterrent forces—strategic nuclear-powered ballistic missile submarines (SSBNs)—in permanent ready status, able to deliver a timely retaliatory strike or deploy in times of growing tension to deter an attack against Russia.
- Defend. Maintain and deploy constant ready general-purpose naval forces to protect and defend Russia's national interests both in adjacent seas as well as in more distant waters.
- Demonstrate. Use the select deployment of general-purpose forces as an "instrument of state" to support Russian foreign policy.

In times of increased tension and war, the Navy's priority missions are:

- Protect. Protect the sea-based strategic deterrent force.
- Interdict. Interdict or blunt an aero-space attack against Russia from the maritime directions.

Strategic Deterrence

The Russian Navy contributes to Russia's strategic nuclear deterrent forces by maintaining nuclear-powered ballistic missile-armed submarines (SSBNs) carrying



intercontinental range ballistic missiles. These missiles can be launched while the SSBNs are surfaced and moored at their homeports, while they are on patrol in protected waters in seas adjacent to Russia, or after surfacing through the ice when patrolling under the Arctic ice pack.

Strategic “Bastions”

SSBN patrol areas in adjacent seas, generally referred to as “bastions,” are protected against enemy forces by a combination of fixed sensor installations, and anti-submarine forces composed of submarines, surface ships, and aircraft.

Layered Defense

The Navy is Russia’s only armed forces service capable of providing for an extended layered defense of Russian territory. This approach is predicated on engaging potential enemy forces as soon as their long-range weapons can threaten and be brought to bear on Russian territory. For the purposes of illustration, such threat weapons could be long range land attack cruise missiles.

Forward defense. In order to provide for forward defense, the Russian Navy could deploy anti-ship and anti-submarine missile-armed nuclear-powered submarines, major



SSBN Yuriy Dolgorukiy at sunset

surface ships, and aircraft out to about 1,000nm from Russia’s frontier, with the intention of eliminating or blunting the effects of such long range land attack cruise missiles by attacking their launching platforms (surface

ships, submarines, and aircraft). These forward-deployed forces could be protected by their own self-defense means as well as by fighter aircraft deployed on an aircraft carrier.

Intermediate/close-in defense. Were enemy naval forces to more closely approach Russian territory, they would encounter smaller surface combatants and diesel submarines armed with anti-ship and anti-submarine cruise missiles and torpedoes. The immediate approaches would be defended by coastal defense anti-ship cruise missiles and mine fields. Direct assaults on coastal territory would encounter Naval Infantry and Ground Forces.

Legal Basis

Russian military and naval activity and organization are defined by a series of fundamental documents at the national level. They are:

- Russian Federation Constitution, 12 December 1993
- Russian Federation law “On Security,” 15 December 2010



- Russian Federation law “On the State Defense Order,” 29 December 2012
- Russian Federation law “On Defense,” 31 May 1996 (as amended)
 - Section IV. Russian Federation Armed Forces, other Troops, and military formations and organizations
 - Article 10. Russian Federation Armed Forces and their purpose, Para 2. The purpose of the Russian Federation Armed Forces is to repulse aggression directed against the Russian Federation, the armed protection of the integrity and inviolability of Russian Federation territory, and the conduct of missions in accordance with federal constitutional laws and the Russian Federation’s international treaties.
- Military Doctrine, Presidential decree of 5 February 2010, as updated December 2014
- Russian Federation Maritime Doctrine through 2020, Presidential decree of 27 July 2001, updated through July 2015
- Regulation “On the Ministry of Defense,” Presidential decree of 16 August 2004, as amended through 27 June 2007
- Russian Federation National Security Strategy through 2020, Presidential decree of 12 May 2009 (superceded National Security Concepts of 1997 and 2000)



*“Any ruler that has but ground troops
has one hand, but one that has also a
navy has both.”*

- Peter the Great



Introduction:

Russian Naval History

From the Kievan Rus' to Today's Russia . . . Three Centuries Toward a Modern Navy

Today, the Russian Federation (Russia), though smaller than at any time since Catherine the Great in the 18th century—contemporaneous with Colonial America—is still the largest country by area in the world. A little noted fact is that its coastline is more than 2.5 times as long as its land frontiers.

Although Russia has one centrally managed Navy, due to Russia's geography, it should be viewed as functionally four and one half navies: the Northern Fleet, Baltic Fleet, Black Sea Fleet, the Pacific Fleet, and the Caspian Flotilla. In October 2016, the Russia Navy will celebrate the 320th anniversary of its founding by Peter I (the Great) in 1696.

Early Days

Russian seafaring goes back to Kievan Rus' in the 9th century when medieval commerce was active along the north-south riverine trade route "from the Varangians (Vikings) to the Greeks" connecting the Baltic and the Black Seas. In the south, direct access to the Black Sea carried trade to Constantinople (Istanbul). From the 12th century on, coastal residents of the north voyaged to Novaya Zemlya and to what is today called Spitsbergen. The Mongol invasions of the 12th century displaced Kievan Rus' and unrestricted commercial access to the Black Sea was lost. As the Rus' battled the Mongols, tenuous access to the Baltic was lost



Painting depicting Peter the Great as a naval leader

to the Teutonic Knights and the Swedes. The center of power shifted from Kiev to Moscow.

Only during the reigns of Ivan III (the Great) and Ivan IV (the Terrible) in the 16th century did Russia begin seriously to roll back the invaders and take steps to regain maritime access to the south. By this time, Russia was already engaged in international maritime trade with Europe through the port of Arkhangelsk on the White Sea. This port had access to the Barents and Norwegian Seas and beyond but was seasonally blocked by ice.

In the early years of the Romanov dynasty in the mid-17th century, Russia reached the Sea of Okhotsk and the Pacific, eventually acquiring Alaska, establishing a colonial capital at Novo-arkhangelsk ("New Arkhangelsk"),



now Sitka, Alaska, and a coastal provisioning outpost at Fort Ross just 65 miles north of San Francisco, California.

The Imperial Navy Established

The foundation of today's Russian access to the western seas and the Russian Navy was laid by Peter I (the Great) when he ordered the establishment of a regular navy in 1696. In the early 18th century, Russia gained permanent access to the Baltic Sea by defeating Sweden, then the preeminent Baltic Sea power, in the Great Northern War. The Russian Baltic Fleet was established in 1703. Peter the Great also personally drew up the first Naval Regulations, the form and design of the Navy's St. Andrew's flag, ensign, signal flags, signal code, and established the Admiralty Board. Even the focal point of the urban design of St. Petersburg, Russia's imperial capital and "window to the West," was and remains the Admiralty, the headquarters of the Russian Navy, built on Peter's order.

In the late 18th century under Catherine II (the Great), Russia finally gained a permanent foothold on the Black Sea and access to the Mediterranean through the Turkish Straits. The first Russian naval squadron to operate in the Mediterranean was formed from the Baltic Fleet and fought victoriously against the Turks, sinking the Ottoman fleet at Chesme in 1770. In 1783, the city of Sevastopol was founded and the Black Sea Fleet came into existence.

The 19th century saw the Russian Navy transition from the "Age of Sail" to the "Age



The Admiralty in St. Petersburg

of Steam." It also witnessed three more wars with Turkey to ensure the Black Sea Fleet access to the Mediterranean. The first was in 1806–1812, when Russia dispatched a naval squadron to the Mediterranean composed of Baltic Fleet ships under the command of F.F. Ushakov. The Crimean War came in 1853–56 and saw both the world's last naval battle under sail at the Battle of Sinope and then the first between steam-powered ships. In the end, Russia was out-gunned



and out-maneuvered by an allied force of dominantly steam-driven ships. The third war, in 1877–78, saw the first use of what can be considered the forerunner of modern torpedoes. There were also two wars with Persia in 1803–1813 and 1826–1827 in which the Caspian Flotilla participated and gained a secure foothold along the northern Caspian Sea.

The Russian naval advances and achievements in the 1800s were brought to an end at the beginning of the 20th century by the Battle of Tsushima Straits in the Russo-Japanese War of 1904–1905. The Russian Pacific Fleet was unprepared for the developed might of the Japanese Navy. In an early engagement the cruiser *Varyag* perished in an uneven battle at Chemulpo (Incheon). To reinforce the Pacific Fleet, a late decision was made to send a sizable portion of the Baltic Fleet, Russia's largest, around Africa and through the Indian Ocean to attempt to turn the tide of battle. By the time the fleet neared Japan, it was weary and worn from the 220-day transit. The Japanese Navy made short work of the pride of the Russian Navy.

Plans were made to rebuild the Navy. In 1913, the lead unit of the NOVIK Class destroyers was delivered, capable of an impressive 37.7 knots.

The navy that was lost at Tsushima was barely beginning to be replaced when the next blow fell—the Russian Revolution of 1917.

The Soviet Navy

When the Bolsheviks finally established control over all of Russia after the Russian Civil War that followed the Revolution, the naval forces were tattered and scattered. A significant portion of the remainder that had survived Tsushima and World War I had fled the country, carrying refugees to various Western countries. A large part of the Imperial Black Sea Fleet found its last anchorage in Bizerte, Algeria.

The institutions of the Navy carried on, led by officers who considered themselves apolitical and wished to remain to serve their country. The new order accepted them, but with conditions. They were never fully trusted and “political officers” were assigned to watch over their actions and decisions, which had to be countersigned by the political officers in order to be valid. The final chapter for many of them was written by bullets in blood when the purges (“repressions”) of the 1930s swept away the loyal and experienced vestiges of the past. Under Joseph Dzhugashvili (Stalin), the forced fulfillment of ambitious plans for massive industrialization was undertaken. These plans included the recapitalization of shipyards, including the large shipyards in Leningrad (St. Petersburg) and Nikolayev, and the construction of an entirely new shipyard at Severodvinsk (originally called Sudostroy, then Molotovsk) on the White Sea. Likewise, designs were drawn up for new warships, both surface and submarines. Once again, the construction of a new navy had begun.



The Great Patriotic War

And, once again, catastrophe intervened. On 22 June 1941, Nazi Germany invaded the Soviet Union: Operation Barbarossa had begun. Though there had been indications of eastward German troop movements, the only formation of the Soviet Armed Forces that was fully combat-ready that day was the Baltic Fleet. Navy Commander-in-Chief Admiral N.G. Kuznetsov had taken upon himself the responsibility for issuing the readiness order without waiting for the normal functioning of the military bureaucracy.

The German forces laid siege to Leningrad for 900 days and advanced to the outskirts of Moscow. Many Baltic Fleet ships managed to retreat to Leningrad where they continued to function as slightly mobile long-range artillery and anti-aircraft batteries. While the German Navy dominantly succeeded in “bottling up” the fleet in the Gulf of Finland using thousands of mines as “corks,” some Soviet diesel submarine crews managed to thread the minefields and inflict considerable damage on German shipping in the Baltic. Many of the fleet’s sailors and officers and all of the Naval Infantry joined the ranks of the ground forces to stop the invader and pushed him back.

German advances in the north effectively contained counterattack operations by the Northern Fleet operating out of the Kola Gulf and the White Sea. And here also, submarine crews were able to slip out and inflict damage.

The southern front saw the Germans overwhelm Crimea. The forces of the Black Sea Fleet retreated to Novorossiysk and from there assisted the counter-offensive that eventually repelled and ejected the invader. It was in these actions that then Rear Admiral S.G. Gorshkov, in charge of the naval forces, came in close contact with N.S. Khrushchev and L.I. Brezhnev, both of whom were political officers in this sector of the war.

To illustrate the extent of the German invasion of the Soviet Union and its consequences in terms more familiar to a U.S. audience, envision the following: Nazi Germany geographically abutting the United States’ eastern seaboard with no intervening land or water. In the early morning of 22 June 1941, the invading forces would have simultaneously advanced on a front stretching from Boston, Massachusetts to Savannah, Georgia. The United States would be forced to move all of its east coast heavy industries to the Rocky Mountains. The farthest point of German penetration would be Des Moines, Iowa, and the great tank Battle of Kursk would take place in Cincinnati, Ohio. Instead of the WWII U.S. military death toll of some 400,000, there would be upward of at least 12 million (25+ million by others), counting both servicemen and civilians, with most of their blood shed into their own soil. This traumatic event was seared into the consciousness of every Soviet citizen and all would continue to sacrifice much to ensure that war would not come again.



Once Germany was defeated, the wartime alliance between the U.S., U.K., and the Soviet Union evaporated and the chill of the Cold War soon set in. Interpreting the Soviet advance into Eastern Europe and the retention of control there differently, both East and West warily eyed each other.

The development and use of the atom bomb cast the long shadow of its mushroom cloud over all military calculations. The world did not yet know all of the consequences and after-effects of radiation exposure and many considered the development of nuclear arsenals to be yet another step in future warfighting.

On the naval side, the Soviet Union once again developed programs to rebuild. The acquisition of German technology, documentation, and scientists allowed both the USSR and the West to advance their naval capabilities. The war had shown the utility of longer-range weapons: the German V-1 “flying bomb” cruise missiles and the V-2 ballistic missiles became the starting points for the development of whole families of ground- and sea-launched weapons. The launch of the *USS Nautilus* ushered in the age of naval nuclear power and true submarines—warships that could dive and operate submerged, limited only by the endurance of their human crew. When cruise and ballistic missiles were added to submarines, the capability to hold an adversary at risk or the ability to launch a surprise attack was greatly increased.

