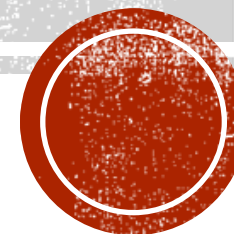


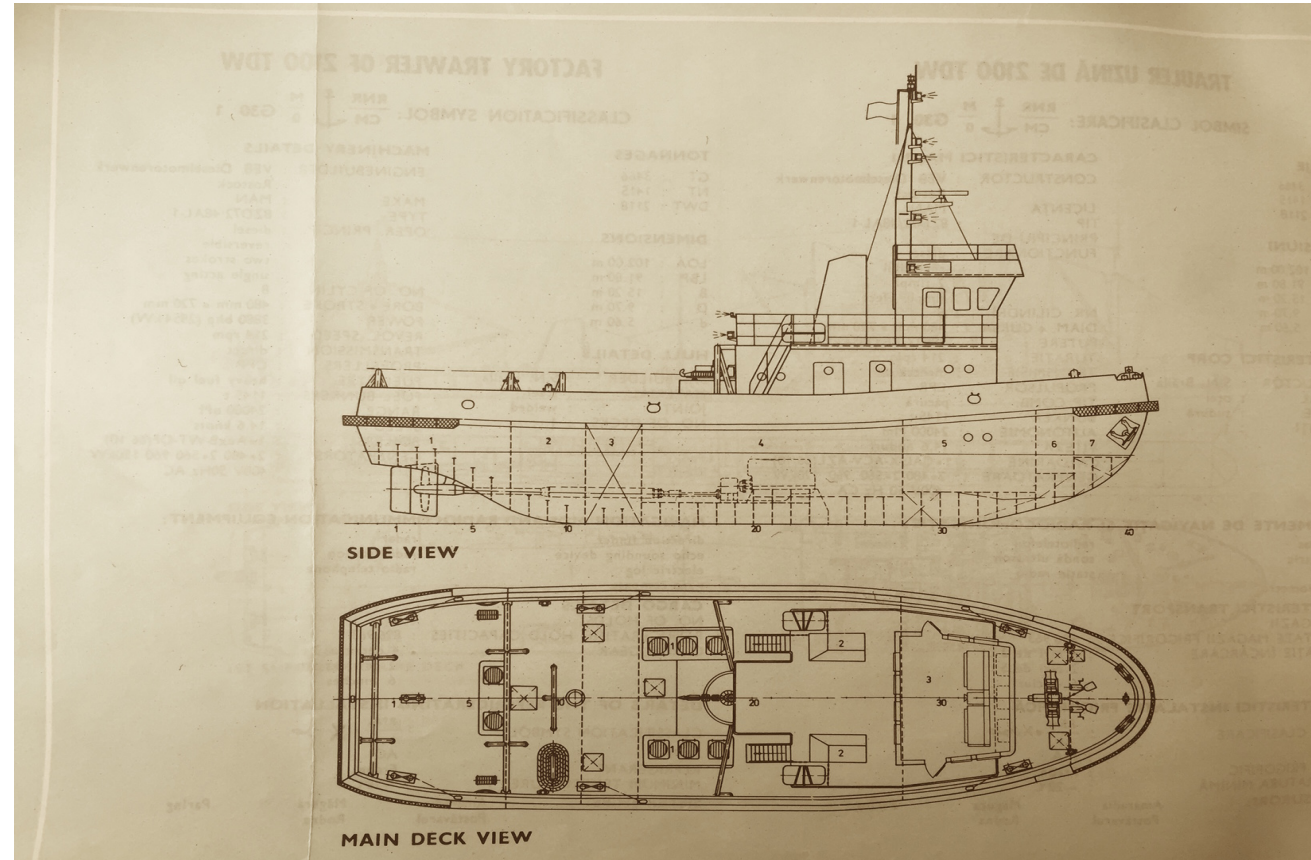
MARITIME TUG SIRENA 6 – COREMAR 16 PROJECT

COMPANIA DE REMORCARE MARITIMA COREMAR CONSTANTA



MARITIME TUG SIRENA 6

- Work boat project designed in the mid '70's in Romania by the Naval Constructions Project Institute;
- Designed for towing services in ports and coastal waters for meeting the needs of the Romanian merchant marine fleet;



