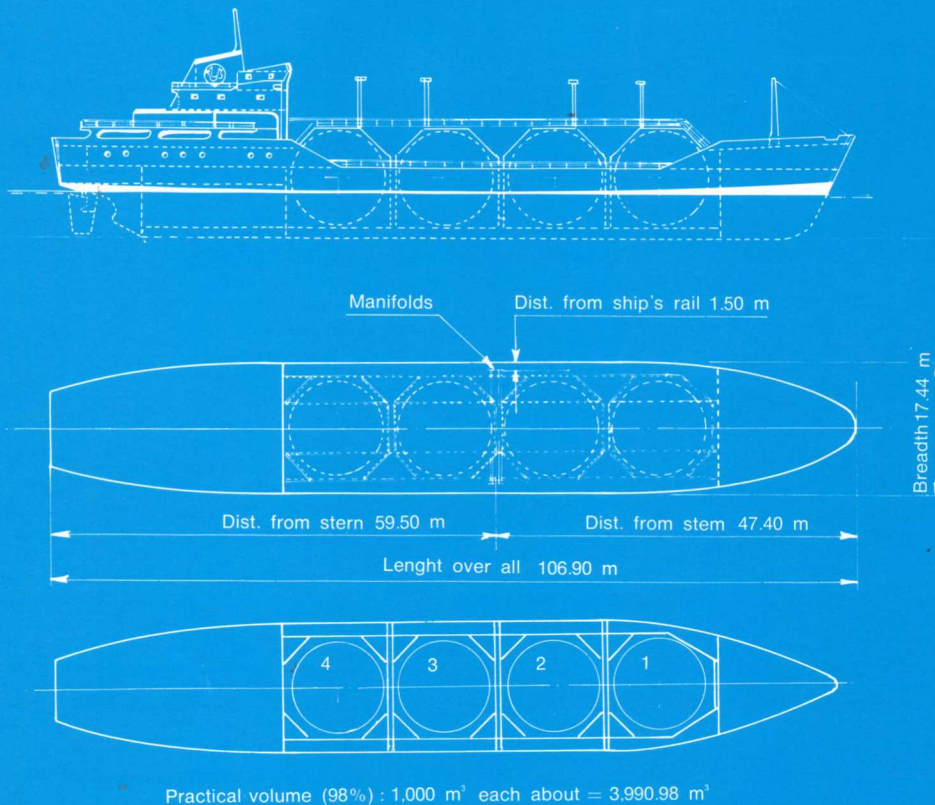




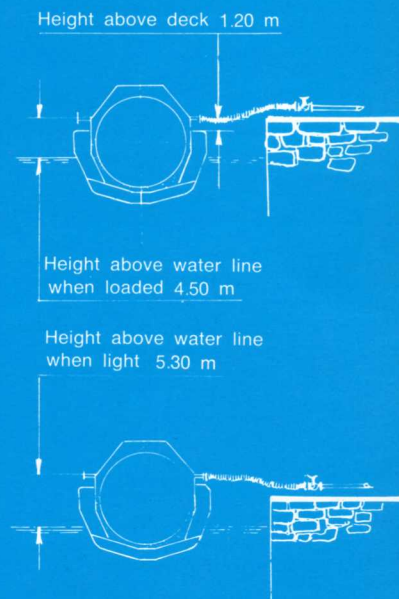
## L.N.G. - L.P.G. Tanker Euclide

Gastanker of 4,070 m<sup>3</sup> 100% volume  
 Max press. 5 bars Min. temp. -165 °C

Cargo tanks and manifolds position



Practical volume (98%) : 1,000 m<sup>3</sup> each about = 3,990.98 m<sup>3</sup>



Liquid line 8" Flange size 8" ASA 150 RF  
 Gas line 6" Flange size 6" ASA 150 RF  
 Reducers on board: 6"/6" ASA 150/300  
 4"/6" ASA 150 - 6"/10" ASA 150  
 6"/8" ASA 150 - 8"/12" ASA 150  
 8"/8" ASA 150/300  
 Derricks: 5 T. lifting capacity

## general characteristics

Built 1971 by  
 Ateliers et Chantiers du Havre  
 Reg.ed owners: Carbocoke - Palermo  
 Flag: Italian  
 Port of registry: Palermo

Class: R.I.N.A. 100 A 1.1 - IL  
 Approved by U.S. Coast Guard -  
 I.M.C.O. Code existing ships  
 Grt. Int. 5,053.44 - Nrt. 2,310.29  
 Suez 5,330.04 - Nrt. 3,841.22  
 Panama 5,349.40 - Nrt. 3,423.52

Hull		Communication equipment
Lenght over all	m 106.90	Call letters: I C C Q
Lenght between P.P.	m 98.45	Radio station normally watched:
Breadth moulded	m 17.44	Roma and Genoa
Draft: m 6.06	DWT T. 3260	Radiotelegraphy - Radiotelephony
Steel single screw		VHF
Liquefied gas carrier		
Machinery aft		
Air draft: m 25 max ballast		

