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Friday, February 20, 1891.

ADMIRAL SIR EDWARD G. FANSHAWE, G.C.B.,
Vice-President, in the Chair.

MANNING THE FLEET; A RE-ARRANGEMENT OF EXISTING CORPS AND THEIR TRAINING.

By Captain CHARLES JOHNSTONE, R.N.

IN placing this paper before the Institution, it is necessary to explain that it was prepared in ignorance of the fact that the Admiralty had summoned a committee to consider matters with which the subject of the present reflections is closely allied. In these circumstances I should hesitate to offer the suggestions herein set forth, were it not that I am assured it will be well understood that this is merely an effort to assist in the elucidation of matters which are exercising, if not agitating, the minds of all thinkers on the subject of naval warfare as it interests our country.

The rapid disappearance of masts and sails from ships of war makes it evident that the duties of the personnel of the Fleet are undergoing a corresponding and great change.

Some naval officers are still persuaded that masts and sails ought to be retained for certain classes of vessels, and at least in view of the occasional expeditions required to be performed by H.M.'s ships this opinion seems correct; but whether or no this be so, the crews required for such vessels will not be more than the smaller portion of the seaman class of the Navy. The high standard of efficiency attained by our men-of-war's men in all exercises with arms where activity of body and celerity of movement are required, will freely be admitted by all who have experience in naval and military manœuvres. To what is this efficiency due? If seamen are as a rule more quick and active than any body of men not used to the sea, the reason would seem to lie in the training they have gone through, or the life they lead. The life of a British man-of-war's man apart from the exercise of the active work of his profession, has no special features which could set it above that of other bodies of men; but the ordinary round of a seaman's work is a constant exercise of the most important of his senses, a constant quickening of the powers both of body and of mind. The work of the masts and sails and the handling of the ship under sail are the principal matters which train

up and bring out the qualities of a man. The seaman whilst aloft, continually holds his life in his hand; like animals of the chase, his wits are sharpened by the knowledge that life depends on his activity and quickness of eye; till use becomes second nature, and celerity of movement a natural function. The officer if in his youth he is trained aloft, acquires a large portion of the same activity of movement; but the important duties of responsible stations in a ship under sail, are as great an exercise to his combined mental and physical powers, as the more simple bodily exercise is in a lower degree, to the powers of the seaman. Can any training equally powerful in developing combined mental and physical energy be found? If such is possible, no advance has yet been made towards discovering it. Gymnastics increase bodily activity, certain studies develop that of the mind, but these exercises united will not produce the desired combination. No doubt there are certain occupations which keep a strain on mind and body alike, and to this extent probably foster in an almost similar degree the activity produced by the work of a sailing ship; such are the lives of hunters, ranchmen, and cowboys; but in no case are men of these classes to be obtained in large numbers for sea service, nor does their training in any way fit them specially for a life at sea. It is said that in the year 1793, on the outbreak of war with France, Sir Edward Pellew, being forced to complete the "Nymph's" ship's company with landmen, selected Cornish miners, as men whose dangerous life would the most readily cause them to accommodate themselves to the dangers of that of a seaman; but, if this really was so, few would be found to advocate now such a training as a substitute for that in a ship at sea. If the British man-of-war's man is, in times immediately approaching, to be equal in gun drill, in rifle drill, as a field artilleryman, or as an irregular soldier, to what he has been in times past and is now, he must have a special training; and an indispensable part of this training can practically be got nowhere but with masts and sails. How this can be made possible will be dealt with later on; but enough has been now said to indicate that of the proposals about to be set forth, the retention of a proportion of seamen of the same bringing up as in the near past is an important feature. It would be better if this proportion could be the same as at present; but not being possible, the next best thing must be accepted, viz., a part of the crew to whom the best sort of preliminary training has been given, and the remainder trained as well as circumstances admit.

The fundamental assumption of this paper is that Her Majesty's ships of war will, in time of war almost exclusively, and for by far the greater part at all other times, be propelled by steam power alone; and therefore have no sails. Such vessels evidently do not, for the work of the ship, necessarily require men able to handle sails; the value of such men resides in the habits of mind and body induced by training aloft, followed up by suitable exercise in the special duties they now have to perform. But however useful such highly trained men may be, they need not form the majority of the crew; in fact the seamen of the old sort may well in

our new ships, be borne in comparatively small numbers. It is on this ground, on the fact that a complete revolution in the duties of the crew of a man-of-war has taken place, that a proposal for a re-arrangement of the personnel of the Navy can be based. The duties devolving on the officers of the different classes and branches are likely, in the near future, to undergo some change; it is not, however, intended here to deal generally with that division of the subject, but merely to touch on such parts of it as present themselves in connection with a re-arrangement of the different bodies from which the crews of our ships are drawn.

These bodies are—

(a.) The class of the seaman proper, or, as called sometimes in Parliament, the pure bluejacket. This body is at present recruited from boys exclusively: each individual spends about a year in a stationary training ship; where he is instructed in every branch of the duties of his class; including work aloft and in boats, gunnery, &c. At the end of his term of training he is available for sea service. As soon as he is required in a seagoing ship he is drafted to one with or without masts, and in the latter case his knowledge of work aloft may easily end there. If, however, his fortune should carry him to the Training Squadron, or to a masted ship on stations where sails are used, he may acquire all the advantages of thorough practice aloft. It will thus be seen that, at the present day, the work of our men, after leaving the boys' training ship, does not run in one direction alone: a portion become seamen somewhat of the old type, another portion are employed in work of a different nature, and a third portion spend their time of service in a combination of the two kinds of duty. The signal class are derived from this body.

(b.) The steam party, which now forms such a large part of the crew, is divided into—

(1.) Engine-room artificers.

(2.) Stoker petty officers and stokers.

Both classes are entered direct from the shore; the first as men having some trade qualifications for their duties afloat; the second having none but those of physical ability, and often this in but a moderate degree. The stokers are taught their special duties practically, and are further drilled in the use of small-arms, &c.

(c.) The artificers for the repairs of the ships and their furniture are for the most part, entered as qualified workmen; but a certain number join as boys, and are passed through the training ships. The whole of this body are drilled in the use of small-arms, &c., and, where necessary, receive special instruction for their duties.

(d.) The remainder of the ship's company is composed of domestics, sick bay staff, &c., entered in various ways, which it is not necessary to dwell upon; and who receive the instruction requisite for performing their duties in action, in case of fire, &c.

(e.) The Royal Marine Forces, comprising Artillery and Light Infantry, are entered and trained on shore as soldiers, and are drafted afloat as required; but beyond their military training, they receive

special instruction for service afloat; so that, in naval gunnery, an Artilleryman may be said to be on a par with a seaman gunner, and a Light Infantryman with the seaman's qualification of trained man.

The sources then from which the crew of a man-of-war is drawn, and the modes of preparation of the different bodies, are seen to be various. There are advantages and disadvantages in this system, the principal of the former being perhaps some small economy, the principal of the latter increased labour in manning the fleet, in organizing, and in teaching discipline. The net gain, when economy is balanced against efficiency, is very doubtful. When a certain standard of work is to be kept up, no saving is effected beyond a certain point by reducing either the quantity or the quality of the labour; for example, a good workman at 6s. a day will often be of more value than two indifferent ones at 4s. each. This is a general proposition; but a special exemplification of it is the present body of 2nd class stokers.

The method of manning our ships, such as it is, is historical; no one could explain the different parts of our naval system without remembering its history; the composition of the crews of our men-of-war was formerly indeed heterogeneous, and this condition altered but slowly whilst the general form and possible mode of propulsion of the ships remained the same. Now, however, with an entirely different fighting machine for use on the seas, the requirements in the men have changed; and the feeling that a different system with regard to the personnel is advisable, naturally presses itself on our notice.

As a rule, in great undertakings an invariable standard of efficiency in the whole of the operators is by no means required; there must be skilled superiors, skilled workmen, and unskilled labourers. The Navy is no exception to this, and it must educate its people for their duties; but as it is unnecessary to bring all up to the same point of education, so it is unnecessary to put all through the same preliminary course. This, however, is attempted, or nominally so, in the case of the seamen, all of whom pass through the boy's training ships, and are supposed to come up to the same standard of seamanship; that they should do so is, under the present system, impossible, and the conditions which formerly required it have now passed away.

At various times, of late years, much has been written and said on the question of what in the next war will be the principal offensive weapon for ships, whether the gun, the ram, or the torpedo; and different views have been advanced by different authorities; but it is certain that it is the gun which most impresses men's minds, and the development of which receives the greatest amount of attention. Naval gunnery, therefore, must hold the first place in the acquirements of the crews of our ships, and the attainment of superiority in this is the principal object to be kept in view in the training of our men-of-war's men.

Our requirements now are—putting on one side the engine-room duties—the highest attainable mental and bodily activity for the

leading employments in gunnery and torpedo work, and in a few other special positions; the 2nd class of efficiency in men for the ordinary gunnery occupations, and for the more important part of the duties of the ship and in boats; and the 3rd class of efficiency or training, or what may be called the general average, for all the remainder of the work.

The men at present provided for the foregoing duties are, the class of the seaman proper and the Marines. With very few exceptions, the most important duties are assigned to the seaman class; this, in the view already set forth that the seaman from his exercise aloft has an incomparable advantage over the Marine, seems perfectly right; but, as before remarked, in the conditions to which the naval service has now advanced, there is no practical possibility of giving the superior preliminary training to so large a body as the present one of the seaman class, and no necessity for so doing, if it were possible.

