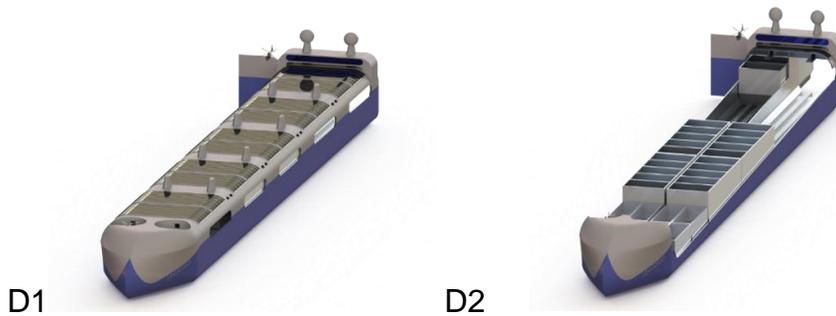


FREBS MARINE INTERNATIONAL LTD

Universal Cargo & Docking System

Background

The FREBS concept, formulated by Michael Freeland over many years, is based on his extensive experience in the Royal Naval Auxiliary, which supplied NATO fighting ships across the world.



The FREBS MaxiShip 1,200 feet LOA 160 feet beam

D1 – shows the open rear doors through which the barges are floated in and out.

D2 - shows the ship with the deck 'cut away' loaded with :

8 x Mini barges plus 4 x Maxi barges (each with 5 x bulkheads)

The full capacity is 8 x Maxi FREBS barges and 8 x Mini barges.

The hull is semi-submersible to allow loading and unloading of barges.

The hard top deck which can be fitted with solar panels to augment the main power unit.

In the bow are two 'sunken' helicopter pads. The control bridge is over the stern doors.

The main power unit is one of 4x inter-changeable Powerpacks in the bow.

Any one of these can drive 3x Azipods in the stern and 2x additional Azipods forward.

These could be fuelled by non-polluting LNG or Hydrogen.

The power packs would also supply reefers.

Rotary sails are an option to add extra power.

In due course a MaxiShip would be autonomous.

The MaxiShip is able to navigate oceans and canals worldwide, has covered decks protecting the barges from the weather and so eliminating any loss of cargo at sea.

The new Panama Canal is 180 feet wide. A MaxiShip could pass right through and exchange some or all of the barges carried with one or more MaxiShips at the other end.

The MaxiShip can load a **mix** of Mini and Maxi barges.

The mix of containers in a barge depends on the individual weights of each container and their distribution inside the hull to maintain balance and stability.

The distribution of barges is determined by their destination port and onward route.

! Total Flexibility !

Continued

FREBS BARGES

There are three identical formats of the **autonomous self-powered barge** :-

<u>Mini FREBS</u>	110 feet	LOA	37 feet beam
<u>Maxi FREBS</u>	220 feet	LOA	75 feet beam
<u>Humanitarian FREBS</u>	220 feet	LOA	75 feet beam

Each barge is basically an autonomous 'feeder ship' which, with its own inter-changeable power pack can motor from off-shore to the FREBS dock for unloading.

After re-loading the barge returns to the off-shore mooring to be floated into the MaxiShip.

FREBS Docking

A FREBS dry dock is built at 90 degrees to the shore line.

Each dock can be serviced by several straddle cranes.

The straddle cranes can each lift one (or two) containers and deposit these straight onto railway wagons or road trucks or onto the dock side for later collection.

A FREBS dock holds the barge securely after the caisson has been closed.

Hence a barge remains at a constant level as the tide rises and falls.

This will ensure that the loading ramps remain static at the bow or at the beam.

If a number of dry docks are built in parallel at a port, the **reduction** in the loading and unloading **time** per barge could be **50%** ...or more.

Barges may also be left in a dock, empty or loaded, awaiting the arrival of the MaxiShip.

A barge is designed to carry :-

- Non-perishable goods of any kind loaded by the supplier in standard containers.
- Perishable goods stored in reefers can be plugged into the barge's power supply.
- Barges can be specially designed to hold :-
 - motor cars, road trucks, earth moving equipment, machinery
 - dry bulk cargos, such as iron ore, grain, aggregates
 - basic metals, yachts, power craft etc
- A Humanitarian self-powered barge is fitted with a helipad, a fully equipped hospital, tents, portable shacks, caravans, food, cross country vehicles, kitchen equipment, clothing, a range of emergency equipment, power generators, mobile cranes....
Food & clothing etc can be stored in 40ft shipping containers – maximum number - 48.

Many ports across the world are **congested** for most of the time.

Our UNIVERSAL CARGO SYSTEM provides the **SOLUTION !**

Investment in our unique design of MaxiShips, MaxiBarges and docks will :-

- ELIMINATE PORT CONGESTION**
- REDUCE POLLUTION**
- REDUCE IN-PORT TIME**
- REDUCE TRANSIT TIME**
- SAVE ENERGY**
- REDUCE THE OVERALL SHIPMENT COSTS**
- SHORTEN THE SUPPLY CHAIN FROM
SUPPLIER TO CONSUMER**

We are seeking support from the major shipping lines and ports operators to launch our UCS, which sets a new international standard for totally efficiency in handling all types of cargo and all sizes of shipping containers.

The main advantage of the FREBS Universal Cargo & Docking System is SPEED.. which will shorten the supply chain considerably.

SPEED across the oceans and FAST turnaround times in port.

This is the GREEN solution to port congestion and to reduced emissions

The MaxiShip can carry a mix of cargos which, if all containerised, would be c.7,200 teu.

A fleet of MaxiShips would be able to deliver more cargo than one ULCV and be considerably **quicker** and at much **lower cost**.

Larger FREBS MaxiShips are planned with extended capacity.

INVESTMENT
in the
**FREBS Universal Cargo & Docking System creates a
unique and highly profitable opportunity**

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