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Publisher: Routledge
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Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH,
UK



Royal United Services Institution. Journal

Publication details, including instructions for
authors and subscription information:

<http://www.tandfonline.com/loi/rusi19>

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Captain S. M. Eardley-Wilmot R.N.

Published online: 11 Sep 2009.

To cite this article: Captain S. M. Eardley-Wilmot R.N. (1891) The Navy and its
Exhibition, Royal United Services Institution. Journal, 35:159, 547-554, DOI:
[10.1080/03071849109417930](https://doi.org/10.1080/03071849109417930)

To link to this article: <http://dx.doi.org/10.1080/03071849109417930>

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THE NAVY AND ITS EXHIBITION.

By Captain S. M. EARDLEY-WILMOT, R.N.

THE year 1891 will be memorable in a country justly proud of its pre-eminence at sea for two incidents closely connected with that maritime supremacy which has given the British Empire the place it now holds among the nations of the world. I allude to the launch of two noble warships at Portsmouth by the Queen last February, and the opening of a Naval Exhibition in the capital during the present month. The latter may perhaps be considered the culminating point of that increasing interest which the nation has taken in the condition of the Navy during the last few years.

Though not always apparent, it exists, and can be readily evoked when occasion requires. There never has been yet a legitimate demand for increased naval expenditure on the part of our rulers which has been refused by the country.

In the time of Charles II, Macaulay states: "The Commons, even when most discontented and most parsimonious, had always been bountiful, even to profusion, where the interest of the Navy was concerned; and, although the House was at that time in no giving mood, an aid of near 630,000*l.* had been granted for the building of thirty new men-of-war." The reluctance to ask for increased grants on the part of Governments has been the cause of our Fleet at times falling below that strength at which it should be maintained, taking into account the progress made by other nations. Whereas, in such a country as Germany, there is great difficulty in persuading Parliament to grant money for naval purposes, here we have the reverse, an unwilling Government coerced into expenditure by the unanimous voice of a people always ready to increase the efficiency of that force which, while it is the best protection of the Empire against foreign enemies, is powerless against civil liberty. As Lord Brassey says in one of his excellent naval annuals, referring to the increase of ship-building which took place under Lord Northbrook's administration, "The truth is that, at the bidding of the nation, we entered upon a new policy." That policy has been maintained and extended up to the present day, and the launch of the "Royal Sovereign" is a tangible proof that we are within measurable distance of obtaining an access of naval strength which will to some extent counterbalance the indifference of past years. Having alluded to what was deemed necessary in the time of Charles II to rehabilitate the Fleet, it may be of interest to briefly examine its counterpart in the present day. One thing is at once evident, that the total sum then granted would not now produce one first-class battle-ship. The "Royal Sovereign" of 1891 is one of eight vessels which will have cost, when ready for

commission, a million sterling each. She will be upwards of 14,000 tons, and practically take three years in construction from time of laying down till completion of trials.

In 1791 there was a "Royal Sovereign," which, two years later, carried the flag of Vice-Admiral Graves in Howe's squadron, and participated in his action of the 1st June, 1794. She was a hundred-gun ship, of about 2,200 tons, costing, with all her equipment complete, a little over 100,000*l*. In those days, even the largest ships could be built and sent to sea in a few months. At the time of the Crimean War, a French ship of the line was constructed and despatched to the scene of operations within eighty days.