When cruise missiles were added to surface ships in the 1950s, the age of long-range naval artillery duels was a thing of the past. Of course, every advance in a capability to attack called forth efforts to provide for an effective defense. Extensive efforts were focused on developing anti-submarine warfare (ASW) capabilities by using submarines, surface ships, helicopters, long-range aviation, and fixed sensor systems.

By the late 1960s, under the able and visionary leadership of Fleet Admiral of the Soviet Union S.G. Gorshkov and his close personal connections with the leadership of the Communist Party and Government, the USSR had built and was continuing to construct an impressive navy. In response to the mention of the huge numbers of hastily built platforms with a tone that questioned their quality, a Soviet naval officer reportedly said, “Quantity has a quality of its own.” The 1974 first edition of the U.S. Department of the Navy publication “Understanding Soviet Naval Developments” noted the general-purpose Soviet Navy as having 245 active nuclear-powered and diesel-electric submarines and 222 major surface warships. In addition, there were 61 nuclear-powered and diesel-electric ballistic missile submarines.

By the 1970s, the leadership of both the U.S. and the USSR decided that the arms race could not go on unchecked. Negotiations led to treaties limiting strategic nuclear arms, first SALT and then START. Other negotiations led to a bilateral agreement aimed at making



*Fleet Admiral of the Soviet Union
S.G. Gorshkov*

close encounters at sea more safe and less hazardous—the 1972 Agreement for the Prevention of Incidents On and Over the High Seas (INCSEA)—which continues to function today.

Disintegration of the USSR

With the passing of the WW-II generation from the leadership of the Soviet Union, new thinking and new opportunities arose. When

the middle-aged M.S. Gorbachev succeeded the quickly dying geriatric parade of Brezhnev, Andropov, and Chernenko, a time of change came to the USSR. For the first time since the Revolution, things could be described as they really were, rather than as the Party ideology insisted they be. Growing global communications capabilities broke down the barriers of radio jamming and press censorship. The massive but fragile Soviet edifice began to show cracks, and on Christmas Day, 25 December 1991, it disintegrated.

A wave of information and change swept away the fossilized dogmas of the past. Both sides realized that, absent the Communist ideology that had preached an inevitable clash and even a nuclear war between the U.S. and the USSR, a mortal confrontation was not inevitable and a nuclear war was unwinnable. Greater transparency showed that neither side wished to attack or invade the other. This specifically led to the realization that there was much to be done to rebuild and renew Russia after some 70 years of isolation. The Armed Forces could be downsized and refocused on essential defensive missions and on providing stability for internal development.

New Russia and Its Navy

The historical transition from communism to capitalism, and the end of the Communist Party at the end of the 20th century, turned out to be extremely painful and bordering on the chaotic. The Russian ship of state was sailing into stormy, unknown waters with an experienced captain (Boris Yeltsin) at the helm,



Russian Navy Honor Guard in Norfolk, VA

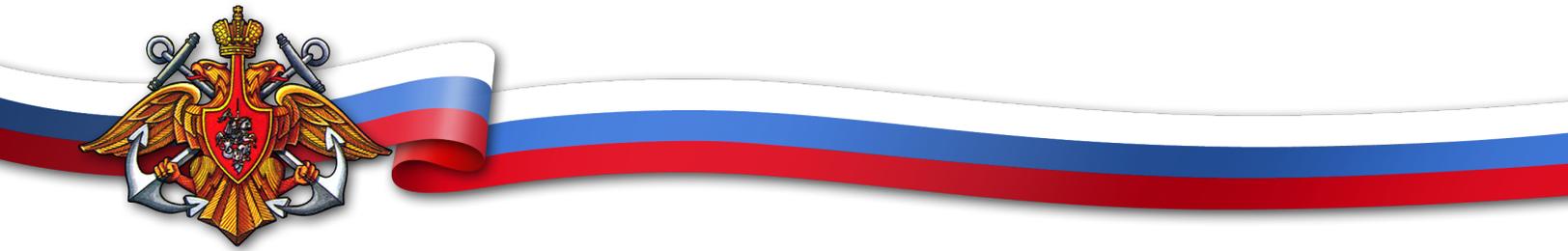
but one unfamiliar with this class of ship and lacking accurate charts. Its crew was new, their uniforms were tattered, and its threadbare pockets were almost empty. Everybody was thrown into a crash course of survival and on-the-job-training as Russia turned yet another momentous page of its history.

Sailing into uncharted waters, the Navy could not avoid the shoals and shallows. With the now-acceptable ability to see and speak the truth, it was obvious that much of Admiral Gorshkov's once-impressive Navy was inoperative, obsolete, or in need of more attention than the results would merit. In the course of some 10 years, from 1995–2005, naval leadership made painful triage decisions. The choices were stark: try to save most and lose all, or try to maintain the most capable and invest in the future. The latter was the wise choice. As a result, the Russian Navy today is about one-sixth to one-quarter the size of the Soviet Navy in its heyday. The fallow years of the 1990s were used to

develop new, more modern and capable designs and systems.

The organization and fiscal stability achieved since 2005 has permitted budgeting for and financing of critically needed new construction. The Russian Navy still retains the essential missions of its Soviet predecessor, all geared toward the defense of the territorial integrity and sovereignty of the Russian state and the protection and promotion of its interests. Today's global realities may allow it to accomplish these missions with fewer means and lesser cost, which would be advantageous, because navies are expensive and each generation of armaments takes more than a decade to develop, design, and build.

Today, the Russian Navy once again stands at a point of transition and renewal, as it has at various times in the preceding centuries of its history. The 21st century is beginning with different challenges and opportunities, and Russia envisions its new 21st-century Navy to be built and manned to effectively face those challenges and fulfill its missions while carrying on the best traditions of its illustrious but often rocky and painful past.





Chapter One:

Strategy – Fulfilling National Missions

The Evolution of Naval Strategy

Over three centuries, Russian naval strategy has transitioned from developing approaches and capabilities to acquire access for commerce to open seas in the west to developing effective and credible anti-access approaches and capabilities to deter or defend against long-range aerospace capabilities to attack Russia from the sea in the west, north, and east. However, even today, Russia's need for access to open seas remains a vital concern in the Baltic and Black Seas.

Russia's early requirement for a regular Navy during the reign of Peter I (the Great) in the early 18th century was occasioned by the need to break out of its riverine constraints and to secure access to the open sea. To do so, Russia needed a fleet that could both support the actions of the army and effectively confront enemy ships at sea. The focus of Russian Navy actions at this time was to defeat Turkish forces blocking access to the Black Sea via the Sea of Azov and Swedish forces preventing access to the Baltic through the Volkhov and Neva Rivers. Russia's approach was to build numerous relatively small but easily-maneuverable oared sail-augmented galleys and watercraft mounting cannon. The use of such craft gave Russia an asymmetrical advantage over the larger sail men-of-war of its adversaries, permitting Russian naval victories in both theaters.

Russia's early expansion to the north with maritime access to the White and Barents Seas and to the east with access to the Sea of Okhotsk and the North Pacific Ocean beyond was not met with opposition and did not necessitate the development of any serious either offensive or defensive naval capability in those directions.

In the 19th century, Russia continued to work to secure access to open seas in the face of the developing European naval capabilities often arrayed against it. The only strategy available was to develop better ships and weapons and to train and educate its naval leaders and ship's crews to fight better. Because the essence of Russian military power lay in its ground forces, it was the success of those forces that backed the diplomacy and naval actions that eventually secured access to the open seas. That access from the Baltic Sea and the Black Sea is still more dependent on the combination of diplomacy and the existence of military power than on the massive demonstration of it.

Due to Russia's internal economic and political situation at the beginning of the 20th century and into World War I, the Russian Navy had not received sufficient governmental support and was not in a



position to significantly contribute to the operations of a weak Russian army in the context of a ground war in Europe. In the Far East, the limited capabilities of the Pacific Fleet and the basing of a portion of it in China at the leasehold of Port Arthur did not permit mounting an adequate defense against attack by a more capable and numerically larger Japanese Navy. The geographic reality of Russia's widely separated maritime frontage did not in 1904 and still does not today support the strategic utility of sending ships from one fleet to support another in their defensive missions.

Each fleet and the Caspian Flotilla must be effectively self-sufficient to perform its missions in its region of responsibility in conjunction with whatever other armed forces branches are directly available.

Soviet Navy Roles and Missions

The early Soviet Period saw the virtual disappearance of the Navy with most of its ships either sunk or scuttled during World War I or removed to foreign ports by departing contingents of forces opposing the Bolshevik Revolutions and Communist rule. Prior to World War II, the Soviet Union worked steadily to rebuild its navy and the navy's mission together with that of the Red Army was limited to protecting the gains of the Revolution.

World War II - the Great Patriotic War. The onset of World War II found the Soviet Navy in a defensive posture at its bases. The rapid

advance of the German Army in its surprise attack on the USSR (Operation Barbarossa) supported by the German Navy effectively bottled up the Baltic Fleet once it withdrew to bases in and near Leningrad in the Gulf of Finland. Even the fact that the Soviet fleet was put on war readiness just before the start of the offensive was not enough to stall the German advance in the Baltic. The Soviet Northern Fleet, which was just being developed in the 1930s, was also forced into a defensive posture. The same fate befell the Black Sea Fleet, which was significantly diminished with the capture of Sevastopol. Most naval personnel ended up fighting ashore alongside the army as the entire nation fought to expel the invader.

By the end of the war, resistance and exploits by a handful of submarine crews in the Baltic and North and the construction of numerous small craft in the Black Sea allowed the Soviet Navy to support the Red Army in rolling back the invader. In the Pacific, the modest forces of the Pacific Fleet entered the war close to the last moment in order to join in the spoils of victory. This overall experience left an indelible imprint on the Soviet political and military establishment, and for many years, the Navy's role remained the support of the Army. In fact, Soviet military theoreticians asserted that because of the nature of the Soviet Navy, there could not be a "naval strategy" as distinct from "military strategy."

Post-war Soviet Navy. After the war, the Soviet Union once again embarked on building a



navy; however, the pace was slow and the Navy's mission remained ill-defined.

Post Cuban Missile Crisis. When the Soviet Union was embarrassed over the 1962 Cuban Missile Crisis, it provided Admiral Gorshkov, Commander-in-Chief of the Soviet Navy for almost 30 years, with the opportunity and justification to promote equipping the Navy with capabilities significantly beyond those required for the direct support of the Army. Gorshkov postulated that the Navy, acting relatively alone, could achieve decisive strategic goals in Oceanic Theaters of Military Operations (Oceanic TMOs; in Russian: Oceanic TVD). Pursuing his vision and using his close wartime connections with the Soviet political leadership, he was able to push through robust weapons and sensor development as well as shipbuilding programs.

These programs gave the Soviet Navy a role in strategic defense by creating more capable nuclear-powered ballistic missile submarines that could threaten the United States and its NATO allies with nuclear weapons. The construction of a large number of general-purpose conventional and nuclear-powered submarines together with numerous surface combatants—all armed with cruise missiles—further threatened U.S. and Allied naval forces deployed in the Atlantic, Indian, and Pacific Oceans, and the Mediterranean Sea. The Soviet posture took on very offensive dimensions as the temperature of the Cold War rose.

Strategic Deterrence. The development of the ballistic missile submarine changed the strategic playing field. The adversary could now be threatened with assured destruction from invisible platforms lurking in the offshore ocean depths. At first, Soviet submarine-launched ballistic missiles were of relatively short range, necessitating long transits to get within target range. They also made noisy Soviet submarines vulnerable to detection and prosecution by fixed acoustic sensor systems, shore-based maritime patrol aircraft, and attack submarines and surface ships. The development of longer-range ballistic missiles allowed the submarines that carried them to patrol closer to their home bases where they could be protected by various general-purpose forces and even reach their targets from their home piers or after surfacing through the Arctic icecap.

