

The green ships' revolution

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SMART transportation is green, and there are a number of beneficial forms of green transportation that support and enhance walkable urbanism. These green transportation options make our lives easier, reduce congestion, reduce our dependence on cars & foreign oil, **are safer & less costly**, and help save the planet. Greening the transportation system is all about reducing carbon footprint. The negative effects of our transportation system is large and the "greening" of the transportation system is very important. Unfortunately "Green such-and-so" is widely used in many areas, without a precise meaning.

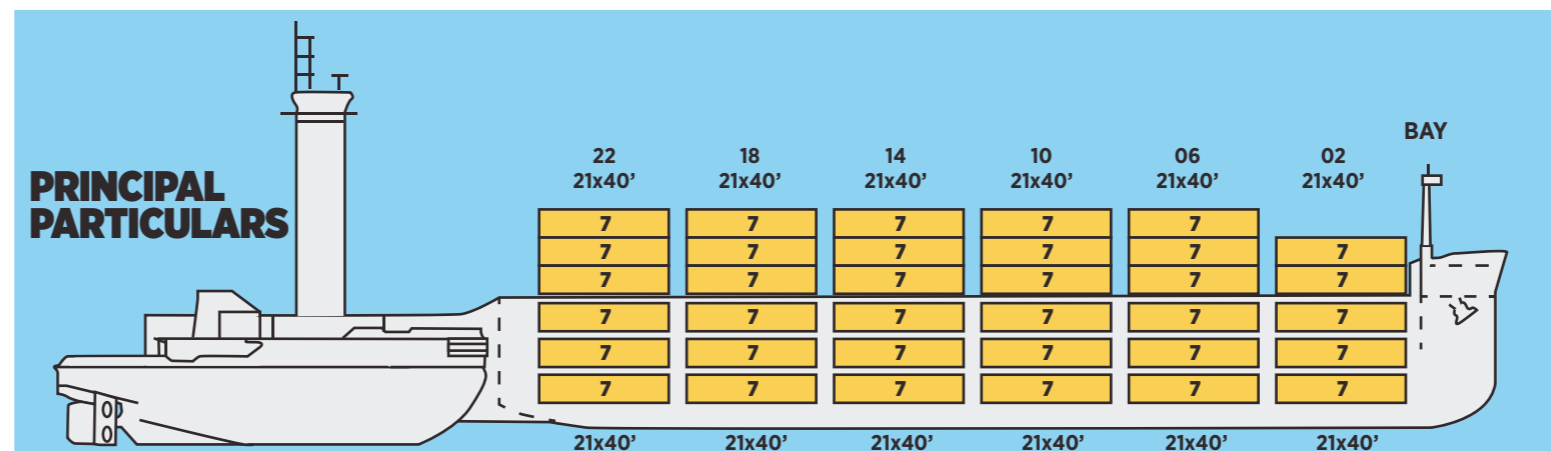
GREEN IN THE SHIPPING

Many flags of shipping world supports "The Green Ship Programme" which encourages own flagged ships to reduce carbon dioxide and sulphur oxides (SOx) emissions. Joining to this program allows benefits to ship owner such as adopting energy efficient ship designs exceeding IMO's Energy Efficiency Design Index (EEDI) **will enjoy 50% reduction of Initial Registration Fees and 20% rebate on Annual Tonnage Tax and ships that adopt both energy efficient ship designs and approved SOx scrubber technology exceeding IMO's requirements will enjoy almost 75% reduction of Initial Registration Fees and 50% rebate on Annual Tonnage Tax.** But this is not enough.

A new technology about Articulated Tug/Barge (ATB) systems allows better ships handling and greener solutions to the operators. Alongside these developments emerged the Articulated Tug/Barge (ATB) that adopted a new approach to the link between the tug and the barge mainly prompted by the regulations. **Various patented systems were de-**

veloped in general made the connection between the tug and the barge through massive side pins that were extended horizontally once the tug was in the notch. The basic tug/barge concept is simple - a tug tows the barge astern on a wire towline. Such a system has obvious disadvantages including weather limitations and risks, **slow speeds and the difficulty in maintaining time schedules.** With ATB designs now having reached maturity, reliable ETAs and higher speeds are possible, **along with greater crew comfort and better awareness from the crew of rough sea states.** Compared with towed barges, **operators claim a 25% fuel saving and comparable sea-keeping to a ship.** Tugs and barges can operate independently and are thus interchangeable.