Hence, at the present time, no reliance can be placed upon supplementing a naval force in its most powerful element during a war which is not protracted over years, and it is more than ever essential that the opening of hostilities should find us with an adequate number of battle-ships. The enormous increase of displacement which a century has produced is not, however, more remarkable than the advance made in the ordnance now carried by ships. From a projectile of 32 lbs., propelled by one-third its weight of powder, we have, in the new "Royal Sovereign," come to steel bolts, weighing over half a ton, hurled by 630 lbs. of powder to a distance of 10 miles. Each shot represents a concentrated broadside of forty 32-prs.: or four rounds fired simultaneously from the modern "Royal Sovereign's" heavy guns will equal in weight the broadsides of two eighty-gun ships equipped with the old smooth-bore piece. But even the 67-ton gun of the new vessels is a moderate arm compared with the much-abused 110-ton gun, of which two are carried by the "Victoria," "Sanspareil," and "Benbow." This capacious monster is fed with a shot weighing 1,800 lbs., which, by means of the energy stored in 960 lbs. of powder behind it, is capable of passing through nearly 3 feet of iron. Imagination fails to depict the result of a shell from this gun bursting within the confined spaces into which ironclads are subdivided. As in the old days a single broadside well directed sometimes decided the combat, it is not unreasonable to anticipate a similar result from one projectile reaching a vital spot when it combines such powers of penetration and destructiveness. The increase in the power of ordnance, though, perhaps, hastened and exaggerated by the introduction of armour, has been going on for more than a century. In 1752, a French writer on naval architecture, M. Duhamel de Monceau, said: "Il est certain que ce sont toujours les gros canons qui sont les plus avantageux dans un combat, et ainsi il est préférable de mettre sur un vaisseau un petit nombre de gros canons qu'un grand nombre de petits." There must, however, be some limit, and it is probably found when complicated machinery is required for all the manipulation which, up to recent years, could be efficiently and expeditiously performed by hand. Experience has shown that it is safer to err on the side of simplicity, but, in spite of the various arguments which are put forward on both sides, with the greater vehemence as the less is known of the subject, the rude test of war can alone determine this and many other points.

It is some consolation to know that other nations are in the same predicament. Italy, the first to embark in monster ships and ordnance, with a boldness which may be admired though not necessarily imitated, has its "Italia" and "Lepanto" of 13,800 tons, each carrying four 100-ton guns, an armament which, if successfully applied, seems irresistible. The defect of these vessels is the want of external armour, and consequent danger of the guns being disabled by the explosion of powerful shells beneath. They have a speed of 18 knots, and carry 1,600 tons of coal. Whatever may be said against placing so much in a single vessel, they are magnificent specimens of naval architecture. Three others, somewhat smaller, are to have four 67-ton guns in place of the larger ordnance, but in other respects are not dissimilar. Italy possesses, in fact, ten battleships that will compare in power with any similar number elsewhere. How they will be handled when the clash of arms comes cannot be foretold from any indication yet given.

The progress of Russia in naval strength has been steady and consistent for some years, though a temporary aberration led her towards circular ironclads, and the influence of the "Monitor" type was long apparent in her shipbuilding policy. Having, however, regained full liberty in the Black Sea, a definite programme was laid down ten years ago which may be considered half accomplished. As a result, we find in the Black Sea three powerful ironclads completed, named the "Tchesma," "Sinope," and "Catherine II." Wise in limiting the dimensions to 10,400 tons, which involved moderate cost and time in production, Russia has in these vessels quite changed the maritime conditions which prevailed during the last war with Turkey. Under the influence of some strange infatuation, the latter has allowed the fine fleet she mustered fifteen years ago to fall into decay, and she no longer controls the Black Sea. The consequences, some day, will be most momentous, but with such matters I am not now concerned. The "Tchesma" and her consorts carry six 50-ton guns—an admirable armament, but somewhat too crowded in its location. It is, however, fairly well protected, and Russia follows France in adhering to the continuous water-line belt of armour.

In the Baltic, two useful vessels of 8,500 tons—the "Alexander II" and "Nicholas I"—are practically complete. Others are in course of construction. It would appear, therefore, that in battleships Russia is not attempting to compete with the first naval Powers; but has more in view in this respect—a struggle with a rival military Empire, whose shallow waters are not adapted to vessels of deep draught. But in the cruiser class Russia has long displayed an ability and progress not even second to this country. That clever brochure "The Russias' Hope," detailing, after the manner of "The Battle of Dorking," how the might of England was reduced by a skilful warfare directed against our commerce and colonies, reflects the opinion of how any future struggle should be conducted.

