

DESIGN EVALUATION AND ALTERATION OF THE DARK HARBOUR 17.5: CASE STUDY OF A MODERN REPLICA.

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Abstract

Designed in 1908 by B. B. Crowninshield, the Dark Harbour 17.5 is a classic example of a traditional day sailor. A modern replica is currently being built at the IBTC Portsmouth, with the intention to develop into a commercial production. This modern replica calls for a number of design alterations, concessions of a traditional design to the modern world.

An initial design evaluation was performed to assess the characteristic of the original yacht, in terms of hydrostatics, hydrodynamics, structural arrangement and comfort. Based on the owner's requirements, a number of modifications will be implemented. A shallower keel aims at increasing the area of operation of the craft and making it trailerable, while retaining performance and stability. To improve the strength and durability of the craft, a modern strip-planking sheathed with cold-moulded veneers has been chosen. The boat is also to be more comfortable and practical to use. Indeed, modern standards dictate the presence of additional comfort equipment as well as an electrical inboard engine. Finally, compliance with the relevant regulations will be checked to ensure the commercial viability of the craft.

The new design can finally be compared to the original one, allowing to evaluate the challenges of design modernization, the impact of contemporary requirements on a traditional design and the suitability of modern replicas in today's market.