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### The Best Method of Providing an Efficient Force of Officers and Men for the Navy, Including the Reserves

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### THE NAVAL PRIZE ESSAY, 1882.

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THE BEST METHOD OF PROVIDING AN EFFICIENT  
FORCE OF OFFICERS AND MEN FOR THE NAVY  
INCLUDING THE RESERVES.

By Captain LINDESAY BRINE, R.N.

*"Tempora mutantur, nos et mutamur in illis."*

WHAT are the best methods of obtaining in time of peace a Naval Reserve that can be rapidly developed into a powerful force in time of war? What force is required to maintain our naval supremacy, protect our colonies and Mercantile Marine, and prevent the control of the Channel from falling under the control of an enemy?

All the other great maritime Powers of Europe have determined to avail themselves of the services of their seaboard populations, and have adopted, in more or less stringent degrees, systems of conscription for the purpose of manning their fleets. These systems have been made to correspond, as far as possible, with those that regulate compulsory military services, and are consistent with the institutions of the respective nations. Great Britain stands alone in having not provided for the manning of her great fleets by the method of voluntary engagement, and successive Governments and Boards of Admiralty have shown constant anxiety in endeavouring to establish a system of manning which would place our naval power in a position of unquestionable security.

During the long period of tranquillity and general disarmament in Europe, subsequent to 1815, our fleets were maintained upon a small establishment. Our ships were manned by short service men who volunteered for the commission and left when their ships were paid off, and there were no means for establishing efficient reserves to rapidly augmenting our force. It was considered that, in the event

an emergency occurring, volunteers would come forward in sufficient numbers, and as a final resource it was always possible to obtain by impressment. It was, however, gradually made evident that these methods were most insecure and inexpedient.

The revolutionary state of Europe during 1848 pointed to the necessity of our having a fleet capable of immediate preparation for war, and in 1852 the Admiralty were so dissatisfied with the long time occupied in obtaining crews for ships when commissioned, that the Duke of Northumberland, who was then the First Lord, thought it desirable to form a Committee to inquire into the subject. The Report of this Committee led the Admiralty to consider a plan for establishing a system that would give a more permanent character to the Navy, and in 1853 the continuous service principle was adopted and has been carried into effect with slight modifications. This system as then proposed continues to be the basis upon which the manning of the Navy rests.

In their letter to the Treasury respecting this scheme, the Admiralty dwelt with much force upon the difficulties and uncertainties of the previous methods of manning, and drew especial attention to the serious danger that existed in consequence of their inability to equip Her Majesty's ships with sufficient rapidity, and in bringing this to the consideration of the Treasury their propositions, which involved an additional grant of money, they dwelt upon the great advantages that would result when the continuous system was in complete operation. "It is essential," their Lordships observed, "to give to the Royal Navy a permanent constitution, in order that it may be brought to a high point of organization, efficiency, and discipline, and thus be enabled to meet at critical junctures to fulfil the expectations of the country."

The practical results of this continuous service scheme as it has been developed will be presently examined, but the whole subject of the manning of the Navy, and of establishing an efficient Reserve, both of which have since the suggestions of the Committee of 1852, has been so obscured by a too great estimate of the fighting value of the personnel of our Mercantile Marine, that it is in the first place necessary to examine the basis upon which our strength in men as a naval force depends.

It appears that the largest number of men that have at any one time actually been borne upon the books of Her Majesty's ships was in the year 1813. The vote was taken for 108,600 seamen and 4,500 marines, but the total numbers borne were 147,047. During the years of peace that preceded the Revolutionary War the average numbers annually voted were 15,035 seamen and 4,590 marines. The smallest vote taken was in the year before the war, when the numbers voted were 11,575 seamen and 4,425 marines. In the same year the whole number of men serving in registered ships belonging to the British Empire—that is to say, employed in our Commercial Marine—was 118,236, and in 1813, when fully 115,000 seamen were employed in the Navy, there were 165,537 men in the Merchant Service.<sup>1</sup>

<sup>1</sup> These numbers include Officers.

## OF OFFICERS AND MEN FOR THE NAVY, ETC.

Judging from the Return<sup>1</sup> from which these figures are taken, evident that the methods adopted for manning our fleets did not greatly embarrass our merchant shipping.

In 1805, the year of Trafalgar, the number borne in our Fleet 114,012, and in the Mercantile Marine 157,712. At the time when Lord Howe fought the action of the 1st of June, 1794, our fleets were mainly composed of seamen volunteers (many of whom were of different nationalities), of men gathered by impressment, and landsmen and others, attracted by bounties or the hope of prize-money. To these were added by Mr. Pitt's Government a number of men raised by a system of "quota," furnished by each parish in the kingdom, and also by a special compulsory conscription from maritime counties.

The crews of the French Navy were at the same time composed of equally untrained elements. The resources of the Maritime Institution, which were then not so great as at present, were soon exhausted, and the fleets were filled with men of the roughest and most undisciplined character, gathered from the seaports during the period when the revolutionary excitement had produced large bands of lawless desperadoes. A considerable part of the crew of the "Vengeur," which fought so well on the 1st of June, was formed of men who had never been to sea until they left the port of Brest to encounter the British under Lord Howe. The greater number of the crews who were embarked in our fleets were neither seamen nor in any sense trained men, but they soon became valuable, through the constant experience gained by long periods of active service at sea. The constant practice of seamanship caused by the long blockades, and the rigid system of discipline enforced by Lord St. Vincent, soon established a splendid force of seamen, which formed the nucleus round which the newly raised ships' companies were gathered during the latter years of the war.

After 1815 the number of seamen annually voted for the peacetime establishment varied from 13,000 to 22,000, according to the political state of Europe, but the average vote for marines was usually tallied for 9,000 men.

1834 was the first year in which a vote appears for the entry of boys. This vote was increased to 2,000 the following year, and was maintained at that number until the recommendations of the Committee of 1852 were carried into effect, when the vote for boys was increased to 10,000.

This was in 1855, during the war with Russia, when the number voted were 44,000 seamen, 10,000 boys, and 16,000 marines. The number employed in our merchant vessels was in the same year stated to be 261,194.

Early in 1852 the "Southampton," one of our 50-gun frigates, arrived in England from the Brazils, where she had carried the flag of Rear-Admiral Barrington Reynolds, and after a commission of nearly

<sup>1</sup> "Return of the Number of Seamen (including Officers), Boys, and Marines voted for the Royal Navy, and actually borne, together with the Number of Men employed in the Commercial Marine from the year 1756 to 1858, inclusive."

four years, her fine crew were paid off. Considerable attention was drawn to the fact that a large proportion of her petty officers and seamen had decided to quit the English Navy and take service in America under the flag of the United States. It was also observed that there was an increasing difficulty in obtaining men for our ships when commissioned. It may here be noticed that in this year the number of men serving in our Mercantile Marine was stated to be 243,512. The length of time then occupied in getting crews for ships was becoming intolerable. Our line-of-battle ships were waiting three or four months before they were able to go to sea, and even our smart 26-gun frigates, of the "Vestal" and "Spartan" class, were directed to be fitted out, it was not without vexatious delay that ships were able to quit England. At that time there was a positive sense of relief felt on board a ship when the complement of men arrived from barracks and settled down to their duties, as for a considerable time they formed the backbone of the ship's company.

To obtain seamen for each ship when commissioned, Officers were sent to the chief ports to enter men. Rendezvous houses were established, placards were posted in all public places, and every possible inducement was offered to get men to join. It, however, soon became evident that the majority of the men who usually constituted our crews in the Navy were those who did not to any great extent especially attach themselves to our Merchant Service, but as a rule preferred serving in men-of-war. At the same time they liked the freedom of changing and selecting their ships, and this sense of freedom was far as to cause men to think too lightly of their nationality, and many of our best seamen, trained in our ships-of-war, were known to be serving under the flag of the United States, and it was a question much debated at the time whether in case of hostilities we could be certain of the loyalty of our men.

The *personnel* of the Navy at the time of the introduction of the continuous service scheme may thus be summarized: the number of seamen under the authority of the Admiralty, exclusive of those employed in the Coast Guard, and also exclusive of landsmen, apprentices, and boys, was estimated at about 14,000 petty officers and seamen. Of these about one-fourth were steadily serving to complete twenty-one years' service and obtain a pension. The remainder was composed partly of men of various terms of service, who quitted the Navy for a time at the end of a commission and re-entered, partly of men who, disliking the discipline and the gunnery exercises, left to join merchant ships under the English or American flag, whose services as trained men were thus lost.

In their letter of 21st March, 1853, to the Lords of the Treasury the Admiralty pointed out the unsatisfactory results produced by the difficulty of inducing seamen to serve voluntarily for long periods.

"The difficulties," they observed, "are inherent in the system itself, which consists in entering them for particular ships selected by themselves, nominally for three years, but practically, according to immemorial usage, for three years service less the ship be detained on a foreign station for a period longer than three months, less than five years, and then after much expense, time, and labour besto-

training them, they are disbanded, and are often lost to the Service. A certain portion of the men thus discharged never return to the Navy. Some carry the fruit of their training to foreign flags, the larger number return at periods dictated by their own inclination or convenience, and not by any regard to the wants of the Service."

The Report and the recommendations of the Committee in 1852 upon which the letter was based, created an entire change in the training and constitution of our men-of-war's men.

The old classes of our fighting seamen were destined to become extinct, and their places are now occupied by a body of lads and men in many respects different and dissimilar. The men who manned our old sailing line-of-battle ships, frigates, and brigs, were at sea good seamen, brave, daring, and self-reliant; on shore, thoughtless and extravagant. They were powerful in physique, most capable in handling sails, and ships in stormy weather; disliking gunnery machinery, and musket drill; fond of change, and yet proud of the ships in which they had volunteered to serve. These men are gone and the type can never be reproduced.

The change, although great, and in some respects serious, cannot be regretted, for such men would be utterly unsuited to the altered character of modern warfare, and they had not the intelligence that is now required to form trained petty officers and seamen gunners. The opinion expressed by the Board of Admiralty with respect to the inadequacy of our means for manning a fleet in time of war was soon to be verified. In 1853, the fleet in the Mediterranean was largely increased to meet the exigencies of the approaching war with Russia, and when in 1854 it was thought necessary to send a fleet into the Baltic, the defects of the system of manning were immediately evident. There existed no power of expanding an establishment sufficient for peace purposes, into a Navy prepared for a great war. The entire manning power was exhausted in maintaining the fleet in the Black Sea.

The Coast Guard Reserve was not then the valuable force it is at present, and in order to supply men for the Baltic Fleet, the Admiralty were obliged to man the ships with crews largely composed of landsmen, who were entirely untrained, and were for all practical purposes absolutely valueless. France had also employed all her available men, exclusive of the Reserves, in maintaining her large fleet in the Black Sea—a fleet that was in all respects, in ships as well as crews, equal to our own. But when she was required, as our ally, to send a second fleet to the Baltic, she called out her Reserves from the Maritime Inscription, and manned her ships with such of her coast fishermen<sup>1</sup> as had completed their period of compulsory active service in the Navy, and thus her ships were manned with a strong body of trained seamen, all accustomed to the discipline of a man-of-war, and all familiar with the exercise of their great guns.

The establishment of the present Continuous Service Regulations together with certain existing schemes for raising and maintaining a Naval Reserve that would adequately man the Royal Navy in the even

<sup>1</sup> The greater part of the fishermen were then absent at the deep sea fisheries.

of sudden hostilities, have been the result of the recommendation of the Committee appointed by the Duke of Northumberland in 1852, and of the Report of the Commissioners directed in 1858 to inquire into the best means of obtaining seamen during peace, or in the emergency of war.

Before examining in detail the actual results that an experience of more than twenty years of the practical working value of these systems has produced, it is expedient to ascertain what are the methods of manning that have been found either to have failed, or that have been considered to be in these days impracticable. It has to be noted that previous to the existing system, all schemes for obtaining seamen with certainty in the emergency of war were of a compulsory character; of these, impressment was considered to be the most efficient and satisfactory. The other plans, executed in pursuance of various Acts for raising men in the counties and commercial ports, were found to produce men sufficiently trustworthy or useful. The importance attached to the power of impressment is apparent from reference to the evidence given in 1852 by Admiral of the Fleet Sir Byam Martin. In the reply to the question, requesting him to suggest a substitute for the power of impressment such as might meet the altered feeling of the country, he said:—

“My decided opinion is, that it is not within the compass of human contrivance to light upon any scheme equivalent to impressment as a means of bringing the fleet together with the rapidity which a general armament must ever require. The part with that means of sending forth our fleets with the alacrity and in the overwhelming strength which so astonished and confounded the nations against whom we armed in 1787, 1790, and 1791, England will no longer be what England was on those occasions, and we shall have the mortification to see the French, for the first time, beforehand with us, by means of their maritime conscription, which is, in effect, impressment under a somewhat milder name.”

Admiral of the Fleet Sir George Cockburn, who was also asked the same question, replied:—

“I am decidedly of opinion that the power of the Crown to authorize recruitment by impressment of seamen in cases of necessity, should not be interfered with.”

The Manning Committee were, however, so convinced of the difficulties that might arise in attempting to carry out impressment as a regular means of supplying seamen, that they reported that the means should be pursued on the preferable method of a voluntary principle, with a due regard to economy.

In 1852 and 1859, the ships comprising our fleets were of a different type to those of the present time, and the crews recruited to man them were of such a different character, that the expressed opinions of many Officers of experience respecting the effect of impressment bears more directly upon the Navy of the past than upon the Navy of the future. It may be assumed now as unquestionable, not only that the power of impressment as it existed in the 18th century with France and Spain could not be successfully enforced, but that its application would be comparatively without value, for a promise to collect landsmen and untrained seafaring men, suddenly called on board an ironclad, would be worse than useless; in fact

would be a cause of danger. The advantage of retaining the power of impressment is in the case of a prolonged war, when there was sufficient time to give a certain amount of gunnery training at home ports before the men were embarked; under any circumstances the power of the Crown to demand compulsory service should never be left in doubt. The Commissioners, in the concluding paragraphs of their Report to the Queen in 1859, lay down the principle very distinctly in the following observations:—

“When, however, everything shall have been done which prudence can suggest to furnish in time of peace reserves available on the outbreak of war, there will remain, as a last resource, your Majesty’s undoubted right to the compulsory service of your Majesty’s subjects by sea as well as by land, in case of actual danger to the country.”

