

NAVAL SERVICE.

[To accompany bill H. R. No. 473.]

FEBRUARY 20, 1851.

Mr. F. P. STANTON, from the Committee on Naval Affairs, made the following

REPORT:

*The Committee on Naval Affairs, to whom was referred so much of the President's message, and accompanying documents, as relates to the navy, having had the same under consideration, beg leave to submit the following report:*

The improvements of the age, the growth of the country, the public sentiment, and the spirit of the times, all seem to conspire in calling loudly for a complete revision of our naval policy. Whatever changes may be necessary will relate chiefly to the following subjects:

1. To improve the economy and efficiency of ships of war and their ordnance.
2. To provide the means of naval defence for California and Oregon.
3. To adopt such additional grades, and other measures, as will promote the efficiency of the officers.
4. To revise the code of naval laws.

In the order stated, the committee propose to consider these several subjects.

The war of 1812 established a new era in the navies of all the States of Christendom. So far as naval architecture and armaments were concerned, that war left the United States far in advance of the times. We introduced larger ships and heavier metal, demonstrated by sea-fights the superiority of both, and thus rendered the whole navy of England, as it then existed, almost entirely *effete*. It was destroyed, and has been since to a great extent rebuilt. After the war, that government suffered entire classes of ships to go into disuse. Her line-of battle ships were cut down and made into frigates. Instead of repairing her frigates, she suffered them to rot and then built new ones equal to ours, taking the size of our ships and the calibre of our guns for her guide. Her old armaments of 18 and 24-pounders were entirely discarded, and her ships were all provided with the larger pieces (long 32's and 42's) the great superiority of which, when borne by proper ships, the young American navy, by its achievements on the ocean, had demonstrated to the world. The old 12, 18, and 24 lb. guns of the English navy could not so much as reach where the heavier calibres of the American navy told with terrible effect; and to array a ship armed with 18 and 24-pounders against one with 32's and

42's, was about the same as to attempt by the use of pistols to prevail against rifles.

Men of war are made to carry guns, and by the battery to be carried are the size and proportion of the ship determined. The ordnance a ship is required to carry must control her model. The Americans used the heavy metal, and built heavy ships to carry it. Upon this principle was effected the revolution in naval architecture, in the armaments of ships, and in the entire navies of the Old World, to which allusion has been made. All maritime nations, including the United States, have adopted it in rebuilding their navies or calling new ones into existence; and, upon the demonstration which the American navy, with the blue waters of the ocean for a blackboard, gave of this principle near forty years ago, all navies have been content to rest.

But within the last few years another step has been taken in the same direction—for the adoption of heavier guns, and bigger ships to carry them. From the invention of hollow shot and large shells, dates a new era in the means of naval warfare; and the application of steam to ocean navigation has engrafted a new feature upon the armaments of ships, their construction, and means of propulsion.

The next maritime war is to be a war of gun-casting and ship building; skill, rather than bravery, will, in all probability, bear off the palm. Ingenuity and science have been taxed to their utmost to determine how far weight and calibre of guns can be increased consistently with the size and strength which mechanical skill can give to the sides and frame of a ship of war. Guns of heavy calibre were attempted long ago; but the science and mechanical skill of the day were not equal to the task of giving proper reinforce to the piece, construction to the carriage, or model to the ship. But now the mechanic, with his ingenuity in conception and his skill in execution, goes hand in hand with the man of science in his philosophical researches. The latter has but to announce his newly discovered law of nature, when the former lays hold of the discovery, proceeds to convert a physical principle into a mechanical expression, and straightway to apply it to some useful purpose in the economy of man.

It has been demonstrated with mathematical certainty that instead of guns of 30 and 40 lbs. calibre, we may cast and send to sea, manage and fight with perfect safety to ship and crew, guns of 64, 72, and even of 135 lbs. calibre; and that this may be done with terrible effect upon an enemy, there is no doubt in the minds of the committee. These heavy calibres are as far superior, both in range and effect, to the 32 and 42-pounders of the present day, as these latter were found to be in the war of 1812 to the long 18's and 24's of that day; and the ships of our navy which were built to mount guns throwing 32 and 42 pound shot, are as unfit to carry a battery of 64-pounders or any of the new calibres, as England found her old school ships to be for carrying the heavy armaments of the stout American ships of the last war.

The improvements which have taken place in naval architecture within the last thirty years have been greater than during any former period of equal length; and yet our frigates and ships of the line have all, with one exception, been built upon models adopted thirty years ago and upwards. It is evident that the march of improvement has left them far behind the demands of the present time.

Our 74's are now fitted with twelve, and our frigates with eight 64-

pounders. These vessels would be too feeble to cope with a modern built ship mounting twenty guns, all of the largest calibre. If we give the latter the advantage of speed, which she is almost sure to have, she could choose her distance and engage the Pennsylvania out of the reach of her 32's and 42's. In that case the only guns which this leviathan could bring into action would be her sixteen 64-pounders; but these are no larger than the twenty of her antagonist; indeed, they might be smaller, for it is now practicable to build a twenty gun ship that shall mount all 135-pounders, and thus be made so much the more superior to the Pennsylvania with her present armament. In such a case, weight of broadside, size of target, and all chances would be in favor of the small ship having all large guns. The fight would really be between a ship of sixteen guns on the one side and a ship of twenty on the other, with both calibre and range in favor of the latter.

The committee are not informed that other maritime nations have any such small ships so provided with heavy batteries, except steamers; but from the results of experiments on the subject, which have been conducted in the most masterly manner by the direction of the distinguished officer at the head of the Bureau of Ordnance and Hydrography, and from information derived from sources of unquestionable authority, the committee have been convinced of the startling fact, that the improvements of the day, in steam, in ordnance, and other matters, have left the navy of the United States, with its imperishable live oak framed models, in a condition as *effete* as the war of 1812 left the men of war of Great Britain.