Conventional Forces. Robust, general-purpose forces were developed and built to support the layered defense of the homeland. Small combatants and minesweepers protected adjacent home waters and were tasked to ensure that naval forces could not be bottled up in their bases. Larger, more seaworthy forces with greater endurance were deployed beyond adjacent seas to guard against incursions into the outer approaches to the Soviet Union. At the height of the Cold War, the Soviet Navy deployed submarine and surface forces globally to confront and monitor U.S. and Allied naval forces in order to preclude a surprise attack against the USSR. This constant shadowing posture



Layered Defense. Having acquired the means to strike targets at long ranges using ballistic missiles launched from nuclear-powered submarines, it was now possible to directly protect them and the country against attacks from the sea. To accomplish this, the Navy developed a layered defense strategy. Today, the outer limit of this layered defense can be generally defined as about 1,000 nautical miles (TOMAHAWK land attack cruise missile range) from the Russian frontier or from Moscow. For western Russia, this outer

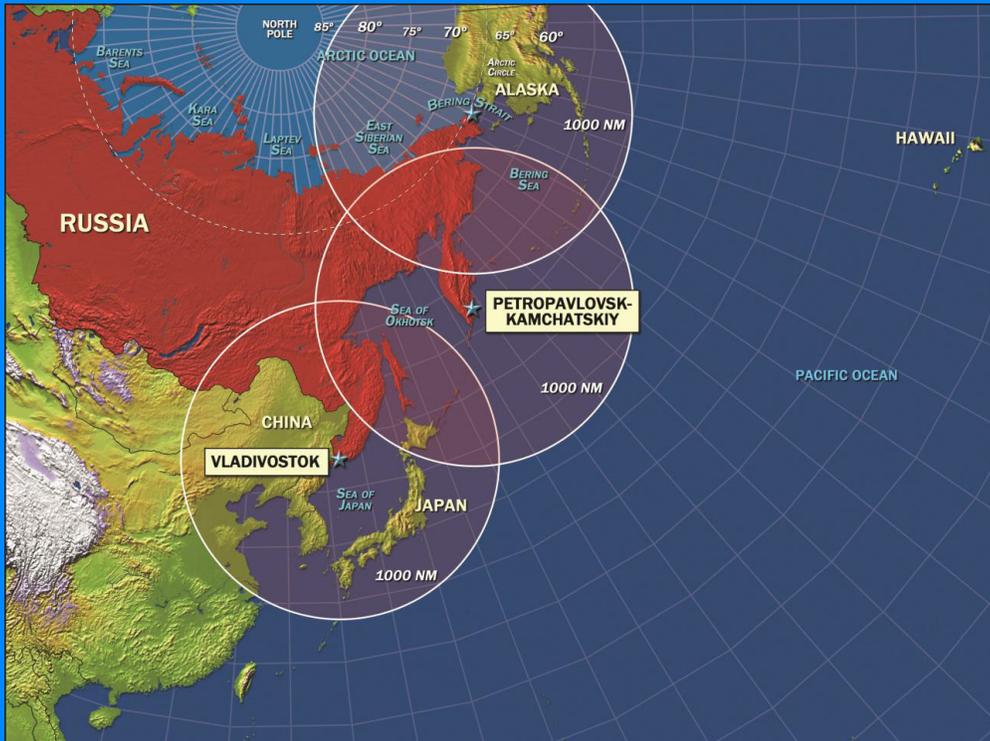


1000nm range rings – Perceived TLAM threat to Russian homeland

was characterized as “the battle for the first salvo.” Due to an objective regard for Western capabilities, the Soviet sailors who manned the forward-deployed submarines and ships were under no illusion that they would survive the initial stages of a war, but their mission was to preempt or blunt the expected attack, to attempt to “kill the archer” and thereby lessen the number of incoming “arrows” aimed at their homeland that would have to be dealt with by other defending forces.

Local Conflicts and Proxy Wars. Because the confrontation between East and West had not

only a military but also an ideological and political component, each side embraced a “zero sum” calculus whereby any win by one was automatically seen as a loss by the other. The USSR chose to support various anti-colonial or anti-Western movements in the Middle East, Africa, Latin America, and Southeast Asia. This East-West contest of wills played out in “proxy wars” where the warring sides were openly or clandestinely supported and equipped either by the Soviet Union or the United States. In many cases, Soviet advisors accompanied the equipment to provide training, and in some



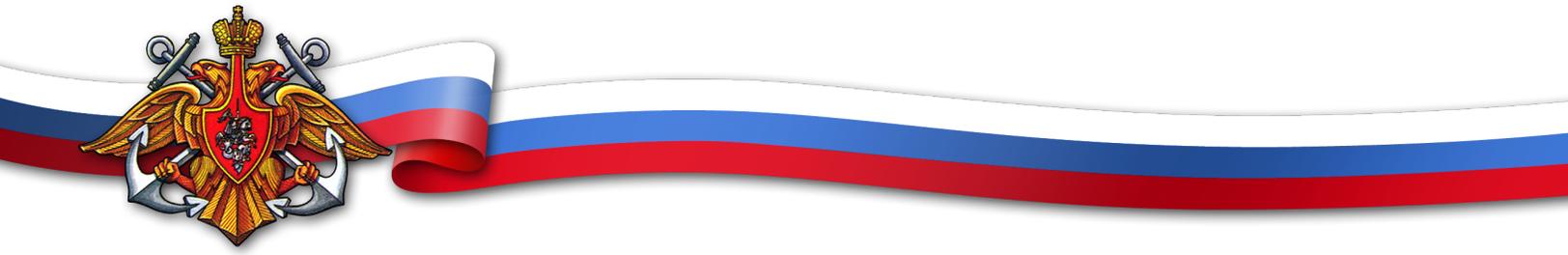
1000nm range rings – Perceived TLAM threat to Russian homeland (Pacific)

bound runs through the Greenland-Iceland-United Kingdom gap separating the North Atlantic from the Norwegian Sea. In the Mediterranean, the line runs roughly north-south at the boot of Italy defining the eastern and western Mediterranean. In the Pacific, there are no easily identifiable geographic bounds at the 1,000 nm range (distances from three points provide general orientation). The disintegration of the USSR did more to change Russia's strategic defense depth on land (a loss of about 300 miles) but had negligible effect on seaward concerns.

cases, to actually operate weapons systems in wartime conditions. This activity provided opportunities to slough off excess or outdated equipment, test new battlefield weapons or applications, and gain intelligence on the equipment and tactics of the opposing side.

Today. Russia's wartime naval strategy remains focused on nuclear deterrence and layered defense as described above. Russia is paying specific attention to peripheral defense, particularly in the Arctic where it assesses the effects of global climate change will potentially increase foreign maritime presence and where

it has filed a claim to extended continental shelf rights in accordance with United Nations Convention on the Law of the Sea (UNCLOS) mandated procedures. Russia is taking steps to enhance its ability to protect its exclusive economic zone (EEZ), monitor and control the use of the Northern Sea Route within that EEZ, and improve its ability to affect search and rescue (SAR) operations in the Russian Arctic.





Chapter Two:

Russian Navy: Structure and Leadership

Organization

The Russian Navy is composed of interconnected components, spanning the gamut from combat forces to all elements of supporting infrastructure:

- Command staff
- Submarine forces
- Surface forces
- Naval auxiliaries
- Naval aviation
- Naval Infantry and Coastal Missile and Artillery Troops
- Naval shore establishment (headquarters, communications, intelligence, maintenance and repair, education and training, etc.)

The headquarters of the Russian Navy was recently relocated from Moscow to its historical home in the Admiralty building in St. Petersburg. The move is complete and the new Navy Command Center is functioning. Operations are directed and administrative orders and actions taken emanate from St. Petersburg. The Commander-in-Chief (CINC) of the Russian Navy, Admiral Viktor Viktorovich Chirkov, officially runs the Navy from the new headquarters, but will always share time between the seat of government in Moscow and St. Petersburg. Like his U.S. counterpart, Admiral Chirkov oversees and is ultimately responsible for all new weapons

acquisitions of strategic importance, i.e. the SEVERODVINSK and the DOLGORUKIY submarine projects. This will include management of the Russian aircraft carrier project as well.

Historically, the CINC Navy exercises command authority over and provides administrative direction to the Navy. In this respect, this position somewhat combines the historical functions of the U.S. Chief of Naval Operations and the Secretary of the Navy.

The Chief of Staff/First Deputy CINC is the second in command and is responsible for all operational issues and direct support. His organization includes the Main Operational Directorate and the Navy's Main Command Post, as well as direct support elements such as communications and intelligence.

The Deputy CINC, the third person at the top, oversees on a day-to-day basis all of the administrative elements such as personnel, education, shipbuilding and armaments, logistics, and engineering and billeting. He has command authority over naval operations only when functioning as the Acting CINC.



The CINC Navy and the Main Navy Staff, responding to orders from the National Command Authority and in accordance with procedures and guidelines issued by the General Staff, and likely in coordination with the appropriate new Joint Strategic Commands, issue commands and directives to the Northern, Baltic, Black Sea, and Pacific Fleets as well as the Caspian Flotilla.

The command structures of the individual fleets and the Caspian Flotilla parallel those of the headquarters organization.

The practice of the commander having two deputies extends down to all major fleet

combatants. Aboard first line ships and submarines, the Commanding Officer has both a Senior Assistant (Executive Officer) and another Assistant.

Within the fleet order of battle, individual ships and submarines are classified as 1st, 2nd, and 3rd rank. The rank of commanding officers (Captains 1st – O-6, 2nd – O-5, and 3rd – O-4 Rank) nominally corresponds to the rank of ship commanded.

- 1st Rank – SSBNs, SSGNs, newest SSNs, CV, CGNs, CGs.
- 2nd Rank – older SSNs, SSs, DDGs, DDs, FFGs, FFs, LSTs.
- 3rd Rank – PGs, PGGs, etc.



Admiral Viktor Chirkov
Commander-in-Chief
Russian Navy



Admiral Chirkov, appointed Commander-in-Chief of the Russian Navy in May 2012, is a lifelong surface officer with extensive experience in the Pacific and Baltic Fleets. He replaced Admiral Vysotskiy at a time when the chiefs of all three services—Ground Forces, Air Forces, and Navy—were apparently losing their direct command functions to the Main Operational Directorate of the General Staff. In the case of the Navy, this occurred in November 2011. In the new Armed Forces structure, the focus of the Main Navy Staff is concentrated on man, train, and equip issues. However, imprecise press reports indicate that the specific command functions of the service CINCs remain unresolved. This senior personnel transition also came as the Navy's Main Staff moved from Moscow to its historic home at the Admiralty building in St. Petersburg, located on Palace Square across from the headquarters of the recently established Joint Strategic Command West/Western Military District housed in the building of the former Imperial General Staff.

Chirkov came to the helm as the Navy embarked on a very ambitious shipbuilding, infrastructure, and personnel development program to create a new, modern, 21st-century Russian Navy. Upon his appointment, Chirkov said, "The most important thing for Russia is to build the fleet with support of the president and like-minded persons. My experience of commanding the fleet on the country's western maritime frontier will allow me to assess the full importance and responsibility of this appointment." He gave his assurance that within the framework of the underway reform, the Navy will continue to defend and ensure the country's security along all of its maritime frontiers.

Continued executive support and reliable funding are critical to the fulfillment of Russia's national plans for renewing and developing its naval might.

Because of the longstanding process by which senior officers are groomed for high command as well as the procedures and traditions of the Russian Armed Forces, no significant changes of focus or policy were expected in the change from Vysotskiy to Chirkov and none have been observed. Political policy is developed, set, and promulgated by the Presidential executive. Military policy also flows from the Russian president and is developed and executed in conjunction with the Minister of Defense and the General Staff.

In the course of his career, Chirkov gained at-sea operational experience as a junior officer in the Pacific Fleet (PACFLT). Continuing to serve in the Pacific, he rose to command of an UDALOY I destroyer, higher to group command, and then to combined force command in charge of all Russian forces—submarine, surface-, air-, and land-based on the Kamchatka Peninsula. With his posting to the Baltic Fleet, he gained broader insight and exposure to the European theater and visited most of the Baltic countries while also hosting many visitors to the Baltic Fleet at its main base in Baltiysk, Kaliningrad Oblast, and to St. Petersburg. Prior to his appointment as CINC Russian Navy, there were rumors that he would return to Vladivostok and be posted to command the Pacific Fleet, but clearly higher command decided otherwise and appointed him to head the Russian Navy.

(Chronology next page)



ADMIRAL VIKTOR CHIRKOV CHRONOLOGY



08 Sep 1959	Born in Alma Ata, Kazakhstan SSR
1979–1982	Attended and graduated from S.O. Makarov Higher Naval School, Vladivostok, USSR Commissioned as Lieutenant (U.S. O-1 equivalent) Commander of Mine-Torpedo Department, Patrol Ship, Pacific Fleet Assistant to CO of PACFLT patrol ship Executive officer, KOTLIN DD <i>VOZBUZHDENNYI</i> , Pacific Fleet
1986	Attended Advanced Special Officers' Classes, Leningrad (U.S. SWOS and PXO/PCO courses equivalent)
1987–1990	Commanding Officer, KRIVAK I FF <i>STOROZHEVOY</i> , Pacific Fleet
1990–1993	Commanding Officer, UDALOY I DD <i>ADMIRAL SPIRIDONOV</i> , PACFLT
1993–1998	Deputy Chief of Staff, ASW ship formation, Pacific Fleet Deputy Commander, ASW ship formation, Pacific Fleet Commander, 44th Brigade of ASW ships, Vladivostok, Pacific Fleet
1997	Graduated N.G. Kuznetsov Naval Academy, St. Petersburg (by correspondence) (U.S. Naval War College equivalent)
1998–2000	Attended and graduated from General Staff Academy, Moscow (requirement for senior flag positions at fleet and national level)
2000–Jun 2005	Chief of Staff/1st Deputy Commander, Northeast Group of Troops and Forces, Pacific Fleet
Jun 2005–Feb 2007	Commander, Primorsk Combined Forces Flotilla, Vladivostok, Pacific Fleet
Feb 2007–Sep 2009	Chief of Staff / 1st Deputy Commander, Baltic Fleet
Sep 2009–May 2012	Commander, Baltic Fleet
6 May 2012–present	Appointed Commander-in-Chief, Russian Federation Navy

Decorations:

Order "For Service to the Nation in the Armed Forces", 3rd Degree

Order "For Military Achievement"

Order "For Naval Achievement"



Future Leadership

The Russian military leadership structure is the product of many decades of history and tradition. Due to the enormity of the Russian land, and for the most part, the difficulty and expense of moving and finding suitable housing, most of the Russian officer corps, Navy as well as Ground Forces, have tended to remain relatively geographically stationary.