The relative value as gunners of the different components of the working part of the crew is much as follows:—

Seamen gunners.
Marine Artillery.
The remainder of the seamen.
Marine Light Infantry.

So that if the portion of men trained as seamen gunners be sufficient for the special seaman's duties in working the vessel, it would appear that the ship with Marine Artillerymen substituted for the remainder of the seamen would be a better man-of-war than if manned on the present system. And undoubtedly this is so; but the arrangement would be unnecessarily costly, as it is not required that every working man should be trained to such a high point.

The Marine Artillery are a highly drilled and most efficient body, but they are not needed afloat whilst there are sufficient seamen gunners. Except for the key of history, the existence of the corps would be a naval puzzle. Without access to official records, it is always dangerous to pronounce an opinion on a question of public policy; but so long as this body has no more important part to perform amongst our fighting forces than that now allotted to it, there seems to be next to nothing to be said in favour of its continuance. There is a duty which seems naturally pointed out for a highly trained military corps accustomed to sea life and under the Admiralty; but the execution of this has been assigned to the Army, and the question therefore forms no part of the subject of this paper.

It being then impossible to employ the Marine Artillery afloat according to their just value, it will, for the moment, be more convenient to consider them together with the Infantry.

Of the three gunnery components of a ship's crew, viz.:—

Seamen gunners,
Seamen,
Marines,
2 c 2

there is, so far as fighting attainments go, one which forms a superior order, the seamen gunners; and two which may be grouped together, viz., the rest of the seamen and the Marines.

Every effort must be made that this superior order shall have the best of training.

It is to be observed, first, that all our seamen cannot be trained in masted ships; second, that whilst (as under the present system) they all start on an equal footing, and on equal terms of service, the selection of men for seamen gunners cannot be restricted to such men as have been trained in masted ships.

In these circumstances, it would seem advisable to make some change whereby the need for such a restricted selection may be avoided, and yet all the men required for seamen gunners may have had adequate practice in vessels with sails.

It is now held by many authorities that the limitation of the distinction and special training of seamen gunners to a portion only of the whole body of seamen should be abolished, and that all men should be seamen gunners.

Firstly, is this reasonably practicable? Secondly, if so, is it advisable?

To carry out such a change, either the period under instruction must be shorter than at present, or the number of seamen in the Navy must be increased to allow for the greater number under instruction.

A shorter period of instruction would imply a lowering of the standard, and this seems decidedly objectionable; whilst an increase in the number of men, though highly desirable from the point of view of manning the fleet in war-time, would reduce the proportion of men trained aloft, and the sea service of every man.

It does not therefore seem reasonably practicable, and certainly does not seem advisable.

As time spent actually out of harbour is an indispensable element in the bringing up of a man-of-war's man, so up to a certain, and that a very advanced, point, his efficiency continues to be improved by it.

A deficiency of sea service is a loss in the case of any seafaring man; where the general average of the crew, or men of the 3rd class of efficiency, is concerned, a certain reduction of time now spent actually at sea would not be of excessive importance, but in the case of the men for the higher training, i.e., of the 1st and 2nd orders of efficiency (or seamen gunners) the loss would be very serious. It may here be observed in passing, that if the proper amount of practice at sea cannot be given to men of the higher orders of efficiency without reducing the sea service of the men of the 3rd order, this sacrifice should unhesitatingly be made.

It must, therefore, be pronounced that the acceptance for the more highly-trained men of reduced experience at sea is impossible. The whole body of seamen at present cannot be given adequate practice at sea; consequently, whilst maintaining the existing standard for the gunnery course, the entire present body of seamen cannot be put

on one and the same level of instruction, to the extent of passing them all through the gunnery schools now in use.

The matter then reduces itself to this: that two elements in unequal numbers are needed to form the working crew of a ship, the larger but inferior portion well trained in gunnery and practised by such service at sea as can be afforded them; the smaller but superior portion, prepared by a training in seamanship of the old kind, and with much more extended service at sea than could be given to the majority, this followed by what now answers to the seaman gunner's training. From this smaller body would be selected, as at present, the men for the most important gunnery and torpedo qualifications. This will fulfil the requirements before stated, viz., the highest mental and bodily activity for the principal employments, the 2nd class of efficiency for the ordinary gunnery occupations, &c., and more important part of the work of the ship, &c., and the 3rd class of efficiency and training for the rest of the work.

Before proceeding further it will be well to re-state in explicit terms the main propositions here set forth.

They are :—

- 1st. That, putting on one side questions relating to steam power, efficiency in gunnery is, as regards the personnel, the matter of the first importance in naval warfare.
- 2nd. That an important part of the high efficiency of naval gunnery is due to the practice of the seamen in masted ships.
- 3rd. That, without departing from the present policy of mastless fighting ships, it is possible, and therefore essentially necessary, to give all seamen gunners a preliminary training in ships with sails.

To accomplish the end in view—putting the matter in a few words—it is now proposed that the relative proportion of Marines and so-called seamen in the complements of ships should be altered, the seamen being reduced, the Marines increased.

It has been stated that a step in this direction was in contemplation, perhaps it has been already ordered; but, to meet the object proposed by this paper, the change of proportions must be greater than anything yet publicly hinted at. At the present time the Marines, in the complement of a ship, form about one-sixth or one-seventh of the whole; with the exception of work aloft, their duty is in principle precisely the same as that of the seamen, though practice has assigned, in the absence of good reason to the contrary, special functions to either class. Where there are no masts and sails, the duties of the Marines may, without any inconvenience, become identical with those of the seamen. Even with the present difference of experience at sea of seamen and Marines, this is, in small ships, frequently proved by the efficiency and value of the detachment in all matters.

The extended employment afloat of the Marines would be accompanied, not only by an identification of their duties with those of the seamen; but also by an assimilation, as far as possible, of regulations

as to service, &c., concerning them; the discipline would be one and the same.

This partial merging of the positions of seamen and Marines does not at all imply that Marines would be expected to take the foremost duties at the helm, in boats, &c.; but it is highly probable many of them would show their capability of doing so, when the learning of seamen's duties was no longer considered unsuited to Marine discipline. Amongst the seamen there are many who during all their service can be trusted to take no leading part, and even in their own profession remain below the level of a handy Marine.

The proposed modification of the duties of Marines afloat would by no means hinder the employment of land forces to serve as a part of the complement of ships as in former times, if such a necessity should arise. But independently of the question of suddenly, in time of need, augmenting our sea forces by the introduction of a body of men disciplined and trained to arms, there is now no reason at all for employing on board ship men brought up and instructed as land forces, and yet such is the result of the present system of the training and discipline of the Marines.

In the year 1699, in answer to arguments put forth against the employment of Marines afloat, it was urged in support of the practice that the Marines were much better in the use of small-arms than the seamen; and that, the periods of service of the latter being more irregular than that of the former, the discipline of the Marines was superior, and gave great advantages in case of misconduct occurring amongst the less orderly part of the crew. Such reasons exist no longer; the seamen have a complete knowledge of the use of arms, and the Marines are not looked to for the preservation of discipline.

The intention with regard to the Marines in the time of William the Third is, however, much more in consonance with our present needs; we are told that then the Marines were raised with the sole view of being a nursery to man our fleets, "as each individual became properly qualified to act on board of ship as a foremast man, which was uniformly encouraged, he was discharged from his regiment, and entered upon the books as such." This intention seems to have been abandoned when the regiments were re-formed under Queen Anne.

The original temporary nature of the Marine force will be noticed later on, but it is now time to consider the relative proportion of seamen and Marines in the crews of ships. This is now very different from what it was a hundred years ago: ships then depended on their sails, not only for locomotion, but also for manœuvring in action, so that efficient handling of the ship was scarcely second in importance to handling of the guns; and yet we find the general composition of the crews stated as one-third ordinary landsmen, "one-third Marines, and one-third seamen." It is not surprising that the remark follows:—"The latter proportion was as few seamen as could possibly navigate the ships," and no doubt it was so; but if in those circumstances one-third of seamen did actually suffice, what number is necessary now? Assuming that each of the landsmen mentioned

above was about equal to a Marine, the crews would be formed of one-third seamen and two-thirds Marines. It seems highly probable that this would be a very proper proportion for the present time.

But in carrying out the scheme of this paper, the relative proportions in our existing complements might be altered by degrees, tentatively—beginning with one-fourth of the ship's complement Marines instead of one-sixth. It may be remarked that this mode of effecting the alteration would have the great advantage of performing it gradually; no violent changes would be necessary; in fact, if not published, it might be in force for a considerable time without attracting notice. To carry out, however, the system in its entirety, a much more complete change will be necessary. If together with the alteration in the proportion of Marines afloat the present organization were maintained, keeping an impassable barrier between the two forces, the Marine headquarters must be considerably enlarged, the number of boys' training ships reduced.

But the time seems to have arrived when a new organization is desirable—an organization assimilating the discipline of the whole of the naval forces.

The establishment of naval barracks for the seamen has now become an acknowledged necessity; not only is the sojourn of the men in receiving ships distasteful to the men and injurious to discipline, but, owing to the altered construction of modern vessels, the conditions of life in the sea-going ships are entirely changed. In old ships the officers and seamen were frequently in close proximity to one another in their mess places, as well as whilst on duty, and in all cases they came much in contact; but now the reduction in the number of young officers, the alteration of their duties withdrawing them from constant attendance with, or supervision of, their men, the construction of the ships, which separates the men's dwelling-place into small sections, and hides them alike from their officers and from other portions of the crew—all have combined to render most difficult, in many cases, the disciplining of a crew on board their own ship, and to make the tone of the men dependent on the habits previously instilled into them. From the moment of a boy's entry into the service, joining a training ship, his training in discipline begins; and good habits early inculcated are lasting; but a continued high standard demands constant attention; and the more the men can be massed together when they cannot be employed at sea, the better it will be for naval efficiency.

