BARZAN: Containership

Shipbuilder: ..... **Hyundai Samho Heavy Industries Co., Ltd.**
Vessel's name: ..... ***Barzan***
Hull No: **S746**
Owner/Operator: ..... **UASC**
Country: ..... **Kuwait**
Designer: ..... **Hyundai Samho Heavy Industries Co., Ltd.**
Country: ..... **Republic of Korea**
Model test establishment used: ..... **HSVA**
Flag: ..... **Malta**
IMO number: **9708851**
Total number of sister ships already completed (excluding ship presented): **3**
Total number of sister ships still on order: **5**

Barzan is the first in the series of six 18,800TEU container carriers ordered by United Arab Shipping Company (SAG). The vessel was delivered from Hyundai Samho Heavy Industries Co., Ltd (HSHI) to United Arab Shipping Company on 8 May 2015.

Barzan is the first vessel to use a shaft generator and waste heat recovery (WHR) system to increase the total efficiency of the plant, which is automatically activated by a Power Management System at HSHI. Surplus WHR energy can be used for propulsion via a shaft motor. Energy from the auxiliary engine can be used to boost the ship speed when required for navigation. The WHRS system is composed of a power turbine, steam turbine and turbine generator for electric power production. The task of the power management system (PMS) is to deliver electrical power for all consumers on the ship. In order to perform the task PMS controls the auxiliary engine(s) and possibly a shaft generator and/or a WHR system.

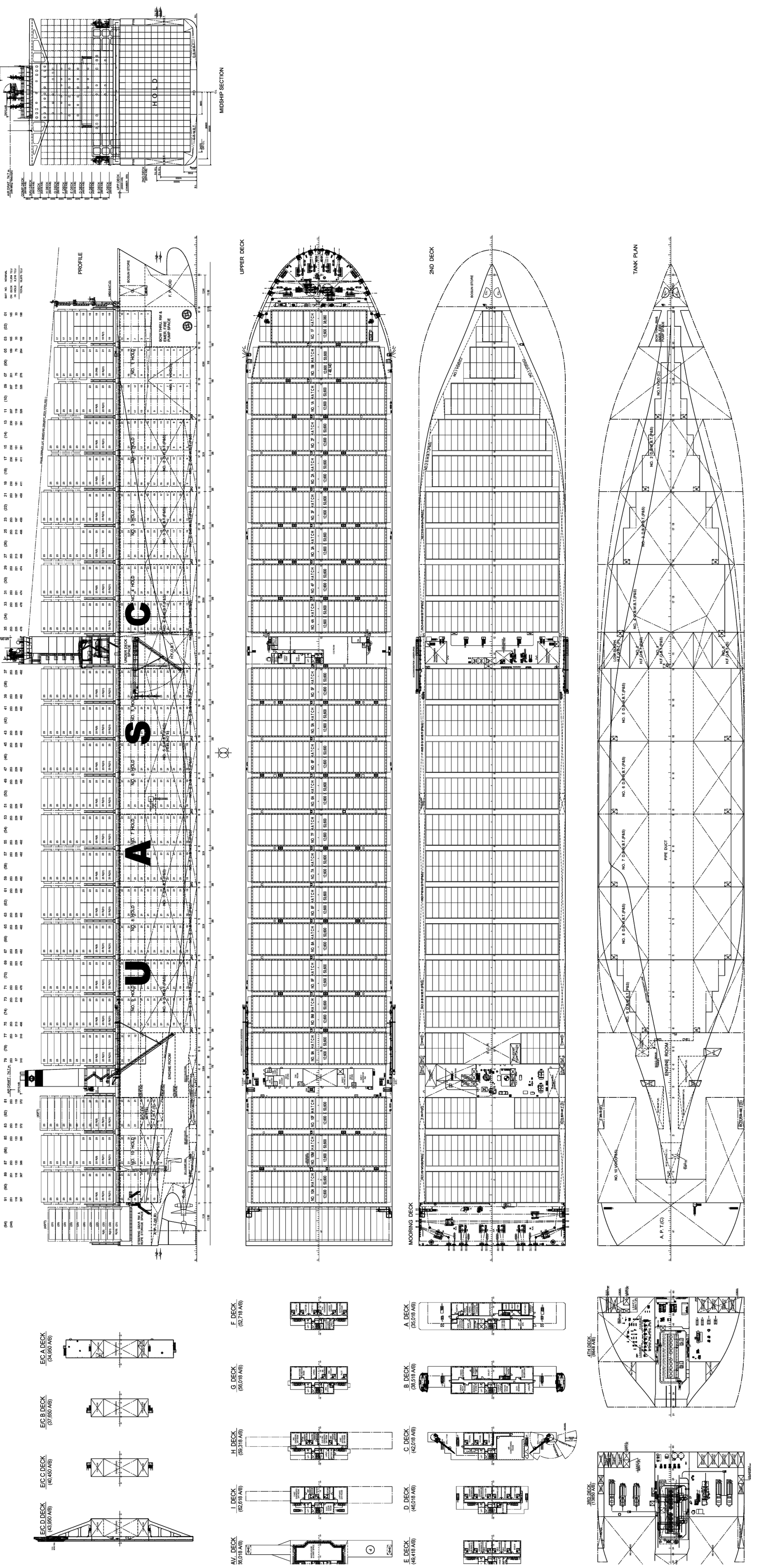
Other distinctive features of *Barzan* include a Becker rudder with bulb, Becker twisted fins and a hull stress monitoring system.