The ultimate resource of impressment is thus maintained.

Another compulsory plan of obtaining seamen, based upon a system of ballot, was brought to the notice of the Committee of 1852, and was also examined by the Commissioners of 1859, but, although containing suggestions of great value, it was not adopted or recommended. The chief principle of the ballot scheme was to obtain a sufficient number of seafaring men for the requirements of the Navy in time of war, without having recourse to the severe and sweeping method of general impressment. The plan proposed was that after the services of all seafaring men have been called for by proclamation from the Crown, all such men shall present themselves for ballot, and the number required having been taken, the remainder are exempt from the action of the proclamation, and are made free from service. This plan, it was urged, would take away from the harsh and compulsory character of impressment, and yet yield a sufficient supply of men. The scheme was not, however, considered advisable, chiefly upon the ground that it would be difficult to apply the ballot to a floating or non-resident class of the population. This objection would probably be found insuperable when applied to the seamen of the Mercantile Marine, but there is no reason why a system of ballot might not be found advantageous if applied to our fishermen and boatmen.

It certainly would be equitable, and by taking a percentage according to what was required, the number raised would be sufficient for the wants of the Navy, and yet the interests of the maritime class would not be unduly injured.

In order that such a ballot system should work correctly it would be necessary that a register, such as exists in the other maritime Powers of Europe, should be taken of fishermen of all classes, boatmen, and others occupied in seafaring pursuits on the coasts. Such a registration might prove to be most valuable, and this addition to the knowledge of the maritime resources of the Empire should certainly be at the disposal of the Admiralty.

The investigation of the Committee, however, clearly led to the conclusion that it was time for an entire reorganization of the system of manning, and also for the adoption of a voluntary reserve, and proposing their scheme they also quoted the opinion of the Finance

Committee of the House of Commons appointed in 1828, and which was thus given :—

"The establishments of this country should be regulated, not with reference to the unusual circumstances of the late war, or to the probability of being called upon to make a similar exertion, but rather with reference to the policy of depending mainly on our Navy for protection against foreign invasion, and for the meeting and attacking our enemies."

The scheme of general and continuous service, which was recommended by the Committee and was adopted by the Board of Admiralty in 1853, is still the method in force for manning our Navy, the occasional alterations, that have been from time to time made by successive Boards, have been in minor matters, and have not affected its broad principles.

The system as at present in operation is so well understood that it is not necessary to notice its regulations in detail, but as it has entirely altered the character and the class of men who now man our ships at sea, it will be expedient to ascertain its comparative value in supplying efficient and able-bodied men for actual service afloat, and also for power for maintaining a trained and disciplined Reserve.

It was considered that the organization of a permanent Navy rested chiefly upon the entry of boys, and it was expected that by giving those boys the advantage of an early training on board ship, they would, from habit and association, become attached to the Service, and that they would eventually, through their education and continued training, become a most valuable force. But as it is evident that the expense and trouble of this training would be of no avail if they were permitted when grown to manhood to have the choice of leaving or remaining, it was required that they should enter into an engagement to serve for ten years from the age of eighteen, and that at the expiration of that period they were given the option of leaving or continuing to serve to complete the time of service required to enable them to obtain a pension.

The prospective advantages, offered to those who volunteered under the new Regulations, were very considerable. Men were allowed to count their time for pensions from the age of eighteen instead of twenty, and only to serve twenty years instead of twenty-one. Liberal rates of pay were fixed, and a higher class of able seamen was established under the name of "leading seamen;" separate messes were given to the petty officers; the position of the warrant officers was also greatly improved. In consequence of these measures, it was found that there was no difficulty in obtaining the annual number of volunteers required; and now that the continuous service system has been in working order for nearly thirty years, and seeing that it has not failed in maintaining the establishment of seamen voted by Parliament, it must be considered to be a successful method of manning. There are, however, certain faults in its results which, being inherent in the system, must always exist so long as the system is maintained in its present form. The greatest and most serious of these is that of crowding our ships with lads, who, although well-trained and educated in the trade of the ships at home, are not, either by age or by physique, sufficiently

bodied to perform with efficiency the duties they might be expected fulfil in time of emergency. The second grave fault in the continuous service scheme is that of the expense. The cost of the training system, and the expenditure on account of the pensions, form a considerable charge upon the Navy Estimates. It is, however, to the extreme youth of the complements of our ships in commission that attention has chiefly to be drawn, and this is a subject of the great importance.

Upon an examination of the Returns since the commencement of the system, it appears that the annual numbers of boys entered have averaged approximately 3,000, and the total number of boys in Service have varied from a maximum of 9,265 in 1861-62 to 4,700 the number voted for the year 1881-82, and are increased or decreased according to the requirements of the Service.

A Return furnished to the House of Commons by the Admiralty in June, 1876, shows the number of boys entered since the year 1818 and traces their history during their service as boys, showing the number who invalided, died, or deserted, together with the number remaining in the Service at the end of each year.

This Return<sup>1</sup> was preceded by a series of very valuable annual Returns,<sup>2</sup> also furnished by the Admiralty to the House of Commons giving the numbers of first-class boys, second-class boys, *bonâ fide* seamen, Coast Guard fleet men, borne, rated, entered, or who left Service in each year, and finally, in July, 1879, the Admiralty gave a Return of the numbers serving on 1st January of that year, giving the ages of the men, and whether single or married. These Returns together with an annual statistical Return of the engagements of continuous service men, give ample means of investigating with accuracy the actual working of the continuous service system.

Taking as a basis of analysis the numbers voted in the Estimates will be seen that for 1881-82 they provide for a total force of 58,100 men and boys. Averaging the details of the votes, it will be approximately correct to estimate the numbers as follows:—Commissioned Officers, 2,769; subordinate Officers and Cadets, 617; warrant officers, 826; petty officers, seamen, &c., 30,988; boys, 4,700; Coast Guard, 4,000; Marines, 13,000; Troop Ship Service, 1,200—total 58,100.

As the Estimates do not give separately the numbers of stokers, artificers, and domestics, it is useful to take the proportion of these men as deduced from a Return laid before the Commissioners in 1858-59, observing that these proportions are nearly the same as those now existing, with the exception of a slight increase in the establishment for the engine-room, and some modification in the numbers borne of petty officers and leading seamen.

Upon a total number voted of 52,000 there were—Commissioned Officers, 2,857; subordinate and warrant officers, 1,718; petty officers including artificers of this class and leading stokers, 5,434; leading seamen, 763; able seamen, 6,262; ordinary seamen, 5,913; ordinary

<sup>1</sup> Printed by order of the House of Commons, June 23, 1876.

<sup>2</sup> Extracts from these Returns are given for reference at the end of the Essay; they are too extensive to be given in full.

second class, 1,904; bandsmen, stewards, and cooks, 1,454; boys first-class, 2,383; boys, second-class, 2,745; supernumerary boys for disposal, 767; supernumerary Officers and men for disposal, 1,700; shipwrights and stokers, 3,260; marines, afloat 8,755, on shore 6,000—total borne, 52,032.

Thus it will be seen that in 1858 the number of petty officers and men who were *bond fide* seamen was between 19,000 and 20,000.

In 1875 a statistical Return furnished by the Admiralty to the House of Commons gave 19,283 as the total number of continuous service blue-jackets serving on the 1st October of that year. Repeating these average numbers, and applying them to the votes of the present year, it may be estimated that the actual number of petty officers and seamen who are *bond fide* seamen amounts to about 20,000 men. Taking, then, this number as a fair average of our combatant sea force on active service afloat, and adding to these the contingent marines also serving afloat, and which numbers this year 6,300 men, it appears that the total combatant<sup>1</sup> force afloat, exclusive of Officers and boys, equals approximately 26,000 men. This force, which is sufficient for the purposes of a peace establishment, must now be estimated, when considered as a combatant force, by the ages and length of service<sup>2</sup> of the men that compose it.

Upon examination of the Return of the ages of the men and boys of all classes serving in the Navy, on the 1st January, 1879, the following useful data are obtained. The Return includes all seamen, marines, stokers; artificers, domestics, and boys, but excludes Officers. The total number thus serving on that day was 53,050. Of these there were—Under 20, 10,933; 20 to 25, 17,101; 25 to 30, 9,677; 30 to 35, 6,157; 35 to 40, 5,636; over 40, 3,546; total, 53,050. Upon referring to the Returns giving the numbers<sup>3</sup> of ordinary seamen rated for boys, we find that the average thus rated in each year is at 2,500; and as all boys are rated at 18, we arrive at the following results, which are approximately correct for any given year:—

*Bond fide* seamen, exclusive of boys.—Age 18, 2,500; 19, 2,200; 20, 2,163; 21, 2,012; total actually serving of and under 21 years of age, 9,000.

The waste of 7 per cent. upon which the above figures are calculated is an average taken upon the loss to the Service after boys are rated, and which has been found to be approximately correct. The waste upon the boys is much greater. Thus, taking an average estimated from a Return<sup>4</sup> given by the Admiralty in 1876, it may be seen that the annual loss is about 18 per cent. The Return for the year 1874–75, which fairly represents the normal annual loss, is given:—

<sup>1</sup> The "non-combatants" include artificers, stokers, bandsmen, stewards, domestics.

<sup>2</sup> For comparative length of service, see Appendix No. V.

<sup>3</sup> These numbers are dependent upon the entries and discharges. The average given above is taken from the Returns of several years since 1870.

<sup>4</sup> It is very remarkable in looking at this Return, which is given for a period of twenty years, to observe how the averages of the causes of discharge agree.

# OF OFFICERS AND MEN FOR THE NAVY, ETC.

Year.	Number of boys entered.	Discharges.							Num of bo remai each y
		Purchase.	Invalided.	Died.	Deserted.	Disgraced.	Unfit, Objection- able, &c.	Total.	
1874-5....	3,079	25	208	22	263	2	31	551	6,20

There are circumstances connected with the training of boys by State which require some notice as bearing upon the system of continuous service. It has been observed that boys trained at an age, brought up and fed under either the care of the Government or Local Boards, do not, as a general rule, as they grow towards manhood compare favourably either in physique or in capacity with those who have been brought up under home influences, or who have had great extent to rely upon their own exertions for their maintenance.

Thus a very decided difference is noticeable between the young fishermen who volunteer for our second-class Naval Reserve, and our own ordinary seamen of the same age, the former being much superior to the latter in strength, stature, and self-reliance.

And the same fact is observed upon the examination of the French "mousses" (boys) trained for the Naval Service on board the "Austerlitz" at Brest, when they are compared at similar ages with the men who are taken from the fishermen belonging to the Maritime Inscription. The Returns taken some years ago of the weight and stature of the boys received from Greenwich School, showed that they were inferior in those respects to the average of other boys of the same age.

At the institution in Brest for the education and training of the "Pupilles de la Marine," which is a school analogous to the Greenwich Lower School, this singular comparative inferiority of size is also very marked. The boys trained for the French Navy are taken from a class almost identical with the classes from which our own boys are taken; and, therefore, it is probable that the causes which create an inferiority in physique on the other side of the Channel, correspond to those at home. In both cases this deficiency of stamina is possible in a degree due to the stock from which they are taken, but there can be no doubt that it is to the overcrowding of these lads at the institution through want of sufficient accommodation and air space that the serious defect is chiefly attributable. Under the French system, growing lads are thus crowded in one ship, and in our own training ships there exists an exactly similar system.

It is well known that, for purposes of health, growing boys require more air space than adults, and the vitiated air necessarily breathed every night by the thousands of boys who pass through our training

ships must unquestionably have an injurious effect upon their ultimate development into manhood. It is not within the scope of this I to dwell further upon the subject of our training system, which admirable results as far as is possible with the conditions under which it works.

But there can be no doubt that it would be advantageous to enlarge the space at present assigned for the boys' sleeping quarters. It is also a matter of experience both in the French Navy and in our own that where too many young lads are trained together, they lose to a considerable extent their powers of self-reliance, and being accustomed to work in companionship they trust too little to their own individual exertions. The habits of personal hard work, and of obtaining confidence in their own judgment and general resources, which are natural to that class of men from which our Naval Reserve are recruited, are thus necessarily absent from the young ordinary seamen trained from boys by the State, and are only developed later on after years of active service. This much may be said, that although late in developing, nothing can exceed the value of our trained men when they become our petty officers and seamen gunners.

It is a necessary consequence of the continuous service system, as at present carried out, that the ships in commission should to a certain extent continue the training which was commenced in the training ships in our home ports, and therefore the extreme youth of a large proportion of the complements of these ships cannot be avoided. This, though a matter of unimportance in time of peace, would be a serious element of weakness in the case of sudden hostilities, as the ships' companies would not proportionally, and with regard to physical strength of their men, be in the same preparation for battle as the crews of the ships that would probably be opposed to them. Take, for instance, an ironclad of the first class of our Navy met with a similar vessel under the French flag, both having complements of 600 men. Our ordinaries of the first and second class, and young able seamen of the ages of 18, 19, 20, and 21, would be opposed to trained men taken from the Maritime Inscription, of the ages of 23, 24, and 25, men who in stature and strength almost equal the splendid force of Naval Reserve men that we have enrolled from the northern coast.<sup>1</sup> The continuous service system when first organised in 1853 was, to a considerable degree, an experiment, and was the first attempt to man our ships-of-war upon a regulated principle. It has proved to have been most successful in many of its results, especially with respect to establishing a very superior class of officers, and it also has produced that fine body of trained seamen who now constitute our Coast Guard. It has also entirely put an end to the uncertainty of manning. Ships when commissioned are no longer kept waiting for months for their crews, and the Admiralty is always at their command the number of men that they may require.

These results are certainly very important, but there must also be

<sup>1</sup> An investigation of the French Maritime Inscription and Military Sea Commission will be given in its proper place, upon considering the strength of our Reserve.

exist in the system, as at present worked out, that grave defect of too great proportion of lads, and also the corresponding defect of protracted period of time expended for training purposes. As first result of the system, there are every year placed at the disposal of the Admiralty over 2,000 young lads of eighteen years of age, who have to be distributed in the most expedient manner. Some are sent to complete the complements of ships in commission in various parts of the world; others have a further training in special training ships; others are sent to the reserve ships; and the surplus yet remain to crowd the ships and barracks in our home ports. The difficulty that thus annually presents itself is to absorb into active service the excess of young seamen.