It has been seen that the Marine Artillery occupy a very anomalous position; the connection of the corps with the Navy afloat would now (by the scheme) be entirely severed; or the force would be united with the Marine Light Infantry; and the united bodies (or the Infantry, as might be decided) would become a sea artillery corps, trained up in gunnery to a higher point than is at present reached by the Infantry, but to a lower point than is attained by the Artillery.

The crew of a man-of-war always containing seamen and Marines, it is a system worthy of the dark ages alone from which it has descended, that the power and control of the officers of each force

should not extend freely to their inferiors in the other corps, though it is true that the restriction is rather one-sided. It does not appear that this practice is in accordance with the spirit of the Queen's Regulations; but that powerful law, the Custom of the Navy, decidedly supports it. A reference again to history will throw some light on the matter.

In the year 1759, an Order in Council was issued establishing appointments as Generals of Marines, which appointments were to be held by Admirals. Alluding to an increase of the Marines, the Order says, "This great increase of the number, we apprehend, will make it necessary, in order to preserve discipline and regularity amongst so great a body of men, that we should have some officers of rank in the Navy to assist us therein, who may frequently review them, both afloat and ashore, &c." Sir John Barrow states that this was not the real intention, and that the appointments were only intended to be sinecures. We find, however, that the next year Post-Captains were appointed as Colonels of Marines; and in 1763—three years later—the Admiralty addressed an order to Lord Howe, as Colonel of Marines, directing him to call out under arms all the Marine forces at Chatham, and review them, &c. In any case it is clear that the feeling was that the qualifications of the corps—a corps recently formed for the Navy—were to be decided from a seaman's, not from a soldier's, point of view. Later in the century, the unhappy disturbances of discipline in the seamen of the Navy caused the adoption of the policy of, so to say, drawing off the Marines into a separate camp. Lord St. Vincent was very strong on this point, as his written orders show, and it is not surprising that the lessons taught by him should encourage in the corps a spirit of exclusiveness, and in the seamen and their officers a feeling that this exclusiveness must be respected. The reasons which gave rise to these distinctions have long passed away. The discipline of the seamen is almost equal to that of the Marines; and it will be quite so when the disorganizing influence of service in ships where the inculcation of discipline is most difficult is shared by both bodies alike; and when the seamen at intervals pass through a healthy re-toning in barracks on shore, as is now done by the Marines at the headquarters.

In the new organization, the Marine officer whilst afloat would, according to his rank, be employed in the duties of the ship; his work being assigned according to his ability. There can be little doubt as to the healthy moral effect of this, and such a change would probably be welcomed by the officers. As far as their acquirements at present go, there is no reason why the officers of Marines should not be employed in general gunnery drills, in internal duties of the ship, and in other useful matters; and an extension of responsibility would very quickly produce an increase of attainments. By the regulations for the admission of gentlemen to the Marine force, a young man may now at the age of nineteen years, find himself a Lieutenant of Marines on board one of Her Majesty's ships; that is to say, one year before the age at which many Midshipmen pass for

Acting Sub-Lieutenant; he may have had uninterrupted work at school up to the age of sixteen (allowing for a subsequent period of injurious cramming), and he will have had nine months' excellent instruction at Greenwich. He will thus, in the opinion of many, have had great educational advantages over the young naval Officer. Without supposing that the entry of officers for the Marines is likely to be deliberately arranged as a second channel for the admission of naval officers (though in other branches of Her Majesty's service two channels exist), there seems no reason why it should not be suffered to become so; what an advantage would not such a system in full working order several years ago, be now affording in the existing difficulty as to the paucity of Lieutenants!

The great argument used for the youthful entry of naval Cadets is that, unless the boy comes early to sea he will not take to the life, and will become, therefore, lost to the Service, or else make an indifferent officer; but it is known that good sea officers have been produced amongst those who have taken to the life at eighteen years and upwards; and whilst, as a rule, entering boys younger, there seems no sufficient reason for barring admittance to those whose tastes have been more maturely formed. Boys develop at very different ages, and the most precocious tastes are not necessarily the most lasting.

Whether such a system be permitted or no, there seems nothing to prevent the young Marine officer, in the example mentioned, becoming in every way a most useful officer afloat, as well as on shore.

The advantage of giving every one on board ship adequate employment is unquestioned; space is limited, and those for whom sufficient work cannot be found, had better be left on shore.

The position of the Marine officer afloat, especially with regard to the men of the same corps, would be pretty much that of a Divisional Officer; in all other respects he would, in the position in which, according to his ability he is placed, command indifferently seamen and Marines.

To these proposals as to the Marine corps it may be objected that in view of the present high state of discipline and efficiency of the force, it is better to let well alone, and not to try experiments. Such an argument would oppose advance of any kind, and cannot be considered of more weight here than in any other branch of progress.

It may also possibly be urged, that to modify the military organization of the Marines would impair their efficiency as land troops, it being the custom to attach a battalion of them to the Army in all warlike expeditions. This will not be so at all; in fact much advantage might result from the co-operation of a military body enjoying a training and organization somewhat between that of infantry, of artillery, and of seamen. But in reality this last question is beside the mark; the Marines are raised as a part of the naval forces. It is all very well, when convenient, to employ them with the Army, but their real work is service at sea.

If the organization of the Marines is not to depend solely on their

connection with the sea service, and is not to be modified as often as the benefit of that service requires, the corps should be withdrawn to the position of the French "*Infanterie de Marine*," who do not ordinarily serve afloat, and a body with such organization as is here advocated should be established, thus leaving it possible to attain the prime object, viz., a sufficient training at sea of those who are called and required to do the work of seamen.

For the year 1889 to 1890 the numbers of officers and men voted were:—

For the Navy, 41,730, of whom 21,252 were "seaman-class men," and 8,725 of the steam party, not officers.

For the Marines, 13,864, of whom 7,099 were for service afloat.

For the present year, 1890 to 1891, the numbers of the Marines remain practically the same, whilst there is an increase of 1,645 for the Navy.

But the increase cannot stop here; our force of ships is most properly being augmented, and this will entail an enlarged supply of men. It may be remarked that, whilst other navies of Europe are also becoming larger, the available sources for seamen of the first class of the Royal Naval Reserve have already been drawn upon to their full extent.

The whole body of the seaman class of the Navy being now entered in and passed through the stationary training ships, and these ships being practically unable to accommodate more than the present numbers, an enlarged entry under the existing system would entail more training ships, or a shorter period of training. The latter alternative is inadmissible; and with an altered system the amount an additional ship would cost might be employed otherwise to greater advantage.

Acting on the present proposals, the proportion of seamen would be reduced; so that, even with some considerable increase of the total personnel for service afloat, beyond what is now voted, the present training ships would be more than enough for the number required.

Leaving this question for the time, and turning to that of the entry and training of the Marines, it will be seen that a considerable increase in their numbers would be necessitated, both by the extended employment of them afloat, and by the extinction of the Royal Marine Artillery, so far as sea service is concerned, or by their amalgamation with the Infantry. The addition to or alteration in the present mode of raising the men would be slight, but it should be accompanied by the entry of a certain proportion at an earlier age. By the proposed scheme this would be done in the training ships; the actual numbers of boys to be so raised must be settled after some experience; but, to begin with, the staffs of the present training ships would be maintained at their actual strength, and the ships kept up to their full number of boys, the portion not required for seamen being assigned to the Marines. The selection in the training ships of the boys for seamen and boys for Marines, and the modifications of the training for the latter after their selection, are matters of detail which need not be gone into here.

The extended instruction required to be given to the Marines to form sea artillery should present no difficulty; the general course to be as at present, except that it would include as much work as possible in boats, and that the standard of gunnery will be at least that of Trained Man. The qualification of Trained Man, as a rating carrying pay, would be abolished both for seamen and Marines; and all the fighting men trained to reach at least this point of efficiency. Advanced courses, leading each to a special qualification carrying a small pecuniary allowance, would be established, *e.g.*,

In field artillery drill.
In laboratory work.
In fitting gun gear.
In torpedo work.

The majority of the small trades, such as barber, butcher, &c., formerly exercised on board ship by specially entered men, have recently been taken by men of the Marines; probably all the trades still carrying distinct ratings could, with the exception of those for the repair of the ship or her furniture, be carried out by men of the Marines.

Dress or uniform is a factor in discipline, and a more powerful one than might appear to casual observation; as such and not otherwise it concerns the subject of this paper. The existing uniform of the Marines shows a connection with the Army; it gives no indication that the corps is raised, and exists, for the sea service. With a drawing together of the discipline of the two principal co-efficients of the Navy, some connection might be shown in the dress. In the year 1781, Admiral Keppel, speaking of Marines for service afloat, is reported as saying: "He never wished them to wear a red coat or any badge which distinguished them from sailors." It may appear strange that this feeling, probably a very general one, has never been acted upon; but the explanation seems simple. Up to the middle of the last century, the Marines, under the name of "The Mariners" or "The Marine Regiments" were a temporary force, raised for war only, and "broken" or disbanded on the conclusion of peace, and they had no permanent connection with the Navy. Although this system was altered at the outbreak of the Seven Years War, and the Marines were then finally placed on a permanent footing, it is probable that this distinction was lost sight of, and that they continued to be regarded as a body apart from the Navy.

