

As the world's third-largest container ship operator, French liner group CMA CGM has invested heavily in the new breed of ultra-large box ships, but has been a little slower in taking delivery than rivals Maersk and MSC. Late in 2009, the company took delivery at the Daewoo yard of its new flagship, the 13,800teu CMA CGM *Christophe Colomb*, becoming the owner of the largest box ship to operate under the French flag.

The CMA CGM *Christophe Colomb* is comparable in size to APM's *Emma Maersk* and to MSC's Samsung-built *MSC Beatrice* and shares the same hull design as the *MSC Danit*. The nominal capacity of these ships is somewhat

academic – it will rarely be reached in normal operating circumstances. But as a point of interest, *Emma Maersk* is listed as having a 12,508teu capacity while CMA CGM lists a 13,344teu capacity for the *Christophe Colomb*.

Christophe Colomb has been built to take advantage of the opportunities that may become available once the new Panama Canal locks are constructed – its hull length is just 0.5m short of the 366m maximum. The ship's draught and extreme beam are a fraction larger than the declared size of the locks but transit would probably be possible in a non-fully-loaded condition. In size, *Emma Maersk* exceeds the French ship by every measure except dead-

weight. The two ship types share the same choice of engine, with both being equipped with electronically-controlled Wartsila 14RTflex 96C units producing 80,080Kw at 102 rpm driving a fixed pitch propeller and giving service speeds slightly above 24kt.

One noticeable difference between the Danish vessel and the *Christophe Colomb* is the position of the superstructure. *Emma Maersk* has its accommodation and engine rooms well forward of the traditional aft position but the Daewoo design has separated the engine room and accommodation leaving the former in the usual aft position but moving the bridge and accommodation in to a much more for-

ward position than is common. The Samsung design mentioned above is very similar. The forward position vastly improves line of sight and allows for a greater deck load.

CMA CGM is proud of the environmental technologies being used aboard its larger vessels. Beginning with the delivery of CMA CGM *Christophe Colomb*, all vessels of similar size ordered by the group are fitted with a Daewoo version of the pre-swirl stator, a device which alters the inflow angles to the propeller to maximise propulsion efficiency. Together with the twisted leading edge rudder, it optimises a ship's hydrodynamics to cut fuel consumption by 2% to 4%.

The environmental considerations also extend to the deck machinery where hydraulics have been abandoned in favour of frequency controlled electric motors in the winches to eliminate the problem of hydraulic fluid leaks.

For some years now, container ships have been obliged to provide protection for the fuel tanks by positioning them away from the ship's sides. The *Christophe Colomb* follows this practice. In addition, it is equipped with the Fast Oil Recovery (FOR) system developed by Paris-based JLMD which should significantly limit environmental impact should there be an incident at sea.

Initially developed for tankers, the FOR design has been adapted for CMA CGM container

ships by the joint efforts of JLMD Ecologic Group and the CMA CGM group's newbuilding department. The operator has been an enthusiastic supporter of the FOR with the 11,400teu CMA CGM *Andromeda* being the first box ship to be equipped with this system for recovery of bunkers when it was delivered in early 2009.

Sharing some of the same features as its much larger sister, the 8,500teu capacity CMA CGM *Figaro* was delivered by Samsung in April this year. It too has the JLMD FOR system and also features an electronically controlled injection system for its MAN B&W 12K98MC-C engine. CMA CGM claims oil consumption has been reduced by 25% and fuel consumption by 3%, while allowing the vessel to operate at, what the company describes as, the super eco-speed of 14 to 15kt.

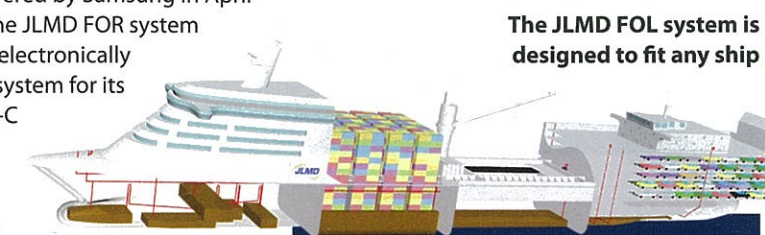
Moreover, to reduce sulphur oxide emissions, the CMA CGM Group reports that it has also chosen a low-sulphur fuel of a much better quality to that stipulated by the regulations, with a sulphur content estimated in average at 2.7% (even less in certain regions) instead of 4.5%.

Figaro has an optimised hull design to improve the hydrodynamics of the vessel and is what the group calls the second generation of its 8,000teu class, it does not though have a pre-swirl stator fitted as such a device is considered less effective on the smaller ship.

Beside the environment-conscious solutions, the loading capability of the vessel is excellent due in part to the hold being optimised for 40ft high cube containers that can be loaded without losing space. Provision has been made for longer boxes and 45ft units can be loaded in certain areas on deck. Its double-height lashing bridge combined with 140 tonnes stack weights for 40ft on-hatch cover do offer the best flexibility and capability for the line.

Figaro, which is the largest CMA CGM vessel ever to serve the US, made its maiden call in Los Angeles on 29 June this year. The ship has been equipped to take advantage of the cold ironing facilities in the Californian port and could take advantage of similar facilities

should they become available at other ports on its scheduled route. CMA CGM feels it is unfortunate that there is no worldwide standard for connecting to shore power but it has prepared the ship for the future retrofit of the cable reel and plug. Other facilities, including main switchboard, are already on board. ■



The JLMD FOR system is designed to fit any ship

CMA CGM's clean container ships

French shipping giant CMA CGM has made much of the green credentials of its new flagship CMA CGM *Christophe Colomb*. It has included many environmentally-friendly features into it and several other recent newbuildings



CMA CGM *Christophe Colomb*, the largest French-flagged ship

principal particulars	
CMA CGM CHRISTOPHE COLOMB	
Length overall	365.5m
Beam (moulded)	51.20m
Hull depth (moulded)	29.90m
Draught	15.50m
GT	153,022
Dwt	157,092
Main engines	Single Wartsila 14 RT-flex96C
Total Power	80,080kW at 102rpm,
Speed	24.10kt
Capacity	13,344teu
Classification	Bureau Veritas
Flag state	France
CMA CGM FIGARO	
Length overall	334.0m
Beam (moulded)	42.80m
Depth (moulded)	24.60m
Draught	15.00m
GT	90,931
Dwt	107,000
Main engines	Single MAN B&W 12K98MC-C
Total Power	68,520kW at 104rpm
Speed	25.00kt
Capacity	8,500teu
Classification	Bureau Veritas
Flag state	France