UASC has been currently implementing one of the industry's largest and most technologically advanced new building programmes, with 17 new vessels on order; six of 18,800TEU and eleven 15,000TEU containerships.

UASC's vessel designs have been developed with a focus on cost efficiency and enhanced environmental friendliness. These vessels will be the first ultra large containerships in the industry to be delivered 'LNG ready', to enable dual fuel (the use of both traditional heavy fuel oil as well as liquefied natural gas or LNG fuel), which is expected to significantly reduce environmental impacts and reduce fuel costs. Final calculations indicate an EEDI (Energy Efficiency Design Index) value that is close to 50% below the 2025 limit set by IMO.

TECHNICAL PARTICULARS

Length oa: 400m
Length bp: 383m
Breadth moulded: 58.60m
Depth moulded
  To main deck: 30.60m
  To upper deck: 30.60m
  To other decks: .....20.744m(2nd deck)
Width of double skin
  Side: 2.50m
  Bottom: .....2.60m (Above Base Line)
Draught
  Scantling: .....16m (Moulded)
  Design: .....14.50m (Moulded)
Gross: 19, 5636gt
Displacement: ..... 257,947gt (at scantling draught)
Lightweight: 58,203gt
Deadweight
  Design: 170,658t
  Scantling: 199,744t
Block co-efficient: ..... 0.6989 (at scantling draught)
Speed, service (-- %MCR output): .....21knots (Beaufort 3)
Container capacity (TEU)
  On deck/hatch (11tier): ..... 11,654 TEU
  In hold: ..... 8,216 TEU
  Total: ..... 19,870 TEU
Bunkers (m^3)
  Heavy oil: ..... 8859.6 m^3
  Diesel oil: ..... 1158.4 m^3
Water ballast (m^3): ..... 50,793.3 m^3
Containerships – water ballast in loaded condition (tonnes): 37,562.2tonnes
Daily fuel consumption (tonnes/day)
  Main engine only: ..... 161.7g/kW.h + 5% at MCR
Classification society and notations: ..... DNV, +1A1 Container carrier, BIS, BWM(T), Clean,DG(P), E0, Gas ready(AEI,D ,MEC,S), HMON (A1,C1,G4), NAUT(OC), NAUTICUS (Newbuilding), Shore power, Safelash, TMON
Main engine(s)
  Design: ..... HYUNDAI-MAN B&W
  Model: 10S90ME-C10.2
  Manufacturer: ..... HHI-EMD
  Number: ..... ONE(1)
  Type of fuel (eg, HFO or MDO) : ..... HFO, MGO
Output of each engine: .....61,000 kW X 84 rpm (Two stroke, Crosshead, Turbocharged)
Propeller(s)
  Material: ..... Ni.Al.Bronze
  Designer/Manufacturer: ..... HHI-EMD
  Number: ..... 1 set
  Fixed/Controllable pitch: ..... Fixed pitch
  Diameter: ..... 10.4 m
  Speed: .....72 rpm
Diesel-driven alternators
  Number: 5
  Engine make/type: .....Nishishiba Electric
  Output/speed of each set: ..... 4,140kW (3 sets) / 3,220kW(2 sets) AT 720 RPM
Boilers
  Number: ..... 1 set