The passing away of this view was no doubt arrested by the policy of Lord St. Vincent, and by the frequent employment of actual land forces to complete deficiencies in the crews of ships; and being thus firmly fixed, it has existed till the present day.

The tendency of alterations of uniform of the Army has in late years been in the direction of the greater ease and freedom of the seaman's dress; but, on the other hand, this ease is receding before the altered conditions of life on board ship. Boots now become a necessity for the seamen; and loose fitting clothes and

knife lanyards become tiresome, if not dangerous, whilst working with moving machinery.

Under the proposed scheme, the training of the seamen would be more extended than that of the Marines. Boys, to about the same number as at present, will be entered in the training ships, the number required as seamen being passed through as such, and the surplus transferred to the Marines. The mode of selecting the boys for these two branches of the Service is a matter of detail; good men afloat are not necessarily good men ashore, and *vice versa*; and it would not at all stand to reason that most of the valuable men would find their way into one branch. A higher standard of school instruction on entry should be required; the improved education of the country at large warrants this. Less time at school in the training ship would then be necessary, unless it were decided to raise the passing out standard. There would be little else to change from the present course of instruction; and though, in some particulars, it might be considered desirable towards the end of their training to modify the course for boys going into the Marines, the part they had previously gone through, would not be thrown away. On leaving the training ship, the boys would be sent at once to sea-going ships; to a Training Squadron or other masted ships if possible, but if this could not be done at once, they would be transferred to such as soon as might be; and it must be so arranged that this transfer will not be delayed beyond a few months.

During the first four or five years of a seaman's service, his time would be spent, as far as accommodation permitted, in masted ships; the numbers of older men in such vessels being restricted as much as possible, and no Marines being taken. The mastless ships would take the men of four years and upwards. The mastless ships would, of course, require a proportion of petty officers and of men over four years' service; service in masted ships should for them be considered of more value than the easier life of a mastless one, and should lead to earlier promotion; if this were not found to be in the men's opinions sufficient to compensate for the harder work, and if service on such terms in the masted ships were likely to be unpopular, slightly better pay should be attached to the various ratings of a masted ship than to the equivalents in a mastless one. The ratings of captains of tops, &c., might well be a specialty for masted ships.

The Navy now possesses sixteen or more masted ships with complements of 250 men and upwards, and capable altogether of accommodating over 5,000 seamen. These vessels are for the most part of steel or iron; a few are composite built, and all of them may be made to last for many years—probably until the wheel of construction takes a fresh turn. In addition, there are several vessels in a less satisfactory condition but which have yet some work in them, and a number of sound smaller vessels. Under the present system, when the Marines form about one-sixth or one-seventh of the crew, the ratio of seamen to Marines in a ship is about three or four seamen to one Marine; to be strictly accurate, from 2·3 seamen to one Marine in a 2nd class ironclad, to 4·3 seamen to one Marine in a 3rd class cruiser.

When the first stage in the proposed alteration of the proportions of seamen and Marines is reached, viz., the Marines forming one-fourth of the whole complement, it may be estimated that under 19,000 seamen in all will be required against about 22,000 at present. Of this reduced number (under 19,000), probably one-third, or about 6,300, will be under four years' service; so that, until the scheme has progressed, and the proportion of seamen been further reduced, the requisite training cannot come completely into operation. The total number of the seamen class and Marines for service afloat voted in 1889-90 is 28,351; and, allowing for a moderate increase, the total in the immediate future may be set down at 32,000. When the ratio of these two classes in the crews has become even, 16,000 will be the total number required of the seaman class; and, taking one-third of these as being under four years' service, there will be perhaps 5,400 seamen to be accommodated in masted ships. This is probably putting the case at its worst, as far as providing for service afloat is concerned.

For present purposes it is not necessary to go further than this, in considering the alteration of the proportions; but there is no reason to suppose that with Marines under the new organization, a much smaller number of seamen would not be sufficient in a ship than even one-half of the working crew.

It cannot be considered that at the present moment there are in employment an excessive number of ships which can proceed under sail alone, and yet the total number of seamen in them is considerable. Counting the frigates ("Boadicea," &c.), and the larger class of sloops, and omitting ironclads, the smaller sloops, gun-vessels, &c., the masted ships now in commission carry about 4,000 men of the seamen class, and, were the Marines withdrawn, they could take many more without increase to the total of persons employed.

It must here be clearly explained that it is no part of this scheme to go back in the least from the present policy as to the employment of mastless war vessels; the necessary construction of our principal fighting ships renders the use of masts and sails in them an impossibility; and in war-time masts and sails must be a useless encumbrance to vessels of all classes when they have adequate steam power, and can rely on their coal endurance.

But we seem yet to be a long way from the attainment of the need as to the coal; unless ships can carry much more than at present, a great increase in the number of coaling stations will be necessary before the difficulty can be said to be even approximately met in distant parts of the world. Vessels capable of moving under sail alone can, however, still be usefully and economically employed in time of peace, and such use will have the great advantage of giving a proper training to the seamen.

With regard to the question of the economical use of sails, it is necessary to observe that it has been shown by statistics that there is no economy; this is a striking instance of the familiar fact that statistics will prove almost anything. The reality is that for many years past there has been in the Service at large no attempt to propel

ships in the most economical way; the element of time has almost always been the overwhelming factor, and when tied to time, waiting for a breeze is out of the question. Where, however, time is not a matter of great consideration, there is abundant proof of the cheap rate at which ships can be moved from place to place under sail; and further evidence is always forthcoming from our Training Squadron.

It must also be again clearly expressed that the practice in masted ships is intended as a means to an end, and as a training preliminary to that in gunnery.

The change of conditions of naval warfare shows no sign of reaching a resting place; the introduction of liquid fuel, which looms in the very near future, alone will revolutionize many matters that are now of fundamental importance; why, then, hastily throw on one side a system which provides the best possible preparation of our fighting men, when we have to our hand the matériel necessary for the production of it?

The present Training Squadron of four ships, carrying about 800 of the seaman class, is quite insufficient for the present purpose; three such squadrons would under the new scheme be established, each spending about one year away from England, their cruizes being arranged with a view to the ready availability of the men in case of war. The remainder of the men under four years' service would be in masted ships on any station except the Channel, E. Indies, and China, and perhaps the Mediterranean; these ships, being capable of moving under sail, would be required to do so as much as the training squadrons. In all cases the life in the masted ships is to be one of activity, without being unnecessarily irksome. Whilst prolonged sojourns in port would be forbidden, the aim would be to make the period passed in this branch of the Service as agreeable as time spent in a mastless ship can be. There must in these masted ships be a sufficiency of war matériel of new patterns for the instruction of everyone; obsolete guns, &c., will as far as possible be excluded; in ships designed to train men they are better away, and their room can always be well utilized.

These proposals will, no doubt, be met by the old argument that as to the work of handling our real fighting machines, the time in masted ships would be thrown away; if time spent in executing means to an end is wasted, this may be true, but not otherwise; great ends cannot be effected without the employment of the necessary means, and, if the means cannot be provided, the accomplishment of the ends must not be looked for.

The number of seamen to be required in the future will, of course, depend on the relative proportions in the crews of ships; the actual figures will best be decided by experience, but accepting them as those already taken when considering the question of the training in masted ships, viz., at 16,000, the problem of giving to this body thorough training in gunnery will be much simplified as compared with what it would be with the present numbers. Under this scheme, all seamen after finishing their service in masted ships, say, at an average age of 23, would be required to pass through the gunnery

schools, and a proportion of them through the torpedo schools, the standard of instruction in gunnery being equal to the present one of seaman gunner; those who cannot reach the standard to be discharged to general service. From those who pass best would be selected men for further instruction and for the higher gunnery and torpedo posts. Amongst the men who fail in gunnery may be found the best quartermasters, forecastle-men, or boatmen; but otherwise their duties would be the same as those of the Marines.

The steam party now forms such an important part of the complement of every ship that its organization and discipline must be considered as bound up with that of the rest of the crew. The disintegrating influence of the present system of separate centres of discipline should be abandoned. Every squadron and every ship at sea will always have its own slight modifications of the central discipline, and it is not desirable for it to be otherwise; but naval barracks, Marines' barracks, "Excellent's" barracks, "Vernon," "Cambridge," Steam Reserves, &c., should come under one general system, as much as the five training ships for boys are worked under one; though necessary modifications for different classes must, of course, exist.

A different mode of entry of stokers is not an essential part of the scheme herein set forth; but the present system is far from satisfactory, and it is open to consideration whether a certain proportion should not be entered in the boys' training ships. Expense seems the only obstacle. In any case their first breaking in should take place in an atmosphere of general naval discipline, and not in the somewhat narrow zones it is now confined to.

The ships' police as a separate body would be abolished, except as to the Master-at-Arms or Chief of Police, who would in all cases be appointed by superior authority; the petty officers and men for the police duties would then be selected on board the ship indifferently from the seamen and Marines.

It is unnecessary to go more fully into detail than has been already done in this paper; the outline of an organization being clearly established, the particulars will in the hands of experienced men be quickly filled in to the best advantage.