**Machinery**  
 ME.: one diesel mot. Sulzer 6 RD/56  
 IHP 6400 - BHP 5500 - 190 RPM  
 Average Speed: 14 K  
 Fuel used: HVF. 1500 RDW  
 Aux. E.: three d. alt. Lister ERS 6M  
 475 HP - 328 Kw/440 V-60 HZ  
 Boilers: one Aalborg AQ5 exhaust  
 and oil fired, 2200 LBS steam/H -  
 work press: 100 LBS/S.I.  
 Daily consumption at sea (keeping  
 refrigerated a propane cargo):  
 mt. 18 HVF - mt. 1.5 DO  
 at port (load/disch): mt. 2.5 DO  
 Bunker capac.: HVF 450 m<sup>3</sup> - DO 65 m<sup>3</sup>

# cargo equipment information

## Transportable products

Respective quantities in mt

Corresponding draft (immersion: mt. 13.93 per cm.)

(theoretical data)

Tank no.	Total volume 100% m <sup>3</sup>	Practical volume 98% m <sup>3</sup>	Butane sp. grav. 0.595 T. -0.5 °C	Propane sp. grav. 0.582 T. -42 °C	Butadiene sp. grav. 0.650 T. -4.4 °C	Propylene sp. grav. 0.613 T. -47.7 °C	Ethylene sp. grav. 0.568 T. -104 °C	Methane sp. grav. 0.420 T. -161 °C
1	1,019.86	999.35	594.61	581.62	649.57	612.60	567.63	419.72
2	1,016.76	996.45	592.88	579.93	647.69	610.82	565.98	418.50
3	1,018.40	997.91	593.75	580.78	648.64	611.72	566.81	419.12
4	1,017.75	997.27	593.37	580.41	648.22	611.33	566.45	418.85
Total	4,072.77	3,990.98	2,364.61	2,332.74	2,594.12	2,446.47	2,266.87	1,676.19
Draft in meters FWD/AFT - F. Bunker			5.64/6.46	5.60/6.37	5.66/6.48	5.65/6.48	5.97/6.12	5.48/5.86

Other transportable products: naphta

## Cargo tanks characteristics

Four spherical cargo tanks

High pressure safety valves:

4 kg/cm<sup>2</sup> U.S.C.G. - 5 kg/cm<sup>2</sup> R.I.N.A.

Low pressure safety valves:

0.435 kg/cm<sup>2</sup>

Maximum vacuum: 0.50 kg/cm<sup>2</sup> abs.

Minimum temperature: -165 °C

Maximum density: 0.690

### Cooling down before loading

With vapour return line

	amount of product	time (hours)
Propane	—	1
Ethylene	20 mt.	10
Methane	40 mt.	30

Average temp. inside tanks:

- 65 °C ethylene

- 100 °C methane

### Loading rate mt. hour

From a refrigerated storage cargo tank near atmosphere:

	with vapour return line	without vap. r. l.
Butane	250	250
Propane	250	200
Ethylene	250	100
Methane	200	—

From a pressurized storage:

Butane (from 10 °C)	250	250
Propane (from 10 °C)	150	90

### Vaporizer - Blower

One vaporizer: C.A.F.I.

Capacity: 500 m<sup>3</sup>/h

One blower: M.P.R.-R. 160 VEV

Capacity: 1680 m<sup>3</sup>/h

### Refrigerating plant

Two reliquefying units « Werkspoor »  
19.800 F/h each

Refrigerating fluid helium intermed.  
for ethylene, freon for propane.

One compressor « Sulzer » K.160 - 2 H  
Ethylene: 90.000 F/h. +

+ one compressor « Loire » 8 FA-160  
(in cascade with « Sulzer »):

Propane -42 °C 105.000 F/h

Propane 0 °C 300.000 F/h

For LPG only: one reliquefying  
units « Loire » (direct refriger.):

85.000 F/h fully ref. cargo

450.000 F/h semi ref. cargo

Time required at sea to lower by 1 °C  
the temperature of a full cargo:

Butane 18 hours

Propane 20 hours

Ethylene 24 hours

### Cargo pumps

Four submerged pumps: « Carter »  
100 m<sup>3</sup>/h - 120 m deliv. head.

Maximum density: 0.690.

One booster pump: « Guinard »  
100 m<sup>3</sup>/h - 80 m deliv. head.

### Unloading - Cargo heater

A fully refrigerated product:

back press. 1 bar 15 hours

back press. 5 bars 16 hours

back press. 10 bars 44 hours

with or without vapour return line.

With simultaneous warming up:

cargo heater « Loire »

1.000.000 Kcal/h - 50 mt/h propane

from -42 °C to -5 °C

sea water 10 °C minimum.

### Measuring apparatus

One level gauge per tank

« Whessoe St. » 9400 M

15 records and 16 sensors for  
temperature gauge

« Honeywell » - 180 °C/50 °C

One high pressure gauge per tank

One low pressure gauge per tank

One low tube pressure gauge

« Mercury ».

Liquid and gas samples location:

three each tank

bottom - mid level - top.