

CG601

Featured Ship of the Year 2022 in Taiwan



Taiwan SNAME



Preface

The design and building of this ship are intended for coastal patrol/defense, search and rescue duties, and protection of the nation's fishing ground.

This law-enforcement patrol ship which was scheduled, designed, and built by ship yard, convertible missions between peace and war, has the highest speed performance domestically.

Main Principals

LOA :	65.40 M
Breadth :	14.80 M
Depth :	6.20 M
Maximum Draft :	2.10 M
Endurance :	2000 NM
Main Engine :	Waterjet x 4
Design Speed :	35 knots
Classification :	CR CLASSIFICATION SOCIETY

General Outline

In terms of hull design, this ship is the first frigate of coast guard in Taiwan to adopt a wave-piercing catamaran. It provides many advantages, including less displacement, smaller water-plane area, reduced wave-making resistance, providing excellent sea-keeping performance that partial missions could be carried out under Beaufort scale 9. Different from the current domestic medium and large frigates, the entire ship structure is made of marine corrosion-resistant aluminum alloy to achieve lightweight and facilitate high-speed navigation.

In terms of hull structural strength, this ship is constructed of corrosion-resistant marine aluminum alloy. The structural dimensions are planned according to the regulations of the Classification Society, and its structural strength has passed the CR inspection of the Classification Society. In addition, the hull structure of this ship uses the finite element method (FEM) for structural strength analysis, and the sea state resistance can reach Beaufort scale 9.

In terms of stability and security, the intact stability of the ship complies with the 100 knots lateral wind and high-speed turning stability specified in the US Naval Ship Engineering Center Design Data Sheets (DDS-079). This ship is provided with multiple watertight bulkheads below the freeboard deck, and the damage stability conforms to the damage stability of both compartments specified in DDS-079.

In terms of propulsion system, this ship is equipped with four waterjets, be provided with good maneuverability and good traits such as short turning time, short turning radius, high agility etc. The medium-to-high-speed cruising efficiency is higher than traditional propeller system. The ship speed can reach up to 40 knots at 100% maximum output of four main engines. Loaded with fuel oil 70 tons, this ship can sail up to 2000 nautical miles at 12 knots. Interceptors are installed on the stern. It can adjust the boat to the best motion posture, enabling more stability in turning and in bad sea conditions. According to the sea trial, this ship equipping with the interceptor, which can increase the speed of the ship and reduce the fuel consumption.

In terms of special equipment, in order to meet the needs of the shipowner to perform rescue tasks and fishing protection tasks, one high-pressure water cannon is

installed on the foredeck. Maximum range is over 120 meters, It can use to expel illegal ships. And this ship is the only ship equipped with a high-pressure water cannon for medium-sized frigates in Taiwan.

A rescue operation area is set up at the broadside, equipped with a rescue boat, which can effectively perform tasks such as lifesaving and rescue at sea, boarding inspection and driving away of fishing boats that cross the boundary.

The domestically developed Smart Ship Command and Management system (CGICS) is in use for the first time, which can carry out traditional radio voice calls, video calls, multi-party conferences, real-time audio, video, navigation status and other data transmission services required by smart ships. In addition, the ad hoc technology is in use, making direct communication not only between the ship and the shore station, but also by the automatic relay network construction function.

The ship is equipped with remote control cannon, rocket turrets and other weapons equipped, and has reserved missile system pipelines. In peacetime, it performs the tasks like life-saving, rescue and law enforcement in the sea area. In wartime, it can be equipped with missiles, has the function of converting missions between peace and war.

Social Influence

CG601 has been designed based on the Tuo River class corvette, considering the patrol missions and requirements, moderately improved and optimized to special module, installed the high-pressure water cannon, strengthened the strength and stability of the hull structure. At the same time, the pipeline of the missile system is reserved, which has the function of converting between peacetime and wartime, and has the strong strength to maintain the security of the Taiwan Strait and regional peace. It symbolizes that Taiwan has taken a big step forward towards the goal of national defense independence.