Service schools are the predominant path to service as an officer and a young man aspiring to a naval career normally chooses to attend one of five naval commissioning schools, usually the one near his home. The curricula of these schools reflect the political, ethical, and moral expectations Russia sets for future officers through a rigid set of training requirements. The exception to a near home choice would be choosing to attend the St. Petersburg Naval Institute Peter the Great Corps (established in 1701), the premier school of the naval service, with an eye on a future high leadership position. Once commissioned, he will be assigned to serve in a unit located within the immediate or adjacent geographic region. Once settled in, he has the potential to progress in rank through Captain 1st Rank (O-6 equivalent) within the same overall military unit, possibly on the same ship. Promotions in rank through Captain 3rd Rank (O-4) are dominantly within the purview of the immediate commanding officer. Promotion to higher ranks involves decisions by formation and fleet commanders. Flag ranks are the combined purview of the Navy Command and the Ministry of Defense.



Russian sailors on the bridge of USS Fort McHenry (LSD 43)

The only alternate path to service as an officer is through what are called “military faculties” of a very limited number of civilian university level educational institutions. These are rough equivalents of the U.S. Reserve Officer Training Corps (ROTC) units. There is no Officer Candidate School (OCS) path in the Russian military.

Only when an officer is identified as having the potential to rise to higher flag rank and assume senior command is it likely that he may be rotated to a different geographic area. At this rank, some of the difficulties otherwise inherent in making permanent change of station changes are overcome by seniority and deference to command position. Even so, large geographic shifts are still rare for the majority of the Russian officer cadre.



Career Ladders

The Russian Armed Forces, and specifically the Navy, have fairly rigid careers ladders. The Russian military system does not train and educate “generalists”; the focus is on “masters of their craft.” Newly commissioned officers are screened and selected for command possibilities early. This selection is dominantly made by commanding officers at the Captain 2nd Rank (O-5) and Captain 1st Rank (O-6) level, since these same officers are responsible for awarding the early promotions in rank. As noted previously, only once reaching the Captain 2nd Rank level are promotion considerations usually made by senior organizational staff and senior commanders. A young, newly commissioned officer coming to his first ship or submarine places his career fate in the hands of his commanding officer. The military educational system focuses on qualifying officers for their initial assignments in specific specialties. A fleet/unit assignment choice preference is given to those graduating at the top of their class (gold medalist/red diploma). This qualification also plays a significant role in the perception of selecting commanding officers.

Career paths are set early. Young officers with specialties in navigation and weapons have the best chance for advancement to command positions. Officers with specialties in engineering, communications, and so on, dominantly will only have career paths in those specialties and will not qualify for command. In this regard, the Russian Navy functions similarly to many European navies.

Path to Command

The classic path to command, both at sea and at the higher leadership levels of the Navy, is through the navigation specialty—with weapons as a close second. Navigation and weapons specialists are always “where the action is.” They constantly work in close proximity to, in coordination with, and under the direct command of their commanding officers. Under such working conditions, they have the opportunity to closely observe the workings and practice of the art of command, and conversely, they are constantly under the watchful eyes of their seniors.

A typical path is to rise from commander of a specific team to division and department head. From there, the decision is made whether a promising officer is deemed fit for command, at which point he would be considered for the position as assistant to the Executive Officer of that ship, or effectively, third in Command. This position is typically held for three to five years, and then the transition to Executive Officer is made; this position is held for four to five years. With a background of success, he will then move on to be Commanding Officer. Command may be aboard that vessel or transition to another ship to serve as the Commander. It is not at all the exception that this entire portion of a naval career can be spent on a single ship or submarine or those of the same class. There are, of course, some breaks for en route courses; however, there are no ship-shore rotations. The only times of relatively prolonged “shore” periods is when the assigned ship or submarine is



down for maintenance or overhaul. In this way, the first twenty years of a naval career becomes the “ship” rotation. Only when an officer is assigned to a group staff does a “shore” rotation truly begin. However, even as a member of a group staff, there are still extended periods spent at sea overseeing training, exercises, certifications, or deployments.

With all of this as prologue, the path to the very top of the naval leadership pyramid is a combination of many early pre-selections. Many early-made decisions preclude options to rise to the top. When reviewing candidates for senior formation and fleet command, only those officers who are the top performing commanders at lower levels are in the running. Again, the only path to high command is for those firmly entrenched in the “command” line.

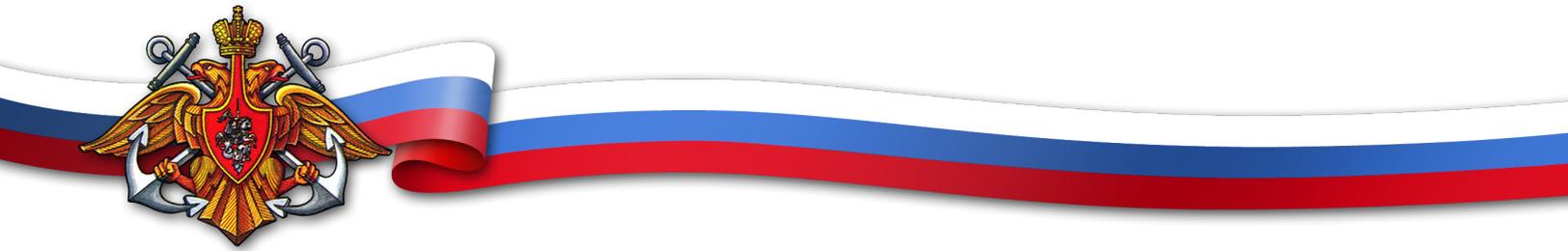
Once an officer reaches one of the two senior deputy positions at the formation or fleet level, usually the Chief of Staff has been the one who will succeed to the Commander’s chair. There have been exceptions where the Deputy Commander has gone on to be the Commander, but those are rare.

When a senior vacancy is rumored or arises, one should look at the pool of the immediately subordinate commanders, first locally, and then perhaps more widely afield. The wider look obviously mostly applies to appointments to the senior three positions at the overall navy and fleet levels. All flag officer appointments

are scrutinized at the Navy Main Staff and Defense Ministry levels, but those to fleet command positions also are reviewed at the presidential level. These are executive decisions; no legislative review or approval is required.

According to standing legislation, the age limit for service in the rank of admiral is 60. This can be extended “at the pleasure of the President” in one-year increments.

Current information regarding Russian Navy leadership is available on the pullout inside the back cover.





Chapter Three

Procurement: Shift to Quality Over Quantity

Procurement

Naval procurement is a multi-stage process. The navy assesses and develops its requirements for platforms and their characteristics in light of its assigned missions to support and fulfill the officially promulgated Russian Federation security and defense policies and doctrine. These requirements are developed in close coordination with the Ministry of Defense and, when approved, are included in the multi-year State Armaments Plan. The State Defense Order is the vehicle which puts specific requirements into development and production. This entire process involves close coordination between the Defense Ministry and major scientific and industrial organizations belonging to other ministries.

At the national level, defense related arms production is managed both for domestic use and for foreign sale. The proceeds from foreign arms are used both as a general source of federal revenue and to defray or subsidize the cost of domestic weapons development and production. In the naval arena, Russia, as the Soviet Union before it, offers a wide variety of military products for sale. In recent years Russia has sold KILO Class submarines to Algeria and Vietnam, GEPARD Class frigates to Vietnam, TALWAR II Class frigates and a modified KIEV Class aircraft carrier to India. High performance missile systems of

the CLUB weapons family (export version of the domestic KALIBR family) have been sold and heavily advertised for sale for over a decade. The BRAHMOS anti-ship missile, closely related to the S-N-26 STROBILE, was a joint Russia-India development program. The marketing showcases for these and other naval arms merchandise have included the biennial International Maritime Defense Show (IMDS) held in St. Petersburg and various other major arms shows held both in Russia and around the world.

We have multiple reflections in the intelligence record of state-of-the-art weapons systems, Russian technical assistance, and related arms traffic from Russia to many non-peer foreign actors. This proliferation of high grade weapons is one of the most troubling aspects of Russian Federation adventurism worldwide.

Quality

In the post-Soviet era, the Russian government has taken a more cost effective approach to military procurement in an attempt to find and cut waste, fraud, and embezzlement of procurement funds. Significant steps have been taken to ensure that the defense procurement ruble results in a “ruble’s worth” of equipment. The management of the State Defense Order, the government’s military purchase plan, is overseen by a Ministry of Defense department.



Russian Navy Strategic and General Purpose Forces Order of Battle (OOB) 2015						
	North- ern Fleet	Baltic Fleet	Black Sea Fleet	Caspian Flotilla	Pacific Fleet	Totals
SSBN	7				5	12
SSGN/SSN	17				9	26
SS	6	2	4		8	18
Submarine totals						56
CV	1					1
CGN	2					2
CG	1		1		1	3
DD	4				4	8
DDG	1	2	1		2	6
FFG		1				1
FF		6	2	2		10
Major Surface totals						31
FFL	6		6		9	21
PGG	6	11	9	4	15	45
PG		7		4		11
LST	4	4	7		4	19
LCU		2		1		3
Minor Surface totals						99

For naval platform purchases, the emphasis has been—with the sole exception of strategic systems—on multipurpose platforms designed with sufficient capability and margin for future modernization in order to maximize the use of the basic hull and propulsion systems.

Renewal Imperative

In late 1991, when the Russian Navy inherited its current order of battle of Soviet legacy ships and submarines, these platforms had already seen years of service.

The waning years of the USSR and the formative decade of post-Soviet Russia were

marked by drastically cut military budgets. The result was the further degradation of a fleet already badly in need of maintenance and repair.

The charts (see foldouts) depicting the Russian Navy's current major combatant order of battle (OOB) clearly show that the average age of most of the ships and submarines is more than 20 years. A nominal service life for most Soviet ships and submarines when built was considered to be 25 years. With diligent care and appropriate maintenance, the service lives of the larger, more robustly built units can be extended by five to

ten years—possibly fifteen. These fleet OOB charts depict such selected extended service lives and also clearly illustrate the current age of Russia's Soviet legacy fleet.

Overall, these charts, a more accurate and detailed version of which undoubtedly graces a wall in the Russian Navy's shipbuilding and repair directorate, clearly shows that the Russian Navy faces the imperative of new construction in order to avoid disappearing in the 2020 timeframe. An additional chart depicts the status of new construction programs.

The Future Fleet

Russia's national leadership has recognized future naval needs, and has approved and funded a broad shipbuilding program that will result in a new 21st-century Russian Navy. The Navy's major combatants will dominantly comprise multipurpose submarines and surface ships capable of conducting aerospace defense, anti-ship and anti-submarine warfare unlike their mostly single mission Soviet predecessors. The following briefly describes both the major programs underway and several that are expected to be pursued in the future. (See the chart, similar in format to that showing the current major combatant order of battle, depicting the status of new construction.)

Submarines

"The nuclear submarine fleet is the priority in the Navy shipbuilding program."

- Admiral Viktor Chirkov,
Commander-in-Chief, Russian Navy
6 July 2015

Submarines are the capital ships of the Russian Navy. This is dictated by Russia's geography—constrained direct access to major ocean areas everywhere but in the Pacific makes surface ship operations vulnerable to potential enemy action. The inherent covert nature of submarines enhances their survivability whether operating locally or when transiting into more open sea areas.

Placing a priority on strategic deterrence and defense, Russia's recapitalization of its submarine forces began with its strategic ballistic missile submarines. Construction of general purpose nuclear and non-nuclear submarines was second in importance.

DOLGORUKIY Class SSBN

(in series construction)

The *Yuriy Dolgorukiy*, first unit of the DOLGORUKIY nuclear-powered ballistic submarine (SSBN) Class, also known as the Borey or Design 955, was designed by the Rubin Design Bureau in St. Petersburg and laid down in late 1996, initially to complement and eventually to replace the DELTA III Class SSBNs. The class, with each submarine equipped with 16 launchers for launched ballistic missiles (SLBM), will form the core



DOLGORUKIY Class Basic Characteristics:

Type	SSBN
(Russian)	Borey
Design #	995/995M
Length	170 meters
Displacement (full)	24,000 tons
Propulsion	Nuclear
Speed	29 knots
Crew	107
Main Armament	16x SS-N-32 BULAVA

of Russia's naval strategic nuclear forces for most of the 21st century. (Note: SLBMs can be launched from a submarine moored at a pier, i.e., not submerged.) The DOLGORUKIY Class is equipped with the SS-N-32 Bulava SLBM, an inter-continental, sea-based ballistic missile with a reported range of 8,500 km. The missile test program encountered many difficulties, delaying the submarine's expected 2009 acceptance into the Navy. The missile's shortfalls were said to have been caused by technical malfunctions and quality control issues in final assembly; however, testing continued and the flaws were investigated and eliminated.

The *Yuriy Dolgorukiy* was finally accepted into the Russian Fleet on 10 January 2013, several years later than originally expected. The second unit, *Aleksandr Nevskiy*, was delivered in late December 2013 and the third—*Vladimir Monomakh*—is completing sea trials. Two more units, *Knyaz Vladimir* and *Knyaz Oleg*, are under construction in Severodvinsk, Russia. It has been publicly announced that construction program is to deliver eight units by the end of 2020.

SEVERODVINSK SSGN

(in series construction)

The SEVERODVINSK SSGN, also known as the Yasen and Design 885, is a 4th generation submarine designed as a multi-purpose nuclear attack submarine. The lead submarine, *Severodvinsk*, designed by the Malakhit Bureau in St. Petersburg, was laid down at Sevmas Shipyard on 21 December 1993.