The reply to our "Blake" of 9,000 tons is the "Rurik" of 10,600, especially adapted for prolonged service on distant oceans.

Unlike the former, which is protected by an armoured deck only, the "Rurik" will have a belt of ten inches of armour. We may anticipate a superior speed in our vessel, but it is evident much mischief could be accomplished by such a rover before being brought to bay, if she obtained a start at the outbreak of hostilities. There is evidently no finality in cruiser, any more than in battle-ship, construction, and we should at once lay down six vessels of superior speed and armament to the "Rurik," because it is evident that she could not be overcome, even if overtaken, by any of our magnificent merchant steamers provided with such an armament as they are capable of carrying. Turning now to our ancient rival, France, we have a standard by which as of old we may compare types and aggregate strength. Of late years it has become the fashion, and it is sanctioned by authority, to say the naval power of Britain should be equal to that of any two other countries combined. This tends to mislead, as people simply apply a numerical test, and if by any process of comparison they are assured that our battle-ships are equal in numbers to those of the two countries selected they are content. It is obvious, however, that an accurate basis can only be found in the force necessary to successfully thwart, defeat, and paralyze the designs of such a combination; and to carry this out effectually there must be a superiority at the several points threatened incompatible with equal numbers. Such requirements involve an accurate knowledge of the resources, distribution, and strength of foreign navies denied to the majority, and hence some simpler basis is desirable. This can be found by reverting to the old principles of maintaining, in ships of the line, a number twice as great as can be shown by any other Power. This empirical standard commended itself to such a man of peace as Mr. Cobden, who held that we had a natural right to have two line-of-battle-ships to each vessel of that class possessed by France. That country has also admitted it. Lord Malmesbury records in his Diary on April 6th, 1859, that in an interview with Napoleon III the latter was much out of humour with Lord Palmerston's Government, which suspected all he did, and was always complaining of his building ships. This he ridiculed as childish, and said: "Let each build what he considers the right number; you ought to have twice as many as I, as they are your principal protection." When in 1793 the National Convention of France declared war against us, this proportion approximately existed; and it was the result of successful operations and energetic building on our part which afterwards so materially altered the ratio.

For some years after the peace of 1815 no systematic attempt to resuscitate her Navy was made by our late antagonist, until in 1820 the country was roused by a suggestion of Baron Portal, the Minister of Marine, "to abandon the institution to save the expense, or to increase the expenses to save the institution." A sum of twenty-eight millions sterling was granted to improve the fleet, to be spread over eleven years. Since that time progress has been steady, and at certain periods energetic. Before testing our position by this

historical standard it is desirable to review champion types in each navy. France has long been famous for the talent of her naval architects. Their ships have been models for our own, as when in 1672 the "Superbe," a French two decker, was reproduced in the "Harwich" and others. Pepys tells us also that the first frigate built in England was modelled from a French frigate, Pett the shipwright, had seen in the Thames. When the destructive effects of shell-fire were brought home to the world, France took the lead in armour-clad construction, but until after the Franco-German war the various types had not any marked features of merit. Since then some remarkable vessels have been constructed which have called forth the admiration of our own Officers who have been afforded an opportunity of observing them. The "Amiral Baudin" and "Formidable" are two in point. These fine ships are of 11,500 tons, hence considerably smaller than our "Royal Sovereign" type; but, as their conception dates back to ten years ago, when we had just completed the "Inflexible," and were preparing to build on new lines in the "Admiral" class, a more fitting comparison can be found in the "Nile" and "Trafalgar," though later designs. A special feature in the French vessels is their high freeboard, which, though it has the sole disadvantage of enlarging the target for an enemy's guns, ensures the ability to fight her own and keep the sea in all weathers with efficiency and comfort. They carry three 75-ton guns in separate positions, as against four 67-ton guns in two turrets, which is the principal armament of the English pair. In the latter a single shot might disable half their armament, whereas with the former it would affect only one-third of the heavy guns. There are, of course, corresponding advantages which may be advanced on our side. The difference as regards protection is principally in method of distribution. The French employ a complete belt of armour at the water-line, while we do not encumber the extremities with such weights. Much has been made of the danger of thus leaving the ends unprotected, but the objection is not based on experience. The little we have to guide us rather points to the immunity of the water-line under heavy fire. In the notable action of the Peruvian ironclad "Huascar," against two Chilean warships, the former suffered little at the water-line, but succumbed to the losses inflicted on Officers and men. The vital portions of the ship were intact after a heavy cannonade.