A brief summing up of the principal proposals set forth by this paper is as follows:—

(1.) The number of seamen in the Fleet to be reduced to such a complement as will supply jointly all the seamen gunners required, and a sufficient number of men for the purely seamen's duties, as boat and anchor work, helm, lead, &c.: so that the reduced number may be able to receive a more complete preliminary training than at present.

(2.) This body of men to have their first service in sea-going masted ships, and as far as possible to have a training as seamen of the old sort; and then to be instructed as seamen gunners.

(3.) The Marines to be increased in numbers to supply the reduction of seamen. Their system of training to be modified.

(4.) The whole of the seamen and Marines and stokers to be under one organization so far as discipline is concerned.

A desire for unnecessary change simply for the sake of change must always be condemned; but new conditions require to be met with new measures.

From the earliest times the crews of war vessels have been proportioned and suitably trained to the duties required of them. In the old galleys, in action, the duty of the oarsmen (until the oars were of no further use) was to propel the vessel and nothing else; the motive power was controlled by a few men specially in charge of it; the remainder of the crew were for fighting.

When the use of oars was abandoned, manœuvring in battle was little thought of; the sails then required small attention; and, whilst seamen formed a small part of the crew, fighting men were the bulk. But when the result of the action came to depend greatly on the skilful handling of the sails, the soldier was practically lost in the necessarily increased numbers of seamen.

Our sails are no longer of use, our motive power is dependent in no way on the fighting men, we have returned to conditions analogous to those of the galley, and yet we retain the obsolete organization of an intermediate period. The pith of this matter is a change of duties turning on a change of motive power, and the consequent adoption of an altered organization. Our necessity for seamen is that of the galley, few but first rate; but it is from them we shall get our most active and intelligent fighting men.

Our present high standard of gunnery is the surviving product of a system which is gone; the conditions which have succeeded that system are incapable of supplying a like result; unless an adequate substitute is provided, a decline of efficiency is surely at hand.

The supply of our need is easily within our reach, and a clear recognition of altered circumstances should make us as ready to modify the organization of our men as we have been to change the duties they must fulfil.

Colonel MORRIS: I do not wish to set myself up in any way in opposition to Captain Johnstone, who has given us a remarkably good paper, in which his arguments have been very lucidly stated. I do, however, wish to differ from his estimation of the relative value which he has given to some of the component parts. He puts the Royal Marine Light Infantry rather too low down in the gunnery scale. I was a Gunnery Instructor myself for four years. During that time we commenced training men very carefully, and also to examine them much more carefully than had hitherto been the custom. We found that about 75 per cent. of the men had fulfilled the conditions of trained men on board ship, and Lieutenant Machonochie, Senior Staff Officer on board the "Cambridge," Captain Alexander Buller and Admiral Sir Houston Stewart, on inspection of the Plymouth Division in Naval Gunnery, said that our trained men were fully up to the average of seamen-trained men. Indeed, soon after that we found that Marines coming back from sea had been requalified by Gunnery Lieutenants, on board ship, frequently in a very slipshod manner, that is, the gunner reported them as fit and the Gunnery Lieutenant passed them; and we had, in many instances, to protest against men being allowed to retain their qualifications so received. That is the first point. Then we have also been put very low down in the scale with reference to Marine Artillery. The Marine Artillery are very highly-instructed men; they are taught

a lot of things that we are not taught; but as regards naval gun drill, and as far as we go, our men are fully equal to them. I think I have gone into the gunnery portion sufficiently. Now, with regard to the duties of Officers on board ship. I fully endorse every word that Captain Johnstone has said about the Marine Officer on board ship having nothing to do, although there are many things that he is fit to do and anxious to do, and for years and years our minds have been revolting against this enforced idleness. With regard to the entry of Officers, we now get our Officers from those who qualify for Sandhurst. We get many who only want to pass through the Marines in order to go to the Indian Staff Corps, &c. I know that is the case, because I have seen many letters to that effect. If Marines are to be merged in the Navy, we shall then know who are our masters, which will be a great thing for us. Why not let midshipmen and Sub-Lieutenants volunteer to undergo a thorough and proper examination, and then be turned into Marine Officers? Sir Evelyn Wood was a Sub-Lieutenant, or something of that kind, in the Navy, and he has made a very good soldier Officer. Why should not a naval Sub-Lieutenant or a midshipman make a very good Marine Officer? then he will be able to go on board ship and do his work thoroughly well afterwards. Lord Dundonald joined the Navy at eighteen or nineteen, and he certainly was not a duffer. I may remark, in passing, that I do not like the reflections made upon the stokers. I am Admiralty Recruiting Officer in London, and I may say that we get as good men as we want, and if the authorities would only make up their minds as to whom they want and when they want them, we should be able to supply them regularly with remarkably good men; but as it is, one day they shy at a Hercules and the next day they swallow a pigmy. I strongly support the view of the lecturer that the ship's police should be abolished. I think it will be very much better to leave that in the hands of the petty officers and the non-commissioned officers. With regard to the discipline of Marines on shore, which I understand the lecturer to say does not fit them for service in men-of-war, since he would substitute a new discipline for it, I cannot agree with him. The training of Marines in barracks makes a good non-commissioned officer. A good non-commissioned officer is the most useful person on board ship, and it is only by training him, giving him authority, and supporting him, that he is able to maintain the dignity of his position on board ship. Naval petty officers lead their men remarkably well in many cases, but in most instances they do not seem to command them thoroughly well.

Admiral Sir GEORGE WILLES, K.C.B.: I am one of those naval Officers, and I am proud to say so, who still feel persuaded that masts and sails ought to be retained for certain classes of vessels. Our lecturer has explained exactly the reason why I say so. Masts and sails in twin-screw vessels are but of little use, I admit, but why should we not have a proportion of single-screw ships? No doubt you can get moderate sailing or decent sailing out of ships which do not exceed the length of the "Active," or her sister ship, and I think that is about 260 feet.¹

Captain JOHNSTONE: Nearly 300 feet.

Sir GEORGE WILLES: You must not go beyond 300 feet with a single screw. In a ship 300 feet long you cannot obtain these enormous speeds under steam—but do we require it? Ought not we to have a certain proportion of single-screw ships which can do their ordinary duty on foreign stations under sail? In the Pacific, for instance, is there any reason why the duty which our ships have to perform on that station should not be done under sail? I know it can on the Chinese seas. Admiral Colomb has stated it has been proved that sails are rather against ships than in favour of them; I deny that. How is that possible? If the Admiral in command makes the ships perform all their ordinary duty under sail, how can he conscientiously say that sails are a disadvantage?

Admiral COLOMB: I did not say that.

Admiral Sir GEORGE WILLES: But very nearly. Then there is another reason: where are we to get the coals from? The other day the First Lord of the Admiralty in the House of Commons said he could not send a ship down to the Creuzet Islands, in the Southern Ocean. Now a ship like the "Active" could have sailed within 100 miles of these islands, and then have proceeded under steam. There is

¹ The "Active" is 270 feet in length.

another view to be taken of all this. You may depend upon it that the restriction in the use of coal is not far distant. The House of Commons will not continue to sanction such enormous expenditure of coal in time of peace, and there is really no occasion for it. I will now say a word or two as to the abolition of what is called the separate system. I rejoice to know that there is a committee sitting at Portsmouth on this very subject. I do not agree with Captain Johnstone in the difficulties which he points out. As a matter of fact, Mr. Smith, when he was First Lord of the Admiralty, in 1879, determined to abolish the system, and I was on the committee with Admiral Hopkins, and we submitted a scheme for that purpose. We found, by forming a gunnery establishment at Sheerness, this would be very easily done. Why has there not been a gunnery establishment at Sheerness? Why is it that when a ship is fitted out in the Medway, they have to send round a body of men from the "Excellent" to carry out the necessary gunnery trials. There is no difficulty whatever about it. We have maintained a "separate system," at the sacrifice of the Service generally. Of course Admiral Hopkins and myself laid down clearly that we must maintain a school of gunnery, but it should be on a moderate scale, and all our men should go through a course of gunnery—not so long as at present, it is a great deal too long now, and large numbers of learners are locked up in the "Excellent" and "Cambridge." It is difficult to get them out again, as I well know. Now come to the barracks. I am happy to say we are to have them at last. Mr. Smith ordered barracks to be built at Keyham; the opposition to them has been something frightful. For years they were empty; now they are filled, and the Officers are all in their praise. Had Mr. Smith remained at the head of the Admiralty he would have possibly effected incalculable good. He ordered barracks to be built at Devonport; he intended building barracks at Chatham and Portsmouth, and he had ordered the abolition of the separate system. What an improved position we should now be in if he had remained in office. I must say he had at his elbow as an adviser a man for whom I have the most profound respect, that is the late Admiral Codrington. On the subject of the Marines, there is a great deal in the paper with which I entirely concur, but I do not think this is the moment to interfere with the organization of the Marine corps. I certainly think there is no occasion for having Marines and Marine Artillery as a separate corps. I do not think this is the moment for disturbing the Marines. We have got a most valuable body of men, and I say "hold on to them." We have lately read a valuable paper by Sir William Jervois, in the "Nineteenth Century," entitled "Home Rule for the Navy," and I am very much inclined to think that his scheme will bear fruit in due time. Captain Johnstone says, and truly, the Marines were established when the bluejacket was a scamp and wanted looking after, but may that day not come again if we have a maritime war? Will not the Marine corps be of as great a value as they were during the last war? I say, "Yes." As to the police, I quite agree with Captain Johnstone. They ought to have been abolished years ago in seagoing ships, where a chief only should be borne to keep the books.