It has been proved by actual experiment, and every day the problem is repeated in the navy, that it is *safe* to carry guns to sea which throw shot weighing 64, 92, and even 135 pounds. It has been proved that these guns can be managed in a sea-way; that they can be loaded and their charges handled with facility by the crew; that they carry farther than the thirty-two and forty-two pounders with which our ships are now served; and that they are equally as accurate, and far more terrible and destructive in effect.

It is too plain for argument that when a ship has to cast a given weight of metal at a broadside, the fewer the pieces the more destructive the effect. Thus a ship casting 1,000 pounds of metal at a broadside, the effect of that broadside would be least if discharged from 1,000 pieces of one pound each; it would be greater if discharged from 100 pieces of 10 pounds each; and greatest of the three if discharged from 10 pieces of 100 pounds each, thus increasing both in range and effect with increase of calibre.

The time has come for the navy to begin to cast aside its present guns and to build up a number of new ships, constructed upon models expressly suited to the new and heavy ordnance. Batteries of 92 or 135-pounders cannot be mounted, carried, and fought upon the decks of a ship that was built to carry a battery of only 32-pounders. The present vessels of the navy are as unfit for their new ordnance as are merchant built vessels for men-of-war.

The policy hitherto pursued of building live oak ships has long been considered of doubtful propriety by officers of the navy, whose opinions are entitled to consideration; and it now appears, to the satisfaction of your committee, that this opinion was well founded, and that the plan of building of live oak should no longer be continued. These are the reasons for this conclusion:

1. In England, from whom we have borrowed largely of naval ideas,

where timber is scarce and dear, where it has to be imported for ship building, and the supplies of which were, therefore, liable to be cut off in war when they might be most needed, the plan was to build ships of the most durable timber, almost regardless of prime cost. The labor was cheap and ship timber scarce and dear. But here, timber was cheap and abundant, and labor for ship building, at the time we set out upon a system of naval policy, was scarce and difficult to procure. Without perceiving the difference of circumstances in the two countries, we proceeded to follow the example of England, and to fill our dock yards with immense piles of costly timber.

But the railroads and canals, the great highways that penetrate through our immense forests of ship timber, can never be interfered with by an enemy. In war we can command supplies from this source to any extent whatever. True policy, therefore, requires that we, having boundless forests of ship timber at all times at command, should consult economy in its true sense alone, and use that timber which will enable us to supply the navy at the least cost with the ships required for it. This timber is not live oak: it is white oak, locust, and the like.

2. Live oak costs several times as much as white oak per cubic foot.

3. Live oak will sink in the sea, and is almost as hard as iron; and, being so heavy and hard, it costs much more to have it wrought into shape than white oak and hachmatac.

4. Consequently, a live-oak built ship is much more expensive than one of white oak.

5. Whether a ship be built of live oak or white oak, her skin, ceilings, and plankings are always of pine and common oak; consequently this timber will last no longer on ribs and knees of live than of white oak.

6. When decay of planking takes place in a live-oak built ship, the heavy iron and copper bolts used in securing this planking to the frame (for it is the frame only that is of live oak) have to be backed out, the holes plugged up, and care taken to drive the bolts for the new planking into fresh places. The operation of backing out the bolts from the frame of a live-oak built ship is more expensive than putting them in. Consequently, the statistics of the Navy Department show cases in which it has cost more to repair a live-oak built ship than it took to build her in the first instance; and the case is of common occurrence where more money will be expended upon the repairs of an old live-oak ship than it would have taken to build a new white-oak one upon a better model and an improved plan.

7. It is the opinion of competent judges (of navy officers who have consulted the statistics of the merchant service, the vessels of which are, with but few exceptions, all of white oak) that a white-oak built man-of-war would run from seven to ten years before she would become unseaworthy through want of repairs from decay. They run longer than this in the merchant service. But, instead of attempting to repair a white-oak man-of-war at prime cost, she should be sold, and the money taken to build a new and a better ship; and thus the navy, with its improvements, would keep pace with the times.

8. And it is the opinion of officers who have attentively considered these statistics and otherwise examined into the subject, that a white-oak man-of-war, of any given class, would cost for hull but little more than



half what would be required to build a like hull of live oak. The committee see no reason for questioning this opinion.

9. The statistics of the navy show that the so called live-oak built ships of the service repeat, on the average, their original cost in repairs for the first seven years, and that, consequently, live-oak built ships are enormously expensive.

10. By building white-oak vessels, running them until extensive repairs from decay begin to be required, and then, instead of repairing, selling and building new vessels, it is readily perceived that the navy would always keep pace with the times, models would be improved, better plans adopted, and new principles applied, so as to keep the navy up with all the improvements of the day, and in a condition to introduce, without sacrifice, any new invention. As it is now, we have upon live-oak frames the models and ships of half a century old, and have really had no opportunity of improving the models of our frigates, or of adapting them and our 74's to any of the improvements which have taken place since 1820 in the means and implements of naval warfare.

11. Were we to build up a navy of iron ships and maintain it for the next half century, it would scarcely be more sealed against improvements of models, ordnance, and means of propulsion, than our live-oak built navy has been since the war of 1812. The power owning an iron navy would, in this age of discovery and invention, be liable to have it thrown into disuse any day by the introduction of some new principle, discovery, or improvement. Any navy that should reject all discoveries and stand still for a few years, would, on waking up, find itself far inferior to others around it.

The time has, therefore, now arrived when true policy and the best interests of the State require that, in consequence of the recent discoveries and improvements connected with naval ordnance, we should commence gradually to dispose of the live-oak built ships of the navy, and, instead of repairing them at heavy cost, to replace them with others of white oak, having all the improvements of the age, both in the armament and in the construction and equipment.

That the committee may not be misunderstood as to the degree of importance to which the experiments upon heavy ordnance in our own navy and elsewhere have attained, it may be stated as a fact (to which the best informed officers of the navy are ready to assent) that it is not only possible, but practicable, easy, and convenient, to build a ship, and that, too, without unusual expense or loss of time, which shall mount thirty or forty guns only of this heavy ordnance, and which ship, so armed, would alone be more than a match at long shot for any ship in the navy, from the Pennsylvania down.