The French Naval Administration have decided to build three more ironclads of about 12,000 tons, and it is probable they will embody the principal features of the "Amiral Baudin" and "Formidable." There is no more difficult task, even for an expert, than to make a comparison of strength in vessels of war. Some would eliminate all built prior to a certain date, casting the term "obsolete" indiscriminately upon the remainder. Others draw the line at a fanciful distinction, as to whether a gun is charged at the breech or muzzle, forgetting that, up to a certain period, the power was unaffected by the method of loading, while simplicity was on the side of the now discarded system. As it appears to me that in comparing

armies some account must be taken of the soldiers who, having arrived at a certain time of life, do not carry a rifle with the alacrity of youth, but are still capable of rendering good service to their country in time of war, I shall attempt a comparison in battle-ships between the two countries foremost in maritime strength, in which due allowance is given to this principle. My deduction after a careful examination is, that at the present time we can muster thirty-six ships of the line, to which the French could oppose twenty-four in operations such as were carried out in the last great war. On each side there are building and completing ten others, so that it is very evident the completion of the Naval Defence Programme in this arm will not bring us into a secure position. As a further step Lord Brassey has proposed laying down ten more battle-ships. If carried out we should have practically the proportionate superiority deemed requisite by our ancestors.

Turning to cruisers, we may compare the "Royal Arthur," one of the vessels launched by Her Majesty, to others building across the Channel. A representative of the latter is the "Tage," of 7,050 tons, while our own type is to be of 7,700 tons. The different ideas prevailing in the two countries may be observed by the proportions given. Though 650 tons smaller, the "Tage" is 30 feet longer, and has 7 feet less beam. She has no heavier gun than a 6-inch, while the "Royal Arthur" will carry a stern-chaser of 22 tons, wherewith to annoy any more powerful vessel by whom she may be pursued. She will be undoubtedly a formidable craft, but whether her length is sufficient to give her such a superiority of speed over the other against moderate head winds and seas as to ensure success in pursuit in a few hours may perhaps be doubted. More recently the French, in view of the effects of quick-firing shell guns, have favoured for their cruisers thin steel armour placed externally as in our earlier ironclads, such as the "Warrior" and others. Practical experience seems to confirm the desirability, if possible, of keeping out shell. In an engagement between an unprotected Chilean cruiser and the forts at Valparaiso last month, a shell from the latter bursting within the ship blew up the deck, disabling nine guns and killing a number of men. As regards the number of cruisers this country should possess in reference to other Powers, it is obvious that such a ratio as two to one is inadequate.

Seeking some light from history, I find in that interesting volume, "The Corsairs of France," by Captain Norman, that during the wars between 1793 and 1815 we captured 1,031 French privateers. In the same period the Board of Admiralty issued 10,605 letters of marque to British vessels. That is to say, we had ten privateers scouring the seas for every privateer of the enemy we succeeded in capturing. It appears to me that a numerical ratio of ten to one may be adopted at the present time. Eliminating all those slow vessels once contemptuously defined by a French critic as "*la poussière navale*," and which, until lately, were more numerous with ourselves than with our neighbours, I find that last year we had forty-one cruisers of sixteen knots and upwards, fit for service. The French had eighteen in a

similar position. If we add vessels on the stocks our total is brought to eighty, and that of the French to thirty. When, therefore, at the Institution of Naval Architects, Lord Brassey proposed as a new programme forty first-class cruisers and thirty look-out ships, in addition to ten battle-ships, he was not submitting an unreasonable proposition.