SEVERODVINSK Class Basic Characteristics:

Type	SSGN
(Russian)	Yasen
Design #	885/885M
Length	120 meters
Displacement (full)	11,800–13,800 tons
Propulsion	Nuclear
Speed	31 knots
Crew	~80
Main Armament	32x VLS KALIBR

The specific missions of SEVERODVINSK SSGN include anti-submarine warfare (ASW), anti-surface warfare (ASuW), as well as land attack missions. This submarine class will be armed with a wide range of advanced cruise missiles to destroy enemy ships and targets ashore. The lead unit was launched on 15 June 2010 and commissioned for trial service on 17 January 2014, some ten years after construction began. Eight are planned to be built through 2020.

The construction of the lead submarine has taken an extensive period of time, suggesting there has been considerable scope for re-design, technical upgrades, and the use of modern design techniques and the inclusion of up-to-date materials and systems.

Fifth Generation SSN/SSGN

Nuclear General Purpose Submarine

(projected, not in construction)

In early 2006, then Russian Navy Commander-in-Chief Admiral Vladimir Masorin discussed the future composition of the Russian submarine force. As part of this force, he noted that a nuclear submarine of an unknown type was currently under development. Speaking later, Rear Admiral Shlemov in charge of naval shipbuilding expanded on this, highlighting that this new type submarine would have a displacement of 5,000–6,000 tons. This new, smaller submarine's main mission would be the protection of the DOLGORUKIY Class SSBN, allowing the multi-mission SEVERODVINSK to perform other navy missions. As of 2006, both the Rubin Design Bureau and Malakhit Design Bureau were said to be interested in undertaking the design of this submarine. The general designer of the Rubin Bureau has reiterated the requirement of future Russian submarines to be smaller in displacement. However, there has been no further public discussion of the design or announcement that



**PETERSBURG Class
Basic Characteristics:**

Type	SS
(Russian)	Lada
Design #	677
Length	~67 meters
Displacement (full)	~1,800 tons
Propulsion	Diesel-electric
Speed	~20 knots
Crew	~35

a final design has been approved. Based on typical timelines for submarine development, a launch prior to 2020 is unlikely.

PETERSBURG Class SS

(limited series construction uncertain)

The PETERSBURG SS, also known as Lada and Design 677, is a diesel-electric submarine intended to be a technological advance on the KILO Design 636, specifically with regard to propulsion, sonar, and combat information support. The class is the product of the Rubin Central Marine Equipment Design Bureau and was built by the Admiralty Shipyard, both are in St. Petersburg. The lead hull Sankt Peterburg, laid down in 1997 and commissioned in 2010 for trial operation, is now located in the Northern Fleet. During initial trials problems were encountered with the electric propulsion system, the main sonar, and combat information system. It has been reported that these issues have been resolved and work has restarted on hull two Kronshtadt, laid down



**KILO Class
Basic Characteristics:**

Type	SS
(Russian)	Varshavyanka
Design #	636.3
Length	73.8 meters
Displacement (full)	3,950 tons
Propulsion	Diesel-electric
Speed	20 knots
Crew	52
Main Armament	KALIBR from torpedo tubes

in 2005. The future of hull three, laid down in 2006, remains uncertain.

Advanced Non-Nuclear General Purpose Submarine

(projected, not in construction)

Work on a future non-nuclear submarine, design covername Kalina, has been announced with work underway at the Rubin Design Bureau. It is expected to have an air-independent propulsion plant (AIP). Laydown of the lead unit is projected soon after 2020.

Unlike the case with submarines, the Navy approached the recapitalization of its surface fleet starting with smaller sized units and progressively building larger ones.

Surface Combatants

MINOR COMBATANTS



ASTRAKHAN Class Basic Characteristics:

Type	PG
(Russian)	Buyan
Design #	21630
Length	62 meters
Displacement (full)	~500 tons
Propulsion	Diesel
Speed	26 knots
Crew	30–35
Main Armament	1x 100mm gun

ASTRAKHAN Class PG

Patrol Combatant

The *Astrakhan* is the lead ship of the Buyan or Project 21630 PG designed by Zelenodolsk Project Design Bureau and built by the Almaz Shipyard in St. Petersburg. The lead unit was laid down 30 January 2004, was launched 10 September 2005, and was commissioned 13 September 2006. This class is dominantly being deployed in the Caspian Sea.

The *Astrakhan* was first displayed during the annual Navy Day parade on the Neva River in St. Petersburg before delivering it to the Russian Navy's Caspian Flotilla on 1 September 2006. Two more units, *Volgodonsk* (originally *Kaspiysk*) and *Makhachkala* were

delivered to the Russian Navy 29 June and 4 Dec 2012, respectively.

The engineer of *Astrakhan*, Guard Capt 3rd-Rank Sergey Parfeyev, stated the PG's two diesel engines drive a reversible water jet steering unit for high maneuverability.

SVIYAZHSK PGG Guided Missile Patrol Ship

(in series construction)

The Buyan design was modified to the increased displacement Buyan-M Design 21631 to include an eight-cell vertical launch system (VLS) capable of firing the KALIBR family of missiles as well as the YAKHONT anti-ship missile (see missile section). Grad Sviyazhsk in the Caspian is the lead unit of this design with additional units in construction for both the Caspian Flotilla and the Black Sea Fleet. The export variant of these designs is called Tornado.



SVIYAZHSK Class Basic Characteristics:

Type	PGG
(Russian)	Buyan-M
Design #	21631
Length	74 meters
Displacement (full)	~950 tons
Propulsion	Diesel
Speed	25 knots
Crew	30–35
Main Armament	8x VLS KALIBR

MAJOR COMBATANTS

BYKOV Class FFLG Guided Missile Corvette

(in series construction)

The Design 22160 BYKOV Class was designed by the Severnoye (Northern) Design Bureau in St. Petersburg and is being built at Zelenodolsk Shipyard. At about 1,500 tons displacement and armed with KALIBR family and Yakhont missiles, these corvettes will perform adjacent water patrol duties likely in the Black and Baltic Seas. Two units, *Vasily Bykov* and *Dmitriy Rogachev*, were laid down in 2014, with the first to be commissioned as early as 2016.

STEREGUSHCHIY Class FF Frigate/FFG Guided Missile Frigate

(in series construction)

The Design 20380 STEREGUSHCHIY Class was designed by the Almaz Central Naval Design Bureau in St. Petersburg and is being built by the (Severnaya Verf) Northern Shipyard in the same city. Construction of additional units is also underway in the



STEREGUSHCHIY Class basic characteristics:

Type	FF
Design #	20380
Length	104.5 meters
Displacement (full)	2,220 tons
Propulsion	Diesel
Speed	~27 knots
Crew	~100

Far East at the Amur Shipyard in the city of Komsomolsk on the Amur River.

The warship is designed for operations in adjacent maritime zones, fighting enemy surface ships and submarines, as well as to provide naval gunfire support for amphibious landings. It is also a replacement for the GRISHA Class frigates (FFL). The ship has a helicopter landing pad and hangar (for 1x Ka-27) and is equipped with the latest electronic equipment and communications systems.

Steregushchiy, the lead hull, was laid down in December 2001, launched in May 2006, and began initial sea trials in November 2006; it required 15 months of trials and equipment testing before commissioning in late February 2008. As of August 2015, four hulls (*Steregushchiy*, *Soobrazitelnyy*, *Boykiy*, and *Stoykiy*) have been launched and commissioned in St. Petersburg. Beginning with *Boykiy*, the design included a VLS cell for the REDUT/POLIMENT (SA-NX-28) air defense missile system; this changed the type designation from FF to FFG. At the Far East Amur Shipyard, workers laid the keel for their first STEREGUSHCHIY hull, the *Sovershennyy*, in late June 2006 with an estimated delivery date of 2011. It was finally launched in May 2015. A second unit, *Gromkiy*, was reported laid down on 17 February 2012. The STEREGUSHCHIY design has an export version, Design 20382 Tigr.

Modified STEREGUSHCHIY Class FFG Guided Missile Frigate

(in series construction)

The Design 20385 Gremyashchiy is a modification of the original 20380 design with the installation of improved radar system and a VLS cell capable of launching the KALIBR family of missiles and the YAKHONT anti-ship cruise missile. Due to problems arising from economic sanctions against Russia related to

STEREGUSHCHIY (GREMYASHCHIY) Class basic characteristics:	
Type	FFG
Design #	20385
Length	104.5 meters
Displacement (full)	2,200 tons
Propulsion	Diesel
Speed	~27 knots
Crew	~100
Main Armament	8x VLS KALIBR

Ukraine, the inability to acquire German diesel propulsion systems will likely limit this design to two ships, Gremyashchiy and Provornyy. There have been reports of work on another improved 20386 design.

GRIGOROVICH Class FFGs

Guided Missile Frigate

(in series construction)



GRIGOROVICH Class basic characteristics:	
Type	FFG
Design #	11356
Length	~130 meters
Displacement (full)	4,500 tons
Propulsion	Diesel-Gas Turbine
Speed	~30 knots
Crew	190
Main Armament	8x VLS KALIBR

The GRIGOROVICH Class, Design 11356, was designed by the Severnoye (Northern) Design Bureau in St. Petersburg, and built by the Yantar Shipyard in Kaliningrad. It is the latest variation of the long-produced KRIVAK FFG and in some respects could be called a KRIVAK V design. (KRIVAK I and II – Soviet Navy; KRIVAK III – Soviet Border Guards; KRIVAK IV – the TALWAR Class for India.) The lead unit, *Admiral Grigorovich*, is in sea trials and the second unit, *Admiral Essen*, was launched on 7 November 2014. It was to be followed by four additional units: *Admiral Makarov*, *Admiral Butakov*, *Admiral Istomin*, and *Admiral Kornilov*. *Admiral Makarov* will be completed but the last three have been cancelled because of Russia's inability to acquire marine gas turbines from Ukraine due to imposed sanctions.

Due to delays in constructing the new design GORSHKOV Class frigates and a critical need to replace the aging inventory of the Black Sea Fleet, the decision was made to order six units of this proven design. An additional benefit was the fact that the Yantar Shipyard already had proven assembly experience with this design, having built a series for India. All six GRIGOROVICH units were expected to be in the Black Sea by 2020.

GORSHKOV Class FFG

Guided Missile Frigate

(in series construction)

The GORSHKOV Class, Project 22350, also known as the "Admiral Class", was designed by the Severnoye (Northern) Design Bureau in St. Petersburg.

The lead hull, *Fleet Admiral of the Soviet Union Gorshkov*, was laid down in February 2006 at St. Petersburg's Northern Shipyard. Then Deputy Prime Minister Sergey Ivanov stated that hull 1 would be launched in 2011. Surprisingly, it was launched in late October



**GORSHKOV Class
basic characteristics:**

Type	FFG
Design #	22350
Length	130 meters
Displacement (full)	4,500 tons
Propulsion	Diesel-Gas Turbine
Speed	~30 knots
Main Armament	16x VLS KALIBR

2010. However, it has undergone a long post-launch fitting out period. FADMSU Gorshkov may be commissioned in 2015, and assigned to the Baltic Fleet.

The GORSHKOV Class is a multi-mission missile frigate for air, surface, and submarine warfare roles. It is intended for combat operations in distant and close-in maritime zones, as well as for participating in the execution of missions in the oceanic zone. The Russian Navy's original plans called for 20 GORSHKOV units (five units for each of its four fleets). However, pending cost overruns and issues with weaponry performance as well as issues with the acquisition of marine gas turbines from Ukraine may reduce the number of FFGs actually produced or greatly extend the construction schedule, or both. Russian re-tooling of domestic production to provide the required marine gas turbines may result in a two-year or longer delay.

New Generation Destroyer (DDG)

(projected, not in construction)

A design development program, covername Lider [Leader] and possibly Design 23560, is underway to replace the aging UDALOY and SOVREMENNY class inventories. Depending on propulsion type, the design could be a 8,000 to 18,000 ton ship combining both destroyer and cruiser characteristics with robust air, surface, and submarine warfare, as well as anti-missile defense capabilities.

Russia reportedly intends to build six such ships for both the Northern and Pacific fleets (12 total). The lead unit is not likely to be built earlier than the mid-2020s.

Press reports have mentioned that the propulsion for this class, whether conventional gas turbine or nuclear, is not yet determined. The resolution may depend on decisions yet to be made regarding a new aircraft carrier which, if built, is likely to be nuclear-powered.



**New generation destroyer
basic characteristics:**

Type	DDG/CG(N)
(Russian)	Lider
Design #	23560
Length	~200 meters
Displacement (full)	8,000–18,000 tons
Propulsion	Gas Turbine/Nuclear
Speed	~30 knots
Crew	~300
Main Armament	~32–64x VLS KALIBR

New Generation CVN

Vice Admiral (retired) Anatoliy Shlemov, of the United Shipbuilding Corporation, spoke to design progress as of 2009 on a future aircraft carrier program. Russian designers are currently working on the aircraft carrier's requirements and tactical-technical tasks. This preliminary design work is being conducted by the Neva Planning and Design Bureau in conjunction with the Krylov State Scientific Center in St. Petersburg, which also designed the previous KIEV and KUZNETSOV Class carriers. A model of a new carrier, preliminary Design 23000 covername Shtorm (Storm), was displayed at the International Maritime Defense Show in St. Petersburg both in 2013 and 2015.