MARITIME TUG SIRENA 6

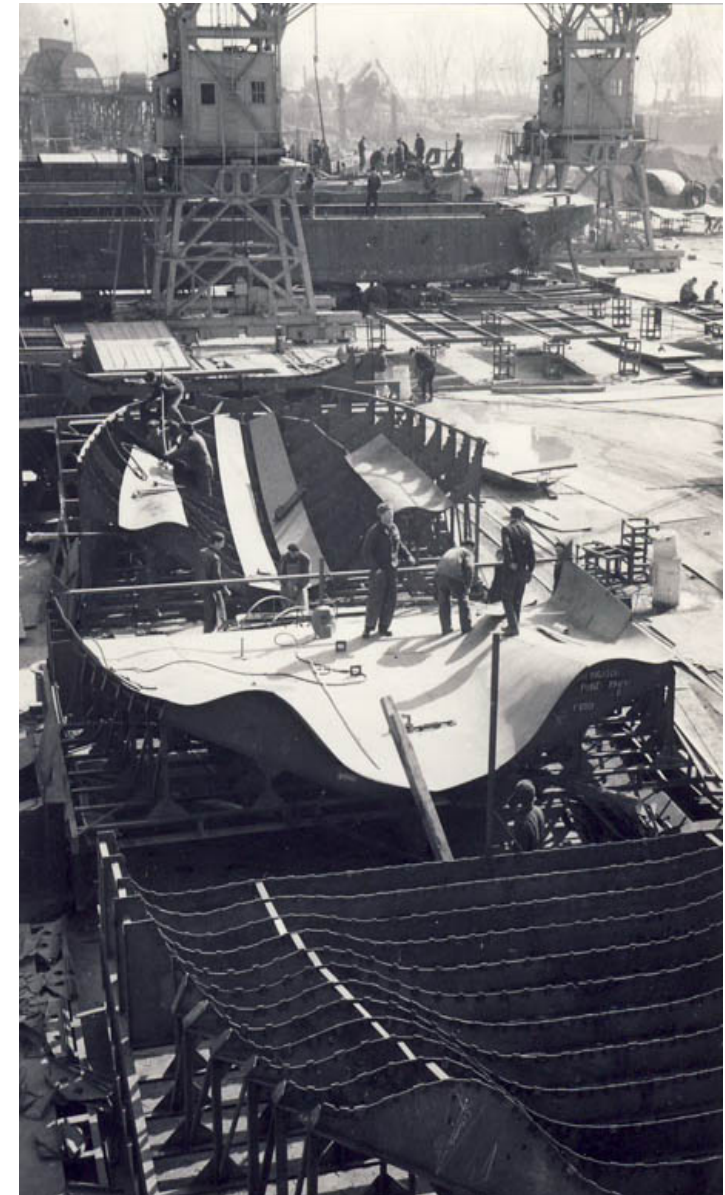
Built in two of the Danube river specialized shipyards Oltenita and Turnu Severin, the maritime tug SIRENA 6 had the following characteristics:

Length Over All:	23.30 m;
Breadt Moulded:	6.96 m;
Construction height:	3.30 m;
Effective total power:	2 x 205 kW;



MADE IN ROMANIA

- The project was following the Romanian strategy implemented at the time therefore over 95% of all the equipment installed onboard were made in Romania;
- The main engines were being built by Întreprinderea 23 August București, diesel auxiliary engines were built by Uzina de tractoare Brașov, air compressors by Întreprinderea Timpuri Noi București, all the electrical engines and generators by Uzina Motoare Electrice București, all the protections of the generators by protecțiile Întreprinderea Tehnoton Iași, pumps, valves, portholes et al by Întreprinderea Mecanică Navală Constanța.



