



THE COMPANY

Delta Marine has been founded in 1996 by a group of Naval architects who have intended to develop qualified projects for marine industry. Since its foundation, Delta Marine has grew up rapidly and founded departments of conceptual design, steel construction design, CAD/CAM, piping and outfitting, advanced engineering for research and development (R & D), information technologies (including Software Development), ship theory and project planning. Delta Marine has a vast ship design experience, which is reflected to the realization of numerous projects of different kinds of ships. As a result of its designs Delta Marine not only has been known as the best ship design company of Turkey but also has succeeded to reach the level of most reliable and productive design companies in Europe. Delta Marine, when considering its capabilities and ambition to develop new designs by using the opportunities of high technology, guarantees a reliable and fast work with well-experienced engineering team. The company has the ability to work on a grand range of product by the means of different kinds of activities.

By combining the experience accumulated from the design process and by supervising numerous vessels using the latest computer technology, Delta Marine provides the most appropriate and applicable solutions of highest quality. To be able to provide state-of-the art solutions, the company follows the philosophy of continuous improvement by applying the latest developments and rules with all the aspects of shipping through a constant dialogue with ship owners, shippards, suppliers, operators, authorities and classification societies. Delta Marine employing naval architects, marine engineers, architects, mechanical engineers offers design services for.



Integrated Solution In Naval Architecture

- Basic design
- concept design
- preliminary design
- contract design
- functional design
- Product engineering
- transition design
- workstation/zone information preparation
- Advanced Engineering,
- · Consultancy, supervision and inspection activities,
- · Conversions,
- · Preparation of tenders and shipbuilding contracts,
- Software Development

Key Personnel

Rey i ersonner	
Chairman	: H. Bülent SENER
General Manager	: Yasar GUL
Department Manager	: Cemal SAHIN
Department Manager	: Cem DOGANCI
Department Manager	: Tamer CAKMAK
Department Manager	: Timur E. ERIS
Department Manager	: Levent KAYDIHAN
Department Manager	: Erki KIROGLU
Department Manager	: S. Dirim SENER

Contact Information

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- Web
- : www.deltamarine.com.tr



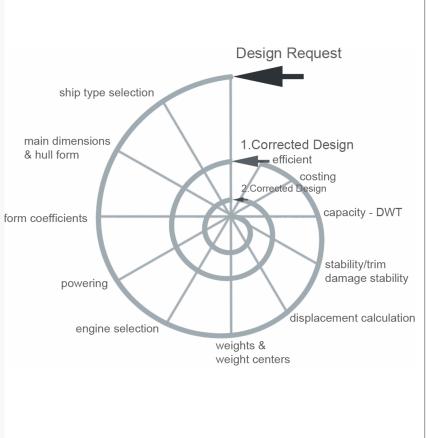


Delta Marine provides a very detailed engineering service and design work on different types of ships such as, General Cargo Ships, Containers, Oil and/or Chemical Tankers, Passengers Ships and Ferries, Yachts, Navy ships. Throughout these designs Delta Marine realizes the conceptual design, feasibility analyses, technical specifications, basic and classification plan, detailed engineering of hull and outfitting, instruction books and manual preparation and interior design, during the whole design process of a ship.

CONCEPTUAL DESIGN

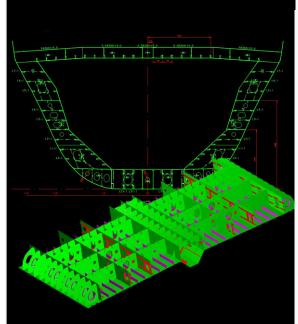
At the early stages of the design process, Delta Marine determines the parameters that will form the basis for optimum ship dimensions, hull form as well as the selection of propulsion system's type and power and auxiliary systems, according to the customer's requirements (for example, speed, DWT, number of passengers, number of vehicles etc.). Concerning the conceptual design stage of the project, Delta Marine provides the services stated as below,

- Determination of main dimensions according to ship type, speed and carrying capacity
- Preliminary form design
- Speed-power analysis
- Calculation of preliminary stability, trimmed and damaged stability conditions
- Calculation of preliminary weight distribution
- Calculation of longitudinal strength
- Subdivision calculations
- Preparation of preliminary general arrangement
- Calculation of capacities
- Feasibility studies
- Preparation of Technical Specification Booklet



SCOPE OF SERVICES





STRUCTURAL DESIGN

In Delta Marine, Engineers of Structural Design, who are experts on their subjects, prepare the optimum structural configuration of ship dimensions by taking the type of cargo and type of the ship as reference. Their aims are to use minimum amount of material, to comply the rules of Classification Society, to develop special details in critical areas of fatigue and corrosion, to develop the most

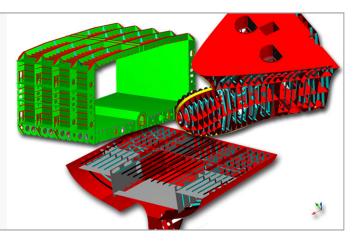
suitable structural configuration for workmanship and vibration. They utilize acknowledged software such as, Classification Society Software (for example, Poseidon, Safe Hull, Mars etc.) and Finite Element Analysis Software for all these purposes. The scope of services of structural design includes,

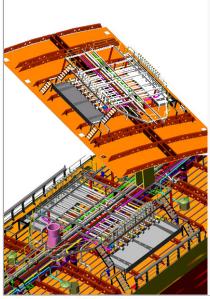
- Design of midship and typical transverse section details
- Design of ship structure and preparation of general steel construction drawings
- Preparation of shell expansion and framing system
- Preparation of engine room, foundation of main engine and other machinery equipment
- Preparation of fore and aft structural details
- Design of signal masts and crane columns
- Design of hatch covers and ramp

CAD / CAM

CAD/CAM Engineers and Draftsmen in Delta Marine work on the realization of the items cited as below,

- Lines fairing
- Preparation of manufacturing sections
- Preparation of block plans
- Determination of building strategy
- Design of the 3D structural model
- Calculation of block weight and centre of gravity
- Determination of element position numbers
- Preparation of workshop drawings
- Development of shell plates and preparation for cutting
- Preparation of shell's bending model





MACHINERY, OUTFITTING & PIPING

Outfitting and Marine Engineers who have worked in ships for many years and who have a long onboard experience, develop projects on arrangements, outfitting and one-line diagrams of the main and auxiliary engines of the ship. During this arrangement process, their main aim is to provide safe, ergonomic and environmental designs. 3D model of piping layout and isometric drawings are among their experience.