Captain JOHNSTONE: Will you allow me one word in answer to Sir George Willes, as he is obliged to leave? With regard to the ships, we have the ships at the present time. I think I stated in the paper that we have plenty of single-screw ships already in existence. As to the Marines, I do not propose to abolish them. What I propose is to increase their numbers.

Sir J. R. COLMAN, M.P.: I will first refer to the reason advanced by the gallant Admiral for having masted ships—that the House of Commons, whom I admit may do very funny things, will not provide money for coal. The naval difficulties in the House of Commons have in the past very much arisen from the confusion of naval opinion, and the House of Commons might gladly escape from the expenditure of coal, if they find that there are Admirals and great authorities in the Navy who really still believe that you can carry on a war under sails. The gallant Admiral also observes that the Marines in the past originated in the necessity of controlling the scamps that were impressed into the Navy. That is absolutely true, and he then goes on to say that you must prepare, in a great maritime war, to have rissraff in the Navy again. But I say it is the very essence and business of naval authorities in this country to take such steps that you shall not have rissraff in your Navy, and I venture to submit to the gallant Admiral, that the very fundamental

principle, as I understand it, of the discussion we are now engaged in, is to so improve the organization of the Navy, as to give it that power of expansion which will secure not only sufficient men in maritime war, but that the men shall be first-rate men, and thoroughly trained for the work they have to do. Now, Sir, with regard to the observation that fell from Colonel Morris, I am not going to enter into any discussion as to the superiority in gunnery of the Marines or Marine Artillery. I think that is quite outside the question. The only thing I will observe is this: the Marine Artillery costs an enormous sum of money to give them a special training over and above almost any Service under the Crown; and one of the things which are brought out in Captain Johnstone's paper, and I am very glad that it has been so, is that this most highly-trained and most expensive corps you absolutely do not know what to do with at this minute. With regard to the argument about the admitted superiority of a non-commissioned officer of Marines over a petty officer of the Navy, Colonel Morris went on to show why that was so, and the reason he gave was a very remarkable one. It is, he says, because the non-commissioned officer of Marines is trained in barracks. But that will wholly disappear when the Navy gets, as it ought to have long ago obtained, barracks in which to train their own non-commissioned officers. Therefore the moment the Navy comes to have the barracks they ought to have, the very thing that now gives superiority to the non-commissioned officer of the Marines is equalized. The present reason of the difference is this, that a ship does not afford facilities for separating the petty officers from the men, and it is impossible to get a status of superiority, if the petty officers and men are mixed up all day long in every way with one another. Therefore I think there can be no objection to the argument of the gallant lecturer with regard to the matter of non-commissioned officers. Now I would like to touch as briefly as I can on the paper itself. I suppose it will be admitted, as I think it ought to be, that in dealing with the question of naval organization, there is one main thing we must remember, and that is that the men are for the ships and not the ships for the men, and if the naval necessities due to modern science render it imperative and inevitable that you are to use mastless ships in war, I protest against the doctrine that you are to create and maintain war-ships propelled by sail for the mere purpose of training your men in peace. I think the very first thing in dealing with naval organization is to acknowledge that the policy of retaining masted ships for the purpose of training men for service in mastless ships is radically unsound; and with regard to this matter, I would ask the gallant Officer, when he is replying, to explain the passage in which he emphasizes his argument in favour of retaining masted ships for the purpose of training. He says, "If the Britishman-of-war's man is, in times immediately approaching, to be equal in gun drill, in rifle drill, as a field artilleryman, or as an irregular soldier, to what he has been in times past and is now, he must have a special training; and an indispensable of this training can practically be got nowhere but with masts and sails." If that be true, the field artillery of the Army ought to be trained by masts and sails. All your rifle regiments ought to be trained by masts and sails. I may misunderstand the paper, but I cannot see any connection between the training of the field artilleryman, the training of the regular soldier, or the training of the rifleman with masts and sails. I admit the loss of masts and sails as a means for training the individual seaman is a very serious matter, and one of the problems the Navy has before it. The question is, how you are to produce the same qualities to-day as in the past without masts and sails? You cannot admit that you are to go back to masts and sails in war-ships simply for the purpose of training your men. Now, I think it is because thirty-two years ago naval opinions were everywhere clinging to the old things, that the Navy is so far behind in its organization. We had the Commission of 1859, and I have already pointed out, in this Institution, that even the word "steam" never appears in the report of that Commission, and the whole of their recommendations were based on the supposition that masts and sails were to go on for ever. You were told then in the evidence of the then naval experts, and the report was based upon that evidence, that the Navy would not carry on war under steam. One of the reasons given was a reason partially advanced here to-day, that you would never be able to provide the coal. Therefore, let us be cautious, in making any change now, not to make the same blunder, and let us

frankly admit and frankly adopt the principle that masts and sails are things of the past. Now, passing to other matters, we have two great branches before us. You have the class of seamen and the class of Marines, and with reference to how this state of things was produced, I must ask the lecturer to consider one great cause of the present existence of this anomaly. I think it has not sufficiently been considered; at all events I find absence of reference to it in his paper. It is this, that in the old days you had not continuous service in the Navy, in the old days you had no real consecutive training of bluejackets. It was found that by training men you trained them to a trade that was a marketable trade. A seaman's trade was a marketable trade, and all the merchants in the world were bidding for seamen trained in the Royal Navy; and, therefore, you first caught men for three years only, and you then trained them to be seamen, and at the end of three years they carried their trade to other markets. The result was you were compelled to go to continuous service. You had then to maintain two different Discipline Acts—one for continuous service—the Marines, and one for non-continuous service—seamen. The Navy required a different Discipline Act, being a non-continuous service, from the Marines, who were continuous. That is a very important point to bear in mind, but now that reason has entirely disappeared. There is no difference now in the duration of service, as men are enlisted as long for the Navy as for the Marines, therefore there is no practical difference between the two. But when you come to the solution of this anomaly, you find this extraordinary state of things, you come to an absolute deficiency of trained naval Officers of the rank of Lieutenant and other ranks. You have at the same time a great body of Marine and Marine Artillery Officers, but not being trained as naval Officers, you do not know what to do with them. There it is, and therefore I am most heartily in accord, and I put it forward years ago in this Institution, that the Admiralty arrangements and the policy of the Navy should be to fuse the two bodies, and to bring them into line together. The whole tendency of circumstances is to bring them together, and it is only old regulations, training, and prejudice that stand in the way. I am, therefore, most heartily in agreement with the general views of the lecturer with regard to the importance of increasing the naval training of the Marine forces, and above all things of making your Officers of Marine available for general duties on board ship. While agreeing with the premises of the lecturer, I differ somewhat from his conclusions, and I think the difference lies in this, that I refuse to contemplate the reorganization of the Navy from such a narrow basis as he does. He rather takes the ship as the unit from which you are to work; I prefer to take the general duties to be discharged by the whole Naval Power of England, and I think, in proposing the changes he has, he has omitted those broader considerations. The considerations that we should keep in view are these: first, you have to consider the personnel employed in your active fleet; you have to consider, secondly, the personnel of the Reserves for that fleet, which must be maintained; and, thirdly, you must consider the personnel of trained fighting men as Reserves, available for service on board mail steamers, and the great steamers running up your lines of communication; and, fourthly, you have to consider the necessity involved in all naval operations, that is, the minor military operations, in seizing and holding small posts without denuding the fleet of the men that are necessary for the fleet. Therefore, if I differ from the lecturer at all, it is simply that I wish he would look a little further into this matter, and I think then that he would see that what he dismisses as apart altogether from the subject of the paper—or rather incidentally and mysteriously refers to—is the garrisoning of all your ports and naval bases by a force under the Navy. Perhaps the force might be more naval than marine, but still such a military force is very germane indeed, and an essential part of the organization of the Navy. I trust that this subject will be kept alive by naval Officers, because I think it is want of organization which is weakening our Navy, and I think the money that is going into the Army might be applied to the Navy, and with greater advantage to the State if the Navy would only make up its mind what it wants and determines to get it.

Captain CURTIS: I presume that what Captain Johnstone wants is to give our fighting men a sea-stomach, and a sea-stomach cannot be given in barracks. It is very evident that it must be given on board ship. With respect to coal, I may say

I have just come from Vancouver, where I have been for fifteen months. There is any amount of coal there, but on any other part of the Pacific station you may have to go to the Falkland Islands for coal in time of war, and I believe it is for that reason that they have just divided the station into two parts, viz., North and South Pacific Stations. Scafaring men readily adapt themselves to circumstances. In the first ship I went to sea in, in 1841, "The Queen," 110 guns, the second gunner's mate was a Royal Marine Artillery pensioner: Marines shared boat duty and duty as prize crews, furlled the lower sails, and did other duties with the seamen. My experience has been that the able seamen and petty officers were quite equal to the seamen gunners as experts in target firing. On one occasion, at the gunnery inspection, on paying off the ship, the quarters I was in command of were ordered to fire three rounds quick firing, at a fixed object in Plymouth Sound; at the second round the Inspecting Officer ran his eye along the sights of one gun, and said the gun had not been correctly laid. I replied, "Sir, the captain of that gun is a Gunnery Instructor," whereupon the Inspecting Officer smiled. I speak subject to correction. I have been informed where Marine Artillery Officers are borne on ships' books they usually are in command of one of the important guns or battery; the Marine Officer of H.M.S. "Calypso" in 1846 had charge of the fore-castle gun—a pivot-slide gun. Gymnasiums on board ship are a poor substitute for practical seaman-ship, they may help to develop the muscles.¹