The experiments in ordnance which have been carried on for the last few years, under the Bureau of Ordnance and Hydrography, leave no doubt in the minds of officers informed upon the subject as to the practicability of building ships, and of mounting them with entire batteries of this heavy ordnance, which shall not only have a longer range and greater precision, but which shall be more terrible and destructive than the present battery of any sailing-vessel in the world.

The moment we build and send to sea one such ship, that moment must all the great maritime nations of the earth begin to throw aside their ships and armaments as they at present exist, and come up to the new

standard. The alternative would be the undisputed supremacy of the seas for the United States.

There is another consideration in favor of these new ships with heavy ordnance, and it is a consideration of economy; for, while these great guns make ships more effective, they also lessen the expenses of maintaining them in commission. For the comparison, let us take two ships—one armed as at present, with 32's; the other in the manner proposed, with 135's (10 inch solid shot) of this new kind of ordnance. The two ships, let it be supposed, will throw each about the same weight of metal at a broadside. One of our present first class frigates, (as the Independence, the largest of them all,) with thirty 32 pounders on a side, will discharge at a broadside 960 lbs. of metal, which will require a battery of seven 135 pounders. Therefore, in one ship we shall have 11 guns, and in the other 60. This 60 gun ship,\* a first class frigate as she is called, would require a crew of fourteen men to a gun, counting those only on one side. The heavy-ordnance ships would require a crew of sixteen men to each of her guns on one side. Now, supposing the new fourteen-gun ship to require as many men as the frigate in every other respect, except at the guns, it appears that the present ship requires 420 men to serve her guns, while the proposed vessel requires only 140 to serve her guns; difference 280 men, whose services are not required for the new ship.

The average cost to the government of each of these 280 men, whose services are thus dispensed with, is, at a moderate estimate, \$16 66 pay and rations, or \$200 per annum. Here is a gain, therefore, of a more efficient ship, and a saving of \$56,000 a year in her crew alone. Now, if we suppose this one ship to be of white oak; that she will last seven years, or two cruises, before repairs from decay become necessary; and that, at the end of that time, she will be sold instead of repaired; and, moreover, that what she brings be applied to the building of a new one, we shall have, besides the \$352,800 saved during the seven years on account of crew alone, the difference of cost between a white-oak and a live-oak vessel, in addition to the whole amount paid for repairs upon the latter for seven years. Here, on the side of economy, is an immense margin.

The live-oak, according to official statements from the old board of Navy Commissioners, require repairs at the rate of 14 per cent. per annum upon prime cost; in other words, they require as much to keep them in repair for seven years as it originally took to build them. That the error, if there be any, may be on the safe side, let it be supposed that a white-oak ship of war will last but seven years without repairs from decay, though there is no reason to doubt that it will last longer.† The plan, then, is, when they require extensive repairs from decay, to sell them and apply the proceeds towards building new ships. This plan would give us a navy of new vessels every seven years, in the place of old live-oak ships which eat themselves up in repairs during that period.

\*The Independence has at present eight of these heavy guns on board, and would have more if she could carry them.

†The United States vessel Dolphin was of white oak. She lasted fourteen years without repairs from decay, and was then sold. The steamers navigating Long Island Sound are of white oak, and they last ten or twelve years without repairs from decay.—See Harry Bluff's Lucky Bag, Southern Literary Messenger, vol. vii, where the subject of white-oak men-of-war is treated with much detail.

The fairest exhibit of the comparative cost of the two plans (since the live-oak ship, after seven years of repairs, is again fit for service) is, to include the whole expense of building the first white oak ship and of her successor, less the sum produced by the sale of the former. Thus, contrasting the cost of two white-oak ships which, together, will serve fourteen years, against the cost of one live-oak ship and her repairs, not for fourteen, but for seven years, we have:

According to the report of the Secretary of the Navy, there are in commission, exclusive of steamers, storeships, and schooners—

3 ships of the line built to mount 304 guns, throwing 5,638 pounds at a broadside.				
8 frigates	"	430	"	7,626
16 sloops of war	"	332	"	4,874
4 brigs	"	42	"	554
<u>31 vessels.</u>		<u>1,108</u>		<u>18,692</u>
		guns.		pounds at a broadside.

When manned with the full war complement, it would require 6,140 men to serve those guns. In deducting the guns of the three ships of the line, which are only receiving ships, and not in fighting order, we have 4,268 as the number of men actually required to serve the guns of the ships now at sea, according to their present armament, or those they are built to carry.

The prime cost of these live oak vessels, with the expense of keeping them in repair, may be stated approximately, but near enough to absolute accuracy for present purposes, as follows:

	Prime cost.	Repairs for 7 years.	Total.
3 ships of the line	\$1,800,000	\$1,800,000	\$3,600,000
8 frigates	2,000,000	2,000,000	4,000,000
16 sloops	1,920,000	1,920,000	3,840,000
4 brigs	200,000	200,000	400,000
* Total cost of present live-oak ships for seven years	-	-	<u>11,840,000</u>

Estimated cost of 31 white-oak vessels, to be armed with heavy ordnance—10 or 11-inch guns, to throw solid shot or shells, and to cast the same weight of metal at a broadside with the live-oak ships now in commission, viz:

	Wgt broadside.	Cost of each.	Total.
3 28-gun ships (135-pounders)	84 guns. 5,670 pounds.	\$120,000	\$360,000
8 14-gun "	112 " 7,560 "	75,000	600,000
16 6-gun "	96 " 6,480 "	40,000	640,000
4 2-gun "	8 " 540 "	15,000	60,000
	<u>300</u>	<u>20,250</u>	<u>1,660,000</u>

At the end of seven years, these ships, if offered for sale, would bring \$40,000 for each of the three 28 gun ships; \$25,000 for each of the 14-gun ships; \$12,000 for each of the 6-gun ships; and \$5,000 for each of the 2 gun vessels, or in the aggregate \$532,000, which being applied towards building new ones to take their places, would leave at the end of seven years \$1,128,000 to be added to this to complete them; thus making the total cost of building thirty-one white oak vessels, and of substituting new ones for them at the end of seven years, only \$2,788,000

\* Wear and tear of rigging and sails, painting and caulking, not included in this estimate. Nothing but the expense of building and repairing is estimated.

against \$11,840,000 for the present live-oak; saving on this one item in seven years \$9,052,000, or more than a million and a quarter per annum.

