

## Marine Services

*Bright Heritage Associates (H.K.) Limited (BHAL) specialize in consultancy services, manpower services and technical services for maritime, offshore oil & gas, power generation, mining, refiners and industrial plants world-wide.*

*For Maritime projects, our technical and engineering consultants are deployable with minimal notice to any location globally and come from a variety of countries in Europe and Asia, all consultants have many years engineering and services experience from leading maritime systems and machinery providers and as marine engineers, electrical engineers, pump men and mechanics with work experience from shipping companies and marine & offshore service companies. Our team includes multi-lingual, multi-skilled and experienced personnel working on projects in some of the most competitive, challenging, and bureaucratic locations worldwide at plants, yards, sites, on ships and offshore oil & gas installations.*

*During the years in business we have established supplier and services networks for parts and specialized support services, we also search replacement parts, new and reconditioned for outdated equipment.*

*Known for its professionalism and corporate integrity, BHAL is also committed to quality service and continual improvement.*

*We pride ourselves on meeting our customer's need and thrive on challenges. Our team will work hand in hand with your company to ensure your project is completed safely, on time and to the highest industry standards of quality.*

*Our priority is to please our customers by providing the highest quality of services consistent with their requirements and specifications.*

*We treat our customers fairly in all aspects of our business transactions, including remedies for any dissatisfaction.*

*We strive to build strong and long-term relationships with our customers, and support their success by creating exceptional value through confidentiality, collaboration, continuous improvement, change, and innovation to meet their ever-changing needs.*

*Bright Heritage Marine division, offer services for:*

*Marine Hydraulic Systems*

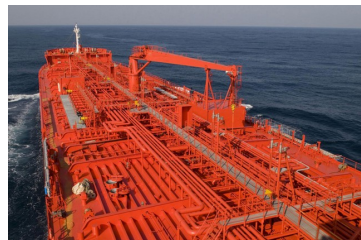
*Marine Cargo Pumping Systems*

*Marine Hydraulic and Cargo Piping Systems*

*Marine Electronics, Control & Alarm Systems, Navigation Bridge Systems*

*For further information, ref. to the services information on the following pages and our web site [www.bright-heritage.com](http://www.bright-heritage.com) or contact us on the following numbers and e-mails.*

Danny Stewart	Managing Director	<a href="mailto:dstewart@bright-heritage.com">dstewart@bright-heritage.com</a>	+639175177563
Mikael Hammar	Technical Director	<a href="mailto:mhammar@bright-heritage.com">mhammar@bright-heritage.com</a>	+639175822260
Arve Gjelsvik	Projects Manager	<a href="mailto:agjelsvik@bright-heritage.com">agjelsvik@bright-heritage.com</a>	+639473145387



## ***Hydraulic System Services***

BHAL service and provide parts for a wide range of marine hydraulic systems

- Hydraulic Systems and Component Services
- Hydraulic Transmission Systems
- Hydraulic Valve Control Systems
- Steering gear, Cranes, Winches.
- Actuators, Cylinders, Pumps and Motor repairs.

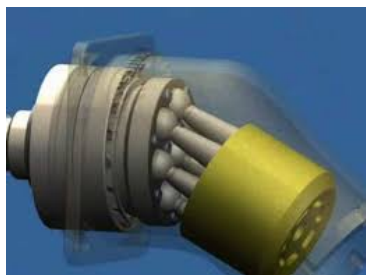
We provide:

- Hydraulic System Engineering.
- Supervisors.
- Hydraulic Service Engineers.

Hydraulic System Inspection, testing for pre docking assessments and purchase of ships.

Our senior engineers have experience as managers, project and service engineers from leading system providers and are trained by hydraulic component providers as Rexroth, Vickers, Parker-Hannifin (Denison Hydraulic). We also have service experience for systems and components from among other Staffa and Kawasaki as well as the most common Chinese and Korean brands.

We provide spare parts and components from well renowned suppliers and search and provide replacement for outdated system components.