- Design and arrangement of engine room
- Calculation of the equipment capacities and selection of equipment
- Design of propeller and rudder shaft systems
- Calculation of boiler capacity, heating coil length, design of heating systems
- Design of ladder, railway, windlass-mooring arrangement and other deck equipment
- Design and preparation of piping diagrams
- Design of exhaust and ventilation ducts
- 3 D pipe modelling and preparation of isometric plans
- Preparation of P&A, ODME, Rudder Shaft and Clean Sea manuals
- Preparation of Fire and Safety plans
- Preparation of Damaged Stability control plans
- Preparation of docking and painting plans
- Pressure Drop calculation for P/V circuits

SCOPE OF SERVICES





ACCOMMODATION DESIGN

Not only Marine Engineers are working Delta Marine for the realization of the design of ships but also architects are employed in the company in order to reach a fine, comfortable and functional design of accommodation. As far as the accommodation of the ship is concerned architects and engineers provide the services that can be resumed as follows,

- Design of accommodations in accordance with function, status and regulations
- Interior design of cabins, rooms, kitchen etc.
- Design of furniture and details
- Design of wetted volume
- Preparation of fire, noise and heat insulation

SHIP THEORY

Delta Marine has a vast experience on ship stability (intact and damaged) calculations and engineering. An independent department has been established for this subject in Delta Marine. Through a very close contact with the changing and developing rules, Ship Theory Department provides perfect compatibility with new projects as well as existing one's. There is an ongoing research and development study for new software on this subject. The scope of services of this department are stated as below,

- Calculation of tank capacities, preparation of ullage and sounding tables
- Calculation of hold capacities for trimmed and untrimmed ends, calculation heeling moment
- Calculation of hydrostatic, stability cross curves and trim table
- Inclining experiment executing and preparation of the experiment report
- Freeboard calculation
- Calculation of trim & stability according to IMO Stability Regulations
- Preparation of trim & stability booklet
- Calculation of damaged stability
- Calculation of required damaged stability for B reduced freeboard
- Calculation of damaged stability for tankers according to IBC Code and MARPOL 73/78 Rules
- Calculation of probabilistic stability and determination of allowable GM curve for general cargo and Ro-Ro ships according to SOLAS
- Calculation of damaged stability and determination of A / Amax value for passenger ships according to SOLAS
- Preparation of loading manuals for trimmed and untrimmed grain cargo
- Calculation of weight distribution of light ship
- Calculation of allowable bending moments and sheering forces
- Calculation of longitudinal strength
- Preparation of loading manuals and bulk cargo loading booklets
- Preparation of Loading / Unloading Sequence Booklet
- Preparation of Cargo Securing Manual
- Preparation of Garbage Management
- Preparation of Capacity Plan



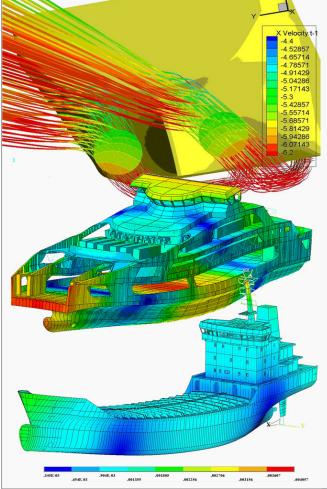
RESEARCH & DEVELOPMENT

Throughout the services of Delta Marine, Research & Development is also important to reach the perfection in the ship design. Some services of this concept are,

- Form development and optimisation
- Weight optimisation
- Vibration and noise prediction

SCOPE OF SERVICES





CAE (FEA / CFD)

In a very close relation with the advanced engineering tools, designing ships with art-style perfection are among the objects of Delta Marine Engineers.

To achieve this goal the following engineering studies are in performed:

Finite Element Based Analysis

- Statical stress analysis
- Linear and non-linear buckling analysis
- Fatigue analysis
- Thermal stress analysis
- Dynamic analysis
- Vibration analysis (free and forced vibrations)
- Transient dynamic analysis (crushed, earthquake etc.)

Boundary Element Based Analysis

- Form Optimisations
- Wave analysis around the hull
- Stream lines analysis

Finite Volume Based Analysis

- Viscous flow (Navier-Stokes) Solutions
- Prediction of ship friction and viscous pressure resistance
- Wake flow analysis and optimisation
- Propeller analysis and solving propeller-hull interaction problems
- Design and analysis of equipment for propulsion efficiency
- Noise induced by flow analysis
- Exhaust gas analysis
- HVAC system analysis
- Mass and heat transfer analysis.

SOFTWARE DEVELOPMENT

Delta Marine develops own software to solve Naval Architectural problems as well as company's organizational needs . A new software is still being developed on ship structure modelling and production planning. Below, software, which are developed or being developed by Delta Marine for in-house use, are determined.

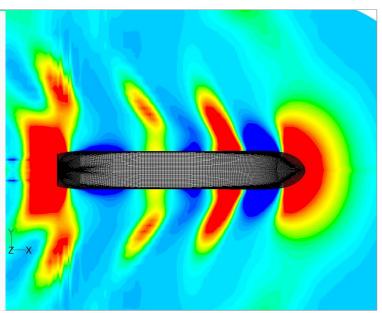
DeltaLoad : Loading computer software for stability, trim, grain cargo and container loading

and reporting, longitudinal strength calculation, developed to be used both in office and onboard

B_Surf : Form design, manufacturing and fairing **DeltaHydro** : Software for capacity calculation,

hydrostatic, stability cross curves, inclining experiment report, trim & stability, GM limit curve, longitudinal strength and launching calculations. **MarineCAD**: Software for ship structure modelling and production planning.

Textus : Application for Document Management, workflow Management and Project Management

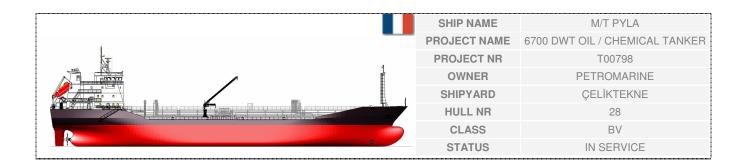


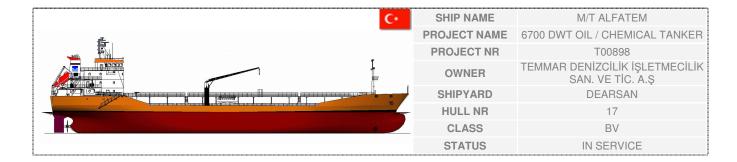


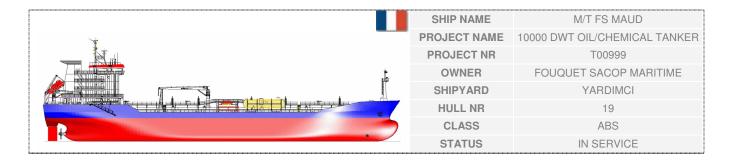




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ale	PROJECT NAME	TRAINING BOAT
1	PROJECT NR	E00698
H	OWNER	T.C. DNZ. K.K.
	SHIPYARD	BORA-DÜZGİT
	HULL NR	001
the second secon	CLASS	T. LLOYD
	STATUS	IN SERVICE