The live oak ships as they now are, require 6,140 men to serve their guns. The white-oak, with heavy ordnance and same weight of metal at broadside, would require 2,760 men—difference 3,380. But, as before stated, men to serve the batteries of the three line-of-battle-ships are not provided. Only 4,268 men are required to serve the guns of the ships now actually at sea, without counting steamers and schooners. To serve heavy guns in white-oak ships, throwing the same metal, would require 1,920 men. The services of 2,348 men could be dispensed with. Each of them costs, on an average, \$200 per annum—total for seven years \$3,287,200, or \$469,600 per annum.

The new heavy-gun ships would not require so many men to handle them in action as the live-oak ships. The total difference on this score may be estimated at 300 men, making probable a still further deduction, if the white-oak ships be adopted and armed with the heavy and destructive ordnance.

The conclusion is irresistible, that we may maintain in active service a more effective naval force than that we now have in commission, and save annually something like two millions of dollars under the heads of *increase and repair*, and *pay and provisions*. Contrasting the proposed white-oak navy, with its few guns and heavy shot, against the present live-oak navy, with its many guns and light shot, the difference in the cost of maintaining the two, and the saving to be effected by suffering the existing ships gradually to disappear, would soon counterbalance the whole cost of the new vessels, and place the navy upon a footing of economy which is impossible upon any other system. The number of officers would be the same under the new as under the old system.

The most important and striking feature in the proposed system is its economy. But it cannot be doubted that so radical a change would draw after it others of equal importance. At all events, the material of the navy would be in a condition so plastic and so cheaply maintained, that it would be easy to impress upon it any form required by the progress of future events and improvements. In this point of view the committee deem the change to be one of the highest importance, and they earnestly recommend it to the consideration of the House.

The next object which has engaged the attention of the committee is that which relates to the naval defence of our western coast.

The acquisition of California, and the occupation of Oregon, have extended our sea front from the Atlantic to the Pacific ocean. The national defences to be provided for those distant shores must, of necessity, be almost entirely naval. The approaches from every other direction except from the sea are difficult and doubtful, and may easily be well secured. But so weak and helpless against hostile approaches on the sea front are our fellow-citizens on the Pacific, that it is within the reach of any third or fourth-rate naval power with whom the United States may be at war greatly to harass and annoy them. So dependent are they upon ships for supplies of all kinds, that a blockade of her principal ports for a few months would reduce the State of California to a starving condition.

The average population of California, for the last year, may be estimated at 200,000; and it may be assumed, that during the year there were about 2,000 vessels of all descriptions which entered her ports. This estimate is sufficiently accurate to show how entirely dependent



that country is upon the sea, and how vulnerable from that quarter; for it proves that, in the average, one ship is required to supply the wants and necessities of about one hundred Californians—so little do they produce except gold, and so dependent are they upon foreign markets. The world would not afford sea-going vessels enough at this rate to fetch and carry for the people on this side of the Rocky mountains; nor does the world afford another instance of a people so dependent for supplies upon the sea, or so exposed and so utterly helpless in case of attack by sea, as are the people of California in their present condition.

A blockade of our Atlantic ports might interfere with our intercourse abroad, but it could not bring the people here to such a degree of suffering, distress, and misery as would be inflicted on the people of California by a blockade of their coast. The voyage by sea hence to California and Oregon is the longest voyage known to navigation; and as far as the naval defences of that State and Territory are concerned, they are as a colony in the most distant part of the world, which in war the navy has to protect, and the route to which would be thronged with the enemy and beset with dangers.

In providing the means of naval defence, or planning a course of naval policy, regard must be had to the situation and condition of other nations.

Seeing, then, the means of attack, and knowing the extent of their resources at sea, and our own, we can the better judge as to the degree and kind of preparation which it behooves us to make.

Owing to the great naval resources of the States upon the waters of the Atlantic, it never has been and never will be consistent with the true policy of the country to keep up in peace a standing navy in proportion to the standing navies of other countries. Hence, though we find the United States the first commercial nation for tonnage, she is only the fifth in actual naval force. The navies of Great Britain, France, Russia and Turkey, all carry more guns than the American navy, and the Egyptian navy has only seven guns less.

In proportion to commercial marine, the navy of the United States is the smallest navy in the world. The nations of Europe support navies that mount some twenty, some ten, but all more than two guns for every 1,000 tons of commercial shipping; whereas we mount, on the average, rather less than one gun. Great Britain has six, France ten, Russia twenty-four guns for every 1,000 tons of shipping owned by their merchants. The naval force to be kept ordinarily in commission should not, in the judgment of your committee, ever reach such a figure as these navies present, nor do the public interests require that in times of profound peace it should exceed one-third or one-fourth of the lowest of these rates.