It is of no use to reduce the entry of boys, because these large numbers of youths are ultimately required in the course of the service to fill up the vacancies created by the waste arising from sickness, desertion, and other causes, and also to complete the vacancies in our complements caused by the continuous drain of our old seamen and petty officers into the Coast Guard.

There is also a serious evil connected with this part of the system.

Several hundreds of lads thus thrown together, with a sudden sense of comparative freedom, are naturally subject to great temptations, and many of those who leave the training ships well behaved and of promise become addicted to injurious habits. It would be difficult to over-estimate the harm that is thus caused. This aspect of the subject, however, will not further be dwelt upon.

As it is the youth of such large bodies of our seamen that is the chief fault of the continuous service system, all propositions for other methods of manning must be based upon a later age of entry. It may be assumed as a principle, that in view of our ships in commission being always kept in preparation for battle, in consequence of the possibility of sudden hostilities, no man who is expected to take place at a gun and actively to take part in war should be less than twenty years of age.

If such a principle were adopted, it would very greatly and would properly strengthen our ships' companies, but it would be necessary, in case it were decided to retain intact the present continuous service system, to extend the training by means of flying squadrons, distinctly organized for training purposes, in which ordinary seamen would remain until they were of the proper age and strength to be sent upon regular service. The drawback to such a system would be its additional expense.

The establishment of barracks, as now contemplated at all the home ports, would greatly facilitate the execution of this principle.

The following methods may now be proposed as likely to lead to a satisfactory way of obtaining sufficient men, without the above waste of time and expenditure.

Boys are now willing to enter the Navy in such numbers that it is probable that the age for entry could be considerably raised. The entry of novices between the ages of nineteen and twenty-one might also be encouraged.

The results obtained from those men who were trained in the "Illustrious," in the years 1854-59, were very favourable; in fact, it may be assumed that whilst maintaining a modification of the continuous service principle, it would be expedient to combine it with a system that would enable men of a mature age to be entered.

The present pay, together with the prospective advantage pensions, will, no doubt, when clearly understood, attract a sufficient number of volunteers. The general expense to the State would be less, and the ultimate advantage would be greater. The time required for training purposes would be comparatively short. No better proof of this exists than in observing the rapid manner by which a lad of twenty, taken from the agricultural classes, is, by means of an excellent training system, converted into an efficient marine artilleryman.<sup>1</sup>

It is mainly to the recommendations of the Royal Commission in 1859 that we are indebted for our existing Naval Reserve. The Commissioners were appointed in the first instance to inquire into the best means of manning the Navy, but they were also directed especially to report as to the manner in which the services of the seamen of the Mercantile Marine, and of the seafaring population generally, could be best made available for the requirements of the Navy.

With respect to the first part of their inquiries, they considered that the continuous service system, introduced through the recommendations of the Admiralty Committee in 1852, would, if fully carried out in the manner contemplated, produce sufficiently beneficial results, and ultimately place the peace establishment of the Navy in a satisfactory condition. They also proposed various improvements with respect to the position, pay, and comfort of the warrant officers and seamen, all of which have been mostly adopted. They then directed their attention to the best methods of obtaining a Reserve that would enable our peace establishment to be immediately placed on a war footing, and in examining these questions, they extended their inquiry into the Naval Reserves of the Continental Powers, in order to place our own Reserves at a strength commensurate with the forces that might be expected to oppose them.

At the period when the Commissioners had submitted their recommendations, Italy was not an European Power, and could not then be taken into consideration when estimating the numbers required for the Naval Reserves. But immediately that Sardinia, Italy, and Sicily became united as one kingdom, every effort was made by the Italian Government to establish their Navy upon a strong footing. Their remarkable extensive seaboard, and the known excellence of their sailors, gave great facilities for this purpose. The determination of Italy to become a Naval Power was chiefly shown in the year 1871, after the conclusion of the Franco-German War, and when European nations generally

<sup>1</sup> Some further observations respecting the subject of manning, and what would probably prove to be good methods of attracting a satisfactory class of merchant volunteers for a term of service in the Navy, will be given after the subject of the Royal Naval Reserves has been considered.

were made aware of the importance of keeping their forces in a state of immediate preparation for hostilities. At this time the Italian Government instituted that most stringent series of enactments called the "*Legge Fondamentale della Leva Maritima*," which is most remarkable, when it is considered that they were enforcing extensive compulsory service upon a nation just made sensible of freedom.

The whole of the seaboard population were placed under a system of maritime inscription, and were liable to be called upon at service according to the requirements of the Government. Various regulations that have from time to time been made for practical application of the laws, bear a close analogy with those existing in France, and need not here be noticed, except to observe that as the Italian Navy is not now sufficiently large to train great numbers of men, the inscription is divided into two classes, those are called into immediate service, and those who are said to be on limited leave.

In 1880, the Italian Maritime Inscription comprised 210,267 men including fishermen, boatmen, merchant seamen, artificers, stokers and shipwrights. Looking at the great elements that exist on the coast of Italy for the development of a strong maritime Power, it can be no doubt that when the state of her finances permits the construction of a large fleet, she will, owing to her great resources in seamen, necessarily become a most powerful naval nation.

Germany also, in 1871, promulgated laws which constituted the Navy upon a basis of compulsory service which can be developed in proportion to the naval requirements of that Empire.

It is, however, to the system of manning, as pursued in France, that the greatest importance must be attached, as contrasted with the system adopted in Great Britain.

Men composing the fleets of the French Navy are derived from three sources, viz., a maritime inscription, and a military conscription. The former generally supplies about two-thirds of the ships' complement, and the latter one-third. The quota furnished by the military conscription consists of the men who draw the lowest numbers at a ballot for military service, and thus when the young men who have attained the age required by law present themselves for the ballot at the chief towns of the departments, those who draw out of the lowest numbers are destined by the Minister at War for service in the Navy, in accordance with the requisitions that may have been made by the Admiralty, the higher numbers having the choice of electing to serve in the Army. The men, when so taken for the Navy, are termed, when on service, seamen taken from the "*Recrutement*."

These men, upon arriving at the age for being called out on service, proceed to their nearest military ports, and are received into the naval barracks. After remaining the time necessary for receiving their clothing, and getting a certain acquaintance with naval routine, they are sent away to the school ships of instruction to go through a year of training before final embarkation on board ships-of-war.

<sup>1</sup> Of this number 148,390 are composed of men specially following or connected with seafaring pursuits; the remainder are workmen, carpenters, &c.

As a general rule, a considerable part of the men of the "Reiment" are sent to Lorient, to be there trained in a special course of musketry, in order to form what are termed "*les compagnies de débarquement*." They represent to a certain extent the non-sea element on board the French ships, and thus are similar in respects to our marines. Their period of service is for five years, the same as that for the Army; and at the end of that time, if they are not re-engaged, or are not considered desirable to be re-engaged, they quit the active service of the Navy and pass into the Reserve.

Whilst in the Reserve they have to present themselves for two or three days' training in the home ports once in every two years. They ultimately pass into the Reserve of what is termed the "Maritorial Army."

The men of the "Recrutement" are generally intelligent and energetic, but cannot be considered as equal to the seamen of the inscribed Marine. They are mostly employed in such positions as do not require special sea-like knowledge. French Officers of experience, however, think of them as a component part of the complement. It is found that they are very steady at the guns, are readily trained, and are amenable to discipline. It is certainly instructive to see how men, when they join the barracks, willingly and even cheerfully submit to the new circumstances in which they find themselves, and are ready to submit to whatever special training it is considered the best fitted for.

There can be no doubt that the law of 27th July, 1872, establishing the principle that every Frenchman is bound to perform military service, and suppressing all previous systems of obtaining substitutes, has had very good results.

The system of obtaining a proportion of men from the maritime conscription is of great use to the French Admiralty, as they have in their power to take as many or as few men as the exigencies of the Service may require, and it also relieves the strain on the resources available from the Maritime Inscription, and thus the compulsory service of merchant seamen and fishermen can be occasionally mobilized when desirable.

It is thus evident that provided sufficient time is given for training the recruits, the French Admiralty have by means of the "Reiment," great powers at their disposal for manning their ships in the case of a prolonged war, independently of the resources available through the population of the seaboard.

The Maritime Inscription has to a certain extent changed its character since the law of universal military service was passed in 1872. Previous to that time a sense of injustice was felt in consequence of the existence of regulations which pressed more heavily upon the population of the seaboard than upon the population of the interior. But now the law which demands a certain number of years of military service from all who follow the profession of the sea is no longer to be exceptionally severe, and consequently this service is much more cheerfully rendered.

The institution of the compulsory service of all seafaring classes

has existed for so long a period, practically since the year 1784, that it has naturally become recognized as one of the duties that, as a matter of course, falls to the lot of all boys who decide to follow a seafaring life, and thus may be said to have become a national custom. This compulsory service in the French Navy is not, however, necessarily imposed on the people merely because they happen to be dwelling on the sea-coasts, for there is this choice open, if a man decides not to follow the profession of the sea, his name is not then placed on the list of the inscription, but in that case he has to perform his five years' active service in the Army. In the contrary case he presents himself before the Syndic, and is inscribed as liable for service on board the ships of the State.

It is not of importance to notice the minor rules that govern peculiar cases, and introduce slight modifications of the system. The latest law upon the subject, viz., that of 25th October, 1795, is practically unchanged, and this distinctly lays down the simple rules that apply to sailors of whatever grade, and of all descriptions, navigating either the ships of the Navy, or in vessels of commerce, and all who are employed in the coast navigation, in the sea-fisheries, or in the fisheries of the rivers up to that point where the tide reaches, and the fishermen employed in boats within similar limits, are comprised in the Maritime Inscription.

In 1879 the total numbers on the list of the inscription were 162,830; and in 1878, 161,192. 78,000 of the men inscribed in 1878 were classed as being between the ages of eighteen and forty, a term what is termed the "Levée Permanente."<sup>1</sup> The remainder is composed of about 50,000 "Inscrits Provisoires," who chiefly consist of youths who have not completed the requisite age or term of service in fishing boats and merchant ships to be eligible for the Navy, and there are also about 40,000 men unemployed, the majority of whom cannot be deemed available for active service.

Of late years, what used to be the chief difficulty in the French Service, with regard to the practical working of their system of manning, has been much lessened, and they now get a very good class of men to re-engage, and thus they are able to have what may be considered an almost permanent establishment of petty officers and good seamen, and thus the fault arising from the constant passing in and out of the younger seamen is not so much felt.

Much of the advantage thus gained by the French Naval Service is due to the scale of higher pay given to re-engaged men, and also to a liberal system of pensions, not only granted to petty officers and good seamen after twenty-five years' service, but continued to their widows and orphans.

The value of a system of compulsory service, considered with respect to a reserve in time of war, principally depends upon the number that can be trained during peace. At present an average of nearly 4,000 men of the Maritime Inscription, and 1,500 men from the militia

<sup>1</sup> The numbers of the *Levée Permanente* represent the real strength of the Maritime Inscription.

conscription, are annually trained in the home ports and embarked on sea service.<sup>1</sup>

In 1879 there were about 6,000 men training either in the transport ships at Brest, in the gunnery ships at Toulon, in the musketry school at Lorient, or in the Flying Squadron, and the numbers actually serving in ships-of-war in commission were slightly in excess of 18,000. To these must be added nearly 3,000 trained men, who have completed portions of their sea service, who are temporarily in naval barracks, engaged in dockyard duties, or upon service in ships on shore. Thus it may be estimated that at present the peace establishment of the French Navy comprises about 21,000 combatants immediately available in case of hostilities, and 6,000 men going through annual training, of whom one-half may be said to be sufficiently advanced to embark in an emergency.

In case of war she would have in addition, available from the "Levée Permanente," a force which, excluding the numbers actually on service in the fleet, consists of about 54,000 men, and to this must be added the naval reservists belonging to the military conscription. All these would have been trained in early life to the discipline, drills, and habits of a man-of-war, and would rapidly conform themselves to the circumstances and requirements of modern warfare.

It must also not be overlooked that the "Infanterie de Marine" can within certain limits be utilized for naval purposes. In 1879-80 the force comprised 775 Officers and 16,889 men, of whom 8,000 were in garrison in the colonies, and the remainder were quartered at Toulon, Rochfort, Brest, and Cherbourg. To these have to be added the "Artillerie de Marine," comprising 270 Officers and 4,287 men, of whom 1,087 were also in garrison in the colonies, and 3,200 attached to the dépôt at Lorient.

In consequence of the vote for the garrisons of the colonies for the part of the Naval Estimates, these troops are placed under the command of the French Admiralty, but they are never embarked in ships-of-war and have no more acquaintance with the drills and discipline of the Navy than have the soldiers who are embarked in our troop-ships on service in India. But there are certain circumstances which render them in other respects to the naval Service. Their barracks are situated in the naval ports, generally adjacent to the dockyard, and when quartered there they are under the command of the "Préfet Maritime" (the Admiral), and in case of emergency the "Infanterie" and "Artillerie de Marine" might be employed in whatever manner the Admiralty thought expedient.

The best sailors that France obtains for her fleets are taken from the northern and north-western coasts. Nothing can exceed the efficiency and able-bodied seamen, of the men engaged in the sea fisheries of Newfoundland and the North Sea. They may be compared in general physique and stature with that fine class of fishermen who are occupied in our own deep sea fisheries, many of whom

<sup>1</sup> In 1878 it was estimated that the number of re-engaged men and petty officers belonging to the Maritime Inscription was about 8,000. The numbers engaged in active service in the Fleet include these under training.

enrolled in our Second Class Reserve. It is impossible when seeing these fine young seamen arrive at the barracks, willingly prepared to go through their training and perform their forty-two months<sup>1</sup> service in their Navy, not to realize how unfortunate it is that Great Britain, with her unparalleled extent of coast, and her numbers of seafaring people, cannot command the services of her subjects, and avail herself of the great maritime strength thus placed by nature at her disposition. If it was possible to adopt a system of compulsory service, such as exists on the Continent, the supremacy of Great Britain on the seas could never be questioned.

