

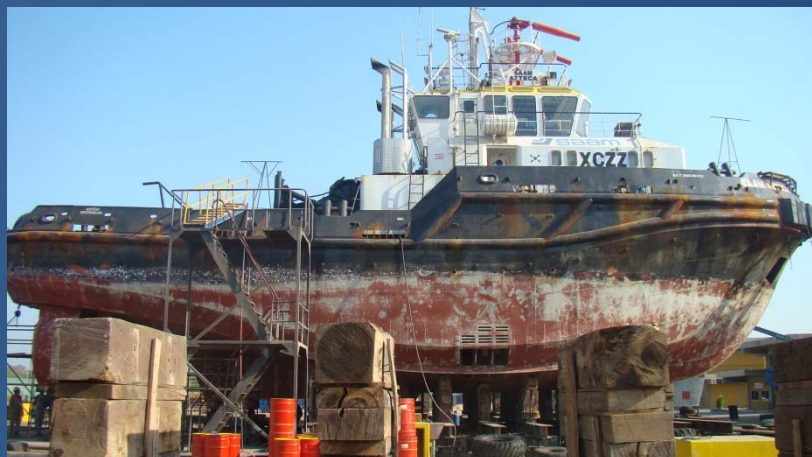


Type: Tugboat
Overall length: 29.50 m
Overall Beam: 10.00 m
Engine: 2x1450KW

A tugboat needs to update the conventional propeller – nozzle propulsion system installed, by changing it for an azimuthal propulsion in order to improve the ship performance

Tecnavin S.A. was committed for engineering product with excellent results for shipyard and owner.

- 3D structural model of tugboat related parts including construction details.
- Plasma CNC cutting codes for automatic prefabrication parts and identification.
- Assembly drawings for easy and exact installation (units, assemblies, subassemblies, etc.)
- Assemblies part list and C.G.
- Pin jig for prefabricated units.
- Welding booklet to guarantee excellent joints and rules compliance.

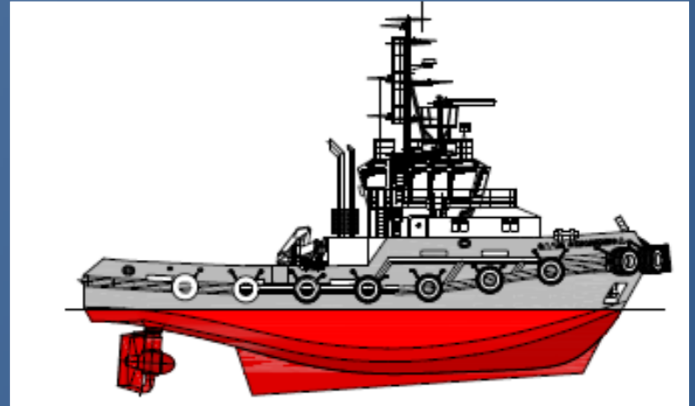


Tugboat update with azimuth system

Original system propeller-nozzle



Azimuth system renewed



TECNAVIN S.A.