  Type: ..... Automatic, Forced draft, Heavy fuel oil burning, Marine boiler
Make: ..... Alfa Laval
Output, each boiler: ..... 8,000 kg/h
Other cranes
  Number: ..... 1 set(Monorail crane)
  Make: .....Dongnam Marine Crane Co. Ltd
  Type: .....Electric-Hydraulic
  - Capacity : ..... 12.5 tonnes
  - Lifting height: 45m
  - Hoisting speed 10/5 m/min (by 2nd layer)
  - Transversing speed: 7m/min
  Number: .....2 sets(Provision crane)
  Make: .....Dongnam Marine Crane Co. Ltd
  Type: .....Electric-Hydraulic
  - Capacity : ..... 4 tonnes
  - Working Radius : ..... Max.10.5m~Min.3.0m
Mooring equipment
  Number: ....16set (Upper deck foward: 8 sets/ Mooring deck aft: ..... 8 sets)
  Make: ..... Towimor S.A.
Special lifesaving equipment (eg MES, free-fall lifeboats)
  Number of each and capacity: .....2 sets, 35 persons
  Make: .....Hyundai Lifeboats
  Type: ..... Davit Launched Type
Hatch covers
  Manufacturer: .....Macgregor
  Type (upper deck/other decks):..... Weather Deck Hatch Covers, Lift-Away type
Containers
  Lengths: .....ISO standard container
  Heights: .....ISO standard container
  Cell guides: .....Mixed (random) storage
  Total TEU capacity:
    On deck: ..... 11,654 TEU
    In holds: ..... 8,216 TEU
    Homogeneously loaded to 14tonnes: ..... 14T *11676TEU+ 28T*931FEU
  Tiers/rows (maximum)
    On deck: 11/23
    In holds: 11/21
Ballast control system
  Make: ..... Kongsberg
  Type:.....
Water ballast Treatment System
  Make: ..... Panasia
  Capacity:.....1200m^3/hr
Complement
  Officers:..... 13
  Crew:..... 19
Stern appendages/special rudders: ..... Becker Twisted Rudder with Bulb.
Bow thruster(s)
  Make: ..... Kawasaki Heavy Ind. Ltd.
  Number: .....2 sets
Output (each): .....about 444kN
Bridge control system
  Make: ..... Kongsberg
Is bridge fitted for one-man operation? .....YES
Fire detection system
  Make: ..... Consilium
  Type: BS-420M
Fire extinguishing systems
  Cargo holds: .....CO_2
  Make/Type: ..... NK Co.Ltd
  Engine room:.....CO_2
  Make/Type: NK Co.Ltd
  Cabins:..... -
  Make/Type: ..... Portable fire extinguisher
  Public spaces: .....
  Make/Type: ..... Portable fire extinguisher
Radars
  Number: 2
  Make: ..... Kongsberg
Integrated bridge system: .....Yes
  Model: ..... Kongsberg
Incinerator
  Make: ..... HMMCO
  Model: ..... Sludge oil & solid waste burning type
Sewage plant
  Make: .....ILSEUNG
  Model: .....Biological Type
Contract date: .....29 August 2013
Launch/float-out date: .....26 February 2015
Delivery date: ..... 8 May 2015


MIDSHIP SECTION
PROFILE
UPPER DECK
2ND DECK
TANK PLAN
MOORING DECK
UASC