It would not be much to require from all her seafaring people to give their time between the ages of twenty-one and twenty-four to the service of the State, and how great would be the strength thus given to the nation! Not only would our fleets be manned by practically an unlimited number of trained, able-bodied men, but our coasts would be secure from invasion, because they would be guarded by a population trained to war, and accustomed to arms. Every seaport and every fishing village would then in its degree be prepared to resist an enemy. But as such a desirable state of things cannot be considered as practicable, it becomes necessary to use every endeavour to organize and apply our national strength by means of voluntary service; that is, service so well paid or offering such advantages as will attract men to serve on board our ships-of-war.

But no system, except such as would involve expenses greater than any Government could contemplate, can ever give us the resources that are immediately and willingly placed at the command of other nations.

Before quitting this part of the subject, it is desirable that it should be recognized that a great mercantile Power is not necessarily a great naval Power, and there is no relation whatever in these days between the numbers of the crews of our merchant shipping, and the numbers available for the requirements of our Navy in war. It would be a very grave error to suppose that we could rely as a nation upon the resources which a large mercantile marine might be expected to develop. The only strength available from that source is what may be derived from the numbers, comparatively few, that are willing and sufficiently efficient to form part of our reserves; but these, however well trained in the drill ships and shore batteries, cannot be considered equal to men who have passed three or four years' active service on board ships-of-war.

Having thus briefly investigated the resources of other naval Powers, as at present developed under this system of compulsory service, it will be needful to examine into the resources that are at the command of Great Britain, as established by methods of voluntary engagements.

These consist of the Coast Guard, the Marines not employed afloat,

<sup>1</sup> The prescribed period of service is five years, but this is seldom required; thus from 1868 to 1874 the average time served was thirty-six months. From 1874 to 1881 the average has been forty-two months. Upon this subject see "*Cours d'Administration*," by M. Fournier.

the Pensioners, and the Royal Naval Reserve, and also the unpaid corps of Artillery Volunteers.

The establishment of that part of the Reserve Force which known as the Naval Coast Volunteers was the result of the recommendations of the Committee of 1852, and the principles which go to their organization were, in a considerable degree, similar to those which were based on the regulations for the enrolment of the Sea Fencibles in 1798. Upon referring to the Return given, pursuant to an order of the House of Commons, in 1858, for a copy of the act under which the Sea Fencibles were organized and their duties defined, it appears that the numbers of men actually enrolled in 1811 were distributed as follows:—East coast of England, 3,042; south coast of England, 4,551; west coast of England, 3,466; Scotland, 584; Ireland, 11,812—total 23,455.

These men were to be raised, it is observed in the Order of Council giving the necessary powers to the Admiralty, for the purpose of assisting in the defence of the Kingdom against invasion, and it does not appear that there was ever any intention of employing them in active service at sea.

In accordance with the recommendations of the Committee of 1852, an act was passed in 1853, giving power to the Admiralty to raise a corps of men, not exceeding 10,000, who were to be called Royal Naval Coast Volunteers. These men were to receive suitable pay and allowances, and to be trained and exercised for twenty-eight days each year. They were, if required, in case of war to be called into service afloat, but their general usefulness was much impaired by a part of the Act which directed that they were not liable to be sent beyond 100 leagues from the shore of the United Kingdom. As many men of a very inferior class joined this Reserve, but the Reserve was gradually eliminated, and in the evidence given before the Commission in 1859, it appears that there were then 6,869 men of that description enrolled. These came from the following districts: East coast (Cromer to Berwick), 599; Harwich district, 509; Falmouth district, 471; Weymouth district, 468; Falmouth district, 468; Milford district, 1,212; Liverpool district, 506; Leith district, 288; Clyde district, 288; Queenstown district, 424; Kingstown district, 424; total 6,869. The majority of these were fishermen and boatmen.

It will be noticed that the Leith district, which includes the coast of Scotland, obtained the largest number of volunteers. The Captain of that district was of opinion that these would be valuable as gunners but not as seamen, and stated, in reply to a question respecting their size, "that they were a remarkably fine race of men."

The general character of the evidence regarding the Coast Volunteers was, however, considered not favourable with respect to their usefulness for manning a fleet in an emergency, and the entry of a new class of reserve has been stopped.

It is to the investigation made by the Commissioners in 1859 into the resources of our Mercantile Marine that we are indebted for the following evidence.

<sup>1</sup> Evidence given by Commodore Charles Eden, then commanding the *Guard*.

establishment of the Royal Naval Reserve. The regulations under which this Reserve was formed were chiefly framed in accordance with the suggestions of the shipping masters at the principal mercantile ports, and who were the witnesses most conversant with the character of merchant seamen. It is unquestionable that the advantages offered to these men to induce them to volunteer were the most attractive, and combine the best method of obtaining efficient force with the least public expenditure. The conditions of entry as originally established and modified by later regulations may thus be summarized. The candidates should be British subjects, free from physical defects. The age on first enrolment is not to exceed thirty years, and the minimum standard of height is five feet four inches, except when special circumstances may render it desirable to enter smaller men.

There is no restriction with respect to the seafaring employment of a Reserve man, except that if he wishes to serve in a merchant vessel for a voyage exceeding six months, he must obtain leave from the Registrar of Reserve. He is required to have had a certain amount of sea service, and if not an apprentice, must have completed a year's service as an able seaman.

After entry, he is required to perform twenty-eight days' drill each year, which, however, to suit his convenience, may be performed in broken periods of not less than one week. When called out to service in the Navy, he is treated in all respects as our regular continuous service men, and is given equal pay and allowances. He is then liable to serve for five years, at the expiration of which service he may demand his final discharge.

Each Naval Reserve man is entitled to an annual retainer of 6*l.*, in quarterly instalments, and when on drill he is paid at the same rate as a naval able seaman, and receives liberal allowances for food and lodging. A man who has belonged to the Naval Reserve for two years becomes entitled to a pension at sixty years of age of 1*l.* a year. There are also other advantages given to Reserve men who have served in the Royal Navy in time of war.

The Commissioners based their recommendations upon the basis that there existed an available number of merchant seamen from whom this force could be selected, of not less than 100,000 men, it is interesting, with the experience we now possess of the comparative inability of our Mercantile Marine to furnish able-bodied men to the Navy, to see what was the state of opinion upon the subject in 1858-59. "That the force," observed the Commissioners in submitting their plan for the Reserve, "may be ready in case of emergency must be selected from men who will never be long absent from ports from which they hail. It appears, from the Returns that have been furnished to us, that the coasting trade of this country employs 63,000 men, including masters. The Returns do not comprise women and others who might be made available for the purpose. In addition the Baltic and Mediterranean trades and the voyages to the West American and other ports, including the seamen employed by the large steam packet companies, we shall have not less than 100,000

who are never absent for any length of time from the ports of the country. We propose that not less than 20,000 such men, as in respect of age, ability, character, and permanent connection with respective posts may appear most suitable for the purpose, shall be selected from this number."

It has been found that instead of 100,000 men there are certainly not 30,000 available, and that instead of selecting 20,000, we can at present rely upon obtaining from all sources an average of 12,000 men. Until 1870, the Royal Naval Reserve was exclusively composed of men who had served in the Mercantile Marine, but that year, as a consequence of the Report made by a Committee on the practical working of the regulations, it was decided to establish a limited number of men called a Second Class Reserve, and the following numbers were then established. First Class to consist of 12,000 men; Second Class, 500 men; the latter being temporarily considered experimental. These Second Class men were soon seen to form a valuable part of the force, and their numbers gradually increased until now we have approximately these proportions—First Class, 12,000; Second Class, 5,000.

The principal qualifications, as at present established for entry into this most important branch of the Reserve, are briefly as follows. The candidate must have followed a seafaring life, either in foreign or home-going, coasting, fishing, or other vessels. His age on entry must be over thirty or under nineteen. He must be a British subject, and be free from physical defect, and eligible in respect of health and character. He is required to drill twenty-eight days in each year, as in the case of the First Class Reserve man, he can divide his period into attendances of not less than one week at a time. His liability to serve is the same as that of the First Class. The advantages offered are these. He is given every year a retainer of 2s. paid in quarterly instalments, and a suit of uniform clothing. He is not entitled as a Second Class man to a pension in old age, but becomes eligible for promotion to the First Class, half of his £100 Class time counts. When called out on service he receives the same pay and allowances as an able seaman, and is entitled to similar portions of prize money and other advantages. When on drill Second Class men are paid as non-continuous service or reserve seamen, and also receive subsistence and lodging money.

The above regulations are found by experience to work well, and give sufficient inducements to encourage men to volunteer. The advantages and disadvantages are exceedingly well balanced. A reduction in the amount of retainer, or any extension of the period of drill, would certainly cause a considerable reduction in the number of candidates. The establishment of the Naval Reserve is undoubtedly the most successful method of placing a force of seafaring men at the command of the Government in time of war that has yet been instituted. The First Class men are the picked men of the Mercantile Service, and those of the Second Class are equally the best of those employed in the fisheries, and an examination of their capacities and numbers is a useful measure of the means at our disposal for dealing with the Reserve systems. The Parliamentary vote for some

## OF OFFICERS AND MEN FOR THE NAVY, ETC.

was for a force of 20,000 men of the First Class, but as this number has never been obtained, the vote for this year, 1881-82, is taken at 18,000, but as it has been found by experience that an average of 12,000 men is all that is furnished by the Mercantile Marine, the remainder of the men that are obtainable are taken from the first population, and supply a general average of over 5,000 men. The exact number of both classes at present enrolled is 17,528.

Upon looking at the Returns of the crews of our merchant ships seems almost inexplicable how such a vast floating population gives such remarkably unsatisfactory results. It may be assumed that the total numbers of seamen that could be considered fit for employment in our Navy must be estimated at less than 30,000 men, and after practical deductions on account of age, physique, and character, arrive at the extraordinary conclusion that a Mercantile Marine, whose force actually employed in merchant shipping has averaged during the last forty years above 200,000 men, cannot be considered as capable of supplying an efficient Reserve of 20,000 men. As a matter of fact it only supplies 12,000, but these numbers might probably be extended to 14,000 or 15,000, if greater facilities were given with respect to attendances at drill, by the establishment of additional drill ship batteries.

Estimates have been made from time to time, based upon the Returns of the Board of Trade, respecting the absolute strength of our Mercantile Marine. An examination of these estimates will involve a demand upon space greater than can be here given, therefore it will be sufficient to observe that all of these give conclusions unfavourable as regards the number of able-bodied seamen serving in our merchant ships. Perhaps the most useful calculations available are those furnished for the year 1873, by the Liverpool Committee. It appears from their Report, that in 1873, the number of men serving in vessels belonging to the United Kingdom was 202,239, and of these 19,840 were foreigners. Of the remainder 182,399 it was calculated by the Secretary of the Committee that more than 20,000 were able-bodied seamen. In 1875, the Board of Trade Return gave the number of men as 207,446. From these the Registrar-General considered that deductions were to be made approximately for a non-seaman class of stokers, servants, and other crew, about 121,000 men, and of foreigners 16,000; thus leaving a number of masters, mates, able and ordinary seamen equal to about 70,000. Of these it was estimated that so large a proportion was composed of apprentices, lads, ordinaries and so-called A.B.'s, that the number of efficient able seamen was only estimated at 28,000.

In 1877, the Board of Trade Return gave 72,800 as the number of able seamen who were British subjects, but no calculation has been made with respect to their efficiency.

There is much difficulty in deducing useful data from the Returns of our Mercantile Marine, as there are no means of ascertaining with sufficient accuracy the proportions of men that are really efficient.

<sup>1</sup> A most useful and exhaustive Return was printed by Order of the House of Commons, March 10, 1881, entitled "Tables showing the Progress of British Merchant Shipping."

seamen. The calculations upon this subject widely differ, and depend chiefly upon the judgment of the person who makes them, as to whether a boy does or does not constitute an able-bodied seaman. But taking a general estimate of the various Returns that are available, it results that the number of our merchant seamen serving in ships belonging to the United Kingdom, who are British subjects, and upon whose regards physique, ability, and character, we can rely as a base for the purpose of manning our fleet or supplying our Reserve, cannot be estimated as exceeding 30,000, or to put the matter in a broader point of view, the value of the crews of the Mercantile Marine, considered as a source of strength to our Navy, equals in an emergency about 30,000 seamen. The scheme for the Reserve, as proposed by the Commissioners in 1859, included a measure which was by no means considered of the greatest importance, viz., the establishment of school ships in the chief commercial ports. Boys were to be trained chiefly with the object of fitting them for the Merchant Service. Instruction was also to be given in gunnery, to make the lads more generally useful for service in the Navy, and much stress was laid upon the probability that the future maintenance of the Reserve would depend upon these trained boys, and it was calculated that 2,400 boys would be sent every year from these school ships into the Merchant Service. These expectations, however, have not been fulfilled.

An examination of the Return of the training vessels that have been established since 1860, and which are, to a certain extent, under the superintendence of the Admiralty and have gunnery instruction attached to them, gives the following results:—

Ship.	Where stationed.	Established.	Class of boys.	Average numbers on board.	Number sent to sea
"Mars" .....	Dundee .....	1870	Destitute and orphans.	300	58
"Cumberland" ....	Helenburgh, N.B.	1870	Street Arabs ..	350	72
"Wellesley" .....	Newcastle .....	1868	Destitute and others.	300	54
"Southampton" ...	Hull .....	1868	Ditto .....	250	24
"Indefatigable" ...	Liverpool .....	1864	Poor .....	250	61
"Formidable" .....	Bristol .....	1869	Street Arabs, who have not been convicted of crime.	250	83
"Exmouth" (late "Goliath").	Grays, River Thames, Essex.	1870	Pauper class chiefly.	550	105
"Clio" .....	Menai Straits ....	1877	Homeless and destitute.	260	
"Gibraltar" .....	Belfast .....	1872	Ditto .....	200	13

The numbers sent to sea in 1879 are in excess of the average, taking that year for an example, it will be seen that 502 boys were sent to sea from the school ships in connection with the Admiral Regulations, of whom 470 went into the Merchant Service.

