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## The Russian Navy

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## THE RUSSIAN NAVY.

(Translated by permission from the "Internationale Revue ueber die  
Gesammten Armeen und Flotten," by Captain H. W. L. HOLMAN,  
R.M.L.I.)

### I.

SINCE the dissolution of the Alliance of the Three Emperors, since the time when Bismarck gave Russian diplomacy to understand that he had drawn closer to his more natural and more trustworthy allies, since Italy too has joined the league of peace, finally, since the Central European Powers and with them England more or less, have taken up an unmistakable attitude regarding the Bulgarian confusion, Russia's Army has experienced vast reorganizations and has made tremendous progress.

The great fault of the Russian Army lay, as the last two Turkish wars proved, in the cumbrous mobilization plans, which did not at all meet the requirements of modern warfare. Even when we read the history of the Crimean War, when the Russian corps after long, fatiguing and killing marches, appeared decimated on the theatre of war, when we estimate the weak forces they hurled against the Turks at the last crossing of the Danube and Balkans, when we remember the fruitless exertions of the brave Skobelev before Plevna, when we place before our eyes the mission to the Roumanians, which called on them for the sake of the Cross to hurry up to their assistance, we must finally arrive at the conclusion, either, that a few years ago Russia saw no probability for a long time of any conflict except with the Turks, against whom matters could certainly be taken more easily, or else, that she was very much behindhand in the art of war and did not know what a plan of mobilization really meant. But affairs have vastly changed in the last few years. From the furthest corners of the mighty and extensive Empire of the Czar, soldiers have hastened like swarms of bees, to the West.

The German and the Austro-Hungarian frontiers are lined with a huge multitude of warriors of all arms; thousands of guns, a forest of bayonets and hundreds of thousands of horses stand ready to pour with Asiatic savageness into civilized countries. The greatest military force is concentrated on the western frontier of the Empire, already half mobilized, at any rate perfectly capable of being mobilized in a very short space of time. With the reorganization of the plan of mobilization and the redistribution of whole armies, all sorts of other reforms went hand in hand, in which the Navy was naturally not left out of consideration. While we leave it to others to increase the many studies of the latest times on the Russian Army by further

contributions—for a future enemy can never be studied too much—we will turn our particular attention to those reforms and innovations which affect the Russian Navy.

## II.

We need not take the map in our hands, for every one has the Russian frontier so far in his head to satisfy ourselves that Russia's extent of coast line is enormous, and that for the defence of so vast a littoral a large fleet is necessary. It also happens, unpleasantly for Russia, that the coasts referred to are not contiguous, and are widely separated from each other. Indeed on the eastern side of Europe the Russian shores form the boundary of the whole Continent. Eastward from Varanger Fiord the whole northern stretch of Europe and Asia belongs to the Russians. Separated from this is the Baltic coast from Tornea to Polangen. Finally, in the south, the Black Sea from the Danube to beyond Batoum is Russian. To these must be added the possessions on the north-east coast of Asia, and the large lakes and rivers which must also be provided with men-of-war. Certainly a portion of these coasts defend themselves, for an attack on the shores of the Arctic Ocean is not to be imagined. But even if we leave the inhospitable northern coast out of consideration there is still a great deal left. Russia has, therefore, for a long time endeavoured to have a good Navy at her disposal, and possessed one indeed even before the perils of the last war. In the year 1880 the Russian Baltic Fleet numbered 10 sea-going iron-clads and 13 coast defence vessels (Monitors) of 1,500 to 2,000 tons, which could have rendered excellent services in northern seas. Added to these were about a dozen very elegant cruisers, which were generally cruising abroad, and which were greatly admired by connoisseurs on account of their beautiful build. A number of gun-boats, yachts, training ships, &c., completed the floating matériel.

In the Black Sea, in accordance with the Treaties, Russia possessed no Fleet, except small vessels and the Popoffkas, which, if we are not mistaken, were built between the years 1872 and 1876. She numbered at that time little more than half-a-dozen unarmoured ships of about 1,200 tons, and 10 or 12 of 500 to 700 tons.

The flotillas for Siberia, the Caspian Sea, Lake Aral, and the Oxus consisted of smaller ships.

