



TYPE OF VESSEL

The container vessel APHRODITE is innovative, green and economically advantageous ship designed especially for transport of large number of high cube reefer containers. She has four cargo holds, all forwards of the accommodation deckhouse. Total capacity is 1160 TEU. Stability of the ship at scantling draft is sufficient to carry 740TEU (14t, VCG=0.45H). The ship is equipped with two cargo cranes. With the emphasis on fast port turnarounds, the vessel is provided with the Wartsila Efficiency Rudder and a 900kW CPP bow thruster. This enables the vessel to track sideways and turn in its own length.

Conventional container vessels, in most cases, have only a large number of reefer plugs in order to be more flexible regarding stowage of reefer containers. In practice, they are unable to carry the full amount of reefer containers, because their electrical system and the cargo hold ventilation system are not laid out for this. The APHRODITE meets all requirements of GL's Class Notation RCP and can carry simultaneously up to 362 reefer FEUs. 150 reefer FEUs can be accommodated in specially ventilated holds, and 212 reefer FEUs can be transported above

CV 1100^{PLUS} APHRODITE BETTER BY DESIGN

deck. Maximum 75% of reefer boxes may be loaded with fruit/chilled cargoes. In order to provide electrical power for such large number of reefer boxes the ship is equipped with four diesel driven alternators.

Another outstanding feature of the vessel, is a total segregation of oil tanks from the sea: all HFO, DO and Lube Oil tanks are placed outside of double skin reducing the risk of oil spill.

Other important features of the design include:

- Communication platforms enabling safe access to reefer containers on hatch covers.
- Possibility to accommodate six bays of 45ft containers on hatch covers.
- Excellent continuity of main structure.
- Anchoring/mooring equipment protected by a wave breaker against direct impact of green water.
- High degree of inbuilt safety (bilge wells in holds always accessible, no easy to damage goose-neck type vents, 3 emergency escapes from the Engine Room, etc)
- Enhanced damage stability (double skin in way of the Engine Room).
- High standard of accommodation.
- User-friendly operational design.

The integrated propulsion package consists of the medium speed main engine, which drives through a gearbox a CP highly skewed propeller. Depending on required service speed (19-21knot), different engines can be installed. **Slower versions (17-18knot) can be prepared.**

Accommodation is arranged for 18 + 4 Suez crew.

PRINCIPAL DIMENSIONS

Length overall	L _{OA}	156.40m
Length between perpendiculars	L _{BP}	146.80m
Breadth moulded	B _{mld}	24.00m
Depth to Main Deck	D	12.20m
Design draught	d ₁	7.50m
Scantling draught	d ₂	8.75m

CLASS AND FLAG

The vessel can be designed and constructed according to the requirements of the Germanischer Lloyd, for the following class:

+ 100 A5 E "CONTAINERSHIP" NAV-O, IW, BWM, ERS, RCP 362/75, Environmental passport, SOLAS II-2, Reg.19 +MC E AUT
or to the equivalent class of any other Class Society.

The vessel will meet all rules and requirements necessary to fly the Cyprus flag.

CARGO CAPACITY

Container Capacity

Equivalent container capacity:

On deck	790 TEU (IMO visibility considered)
In holds	370 TEU
Total	1160 TEU

Container stowage

Containers are stowed in four holds optimized for max. 4 tiers high cube (9ft6inch) containers and provided with cell guides designed for 8 rows of 2438/2500 wide containers. Vertical gaps between angle bars of cell guides allow proper airflow through hold. TEUs can be carried in holds in mixed stowage system. FEU/TEU (2500mm wide) containers can be transported on hatch covers in max. 9 rows amidships. Min. distance between TEU blocks is 750mm.

Transport of Reefer Containers

The ship shall is designed and equipped for simultaneous carriage of 362 40ft reefer containers; thereof a maximum 75% may be loaded with fruit/chilled cargoes.

Transport of reefer containers on open deck

1. 212 40ft reefer containers can be transported in three tiers on open deck as shown on the GAP, provided no dangerous cargoes are transported at the same time.
2. Reefer containers on open deck are located is such a way that there is no possible to suck heated air to cargo holds.

Transport of reefer containers in holds

1. 150 40ft reefer containers can be accommodated in specially constructed and ventilated holds N°2A, 2B, 3A, 3B and 4. These holds are equipped with mechanical supply/natural exhaust ventilation system providing 4500 m³/h for each of the 40ft reefer container.
2. A separate air duct serves each container stack.
3. Air ducts have adjustable openings or elastic hoses to direct air to the lower part (1/3 height) of the container independent of the stowage pattern.
4. Supply air fans and air ducts are located in the middle of the hold. Each duct is served by its own fan.
5. In any loading condition it is possible to replace the motor of any fan.