The total numbers actually on board under training were 2,701. Taking, then, 470 as an average of the number of lads who, trained as the Commissioners originally proposed, elect to go into the Merchant Service, and making allowance for waste from various causes it must be admitted that looked upon as feeders to the Navy and Naval Reserve, through the Mercantile Marine, these school ships are not of much importance, but they are undoubtedly invaluable regards their usefulness in educating and training homeless and destitute children.<sup>1</sup>

In estimating the combatant value of our First Class Reserve Return furnished by the Registrar-General in October, 1876, is of great value, and as the numbers and classes of volunteers are within the last five years very similar, this Return may be taken as approximately applying also to the present time. There were then, out of a total number of 11,990 first class men, 75 competent masters, 60 competent mates, and 4,363 holding petty officers' ratings, altogether 5,094 Reserve men of a most intelligent and capable class. The able seamen are also the picked men of the Merchant Service. The second class men are chiefly obtained from fishermen, especially from those occupied in the North Sea and Scotch Fisheries. They are also a strong and intelligent class, very zealous and willing in their drills, and quick in obtaining a knowledge of their gun and rifle exercises.

Although it may be considered that our whole force of First and Second Class Reserves is generally efficient in physique and capacity it must be conceded that those who belong north of the Tweed are especially valuable.

It would be difficult to bring together a finer body of seamen than the 1,200 Reserve men who belong to the Shetland Islands, and who drill at Lerwick. Trained as lads in the whaling and seal fisheries from the north, and accustomed to duties which demand strength, intelligence, and courage, they become very capable sailors, perhaps amongst the best that Great Britain produces. They are of exceptionally great stature, their average height being five feet eight inches. They are steady, sober, and well behaved, obedient to their instructors, attentive to their drills, and evince a high degree of intelligence and efficiency. As marksmen they are unusually good and make excellent practice in firing at a target, both from the great guns and their rifles. At Stornoway, in the Hebrides, there is also a valuable Naval Reserve, equal in numbers to those drilled at Lerwick but differing in the respect that they chiefly belong to the Second Class. These are also powerful young men, and average in height fully five feet seven inches. Here, as in the Shetlands, the men have a remark-

<sup>1</sup> From the boys sent to sea from the ships that have accepted the terms of the Admiralty Circular of 1875 is being formed a Third Class Reserve; of these there were actually enrolled in 1879 seventy-six.

able *esprit de corps*, and exhibit the same great interest in their and the same great desire to attain a high standard of efficiency. drill ships at Aberdeen and Dundee also receive a good class of in a large degree composed of the crews of our whaling ships. physical appearance and general intelligence of these men are satisfactory, and what is especially remarkable, remembering their lives are chiefly spent in merchant ships and fishing vessels the steadiness and correctness with which they perform their bat drill, marching and counter-marching with great precision confidence. Their knowledge with respect to the management of their rifles is also considerable. Indeed, it may be said that the men who constitute at present our Reserve in Scotland are men who would be found to be very useful and reliable as a contingent for our Navy in time of war. The Reserves drilled in England are not taken from a different class of seamen, and as a rule have not the physical strength of their brethren in the north, but are, almost without exception, steady, reliable, and intelligent men; some indeed remarkably so.

Nothing could be more valuable than are the majority of our Reserves trained in the Port of London, of whom many are or have been serving as mates in merchant vessels, many are petty officers, and others are good capable seamen employed in various places of trade in connection with the shipping and the docks.

The question has occasionally been raised whether, in the event of a national emergency, our Royal Naval Reserves will be found willing or desirous to perform their engagements, and present themselves for active employment in war. Until the time arrives for putting the question on trial, it cannot be answered, but this much is evident that it is not conceivable that any number of men would thus expose themselves to public scorn and ignominy, much less can it be imagined that such a class as we have in the Reserve, men of steady habits, intelligent, self-respecting, and manly, could for a moment fail to come forward; on the contrary, it may be considered as a certainty that our Reserves, as at present constituted, will always form a body upon whose willing services the country can rely, whenever they are called out upon active service by proclamation from the Crown.

It is desirable that our Reserves should be increased to a number not less than was originally proposed. This must be done chiefly by encouraging the entry of men of the Second Class. Judging from the almost stationary character of the First Class, it may be considered that the Reserve from the Mercantile Marine has nearly reached practicable limits.

It could be slightly increased by the establishment of drill batteries near any important commercial port, which has not drill barracks within a convenient distance, and then the First Class might ultimately be raised to 14,000 or 15,000 men.

But it is to the Second Class, the class taken from our fisheries that we must look for any augmentation to our strength, and in establishing additional batteries, near the chief fishery districts, especially on the coasts of Scotland, we could easily raise our

Class Reserve to 8,000 men, a force which would be probably found sufficient for all practical purposes, for the larger the numbers on drill, the less training does each individual man obtain, and thus the general average of efficiency becomes lowered.

In connection with the Standing Reserves, the Commissioners drew attention to a system of short service pensions, established in consequence of the suggestions of the Committee in 1852. The object of the Committee was to increase the number of seamen available for the Navy, irrespective of what might be required for the peace establishment, and to obtain these it was proposed to give our seamen pension after ten or fifteen years' service.

It has been, however, found that any short service pension system is incompatible with the continuous service system, which is essentially based upon the principle that men should continue to serve. Indeed, it is of the greatest necessity in regard to its development and proper working that men should be encouraged to remain and re-engage, and thus any advantage given to men who leave is highly injurious. The chief difficulty even as it works now is to maintain a number of petty officers sufficient to supply the wants of our fleet.

The real value of our trained men can hardly be said to be felt before they reach the age of five-and-twenty, and it is between that age and the age of retirement on a pension after twenty years' service that our seamen give an adequate return for the expense and trouble that the State has devoted to their training.

In the recapitulation of their recommendations, the Royal Commissioners proposed that, in addition to the Royal Naval Reserve of 20,000 men, the Coast Volunteers should be maintained at 10,000, thus constituting a force of 30,000 men raised from oceanic and coast resources. They also proposed that there should be 8,000 short service pensioners, 6,000 Marines, not employed abroad, 4,000 available men for reliefs always maintained in the home port, and 12,000 Coast Guard. It was further proposed to increase the Reserve of Marines by 5,000 men, therefore if the scheme of the Commissioners could have been carried out, the Reserves would have consisted of 65,000 men. But instead of a First Class Reserve of 20,000 men, there are only 12,000; instead of 12,000 Coast Guard there are only 4,000; the short service pension system has been discontinued, as it was not found practicable; the Coast Volunteers have been disbanded, and the Marines have not been increased.

It now becomes necessary, in accordance with the object of this Essay, to make an investigation into the best methods of providing, at the present time and under existing circumstances, an efficient force of Officers and men for the Navy, including the Reserves.

In the first place, with regard to the training of our Officers, it must be admitted at the outset that our naval history is but of little use in considering this subject.

Naval architecture has undergone a complete revolution, and modern ships require very different management and different qualities of those that have to control their movements. A competent knowledge

is now required of such subjects as steam, electricity, and mechanics. The later development of gunnery, together with the application of electrical and chemical power to the management of torpedoes, demand a special education. The conditions which were so useful in developing the capacities of the great Officers who commanded our fleet in past wars have now but little value with respect to the formation of the abilities of our Officers for the future.

Perhaps there are only two qualities remaining necessary and common to both. The first is seamanlike resource, which may be defined as a capacity for handling ships of whatever types under all circumstances of wind and weather. The second great quality is the ability to command, which may perhaps be defined as the power to understand the character, and rightly direct the various capacities of the men who compose the ships' companies. Looking back at the days of sailing ships, it is to be noticed that these qualities were those that were chiefly and almost exclusively required, and our Admirals and Captains were Officers who developed their abilities by their unaided study in later life, and were entirely without State education. The letters and despatches of Lord St. Vincent, Lord Nelson, Lord Collingwood, and of many other distinguished sea Officers, remain as proofs of the high cultivation that is attainable without any system of education beyond the slight preliminary teaching received as a boy before going to sea. But such exceptional instances cannot be admitted to be considered as guides for any general rule. It must be observed that the sea training and circumstances which produced these Officers no longer exist. Therefore, all the arguments respecting the expediency of entering midshipmen at an early age, which have been based upon the results of such early habits of acquaintance with the management of sailing vessels, no longer apply.

The history of the training of our young Officers has been for the last fifty years a series of endeavours to fit in the new requirements of the Service with the traditions of the past. To a great extent we have been building upon old foundations, and the results have not been satisfactory. Various schemes have been propounded. Committees have been appointed to consider the training system as pursued in the "Britannia," and to examine the question of the higher education of naval Officers at a later age. But owing to the hampering conditions of the Regulations for entry, and service afloat, no really satisfactory results have been obtained. These Regulations for entry, and subsequent methods of educating the cadets in the "Britannia," are so well known that they need not here be further noticed, and it is sufficient to observe that under the conditions as established it is probable that the training could be improved. It is after they leave the "Britannia" that the defects of the present system become apparent. They join their ships full of hope, zeal, and promise, from that moment it may be said that they begin to cease their progress. They are young Officers, and perform young Officers' duties yet at the same time they are schoolboys, and they have to try to combine essentially opposed elements of work. As must be natural with lads placed under these conditions, their minds are not

interested in the routine of the ship. They think of their boat, their coming or past watch on deck, of the men of their division and their clothing list, of the approaching exercise aloft, and the comparative smartness at mast and sail drill of the ships of the squadron. When in harbour their minds are also distracted by that constant movement always more or less existing when the duties of a great fleet have to be carried on. As compared with these duties, the studies under the Naval Instructor must inevitably be monotonous and dispiriting. Habits of mental indolence are thus frequently contracted, and as a consequence it is found that when, as Acting Sub-Lieutenants, these young Officers present themselves at the Naval College to prepare for the final examinations, they have not on an average sensibly advanced beyond the knowledge that they had acquired in the "Britannia." In fact, the value of the whole educational work performed under the Naval Instructor comes to this:—that the Acting Sub-Lieutenants when nineteen are equal to what they were as "Britannia" boys at fifteen and thus the intellectual advancement during that most valuable interval, between the ages of fifteen and nineteen, has comparatively ceased, and that period may be considered as one of mental inactivity. At the same time it cannot be said that the years thus passed on board a ship are essentially valuable as regards seamanlike training. Practically a midshipman serving in an ironclad has but few opportunities of learning the work of a sailor, certainly not so many as he would have if methodically taught a seaman's duties in a sailing training ship.

With respect to the value of the schooling on board, it is useful to see the negative extent that it prevents a boy from absolutely falling below the standard of mathematical knowledge reached in the "Britannia." But this is a very inadequate result when it is considered that it is obtained by methods which go far to injure his ultimate officer-like capacity. What can be more ruinous to lads than going over and over again work which they were supposed to know when they left the "Britannia," and in the end, when nineteen or twenty years of age, they have to recapitulate at the college what they learnt when they were fifteen? The Director of Naval Studies in his evidence before the Committee as to the difference of the papers set in the "Britannia" for cadets, and those set to the same Officers on joining the College, Acting Sub-Lieutenants, stated that the Algebra paper was virtually the same, the Geometry was the same, and the practical part of Trigonometry was also the same, and so on with respect to several other subjects. It must also be evident how inadequate are the means of education on board a ship for the acquirement of languages or for those wider studies which help to constitute a cultivated Officer.

In fact, the whole character of naval education is defective in principle, and consequently defective in its results. It is, however, universally acknowledged that there are many Officers who, trained under the present system or under that system of education as carried out under a Naval Instructor before the establishment of the "Britannia," have become Officers of marked culture and capability.

but this only proves that there are always midshipmen sufficient energetic and ambitious to overcome all the difficulties and disadvantages of their early training.

Thus, it is evident that the same qualities which in despite absolutely no instruction whatever produced our great Admirals, so largely exist in our Navy.

But although many capable and distinguished Officers have been developed through the sea training existing when there was no education given by the State, and also when trained by such methods have been adopted since the introduction of Naval Instructors, they must be considered as exceptions, and bear but a small proportion to the great number that have been baffled in their career through the want of an early well-directed and methodical training.

Various schemes have been brought forward for the better educational training of midshipmen. Amongst others it has been suggested to do away altogether with Naval Instructors on board ships, and permit the energies of the midshipmen to be exclusively directed to the mastering of their professional duties. But it must be remembered that as the ironclad Navy is now constituted, a midshipman at an early age—too early to be placed in positions of trust and responsibility—gains but little advantage by such a scheme. On ironclad ships are the greater part of their time in harbour, and the short periods they are at sea, they are kept under steam. The experience that is acquired by our Lieutenants in manœuvring can be equally acquired by our midshipmen, for as a rule they are too young to grasp intelligently the principles of naval tactics. Thus the midshipman would gain but little in professional knowledge, and through having no Naval Instructor, he would to a great extent lose the mathematical proficiency he had attained in the “*Britannia*,” and consequently he would present himself at the College as Acting Sub-Lieutenant still more irretrievably hindered by a misdirected educational system than is the case at present. The late Commodore Goodenough, whose experience of the training of midshipmen was very extensive, an experience gained during long service in flag-ships, especially when in command of the “*Victoria*” and the “*Minotaur*,” was convinced of the bad results of the course of instruction then pursued. In the year 1871, he prepared a lecture which was delivered before the Royal United Service Institution, in which he brought prominently into notice the opinion which he had then formed upon the subject.<sup>1</sup> He was at that time very deeply impressed with the incompatibility of the position of an Officer and a schoolboy. In alluding to the examinations as carried out afloat, he observed :—

“That they show a waste, and not only a waste, but a misapplication of time and labour, which is well known and understood by all those who have served recently in a squadron.”

And further on in this lecture, when commenting upon the Report of the Committee on the Higher Education of Naval Officers, he observed

<sup>1</sup> *Vide Journal*, vol. xv, No. LXIV, 1871.