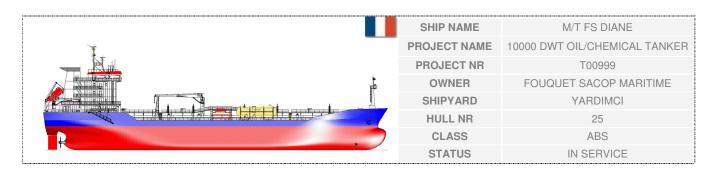


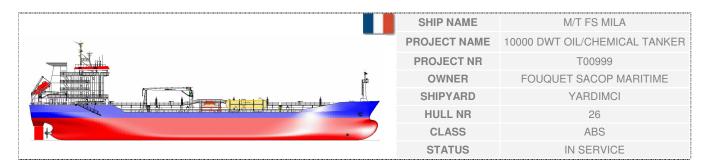


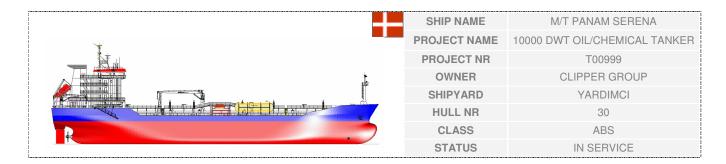










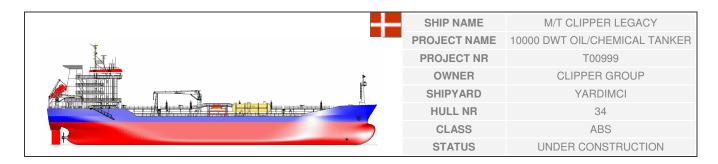


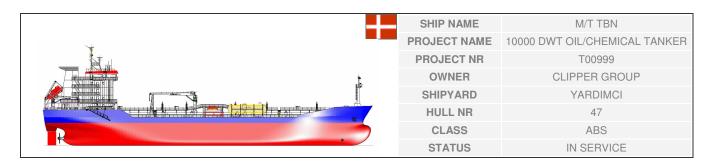
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	PROJECT NAME	10000 DWT OIL/CHEMICAL TANKER
	PROJECT NR	T00999
	OWNER	CLIPPER GROUP
	SHIPYARD	YARDIMCI
	HULL NR	31
	CLASS	ABS
	STATUS	IN SERVICE

	SHIP NAME	M/T CLIPPER LEGEND
	PROJECT NAME	10000 DWT OIL/CHEMICAL TANKER
	PROJECT NR	T00999
	OWNER	CLIPPER GROUP
	SHIPYARD	YARDIMCI
	HULL NR	33
	CLASS	ABS
	STATUS	IN SERVICE









	SHIP NAME	M/T TBN
¥	PROJECT NAME	10000 DWT OIL/CHEMICAL TANKER
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	OWNER	CLIPPER GROUP
	SHIPYARD	YARDIMCI
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	CLASS	ABS
	STATUS	IN SERVICE

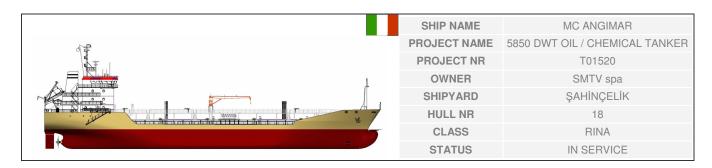
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	PROJECT NAME	6700 DWT OIL / CHEMICAL TANKER
	PROJECT NR	T01099
	OWNER	MARIA JAKOBSEN ILP
	SHIPYARD	DESAN
	HULL NR	011
	CLASS	BV
	STATUS	IN SERVICE

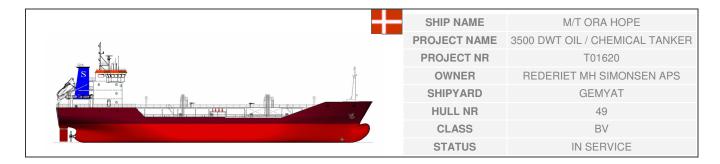
-		SHIP NAME	M/T NORVIK
		PROJECT NAME	7100 DWT OIL / CHEMICAL TANKER
		PROJECT NR	T01299
		OWNER	REDERI AB TANK
		SHIPYARD	GELİBOLU
	7	HULL NR	20
		CLASS	BV
	_	STATUS	IN SERVICE



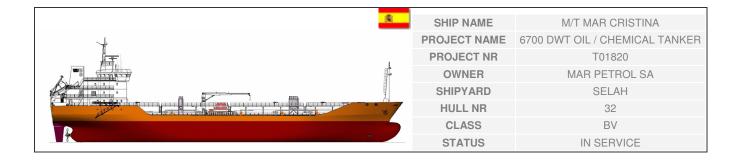






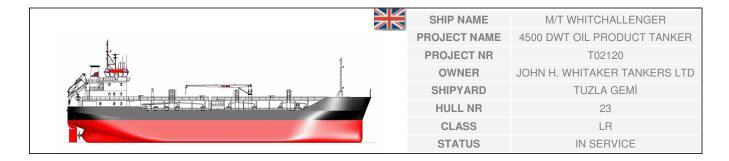


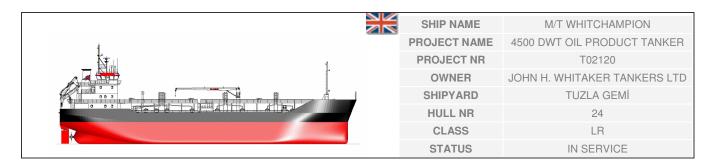
C•	SHIP NAME	M/T MILLENIUM II
u.	PROJECT NAME	1100 DWT OIL PRODUCT TANKER
	PROJECT NR	T01720
	OWNER	DESAŞ DENİZ SERVİSLERİ TİC. A.Ş
	SHIPYARD	SELAH
	HULL NR	33
	CLASS	BV
	STATUS	IN SERVICE

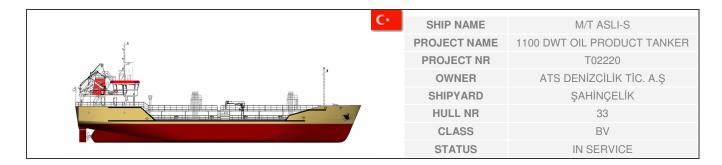










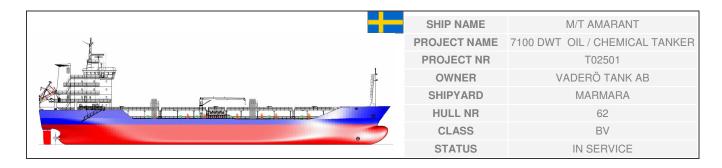


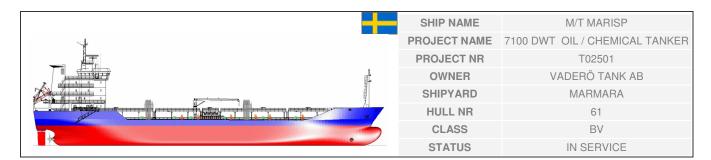
	C• SHIP NAME	IZDENIZ
L	PROJECT NAME	FERRYBOAT
	PROJECT NR	F02301
t t	OWNER	
	SHIPYARD	
	HULL NR	
	CLASS	
	STATUS	AT DESIGN STAGE

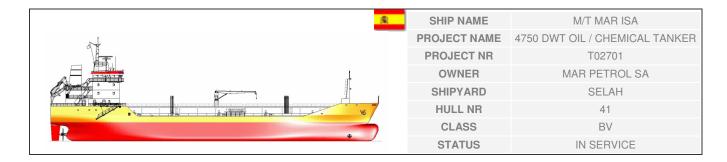
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 PROJECT NAME	6700 DWT OIL / CHEMICAL TANKER
PROJECT NR	T02401
OWNER	CARL F PETERS
SHIPYARD	SELAH
HULL NR	34
CLASS	BV
STATUS	IN SERVICE

