

Abstract of M.V. Archimaiden

Singapore Strait is one of the busiest location in Indonesia, Malaysia and Singapore. Over 900 ships across the strait for maritime activities including container ships, bulk carriers, tankers or even ferries. There are many various activities either business or vacation. Ferries have high activities travelling between Singapore and two neighboring countries, Indonesia and Malaysia in this strait. So, the ferries needed to be fast and safe for travelling. By these conditions, optimized designed of ferry is needed to support and answer these challenges.

M.V. Archimaiden is catamaran fast ferry with V-hull shaped sections. The hull is designed for fast and suitable with weather condition at Singapore Strait. Catamaran is more stable than monohull. V-shaped hull section has smaller wetted surface area rather than U-shaped hull section which made V-shaped hull section has lower resistance on skin friction. The ratio of hull dimension is taken from reference of Multi-Hull Ship written in Chapter 3. The architecture of ferry uses a modern concept with combination of asymmetric, flatted-roof and efficient.

The propulsion system of ferry is optimized. Propulsion of ferry uses water jet. Water jet is more efficient than propeller based propulsion. Then, the fuel system for propulsion uses hybrid-system, diesel and gas. The operation cost for propulsion can be save up to 17.21% than normal operation cost.

M.V. Archimaiden is designed as safe as possible. Evacuation route of this ferry is built to two-way route, from side and stern of the ferry. The compartment is built to optimization of fire-fighting and evacuation. Life raft, life jackets and many more is provided in each deck. All safety plan applied SOLAS Chapter III and IV. For hull, the fast ferry catamaran is built to optimize the stability. The designed hull satisfied stability's rule at Intact Stability (IS) Code Ch. III/3.5 for catamaran which is written at IMO MCS 36 (63) HSC code intact stability for multihull.



Figure 1 Ferry Designed by Institut Teknologi Sepuluh Nopember Team

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