—and the observation could be corroborated by other Officers who have commanded ships:—

"I, and many others with me, have been too long witnesses to the zeal and attention of Naval Instructors, and to the constant striving with the difficulties of instruction in a service afloat, to agree with the Committee. We know that in trying to promote the instruction of our midshipmen, whether as Gunnery-Lieutenants, Naval Instructors, Commanders, or Captains, we have signally failed to obtain either time or the opportunity we desired, and that we have had to record a constant failure to carry out the most modest programme of any study, in consequence of the loss of time and opportunity which the conflicting duties of a sea-going service occasion."

The scheme proposed by Captain Goodenough to remedy this defective education was briefly as follows:—Cadets were to be examined for entry at the average age of fifteen, and after two years' training at a naval college, and in training corvettes, they were to be examined for the rank of midshipman. They were then at the average age seventeen to receive one year's training in practical gunnery, at the conclusion of which time they were to be sent to a ship of the fleet for one year's service as midshipmen, and then they were to pass now for Sub-Lieutenants. A plan somewhat similar in principle and detail was proposed elsewhere by the late Rear-Admiral (then Captain) C. W. Hope.

Passing from the notice of the above suggestions, to the scheme actually in force in other Navies, it will be observed that they agree in the respect of entry at a comparatively late age. To a considerable extent they are similar to the system of naval education that exists in France. But upon a close investigation of the manner in which, for instance, the preliminary training of young Officers is carried out in that country, nothing is more certain than the fact that such a system could not be adopted in England. In France the annual competitive examination is announced, and boys of seventeen are invited to compete. The Admiralty have, perhaps, fifty vacancies, and these are given to the fifty who head the list. These are then sent on board the training ship "*Borda*," at Brest, and there undergo a course of training such as but few English lads of that age would willingly submit to. The course of study in "*Borda*" occupies two years, and includes a fair amount of practical seamanship, learnt on board the sailing brig and steam sloop attached to the "*Borda*," in the Brest roads. At the expiration of these two years, the "*élèves*" (cadets) are sent to a sea-going training vessel (now "*La Flore*") to advance their education as seamen, and to study the interior economy of a man-of-war. At the end of this period they pass an examination of proficiency and are made "*aspirants de première classe*." They are then sent to sea on board a sea-going ship of-war for two years, and then at last at the expiration of this period and without further examination, they are promoted to the rank of Sub-Lieutenant.

By this system, Officers are kept in training at far too advanced an age, and begin their active service career much too late.

In America, the method of training their Officers is much injured by the excess of nominations as compared with the numbers actually

required for their Service, and here, again, we see a system in through which Officers are kept too long in the junior ranks. Beginning their career at the average age of sixteen,<sup>1</sup> they have to undergo a long training of four years at the school at Annapolis; they have two years' service in a ship-of-war, and then after passing a final examination, become qualified for the rank that is equivalent to our Sub-Lieutenant. In Germany, also, Officers are, as a rule, considerably older than ours before they become qualified for the rank of Sub-Lieutenant.

Thus it may be said that the system of naval education in foreign Navies cannot be considered as applicable to Great Britain. If, it be granted that our present Regulations for the education of young Officers are defective in their results, and it is thought desirable that some new system should be adopted, there is no system proposed which is of much practical use as a guide, and therefore the proposed plan must necessarily be theoretical, and its value can only be tested by the experience of several years. The scheme proposed by Captain Goodenough would probably be found to have great practical advantages, but it seems partly to have the same fault as the system now in force, viz.: that a portion of the midshipman's life, equivalent to one year, is passed on board a ship without adequate training. At present, it is thought that four years are thus in a considerable degree wasted, it also follows that in a proportionate degree a year's service, as proposed, would be wasted.

In now submitting a proposition of somewhat different character it has to be observed, in the first place, that it is based upon the belief that it will ultimately be found expedient to abandon the existing methods of training. According to present Regulations no candidate is eligible for examination unless his age exceeds twelve, or does not exceed thirteen and a half. The training on board the "Britannia" lasts two years, and the subsequent period of service as midshipmen in ships-of-war on active service averages four years, but is in some measure dependent upon the character of the certificate obtained on leaving the "Britannia," a less time being required for boys who have shown exceptional qualifications. No midshipman can be examined for Acting Sub-Lieutenant until he is nineteen, and then, as soon as is practicable, after this examination, he is sent to England to study for his final examination in mathematics and gunnery.

In consequence of the time occupied in studying for and passing these examinations, a considerable part of a Sub-Lieutenant's service is more or less removed from the active duties afloat of his profession, and to so great an extent is this the case, that although the number of Sub-Lieutenants would, if available for sea service, be amply sufficient for the requirements of the fleet, in practice it is found with difficulty that an adequate number of these Officers can be appointed. Consequently Sub-Lieutenants are absent from sea service precisely at the age when it is most important that they should

<sup>1</sup> They must be more than fourteen, and less than eighteen.

making themselves conversant, by a practical experience, with the duties which devolve upon them when promoted to the rank of Lieutenant.

Instead of the present Regulations, it is proposed that the age of examination for entry should not be less than fifteen and not exceed sixteen and a-half. The training on board the "Britannia" or at a naval college should continue for three years, and in every year the summer months might be occupied in studying practical seamanship in a training vessel at sea.

At the expiration of this time the cadet should pursue a special course of training in gunnery, steam, torpedoes, and such elements of naval construction as are connected with the special requirements of modern warfare. Upon the completion of this course, and at an age not less than nineteen, the cadet will be eligible for examination, which would be final with respect to mathematics. Upon obtaining a certificate of proficiency, he should then receive his commission, and be appointed to the Navy as a Sub-Lieutenant, and be immediately employed upon active service. Whilst holding the rank of Sub-Lieutenant, he would not necessarily be considered as capable of being held responsible for the correct execution of the duties of Officer of the watch in ironclad ships at sea. The period of service as Sub-Lieutenant should be considered as one of special naval training, and be chiefly devoted to the mastering of all the details of service as carried on in ships-of-war, and in becoming acquainted with the handling of such ships, not only as regards their individual management as Officer of the watch, but also with respect to the general manœuvring of a fleet. The requisite length of service as Sub-Lieutenant would be determined by circumstances, and by such rules as the Admiralty might deem expedient, but it would probably be found in practice that an intelligent Officer, who had pursued with attention his naval training in seamanship and gunnery, would require less than two years to become competent to fulfil all the duties of a Lieutenant in charge of a watch; and he might then present himself to pass a test examination in seamanship and in gunnery, and upon passing become eligible for promotion to the rank of Lieutenant, a rank which should be given to him as soon as possible, if the state of the list permitted.

Such is the outline of a scheme which the essayist believes would be found practicable and would give good results.

In the above scheme it has been considered advisable that the principle of a special naval education in the "Britannia," or in a college under the control of the Admiralty, should be retained. During the three years' training it would become evident if a student was, through want of general ability or health, unfitted for sea duties, and would therefore have to be removed. The Admiralty could thus ensure the Sub-Lieutenants being of the requisite standard of efficiency. The establishment of a cruising training-ship might be so regulated that each Officer, upon the completion of his training, should have had not less than four months' practical experience of sea duties, including personal management of the ship under various

conditions of wind and weather. Finally, before quitting this important subject, it must be observed that the more our executive Officers are methodically trained, the greater becomes the strength of our Navy. In a naval action the loss of certain special Officers, for example, as the gunnery and torpedo Officers, would be a great misfortune; and the more that each Officer is so trained as to be capable of carrying out correctly these special duties, the greater becomes the fighting efficiency of our ironclad ships.

The subject of our executive Officers has been considered with respect to the training for the rank of Lieutenant; their education would consist as at present of a course of voluntary service at the Royal Naval College at Greenwich. The training of executive Officers has produced such excellent results, that it leaves nothing to be desired. With respect to our warrant officers, the additional advantages given to them lately will no doubt have the effect of causing more men to come forward to pass for the warrant. More encouragement should be given to obtain from a good source a sufficient number of these most valuable Officers.

In an earlier part of this Essay it has been observed that although the continuous service system for the manning of our fleet has been found to have been of great advantage to the State, it has the defect of making the complements of our ships' companies too small, and in considering our ironclads as ships prepared for battle, the element of youth is a constant and ever present cause of weakness.

So important, indeed, is this fault, that in estimating the strength of our ships' companies with reference to those of the ships of other maritime Powers, our boys and younger ordinary seamen ought to be considered as forming part of the complements. It is expedient that the bodily strength of our young seamen should be thoroughly satisfactory before they are finally pronounced fit for naval Service. As far back as 1871, when physical qualification was even less necessary than in the present day, the Admiralty, in a Circular of the 4th March of that year, drew attention to this in the following words:—"In consequence of the size of Her Majesty's ships and their heavy armaments, my Lords Commissioners of the Admiralty consider it to be of great importance that the men engaged for continuous service should be strong, able-bodied, and physically fit for the duties required of them;" and they further directed reference to a previous Circular respecting ineligible boys, and that boys unfit for the Service were to be discharged. The difficulties inherent in the continuous service principle make it impossible to comply with these requirements, and in practice an unduly large number of lads and youthful seamen, who are comparatively deficient in physical power, have to form part of the complement of our ships' companies.

Assuming, then, that it is expedient that measures should be taken to give a character of greater manual strength to our ships' companies, it is to be seen in what manner such a desirable result can be obtained without extensively changing our continuous service system. In the first place there is the simple plan of maintaining the system

and of lengthening the period of training; but if this should be considered inexpedient or too expensive, it is proposed to raise the age of entry of boys. The present Regulations require that they shall be between the ages of fifteen and sixteen and a-half. That age might be extended to eighteen, care being taken to ensure sufficient qualifications of strength and stature. Boys entering at a late age shall be trained in a special ship.

Nothing is more undesirable than compelling lads of greatly differing ages to perform a similar course of study, and be subject to similar restrictive rules. A plan adopted some years ago of detaching a number of our first-class boys in the training-ship from the general system of training, which included those of the second class, had good results; and the older boys thus placed in the "Boscawen" were to be in consequence much improved in zeal and general smartness. It is not expedient to enter into any details respecting the subsequent training of boys so long as it is decided that they are not to form part of the complements of our ships-of-war before they are twenty years of age. The methods of training after quitting the school ship necessarily consist of certain periods of service in a training squadron. When barracks are established there will be a special course of instruction in gunnery and musketry. These matters of detail are, however, dependent upon circumstances, and there is only this to remark, that in proportion to the raising of the average age of entry, so the expenditure caused by our training service will diminish. Assuming the cost of each boy under training to be at least 60*l.* a-year, the reduction of one year of the period of inutility for active service in ships-of-war would represent a considerable annual reduction in the charge upon the Estimates.

One of the chief advantages of the special State training of boys is that through not being accustomed to other modes of life than those which are pursued in a man-of-war, they readily volunteer to re-engage at the conclusion of their ten years' engagement, and consequently a steady supply of petty officers is obtained. A similar advantage follows from the training of the "mousses" in France. The school "Austerlitz," at Brest, has usually on board about 800 boys, and of these an average of 300 are annually embarked in ships-of-war to go on active service. They are then subjected to a careful systematic training with the object of obtaining from them an intelligent and capable nucleus of petty officers. The result at present is, that one-half of the French petty officers are derived from boys trained in the State.

In accordance with the general principle of manning the Navy with men of matured strength, it might be found useful to permit the entry of men between the ages of twenty-one and thirty, and to have them receive a sufficient training in the home ports before embarkation. The establishment of barracks would much facilitate this plan. Reserve men of the first and second class should be encouraged to join, and if after certain fixed periods of service they did not re-engage, the time served in ships-of-war should have a special value with respect to their ultimate pensions as Reserve :

Men who, at the age of forty, had served ten years, should a whether Reserve men or not, be entitled to a moderate pension, the condition that they would be liable to be called out on service case of war. There can be no doubt that it will be found there be a sufficient number of volunteers for the requirements of the fl One great advantage of entering a certain proportion of men at twenty-one years of age will be, that we shall be more capable increasing our Coast Guard, the Reserve upon which we must chi depend in the event of war. When the two systems are at worl the same time, viz., the training of boys and the entry of adults, it be important to regulate the proportion that one class of sea should bear to the other.

In the course of his evidence before the Royal Commissioners in year 1859, Captain Harris, who had previously commanded training ship for boys and novices, said, with reference to drills great gun exercise, that a young man commencing to learn his d at twenty would, in the course of a year or so, be made as perfect them as if he had commenced it at fourteen. The short space of t in which lads of twenty and twenty-one, received from fishing be attain proficiency in their drills at Brest, is a sufficient proof of rapid manner in which entirely untrained men can become qualific take their place at the guns.

Indeed, there is no better evidence of the average aptitude of to reach a fair standard gunnery efficiency than to observe quickly our Naval Reserve men learn their drill, although they devote twenty-eight days in the year to that object.

It is perfectly possible so to organize our *personnel* for service ships in commission that all the seamen on board should be efficient and able-bodied, and this result could be obtained without additional charge upon the Estimates. All ineligible boys and should be discharged. The continuous service engagement of a might contain a proviso that in the event of his proving to be desirable, through bad character, deficient strength, or incapacity engagement would be cancelled.

Ordinary seamen raised from boys, who do not evince qualities as will make them useful as trained men, should not be a burden upon the State, but upon proper representation be to be discharged. In fact, no inefficient men ought to be permitted form part of the complements of our ships.

These complements are gradually less as regards their proportion of seamen, and therefore it is very requisite that the men should be the best type attainable.

As regards the entry of boys, it has been proved that sufficient numbers can be obtained with certainty from a satisfactory source. The question of manning our fleet has been so frequently connected with schemes for providing an outlet or a profession for our Arabs, that this qualification of good original stock cannot be too insisted upon. There should be no relation whatever between the training of destitute or vicious boys and the supply of seamen for the Navy. Whatever may be the expediency of providing for the

career of these boys, such provision should not have employment Her Majesty's Navy as a possible object. It would be in the highest degree unfair to our lads received from respectable homes and accustomed to respectable associates, to compel them to accept as their comrades in life, boys of doubtful origin and character.

In these days, when there are few probabilities of prize-money, and men-of-war's men have nothing to look forward to when serving but their bare pay and allowances, it becomes necessary, in order to secure a good class of petty officers and re-engaged men, that sufficient prospective advantages should be offered them.