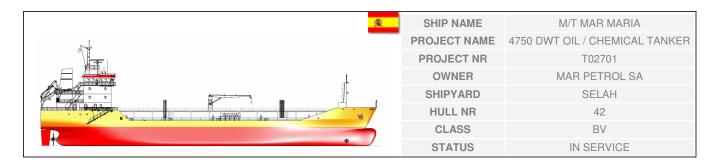










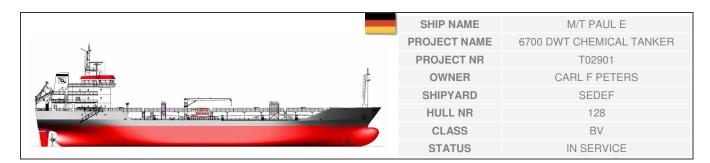


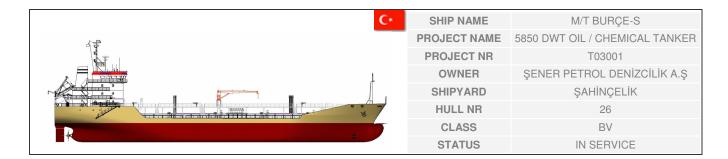
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	PROJECT NAME	6700 DWT CHEMICAL TANKER
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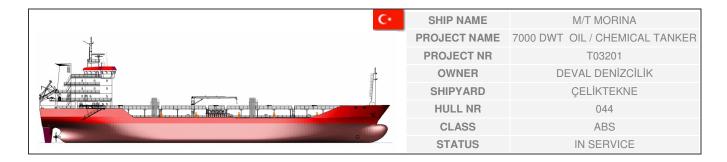








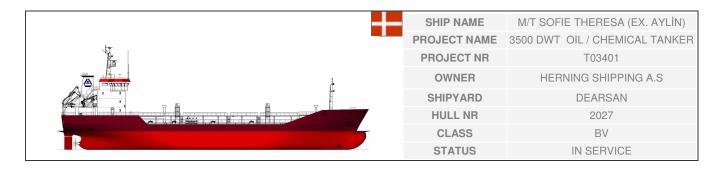


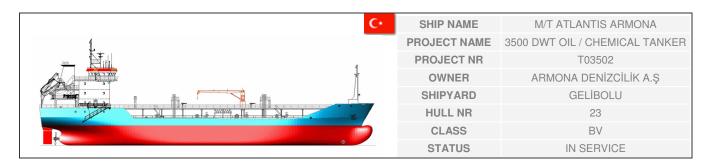


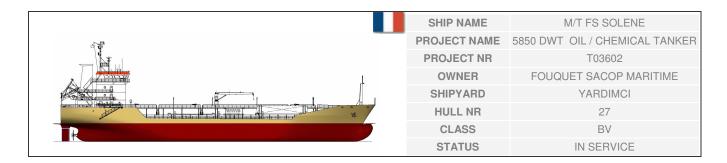
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	PROJECT NAME	3500 DWT OIL / CHEMICAL TANKER
	PROJECT NR	T03301
	OWNER	KAMAN DENİZCİLİK PET. ÜR. PAZ. NAK. VE TİC. A.Ş.
	SHIPYARD	SEDEF
	HULL NR	129
	CLASS	BV
	STATUS	IN SERVICE

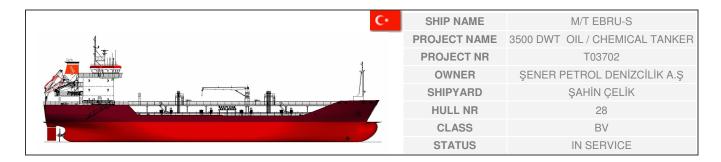










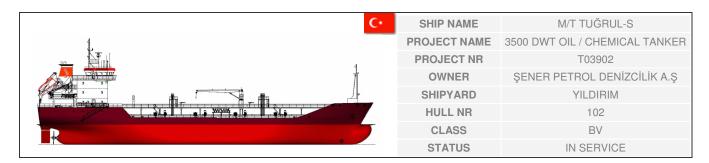


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and the second sec	PROJECT NAME	5850 DWT ASPHALT TANKER
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	OWNER	MAR PETROL SA
	SHIPYARD	SELAH
	HULL NR	35
	CLASS	BV
	STATUS	IN SERVICE









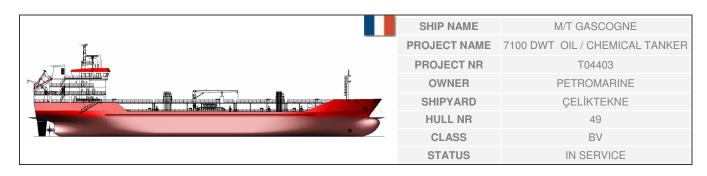
C	SHIP NAME	M/T VEYSEL BEY
4.	PROJECT NAME	3500 DWT OIL / CHEMICAL TANKER
	PROJECT NR	T04002
	OWNER	MASTER PETROL
	SHIPYARD	YILDIRIM
	HULL NR	101
	CLASS	BV
	STATUS	IN SERVICE

	SHIP NAME	M/T ORALAKE
	PROJECT NAME	2850 DWT OIL / CHEMICAL TANKER
	PROJECT NR	T04102
	OWNER	NAVYTIME NV
	SHIPYARD	ÇELİKTRANS
	HULL NR	CS26
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	STATUS	IN SERVICE

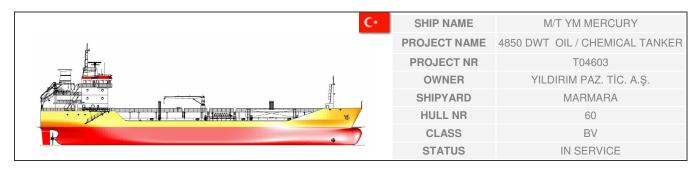
	SHIP NAME	M/T FIONIA SWAN (EX. PULI)
. F	PROJECT NAME	15000 DWT OIL / CHEMICAL TANKER
	PROJECT NR	DLT - 043
	OWNER	UNI TANKERS
	SHIPYARD	ÇİÇEK
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	CLASS	BV
	STATUS	UNDER CONSTRUCTION







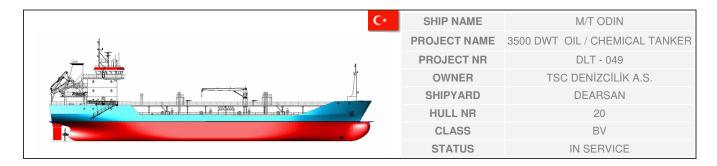


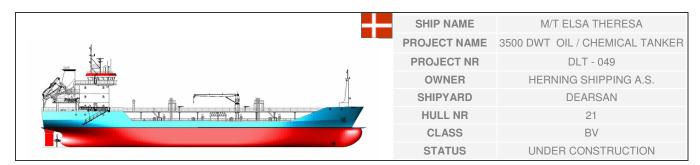


C	SHIP NAME	M/T YM VENUS
	PROJECT NAME	5850 DWT OIL / CHEMICAL TANKER
	PROJECT NR	T04703
	OWNER	YILYAK YAKIT PAZARLAMA VE TİC. A.Ş.
	SHIPYARD	MARMARA
	HULL NR	62
	CLASS	BV
	STATUS	IN SERVICE