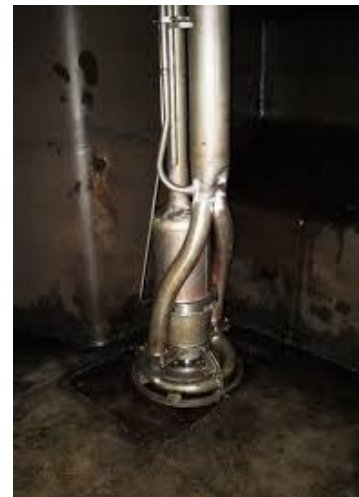
## ***Cargo Pumping Systems Services***

*BHAL service the most common pump types Chemical, Product, Oil and LPG tankers, Submerged and Conventional Pump room systems. Kosaka - Framo - Shinko – Svanehoj - Eureka and others.*

- *Submerged hydraulically driven pumps and “long shaft” pumps for Chemical Product and LPG ships.*
- *Pump room installed pumping systems and*
- *Reconditioning of pump housings, shafts and impellers, repair leaking (cracked, pitted or corroded pipe-stacks) and also supervise such work at sites and ship yards, worldwide..*
- *Emergency repair of pumps, pipe stack and pump housings by use of composite materials.*
- *Pump system Inspection, testing for pre-docking assessments and change of owners/management.*

*BHAL cooperate with well-known providers of a wide range of quality pump spare parts, we also source and arrange spare parts for our projects and replacement components for outdated equipment.*

*Our engineers are all skilled and motivated for their tasks. Our senior engineers have many years experience as project engineers, service managers, service engineers from leading cargo pump and system providers such as Framo, other marine service companies and as marine engineers on oil, chemical, LPG and product tankers.*





## Piping Systems Services

*Hydraulic, Cargo, Control, Instrument, welded, weld free and multicore Pipe systems.*

- *Ship Inspection, Pipe systems Inspection, System Engineering.*
- *Pipe fabrication.*
- *Testing, pre docking assessments and for purchase of ships.*
- *Site supervision for hydraulic pipe fabrication, chemical cleaning, installation, oil filling and flushing.*

*Prefabrication In our cooperating company's facilities in the Philippines or at yards or in ports of call world-wide. Pipes can be delivered NDT tested, Internally Chemical cleaned and Preserved for long time storage. Externally Primed and Coated, paint spec of owners choice.*

*Riding teams for pipe installation during voyage, a service that is minimizing off hire and long time shut down of systems. Hydraulic systems will at any time be operational on short notice. We also provide pressurized welding habitats and spark free grinding and cutting tools, enabling hot-work in hazardous environments.*

*Our engineers are experienced, skilled and motivated for their tasks, our lead engineers have long experience as system engineers and piping engineers from leading providers of Hydraulic and Cargo piping systems.*



## **Marine Electronics, Controls and Alarm Systems.**

**BHAL offer full range technical services for Marine Control & Alarm Systems.**

*Project Engineering, HW / SW for New Installations, Upgrade and Retrofits.*

- *System's Troubleshooting, Repairs and upgrades.*
- *Upgrade of outdated controls and alarm systems*
- *Navigation bridge system services.*
- *Control & Alarm System Inspection, testing for pre docking assessments and change of Owners / Management*

*Together with cooperating companies, we offer cost efficient, class approved, fully redundant control and alarm systems with multi control stations with up to 32 inch multiple display monitors. These can be delivered as independent or fully integrated system solutions.*

### **Liquid Cargo Control Systems**

*Interfaced to Tank Level system, Cargo Temp, Trim, List and Load Computer. Color highlight for running pumps and pressurized pipelines, Tank level graphics, visible indication for % filled, ullage and level.*

### **Pump Control Systems**

*/ Ballast / Stripping / Fuel Transfer Start / Stop - Speed increase / decrease – Automated pump priming, Start block, overload protection and more. Hydraulic control, start / stop, pressure increase / decrease, Oil level – Oil temp – Filter condition pump rpm increase / decrease, Automated cargo circulation etc.*

*Cargo*

### **Valve Control Systems**

*Throttling - open / close – Automated throttling – Start block for el driven pumps with discharge valve > 10% open.*

*password protected valve lock functions etc. Power pack control, start /stop, level alarms, temp, filter condition etc. modules for manual / auto valve operation.*

*Valve  
Hydraulic  
Control*

### **Engine Alarm Systems**

*and SW engineering, field services and upgrade of outdated systems.*

*Together with cooperating companies we offer state of the art, cost efficient, fully redundant, class approved engine alarm systems with multi control station options and e0 watch call. We re-use as much as possible existing sensors and component enabling us to offer cost efficient and easy to install engine alarm systems. The control & alarm systems are made with easily recognizable operator station graphics.*

*HW*

*All components used are from suppliers such as Siemens, ABB, Wago and other known brands, all with a worldwide spare parts distribution network.*