It is certain that nothing now binds a sailor so much to the Service as the prospect of a pension, and nothing will attract a good and valuable class of men to our Navy more than the knowledge that this pension, if earned after good and steady service, would in part be continued to his widow. One of the principal causes which makes the Maritime Inscription in France work so well, is the fact that, at the end of twenty-five years' service, two-thirds of the pension then earned by the men is continued to their widows or orphans.

Whether it would be possible in England for the State to organize such a seamen pension fund as would attach our merchant seamen more to their country and, if combined with a system of naval pensions, bring our naval and merchant seamen into closer relations, it is not within the province of this Essay to consider; but there can be no reasonable doubt that it will not be until some pension fund is established, that our Mercantile Marine will be in a satisfactory condition.

But whatever may be the method adopted to give the merchant seaman a feeling of attachment to his country, and whatever may be the system pursued which will take away from him the feeling that he is a man utilized when strong, and uncared for and left unnoticed when weak, such considerations fortunately do not apply to the seaman serving directly under the Crown. Our continuous service men receive good wages, and after twenty years' service, at a comparatively early age become entitled to pensions. It is still, however, a question whether the pay and pension may not be so arranged as give strong inducements for attracting good men who would enter at a later age. Increasing pay with length of service would be equitable and popular, and a small increase of pension for additional service after the usual pension was due would probably be found advantageous. The subject of a fund or pension for widows or orphans has from time to time been brought under the notice of the Government, but it has always been combined with various plans of voluntary or compulsory subscription.

Judging from the working of the original Merchant Seamen's Fund, it does not seem probable that any such plan will succeed. Some years ago, in 1874, a number of petty officers, seamen, and marines submitted a scheme for a widow's fund. They asked the Admiralty if, by the payment of 6*d.* a month each, their widows or orphans could receive an annual pension of 24*l.* 22,000 men agreed to subscribe this sum. The Admiralty referred the ques-

to the actuary attached to the office of the Commissioners for the Reduction of the National Debt, and the reply was to the effect that not only was 6*d.* a month inadequate, but more than twenty times that amount would be required. Consequently such proposed pension scheme was impracticable. When looking back at the history of this question of a Widow's Fund, and the opinions and recommendations of many experienced witnesses examined with reference to that object by various Committees, together with the suggestions of those who, although not witnesses, were deeply interested in the welfare of our seamen, it is almost self-evident that no scheme entirely based upon voluntary contributions can succeed. Still less feasible would be any compulsory method of deducting portions of pay, and thus we are brought to the conclusion that any adequate Widow Pension Fund must to a very great extent be supplied by the Government.

The principle of pensions for long and good services is not only equitable to the men, but also advantageous to the State, for it not only encourages our best seamen to remain in the Service, but it also gives to the country a valuable Reserve, for there can be no doubt but that our naval pensioners between the ages of thirty-nine and fifty will prove in time of war a most important addition to our strength. Many of them are petty officers, many are seamen gunners, several have been gunnery instructors, and all are thoroughly trained men. The value of such a Reserve cannot be too highly estimated. Therefore, as the pensions, as now granted, cannot be thought excessive when estimated by the services past and prospective of the men to whom they are given, it may fairly be taken into consideration whether an extension of the principle may not be conceded to the extent of continuing a part of such pension to widows and orphans. The question is an important one, and can only be properly dealt with by an exhaustive examination of the expenses that would be incurred but judging from the cost of the system as carried out in France does not appear that the expense would be so great as might be supposed.

The expenditure involved in our system of continuous service may always be considerable, but it might be sensibly reduced, if undesirable and inefficient boys or men were removed from the Service. A lad who deserts at twenty has already cost the Government over 200*l.*, and has certainly not been of any value, probably the reverse, as his habits and example may have led other lads into crime. It may be said that a too easy possibility of discharge might have the effect of making boys commit offences in order to get away from the Navy. Such discharge might also be looked upon as a premium for bad conduct by those who wish to leave the Service but are deterred from so doing in consequence of their engagement or from fear of punishment for desertion. It is, however, altogether unnecessary to remark that boys or ordinary seamen, who are always

<sup>1</sup> The fund from which such widows and orphans' pension is taken would form part of the expenditure in connection with the Naval Estimates.

## OF OFFICERS AND MEN FOR THE NAVY, ETC.

wanting to escape from their duty, are not calculated to make good men-of-war's men, and are not worth keeping.

However, in all these cases, a continuous service system must be guided by the facility or difficulty of obtaining volunteers. If there are sufficient, objectionable men should be discharged, if the reverse they must be retained. But in these days, with ships requiring comparatively few seamen, there ought to be no difficulty whatever in obtaining a well-selected and capable class of men. The clear evident principle is this: that the complements of our ironclad fleet in commission in time of peace should be as thoroughly able-bodied and efficient as they would be expected to be in time of war.

Equal in importance with the calibre of our seamen is the question of the proportion of marines which should be embarked to complete the combatant part of the complement. The general opinion of witnesses examined upon this subject by the Royal Commissioner in 1858-59 was against any change. The composition of our crews has altered since that time, and the present proportion of marine blue-jackets is larger, but probably not too large for the various duties required of them.

It would perhaps, be unnecessary to dwell upon the acknowledged value of the Royal Marine Artillery and the Royal Marines, if it were not that of late years several Officers of experience have advocated their being no longer considered as an auxiliary arm of the Navy, and have proposed to replace them by seamen.

It may be granted that for sea service 13,000 trained seamen would be a very useful addition to our Navy, but where are they to come from? Looking at the matter from a practical point of view, it seems evident that the marines must be maintained, for it would be very difficult to raise such a fine body of men from the classes which now supply our seamen in addition to what we already receive.

The marines are recruited from an entirely different class of population, and are taken to a large extent from the agricultural and manufacturing districts, which otherwise give but little strength to our Navy, and the majority of the men have been brought up to sea trade. For reasons partly connected with pay and other special advantages, and partly consequent upon the nature of the Service itself, the marines are and always have been a popular corps, and recruit a good standard can always be procured. When it is remembered that the marines can always be increased with comparative facility in time of war, that the recruits we receive for them are quick in learning their gunnery instruction, and when embarked are found to be steady at their drills, and reliable for their discipline; when the facts are considered, any suggestions for the disbandment of so valuable a corps should be received with grave hesitation. If, in order to increase the seamen gunners afloat, it was thought expedient to decrease the contingent of marines, this measure should be adopted without reducing the actual force of marines embodied, and the consequence would be that the marines would pass a less period

their service on board a ship. Thus, for example, if in a force 12,000 men, an average of 6,000 are embarked, and 6,000 are in barracks, and if it was decided to increase our complements of sea service by 2,000 men, the marines would be embarked for one-third of the service, instead of one-half as at present, and would not thereby lose in any important degree their seafaring capacity.

The history of the Royal Marines has been so distinguished, and their services to the State in war and in peace have been so valuable that it would be highly impolitic to disarm them, or even to permanently reduce their numbers. It may be added that they are an inexpensive force as compared with our seamen.

The marines must also be considered as forming one of the elements of our standing Reserves. There are now usually from six to six thousand men in the barracks available in case a sudden increase was made of the ships in commission. This number, however, was not thought sufficient by the Royal Commissioners:—

"The marines," they remark, "are a useful and efficient body of men, second none in the service of the State. They are excellent troops, both as artillerymen, infantry, and are, at the same time, capable of performing many of the duties of a ship-of-war. . . . There is ordinarily a Reserve of 6,000 marines in the home ports ready for active service afloat. We think that this force might, to great advantage to the State, and without impairing its efficiency, be increased to 15,000 men, who would be well fitted to garrison the seaports in time of peace, when required to serve at sea they could be at once embarked, and their places in the seaports supplied by the regular Army or the militia."

This was written at a time when the Royal Naval Reserve was organized, and there was then the greater necessity for a Reserve ready for immediate duty. This is no longer required to a similar extent, and although it is always desirable that the Reserve of Royal Marines should be sufficient, there is the difficulty that if that Reserve was increased to the extent proposed by the Commissioners, the amount of sea service would be much less. There is an interval of time beyond which it would be inexpedient to separate the service afloat from the service on shore, and that naval sympathy which ought to exist in a sensible degree between the trained seaman and the trained marine would lose much of its influence. In fact, if the marines were too much considered as a Reserve, and were for long periods employed in garrisoning our ports or colonies, the peculiar characteristics which now make the marines so especially valuable for naval service would be greatly sacrificed. Thus it may be concluded that the number of marines considered with respect to peace complements of the fleet, and with respect to an immediate available Reserve, should be maintained at an average force of less than between twelve and fourteen thousand.

In time of war this Reserve could be rapidly augmented. Recruiting for the marines is so thoroughly satisfactory, and training for sea service is so good, that as regards the general question of the best methods of manning, there is but little to be proposed.

Perhaps it might be desirable either to increase the force of Marine Artillery, or to further develop the gunnery training of the Royal Marines. The object to be attained is what is now so universal

required, viz., efficient gunners, and probably that would best be secured by retaining the existing picked and highly intelligent force of Marine Artillerymen, and advancing the gunnery knowledge of the Marine Infantry to the highest point practicable.<sup>1</sup>

Pursuing the subject of our standing Reserves, we have to estimate the probable value of our seamen pensioners. This force is steadily increasing and will continue to do so for a few years until the Pension Regulations established by the continuous service system have reached their full development. The Act which applies to the portion of our Reserve clearly defines their liability to serve, in the words, which may with advantage be quoted:—

"Whenever any emergency shall arise which, in the opinion of the Lord High Admiral, or Commissioners for executing the office of Lord High Admiral, renders it advisable to require the services in Her Majesty's Navy of any of the persons who may have served as petty officers or seamen in Her Majesty's Navy, and may in the receipt of pensions in respect of such service, it shall be lawful for the Lord High Admiral or Commissioners to order any of such persons to join Her Majesty's Navy; and those so ordered shall join such of Her Majesty's ships or vessels-of-war as the said Lord High Admiral or Commissioners may at any time direct, and shall form the crews or parts of the crews of such ships or vessels, and shall continue to serve in Her Majesty's Navy during such time as such emergency may, in the opinion of the said Lord High Admiral or Commissioners continue, and while so serving shall be entitled to the same pay and allowance according to their respective ratings on board such ships or vessels, as Officers in Her Majesty's Navy and men in Her Majesty's Navy entered for ten years' continuous and general service, and shall also continue to receive their pensions."

In 1870, the Board of Admiralty, deeming it desirable that the pensioners should keep up the knowledge of their drills, establish regulations giving certain allowances to such of these men as would volunteer to take a month's training every alternate year. The regulations have since been modified, and fourteen days' annual drill are now required, and this can be taken at any battery or drill ship and at such periods as may be most convenient.

In 1876 there were 2,800 seamen pensioners under fifty years of age, and 511 attended drill. In 1879 there were 5,000 pensioners, and 1,166 were drilled. These numbers are less than might have been expected. The drilling of the pensioners, however, need not be considered to be of much importance, because the majority of them must have been thoroughly well acquainted with their gunnery exercises when they obtained their pensions, and therefore it is not likely that they would easily forget them. The value of our Reserve of seamen pensioners has perhaps not hitherto been adequately recognized. In case of war these men would be of great use. The younger portion of them, between thirty-nine and forty-five years of age, might supply excellent petty officers for sea service, and the older men could be employed for general duty at the home ports, especially those who had been gunners' mates or gunnery instructors.

The Naval Artillery Volunteers are in all respects so essentially distinct, that their probable use in the emergency of war can only

<sup>1</sup> The training of a Marine Artilleryman has been stated to occupy about 280 days

properly estimated when such emergency arises, and much depend upon the length of time that the members of this force be absent from their usual professional duties; but, judging from the efficient way in which they carry out their great gun drill practice in the gunboats, and from the seamanlike manner in which they willingly perform all the ordinary work of a gun-vessel's crew, there is every reason to believe that they would prove a valuable addition to our naval strength. They could be employed with advantage in our smaller coast defence vessels, in the event of our main armament of the Channel being threatened.

There is left for final consideration our Coast Guard, which is called our First Reserve.

It is upon the strength of this Reserve that our preparation for war in the event of sudden hostilities chiefly depends.

By the Act of the 29th July, 1856, the government of the Coast Guard was transferred from the Customs to the Admiralty. It was then thought expedient, with the view of making a better provision than then existed for manning Her Majesty's ships in case of war, to place the force of men employed in the protection of the revenue under the direct control and authority of the Admiralty. The Admiralty was empowered to raise and employ a number of Officers and men not exceeding 10,000, who, when borne on the books of ships-of-war, were to be subject to the same laws and customs as persons serving in the fleet.

This Act, in its relation to the strength it placed at the disposal of the Navy, is of the greatest importance, and if the powers it gave to the Admiralty could have been carried out to their full extent, the Reserves would have thereby been placed in a thoroughly satisfactory condition. The Royal Commissioners in 1859 thought so well of the Coast Guard, that they proposed to raise its numbers to 12,000. It has not been possible, however, to raise and maintain the force of either of the proposed establishments. But the Coast Guard is now considered as a Naval Reserve, though not increased in numbers, has been greatly improved in its combatant efficiency. Our petty Officers and trained seamen have during the last twenty-five years, and at their best period of strength and capacity, been steadily passing from the active service afloat into the Coast Guard. The special classes of men that constituted that service when under the Customs are gone, and their places are occupied by a body of men-of-war, men of the highest value. Their numbers are, however, unquestionably too few, and this is so generally admitted, that on the various occasions when the subjects of manning the Navy and of establishing Reserves have been discussed, it has always been suggested to increase our Coast Guard. This, however, is a very difficult matter, the Coast Guard as at present composed cannot be augmented without augmenting the peace establishment of our active Navy.

For some years past the vote for the Coast Guard has been for an average of 4,000 Officers and men. In this year 1881-82 the force is thus constituted:—Inspecting Commanders, 36; Divisional Officers, 43; paymasters, 11; clerks, 13; station officers, 227;

boatmen in charge, chief boatmen, commissioned boatmen, boatmen and divisional carpenters, 3,670.—Total, 4,000.

Granting that it is desirable that this number should be increased, the question is, how can this be done?

The annual waste or loss of men in the Coast Guard, arising from completion of service for pension or other causes, averages 200, and consequently, to maintain the force at its normal condition, 200 petty officers and seamen have to be annually transferred to it from the sea service.