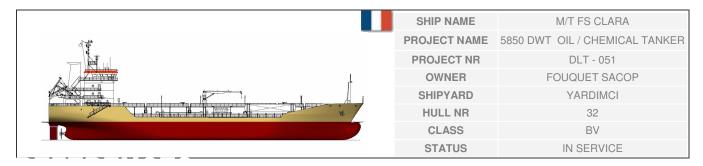
C•	SHIP NAME	M/T AMANDA (EX. PAKİZE S)
4	PROJECT NAME	7000 DWT OIL / CHEMICAL TANKER
	PROJECT NR	DLT - 048
	OWNER	MED MARINE DENİZCİLİK RÖM. VE ESK. HİZ. LTD. ŞTİ.
	SHIPYARD	TORGEM
	HULL NR	071
	CLASS	BV
	STATUS	IN SERVICE







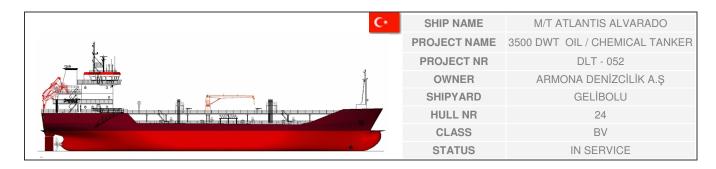


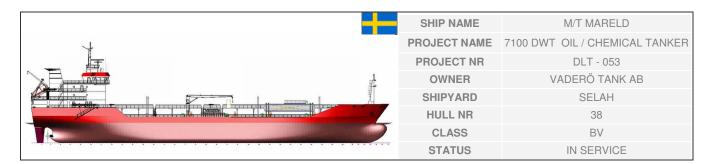


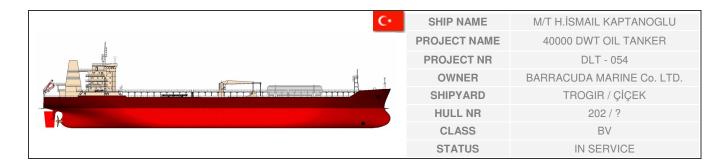
	SHIP NAME	M/T FS PAULINE
ो र्ह	PROJECT NAME	5850 DWT OIL / CHEMICAL TANKER
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	OWNER	FOUQUET SACOP
	SHIPYARD	YARDIMCI
	HULL NR	35
	CLASS	BV
	STATUS	IN SERVICE



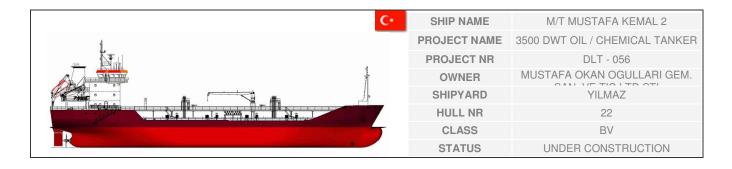






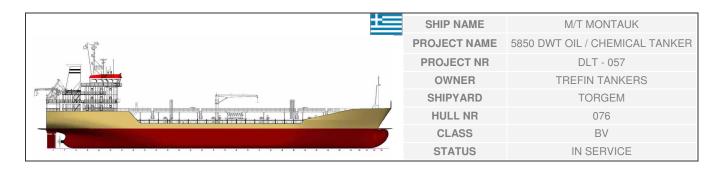


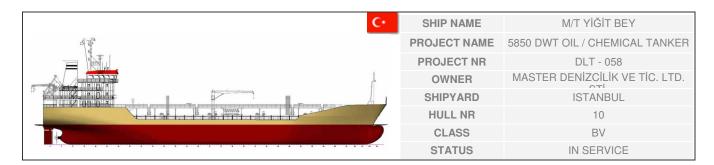
<u>\$</u>	SHIP NAME	M/T COVADONGA
4	PROJECT NAME	7000 DWT OIL / CHEMICAL TANKER
	PROJECT NR	DLT - 055
	OWNER	ALVARGONZALEZ S.A
	SHIPYARD	TUZLA GEMİ
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	STATUS	IN SERVICE