navser@gye.satnet.net

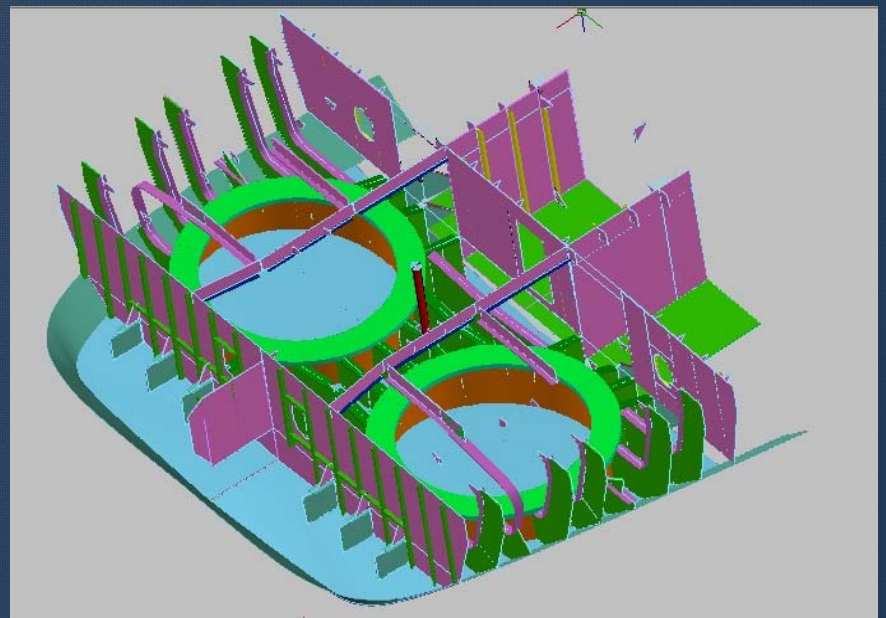
Phone: 593-4-2441022
593-9-84166936

Skype:
Franklin.johnny.dominguez.ruiz.1

Garcia Goyena 600 & Chimborazo
Guayaquil – Ecuador

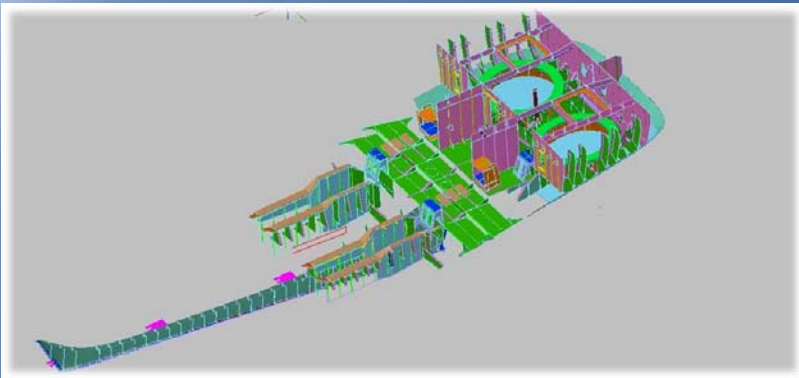
www.tecnavin.com

3D structural model of tugboat related parts



Tugboat update with azimuth system

3D structural model of tugboat related parts

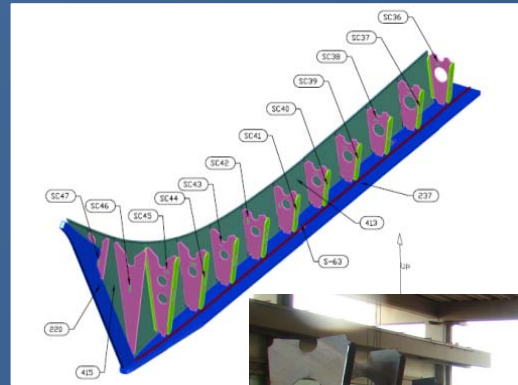
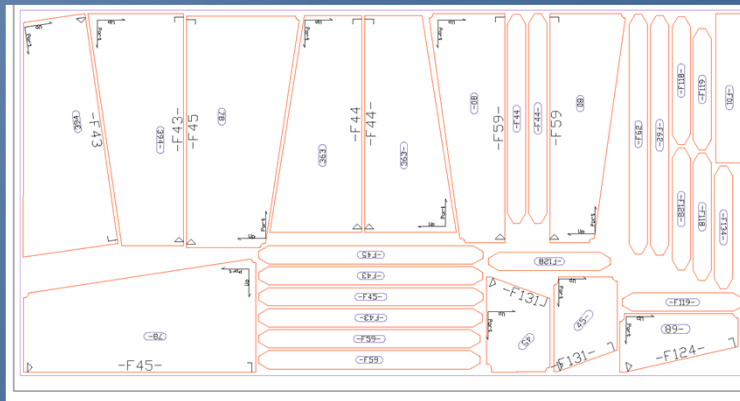


UNITS TO BE CONSTRUCTED

| ESWBS | DESCRIPCION |
|--------|-------------------------------------|
| 114-01 | New Skag |
| 110-01 | Hull structure Fr0 – Fr8 |
| 121-01 | Hull structure Fr8 – Fr12 |
| 121-02 | Structure between transom – Fr0 |
| 182-01 | Engines foundations |
| 110-04 | Diesel oil tank between Fr12 – Fr16 |

Nesting & Plasma CNC cutting codes for automatic parts prefabrication and identification

New Skag Prefabrication



Allows exact parts cutting and identification
Prefabrication and storage of parts



TECNAVIN S.A.

navser@gye.satnet.net

Phone: 593-4-2441022
593-9-84166936

Skype:
Franklin.johnny.dominguez.ruiz.1

Garcia Goyena 600 & Chimborazo
Guayaquil – Ecuador

www.tecnavin.com

Advantages of Product Engineering in Shipbuilding Industry

- ✓ Integration of current and new structural arrangement.
- ✓ Exact material list, including weights and gravity points,
- ✓ Well-arranged pieces list to be cut, conformed and assembled.
- ✓ Waste minimization.
- ✓ Easy to get used to the sequence assembly,
- ✓ Not required experienced workers,
- ✓ Higher productivity is achieved by the implementation,
- ✓ This product facilitates the prefabrication, within a framework of complete accuracy.