As commerce expands and increases, the demands upon the navy for service also increase; therefore, there seems to exist somewhere a ratio between the tonnage of commerce and the guns of armed ships, which, if it could be discovered, an eye being turned to the degree of preparation of other navies and our own resources, would determine the proper size and the most judicious rate of growth for the American navy. That navy is no larger now for the protection of both the Atlantic and Pacific coasts than it was for the protection of the Atlantic coast alone; for the present size was determined before Texas was annexed, California acquired, or Oregon occupied. This increase of sea front, therefore, would

seem to call for an expansion of the navy. But the committee do not propose any enlargement; they believe that the fundamental changes already suggested in the models and armaments of our ships, together with other arrangements which may be easily adopted by executive authority for increased activity and efficiency, will render the present force amply sufficient for a peace establishment. And if it should be deemed important to increase that force, the system of reform herein proposed would enable the government to maintain a larger number of more effective ships, by the expenditure of a much smaller sum of money than that now annually appropriated for the navy. The condition most appropriate for our navy is that which will invest it with the capacity for economical, healthful, and vigorous growth as occasion may require, at the same time that it is sensitive to the influence of every improvement, and never lagging behind the commercial marine in any essential particular. The great reliance of the country in time of war must be upon our vast resources in the productions of our forests, mines, agriculture, and commerce, for building and equipping vessels.

In the opinion of the committee the naval resources of the Atlantic States, in contradistinction to the Pacific States, are unrivalled. The railroads, canals, and other great works and thoroughfares which penetrate into the interior and intersect among the mountains, have converted almost every forest into a timber shed for the navy. The tonnage of the United States is the greatest in the world. Our merchant ships are unmatched for speed and unequalled in size. We build more ships than any other people, and we may almost be regarded as a nation of ship-builders. With sailors enough in peace to man the largest commercial marine that ever spread its sails to the breeze, we should have from that service gallant tars enough in war to man the largest fleet the world ever saw.

With such means, resources, and facilities at command for stretching out the naval arm upon the Atlantic in war, it would be neither wise nor desirable in peace to provide either ships or guns according to the numbers which Great Britain or any other nation may choose to build. All things considered, the Pacific coasts require the protection of a much larger navy in proportion than the Atlantic; for the case is different there. We have no private ship-yards; no ship builders; no timber sheds; no railroads running from the seaboard up into forests of ship-timber; nor any other of the facilities for building up a navy. All the materials for creating a navy there must be sent hence over that long, tedious, and dangerous route, which in war would be controlled and commanded by Great Britain.

First standing in the middle of the great highway to California is the island of Bermuda. Ships from the southern ports bound to the other hemisphere pass on one side of this island, while those from the northern States pass on the other side of it. It is a powerful position, amply provided with coals, munitions of war, and military stores of all sorts. A few steamers stationed as lookouts off that island would give intelligence of the approach, in war, of any fleet bound to California. Escaping here, the rock-bound island of St. Helena, another centre of naval operations in the South Atlantic, stands on the wayside of our road to California. But getting safely by this, we next come to the Falkland islands, another station upon which the British navy is perched right in the middle of our road. Escape here would be a miracle; for at this point the tracks

of all vessels come together preparatory to doubling the cape. But if the fleet for the succor of California should pass by this port without molestation, it would be only to encounter the storms and tempests of the cape, and there, in that inhospitable region, to buffet with the ancient and unsubsidized allies of that proud realm, as the winds of heaven were once styled by a British statesman; and after all these dangers are passed, the haven we seek would still be three months off.

The idea, therefore, of sending to our Pacific coasts any succor in time of war around Cape Horn, or of furnishing any navy supplies by such a route, is a mere chimera—wholly and utterly impracticable.

Taking this view of the subject, the committee propose to consider the means of naval defence which economy, true policy, and a sound forecast require should be provided for California and Oregon. Having determined that, they propose to recommend a plan for accomplishing it.

As to the extent of the naval preparations which ought to be made in peace for the defence in war of any coast line, there is room for wide and honest differences of opinion, more especially as neither the time nor the motive of that war can be foreseen, nor can it be known who the other belligerent may be. But in this case and on this occasion, though some degree of preparation is necessary, that preparation involves no tedious undertaking nor extravagant appropriations.

No respectable naval power is to be found on the shores or among the islands of the Pacific. There is not so much even as a dock yard to be found, from one extent to the other of that vast ocean. The committee cannot learn, though inquiry has been made, that there is a single port in the Pacific ocean, or along its shores, that is at this time capable, with its own resources, of building or equipping so much even as a second class frigate. Maritime nations, as England, France, and Russia, have colonies there, but no naval stations of any consequence whatever.

Hence it appears that the naval supremacy on the sea is easily acquired, and when once acquired and placed in hands as strong as those of the United States, it will not be likely soon to be wrested from them, or even to be disputed. In the event of war, Great Britain finding us unprepared or without naval resources in California, would, by means of her stations and other facilities, send a force there superior to the small one now kept in commission, and so overpower us; at least, seeing that we were unprepared, she would be induced to make the attempt.

But if at the breaking out of war she should see ships already built and lying in ordinary in our Pacific ports; if she should see there the means and facilities of equipment and repair—none of which she has; if she should also see, in connexion with this state of preparation, the Marblehead and other fishermen whom the war would throw out of employment, and of whom 12,000 are engaged in their hardy occupations, on the waters of the Pacific; if she should see there these very men, standing as a corps of reserve and ready to act, who, in Old Ironsides and other ships, gave her in the last war such cause of remembrance, she would no doubt be disposed to leave us alone in that quarter.

As long as ships can be built on the Atlantic and delivered on the Pacific coast cheaper than they could be built there, true policy and economy require that they should be built here and sent there. For the reason already stated, they should be built of white oak, and should mount the new and heavy ordnance. The Pacific ocean, as its name imports, is an ocean of mild weather and smooth surface. In the language of the

Spanish Americans who inhabit that slope, their beautiful ocean is "Muy Mansa," a very gentle sea; so that a white-oak vessel will last there much longer than upon the boisterous Atlantic.

Whether the ships to be sent there be built of white or of live oak, the planking would be the same; and if it cost so much as it has been made to appear it does cost to repair a live-oak ship with decayed planking in the Atlantic ports, what would it not cost in California, where labor and materials are many times the prices, and facilities many times less abundant than here?