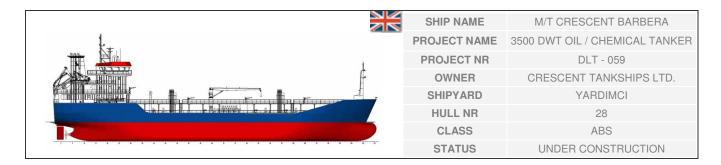


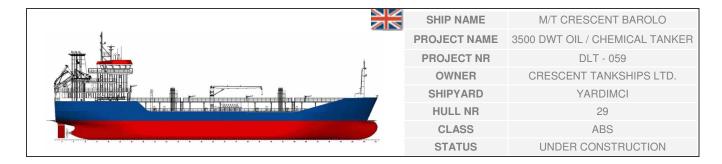


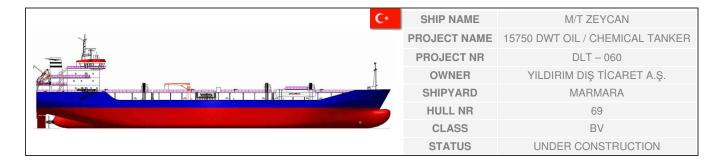






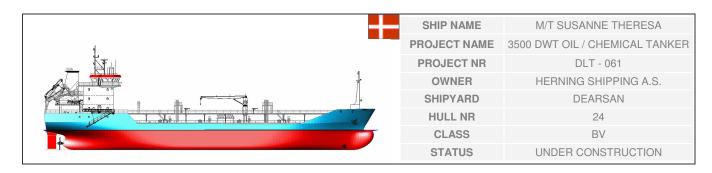


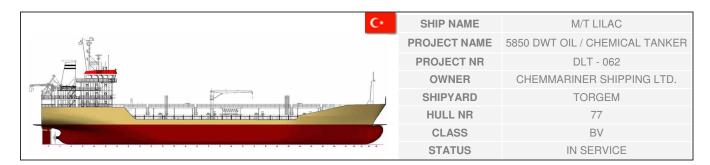




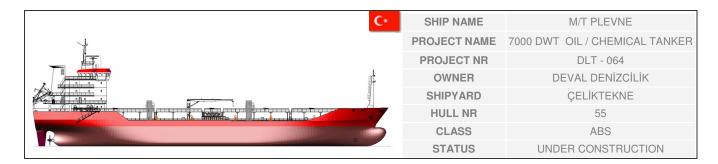






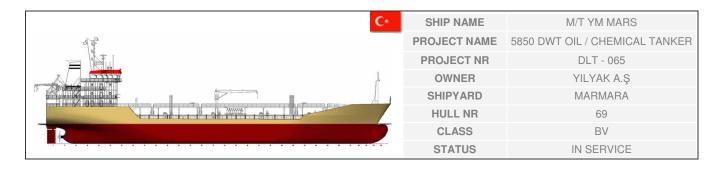


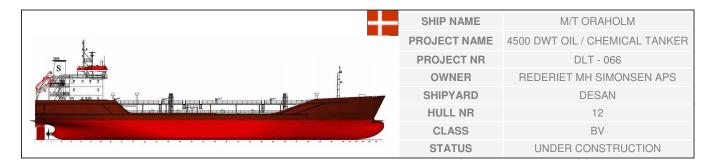


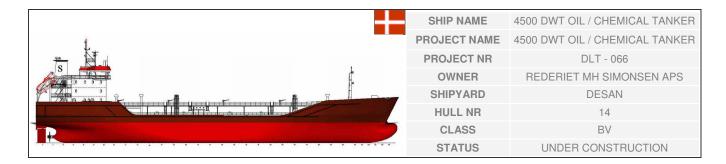


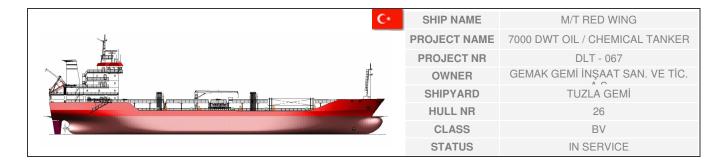
C•	SHIP NAME	M/T YM EARTH
a and a second a s	PROJECT NAME	5850 DWT OIL / CHEMICAL TANKER
	PROJECT NR	DLT - 065
	OWNER	YILYAK A.Ş
	SHIPYARD	MARMARA
	HULL NR	68
	CLASS	BV
	STATUS	UNDER CONSTRUCTION









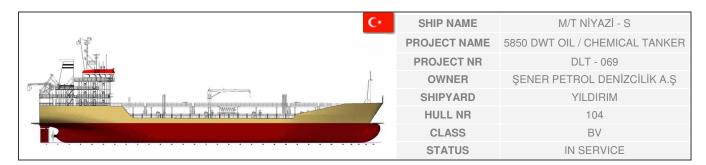






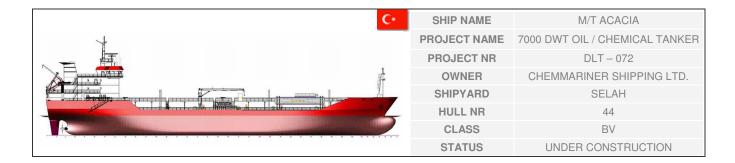








C•	SHIP NAME	M/T PULI 1
	PROJECT NAME	15000 DWT OIL / CHEMICAL
* -	PROJECT NR	DLT - 071
	OWNER	LİMANKÖY DENİZCİLİK A.Ş
	SHIPYARD	ÇİÇEK
	HULL NR	36
	CLASS	BV
	STATUS	UNDER CONSTRUCTION





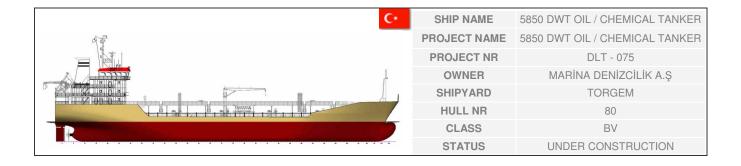


	SHIP NAME	1700 DWT OIL / CHEMICAL TANKER
	PROJECT NAME	1700 DWT OIL / CHEMICAL TANKER
	PROJECT NR	DLT - 073
	OWNER	REDERIET MH SIMONSEN APS
	SHIPYARD	DESAN
	HULL NR	17
	CLASS	BV
*	STATUS	UNDER CONSTRUCTION

C•	SHIP NAME	NOURRAHMA
4	PROJECT NAME	FISHING VESSEL
y .	PROJECT NR	DLT - 074
	OWNER	USTAMEHMETOGLU TERSANESİ
	SHIPYARD	USTAMEHMETOGLU
	HULL NR	163
	CLASS	BV
M.	STATUS	UNDER CONSTRUCTION

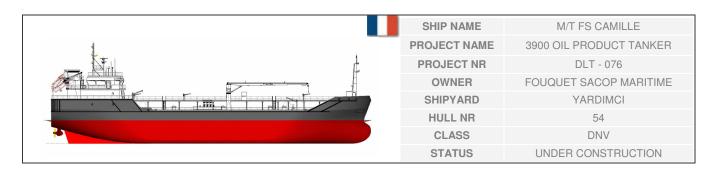
C·	SHIP NAME	SABRRAHMAN
5	PROJECT NAME	FISHING VESSEL
	PROJECT NR	DLT - 074
	OWNER	USTAMEHMETOGLU TERSANESİ
	SHIPYARD	USTAMEHMETOGLU
	HULL NR	164
	CLASS	BV
4 H.	STATUS	UNDER CONSTRUCTION

C	SHIP NAME	ELFELABDELKADER 7
1	PROJECT NAME	FISHING VESSEL
1	PROJECT NR	DLT - 074
	OWNER	USTAMEHMETOGLU TERSANESİ
	SHIPYARD	USTAMEHMETOGLU
	HULL NR	165
	CLASS	BV
ti-	STATUS	UNDER CONSTRUCTION

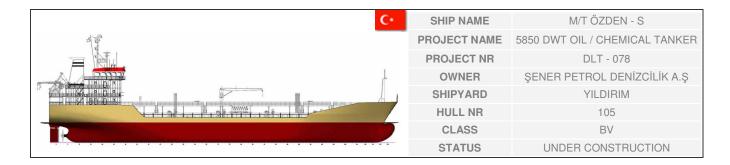












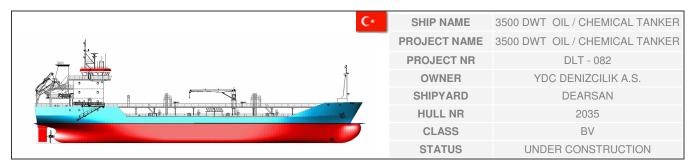
C·	SHIP NAME	M/T PULI 2
	PROJECT NAME	15000 DWT OIL / CHEMICAL
	PROJECT NR	DLT – 079
	OWNER	ÇAMLICA DENİZCİLİK A.Ş
	SHIPYARD	ÇİÇEK
	HULL NR	38
	CLASS	BV
	STATUS	UNDER CONSTRUCTION

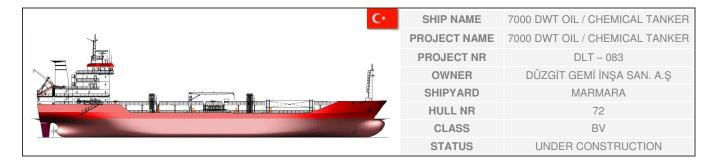
C•	SHIP NAME	1800 TEU CONTAINER
	PROJECT NAME	1800 TEU CONTAINER
	PROJECT NR	DLT – 080
	OWNER	TURKON TRANSPORTATION & SHIPPING Co
	SHIPYARD	SEDEF
	HULL NR	143
	CLASS	ABS
	STATUS	AT DESIGN STAGE







