

**A NEW RIG FOR SHIPS AND
OTHER VESSELS:
COMBINING ECONOMY,
SAFETY AND CONVENIENCE**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649324941

A New Rig for Ships and Other Vessels: Combining Economy, Safety and Convenience by R. B. Forbes

Except for use in any review, the reproduction or utilisation of this work in whole or in part in any form by any electronic, mechanical or other means, now known or hereafter invented, including xerography, photocopying and recording, or in any information storage or retrieval system, is forbidden without the permission of the publisher, Trieste Publishing Pty Ltd, PO Box 1576 Collingwood, Victoria 3066 Australia.

All rights reserved.

Edited by Trieste Publishing Pty Ltd.
Cover @ 2017

This book is sold subject to the condition that it shall not, by way of trade or otherwise, be lent, re-sold, hired out, or otherwise circulated without the publisher's prior consent in any form or binding or cover other than that in which it is published and without a similar condition including this condition being imposed on the subsequent purchaser.

www.triestepublishing.com

R. B. FORBES

**A NEW RIG FOR SHIPS AND
OTHER VESSELS:
COMBINING ECONOMY,
SAFETY AND CONVENIENCE**

A

NEW RIG

FOR

SHIPS AND OTHER VESSELS,

COMBINING

ECONOMY, SAFETY, AND CONVENIENCE.

BY R. B. FORBES.

Third Edition, enlarged.

BOSTON:

PRINTED BY JOHN WILSON & SON,
22, SCHOOL STREET.

1851.

PROPERTY OF THE
HARVARD-YENCHING INSTITUTE

PREFACE TO THE THIRD EDITION.

THE experience of the "New Rig," during the last six years, in the ships Massachusetts, Samoset, Reindeer, and in the barks Edith, Lantao, Racehorse, and Mermaid, satisfies me that it must come into general use in the merchant-service; and I beg most earnestly to call the attention of ship-owners and shipmasters to the many advantages set forth in the following pages, all of which have been fully realized by those who have sailed in the ships alluded to.

I have invariably endeavored to ascertain from those who have commanded ships in which I had an interest, whether any objections in practice have been found to the new rig, and have the pleasure to say that no alterations have been suggested, and that those who commenced voyages with prejudices have returned fully convinced that the new rig is better and cheaper than the old; and I would call the attention of the reader to the opinion of Capt. Louis M. Goldsborough, as stated in the following letter:—

"Portsmouth, N. H., July 25th, 1851.

"R. B. Forbes, Esq.

"My Dear Sir:

"Within the last three years, it has been my lot to pass some fifteen months on board the 'Massachusetts,' which ship, it is quite generally known, was not only built under your own supervision, but also rigged, throughout, after your own original design, now recognised as 'Forbes' new rig."

"Our public duties in that vessel involved a protracted sea-service, in the course of which ample opportunity was afforded me of witnessing the effects of her peculiar rig under a variety of circumstances, and of forming my own conclusions as to its real merits. These, in my judgment, are very decided, and carry with them advantages affecting economy, safety, and convenience, which cannot be too strongly impressed upon the minds of Ship-owners, and all others in any way concerned in commerce or navigation. Among the advantages which the 'new rig' possesses over the old, the following may be enumerated:

"The ordinary number of men allotted as the crew, may be reduced without compromising either efficiency or safety.

"Spars are less liable to be carried away, and sails to be worn out in calms, or split or lost in heavy weather, owing to the great facility of management which the rig itself especially confers.

"A more general interchange of spars and sails, fore and aft the Ship, than is effected by any other mode of rig.

"Much flatter surfaces of sails, and hence a material benefit in bowline sailing.

"Less *leverage weight* aloft (regarding the point of support to lie in the plane of floatation), and thus a less tendency to interfere with stability, or to cause the ship to incline. The eye itself may induce an opposite impression; but if one will take into consideration the materially reduced size of topmasts, actual position of yards when all the canvas is spread, quality of canvas, distribution of heavy blocks, &c. &c., the error of such impression will soon be made manifest. This, too, may be easily confirmed by quite an elementary calculation.