It is found in practice that the constant drain upon our active resources is so serious, that it is difficult with due regard for the requirements of the fleet to supply this number.

It is found that the existing peace establishment of our seamen is just sufficient to man our fleets in commission, and to maintain the Coast Guard at an average force of 4,000 men; but it will do more, and consequently the Coast Guard cannot be increased until the vote for seamen is also increased, and additional ships must kept in active employment in order to absorb the extra men.

The difficulty may be partially modified by encouraging to a greater extent the entry into the Coast Guard of Naval Reserve men, but this should only be done within certain limits, as the chief value of the Coast Guard consists in its being composed of our trained men-of-war. It may be found possible if an older class of seamen is entered into the Navy, and the present great waste caused by the desertion and invaliding of our younger seamen is thereby reduced, to supply more men, and by this means the Coast Guard might be gradually raised to 6,000. It is not probable that this number could be conveniently exceeded without maintaining a much larger force of ships in commission in time of peace than are actually required.

Our First Reserve of Coast Guard is unquestionably the finest body of combatant seamen in the world, and in case of war it would form the nucleus for two considerable fleets.

Three hundred of our Coast Guardsmen, combined with contingents from the Marines and Royal Naval Reserves, would form a very efficient crew for any of our first class ironclads requiring complements of 600 men, and thus we might fairly estimate that, with our First Reserves of Coast Guard at their present strength, we could immediately from them alone man twelve powerful ships. But as the average complements of the ironclads which would be placed in line-of-battle would not exceed 450, we may fairly consider our Coast Guard as capable of supplying a sufficient number of trained men-of-war's men for eighteen ships-of-the-line.

This would, under the probable circumstances of a great naval war, suffice at the commencement; but if the war was much prolonged, we should then feel the weakness in number of our First Reserve, and therefore it is expedient to increase it whenever the peace establishment of our Navy is in a condition to make such an increase practicable.

The questions concerning the best methods of manning, both in

regard to the requirements of active service, and their relations to Reserves, have now been considered as far as the limits of this Essay conveniently permit.

The most important points of the subject may be said to be training of young Officers for Lieutenants, the comparative youth of a certain proportion of our seamen on active service as compared with the ages of the seamen that would be opposed to them in war, and means which our peace establishment of the Navy gives us for maintaining a strong First Reserve.

In the investigation of the supplies of men, it is necessary to avoid being misled by theories with respect to the numbers that should constitute our Reserves. In no branch of inquiry is it so essential to be strictly guided by not only what are the numbers available, also what may be practicable.

Thus, as regards the Royal Naval Reserve, our present experience has taught us the fact that the Mercantile Marine cannot be expected to supply a force so great as the Royal Commissioners calculated upon, and that as a source of strength for the Navy in that direct sense its power has nearly reached its limit.

Also, with respect to our Coast Guard, it would be impossible to maintain the force proposed of 12,000 men without increasing numbers of men and ships of the Navy far beyond the requirements of peace, and to an extent that no Government would probably contemplate. Consequently all proposals for maintaining large numbers in the Reserves have to be carefully examined in their details, and estimated with a strict regard to what can be practically carried out. There is, however, no doubt that it is advisable to strengthen the Reserve force in view of hostilities as far as possible, and for every feasible method should be adopted to increase the Coast Guard.

Such increase will depend chiefly upon two conditions, the first being the numbers available for it from the active service afloat; second, the numbers that the duties of the protection of the revenue might require.

It is also desirable to remark that, independently of their value as a Reserve, the Coast Guard are of great use in saving life from wrecks in working the rocket apparatus, and in assisting in the operation of the lifeboats. Many gallant services have thus been rendered by our Coast Guardsmen, and consequently their numbers might even be augmented beyond the actual requirements of the Customs, with such augmentation being considered an unnecessary charge upon the State. In this Essay it has not been proposed to raise the Coast Guard beyond 6,000 men, because it is not thought that it is at present possible to keep up a greater number; but so valuable is the First Reserve, that it should always be maintained at the greatest attainable strength.

The other Reserves are in such a satisfactory state of efficiency that there is nothing more to be observed, except that the Second Reserve should be increased. It is probable, remembering that a large portion of our maritime population which furnishes these men does

## OF OFFICERS AND MEN FOR THE NAVY, ETC.

leave the country on long sea voyages, that this force would prove of the greatest use, and would be readily available when called out for active service.

The suggestions of this Essay, with respect to the numbers of Reserves, may now be recapitulated.

The Coast Guard to be raised to 6,000 men, or as many as may be found practicable. The Marines, not employed afloat, to be maintained at a force of not less than 7,000 men. The First Class Reserve to consist of 15,000 men, and the Second Class Reserve to be increased to 8,000 men. Estimating our seamen pensioners at 5,000, the Reserves would then equal a force of 41,000 men.<sup>1</sup>

These Reserves would be sufficient for the purpose of manning the fleets on the outbreak of hostilities, and would furnish the regular supply of men during the early part of the war.

In the event of the war being much prolonged, we should be able to rely upon the resources that Great Britain may reasonably be expected to develop.

<sup>1</sup> To these might be added our Naval Artillery Volunteers, now numbered 1,000 men, a number which will soon be augmented.

## APPENDIX I.

Return showing the Numbers of Petty Officers, Seamen, Stokers, Artificers, Domestics, Boys, Royal Marines, and others Serving in the Royal Navy on the 1st day of January, 1879, distinguishing the Married from the Single Men, and specifying, so far as can be ascertained, the Ages of the Wives of the former.

Ages of men.	Numbers of men of each division of ages.		Wives.						
			Numbers of undermentioned ages for each division of men.						
	Single men.		Ages.						
			Under 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	Over 40.	Total.
Under 20 .....	10,911	22	10	11	1	..	..	..	22
20 to 25 .....	15,851	1,250	115	1,001	124	8	..	2	1,250
25 to 30 .....	6,649	3,028	71	1,171	1,616	151	18	1	3,028
30 to 35 .....	2,452	3,705	18	448	1,619	1,426	183	11	3,705
35 to 40 .....	1,524	4,112	6	164	824	1,631	1,364	123	4,112
Over 40 .....	685	2,861	1	14	130	408	888	1,420	2,861
	38,072	14,978	221	2,809	4,314	3,624	2,453	1,557	14,978

Total..... 53,050

Admiralty, July 17, 1879.

Statement showing the Number of Boys entered for the Navy for each Year during the last Twenty Years; the Number of Boys who have been Discharged from the Service by Purchase, Invaliding, Death, Desertion, and Disgrace; and of the Number of Boys remaining in the Service at the end of each year.

Date.	Number of boys entered.	Discharges.						Total.	Number of boys remaining at end of year.
		Purchase.	Invalided.	Died.	Deserted.	Disgraced.	Other causes, unfit, objectionable, &c.		
1855-56	3,237	19	152	77	338	..	..	670	5,040
1856-57	3,911	62	270	102	660	..	..	1,094	7,310
1857-58	1,930	36	167	77	258	..	..	638	6,373
1858-59	1,974	27	112	53	211	11	11	414	5,389
1859-60	4,460	51	171	70	235	17	17	544	8,307
1860-61	3,655	86	232	89	383	12	12	802	9,265
1861-62	3,312	109	294	99	453	21	21	975	8,362
1862-63	2,703	80	269	78	418	33	33	878	7,470
1863-64	2,766	41	205	60	258	25	25	589	7,092
1864-65	1,839	24	281	46	278	10	10	639	6,391
1865-66	2,344	18	139	38	226	9	9	430	6,629
1866-67	3,220	37	203	43	336	15	15	634	6,901
1867-68	3,176	33	231	45	233	8	8	550	7,400
1868-69	2,408	26	210	47	261	8	8	552	7,330
1869-70	1,927	22	220	61	328	6	6	637	6,474
1870-71	3,295	12	205	104	280	4	4	636	6,997
1871-72	3,187	14	193	41	212	4	4	507	7,584
1872-73	2,951	25	255	38	201	2	2	633	7,185
1873-74	2,918	15	234	27	263	1	1	581	6,457
1874-75	3,079	25	208	22	263	2	2	551	6,204

## APPENDIX III.

Return<sup>1</sup> showing Numbers of Men (exclusive of Masters) employed in the Home and Foreign Trade, not including those in River Steamers for the years 1860, 1865, 1870, and 1874-80.

Year.	Sailing ships.	Steam vessels.	Total.
	Men.	Men.	
1860.....	145,487	26,105	171,592
1865.....	158,589	39,054	197,643
1870.....	147,207	48,755	195,962
1874.....	128,733	74,873	203,606
1875.....	126,240	73,427	199,667
1876.....	125,811	72,827	198,638
1877.....	123,563	72,999	196,562
1878.....	120,085	75,500	195,585
1879.....	115,177	78,371	193,548
1880.....	108,668	84,304	192,972

## APPENDIX IV.

Number of Foreign Seamen<sup>1</sup> serving in Registered Sailing and Steam Vessels of the United Kingdom (exclusive of River Steamers) employed in the Home and Foreign Trade, from 1860 to 1880.

Year.	Number of foreign seamen employed.	Percentage of foreign to British seamen employed.
1860.....	14,280	9·0
1861.....	Not specified	—
1862.....	16,096	10·2
1863.....	18,933	11·4
1864.....	21,923	12·6
1865.....	20,280	11·4
1866.....	Not specified	—
1867.....	21,817	12·5
1868.....	20,263	11·4
1869.....	20,158	11·4
1870.....	18,011	10·1
1871.....	17,765	9·76
1872.....	20,591	11·24
1873.....	19,840	10·87
1874.....	20,919	11·45
1875.....	20,673	11·55
1876.....	20,911	11·76
1877.....	22,636	13·01
1878.....	23,343	13·55
1879.....	24,403	14·43
1880.....	23,280	13·72

*Note.*—The actual importance of the numbers of foreign seamen here given is greater than might be assumed from the percentage, as the foreigners employed on our merchant vessels are usually able-bodied men.

<sup>1</sup> Extracted from "Tables showing the Progress of British Merchant Shipping," Board of Trade, March 10, 1881.

## APPENDIX V.

## Return of Seamen (Blue-Jackets). Admiralty, 9th August, 1875.

Total number of seamen in Her Majesty's Navy on 1st October, 1875 (exclusive of Kroomen, 426).....	29,743	}	33,616
"    "    Const Guard on shore on 1st October, 1875.....	3,873		
"    "    blue-jackets in Her Majesty's Navy on 1st October, 1875.....	19,283		

The Annual Statistical Return, completed to 31st March, 1875, shows 27,430 engagements of continuous service men in force (including Coast Guard men on shore), their respective periods of service being as follows :—

In 1st year.	2nd.	3rd.	4th.	5th.	6th.	7th.	8th.	9th.	10th.	11th.	12th.	13th.	14th.	15th.	16th.	17th.	18th.	19th.	20th.	Total.
3,741	2,674	2,073	2,120	1,974	1,522	1,439	1,477	1,387	1,001	555	699	831	992	1,106	1,241	724	643	673	558	27,430 <sup>1</sup>

but the Returns in the Department do not distinguish blue-jackets from others.

<sup>1</sup> This total includes continuous service men other than blue-jackets serving in Her Majesty's Navy, viz. :—

Artificers, &c.....	5,762
Ships' stewards, cooks, &c.....	389
Coast Guard on shore.....	2,259

there being also a slight difference between the numbers borne on the 31st March, 1875, and those shown above as borne on 1st October, 1875.

## APPENDIX VI.

Extract from Return from Admiralty to order of House of Comm  
1870-74.

	1870-71.	1871-72.	1872-73.	1873
Number of <i>bond fide</i> seamen who were rated from boys .....	2,307	2,075	2,697	3,0
Number of <i>bond fide</i> seamen serving in the fleet.....	18,726	18,330	18,960	18,9
Number of Coast Guard fleet men <i>bond fide</i> seamen.....	3,774	3,733	3,891	3,7
Number of <i>bond fide</i> seamen who left the Service from all causes (including those who entered the Coast Guard). ....	3,101	2,461	2,817	2,8

## APPENDIX VII.

Extract from Return of the Number of Seamen (including Office Boys, and Marines voted for the Royal Navy, and actually be together with the Number of Men employed in the Comme Marine.

Year.	Royal Navy.					In registered ships belonging to the British Empire.	Pea n ye
	Seamen.	Boys.	Marines.	Total voted.	Total borne.	Men.	
1762.....	50,939	None.	19,061	70,000	84,797	..	Wi
1772.....	18,336	"	6,664	25,000	26,299	..	Pe
1782.....	78,693	"	21,305	100,000	105,413	..	Wi
1792.....	11,575	"	4,425	16,000	17,361	118,286	Pe
1802.....	100,000	"	30,000	130,000	77,765	154,530	,
1812.....	113,600	"	31,400	145,000	144,844	165,030	Wi
1813.....	108,600	"	31,400	140,000	147,017	165,537	,
1822.....	13,000	"	8,000	21,000	23,806	166,333	Pe
1832.....	18,000	"	9,000	27,000	27,328	161,634	,
1834.....	17,500	1,000	9,000	27,500	28,066	168,061	,
1842.....	30,500	2,000	10,500	43,000	43,105	214,609	Wi
1852.....	26,000	2,000	11,000	39,000	40,451	243,512	Pe
1856.....	50,000	10,000	16,000	76,000	..	267,573	Wi

General Register and Record Office of Seamen,  
November 16 1858.

## APPENDIX VIII.

## Extract from Navy Estimates, 1881-82.

	1880-81.	1881-82.
Flag Officers and their retinues .....	166	187
Commissioned and other Officers above the rank of subordinate officers .....	2,691	2,582
Subordinate officers and naval cadets under training ..	585	617
Warrant officers .....	825	826
Petty officers, seamen, &c. ....	31,433	30,988
Boys for service in the fleet .....	} 4,900	{ 2,500
Boys under instruction .....		
Coast Guard Service on shore .....	4,000	4,000
In troop ships for Indian service .....	1,200	1,200
<i>Marines.</i>		
Headquarter Staff .....	10	10
Divisional and Company Officers .....	399	398
Non-commissioned officers and men .....	12,591	12,592
General total .....	58,800	58,100