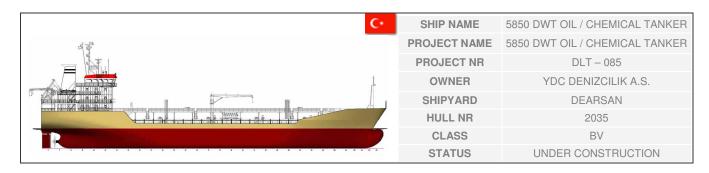


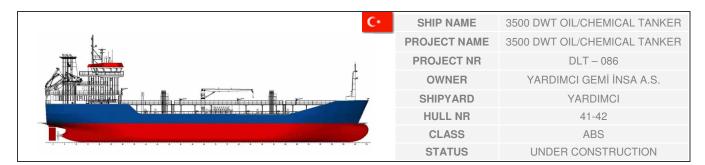




C•	SHIP NAME	7000 DWT OIL / CHEMICAL TANKER
+	PROJECT NAME	7000 DWT OIL / CHEMICAL TANKER
	PROJECT NR	DLT – 084
	OWNER	MED MARINE DENİZCİLİK RÖM. VE ESK. HİZ. LTD. ŞTİ.
	SHIPYARD	EREĞLİ
	HULL NR	04
	CLASS	BV
	STATUS	UNDER CONSTRUCTION









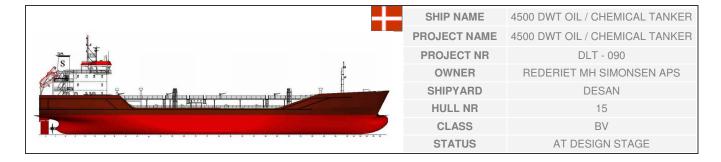
	C• SHIP NAME	20000 DWT BULK CARRIER
	PROJECT NAME	20000 DWT BULK CARRIER
	PROJECT NR	DLT - 087
	OWNER	İLERİ DENIZCILIK A.S.
	SHIPYARD	TORGEM
	HULL NR	88
	CLASS	BV
	STATUS	AT DESIGN STAGE

C•	SHIP NAME	10000 DWT OIL/CHEMICAL TANKER
	PROJECT NAME	10000 DWT OIL/CHEMICAL TANKER
	PROJECT NR	DLT - 088
	OWNER	ATLANTIK DENİZCİLİK SAN. VE TİC.
	SHIPYARD	SELAH
	HULL NR	49
42 · · · · · · · · · · · · · · · · · · ·	CLASS	BV
	STATUS	AT DESIGN STAGE



C•	SHIP NAME	20000 DWT OIL/CHEMICAL TANKER
* F	PROJECT NAME	20000 DWT OIL/CHEMICAL TANKER
	PROJECT NR	DLT - 089
	OWNER	SOLI GEMI INŞA SAN. VE TİC.A.S.
	SHIPYARD	SOLI
	HULL NR	01
	CLASS	BV
	STATUS	AT DESIGN STAGE
C•	SHIP NAME	20000 DWT OIL/CHEMICAL TANKER
	PROJECT NAME	20000 DWT OIL/CHEMICAL TANKER
	PROJECT NR	DLT - 089
	OWNER	SOLI GEMI INŞA SAN. VE TİC.A.S.
	SHIPYARD	SOLI
	HULL NR	02
	CLASS	BV
	STATUS	AT DESIGN STAGE

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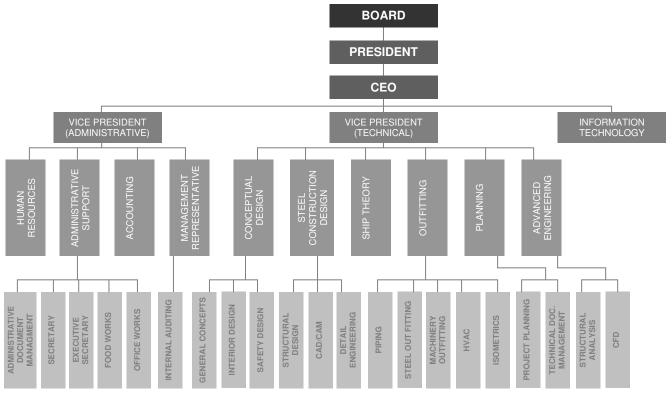


HUMAN RESOURCES



Naval Architect / Marine Engineer	25	Draftsman	7
Ocean Engineer	3	Software Engineer	4
Mechanical Engineer	4	Accountant	2
Industrial Engineer	1	Secretary	3
Industrial Designer	2	Office Boy	2
Architect	1	Cook	1
Aeronautical Engineer	1	Trainee	1
Total			57

ORGANIZATION CHART





HARDWARE AND SOFTWARE RESOURCES

SOFTWARE FOR GENERAL DESIGN PURPOSES

AVEVA TRIBON

TRIBON

Producer Company : Aveva & Tribon Solutions Inc.

Particulars : Tribon helps define your vessel, build strategy and create assembly production information. The application supports numeruous activities in the work preparation and production engineering area. Production and assembly structures can easily be defined and maintained with Assembly Planning. **Purpose to use :** Creation of the whole design

process of ship from the initial design until detailed production drawings

BENTLEY

MICROSTATION

Producer Company : Bentley Systems Inc. **Particulars :** MicroStation is a single, comprehensive platform for design and engineering projects. MicroStation capabilities are suited for 3D modeling, data versatility, workgroup productivity and application development.

Purpose to use : Basic graphics for the whole design, furnishing engineering and architectural design

autodesk

AUTOCAD

Producer Company : Autodesk

Particulars : AutoCAD is the 2D drafting and detailing and 3D design tool providing native DWG compatibility and also integrates new and enhanced productivity tools, presentation graphics, CAD standards.

Purpose to use : Basic graphics for the whole design of the vessel





HARDWARE AND SOFTWARE RESOURCES

SOFTWARE FOR GENERAL DESIGN PURPOSES



NAPA

Producer Company : NAPA Ltd. Particulars : NAPA is a CAE system for initial and basic ship design. It offers powerful functions for the modelling of ships and performing versatile design analysis calculations: 3D modelling of the entire ship, Standard naval architectural calculations, Hydrodynamic calculations, Report generator and drawing functions, Communication with other design systems through numerous links and interfaces. Onboard-NAPA is an advanced software system for on board calculations of ship loading, damage stability analysis, decision support, and ship performance predictions. It can be used onboard all kinds of vessels, such as car ferries, cruise liners, tankers, cable ships and naval ships. The Onboard-NAPA and NAPA systems share the same reliable core technology.

Purpose to use : Hull form design, hull fairing, hull form optimization.



AUTO PLANT

Producer Company : Bentley Systems Inc. **Particulars :** AutoPlant is a tool for analyzing systems of any complexity, combining object-based graphics technology with advanced analytical capabilities.

Purpose to use : To design the piping system and coordination plans of machinery and decks



HARDWARE AND SOFTWARE RESOURCES

ENGINEERING ANALYSIS SOFTWARE

HABAQUS

ABAQUS

Producer Company : ABAQUS, Inc. Particulars : ABAQUS provides solutions for linear, non-linear, explicit and multi-body dynamics problems to deliver a unified finite element analysis environment. The ABAQUS suite consists of three core products, ABAQUS/Standard which provides, analysis technology to solve traditional implicit finite element analyses, such as static, dynamics, thermal, all powered with the widest range of contact and nonlinear material options. ABAQUS/Explicit, is focused on transient dynamics and quasi-static analyses using an explicit approach appropriate in many applications such as drop test, crushing and manufacturing manv processes. ABAQUS/CAE, provides a complete modeling and visualization environment for ABAQUS analysis products.