Admiral P. H. COLOMB: I think this is a paper which was bound to be read at some time or other. I am surprised myself that one such has not been read before. I am nearly sure it will be followed by many others now that the ball has been set rolling. With most of the premises of the lecturer I am inclined to agree, but I am not sure that I reach from his premises his conclusions. One of his premises, in fact, his leading premise, I think I am bound I won't say to disagree with, but to say that it is not proved; it has been already alluded to by Sir John Colomb, and is the statement that, practically, a man cannot be a good seaman gunner unless he has first had good practice with masts and sails. It may be so; it is constantly asserted that it is so; it has been said over and over again in this theatre; but I have never met anybody yet who has attempted to offer the slightest proof of the fact. And the lecturer himself offers no proof; he makes the assertion, and is confident that the majority are with him, because the majority are always asserting it. The theory is that practice with masts and sails gives that quickness and power and training of mind and limb together, which are required to make a perfect seaman gunner. I will ask you to consider in your minds what kind of man, after the agricultural labourer, most fully represents the dulness and stolidity of humanity, and I think you will agree with me when I put it to you that the dullest man, after the agricultural labourer, is the merchant seaman immediately after he has come down from furling an upper topsail, with his sea-boots on. I do not believe for one moment that the drilling of masts and sails has any effect upon the goodness of the seaman gunner. I know, first of all, that the seaman gunners in the Navy are not chosen, and they never have been so chosen, as far as I know, for their activity aloft; they are chosen, at present, entirely for their character, not from their abilities as seamen aloft. Then there is another point; it is quite the custom to say that masts and sails have made the seaman; but my experience on board ship is just the opposite way, that the men who are chosen to take the upper places on board ship are active first, and then placed in those positions afterwards; that to a certain extent you are putting the effect before the cause when you say that the smart seaman or the smart seaman gunner is produced by his work on the upper yards of the ship, because it is only on the upper yards that those qualities of mind and brain combined are called forth. And, then, I have to recollect in old days when there was a seventh gun's crew on board the "Excellent," that was the Officers' gun, and it almost invariably beat the seamen's guns. The Officers, no doubt, most of them, had had some little practice aloft, but nothing to speak of, but how was it that those Officers who were not trained aloft should always beat the seamen who were trained aloft? Then, again,

¹ There is no doubt with our battleships very highly trained men, or Officers, and men of well-known nerve will be chosen to control the heavy battery guns.

the lightest and sharpest and brightest trained military people I have ever met in my life, whether soldiers or sailors, are the Italian Bersaglieri. They are peculiarly light and quick in all their movements, but they have had no training aloft. I believe that what has made the British seaman at present what he is,—and, mind you, the British seaman of the present day is a much smarter, lighter, and more intelligent person than he was forty years ago when he was full of his sail drill,—is not the masts and sails, but it is the naval training, the habit, the custom on board ship of timing everything; so many Officers, with their watches in their hands, measuring the time in which everything is done, which practice does not exist anywhere else. It is that that has produced the sharpness and quickness of the man-of-war's man. But supposing it were so, that it was a necessity for our seamen gunners to be perfect, to undergo a long training with masts and sails, what is the logical conclusion? Surely it is not to put them into steam vessels with masts, where there are all sorts of inconveniences to interfere with their drill aloft. You are bound, if you act logically, to provide sailing vessels for the purpose of training these men, and I am not at all sure, if the lecturer is right, and it is a necessity to have this sail training, that it would not be worth while to build sailing ships for the purpose. There would be duties for them to perform which they could very efficiently carry out in peace, and very economically. All the transport work, all the store work, and taking out the crews to ships abroad, of which so much is done now, could be carried out in that way. I do not say it ought to be, but I think that it is the logical conclusion to which the lecturer ought to have come. I know myself, in masted steamers, it has always been a toss-up what amount of sail training a man got. Some Captains would never give them any training at all, others were constantly under sail. The other general premise is very plainly and clearly stated in the paper—the constant assimilation which is going on between the bluejacket and the marine. There is continuous service, which brings him a step nearer. Now, you have barracks which brings him many steps nearer; you have done away with masts and sails which brings him many steps nearer, and you are training him now in a way to make a very first rate soldier. You are continually bringing, in spite of yourself, the seaman up to the marine, and the conclusion I should come to is not that which the lecturer comes to. You must observe that he proposes to accentuate more strongly the difference between the seaman and the marine. I think that what we are coming to is a greater drawing together of those two branches of the Navy, that is to say, that while you are now “soldiering the sailor,” if I may use the term, what you will have to do presently is to “sailor the soldier,” so as to bring the marine down nearer to the bluejacket level, and I do not think that ultimately there will be any difference whatever between the seaman and the marine, or between the Naval Officer and the Marine Officer. That I believe to be the logical conclusion of the premises set out in the paper. I was glad to notice the lecturer putting it forward clearly that it was not the value of the marine as a soldier, but as a man on board ship, that we should enhance. Sir John Colomb, I am glad to note, put forward most of the views I hold on this subject. We had no consultation as to what was to be said beforehand. I can only say I have fully concurred for years with his views, as he has put them forward again to-day. But, then, I am not absolutely clear as to what the meaning of the lecturer is, what it was exactly that he is aiming at. I trust he will correct me if I am wrong. I understand that what he really wishes is to keep up masted ships, manned wholly with seamen, as a necessary part of the training, and that all that he proposes to do is to increase the Marines sufficiently to take the places of the seamen who are withdrawn from the masted ships. Now, that is not a very big proposal; but I think the premises which are put before us point to much larger conclusions than that. As I say, I think the conclusions which ought to be drawn from the premises put before us in this paper are that we must look to the complete amalgamation of the two branches of the Service, so that there shall be no difference between the seaman and the marine.

Colonel J. M. MOODY, R.M.L.I.: Mr. Chairman and gentlemen, after the eloquent speeches that we have heard, I feel great hesitation in following up the discussion. I have listened to the able paper just read with much attention. With some portions of it I thoroughly agree, with others I totally disagree. I think if

Captain Johnstone had been recently at one of our gunnery headquarters, and seen a little of our system, he would not have rated us quite so low in gunnery. The efficiency of the R.M.L.I. in naval gunnery since Colonel Morris and myself held the appointment of Gunnery Instructor has greatly increased; the increased efficiency being due in a great measure to the trained pay having been granted to the corps; 80 per cent., roughly speaking, of the non-commissioned officers and men qualify as trained men. The system of gunnery training at headquarters is most carefully carried out, and I am informed by gunnery Officers that the result is all that is wanted for naval purposes; I think, therefore, that the Marines should be classed higher than "other seamen." In listening to the paper, it occurs to my mind it may raise in the Marines a feeling of distrust. For many years, the corps lived under a constant fear of being disestablished; very many naval Officers, some very distinguished ones, whose opinions had great weight, held that the Marines should be abolished, and did all they could to carry their ideas out; fortunately wiser counsel prevailed. The effects on the corps by this agitation was to engender a sense of insecurity and distrust, which tended greatly to lessen efficiency; is it, therefore, not advisable to leave a good system, and one which works so satisfactorily, alone? The Admiralty and I believe the Navy generally are satisfied with the discipline and efficiency of the corps as now constituted, and there is no difficulty in keeping it up to its full strength. Begin to discuss radical alterations, and you destroy the confidence of Officers and men. It is recognized that the purpose for which the marine is created is for naval service, and his training should therefore be to make himself, in the first place, as useful as possible to the Navy. But there is another point which should not be lost sight of, and that is his utility for Imperial purposes; not only has the marine to serve on board ship, but in many instances we know that he has to serve on shore. So long as the country has a large number of Colonies, and a vast seaboard, he will be required for land service. I therefore strongly urge do not lower his qualities as a soldier, make him as useful as you like afloat, with this always in view, that he may at any time be called upon for land service, utilize him to fill the artificer and other ratings for which landmen were wont to be entered. The system was begun some years ago, and may with advantage be carried further: provided that the corps is increased sufficiently to meet the additional requirement, more of the skilled artificers' ratings might be filled by Marines, even if eventually they were transferred to the Navy entirely. Were it known that artificers were required for the Royal Marines, there would be an ample supply, as there is in the Royal Engineers; the soldierly qualities of the men do not suffer by such employment, either in the Marines or Engineers. The lecturer raises the question of assimilating the Marines' clothing with the blue-jackets. I may just mention one of the grievances put forward by some men of the Army Reserve, which was that "the Austrian knot had been removed from the cuff of infantry regiments"; if such a small matter should dwell on men's minds, what might it not be, if not only the shape but colour of the Marine uniform were altered? We should most likely be landed in the same difficulty as the Army are in for recruits, if such assimilation took place. As long as we have a voluntary system of enlistment in this country for the public services, we must study these things. We have now no difficulty in recruiting for the Marines, and so long as that is the case great care must be taken not to make radical changes. As regards the Marine Artillery, we all know what the Marine Artillery are; they are a magnificent body, splendidly trained, fit to do anything and go anywhere, and yet it is very sad to hear that these men have no sphere. With the Officers, non-commissioned officers, and men so well educated and highly trained, it would not be encouraging for them to hear the opinions expressed to-day in relation to their usefulness to the Navy. If this is the general opinion of the Naval Officers, why is not a sphere found for them? Sooner or later, the Coast Defence must be undertaken by the Navy; does it not appear that the Royal Marine Artillery were created for it? This Coast Defence question must be faced, and the sooner the better. Here is a body already at hand for the purpose. It will be said why should the Naval Estimates be saddled with the expense which is now met out of the Army Estimates? This would be unfair; but could there not be a sum voted, say, for Imperial purposes, and not included in either Army or Navy Estimates? Let it,

however, be administered by the Navy, and allow the Royal Marine Artillery to undertake the work of Coast Defence; it would be found that it would be a great saving to the country, a good system ensured, and a splendid body utilized. The lecturer has alluded to Lord St. Vincent; I believe it is generally admitted that had it not been for Lord St. Vincent, England most probably would not be now a First-class Power. He regenerated the Navy, and thus saved the country; he was one of those men who appeared to have had an intuitive knowledge of what was right; he recognized the usefulness of Marines and their sphere of action; he was a man, I think, that always held to the principle of "the gunner to the linstock, and cook to the foreshcet," and I think that we should still stick to that principle as much as possible. Let the gunner help the cook, and the cook help the gunner; but do not try to make a man jack of all trades but master of none. As regards the employment of Marine Officers afloat, they will only be too glad to be more useful if they have the opportunity given to them to perform duties for which they are qualified.