*24/7 technical online SW support for ship electricians and system operators.*

*Our consultants are all highly skilled with many years experience with leading marine control systems providers such as Kongsberg Maritime (Norcontrol), Framo, ABB, FMC Technologies, Siemens, Hamwothy and others as Product Development engineers, Site and Service managers, Project engineers, SW engineers, Service Engineers, Control system Lead Engineers and from sailing ships as electricians and engineers.*

### **Other Products and Services.**

*Boiler Control system Refit.*

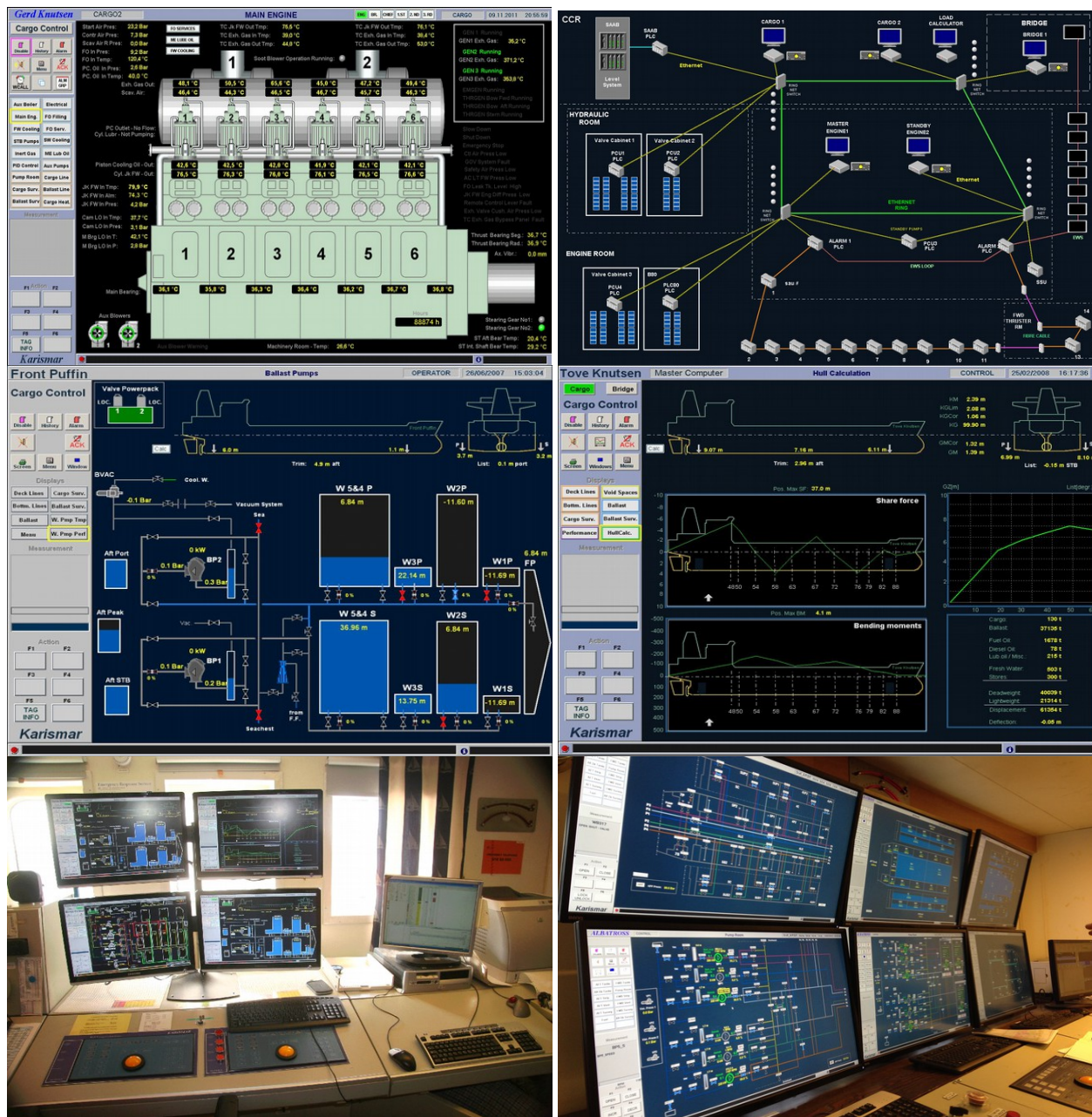
*Control modules. Navigation Light controller E0 Call system*

*do project engineering, specify equipment, update drawings and documentation and/or provide, install, interface and make to work a wide range of navigation bridge systems such as AIS, VDR, Radar, ECDIS, Gyro, VHS, GPS, Steering, Autopilot and more.*

*Valve  
We also*

## Recently installed Engine Alarm and Cargo control & alarm systems.

Installed onboard more than 20 shuttle tankers, product and chemical tankers, tankers, FPSO's, heavy lift vessel and more.