"In the emergency of reefing down, even to double-reef topsails, when the ship is in a *tight* place, the advantages of this rig are very conspicuous; for it may be done *without losing the command or steering-way of the Ship in the slightest degree*, and with the greatest facility. In the event of a squall, too, all that is necessary to bring the vessel, as it were, under double-reef topsails, is simply to let go the topgallant halyards; for then, the topgallant sheets being kept fast, the sails, assimilating as they do to those of a polacre, will take very good care of themselves, provided only that braces and buntlines be looked after.

"Its applicability to sea-propellers is another point worthy of especial notice. In such vessels, striking topmasts, and sending down all the yards fore and aft, must be of frequent occurrence. The topmasts being abaft, of comparatively light weight, and not interfered with by the lower yards, the performance of the task is thereby very much facilitated.

"Also, for men-of-war of a large class — line-of-battle ships — manifold reasons may be assigned why it should be preferred.

"While on the coast of California, we had occasion to go from San Francisco to the Sandwich Islands. This was done with but a boat's crew of men to handle the ship; and when about midway, the number of these men was reduced, by sickness, to four in a watch. Notwithstanding this circumstance, no one on board felt the slightest apprehension as to the safety of the Ship, nor was canvas spared her for a moment on that account. Had she been of the old rig, we should have felt our situation very differently.

"In conclusion, I beg to assure you that so far as I ever exchanged opinions with the officers of the 'Massachusetts' in relation to her rig, every one of them was literally delighted with its convenience and efficiency. Indeed, I have not yet met the first person, whether in or out of the Navy, who has actually served in a vessel rigged after your fashion, at all disposed to dispute its advantages, or to do otherwise than commend them in the warmest terms.

"Very sincerely and truly yours,

"L. M. GOLDBOROUGH,

"Commander U. S. Navy."

After a great deal of consideration, I have not thought of any material changes to introduce.

The rig is specially adapted to steam-ships, and particularly with the masts fidded abaft; and I confidently recommend it to all who are interested in large propellers for ocean-service. The appearance of the new rig is the only thing which, in the least degree, renders it objectionable; but, in these days of active competition, this objection should not be permitted to outweigh its many advantages.

I understand that one large packet-ship out of New York, the Great Western, belonging to C. H. Marshall, Esq., has adopted the new rig with some modifications. I have not seen the plans, and therefore cannot pronounce whether these modifications are improvements or not. I understand that the topsail, or "lower topsail," as it is called by some, is of the size of the usual close-reefed topsail, instead of being, as in my plan, of the size of a double-reefed topsail.

Of one thing I am thoroughly convinced, — that the designer of the modifications alluded to, however great his experience may be, cannot have given more anxious thought than I have done to the subject of the proportions of the sails, and to their availability for several places in the same ship. I therefore venture the opinion, that the modifications introduced will not be adopted when the new rig becomes more fashionable.

Most of the remarks which follow have been extracted from a pamphlet published by me in 1849. I have endeavored to reduce the amount of matter in the present pamphlet to a readable length, though too much cannot be said in favor of the rig; and I recommend it particularly to those building large ships, for which class it is *more necessary* than for smaller vessels, though I would adopt it in *all vessels*, whether sailing vessels or steamers, large or small ships, for the Atlantic or for the Pacific and China Seas. I have introduced a sketch of a large propeller, or auxiliary steamer; but, in carrying out my plan in regular steamers, the sails being auxiliary, the proportions would necessarily be different, as well as the position of the masts.

I am quite satisfied that the principal reasons why the new rig has not been already more generally adopted are simply, *that it is new*; that ship-owners, not seamen, are unwilling to adopt any thing which appears to them to be an experiment, or which adds any

thing to their labor, and to the first cost of their ship, however economical it may be in the long-run. Again, ship-builders, sparmakers, riggers, and blacksmiths are indisposed to recommend any thing out of the ordinary course. They consider the plans carried out in the last packet perfect, and they are unwilling to undertake any thing novel, unless it originate with themselves; and, even then, it is found extremely difficult to introduce any improvement. Prejudice, for a time, gets the better of reason; but, in the end, "economy, safety, and convenience" will carry the day.

The new rig is no longer an experiment; it has been tried during six years; and I have yet to find the seaman who can point out any practical disadvantage.