It is a happy coincidence that the same year which gives the nation a tangible proof of the progress made to improve our Fleet in the launch by the Queen of two such vessels as the "Royal Sovereign" and "Royal Arthur" at Portsmouth on the same day, sees the birth of an Exhibition illustrating in a popular as well as a scientific manner that Navy which, in the memorable words of Pitt, "is the grand and proud bulwark of our fame; that Navy which has extended our commerce, our dominion and power to the most remote parts of the world; that Navy which has explored new sources of wealth, which has discovered new objects of glory." Here may be seen the features of many of those valiant men whose names are household words to most Englishmen. Never has there been gathered under one roof such a collection of pictures and portraits connected with the naval history of this country. The undaunted Blake, whose exploit at Santa Cruz was, records Clarendon, "so miraculous, that all men who know the place concluded that no sober man, with what courage soever endued, would ever undertake it, whilst the Spaniards comforted themselves with the belief that they were devils and not men who had destroyed them in such a manner;" the vanquishers of the Invincible Armada, which event placed England in the first rank of European Powers; Rodney the captor of de Grasse, and declared by one who knew him well, "That as an Officer of nautical abilities, none were his superiors and but few his equals;" Howe, the reserved but beloved leader; St. Vincent, who came at a time to restore that discipline among the Officers and men which so materially assisted Nelson to accomplish what he did; Nelson and Collingwood, the David and Jonathan of the sea.—"We can, my dear Coll., have no little jealousies. We have only one great object in view, that of annihilating our enemies and getting a glorious peace for our country," writes the one on the eve of Trafalgar. "Oh! had Nelson lived! how complete had been my happiness, how perfect my joy!" writes the other after the battle. There can be seen many of that "band of brothers" as the hero of the Nile called them—Troubridge, ever his trusted colleague, of whom his generous chief writes: "I well know he is my superior, and I so often want his advice and assistance." At that end so sad, the stern St. Vincent ejaculates, "I shall never see Troubridge's like again! I loved that invaluable man." He was truly called the Bayard of the British Navy. And such others as Hood, Ball, Hallowell, Berry, Hardy, and Louis were not far behind. But who could resist that charm when, in the moment of victory and suffering a wound believed to be mortal, the chief could order the gallant Captain of the "Minotaur"—Louis—to be hailed and thank him for coming so nobly to his support. Such and many others will be the reflections

in looking upon the works of Beechey, Hoppner, and Romney dedicated to that period.

The full-sized model of the "Victory" will be equally suggestive of the past; showing the fighting deck, and that memorable scene in the cockpit when the adored of the nation, young in years but old in victory, found consolation in his last moments in the thought and expression, "Thank God, I have done my duty."

Those interested in the gradation by which we have advanced from ships of small burden to structures absorbing thousands of tons of iron, and proportionately weighty pieces of ordnance, will be able here to trace that progress, either in model form or the actual object. A Naval Exhibition on dry land only would have been deprived of much of its interest; but the provision of a large piece of water enables many of the operations of a fleet to be executed on a small scale. An action between two ironclads in which all the new weapons are brought into play will probably find great favour. The evolutions which have been carried out in nearly every war on shore by a Naval Brigade will be brought under the observation of thousands who hitherto have had little opportunity of seeing the Navy afloat or ashore.

The interest taken by our Royal Family in this enterprise has been remarkable. It recalls the time when sovereigns led English squadrons to action, and a King—Canute—was elected by the Fleet. It will be an evil day for this country when the Naval Service fails to attract the highest or the lowest, and if the Naval Exhibition serves only to strengthen the attachment between those whose business is on the great waters and their fellow countrymen, the exertions of all connected with its creation will be well repaid.