Already a live-oak built sloop-of war, the Warren, has been left there to rot and decay, because she wanted repairs to enable her to double the Horn, and could not afford to have them made in California. If she had been of white oak she could but have rotted, and the loss would not have been nearly as great.

It is the more important, in the minds of the committee, to abandon the use of live oak almost entirely, and to substitute therefor white oak, because of the reasons already stated—the improvements of the age, and the revolution which steam, or some other motive power, is to effect in naval warfare. Models that are considered the perfection of naval architecture, or ships which to-day may be regarded as irresistible, to-morrow, in the progress of invention and improvement, may be rendered wholly inefficient and almost valueless.

The part which steam is ultimately to play in maritime wars, is by no means a settled question. It must be acknowledged that the steamer and sailing-vessel have each their own peculiar advantages; and it would not be wise, in the present condition of our knowledge and experience, to adhere entirely to either. If sailing-vessels be built, as they certainly ought to be, to carry guns of as heavy calibre and of as great range as those of the steamers, there would be some advantages in an engagement on the side of the sailer. She could carry more guns than the steamer, supposing her cost to be the same, and their range would be quite as great. If it were calm, and the steamer should seek a raking position, she would have to move upon the circumference of a circle, of which the sailer would be the centre, and the distance of the two apart, the radius. In this case, the boats of the sailer would have time to swing her around, so as to keep her broadside bearing. If the fight was a running one, so as to bring each vessel end on, the advantage would again be in favor of the sailer, because the cross section of the steamer is larger, and would present a larger target. A steamer is also more vulnerable than a sailing-vessel. Her machinery makes her instinct with vitality, and a single shot might sometimes inflict a fatal blow. These advantages, however, do not appertain to our present sailing-vessels. They must be remodelled, and their armaments entirely changed, before they can be expected to cope with the present class of steamers.

On the other hand, considering that steam, so soon after its introduction into ocean navigation, has brought about the necessity for remodelling and rebuilding the whole navy, it is by no means certain that further improvements will not enable it to maintain the ascendancy. So far as speed is concerned, the steamer must always be superior to the sailer. In chasing, scouring coasts, and concentrating forces, no comparison can be instituted between the two. The steamers could select their time and opportunity for engaging the sailers, and, by their power of concentration,



might cut them off in detail. Experience and invention will doubtless secure the means of shielding the machinery of the steamer from the effect of shot, by placing it entirely below the water line. This would leave the advantage almost entirely on the side of the steamer.

The course heretofore pursued in the navy with regard to steam, has been wise, cautious, and economical. The plan has been to build a few vessels, in order to keep up with the times and to hold the service ready, without loss or sacrifice, to cast off any exploded forms, models, and arrangements, and to introduce the newest and latest improvements in the application of steam to purposes of naval warfare. By the establishment of lines of mail steamers, encouragement has been given to private enterprise, stimulating invention, accumulating experience, educating engineers, and most effectually preparing for any future emergency which may require the highest exertion of maritime power. The committee do not undertake to determine what proportion of the new force shall be of steamers. It is deemed better to leave this to the executive discretion, and to future legislation.

Nor do the committee propose any large appropriation at this time for the purpose of effecting the great change herein proposed. It is an indisputable fact, that whenever a new or improved piece of ordnance has been introduced upon the ocean, its introduction has been followed by ships built after new and appropriate models, and has formed an epoch from which to date improvements in naval architecture. And although the committee are well satisfied that the late improvements in naval ordnance are such as to make it indispensable for the United States to get rid, without delay, of the old guns, and the ships which were made to carry them, in order to substitute the improved ordnance, and ships adapted to this new species of great guns, they are equally well satisfied that this important transformation must be the work of time, wisely projected and gradually matured.

In providing the proper means for naval defence of the Pacific coasts, the ships to be held in reserve there ought to be built here, loaded with munitions of war, coal and other imperishable articles of naval stores, and sent round with a crew only sufficient for safe navigation.

The ships which are sent to serve in these waters, instead of being brought back to the Atlantic around Cape Horn, as heretofore, when the times of the crews expire, should be suffered to remain there, and laid up in ordinary; and the crew should be brought home across the isthmus; thus gradually accumulating the force which it may be deemed wise to hold in reserve. And in case of war, the whalers and the merchant sailors who would be thrown out of employment, would constitute a force of able-bodied seamen sufficient to man all the ships which the government can command in the Pacific.

In order that suitable means and facilities may be provided for transporting these crews, with their baggage, and with their sick and disabled comrades, across the isthmus, and also that suitable means and facilities may in like manner be provided for transporting powder, provisions, munitions of war and other military stores, which otherwise would have to encounter the dangers and delays of the Cape Horn voyage, the committee propose that authority be given to the Executive to contract with one or more of the isthmus companies to do such transportation, at a sum not exceeding what it would cost to transport the same articles and men

around Cape Horn. Thus leaving the advantage to the government of the difference in time between the two routes—in itself a most important item.

When the distance to California is considered, and the difficulties of communication in war taken into the account, it will not be difficult to appreciate the importance of having such an arrangement; and, moreover, of having on that station an officer of high character, rank, and standing, to take charge of the navy and naval stores there, under the direction of the President here. His powers must be akin to those of a *Lieutenant* to the Secretary of the Navy. He must have the general charge and management of all the naval means and materials there. He must have a general control over the naval forces serving in those waters. All officers on that station, and all in California and Oregon, whether on leave, duty, or furlough, must be at all times subject to his orders and commands. He must be charged with the general superintendence of all the public works, as the construction of dock-yards, &c., for the navy, and consequently be intrusted with the general disbursements of considerable sums of public money. He must be responsible to the government here for the efficiency, safe-keeping, and proper management of all the naval means and resources under his control. He must be of high standing, and of a well-earned reputation for gallantry and skill in his profession; and he must be in such intercourse with the government, that in case of war, or any other sudden emergency requiring prompt action, he may be at no loss what to do or how to proceed.