I cannot derive any pecuniary advantage from the introduction of the new rig. On the contrary, I am willing to labor gratis for its introduction. Why? Because I believe it will materially lessen the anxiety of the captain, and the labor of officers and men; I believe it will materially lessen the chances of disaster, and thus save valuable lives; I believe it will benefit owners and underwriters; and I cannot but look forward, with some pride and satisfaction, to the time when my plan will be universally admitted to be cheaper, safer, and more convenient, and thus conduce to the great cause of humanity.

Prejudice is fast melting away. Not long since, a thousand happy contrivances, now generally adopted, were looked upon as of no value, or as actually dangerous. One man finds fault with a new steering apparatus, because it cannot withstand the shock of stranding; another condemns a life-preserver, because it may possibly be rendered useless by a rupture. All the elements of life, including meat and drink and clothing, are expected in any new contrivance, although the objector may have gone hungry and thirsty and naked all his life. Only a very few years since, such ships as the *Surprise*, *Gamecock*, *Staghound*, *White Squall*, and a host of other new clippers, would have been considered wholly unsafe and uninsurable. Now they command the highest rates of freight for the longest and most stormy voyages; and, if they all had the new rig, they ought to be insured cheaper than the old-fashioned "cotton boxes."

R. B. F.

Boeros, July, 1851.

NEW RIG FOR SHIPS.

VARIOUS expedients have been resorted to for the purpose of lessening the labor of making and taking in sail, with the object of decreasing the risk, the wear and tear, and the labor to the sailor; many improvements have been adopted for making ships more durable, more economical, and more comfortable; great progress has been made within the last twenty-five or thirty years in these respects, especially in the merchant-ships of the United States, and particularly during the last three years.

Ships are now more easily managed by smaller crews than formerly. The adoption of chain-cables, looked upon at first with distrust, is universal; iron trusses, iron futtock shrouds, iron bands to yards, friction roller sheaves, patent steering gear, ventilators, and many smaller articles, have come into general use. The labor of fitting and working ships is much reduced. The rigger, with his mass of "puddings," "mousings," "catharpings," "bentick shrouds," "top-burtons," "rolling tackles," buoys and buoy-ropes, has been obliged to give way, in a great measure, to the blacksmith. Jack is almost ready to go to sea for the love of it; and insurance offices are only kept open for lounging places, where the newspapers and the gossip of the day may be indulged in,—the president and directors occasionally putting their hands into their pockets to pay for some old ship that should have been condemned before starting! Chrono-

meters, barometers, and thermometers, have crowded out lunars, azimuths, and amplitudes. Heaving the lead has become a matter of tradition; the commander who makes the best passage is the best fellow, no matter what risks he runs; — the everlasting spirit of 'go-ahead-ism' rules paramount. Seamen, however, have not improved, except in the important matter of temperance, in the same ratio that ships and their rigging have improved: I speak more specially of the Jacks. The old pig-tail Agamemnons, the sons of Trafalgar, and the younger sons of victory who sailed and fought with Bainbridge, Hull, and others of our own side of the Atlantic, — the old privateersmen, full of oaths, tobacco, and rum, — all are gone! And, in many respects, it is fortunate that we know them no more. But they had their uses; and, generally speaking, always, when sober and at sea, they were *sailors* of the first water, ready and expert to obey any orders against an enemy or against the elements. They were the men not to be ashamed of a reef taken in during the darkest squall; they could straighten out their twelve or fifteen fathoms of line, and melodiously sing the "marks" and "deeps;" they had a religious pride in saying, "Ay, ay, sir!" to every order, and generally in obeying any seamanlike demand. In short, half a dozen of them in a gale of wind were worth ten of the men now rating as seamen.

One great cause of this falling-off in the quality of marlinspike sailors is the discovery of gold in California. Another prominent cause is to be found in the greatly-increased competition among shipowners, whereby economy is necessarily the first object. It is becoming unfashionable to have ships come and go in what once was considered fine order. The freight-list is the great object. It is very seldom that the eye is gratified with a ship coming into port looking neat and trig about her spars and rigging. The booming gun, at departure and on arrival, is no longer heard. Everybody goes and comes back, no matter what part of the world he has been to, without causing any remark. The levelling power of steam has told the story of his ship's load-