The want of a suitable naval force in the Black Sea must have been painfully and bitterly felt in Russia, especially at the time of the last Turkish War, when an ironclad squadron would not have failed to operate against Constantinople. The will of Peter the Great, and the final aim of Russian politics, always points in the direction of Aja Sophia; if the way thither seemingly leads—taking the present state of affairs into consideration—through Berlin or Vienna, yet the possibility of a final understanding, of an agreement with the Central European Powers, must not be regarded as out of the question; and Turkey will for a long time remain for Russia the neighbour to be ultimately fought. But to operate with success

against Turkey and to lighten the heavy task of the Army, Russia, would require a strong fleet, composed of first-class battle-ships, to act in the Black Sea. The Russian Government and diplomacy, therefore, troubled mighty little about the winged words of the foreign press which drivelled about broken treaties, &c., and, knowing that on this account none of the States that were parties to the treaty would draw the sword, she one fine day renounced the stipulations of the Peace of Paris and laid down the keels of the armoured cruisers "Sinope" and "Cesme" in the docks of the Russian Steamship and Commercial Company, at Sebastopol. On the 5th October the keel of the armour-clad turret ship "Catherine II" was laid down at Nikolajeff, with a great display of pomp, and accompanied by stirring speeches which found a tremendous echo at Moscow and St. Petersburg. This event took place for the other two ships named a couple of days after. The fact that the Admiral of the Fleet, the Grand Duke Alexis, went down to the south for this ceremony is of marked significance.

We shall see later on, relative to the number of ships to be built for the Black Sea Fleet, what objects Russia is pursuing, but we must just mention here that, according to the Fleet programme of 1882, the huge ironclads to be employed there will be the most powerful of the whole Russian Navy. The "Catharine II," "Sinope," and "Cesme," which were launched in 1886-87, when completely fitted out, showed a displacement of 10,180 tons. An armoured belt of 457 mm. (18-in.) stretches the whole length of the ship and forms, with the 76-mm. (3-in.) strong, armoured deck, a particularly effective protection. Six 30½-cm. (12-in.) Krupp guns are in a citadel, on disappearing carriages, so that they are only visible in the firing position. Seven 15-cm. (about 6-in.) guns, two of which are bow and two stern guns, together with ten machine-guns, complete the armament.

Their twin screws, with engines of the three-cylinder type of 9,000 indicated horse-power, give a speed of 15 knots. Finally, the coal supply amounts to 872 tons, and admits of their steaming four days at an average speed of 14 knots.

The re-formation of the Black Sea Fleet necessitated the restoration of Sebastopol to the rank of a first class naval port. For a long time it was doubtful whether Sebastopol should be finally fixed on, but in the end this port gained the day. A commencement was made with the building of a dry dock—strictly speaking two dry docks; the laying of the foundation stone followed, likewise in the presence of the Grand Duke Alexis, on 6th October, 1884 (the works were commenced in 1882). They are in the same place (Korabelnaja Bay) as the granite dry docks destroyed after the taking of Sebastopol, in 1855. These docks are respectively 182.5 m. (about 600 ft.) and 140 m. (about 459 ft.) long at the water line and 37½ m. (about 122½ ft.) broad, with an average depth of 8.4 m. (about 27½ ft.). Each dock is emptied within 8½ hours, by means of two centrifugal pumps. The cost was declared to be in round numbers 3 million roubles (about 300,000*l.*). As a matter of course, the old fortifications have been restored and arranged to meet the latest requirements

of the science of war. Last year two new forts were built, one on the right bank of the Tchernaja and the other on the hill where the English constructed Fort Victoria during the siege of 1854. These two forts command the whole of the open country round Sebastopol, and would render a second edition of the events that took place during the Crimea considerably more difficult and almost impossible. It is hardly necessary to mention that the entrances to the harbour are barred and defended by rows of mines and torpedo stations.

Of course the great attention that was paid to the Black Sea necessitated a large sacrifice of money. In an autocratic State, where it is not necessary to wrangle about every penny with members and representatives, it is an easy matter to procure money, as long as the State enjoys credit; still, taking into consideration the low strategic value of Archangel, and after searching investigations had been carried out by the War Office, Admiralty, and the General Staff, the Russian Government decided, in 1887, to leave this far northern arsenal entirely out of the question, and to let the development of Sebastopol benefit by the expenditure saved thereby. In a word, Sebastopol has become the pet of the Russian War Administration.

If we look at the map more closely and collect from the geographical and political writings of the very latest years those notices that relate to further completed or projected works in the Black Sea and in the neighbouring eastern countries and those beyond them, a new horizon opens up before our eyes, and we perceive that the Russian preference for the Black Sea springs from far deeper motives. It is not alone the contingencies of a war with Turkey or with the Central Powers that is rousing Russia to such feverish activity, it is not with the view of hemming the Crescent in on all sides, but the strategical and commercial importance of the Black Sea, which increases from day to day. We must not forget that the Balkan countries had only a momentary importance for Russia, that she has aims in Asia also; that there are there, without thinking of further conquests, vast territories which, better cultivated and brought into closer connection with the civilized world, must develop extraordinary productiveness.

Now if we examine what the works are that we touched on above, and which are partly projected, partly finished, or in course of execution, we must mention, as the least of them, the cutting of the isthmus of Perikop, which joins the Crimea to the mainland of Russia. According to the plan before us, the canal (the cutting of it began in 1888) is to pass through Perikop, Goutschar, Sivash, to Genitschesk, and will be 118 km. (about 73 miles) long; its breadth at the bottom will amount to 20 m. (about 65½ ft.) and its depth to about 3½ to 4 m. (about 10 to 13 ft.). The canal is therefore calculated to take coasting vessels, torpedo-boats, and coast defence vessels, and, according to the preliminary estimates, is to cost 85 million roubles (about 8,500,000*l.*), and to be opened for traffic in 1893.