MADE IN ROMANIA

From January 1979 till 1984 the 600 HP maritime tug project was being the origin for several series of work boats:

- SIRENA 1 – SIRENA 12;
- SUCEVENI 1 – SUCEVENI 6;
- TIRGU OCNA 1 – TIRGU OCNA 6;
- CENTAUR series;
- PESCARUS series;



SIRENA 6 TIMELINE

- Maritime Tug SIRENA 6 keel laid May 25, 1980;
- Built in 4 months by the Turnu Severin Shipyard at the River Danube;
- 1980 – 2011 Owned by the Mangalia Naval Shipyard;
- 2011 onward owned by the Compania de Remorcare Maritima COREMAR Constanta;



AUDITING THE VESSEL'S PERFORMANCE

Evaluating the maritime tug SIRENA 6 operational performance showed:

- The very low reliability of the engines and other equipment;
- Meeting the antipollution legal requirements – mission impossible;
- Due to wear, the Main Engines type MB 836 B had in 2016 a current consumption of 210% compared with the same type of engine when it was new;
- The particulates matter of the unburned fuel exhausted from the old engines are 5.5 times larger comparing to those exhausted from the same type of engine when it was new;



SIRENA 6 RELOADED

The maritime tug SIRENA 6 subject of the

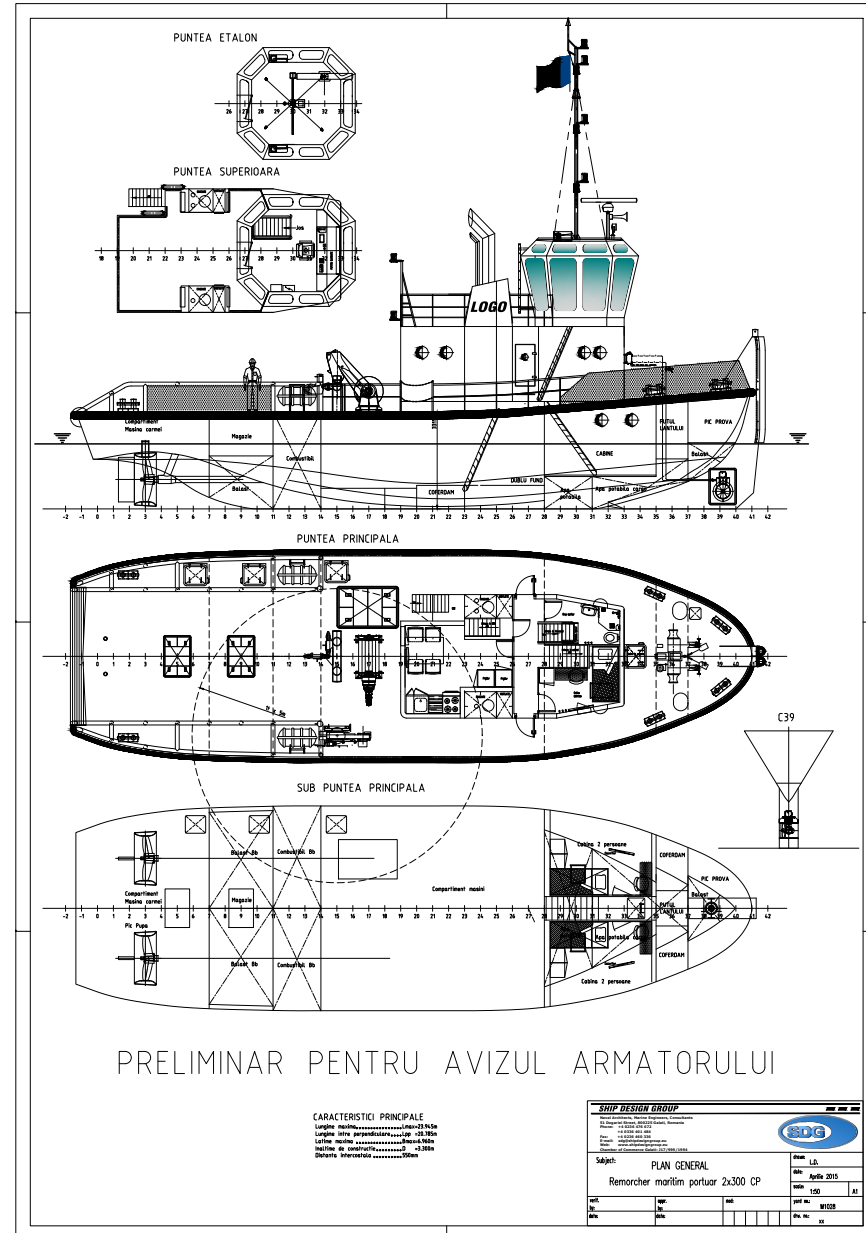
Romanian – Norway (Ro– No) Offshore Initiative

Project for Greening the Industry & the Environment



A NEW SHIP IS BORN

- The management of COREMAR decided to rebuild the vessel;
- SHIP DESIGN GALATI was the naval project design company that delivered a new project built over the old hull surprisingly solid over more than 30 years of wear and tear ...