## **Selection of our Consultants project references;**

### **Heavy lift vessel.** Rebuilt shuttle tanker. Qingdao China.

Valve and ballast control systems. 350+ actuators. Interfaced Valve control, Pump control, Level, Temp, Trim, List. System Operation from multiple control stations.

System Engineering, installation supervision, installation teams and commissioning

SW Control system engineering. Installation supervision. Commissioning.

### **FPSO's.** Rebuild shuttle tanker to FPSO. Singapore.

Upgrade existing system, Interface topside.

HW/SW Control system engineering.

Hydraulic Solenoid rack, engineering.

Installation supervision, Commissioning.

### **FPSO's** New buildings. Dalian and Qingdao China

Makers representative. Hamworth. Cargo, Ballast and Fire pump systems. Commissioning, Systems testing.

### **Subsea Control Systems.**

FMC Technologies Norne template M and K

Lead Engineer for Subsea / Topside control systems, hydr, electric, HW / SW

Lead Engineer for new subsea template and upgrade of existing subsea templates.

### **Chemical & oil tankers. World Wide**

Projects on new buildings, at repair yards, "makeshift" repair berths and during voyage.

Hydraulic driven submersible pumps. Condition test, service and full overhauling.

Hydraulic driven submersible pumps. Emergency repair and permanent repairs of pitted / cracked pipe stacks.

Hydraulic systems Troubleshooting, Repairs and upgrades.

Full OH of acid contaminated hydraulic systems for submersible cargo pumps.

Renewal / Upgrade of Cargo / Ballast and Pump control systems.

Renewal / Upgrade of Engine control & alarm systems.

Renewal of hydraulic and cargo pipes during voyage.

Renewal of pre fabricated double bottom vent pipes during voyage. Successfully completed by use of 3 rope access technicians.

### **Marine Control and Alarm Systems.**

Developed first computer based system for Cargo Control for Norcontrol.

Developed Pump and Valve Control system for Norcontrol

(Hundreds of units installed on tankers ww)

Developed first KCCS Cargo Control system for Kværner

(Installed on many oil tankers ww)

Developed DC2000 Engine Alarm system for Norcontrol

(Thousands of units installed on ships ww)

Developed BLS Control System for Norcontrol/APL

(Hundreds of units installed on ships ww)

Developed VOC control system for Hamworthy

(Installed on many oil tankers.)

Developed Navigation Light Controller for Norselight.

(Hundreds of units installed on ships ww)

Developed KCCS Cargo / Ballast Control System

(Installed onboard more than 20 tankers ww.)

Developed KEAS Engine Alarm System with E0 watch calling.

(Installed on shuttle tankers)

Final assembly / testing of component for maritime alarm / automation systems (Data-Chief) with main emphasis on configuration / testing of the main computers.

System testing and certification of completed facilities at yards ww. (Data Chief products.)

Startup of new facilities, service and maintenance of KM systems, included navigation, radar, electronic charts (ECDIS), heading, autopilot, communication (VHF, MF-HF & SAT), VDR new installations and upgrade etc.

(DataBrigde system) and SeaCocpit (Multifunction System for fast boats).

### **Other marine projects.**

Military frigates and corvettes, Mega Yachts, Oil, Chem., LNG/LPG tankers, Container ships, Bulk carriers, FPSO's

Navigation and steering systems. System Engineering for complete bridge systems, FAT, setting to work and SAT.

Control & Alarm systems. Engineering, site supervision, Installation, commissioning and setting to work.

Cargo and pump control systems. Engineering new systems and upgrade. Site installation and services.

Cargo pump control systems. Engineering new systems and upgrade.

Site installation and services.

Pump Room Control System. Engineering new systems and upgrade.

Site installation and services.

Hydraulic systems. Engineering new systems and upgrade.

Site installation and service.

Hydraulic Driven Cargo pump systems. New systems and upgrade.

Site installation and service.

Pump Room pumping systems. Engineering new systems and upgrade.

Site installation and services

Valve control systems. Engineering new systems and upgrade.

Site installation and services

Oil rig, Drill ships IRM. Repair Manager and Project Engineer.

Multi discipline projects.