If we consider that by means of it the mouths of the Danube, Bug, and Dnieper are brought 140 knots nearer to the ports of Berdjansk, Mariapol, Tuganrog, and the mouth of the Don, and that it will lead to

a quicker and shorter sea passage between the terminus at Odessa and the railways running from the Sea of Azov, we can understand that the commercial advantage of the canal will be as great as its strategical value. From the strategical standpoint not only the 114 knots shorter voyage must be taken into account, but also the greater protection the torpedo-boats and coast defence vessels will find than by going round and doubling the Crimea. They will more easily avoid danger from hostile ships and also the bad weather that generally manages to rage in the Black Sea.

Another important step of the Russian Government was the founding of Novorossisk. Novorossisk lies at the end of that beautiful deep bay, which was better known by the proximity of Soudjoukkalé, and which is separated from the sea by a flat spit. The northern spurs of the Caucasus end there. The bay is almost 10 km. long and 3 wide, with an average depth of 12 to 13 m. (about 39 to 43 ft.), and  $4\frac{1}{2}$  to 8 m. (about 15 to 26 ft.) by the piers. The construction of the harbour has cost the Russians about 40,000,000 marks (2,000,000*l.*). A single line of railway was at once laid to Rostow, which branches off at Tschoretzkaja to Wladikavkas. The latter part of the railway runs along the northern slopes of the Caucasus, through exceptionally rich districts, a truly "Promised Land," that would only require the busy hand of man to produce enormous quantities of grain. As, furthermore, the project for tunnelling the Caucasus and the connection of Wladikavkas with Tiflis, hitherto looked upon as to a certain extent impossible, approaches realization, we can judge of the strategical importance and the commercial future of Novorossisk. In the "*Mittheilungen aus dem Gebiete des Seewesens*" we read the following interesting remarks on it:—

"To the immediate north of the Caucasus extend wide stretches of fertile country, towards which hundreds of peasants coming from the north wend their way each year.<sup>1</sup> Twenty years ago the whole district of Stavropol was inhabited by Cossacks, who by the pressure of the peace-loving peasants, have now, also, for the most part lost their warlike and even predatory spirit. In consequence of this movement of the population towards the Caucasus, Russia, it is true, loses her Cossacks, but, on the other hand, she gains a pushing peasant population which gravitates with its products towards the Black Sea. Formerly the Stavropol district only yielded horses during peace, and wild, hungry Cossacks in war time."

But, Novorossisk is also of great importance for the exportation of petroleum as well as for corn. The districts which harbour the petroleum treasures of the Caucasus are Baku, on the Caspian, and Taman, on the Black Sea. The former region sends its products by Batoum. The 600 miles of railway journey is, however, no light matter for the cargo and is expensive. By the diversion of this branch of commerce to Novorossisk, matters assume a more favourable aspect; the region of the springs is only 60 miles distant from the port and is connected with it by a line of pipes.

<sup>1</sup> From another periodical we learn that many German colonists also have settled in the Tschoretzkaja-Wladikavkas district.

Besides the commercial advantage that arises therefrom, the Russian Fleet obtains a cheap fuel, at least for a portion of its ships; a matter that must not be under-estimated. In the event of an outbreak of hostilities, the Russian Black Sea Fleet would probably be thrown back on the coal supplies that had been stored up before the war; this was the case in the last Russo-Turkish war, and the supply ran so short towards the end of it that several steamers could not put to sea on account of the scarcity of fuel. When the burning of petroleum is introduced, Russia will be quite independent in this respect and, covered by the battery of Soudjoukkalé, the Russian men-of-war will be able to pump their fuel on board from the reservoirs of Novorossisk and keep at sea with the supply twice as long as with coal. With its resources in corn and oil, Novorossisk has all the properties of a naval port that would play an important part in a war, as it doubtless seems called upon to do.

There is, however, another point of view from which the foundation of Novorossisk seems important, and that is from strategic railway point of view. The laying down of the line from Wladikavkas to Petrowsk, on the Caspian Sea, must be looked on as impending, and then Russia will have two parallel lines at disposal, so that in case of war she will be able to throw her resources from the Caspian Sea and the Volga to the Black Sea and *vice versa*. As if such works and projects were not enough, we read in the papers a couple of years ago, that the Russian Government had granted to a Franco-Russian company in Odessa a concession for the construction of a canal joining the Black Sea with the Caspian, and which, with a length of 85 km. (53 miles), was to cost 40,000,000 roubles (about 4,000,000l.).