Fully to appreciate the importance of placing such an officer on the Pacific coast, to have the control and management of the navy in that region, let us suppose that the Navy Department were transferred to Vallejo, and that we, here on the Atlantic, had in war, or even in peace, to wait, for all our naval movements upon the Atlantic, on the orders and instructions of a department at that distance. The confusion and inconvenience which the public would suffer in this supposed case are actually occurring now, for want of such an officer on the Pacific front.

Another officer of equal rank is required here for that sort of control, superintendence, and management of the personnel of the navy, which the major general has of the army. The public service is often made to suffer, and its efficiency is frequently put in jeopardy, for the want of higher grades afloat. All the maritime nations of Christendom, except this country, have adopted them. In this, legislators have stopped short; with the army they have followed the usage of civilized nations, and adopted for it the gradations of rank that are recognised and understood by all. In the navy we have gone but half-way up the list, and paused at captain. The organization of the army would have been as complete had Congress, in establishing the gradations of rank for it, stopped with major. The powers and duties of the officer who is charged with the conduct and management of a whole fleet of ships, are very different from his who has command only of a single ship. Necessities are sometimes above the law, and in this instance usage has gone ahead of legislation, and established, by brevet, the grade of commodore in the navy. What usage has done, what practice approves, and experience commends, the law should sanction. All captains who command squadrons are called, by courtesy, commodores. It is proposed that the law shall recognise the title merely, without granting any additional pay.

We have six squadrons in commission. As the crews for them are shipped for three years, we have the rule established that the terms of two squadrons expire every year—in fact, in a little less, for it is from the time of shipment, and not from the day of sailing of the squadron, that the terms of the crew are reckoned. The average time of a squadron's service is about thirty months. Now, if we take the squadrons that are returning, and those that are going to take their places, we shall have eight and a half squadrons in commission during every year. These, with the necessary reliefs and other occupations, as at navy yards, &c., give occupation to about eighteen officers, whom usage brevets as commodores. It is proposed that authority be given to confer the title by law upon this number of captains, but without any increase of pay. The law makes a difference in the pay of the "captain of a squadron," and other captains. Usage and the convenience of the service makes a difference in the title; and your committee propose to legalize the title of commodore, and to substitute it on the pay-roll for "captain of a squadron," as per act of March 3, 1835.

It has been found by the Navy Department both advantageous and beneficial to interchange the ships and duties of the several squadrons serving in the Atlantic; the like has also been done with regard to the squadrons in the Pacific ocean and China seas.

Parts of the Mediterranean squadron are now serving with the African, and now with the Brazil squadrons. The same principles of public bearing which require that the vessels of a navy should be divided into squadrons, and that each of those squadrons should be commanded by one officer, called a commodore, require, when two or more squadrons are serving together, that these squadrons should also be commanded by another officer, and he of higher official dignity and rank than either of the commodores. Frequent instances of embarrassment and inconvenience occur to the service abroad for the want of this higher office.

The fathers of the republic recognised the importance of the office of admiral in the navy, and acknowledged the grade by law. It went down with the Revolution, and the navy has hobbled along without it ever since. But the experience of other nations has tried, proved, and established it. The interests of the public service require it, and it appears to the committee that the reasons and propriety which induced this government to introduce into the army, into the courts of law, (court of admiralty,) and into diplomacy, the gradations of rank with the officers, the style and titles that were established, recognised, and understood by the States of Christendom, apply with as much force, and make the title of admiral, with his office, as appropriate and as necessary to the navy, as the title of minister extraordinary and plenipotentiary is in the diplomatic corps, or the grade of major general in the army.

By proposing to legalize the rank of commodores, the committee do not wish to be understood as advocating the continuance of the present number of squadrons, or as approving the manner in which they have usually been employed. On the contrary, it is believed that the two grand divisions under the command of admirals, as proposed, will tend to promote the unity of the respective forces in the Atlantic and in the Pacific, and will eventually demonstrate the practicability and necessity of a more economical and efficient system of cruising than that which is now in operation. At the same time, it is not supposed that the minor divisions of our forces,

under the command of commodores, can be wholly dispensed with, or that the establishment of that grade, which now exists by courtesy, will not be of great importance to the service.

It is understood that the pay of senior post captain, as now established by law, would be considered by the navy itself as a just and liberal pay for the grade of admiral. The committee, therefore, propose to abolish this distinction in the grade of captains; to repeal so much of the pay bill of 1835 as relates to "senior captain" and "the captains of squadrons," so as to make the former rate of pay apply to admiral, and the latter to commodores.

The committee also beg leave to state the reasons which have moved them to recommend the establishment, by law, of the grade of masters in the line of promotion, or, more properly speaking, of navigators.

Formerly, ships of war were used to carry soldiers to sea, that they might do the fighting. One person commanded the soldiers, and another the ship. The latter was called the "master."

Finally, when, in the improvements and progress of the time, sailors and marines were substituted for soldiers, and sea officers took the place of army officers on the decks of ships, the old "masters" lost control over the management of the hull, but retained it over the spars, rigging, and sails; he was also the navigator. But as improvements have taken place, and the art of navigation has been divested, under the lights of science, of its mysteries, the office and duties of master have been still more circumscribed—the captain and his lieutenant relieving the master of almost all of his duties and responsibilities, except those of navigating the ship, which consist in finding out, daily, the place of the vessel at sea; in keeping an account of her run, so that he is enabled at all times to point out her place on the ocean, and to tell the bearing and distance from her of the land, with its rocks, shoals, and dangers; so that this officer is no longer a master, but a navigator. This office is usually filled by the senior passed midshipman in the vessel, with the pay of master, according to the act of March 3, 1835. He is then considered by the government as doing the duty of a grade known as the grade of "masters in the line of promotion," which unwieldy title it would be well to supplant by the more descriptive, appropriate, and simple title of navigator, whose duties and pay shall be that as at present established for "masters in the line of promotion."

