

## Kokkuvõte

Töökäigus sai loodud üks võimalik kontseptsioon universaalsele Eesti väikesaari teenindavale laevale, mille kande võime on 40 tonni. Aluse pikkuseks tuli 30 meetrit, laius kaheksa meetrit ning süvis kaks meetrit. Laev mahutab oma autotekile kaks veokit või kuni 10 sõiduautot, lisaks on ruumi 100 reisjale. Sai loodud kontseptsioon, mis vastas algandmetele ning saadud sisendile ehk töö tulemusena saab järelada, et universaalse laeva, mis suudaks 40 tonni jagu kaupa trantsportida pea kõigi Eesti suuremate sadamate vahel, on võimalik ning kogenuma ning rohkem harituma inseneri abiga kindlasti ka teostatav. Samas kuna sadamate poolt tuleb piirangud laeva mõõtmetele, siis gaasil töötava laeva tööraadius ei kataks tervet Eestit. Kui jääda universaalsete asenduslaevade lahenduse peale, siis tuleks kaaluda mitme sellise aluse soetamist.

Lisaks sai uuritud hetkeolukorda väikesaarte sadamates ning nende võimekust taolise universaalse laeva teenindamiseks. Selgus, et Kihnu, Naissaare ning Kalnese sadamates tuleks uuendada infrastruktuuri, statsionaarsed kaid tuleks asendada kaasaegsete rampidega, misvõimaldaks teenindada erinevaid laevu. Samuti tasuks kaaluda Kalnese sadama muulide ümber ehitamist, kuna hetkel on sadama potentsiaal kasutamata. Olemasolev infrastruktuur võimaldaks teenindada oluliselt suuremaid aluseid. Kahjuks on sadamasse sissesõit muulidega liiga kitsaks aetud, mistõttu ei ole sadamasse võimalik sisenenda alustel, mille pikkus ületab 25 meetrit ja/või laius kuute meetrit. Taolised puudused tuleks likvideerida enne võimalike universaalsete laevade kasutusele võttu, vastasel juhul jäävad plaanitavate laevade täisfunktsionaalsus kasutamata.

Töö käigus sai korduvalt läbi tehtud laevaehituses levinud arvutused. Valemite taga oleva füüsika ning seoste mõistmine oli keeruline ning aega võttev. Valminud tulemus ei ole kindlasti veel kasutuskõlbulik, kuid tööd kirjutades saadud kogemused on kindalsti hindamatud.

## Summary

In the course of the work, one possible concept was created for a universal ship servicing Estonian small island, the carrying capacity of which is 40 tons. The length of the base was 30 meters, the width was eight meters and the draft was two meters. The ship can accommodate two trucks or up to 10 passenger cars on its car deck, and there is also room for 100 passengers. A concept was created that corresponded to the original data and the input received, as a result of the work, it can be concluded that a universal ship capable of tranting 40 tons of cargo between almost all the major ports of Estonia is possible and, with the help of a more experienced and more educated engineer, is certainly feasible. At the same time, as there are restrictions on the dimensions of the ship by the ports, the working radius of the gas-powered ship would not cover the whole of Estonia. If one sticks to the solution of universal replacement vessels, then the purchase of several such vessels should be considered.

In addition, the current situation in the ports of small islands and their ability to service such a universal ship were studied. It turned out that in the ports of Kihnu, Naissaar and Kalnese the infrastructure should be renewed, stationary quays should be replaced with modern ramps, which would allow servicing various ships. It would also be worth considering the construction of the piers of the port of Kalnese, as at the moment the potential of the port is unused. Existing infrastructure would allow for the servicing of significantly larger bases. Unfortunately, the entrance to the port is made too narrow with piers, which is why it is not possible to enter the port on bases exceeding 25 meters in length and/or six meters wide. Such deficiencies should be addressed before the introduction of potential universal vessels, otherwise the full functionality of the planned vessels will not be used.

In the course of the work, the calculations common in shipbuilding were repeatedly passed. Understanding the physics and relationships behind the formulas was difficult and time-consuming. The completed result is certainly not yet usable, but the experience gained while writing the work is kind of invaluable.