

It is proposed to increase the height of the side at the midship by 400 mm, which will allow, firstly, to increase the reserve of buoyancy, and secondly, to accommodate three people on the boat instead of one rower and a passenger.

Since people with limited mobility may be on the boat, it is necessary to place a railing along the entire side, which will allow a person not to lose balance and feel more confident.

To increase stability, the boat will be equipped with removable outriggers, which are buoyancy blocks attached to the sides using aluminum outrigger beams. When the boat has no heel, the outriggers are above the water surface, but during a heel, one of them enters the water, creating an additional restoring moment.

Since a person with a high leg amputation may be a rower or passenger on the boat, the body weight of this person will be shifted relative to the diametral plane of the watercraft, which will create a noticeable angle of heel. To compensate for this heel, it is proposed to use solid ballast in the form of lead bars that can move in the transverse direction.

For the convenience of rowers and passengers, the seats will be made not in the form of horizontal boards, as in the original design, but will have a backrest, a soft covering, and the ability to move along the length of the vessel on special guides to compensate for trim.

References

1. <https://smallboatsmonthly.com/article/the-gloucester-light-dory/>
2. <https://hvtial.kapsi.fi/glouc/glouc.htm>
3. <https://adrift314.wordpress.com/building-the-gloucester-gull/>

SPECIFICS OF USING SOFTWARE IN THE EDUCATIONAL PROCESS DURING THE TRAINING OF SHIPBUILDING ENGINEERS IN WARTIME

Senior Lecturer Marina Voinovich
Odesa National Maritime University

During the full-scale invasion, the process of educating engineers in higher educational institutions faces a certain number of complications and challenges. In particular, the following should be mentioned: the lack of sufficient quality of basic education among university entrants as a result of years of distance learning and the discreteness of the educational process in schools caused by daily air raid alerts; the need to ensure the educational process in universities in a distance and mixed-mode format, which limits the possibility of "live" communication between teachers and students and the use of physical visual aids; a high level of stress and anxiety among seekers of educational services, which negatively affects their cognitive abilities and memory; the impossibility, due to the requirements of

current legislation, of using the usual software, the creation of which was associated with the aggressor country.

To solve these problems, I propose the following actions, which have been tested by me during the years of the full-scale invasion and are applied in the teaching process:

1. During the study of the course "Descriptive Geometry and Engineering and Computer Graphics", the majority of students have problems with visualizing three-dimensional bodies, as well as the projections of these bodies onto projection planes. In such a situation, the use of the "Autodesk Inventor" program helps greatly, as it allows creating spatial models of objects and looking at them from certain directions, which perfectly trains spatial imagination, which is currently almost absent in most students due to the absence of the "Drafting" course in the modern school curriculum.

2. Since the 80s of the last century, the software "Dialog-Statika. Project 1" has been very frequently used in ship design in the post-Soviet space. The reliability of this software package has been verified over the years, and the calculations performed in "Project 1" are confirmed by all Classification Societies that control the design and construction of ships. Naturally, much attention was paid to teaching how to work with this software package during the training of shipbuilding engineers.

As a result of known events in Ukrainian realities, there arose a need to use other reliable software in ship design.

Also, a significant condition in the choice of software is the availability of free versions of the programs.

In the Educational and Scientific Maritime Engineering and Technical Institute of the Odesa National Maritime University, this problem was solved as follows:

a) during the study of the "Ship Theory" course, the "FREE!ship Plus" program is used, a significant contribution to the creation of which was made by Associate Professor of the Admiral Makarov National University of Shipbuilding V.F. Tymoshenko;

b) as an alternative to "FREE!ship Plus", the possibility of using the DELFTship Free program is being considered. Analysis and comparison of the calculation results obtained using the aforementioned programs will be conducted in the future in the research work of students;

c) to create spatial models of ship hulls, theoretical lines plans, and necessary calculations of buoyancy, stability, unsinkability, and to solve other tasks arising during ship design, the PolyCAD software package is used.

References

1. <https://share.google/J0Y8G94jJT5Z9I2Ce>
2. <https://www.polycad.co.uk/>
3. <https://www.autodesk.com/products/inventor/overview>