Transport of Dangerous Cargoes

1. Containers loaded with dangerous cargoes can be transported on open deck and in holds N° 1A, 1B equipped with explosion-proof reversible fans.
2. Transformers and switchboards for electric equipment located in the holds N° 1A, 1B, are placed outside of these holds.

SEGREGATION OF FUEL TANKS FROM THE SEA

Risk of collision or grounding which have always accompanied marine transportation persists even today, despite the improved navigational equipment. In the past, the main remedies were disciplinary actions by employers. This may have been coupled with civil action for any damages incurred, such as from oil pollution. More recently, however, owners, operators and seafarers must to be aware of the criminal prosecution in the event of an accident. Unfortunately fuel oil in wing tanks or double bottom is still common practice. As a consequence, even minor contact damage (whether from grounding or collision) could result in oil spillage, criminal prosecution and heavy fines.

With 100% of oil tanks located outside of double skin, the APHRODITE is the ship of totally new class and cannot be compared with old vessels. Fuel is stored in box-shaped deep fuel tanks between holds, which do not need extensive heating and are simpler for cleaning and maintenance.

ACCOMMODATION

Improper accommodations design can adversely impact the crew members' ability to reliably perform their duties, fully relax, sleep and recover from mentally and physically demanding work activities. This in turn may impact their ability to carry out duties on succeeding watches with the required diligence and accuracy. The 6-tier accommodation deckhouse is designed with particular care in order to provide an on-board environment that increase crew member alertness and well-being.

The Engine Control Room and Changing Room are located on the Main Deck, where also an air condition unit is located.

Access to the ship and stairs

1. Accommodation ladders are located on the Poop Deck so access to the ship does not interfere with cargo handling operations.
2. Access to accommodation deckhouse and spaces below is possible only through one controlled entrance directly to the reception area on the Poop Deck.
3. There are no external doors leading from the Main Deck to spaces below.
4. Stairs are arranged in longitudinal direction.

Cabins

1. There are only three types of cabins: apartments for Senior Officers, two-room cabins for Petty Officers and ordinary single cabins. Each type of cabin has an identical arrangement in order to facilitate production.
2. Captain's and Chief Engineer's cabins are usually located on the highest deck. There is no problem onboard vessel provided with a crew lift, however to economise money lifts are not so often installed nowadays. In case of any alarm the Chief Engineer should go down to the Engine Room, similarly all representatives of Authorities or class surveyors shall go high up to visit the Captain. On board the APHRODITE the apartment for Chief Engineer is located at 2nd AD. The Captain Office is placed on the 1st AD near the Deck Office.
3. Sanitary units (WC/shower) are arranged in vertical lines, with easy access to pipe connections (small doors in corridors).

Galley and Provision Stores

Galley, pantry and messrooms are located at the Poop Deck. Galley is connected by direct stairs with provision stores below.

Recreation

The following items are arranged on the 1st Accommodation Deck:

1. Sport room,
2. Recreation room,
3. Large open deck recreation area.

Access to life-saving equipment

1. A large embarkation deck is arranged to enable fast and easy embarkation to free-fall lifeboat.
2. Easy embarkation of injured person on the stretcher is possible.
3. Easy access to the rescue boat and davit launched liferaft is arranged.
4. A store for safety equipment is arranged near the rescue boat.

WORK ON DECK

Safety for stevedores

Very often the lack of suitable and safe access to lashing workstations creates costly delays in stevedoring operation. More important, it is also the most common cause of accidents of stevedores onboard container ships. The financial implications of any such accident are obviously profound.

To minimise the risk for those who have to work on these vessels hatch covers and lashing platforms will create one continuous plan. In addition fixed railings protected by high guides against damages by containers will be arranged.

Loading of stores and provisions

1. The ship will be equipped with combined lifesaving/store crane located on the Poop Deck SB.
2. The arrangement of storerooms, provision stores, workshop, and Emergency Genset Room enables direct and easy transport using a/m crane.

ENGINE ROOM

The Engine Room can accommodate different medium speed engines; Wartsila 9L46F (11 250kW), 6L64 (12 060kW) or 7L64 (14070kW) engine or equivalent engines of other makers.

If preferred the ship can be provided with a low speed engine.

Four diesel generators placed in two separate Genset Rooms will provide electric power. It will be possible to take out any generator through hatch in the Main Deck.

The Engine Control Room (ECR) will be arranged on the Main Deck outside of machinery spaces of category "A". Changing Room and stairs to the Engine Room, will be placed near ECR.

Three emergency escapes are arranged:

- vertical trunk on the fore bulkhead,
- vertical trunk on PS leading to the Poop Deck,
- A60 insulated staircase from the workshop to the Main Deck.

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