Everything we have quoted so far gives the Russian Empire an extraordinary power of resistance in the Black Sea, and it cannot be denied that the Black Sea Fleet is receiving a support that makes it powerful. But it would be foolish to fix our thoughts only on this one point and to look upon the gigantic railway and other works simply as a means of support to the Fleet. Still more foolish would it be to believe that all these preparations are taking place in view of an approaching war with the Central Powers.

If we hold the map before our eyes for a short time longer, we must rather arrive at other conclusions. The present position of Russia with regard to the Central Powers is somewhat strained, it is true, but the possibility of a final agreement, as we have already said, is not entirely out of the question. What are the Balkan countries, which, if some of them do for the moment partly rave for Russia, would not long bear the Russian yoke—what are they, we say, in comparison to the Asiatic territories where Russia is called on to play a part? Servia and Montenegro are the only fanatical people who look towards St. Petersburg, but the civilization of the Servians is too advanced to really believe that present circumstances will last long. And the handful of Crnogorzen need not trouble anyone. Like the Bulgarians, the Servians cannot possibly wish to willingly sacrifice their freedom and independence; sooner or later this coquetting will come to an end, and in one way or another peace



and order will be restored. It is, also, to be hoped that the horrors of Siberia will cease, and that Russia will undertake a more civilizing mission, as, indeed, she has carried out, it cannot be denied, for some decades past in Asia, but not with the energy that would have been possible with otherwise normal circumstances. The construction of the Siberian railway is an important civilizing step, and if we look further towards the south, the other line along which the iron horse races strikes our eye, and which, starting from Usan-Ada, on the Caspian Sea, leads through Merv, Bokhara, and Samarkand to Tashkend (this last branch is still under construction). At three points on this railway, namely, at Duschak, Merv, and Tocharaschin, branch lines are planned towards the south. The main line itself is, in time, to be continued on one side to Orenburg and on the other to the Altai and towards the Siberian line. There is a further idea of joining the Amu-Daria with the Caspian. A couple of years ago, A. J. Gluchowski pointed out in the "Company for the Promotion of Russian Commerce and Industry," in St. Petersburg, that the execution of such a junction would prove by no means difficult. The Amu-Daria could be led into the Kun-Darja; it would fill the basin of Ssarakamysh and go from there through the Usloj to the sea, or, by going round the basin, a canal about 75 versts long would have to be made which would likewise fall into the Usloj. The former plan would cost 15 millions, the second 27 millions. Russia certainly will not let this idea fall, as here, also, it is a question of changing boundless and fruitful stretches of country, now lying bare, into cultivated land.

They are therefore mighty roads from Siberia, China, Persia, Afghanistan, Northern India, &c., which are meant to have their termini on the Black Sea; and Russia naturally cannot then leave such a coast unprotected and undefended. She wants, therefore, a strong, powerful fleet to protect the trade there and to promote the development of her merchant navy. May God grant that the newly arisen or reconstructed Black Sea Fleet may only have to fulfil such peaceful and civilizing missions! Russia and the whole world will reap nothing but blessings from it, and the Russian people will be more thankful to their Czar than if he leads them into a war that can in no way bring any good and will throw millions of widows and orphans into misfortune and misery.

### III.

In the Black Sea there was naturally more to do than in the Baltic. The Baltic Fleet numbered a whole lot of vessels, and it was only a question of adapting them to the demands of the science of modern war. Accordingly new ironclads have been built, and a large number of torpedo-boats bought.

Of course the completion and reform of the fleet follow a fixed plan, namely, the building programme sanctioned by the Czar in 1882.

According to the same, the Russian Navy is divided into four fleets, namely:—

1. The Baltic Fleet.
2. The Black Sea Fleet.
3. The White Sea<sup>1</sup> Squadron (Siberian Flotilla).
4. The Pacific Squadron.

The building programme is to be completed in twenty years from 1883, that is, in 1903, when the different divisions will consist of the following ships:—

Baltic Fleet:—

- |    |   |                           |
|----|---|---------------------------|
| 11 | First-class ironclads of                                | 10,000 tons displacement. |
| 4  | Second-class    „    „                                  | 7,000    „    „           |
| 11 | Gunboats.   |                           |
| 10 | Cruisers  | 3,800    „    „           |
| 6  | Transports and a corresponding number of torpedo-boats. |                           |

Black Sea Fleet:—

- |   |                          |                           |
|---|--------------------------|---------------------------|
| 8 | First-class ironclads of | 10,000 tons displacement. |
| 6 | Dispatch cruisers.       |                           |
|   | Torpedo and gunboats.    |                           |

The total cost of building these is reckoned, in round numbers, at 900,000,000 francs (36,000,000*l.*); so that the yearly quota amounts to 45 millions, of which 20 millions fall to the ordinary and 25 to the extraordinary expenditure.

Of the new ships for the Baltic Fleet, 7 ironclads are finished and 3 others in course of construction. The displacement of the ships built does not exceed 9,000 tons, which, perhaps, seems more suited to circumstances in the Baltic.