Very preliminary published characteristics reveal that the new aircraft carrier will carry a new generation of jet fighters and unmanned



New generation CVN Basic Characteristics:

Type	CVN
(Russian)	Shtorm
Design #	23000
Length	~300 meters
Displacement (full)	~100,000 tons
Propulsion	Nuclear
Speed	~30 knots
Crew	4,000–5,000
Main Armament	80–90 aircraft

aerial vehicles (UAVs). Unlike the KUZNETSOV CV that was built with 12 SS-N-19 anti-ship cruise missiles, the new carrier will not carry surface-to-surface cruise missiles. Its propulsion plant would be nuclear-powered, providing the ship with a full power speed around 29 knots. At least three nuclear-powered aircraft carriers have been discussed; one for the Northern Fleet, one for the Pacific Fleet, and a third hull—a replacement carrier—would be undergoing scheduled repairs. Former Navy CINC Vladimir Masorin stated in 2007 that six aircraft carriers would be necessary, three each in the Northern and Pacific Fleets: one active, one in training, and one in maintenance.

Construction of a new CV poses a challenge for Russia. The KIEV and KUZNETSOV Class carriers were built at Chernomorskoye Shipyard in Nikolayev, Ukraine, now unavailable to the Russians. Two shipyards in Russia that could solicit such a contract are the Baltic Shipyard in St. Petersburg and Sevmash Shipyard in Severodvinsk. These two shipbuilding enterprises reportedly have requested to be retooled and reequipped. They also want new technologies to be introduced in order to increase their plant's production efficiency. However, there have been plans to close Baltic Shipyard by the 2020s and ambitious shipyard development plans for Sevmash have been discussed. In addition to manufacturing issues, the Russian Navy will have to solve issues of basing, support, new frigate/destroyer escorts, training, and billeting for thousands of carrier crew members.

Although recent statements by the naval leadership continue to promote the construction of aircraft carriers, it is likely that there will be extensive discussion and debate before final decisions are made. In light of the extensive work required to enable Russia to build an aircraft carrier, construction is not likely to begin until about the mid-2020s.

Amphibious ships

GREN Class LST

Tank Landing Ship

(in construction, series production uncertain)

The GREN Class, Design 11711, tank landing ship was designed by the Neva Project Design Bureau in St. Petersburg.

Ivan Gren, the lead hull, was laid down on 23 December 2004 at Kaliningrad's Yantar Shipyard. It was planned that the new LST would be built in three and a half to four years resulting in a launch possibly in 2008. However, due to financial issues, the *Ivan Gren* was not launched until late May 2012, and work continues. A second unit, *Petr Morgunov*, was laid down on 11 June 2015.

The amphibious lift capacity will be on the order of 13x main battle tanks (or 40 BTR), and up to 300x assault troops.

Its main difference from the amphibious ships used presently by the Navy is that it will disembark landing troops on a beach in a new way. The new, contact-less unloading method assumes the use of series-production

engineer pontoons, which are normally used by the ground troops when they ford water barriers. A pontoon bridge is formed from several pontoons extended from the bow, along which heavy and light vehicles can be moved and disembarked onto the beach. The LST will also be able to transport standard 20-foot sea containers carrying all kinds of cargo. There is a cargo crane with a capacity of 16 tons for loading and unloading operations on the ship.

MISTRAL Class LHA

(Built, delivery to Russia cancelled)

In 2011, the Russian president approved the negotiation of a contract with France to purchase two MISTRAL Class amphibious assault ships. Four total units had been planned; the initial two units were to be built in France. Russia stated that a decision would be made on whether to construct hulls 3 and 4 via external contract or indigenously in 2016, after the Russian Navy had operated hulls 1 and 2.

This contract has allowed Russia to benefit from the French builder's experience in



GREN Class basic characteristics:

Type	LST
Design #	11711
Length	120 meters
Displacement (full)	5,000 tons
Propulsion	Diesel
Speed	18 knots
Crew	100
Main Armament	1x AK-176 76mm gun

modular surface ship construction concepts that are critical for short build times (two years for the MISTRAL vice up to six for standard production at a Russian shipyard). A fully integrated digital system to manage and operate all ships' systems was incorporated in the MISTRAL design. The actual construction of the first two ships was a joint effort with the forward halves built in St. Nazaire, France, and the stern halves, housing the well deck and helicopter hangar, built at the Russian Baltic Shipyard, St. Petersburg. Final assembly and initial sea trials were conducted in France. The acquisition of MISTRALs and their basing in the Pacific Fleet would have provided the Russian Navy with significant power projection options and also would allow Russia to more effectively participate in humanitarian assistance/disaster relief (HADR) operations.

The original French MISTRAL design was modified for Russian use by incorporating a stronger in-water hull to allow for possible use in ice conditions and a higher hangar deck clearance to accommodate the size of the Ka-29 assault and the naval version of the Ka-52 Alligator attack helicopters planned to be deployed aboard. The ship was to be able to carry up to 16 helicopters and the helicopters, weapons, and military communications capability would be of Russian origin. When completed, these units would be able to embark 450 Naval Infantry and varying load-outs of armored personnel carriers and/or tanks.

The first ship, *Vladivostok*, was to be delivered to Russia by the end of 2014 to complete outfitting before being assigned to operational forces. The second, *Sevastopol*, had initial sea trials planned for 2015. Both units were expected to be operational in late 2015 and were to be based in Vladivostok as part of the Pacific Fleet.



**MISTRAL Class
basic characteristics:**

Type	LHA
Length	199 meters
Displacement (full)	21,300 tons
Propulsion	Diesel-electric
Speed	18.5 knots
Crew	177

However, due to current events in Ukraine, the purchase contract has been cancelled with France in possession of the two ships and obligated to refund Russia's investment in the construction.

Auxiliary Vessels

IVANOV Class AGI

Communications/Intelligence ship

(in series construction)

The lead unit of the IVANOV Class AGI, Design 18280, *Yuriy Ivanov*, was laid down in December 2004 and launched in September 2013 at the Northern Shipyard, St. Petersburg. It was designed by the Aysberg Central Design Bureau in the same city and will be the first of four such intelligence/reconnaissance units, one for each fleet, to be built at this yard. All of these ships likely will be named for past directors of Russian Naval Intelligence. This design will augment and eventually replace the existing ocean-going BALZAM and VISHNYA Class units. The second unit, *Ivan Khurs*, was laid down on 14 November 2013.



IVANOV Class basic characteristics:

Type	AGI
Design #	18280
Length	95 meters
Displacement (full)	~4,000 tons
Propulsion	Diesel
Speed	20 knots
Crew	~120

BELOUSOV Class ASR

Submarine rescue ship

(in series construction)

The BELOUSOV Class, Design 21300, submarine rescue ship (ASR) *Igor Belousov* was designed by the Almaz Central Naval Design Bureau, St. Petersburg and built at the city's Admiralty Shipyard. It was designed to rescue submarine crews, provide assistance to surface ships, feed compressed air and electric power to submarines and surface ships, and detect and examine ships in distress in specified areas. Major features of the new vessel include a deep-sea rescue vehicle (DSRV) with a submergence depth of up to 700 meters, a deep-water dive suit for operating at a depth of about 500 meters, a decompression chamber for 60 men, one-atmosphere rigid diving suits, and two rescue boats. The upper deck of the vessel accommodates a helicopter landing pad.



BELOUSOV Class basic characteristics:

Type	ASR
Design #	21300
Length	105 meters
Displacement (full)	5,310 tons
Propulsion	Diesel-electric
Speed	~15 knots
Crew	~100

The lead unit, *Igor Belousov*, was laid down on 24 December 2005. Planned delivery to the Navy was to be in 2011. As of mid-2015 the lead unit is undergoing trials and has not

been commissioned. Former Navy CINC Fleet Admiral Vladimir Masorin said that a production order for four hulls (one for each fleet) would be requested.

Oceanographic Research Vessels

The Russian Navy signed a contract in February 2009 for two classes of oceanographic ships. “These ships are designed for studying the seas and oceans and will pave the way for the rebirth and revival of Russia’s powerful science and research fleet,” said Vice Admiral Aleksey Burilichev, the head of the Defense Ministry’s Main Directorate for Deep-sea Research. Both were designed by the Almaz Central Naval Design Bureau and will be constructed at Yantar Shipyard, Kaliningrad.

SELIGER

Oceanographic Research Vessel

The SELIGER Class research vessel was designed by the Almaz Design Bureau, St. Petersburg and built by Yantar Shipyard in Kaliningrad.

The lead unit, *Seliger*, was laid down in July 2009 and finally delivered to the Navy in the Black Sea in August 2012, about one year later than originally planned (June 2011).

Seliger is intended to conduct trials of special technical devices, armaments, and military equipment; participate in search and rescue; and perform scientific research and oceanographic work. Russia plans to use the vessel to test and use both manned and unmanned deep-sea vehicles. It is reported that the vessel will be used in closed seas, e.g., Black Sea.

YANTAR class

Oceanographic Research Vessel

(built, series intended)

Design 22010 was also designed by the Almaz Design Bureau, St. Petersburg. The



SELIGER Class basic characteristics:

Type	AG
Design #	11982
Length	59.7 meters
Displacement (full)	1,100 tons
Propulsion	Diesel-electric
Speed	~12 knots
Crew	16+ ~20

lead hull, *Yantar*, was laid down on 8 July 2010, launched in December 2012, sea trials and delivery to the Navy was planned for 2014. *Yantar* concluded sea trials in early 2015, was commissioned, and embarked on its maiden voyage into the Atlantic in August 2015 to further test all of its installed equipment.

YANTAR is an ocean-going vessel intended for conducting research globally throughout the water column and at the ocean floor. It will carry two manned deep submergence vehicles capable of working at 6,000-meter depths. The desire for additional units has been voiced but no further developments have been observed.



**YANTAR Class
basic characteristics:**

Type	AG
(Russian)	Kryuis
Design #	22010
Length	108 meters
Displacement (full)	5,230 tons
Propulsion	Diesel-electric
Speed	~15 knots
Crew	50

Naval Aviation

The Russian Navy's aviation arm comprises shore-based and shipborne aircraft. The medium-range IL-38 MAY and long-range Tu-142 BEAR F maritime patrol/anti-submarine warfare (ASW) aircraft, Su-24 FENCER frontline bombers, and a variety of rotary- (helicopter) and fixed-wing transport aircraft make up the shore-based naval aviation force. Shipborne aircraft are the Ka-27 HELIX helicopters which have ASW and search and rescue (SAR) variants. The unique Independent Shipborne Fighter Regiment, the nucleus of KUZNETSOV-class aircraft carrier air wing, is composed of Su-33 FLANKER D and Su-25 UTG FROGFOOT D. The regiment focuses on frontline aircraft as well as future aircraft development efforts. Only new developments are addressed below.

ASW Aircraft

IL-38 MAY Maritime Patrol Aircraft

(upgrade modification program)

The Ilyushin IL-38 MAY is a four-engine turboprop, shore-based, maritime patrol aircraft in operation since 1968. Its nominal operational range is said to be over 2,500 km (1,360 nm). The aircraft is capable of supporting traditional search and rescue (SAR) missions as well as being the Navy's medium range anti-submarine warfare (ASW) and reconnaissance aircraft (analogous to the U.S. P-3 ORION aircraft).

The IL-38 has undergone numerous updates over the decades. The latest development recently operational is the IL-38N (Novella) variant, said to have upgraded ASW



systems installed. The plan to progressively upgrade older variants through depot-level maintenance has a goal to modernize 20 airframes by 2020. IL-38s are based in the Navy's Northern and Pacific Fleets.

Fighter Aircraft

PAK-FA Future Fifth-Generation Fighter

(in developmental testing)

The first Russian fifth-generation fighter program, called the PAK-FA, is a single-seat, medium-heavyweight, multi-role fighter aircraft designed primarily by the Russian company Sukhoy. The term "PAK-FA," as used by Russian and Indian officials, is an acronym for

"Perspektivnyy Aviatsionnyy Kompleks Frontovoy Aviatsii," or "Advanced Aircraft System for Frontline Aviation." Sukhoy has publicly used the designator "T-50," while at least one Indian publication has called it "PMF." This developmental weapons system has a number of informal names as its air force and naval designators have not been announced.



In terms of concept, the PAK-FA is supposed to conform to all the basic attributes of the fifth-generation fighter. [Concepts integral to the definition of 5th Generation capability are platforms capable of sharing information to increase the availability of the Common Operating Picture (COP).] These include low radar cross-section and infrared signature, a high level of integration of the onboard equipment, weapons disposed in internal compartments, a supersonic cruising speed without the use of afterburners, and supermaneuverability.

PAK-FA flight tests began in January 2010. Russia has four PAK-FA test aircraft in its inventory, with two more to be added in 2015. Series production of the T-50 aircraft could start as early as 2015 scheduled for Russian Air Force's acceptance in 2016.

It can be logically considered that the further development of the PAK-FA program could include the future fighter for a new aircraft carrier that could become operational by the early 2030s, if Russia decides to build it.