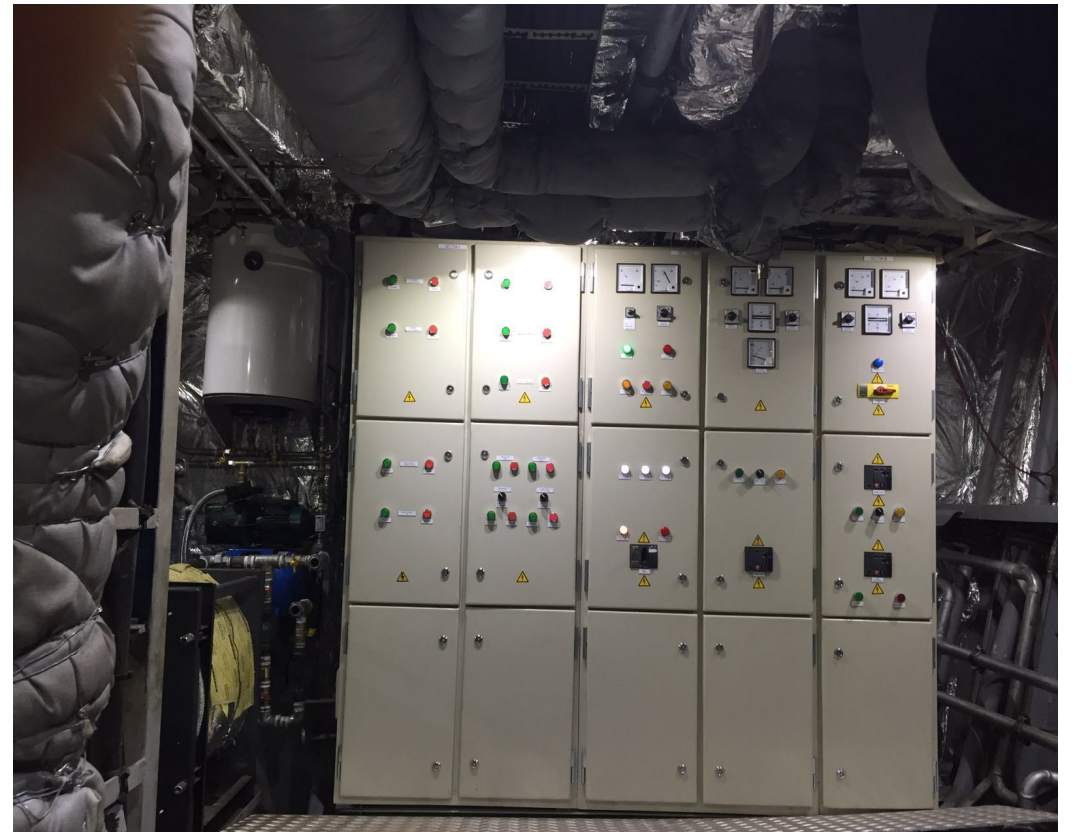
NEW FOR OLD



A NEW BRIDGE IS BORN



A NEW ENGINE ROOM IS BORN



4 MONTHS IN 1980 = 4 MONTHS IN 2016

- The SIRENA 6 maritime tug was built in 4 months in 1980;
- The COREMAR 16 maritime towage and supply vessel was built in 4 months in 2016;
- The result: a new versatile, user friendly vessel, able to deliver towage services in ports, inland waterways and coastal waters up to 50 nautical miles from the shore;



RO-NO PROJECT FOR GREENING THE INDUSTRY & THE ENVIRONMENT

- Consumption improvement (the old main engines 210% more less efficient);
- Measurable gas emissions of the new engines 3.5 times smaller than the old ones;
- The particulates matter from unburned fuel of the new engines 8.3 times smaller than the old ones;