By the naval regulations, every vessel is allowed at least one master; or, substituting therefor the proposed title, one navigator. The committee, therefore, recommend that the President be authorized to appoint, by and with the advice and consent of the Senate, and from the grade of passed midshipmen, a number of masters or navigators; which number shall at no time exceed the number of masters required by the naval regulations to complete the complement of the ships in the navy.

The number of ships is continually varying; and as one navigator is required for each ship, the committee propose to regulate, as nearly as may be, the number of one by the other, rather than recommend any fixed number, which would give rise to acting appointments, and other evils and arrangements to be avoided.

The committee, for reasons which they will proceed to state, would also recommend that the grade of passed midshipman be formally recog-



nized by law, and that they be made commissioned officers, but without any increase of pay.

This grade of officers has been gradually established by the necessities of the service, and has grown out of an over-exercise of the appointing power in former years.

Previous to the act of '42, the law had fixed no limits to the number of officers of any grade in the navy. The President consequently had no limit as to the appointing power of midshipmen. Under this discretion more officers were admitted into the navy as midshipmen than were required to fill the vacancies of lieutenants. Consequently the grade of midshipmen became crowded, for promotion was slow, and the "young gentlemen," as they were called, began to find themselves bearded men, though midshipmen. They became discontented, and grew clamorous for promotion.

Under these circumstances, examinations were introduced. A midshipman was required to be in the navy at first five, and then six years, before he was entitled to his examination. Being entitled to it, a board of the most eminent officers of the navy is convened for the purpose. Here he is subjected to a rigid and searching examination upon mathematics, nautical astronomy, navigation, hydrography, surveying, seamanship, naval tactics, gunnery, language, &c. If found skilled and qualified in all of these branches, he is pronounced qualified for promotion; but there being no vacancy, he is called "passed midshipman." He then receives a warrant as such, and usually serves five or six years longer before a vacancy for promotion occurs.

This is a class of most meritorious officers; and considering their apprenticeship, the examination they have to undergo, and the fact that the cadet who, after four years, graduates at West Point, receives a commission as brevet 2d lieutenant; considering that a 2d lieutenant of marines, without any such previous training or examination, is taken from the same class of young men and commissioned at once; considering that the assistant and passed assistant surgeons—the latter after just such an apprenticeship and examination in his corps, the former without any apprenticeship, but on examination only—one and all, are commissioned officers, it appears but fair and just to treat this class of officers at least with an equal degree of consideration, by requiring them to be appointed by the President, by and with the advice and consent of the Senate, instead of merely by warrant of the Secretary of the Navy.

It is not proposed to make any other change with regard to this class of officers, except as to the mode of appointment. Their pay is the same, whether they be made commissioned officers or whether they remain warrant officers.

Nor are the reasons which govern the committee in this, wholly those of fairness and justice to this class of officers. The discipline of the navy and the efficiency of the service would be materially benefited by the change proposed.

The Secretary of the Navy invites the attention of Congress to a revision of the navy laws, to the subject of a retired list, and to a transfer of the coast survey to the Navy Department. The committee do not deem it expedient at this time to make any change with respect to the coast survey. They have already reported a bill for a retired list.

That there are drones in a service so large as the navy of the United

States, is beyond dispute; and that there is, and for many years has been, a retired list in practical operation, is also clear. It is only necessary to refer to the Navy Register to see that there are officers, and not a small number either, who have retired from active service. Some are on perpetual leave or perpetual furlough; and it is evident to the whole service that they will never be sent to sea again. These officers are practically as much on the retired list as it is possible for officers to be. The Executive has unlimited authority to put them all on half pay. If, therefore, the bill reported should not be acted on, it will be in the power of the President to remedy any actual inconvenience or injury to the public service which may arise from the inefficiency of any portion of the officers of the navy.

With regard, however, to the naval laws, they are old, and have been the subject of complaint, well founded complaint, for many years.

The attention of Congress has frequently been invited to the subject. The "rules and regulations" now in force by law for the government of the navy are old, barbarous, savage, and cruel. Since they were enacted, every State in the Union has modified and altered not only its laws, but its constitution.

The following are some of the offences punishable with death by these laws:

- To hold intercourse with any enemy or rebel.
- To endeavor to corrupt any person in the navy to betray his trust.
- To disobey the lawful orders of a superior officer.
- To draw or offer to draw a weapon upon him.
- To desert or entice others to desert.
- To perform duty negligently.
- To sleep on watch.

To leave station without being regularly relieved.

To burn or unlawfully set fire to any kind of public property.

Such are some of the offences punishable with death.

It would be difficult to find a more barbarous and savage feature in any of the present day than the following, taken from the navy laws now in force:

"Any master-at-arms, or other person of whom the duty of master-at-arms is required, who shall refuse to receive such prisoners as shall be committed to his charge, or, having received them, shall suffer them to escape, or dismiss them without orders from proper authority, shall suffer in such prisoner's stead, or be punished otherwise, at the discretion of a court-martial."

This is equivalent to a law that would hang the jailor when prisoners escape.

It would be also, in the opinion of the committee, desirable, both for economy and a proper degree of accountability, that the appropriations for the navy should be divided into two classes, and each made the subject of a separate general appropriation bill.

It is desirable that the public should know what is expended annually on account of the services actually rendered by the navy, and also what is expended towards providing a contingent for the emergencies of war.

Under the first head should be included the pay and rations of the officers and men, and all the current expenses on account of the naval force actually in commission, and all such items as are fairly chargeable to

supporting the service as it actually exists, including repair, wear and tear of ships in commission, pay and subsistence of officers and men.

Under the other head should be included all the items which are in the way of gradual increase, and which look towards a permanent system of naval defences. Under this head are included the expenses of docks, yards, and other structures, the expenses of building ships, of supporting lines of mail steamers, of building engines and casting guns, and the like. The latter should be entitled "a bill to provide for the common defence;" the former, "a bill for the support of the navy."

In conformity with these views, the committee ask leave to bring in a bill.