MiG-29K

The operational life span of the Su-33 fighter, currently operating aboard *Admiral Kuznetsov*, is coming to an end in 2015 and the Russian Navy has chosen the MiG-29K as a replacement because of lower costs. The MiG-29K was originally ordered by the Indian Navy for the *INS Vikramaditya* and the job of developing and fielding the aircraft was financed by the Indian government. Billed as a 4++ generation fighter, the aircraft features advanced air-to-air and air-to-ground radar capability along with digital touch displays and HOTAS in the cockpit. The avionics used by the MiG-29K allow for the incorporation of advanced PGM munitions.

The aircraft is substantially strengthened to survive the carrier environment. It also features a four-channel fly-by-wire system, allowing for precise control when coming aboard the aircraft carrier. Additionally, the operators will enjoy the added feature of folding wings to aid in the movement of the aircraft in the carrier environment. The Russian Navy expects to acquire 24 fighters at a total cost of 1 billion dollars.

Helicopters

The Russian MISTRAL was to deploy with at most 16 helicopters, and Russia wanted to deploy with an “8 + 8” format (eight attack helicopter plus eight transport/search and rescue (SAR) helicopters). The eight attack helicopters would be newly built Kamov Ka-52K with the remainder of the helicopters being Ka-29 Helix B and Ka-27PS Helix D, for transport and SAR.



Ka-52 Alligator

The Ka-52 HOKUM B, nicknamed “Alligator,” is a two-seat, coaxial rotor, day-and-night-capable attack helicopter. The Ka-52 was designed primarily as an air-to-ground attack helicopter with side-by-side seating. Weapons load includes unguided rockets, antitank guided missiles (ATGMs), and machine guns. The Ka-52K, nicknamed “Katran,” was initially reported as the Ka-52MD (Morskogo Desanta/assault) and will be a Ka-52 modified for maritime operations. The modifications likely include folding rotor blades and weapons pylons. Internal modifications include upgrades to the wiring and the electrical instruments, which will need to be more resistant to an aggressive damp and salty environment. The helicopter will also be equipped with rescue rafts/vests, airframe floats, and a new crew escape system. Lastly, the under-frame supports will be strengthened because under rolling/pitching conditions a helicopter may strike the helicopter deck harder than when landing on the ground. The future delivery from the Arsenyev’s Progress

Aircraft Plant of up to 32 Ka-52K helicopters is set to begin in 2015.

Ka-29

The Russian Navy has used some variant of the HELIX platform for the past 40 years. The aircraft is inherently stable because of the double counter-rotating rotor blades, which makes it ideal for application in the maritime environment.

Designated as the Ka-29TB (Transportno Boyevoy/Combat transport), it features a crew of three who sit side-by-side. The center seat is the weapons operator, responsible for firing the weapons on the hard points and the cannon on the starboard side of the aircraft. The aircraft has nighttime assault capability as well. The complement of aircraft aboard the MISTRAL class amphibious vessels was to feature up to 16 Kamov products, up to eight of which would be the Ka-29TB.

Weapons

Ballistic Missiles

Russia maintains a substantial force of nuclear-powered ballistic missile submarines (SSBNs) with intercontinental-range missiles;



the country is developing new and improved SLBM weapon systems to replace its current inventory of Cold War-era systems. Upgrades to the SS-N-23, named SINEVA and LINER, are replacing the original SS-N-23 on DELTA IV Class SSBNs. The SS-N-32 BULAVA SLBM is the new solid-propellant SLBM deployed on the new DOLGORUKIY Class SSBNs. Russian SLBMs are capable of launch from surfaced and submerged SSBNs and from a variety of launch locations, including while moored at their home pier or on patrol and after surfacing through polar ice cover.

Anti-ship Cruise Missiles

The Russian Navy continues to increase its maritime strike capability through anti-ship cruise missile (ASCM) and sea-launched land-attack cruise missile (LACM) research and development programs. Missile designs are focused on increasing missile speed, range and employment flexibility in addition to improving the ability to penetrate ship defensive systems. ASCMs are deployed on multiple launch platforms—surface combatants, submarines, aircraft, and coastal defense sites—that provide the Russian Navy and Russia’s export customers with multiple maritime strike options. The

development of new ASCM systems should not discredit the threat of “legacy” ASCMs.

SS-N-22 SUNBURN (MOSKIT)

The first variant of the ramjet-powered 3M-80 MOSKIT (SS-N-22 SUNBURN) was accepted into service in 1984 and still presents a stressing threat. The 3M-80 utilizes speeds of Mach 2.0+, terminal maneuvers, and good stand-off range to maximize the probability of kill. Key variants include the 3M-80E (range 120 km) and the high-altitude cruise 3M-80MVE (range 240 km), both of which have been exported to China. All variants are capable of being launched in salvos of up to eight missiles, with as little as 40 seconds between the first and last missile. These salvo launches are intended to overwhelm ships’ defenses, increasing the probability that at least one of the weapons will reach its target.



SS-N-25 SWITCHBLADE (URAN)

On the other end of the speed spectrum is Russia’s entry into the small, lightweight, lower-cost ASCM market, the 3M-24E* URAN. Utilizing a turbo-jet engine, the URAN can be launched in salvos targeted against a single ship or a group of ships up to 130 km away. Due to the 3M-24E’s small size and light weight, it can be installed on a wide variety of platforms including ships and aircraft, giving

**The “E” denotes the export version. Russian domestic variants assessed to be more capable.*

considerable range and firepower to a smaller vessel. In addition to being used by Russia, where it is designated the 3M-24, the export version (3M-24E) has been purchased by Algeria, India, and Vietnam.

SS-N-26 STROBILE (YAKHONT/ONIKS)



The recently-fielded 3M-55E* YAKHONT (SS-N-26 STROBILE), also known as ONIKS (ONYX), succeeds previous SS-N-7, -9, -12, and -19 anti-ship cruise missiles. This 300 km-range (export variant) missile flies Mach 2.5, is equipped with an advanced radar seeker, and conducts evasive maneuvers to increase its survivability. Unlike the MOSKIT missiles, which are launched from inclined launchers, the YAKHONT can be launched vertically. Vertical launch decreases reaction time against targets in any direction, while also reducing a ship's radar signature by eliminating protrusive launch canisters above deck. The YAKHONT can also be salvo fired, and is currently launched from ships, coastal defense launch vehicles, and the SEVERODVINSK SSGN. Russia has exported the YAKHONT as part of the Bastion coastal defense missile system.

KALIBR WEAPONS FAMILY

KALIBR is the more capable Russian domestic version of the export KLUB family of weapons, one of Russia's most comprehensive export offerings. Heavily marketed for 10 years, the KLUB system was designed for ship, submarine, air, and coastal-launched applications. The KALIBR family includes:

- a land attack cruise missile (LACM), the SS-N-30

KALIBR

Russia plans to deploy KALIBR capability on all new design construction nuclear and non-nuclear submarines, corvettes, frigates, and larger surface ships. KALIBR provides even modest platforms, such as corvettes, with significant offensive capability and, with the use of the land attack missile, all platforms have a significant ability to hold distant fixed ground targets at risk using conventional warheads. The proliferation of this capability within the new Russian Navy is profoundly changing its ability to deter, threaten or destroy adversary targets. It can be logically assumed that KALIBR capability will be retrofitted on those larger Soviet legacy ships and submarines that undergo major overhauls and/or modernization¹.

¹ High ranking Russian defense industry official, 12 December 2011

- an anti-ship cruise missile (ASCM), the SS-N-27 SIZZLER, and
- an anti-submarine missile, the 91R.

Although all are capable of being launched vertically using a vertical launch system (VLS), they are also launched from an inclined orientation, from ground launchers, or from submarine torpedo tubes. The ASCM and LACM incorporate salvo capability and waypoint navigation. These technologies allow multiple weapons to be launched against either a single or group of ships, and approach from different directions, significantly complicating the target's defensive task. Information on the export versions is used below in lieu of unavailable details on the domestic variants.

SS-N-30 (3M-14) Land Attack Cruise Missile

The 3M-14E* LACM is visually similar to the 3M-54E1. Equipped with a 450 kg conventional warhead, waypoint navigation, and a 300-km range, the 3M-14E delivers a high range of land-attack options for ships, submarines, aircraft, and ground launchers. It is generally accepted that Russian domestic variants of export systems have improved operational characteristics over their export counterparts. In this regard the reported operational range for the KALIBR family 3M14 SS-N-30 LACM is 300 to 1,500¹/2,500² kilometers (160 to 930/1,550 mi). Responding to a question from President Putin in September 2014, Black Sea Fleet commander



Admiral Vitko said that new units joining the fleet will have weapons with a range in excess of 1,500 km (930 mi). (Map depicts nominal 1,000-mi range rings from possible launch points in Russia's adjacent seas.)

KALIBR LAND ATTACK CRUISE MISSILE RANGES



1000nm range rings – Nominal KALIBR LACM ranges from fleet areas

¹Russian President V. Putin in Novorossiysk on 23 September 2014

²Andrey Kokoshin, former Russian Federation Deputy Minister of Defense and Secretary of the Russian Security Council, 24 March 2011



SS-N-27 SIZZLER

SS-N-27 SIZZLER (3M-54) Anti-ship Cruise Missile

For anti-ship applications, the KLUB family offers the choice of either the 3M-54E* or the 3M-54E1. The 3M-54E is a three-stage missile with a booster, subsonic cruise stage, and supersonic terminal/kill stage. With a 220 km (119 nm) range, supersonic kill vehicle, and terminal maneuvers, the 3M-54E represents a unique anti-ship weapon. The 3M-54E1 is a subsonic anti-ship cruise missile. Although it cruises at a similar speed as the 3M-24E, the 3M-54E1 features a larger warhead and a much longer range: 300 km versus the smaller 3M-24E's range of 150 km.

91R Anti-submarine Missile

The final parts of the KLUB system, available only for submarines and ships, are the 91RE1 (submarine) and 91RTE2 (ship-launched) anti-submarine missiles. The submarine-launched 91RE1 has a range of up to 50 km, and the ship-launched 91RTE2 has a range of 40 km. These weapons have a longer range and quicker weapon delivery time than a conventional torpedo. When fired in a salvo, up to four weapons can be deployed against a single target.

It is expected that Russia will continue to develop its ASCM capabilities, pursuing faster,

more flexible missiles with longer-range and improved electronic and kinematic defense penetration features. Russian ASCM research is expected to focus on achieving hypersonic speeds and improving seeker capabilities, including the possible use of advanced radar seekers that allow improved countermeasure discrimination. The ongoing development of ASCMs with improved design features such as supersonic speed, evasive maneuvers, and advanced terminal seekers will present continuing challenges to U.S. and allied naval forces.

Torpedoes

Russia maintains the world's largest and most diversified inventory of torpedoes. It continues to develop, produce, and export both Anti-Submarine Warfare (ASW) and Anti-Surface Warfare (ASUW) torpedoes; the most recently-developed heavyweight torpedoes are dual-purpose, utilizing wake-homing in the ASUW role and active/passive acoustic homing in the ASW role. Russian torpedoes and torpedo countermeasures are often proliferated to other countries as part of the sale or lease of Russian submarines.

Russia has historically been a leader in developing and implementing new technology for torpedoes. It was the first country to field wake-homing torpedoes, a super-cavitating torpedo, and a super heavyweight 65-cm torpedo. One of Russia's newest torpedoes is the multi-purpose depth homing torpedo (UGST), which entered service in 2002. The UGST has a monopropellant-fueled axial piston engine with pump jet propulsor. It is capable of acoustic, wire-guided, and wake-homing modes and is designed to be fired from both submarines and surface ships. It is advertised as being able to reach speeds of up to 50 knots and having detection ranges of up to 2.5 km for submarines and 1.2 km for

surface ships. Technology from this weapon is believed to have proliferated to China.

Mine Warfare Capabilities

Mines are one of the oldest and most effective naval weapons. Mines are attractive for many reasons, including low cost, minimal training, and the ability to remain in place for extended periods. Russia maintains the world's largest and most diversified inventory of mines. Despite a number of years of likely reducing funding for mine warfare, Russia now appears to be revamping and increasing its capability with renewed interest. Russia's inventory now includes a variety of moored contact, moored influence, bottom influence, mobile, propelled-warhead, and very shallow water mines. Although many of the mines in Russia's inventory are likely vintage moored contact mines, its mine design has moved forward into the modern era. Newer mines include microprocessor-controlled stealthy mines designed to hinder mine countermeasure (MCM) efforts, and encapsulated-torpedo mines designed to launch Russia's most advanced anti-submarine warfare lightweight torpedo.

Mine delivery is accomplished by aircraft/helicopters, surface vessels, and submarines. The Russian Navy likely would employ mines to deter an amphibious landing in defense of their homeland and as part of a layered defense.

As a global expert in mines, Russia maintains and is renewing a complete MCM force capable of countering mines in a variety of environments. Since World War II, improvements in the Russian MCM forces include a large number of minesweepers, the introduction of nonmagnetic hull minesweepers, and the introduction of fleet-size mine-hunters. In addition, Russia maintains a complete suite of MCM equipment, including mechanical, magnetic,



acoustic, and combined minesweeping systems, as well as remotely operated vehicles for mine-hunting and mine neutralization.