The new Fleet programme and the technical changes in the matériel of the Fleet, and, finally, the introduction of the torpedo, rendered a reorganization of the personnel and administrative authorities necessary.

As far back as the year 1883, the Director of the Ministry of Marine received the full power of a Minister of Marine. A special Admiralty Council acts as the supreme naval authority, and in which the Director of the Ministry of Marine has a seat and voice as President representative.

In the highest naval department were united those matters which regard the tactical direction of the Fleet and its employment in case of war and those dispositions which refer to the fitting out and the personnel of the Fleet.

A Marine Scientific Committee follows the progress of naval science and sees to the introduction of new inventions.

Finally, a Shipbuilding Commission studies the plans of ships and occupies itself with the completion and equipment of ships, as well as with arming them. It lays plans before the Minister of Marine, makes reports and submits tenders which refer to the building of new ships. The work of the Shipbuilding Commission is examined beforehand, however, by the Marine Technical Committee.

In the year 1885 followed a reorganization of the personnel of the

Fleet. Up to that time there existed the "Pilotage Corps" and the "Marine Artillery Corps," which were now broken up. Furthermore, a reduction of the active list of Officers, which consisted of 100 Admirals and 2,235 Officers, was considered desirable. After the reorganization of 1885 this number was reduced to 1,563. Russia now numbered an Admiral of the Fleet, a few Admirals, 20 Vice-Admirals, 35 Rear-Admirals, 86 Captains, 194 Commanders, and 529 Lieutenants and Sub-Lieutenants.

With regard to promotion, it was laid down that it should take place by seniority or out of turn.

The following are the rules as to the minimum sea time for promotion by seniority:—

Sub-Lieutenants and Lieutenants have to make up 4 years', Commanders 6, and Captains 8 years' sea time. Promotion out of turn in peace occurs among superior Officers (Commanders and Captains) only; they must have at least 5 years' service in their rank. In war-time other Officers can also be promoted out of turn, if they have, however, at least 3 years' service in their present rank.

Officers who have reached 55 years of age without being promoted to superior rank (Commander) are to be placed at once on the retired list. The same holds good for superior Officers at 58 years of age. Finally, Admirals are retired on the completion of their 63rd year.

Officers who have been in action and have served 28 years have the right to receive honorary rank, also those who have served for 33 years, and Commanders and Captains of 35 years' service, and Rear-Admirals with 40 years' service. Sub-Lieutenants, Lieutenants, and Commanders receive the retired pay of their rank, if they have served at least 1 year, and Captains if they have served at least 5 years in their rank before being pensioned.

Soon after the reorganization of the list of Officers followed the sanctioning of new and particular regulations for Constructors and Engineers.

The Russian Engineer Corps has five grades, as follows:—

1. Chief Constructors and Inspectors of Machinery, with the rank of Rear-Admiral, 3 for each branch.
2. 1st Class Constructors, 15 in number, and Fleet Engineers, 8 in number, with the relative rank of Captain.
3. 2nd Class Constructors and Engineers (23 and 28 respectively), with the relative rank of Commander.
4. 1st Class Assistants, with the relative rank of Lieutenant.
5. 2nd Class Assistants, with the relative rank of Sub-Lieutenant.

The Construction and Engineer Corps is recruited from the pupils of the construction and engine building section of the Naval Technical School, who are admitted into the corps as 2nd Class Assistants after examination. 2nd Class Assistants of the Engineer Corps may be embarked in steamers of the mercantile marine to learn engineer duties; they draw an addition of 720 roubles a year for this service.

The following rules have been laid down for promotion:—

2nd Class Assistants can only be promoted after 4 years' service; 1st Class Assistants after 8 years. The latter must during this time have done some construction work and satisfactorily accomplished some task set them by the Naval Technical Committee.

2nd Class Constructors must have served at least 5 years in that rank before they obtain promotion.

Assistant Engineers have to fulfil the same requirements as the Assistant Constructors, and in addition they must have been embarked for 1 year in foreign waters or 2 years in home waters. A 1st Class Assistant must have been embarked for 2 or 4 years respectively during his 8 years' service.

An Engineer can be made Fleet Engineer on completion of 5 years' service in his rank, if he has been embarked in a first class battle-ship for 1 year abroad or 2 years at home. The execution of construction designs or detailed plans of a ship's engines may make up for want of sea time. One-third of each branch of Engineers may be promoted out of turn.

The 1st and 2nd Class Constructors receive for the construction plans delivered by them a remuneration of 450 roubles yearly *pro* 1,000 tons displacement till a yearly maximum of 1,350 roubles is reached. The Engineers receive an addition of 300 roubles for satisfactory duty on board ship.

Constructors and Engineers may be granted leave with deduction of pay for the space of 3 years for service in the mercantile marine.

Constructors and Chief Constructors who remain more than 5 years in their rank receive a yearly increase of 2,500 roubles for good service. The same applies to Engineers of corresponding rank.

