

OWNER'S REQUIREMENTS FOR A MULTI-PURPOSE CARGO LINER

Introduction

A major international cargo liner operator intends to replace two or three of the older units in a service maintained by nine large fast RO-RO/Container ships.

Trade Route

N. Europe-Canadian Maritime Ports-U.S. East and Gulf Coast Ports-Mexican Ports-New Zealand-Australia-Singapore-Hong Kong-Indonesia-PRC-Korea-Japan-U.S. West Coast Ports-Mexican Ports-U.S. Gulf and East Coast Ports-Canadian Maritime Ports-N. Europe.

A typical round-trip voyage covers about 37,000 nautical miles in 135 days calling at about 35 ports. Port calls may vary from one voyage to the next. The total cargo volume carried on one round trip normally corresponds to the vessel being loaded and discharged approximately three times.

Principal Cargo Types-Loading & Discharge Means

1. ISO standard and high cube containers on weather deck via shore side cranes and dedicated top lift container handling trucks carried on board.
2. ISO standard 20-ft containers below deck via dedicated top lift container handling trucks carried on board.
3. ISO Standard 20-ft and 40-ft containers below deck via terminal tractor and special trailer.
4. Passenger cars, vans and light trucks below deck, driven on/off.
5. Tracked or wheeled heavy transport or construction equipment, below deck, driven or towed on/off.
6. Palletized or otherwise unitized cargo below deck via terminal tractor and MAFI trailer.
7. Heavy or outsized cargo units below deck adjacent to entrance via special tractor and trailer.

Cargo Access

Angled quarter ramp to quayside. Ramp to be of sufficient width to permit uninterrupted two-way traffic flow, load capacity to be 350 LT.

W.T. door fitted in way of stern ramp. Large hinged or sliding interior W.T. doors to be fitted in all transverse bulkheads in way of cargo spaces. Weathertight door located at top of access ramp to weather deck.

Vehicle Deck Loads:

- Limiting vehicle load established by container lift truck with maximum weight 20-ft ISO container
- Axle loads shall be placed in-line on any deck transverse web for design purposes.

Limiting Particulars

- LOA: Reasonable minimum
- Beam: Panamax
- Draft: 35 ft maximum, 33' 6" design
- Air Draft: 135 feet in any operating condition
- Tonnage Reasonable minimum

Speed, Range, DWT

Trial speed at Design Draft – 21 knots at 0.80 MCR
Range—17,000 nautical miles at 20 knots and 0.90 MCR with 10% fuel remaining.

Classification

ABS, LR, or DNV – The choice of a specific classification society shall be supported by specific rationale.

Registry

Bahamas

Complement

Minimum manning is desired consistent with registry and operational requirements.

Additional accommodations to be provided for 6 person riding crew and for technicians, marine superintendents or other persons other than the crew.

Special Design Considerations

In developing the design, the following considerations shall be specifically addressed, considering at all times the requirements of applicable regulations and/or industry standards.

- Structural hull design shall include design of decks for vehicle loadings, design of inner bottom to distribute pillar loadings, design of transverse structure for racking loads and extent of use of higher tensile strength steel.
- Selection of propulsion plant shall consider high auxiliary power loads (reefer cargo, cargo hold ventilation, and maneuvering aids), space required and life cycle cost considerations.
- Auxiliary system requirements unique to the vessel type include cargo hold ventilation and cargo space fire detection and extinguishing, including dewatering.
- Due to the numerous port calls, the vessel shall be capable of berthing without tug assistance except in extreme conditions.
- A list control system shall be provided for use during cargo operations.

Applicable Regulations

The ships shall meet all international regulations for loadline, intact stability, dry-cargo damage stability, and other SOLAS and MARPOL requirements for lifesaving, firefighting, and pollution regulations.

In developing the design, the future course of regulations directed to environmental issues shall be researched and responded to. Evaluations should include but are not limited to features regarding:

- Minimization of NO_x and Sox emissions from the main and auxiliary engines
- Disposal of sewage and waste material
- Oil tanks isolated from the ship sideshell
- Non-ozone depleting fire fighting and refrigeration systems
- Provision for at-sea ballast water exchange or other effective measure of ballast management to minimize invasive species introductions