Surface-to-Air Missiles (SAMs)

Russia, which produces capable naval surface-to-air missiles (SAMs), has not only continued to equip its own ships but has demonstrated a willingness to sell its leading air defense weapons on the export market. In recent years, the Russians have primarily exported two naval SAM systems, the medium range SHTIL-1 and the longer range RIF-M. The SHTIL-1 is the primary air defense weapon onboard the three Russian-built Indian TALWAR Class Frigates, the four SOVREMENNY (956 and 956E) Class destroyers sold to China, and the two LUYANG I Class destroyers built in China. The RIF-M was sold to China for use on the two LUZHOU Class destroyers operated by the People's Liberation Army Navy (PLA(N)). In both cases, the introduction of these weapons represented a significant increase in the overall naval air defense capability of both the Indian and Chinese navies.

The intent of the SHTIL-1 is to engage maneuvering aircraft, helicopters, and anti-ship missiles out to a maximum range of 45 km. The engagement of targets is possible out to the radar horizon, provided that a sufficient quantity of radar energy reflects back into the seeker. Optimizing the effectiveness of the SHTIL-1 is possible by adjusting the missile's control system and warhead for the type of

target it is engaging. The system is effective to a minimum altitude of five meters and maintains its effectiveness in the presence of intensive jamming.

The RIF-M is an advanced, long-range naval SAM system intended to provide area air defense from aircraft, cruise missiles, and ballistic missiles out to a maximum range of 200 km (108 nm). The engagement of targets is possible at a minimum altitude of 10 meters through approximately 27,000 meters at speeds of up to 2,700 m/s. The system can engage as many as six targets with up to twelve missiles and can operate in the presence of intensive jamming.

Lasers

Russia's directed energy weapons program utilizes radio frequencies in order to use electromagnetic energy to damage or disrupt electronics. The lasers use a high-intensity light to disrupt sensors and thermally damage structures. Low-energy devices are already being completed for use in electro-optic countermeasures. Russia's long-term goal is a high-energy weapon with anti-satellite and cruise missile defense capability.

Russia maintains a mid-term high-energy system of chemical and gas lasers and solid-state lasers as medium-energy systems. The development trends of radio-frequency weapons are based on the observed effects with little modeling or simulations. Different waveforms are being utilized, including ultra-wide band and complex waves. Their capabilities are yet to be fully evaluated; problems such as system life and targeting are still key challenges. The other challenge for Russia is weaponization. This involves combining the beam into a solid state, which is dependent on its quality as well as atmospheric compensation. These systems require a high quality of manufacturing using

mirrors, lenses, and exotic laser materials like diodes and non-linear optical crystals.

Rail Guns

Electro-dynamic gun systems are being developed that use electrical energy for 2,000+ m/s muzzle velocity. The near- and mid-term combustion-based technologies are a transitional step to the creation of a railgun. The major issue for Russia is maintaining rail life through material science, transition management, and rail geometry. Another continuing issue remains pulse power. To increase and maintain pulse power, Russia's new developments comprise of capacitor inductors, rotating machines, and flux compression generators. Non-traditional designs of the system include reconnection launchers and linear accelerators.



Chapter Four

Personnel – Movement Towards a Professional Force

Draft and Recruitment

The Russian military is currently reorganizing its personnel structure to more accurately reflect the needs of modern warfare. The goal of a professional, volunteer-based, highly skilled military is augmenting the traditional obligated service conscription system for all males between the ages of 18 to 27. The military is also looking to develop a new curriculum for educational institutions involved in training young men for military service in order to combat a prevailing negative attitude toward the service.

The Russian Navy consists of an officer corps, non-commissioned officers (NCO), enlisted, and conscripted personnel. Conscripts are drafted twice a year during the spring or fall, and serve a one-year commitment as of 2008. Local conscription centers decide who is sent to which service. The military will retain a mix of enlisted and conscript soldiers, but will continue steps toward an all-volunteer force to man all permanent ready combat units. In addition, reportedly the rank of warrant officer will be phased out and re-assigned to the NCO corps.

Women began to join the ranks of the Russian Navy in the mid-1980s and make up a small portion of the officer and enlisted corps on a voluntary basis. The majority of female uniformed personnel serve in the

communications, finance service, medical corps, and as cultural directors.

Training and Education

Officer. The Russian Navy officer corps consists almost exclusively of high school educated males who successfully compete (academic, physical, and psychological examinations) for admission to and graduate from regional or specialty Naval Institutes and are commissioned as Lieutenants (U.S. Ensign equivalent). There are military departments at some civilian universities analogous to U.S. ROTC units but their contribution to the career officer corps is very small. There is a slow but emerging trend to allow females admission to Naval Institutes. RFN midshipmen will attend a Naval Institute for five years. Those five years are counted toward overall military service time for retirement. Naval Institutes (formerly called Higher Naval Schools) are located in Kaliningrad, St. Petersburg, and Vladivostok. These naval institutes include:

- F.F. Ushakov Baltic Naval Institute (Kaliningrad)
- St. Petersburg Naval Institute - Peter the Great Naval Corps
- Naval Polytechnic Institute (the recent combination of the Naval Engineering Institute (St. Petersburg, Pushkin) and A.S. Popov Naval Radioelectronics Institute (St. Petersburg, Petrodvorets))
- S.O. Makarov Pacific Naval Institute (Vladivostok).



Commissioned Officers of the Russian Navy ¹											
U.S. equivalent	O-1	O-2	O-3	O-4	O-5	O-6	O-7	O-8	O-9	O-10	
Sleeve insignia											
Shoulder insignia ²											
Title	Junior Lieutenant (Младший лейтенант)	Lieutenant (Лейтенант)	Senior Lieutenant (Старший лейтенант)	Captain-Lieutenant (Капитан-лейтенант)	Captain 3rd Rank (Капитан 3-го ранга)	Captain 2nd Rank (Капитан 2-го ранга)	Captain 1st Rank (Капитан 1-го ранга)	Rear Admiral (Контр-адмирал)	Vice Admiral (Вице-адмирал)	Admiral (Адмирал)	Fleet Admiral (Адмирал флота) ¹

¹ Rank not attained since FADM Masorin retired in 2007.
² Parade uniform colors (black on gold) are the reverse of the duty uniform.

Warrant Officers and Enlisted Rates of the Russian Navy ¹								
U.S. equivalent	E-3	E-4	E-5	E-6	E-7	E-9	WO-1	CW-2
Shoulder insignia ²								
Title	Seaman (Матрос)	Senior Seaman (Старший матрос)	Petty Officer 2nd Class (Старшина 2 статьи)	Petty Officer 1st Class (Старшина 1 статьи)	Chief Petty Officer (Главный старшина)	Chief Petty Officer of the Ship (Главный корабельный старшина)	Midshipman [Warrant Officer] (Мичман)	Senior Midshipman [Senior Warrant Officer] (Старший мичман)

¹Warrant Officers ranks may be abolished soon.^[2]
²Parade uniform colors (black on gold) are the reverse of the duty uniform.

A midshipman can specialize in navigation, weapons systems, engineering, communications, computer and information systems, meteorology, hydrography, naval architecture, or intelligence. The five years of study and included fleet practical experience are structured to prepare the young officer specifically for the duties of his first assignment in one of the four fleets or the Caspian Flotilla.

specialty commissioning schools and not from the above mentioned Naval Institutes.

In the course of his career progression, an officer may be sent to obtain specialized qualifications or qualification upgrades at the Advanced Special Officers Courses (St. Petersburg). This institution also provides specific courses for prospective Executive Officers and Commanding Officers.

Russian naval aviators first graduate from an Air Force commissioning and flight training school and then transfer to naval aviation where they undergo more specialized training for specific aircraft and over water operations.

Naval Infantry officers attend Combined Arms commissioning schools.

More specialized officers, such as those in the technical communications and civil engineering fields, also graduate from appropriate



At the mid-career point (O-4, O-5), officers can sit for examinations to attend the N.G. Kuznetsov Naval Academy. The modern Russian Naval Academy is similar to a combination of the U.S. Naval War College and the Naval Postgraduate School. The Naval Academy traces its origins to the Naval Guards Academy established in 1715 in St. Petersburg where students studied navigation, artillery, fortifications and naval architecture. In 1960, the Soviet Union combined the Voroshilov Naval Academy and Krylov Shipbuilding and Armaments Academy. And, in 1980 it became the Admiral of the Fleet of the Soviet Union N.G. Kuznetsov Naval Academy, normally referred to as the Kuznetsov Naval Academy and sometimes even shortened to KNA. Graduation from the Naval Academy is a prerequisite for further advancement to senior ship and shore positions at the fleet and naval headquarters level.

A select group of identified prospective or serving flag officers attend the General

Staff Academy (U.S. National Defense University equivalent) for higher level officer education. General Staff Academy credentials are required for assignment to senior fleet command, joint command, and Defense Ministry positions.

In January 2009, a major reorganization of the Navy's educational system was announced. Plans called for the creation, on the basis of the Naval Academy, of a composite naval education and research center to be located in Kronshtadt on Kotlin Island at the sea entrance to St. Petersburg. This center, using the Naval Academy as a core, would incorporate several smaller institutes across a broad spectrum of naval disciplines and provide undergraduate, graduate, and postgraduate education. Adjunct to this core would be training facilities for enlisted specialists and accommodation for the pre-naval institute preparatory Nakhimov School and the Naval Cadet Corps for younger boys. This ambitious plan for the creation of a single large naval educational-training campus was apparently considered too costly. However, all of the above mentioned naval educational institutions were combined under the umbrella organization named the Military-Educational Center "N.G. Kuznetsov Naval Academy" providing centralized management of naval training and education.

Professional Enlisted. Russian Navy enlisted personnel are contracted for a certain term of service and receive technical training in their specific subject matter area. The Russian Navy, as well as other services, is currently working



to create a fully functional non-commissioned officer corps. In principle, the Russian Navy has had enlisted personnel whose rate designation would be equivalent to U.S. Navy Chief Petty Officers; however, actual equivalency is yet to be achieved.

Conscripts. Conscripted sailors are required to serve a minimum of one year of service and receive four to six weeks of basic training prior to their first assignment. Although unpopular in media reporting, the draft is necessary to replace previously conscripted sailors and retirees throughout the fleet. With a renewed emphasis on force readiness, within the navy conscripts normally are assigned to either shore duty or to ships in extended maintenance. Relatively few serve on deployed ships.

Reform in Progress

The Russian military is in the process of a significant draw-down in forces and a further down-sizing restructuring. As Russia's perception of NATO as a threat has evolved, irregular and asymmetric threats have arisen, and market forces have emphasized cost-effectiveness, the Russian leadership decided that the country no longer needs the massive force structure of the Soviet Union. The Soviet legacy military came with large numbers of officers at the O-5 and O-6 level. These numbers were incompatible with the new Armed Forces structure and the Defense Ministry moved to trim this portion of the officer corps and provide for early retirements for personnel deemed no longer required.

Relative to the other services, the Russian Navy began to seriously assess its organizational structure and manning early in the first decade of the 21st century. Significant adjustments had already been made prior to the announcement of the latest Defense Ministry reforms. As a result, among the main services (Ground Forces, Air Forces and Navy) the Navy has been the least affected by ongoing changes.



Outlook

In the next 10–15 years, the Russian Navy will continue its historic transition to a new 21st-century navy. A modest number of new class ships and submarines will enter the Navy by the turn of the decade. Continuing series construction and the start of several more sophisticated and complex new classes are projected for the next decade. The new construction will be accompanied by the maintenance and extension in service of the most capable Soviet legacy units.

The new submarine and ship classes will incorporate the latest advances in militarily significant areas such as: weapons; sensors; command, control and communication capabilities; signature reduction; electronic countermeasures; and automation and habitability. More technologically advanced total ship systems requiring smaller crews will be complemented with personnel better trained and educated to exploit the full potential of their combat systems.



Newest Russian SSBN Class: Yuri Dolgorukiy



Proposed Ka-52K naval attack variant

The development of extended and interlinked intelligence, surveillance, and reconnaissance systems within the “World Ocean” Federal Targeted Program initiated in 1997 was intended to make Russian naval and other military and civilian systems more integrated and interoperable, and, if successful, was planned to support better informed and timely direction of the Navy by commanders both afloat and ashore.

The continued improvement of Russian Navy uniformed personnel’s quality of life, increases in pay and allowances, improved housing, and public recognition of achievements will reward their dedication and restore and enhance the prestige of naval service.

Challenges

The achievement of these goals will not be without challenges. Continued understanding of the role and capabilities of the Navy by Russia’s leaders, securing sufficient and reliable long-range funding for ship construction

and maintenance, overcoming the impact of current sanctions, and the recapitalization of related infrastructure will not be easy to sustain and will require constant effort.

Future Forces

The future 21st-century Russian Navy is projected to be more capable on a unit-by-unit basis than at present but not significantly larger in overall order of battle numbers. Barring unexpected changes in the global political and economic environment, the Navy’s missions are expected to remain the same: to deter potential adversaries with strategic sea-based nuclear forces, to defend the nation and its interests using the navy’s general purpose forces, and to use the Navy as an “instrument of state” to support Russia’s diplomatic efforts, initiatives, and national interests.





“ANY RULER THAT HAS BUT GROUND TROOPS
HAS ONE HAND, BUT ONE THAT HAS ALSO
A NAVY HAS BOTH HANDS.”

PETER I, “THE GREAT”



4251 SUITLAND ROAD
WASHINGTON DC 20395-5211
WWW.ONI.NAVY.MIL



ПЕТРЪ ПЕРВЫЙ
ЕКАТЕРИНА ВТОРАЯ
АВГУСТЪ 1717