The CHAIRMAN: With reference to the Marines and their training in gunnery, I can say, from my own experience, that I commissioned a line of battle ship, which was not exactly as Sir George Wiles said, full of rogues, but it was full of landmen. I do not believe there were a dozen men of the seaman class who had been in a man-of-war before. I was glad to employ the Marines as captains of guns at first, and also to employ one of the young Marine Officers, who had lately gone through a very creditable course at Hythe, to train these landmen in the rifle drill. The men were trained at the guns under the supervision of a first-rate gunnery Lieutenant, and the Marine Officer trained these young landmen to use their rifles in such a way that after two or three weeks, when they began to fire at targets astern, they fired a great deal better than the old man-of-war's men, although these latter could do their manual platoon with the greatest possible precision. I should not, therefore, like to admit that the general training of Marines in gunnery was inferior to what you might reasonably expect from our own men. Reference is made by the lecturer to its being absolutely necessary, if men are to be highly trained in gunnery, that they should previously serve in masted ships. The lecturer has put it very clearly in the shape of a syllogism. First, it is very necessary that our men on board ship should be thoroughly trained in gunnery; secondly, it is found that the best training in gunnery is given by working ships with masts and sails; and the conclusion is, therefore, that men who are intended to be seamen gunners should be first trained to work ships with masts and sails. It is afterwards proposed in the lecture that a classification of the crew should consist of: First, those seamen gunners who, having been trained in sailing ships, have attended the gunnery and torpedo school; a second class, who are not so highly trained in gunnery, should do the ordinary sailor's work, boats, &c.; and a third class who should do the remaining work. Therefore the proposal is that men who are intended to reach the highest standard in gunnery should pass four or five years in a seagoing sailing ship, removed from all the gunnery practice in the larger sense that is connected with naval artillery, and then, having learnt all the seamanship in sailing ships, they should not afterwards practise it, but be reserved entirely for gunnery. I think the lecturer has endeavoured to discriminate and to divide in these arrangements more than is necessary, otherwise the lecture is one that will meet with everybody's approbation. I should say that I myself am one of those who have thought for many years that all the seamen of the Navy should be trained to be seamen gunners; that the exception should be a man that is not a seaman gunner. But then I use the word "seaman gunner" in the sense in which it was originally used in the early times of the "Excellent," before which there had been no system of gunnery. It was then necessary that the "Excellent," after compiling a general system of gunnery should train some men for the purpose of teaching the others, and they were the seamen gunners. Every man ought to be a seaman gunner now, because every man ought to know the gunnery system. There are a few higher men qualified as trained captains of guns; but, otherwise, I do not quite agree with the lecturer that we ought to keep up two classes, one of seamen gunners and the other of non-seamen gunners, in the Navy.

Captain JOHNSTONE, in reply: Colonel Morris and Colonel Moody have thought

that the paper places the gunnery qualification of Marines too low. Whether that is so is a matter I must leave to be decided by other opinions. My own estimate is, if the Marine Light Infantry man is placed on a par with trained men he is not in a bad position, and certainly it is not looking down upon him, as far as gunnery qualifications are concerned. I think it is putting rather a high value upon his gunnery qualifications, at any rate that was my intention. Colonel Morris mentioned that I said the training of Marines on shore was a bad thing. I think that is quite a mistake; that certainly was not my intention. I said particularly the discipline of the Navy was nearly as good as that of the Marines, and it will be quite as good when they have the same opportunity that the Marines have. My view is quite the other way. I think there is nothing equal to the non-commissioned officers of Marines we have on board ship. I have never seen any discipline in the profession like it. A good non-commissioned officer of Marines is certainly the most useful man you can have, and I shall be very glad when we can safely say the bearing of our petty officers generally is equal to that of the non-commissioned officers of Marines. Sir John Colomb said, the men for the ships, and not the ships for the men; but my contention is, if you are to work your ships properly, you must have a better sort of men in them. It is no use expecting to have the best sort of men, if you do not give the men the best opportunities for becoming so. Admiral Colomb also alluded to that point, and said there was no proof at all that an indispensable part of training to seamen was that with masts and sails. My contention is not that he cannot become a good seaman gunner if he does not have training aloft, but that if you were to have him very good, that is, as useful as he is at the present time, you must take the same means. There is nothing to show you cannot get the same sort of men if you carry on the same kind of training you have at the present time. There is a particular class of training, and unless you have that particular class of training, I certainly think there is nothing to lead us to hope even that we shall have the same sort of men. Admiral Colomb also said he believed the quickness of our men was due to the fact of their doing everything with their Officers standing watch in hand. That is perfectly true, but then the great point is, in modern ships you have no means of competing. In the first ships that came out without masts, it was proposed, instead of crossing the upper yards and so on, to have, as an eight o'clock evolution, shooting off a torpedo, or something or other. Of course it was not the same thing. Every ship now is different: there are no two ships alike; there is no standard you can possibly establish for quickness. I really do not see how you are to do anything of the kind, you cannot possibly compare them; whether it is getting up anchors, or whatever the drill may be, there is no possibility of comparing them, whereas in the old standard of masts and sails there was no mistake about it. If there was any difference in the fitting of a ship, every person in the fleet knew it perfectly well, and how much allowance was to be made for it; if one could not ship her topgallant masts, the other could not shift her topsails so well; but at the present time there is no possibility of competition, as far as I am aware, and that is one great point. With regard to the Officers' gun beating the seamen's, I do not think that proves very much. To begin with, the most efficient Officers in these days have been trained aloft, and a smart top Midshipman would be very sorry if a royal yardsman could beat him going aloft. Besides, the men have not the same thing to struggle for as the Officers. The Officers have to determine to keep their position, therefore, the Officers' gun is bound to be first. We know the Officers have greater endurance than the men. In the Arctic Regions the men used to give in first, not the Officers. With regard to Colonel Moody's further remarks upon the paper, of course it is not very easy for me to answer them, because he took an entirely opposite view on several questions I put forward, and, therefore, there is no reply to be given to them. No doubt Lord St. Vincent was a very clear-headed man, and certainly the corps *par excellence* in his idea was the Marines, because the Marines were most useful, but he carried it so far that he wished to have the whole army Marines. I do not think we can exactly hold Lord St. Vincent as being perfect in his ideas on this point. It is related of him that he objected to vaccination because he thought small-pox was a means of Providence for keeping down the surplus population. That is not quite in accordance with our views in the present day. I fear I have not made it quite

clear what the intention of this paper was. Perhaps I might explain. The idea is that all our men should be seamen gunners, that every man who is called a seaman should be a seaman gunner, that we should not as at present have part seamen gunners and part not seamen gunners, but that they should be all actual seamen gunners and not a modified form of seamen gunners, that it should not be a shortened course, but that they should be thoroughly instructed to the same point as the seamen gunners are at the present time, and that every one should go through it. At present that is impossible; you cannot put the whole of the men in the Service through the gunnery ships, and give them the same seaman gunner's training at the present day; at least, if it is possible, I do not see myself how it could be done; but if you reduce the number of seamen the matter is simplified at once. If you have a larger number of Marines, whom you train on shore in gunnery, and I think their system of training is excellent, but I wish there was more of it; if you reduce the number of seamen and have a larger number of Marines, you will at once be able to put the seamen through the gunnery ships in the present way. Those who are too stupid, and cannot come up to the seamen gunners' training, because there are some who are discharged from the gunnery ships because they are unable to come up to the standard, this sort of men you must discharge. They must go back into the fleet as general service men. Then, as at the present time, men will be selected for gunnery instructors and torpedo instructors, and many positions which require very superior training to what they have at the present time. The Marines would have a higher gunnery training, and they would fill up and actually make up the number of seamen who were reduced. There is another remark of Admiral Colomb's which I do not think I quite answered. Admiral Colomb thought my object was to take Marines out of the ships that had masts, and merely put seamen into them. My object was not that: it was to reduce the seamen to such a number that you could get them all conveniently through the gunnery schools, and unless the numbers are considerably less than they are now, or there is a great increase of gunnery schools, I do not see how that is possible to be done.

The CHAIRMAN: It now only remains for me to ask you to give your best thanks to Captain Johnstone for his very valuable paper. I hope it will lead to a considerable amount of opinion gaining ground in the Service, connected with the subjects he has brought before us.