The company, Germanische Shipping GmbH & Co.KG, a member of G-Group, located in Hamburg, Germany, want to prove itself as an innovator and leader in container transportation through the development of an unrivaled Articulated Tug & Container Barge (ATB) fleet to be ordered in Turkey, providing an environmentally friendly solution to the North Germany (and North Europe) container transportation needs. The vessels differ from many competitors' in that they are designed to operate and perform on many transportation routes, **gains in total economy can be achieved with an efficient integrated AT&B-Cont. barge system capable of safe operation on the open sea.** AT&B-Cont. barge system allows this concept to be used to full advantage. The key factors for the successful system & design are simplicity and cost efficiency of the constructions and the connection system; **AT&B-Cont. barge system allowing the pusher to be coupled**



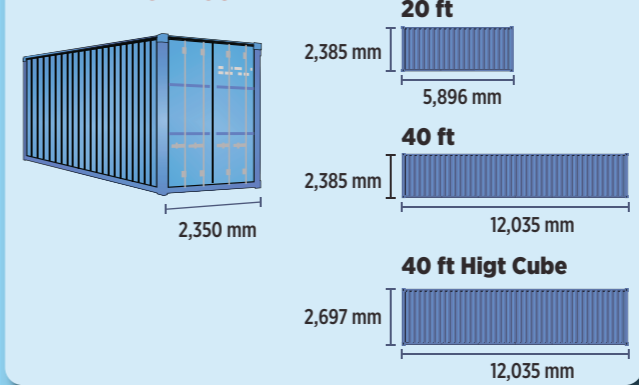
MAIN DIMENSIONS

Combined Length, Over All.....	129,99 m.
Beam	20,99 m.
Cargo Weight.....	6.175 MT
Capacity	
(empty) (7 layers).....	490 TEU
(14 ton homo.).....	270 TEU
(20 ton homo.).....	224 TEU
Reefer Plug	50 PCS

PROPULSION

	Option 01	Option 02	Option 03
Engine	2 x 931 kW	2 x 1.248 kW	2 x 1.650 kW
Speed (at design draft)	10 knots	11 knots	12 knots
Bunker Consumption	8,96 MT/day	12,01 MT/day	15,87 MT/day
(no reefers, inc. D/G)			

DRY FREIGHT CONTAINER



to the barge at different draughts of the barge; absolute reliability of the system in all sea conditions. **AT&B-Cont. barge system allowing unlimited ocean wide operation.** The system, consisting of two pushers and four 6.175 dwt barges, is intended for container transportation in the North of Germany, but also, **in case of need, expandable range to long distance trip in North Sea & Baltic Sea.** In the AT&B-Cont. transport solution the cargo ship is divided into two parts, **a pusher-tug for propulsion and a barge for the payload.** The impor-

tant and expensive systems of a cargo ship, such as the propulsion machinery and the crew quarters, **are concentrated in the pusher.** The AT&B-Cont. transportation system can be employed on the same routes as normal cargo vessels, but the possibility of separating the pusher from the payload-carrying barge gives several advantages: only the barge has to stay in harbour during cargo loading and unloading. The pusher can be coupled to an already loaded barge and leave harbour immediately; the machinery and

crew of the pusher can work efficiently, without idle time in port; in the harbour, **the barge can be allowed a longer time for cargo handling than the conventional ships.** Thus harbour expenses may be reduced by using simple cargo handling facilities; the barge may be used as a floating warehouse; in a "drop and swap" operation, the turnaround frequency and thus the capacity of the pusher-barge system is higher than that of a conventional vessel; **the needed turnaround frequency is the same for the pusher -barge system and**

a conventional vessel, the service speed of the pusher can be lower, as no harbour time is required. **This results in a smaller need for machinery power and in lower fuel consumption;** the same pusher can be used with barges of different sizes and with different cargoes.

ATB COMPARED WITH A SIETAS FEEDER CONTAINERSHIP

The initial investment for building necessary vessels is saved, because the number of ships with propelling engines is smaller and the building cost of barges is generally low; the manning cost is low, because the number of manned ships is smaller and, in addition, smaller pusherboats need smaller number of crew: **2x5=10 crew & 2x9=18 crew;** the maintenance cost is low, because the total number of propelling engines is smaller and the size of pusher boats having engines is smaller. The maintenance cost of barge relates to hull part only; **as barges can stay long at terminals for cargo-handling and the on-shore cargo-handling facilities can be operated practically without interruption,** their loading and unloading rates can be smaller; it is sometimes possible to reduce the running speed without affecting the total transporting capacity of the fleet to save fuel consumption. Without a doubt, **though, the concept is firmly established as a viable ocean and coastwise transportation system in North Europe.** But like any transportation asset, the concept has to not only expand its' capabilities, **but also conform over time to ever-changing rules and regulations.** It must also be able to embrace and adapt to changes in technology that hold the promise of reduced emissions as well as savings in fuel and protection of the environment. AT/B's recently placed in service as well as those on the drawing boards today, are indeed being designed around these principles and future AT/B's promise higher speeds per HP, lower fuel consumption and the application of all manner of "green" technologies in their construction.

Wishing you all calm seas.

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