Engineers are at once retired when they reach the following ages without having complied with the regulations for promotion:—

2nd Class Assistants when they have been longer than 10 years in that rank. 1st Class Assistants at the age of 47, 2nd Class Constructors and Engineers at 55, 1st Class ditto at 58, Inspectors of Works at 65, Chief Constructors and Inspectors of Machinery at 68.

The claims for being granted honorary rank on transfer to the retired list are as follows:—

1st Class Assistants who have been in action and have 25 years' service; all Assistants with 33 years' service. In all other ranks 33 years' service is required; for Inspectors of Machinery, however, 40 years' service.

For recruiting the personnel of the Fleet, Russia possesses the splendid Naval College at St. Petersburg (Wassili Ostrowo). Its teaching and superintending staff numbers 1 Rear-Admiral, 1 Director of Studies, 1 Director of Military Training, 5 Class Officers, 12 Officers, and 130 civil officials. The period of instruction lasts four years, and before the pupils are accepted an entrance examination has to take place. Besides professional subjects, English and French are taught at the College. There is furthermore a Technical Military College in Cronstadt which is given up to the Engineer branch. The higher Academy in St. Petersburg is only meant for

Officers and Engineers. All these institutions have already been discussed in this periodical, and we may therefore content ourselves with this slight reference to them.

For special courses there are one or more gunnery ships, and a torpedo course for Officers at Cronstadt. The period of instruction at the latter amounts to eighteen months. For petty officers there are torpedo schools at Odessa, St. Petersburg, and at the present time, one at Sebastopol. The Naval School of Musketry founded at Oranienbaum forms a speciality of the Russian Navy. At it Officers, as well as petty officers, are exercised and instructed in shooting with small arms, in gymnastics, in fencing, in small-arm drill, and duties under arms. Pupils who have passed find employment as instructors. The Commandant is a superior Officer, who is directly under the Chief of the Admiral's Staff; two Officers act as Instructors. The establishment of pupils is made up of 12 Officers and 121 petty officers of the Baltic and 2 Officers and 20 petty officers of the Black Sea Fleet. In order to carry out drills for landing parties as well, this establishment has six rowing boats, two steam launches, and a corresponding number of land service and quick-firing guns attached to it. There is a remarkable order, according to which drill days in the boats count as regulation sea time for the Officers. Ammunition for practice is allowed as follows: 200 rounds of Berdan ball cartridge, 100 rounds of blank cartridge, 200 revolver cartridges, and 300 rounds of needle-gun cartridges for each pupil.

With the large effective list of the Russian Navy, the Admiralty is obliged to retain a large number of ships in commission, so as to keep all the Officers in constant practice. Now, as navigation is impossible in the Baltic during the winter months, the summer is made use of all the more. The same may be said of the Black Sea, which is not indeed frozen over in winter, but is frequently visited by fearful storms. For the great summer manœuvres, which take place yearly in Russia also, the Ministry fits out rather a large number of ships. The different military periodicals bring out regular reports about them every year, and therefore we need not go closer into this subject. We must further observe that Russia keeps a squadron permanently in commission in the Mediterranean, and another in Eastern Asiatic waters, also that Russian particular service ships are to be found in all parts of the world. As regards cleanliness, order, discipline, and seamanlike capability, every one who has had the opportunity of visiting and observing Russian men-of-war must admit that Russia is second to no navy in the world in these respects, and could even give points to several big maritime nations. In sail drill, as well as in exercising at clearing for action and landing parties, in short, in all nautical and military exercises, the Russian naval Officers and seamen earn for themselves the respect of all sailors. We need hardly mention that just lately some of the best tactical studies and theories have been published by Russian Admirals.

In order to stimulate the scientific education of the naval personnel, the Russian Ministry of Marine publishes from time to time a few

Prize Essays, the best of which are rewarded with large sums of from one to two thousand roubles.

We will finally relate the dispositions which the Admiral of the Fleet, the Grand Duke Alexis, has taken with regard to the readiness for active service of the torpedo-boats, and which are in force at the present time.

The torpedo-boats have always got their complete personnel told off to them. They, as well as their crews, belong to the different squadrons of the Fleet united at Cronstadt, in the proportion of fifteen boats per squadron at the most.

The crews of each fifteen torpedo-boats are formed into one company.

The command of each torpedo-boat is only given to senior Officers at times when manœuvres are to be carried out, preferably to Officers who have passed the torpedo course, or who belong to torpedo companies.

The superintendence of the torpedo-boats and their personnel is entrusted to a senior Officer, for choice a torpedo Officer.

The companies are commanded by senior Officers who have gone through the torpedo course; for winter drills two torpedo Officers and two technical workmen, who are familiar with the Whitehead torpedo, are added to them.

The preparation of instructions for the arrangement of details falls to the Chief of the General Staff of the Fleet.