Purpose to use : ABAQUS is being used to make many kinds of linear and non-linear analyses such as global vibration analyses of the ships with the interaction of surrounding water, structural stress patterns occurred at the global or local part of ships caused by the sea loading, internal loading or underwater explosions, thermal stress distribution occurred in tank structures caused by the thermal loads, structural born noise calculations, contact problems and crash test analyses.



ANSYS

Producer Company : ANSYS Inc.

Particulars : ANSYS is a general purpose finite element modelling and analysis software that can be used to analyse complex problems in mechanical structures, thermal processes, computational fluid dynamics, magnetic, electrical fields.

Purpose to use : Ansys/Proffesional product is being used to analyse the vibration characteristics of the ships, structural stress patterns occurred at the global and local part of ships and thermal stress distribution occurred in tank structures because of thermal loads.

#FLUENT

FLUENT

Producer Company : Fluent Inc.

Particulars : Fluent is the solver based on the finite volume method, in which all of the fluid dynamic problems cam be analyzed computationally. Thank to the post processing of the FLUENT, the results can be investigated in detail.

Purpose to use : Resistance and propulsion analyses, form and appendages analyses, propeller-based noise and vibration analyses, flow analyses around the superstructure, ventilation and air-conditioning analyses, analyses of the objects of 6 freedom degree in fluids (dynamic mesh).



HARDWARE AND SOFTWARE RESOURCES

ENGINEERING ANALYSIS SOFTWARE



GAMBIT

Producer Company : Fluent Inc. **Particulars :** Gambit is the mesh generator program, in which the grid of the model is built to analyze in CFD Software.

Purpose to use : Mesh and Grid Generation of the Models



TECPLOT

Producer Company : Amtec Inc.

Particulars : Tecplot is a 2-D and 3-D data graphing, plotting, scientific visualization and evaluation tool.

Purpose to use : To plot, visualize and evaluate the solutions of numerical analyses (FEM, VOF).



DELTAFLOW

Producer Company : In House **Particulars :** Potential flow solution with panel method, around the hull

Purpose to use : To make the form optimization by solving potential flow around the hull, to determine the streamlines and to calculate the wave making resistance

SOFTWARE FOR OPERATING SYSTEM & OFFICE WORKS

Microsoft

WINDOWS 2000 & WINDOWS NT

Producer Company : Microsoft Corporation Particulars : Worldwide used operating systems Purpose to use : To operate the whole computer based system

Microsoft

OFFICE PROGRAMS (WORD, EXCEL, POWERPOINT)

Producer Company : Microsoft Corporation **Particulars :** Worlwide used software for office works

Purpose to use : To prepare necessary documents for different office purposes and presentations



ADOBE ACROBAT

Producer Company : Adobe Systems Inc. **Particulars :** Adobe PDF is a reliable format for electronic document exchange that preserves document integrity so files can be viewed and printed on a variety of platforms.

Purpose to use : To prepare and keep design and official documents in a secure environment



HARDWARE AND SOFTWARE RESOURCES

SOFTWARE FOR ENGINEERING PROJECT & INFORMATION MANAGEMENT



PROJECTWISE

Producer Company : Bentley Systems Inc. **Particulars :** Bentley ProjectWise is the AEC content management solution, designed to handle MicroStation DGN and AutoCAD DWG files, as well as other business file formats, for the engineering office. Users can consolidate decentralized engineering content into a single presentation to ensure that all project team members have access to the right data when needed.

Purpose to use : To handle the document management, work flow management and engineering project management issues in an integrated solution



SMARTDRAW

Producer Company : smartdraw.com **Particulars :** SmartDraw is the easy-to-use software for creating business charts, diagrams, technical drawings and business documents.

Purpose to use : To create necessary process diagrams for defining the working System of the company, special informative documentation about the staff using the pre-defined forms.



MS PROJECT

Producer Company : Microsoft Corporation **Particulars :** MS Project is a software specialized to manage projects independently or as part of a large organization **Purpose to use :** To make financial analysis and scheduling in order to track the flows of every single project separately and all together.

SOFTWARE FOR NAVAL ARCHITECTURE



B_SURF

Producer Company : In House

Particulars : Hull modeling, fairing and ship theory calculations **Purpose to use :** To create and modify the form of the vessel, to create a new vessel form from an old one, to make fairing, to create a database for the theoretical calculations, to divide the surface into the panels for DeltaFlow



DAMAGE SHIP

Producer Company : In House **Particulars :** To make the necessary damage calculations for the vessel

Purpose to use : To make necessary probabilistic and deterministic damaged stability calculations and to control the compatibility with the international rules for vessels bulk carriers, tankers and passenger



HARDWARE AND SOFTWARE RESOURCES

SOFTWARE FOR NAVAL ARCHITECTURE



DELTA LOAD

Producer Company : In House **Particulars :** Ship loading condition calculation, information booklet preparation

Purpose to use : To make any type of loading calculation, to determine the intact stability and longitudinal strength values with controlling the suitability to the international rules for tankers, bulk carriers and containers.

SOFTWARE FOR GRAPHIC DESIGN



COREL

Producer Company : Corel Corporation **Particulars :** Graphic design and vector animation software for print and the Web **Purpose to use :** To create necessary graphical design files especially for presentation documents



ADOBE PHOTOSHOP

Producer Company : Adobe Systems Inc. **Particulars :** Image editing and graphic design software

Purpose to use : To create necessary graphical design files especially for presentation documents

SOFTWARE OF CLASSIFICATION SOCIETIES



SAFEHULL

Producer Company : American Bureau of Shipping **Particulars :** Rule and ship structure FEM software

Purpose to use : Modeling, dimensioning, preparing the FEM model and realizing the analyses of the structural elements of the vessel according to ABS rules.



MARS

Producer Company : Bureau Veritas **Particulars :** Rule Software **Purpose to use :** Modeling and dimensioning the plates and secondary structural elements of the vessel according to BV rules.



POSEIDON

Producer Company : Germanischer Lloyd **Particulars :** Rule and ship structure FEM software

Purpose to use : Modeling, dimensioning, preparing the FEM model of the structural elements of the vessel according to Germanischer Lloyd rules.



HARDWARE AND SOFTWARE RESOURCES

SOFTWARE FOR 3D MODELING

autodesk

AUTODESK 3D STUDIO MAX

Producer Company : Autodesk **Particulars :** Solid modeling, animation and rendering software. **Purpose to use :** To create necessary 3D models, animation and realistic rendering.



RHINOCEROS

Producer Company : Rhinoceros **Particulars :** Nurbs modeling software for Windows.

Purpose to use : Rhino provides the tools to accurately model your designs ready for rendering, animation, drafting, engineering, analysis, and manufacturing.

Contact Information Delta Denizcilik Muhendislik ve Bilgisayar Sanayi ve Ticaret A.S. F. Kerim Gokay Cad. Okul Sok. Altunizade Sitesi E Blok D: 2 34662 Uskudar / Istanbul / TURKEY Phone : 0090 216 428 02 41 Fax : 0090 216 428 44 75 e-mail : contact@deltamarine.com.tr Web : www.deltamarine.com.tr