With regard to ships' companies, it was laid down last year that the crews of ships and squadrons, with their Officers, should be kept together during the winter also, and on all occasions while disembarked. Accordingly, the seamen depôts have been reorganized, and number eighteen depôt companies in the Baltic and six in the Black Sea. The same Officers who belong to the companies for embarkation act as company Officers and as Commandants of depôts. These dispositions have been taken, with regard to facilitating and hastening fitting out of ships and for the better maintenance of discipline. The advantage that thereby accrues to the Navy is palpable; however, in other navies, where the period of service is short, the same would not be practicable.

#### IV.

We saw above, that at the same time as the sanctioning of the new Fleet programme, a Siberian Flotilla and a Pacific Squadron were also mentioned. We were unable to gather accurate and extensive data about these two divisions of the Russian Fleet. The little we could learn is as follows:—

The Siberian Flotilla consists only of a few cruisers with, roughly, 1,000 tons displacement, of half a dozen gunboats, of several steamers for the rivers, and a corresponding number of torpedo-boats. That the flotilla is not neglected is proved by the fact that the professional papers pretty frequently announce the building of new ships for this division.

The Pacific Squadron only consists of cruisers (clippers) and smaller ships, such as gunboats, torpedo-vessels, &c. In Eastern Asiatic

waters, in China and Japan, Russia always maintains a squadron of from seven to nine ships, chiefly clippers and larger gunboats, which are under the command of a Rear- or Vice-Admiral. In former years this division belonged to the Baltic Fleet. This is probably no longer the case, and the squadron in question forms part of the Pacific Fleet.

Service papers of the past year announced that the headquarters of the ships in Siberia, namely, Vladivostok, was to be made into one of the strongest naval ports, and also that a dry dock was to be built there. The ships of the Volunteer Fleet have organized a regular service between this port and Odessa, and the passage is made seven times a year. As regards communication by land, we know that Vladivostok is to be the terminus of the Siberian railway which is in course of construction. As the Odessa-Vladivostok ships can only run in summer, connection with Russia in Europe is kept up during the winter by land *via* Tura, Irkutsk, Blagowietscheusk, and Kabarowska. Two months and a half, or a continuous (night and day) journey of six weeks, is required to cover the distance to St. Petersburg.

The Fleet programme makes no mention of the Caspian Flotilla nor of those on Lake Aral and the Oxus. Indeed, the Aral and Oxus flotillas were declared to be broken up a few years ago, but, as far as we could gather, the matériel still exists and in case of need could easily be got ready for service. When, moreover, the Caspian is connected with the Black Sea by a canal, as planned, and the Amu-Daria has also been led into the Caspian, the Black Sea ships will easily be able to undertake a trip into the interior of Asia, and then the Black Sea will also be able to provide the inland seas of Asia with men-of-war. The Aral Sea Flotilla numbered at the time its dissolution was decreed four paddle-wheelers, a few steam launches, and several sailing ships. On the Oxus there were six paddle-wheelers, among them four that could be taken to pieces. The flotilla on the Caspian Sea numbers four gunboats of 200 to 400 tons displacement, a dozen paddle-ships, and several steamers for traffic, which in case of need could be used as men-of-war. Russia's intentions with regard to these waters are hard to divine, and the Russian Government will probably assume a waiting attitude before it carries out any decisive steps. The first thing is to strengthen her own position in the Black Sea; everything else is easier.

That Russia does not leave her inland waters out of consideration is proved by the recent building of a stern-wheeler to take to pieces, which was supplied by Yarrow and Co. According to the conditions of the contract, this steamer was to be adapted for transport over considerable distances by rail when taken to pieces, and on arrival at its destination to be put together without much trouble and waste of time. A further stipulation was, that the draught of the steamer was not to exceed 475 mm. (about 18 $\frac{3}{4}$  in.) with an armament weighing 7 tons and a sufficient coal supply on board for steaming twelve hours with full power. The speed was to amount to 10 knots.

Yarrow built the steamer in ten floating sections, whose dimen-

sions were so proportioned as to make each of them easily transportable on Continental railways.

We have been able to learn nothing as to the immediate destination of this vessel, nor whether, after the construction had fully answered the requirements, more of such ships capable of being taken to pieces were ordered. It is not impossible that the vessel supplied by Yarrow is now used as a model and that ships of this type are being built in Russian establishments.

Our thoughts again involuntarily recur to Russian preparations for a possible war with the Central Powers, when we read that Officers of the Russian Navy are on the Danube in order to learn pilotage duties there. We gather this news from German and Italian papers. We may at once connect this with the formation, a few years ago, of a Russian steamship company on the Lower Danube. It is not for the trade with the Danube countries that Gargarin has been working; Russia has much too extensive fields for commerce elsewhere, which demand her attention, and the object of her penetration on the Danube is palpable. But it is now still clearer by the appointment of Russian Officers to learn pilotage duties.

The so-called "Volunteer Fleet" will constitute a factor that must not be underrated in Russia's next war with any other Power. The ships of the Volunteer Fleet, about twelve in number, are, in peace-time, ordinary merchantmen, which can, however, in time of war, be easily armed and used for doing the work of cruisers. In 1885 this company undertook to cover 141,000 knots yearly, between the eastern Black Sea ports and the Russian ports in East Asia, in respect of a subsidy of 600,000 roubles per annum. The connection of this fleet with the State was formerly much too loose, in consequence of which, a new organization of it took place in 1886. According to the agreements of 1886, the Volunteer Fleet is under the Admiralty, but has its own management and capital. In peace it is bound to keep up regular commercial communication with East Asia. In its financial proceedings it is under the highest audit office.

The "Rivista Marittima" reports that at the present time a further reform of this fleet is in progress. The reforms will have reference to the composition of the Council of Administration and to the direction of business; the Navy is to have a stronger direct representation in the Council of Administration, as well as have the superintendence of it.

In war-time the Volunteer Fleet must be placed entirely at the disposal of the Admiralty. Its capital is to remain untouched during the war. Finally, the fleet receives subsidies from the State and mileage money as well.

The Volunteer Fleet, as we have already said, provides for the regular traffic between Odessa and Vladivostok. It runs, in addition, the tea trade and passenger traffic between China and the Black Sea. Among other things, its ships are also employed in peace as transports for troops, particularly for the transport of recruits and Reserve men between Odessa and Batoum.



In consideration of the direct and indirect benefit that the Navy draws from the mercantile marine and with regard to the general decay of the latter, the Russian Government, some five or six years ago, issued a law, by virtue of which private individuals are granted advances from the State for building ships, with the right of turning the debt over to the purchaser of the vessel. To avoid abuses, these favours are only accorded to professional shipbuilders who enjoy the best reputation. In giving publicity to this law, the "Mittheilungen aus dem Gebiete des Seewesens" made the following very true remark: "The reason for this subsidy on the part of the State must be sought for in the interest which the Government cherishes for the increase of ships which could be of use in war-time. Besides this, it is made easier for seamen to get ships, and the greater possibility of a livelihood is offered to retired naval Officers; finally, the number of sailors in the mercantile marine naturally increases with the number of ships, which again furthers recruiting for the Navy."

The Russian Navy costs the State over 40,000,000 roubles per annum, and the Budget has, indeed, increased during the last few years, as can be seen from the following summary:—

	Budget for the year in roubles.	
	1886.	1891.
1. Central direction and harbour administration ....	1,708,775	1,767,513
2. Rewards, allowances, retired pay .....	480,232	455,903
3. Naval educational establishments .....	515,093	538,082
4. Medicinal and sanitary concerns, hospitals .....	821,250	735,591
5. Pay of Officers on the active list, engineers, officials, wages of petty officers and men .....	3,775,764	3,359,520
6. Victualling .....	867,619	1,016,804
7. Clothing of crews .....	898,733	1,161,918
8. Sea service, training squadrons, particular service ships .....	4,915,577	5,237,074
9. Hydrographical service .....	419,159	453,388
10. Gunnery, torpedo, and mining departments, laying on electric light .....	3,105,168	3,914,245
11. Shipbuilding .....	15,685,940	17,525,573
12. Admiralty and dockyards (factories and workshops) .....	1,396,077	2,527,815
13. Rent, maintenance, building, and repairs of buildings	3,035,651	3,626,763
14. Particular appointments .....	400,000	450,000
15. Sveaborg Harbour .....	..	50,272
16. Sundry and unforeseen expenses .....	1,371,705	903,463
Total .....	39,405,757	43,759,924 39,405,757
Increase of the Budget, 1886—1891 ....	..	4,354,167

To this must be added the extraordinary expenditure, which, if the fleet programme is carried out consistently, will alone require a further 20,000,000 roubles per annum for shipbuilding.

If we examine the rôle which Russia's Navy might play in case of war, it is certainly weaker as compared with the united fleets of the Triple Alliance, but still strong enough, however, to manage a powerful and effective defence. But if Russia gets many more years' time, her Navy will reach an undreamed-of strength. For, if present circumstances do not change, on completion of the ships planned, another fleet programme will be prepared. For the moment, Russia reckons on help from the French. But the alliance of the Republicans with the autocratic Czar is something unnatural, and rests on sophisms. In spite of the great momentary sympathy between the people of the two nations, a continuous liking for France cannot last in Russia, at least, if we cast a glance at the traditions of the country. In any case, Russia is striving to be self-dependent, and she is therefore continually making preparations and building, till the time will come when she will feel herself strong enough to shake off her unnatural ally. God grant that the Central Powers may meanwhile settle pending questions with the Muscovite Colossus at the board of green cloth, and that Russia's Fleet will only be called on to fulfil missions of civilization! And in this direction there is abundance of work for Russia.