

ANGBÅTSAKTIEBOLAGET FERM

KRISTINEHAMN, SWEDEN

TELEGRAPHIC ADDRESS: **BROSTRÖM**, GOTHENBURG

Built by:

AB GOTAVERKEN, Gothenburg 1951.

YARD No 684

CLASS: LLOYD'S REGISTER † 100 A 1.

CARRYING PETROLEUM IN BULK.

SIGNAL LETTERS AND WIRELESS SIGNAL: **SHUN**

OFFICIAL No 9299

Capacities of Cargo Tanks

Cargo tank No	Cubic metres	Cubic feet	Tons oil ^{*)}		
			Sp gr 0,700	Sp gr 0,800	Sp gr 0,900
No 1 centre tank	1155,8	40817	746,9	887,9	998,9
" 2 "	1129,1	39873	758,9	867,4	975,8
" 3 "	1116,1	39411	750,3	857,4	964,6
" 4 "	1113,7	39333	748,6	855,5	962,5
" 5 "	1254,6	44306	843,3	963,8	1084,2
" 6 "	1113,7	39333	748,6	855,5	962,5
" 7 "	1113,7	39333	748,6	855,5	962,5
" 8 "	1113,7	39333	748,6	855,5	962,5
" 9 "	1113,7	39333	748,6	855,5	962,5
" 1 wingtank SB	987,1	34861	663,5	758,3	853,1
" 1 " Port	987,1	34861	663,5	758,3	853,1
" 2 " SB	1156,5	40842	777,4	888,4	999,5
" 2 " Port	1156,5	40842	777,4	888,4	999,5
" 3 " SB	774,3	27344	520,5	594,8	669,2
" 3 " Port	774,3	27344	520,5	594,8	669,2
" 4 " SB	1161,0	41000	780,4	891,9	1003,4
" 4 " Port	1161,0	41000	780,4	891,9	1003,4
" 5 " SB	1116,2	39417	750,3	857,5	964,6
" 5 " Port	1116,2	39417	750,3	857,5	964,6
Total	20614,3	728003	13856,6	15835,8	17815,6

^{*)} Tons à 1016 kgs with 2½ % allowance for expansion.

Dry cargo hold capacity = 33125 cbft grain

Cofferdam aft, frames 46—47= 6950 " "

" forw, " 161—162= 5645 " "

Tonnage, Deadweight, Draft and Speed

Reg dimensions: Length 155,18 m, breadth 19,57 m, depth 11,76 m

" Swedish under deck	9073,00 tons
" " gross	10010,56 " , 7441,81 tons
" English	10143,92 " , 5871,35 "
" Panama Canal gross	10481,02 " , 7352,45 "
" Suez	10435,26 " , 7840,87 "

Deadweight incl bunkers 15810 Engl tons in salt water.

Displacement loaded on summer freeboard 20610 Engl tons in salt water.

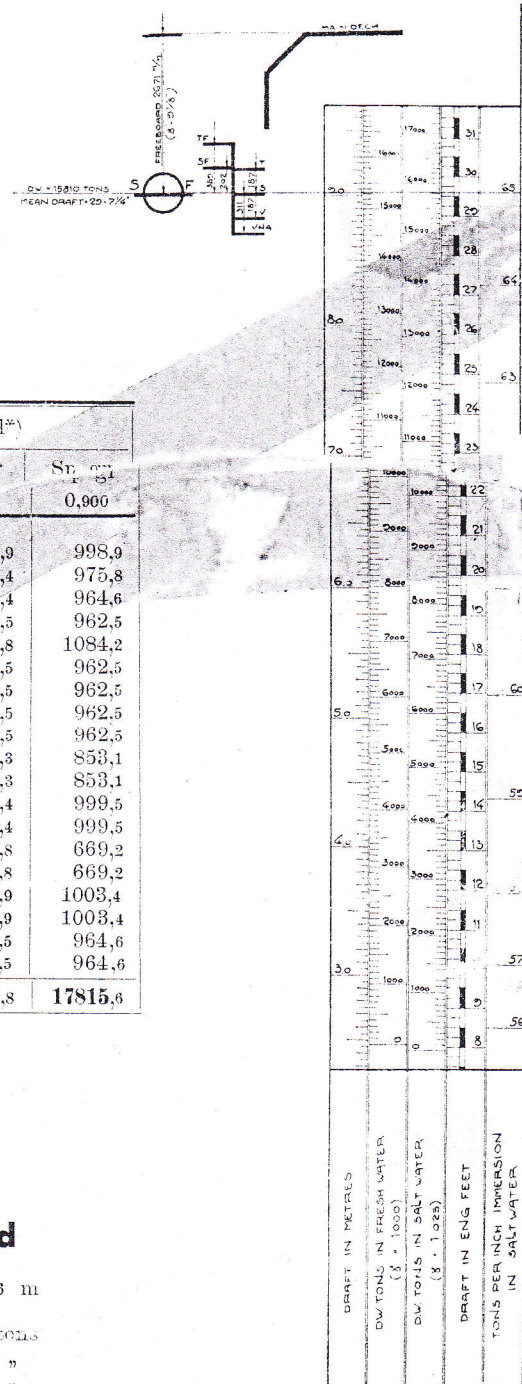
Draft loaded on summer freeboard 29'—7¼"=9,02 m

" light forward 2'—7½"=0,80 "

" " aft 13'—5½"=4,10 "

" " mean 8'—1½"=2,45 "

Speed loaded 14,5 knots, light 15,5 knots.



- 2 single-acting, four-cycle, solid injection *Diesel motors*, built by AB Götaverken, Gothenburg, 5 cyl each, diam 300 mm, length of stroke 450 mm, 350 revs per min, each motor 300 BHP, direct driving one *electric generator*. Generators 200 kW each, 220 volt DC. Type LE-135. Maker: ASEA, Västerås.
- 1 vertical enclosed, two-cyl, double acting compound *steam engine*, type DF-12, 205 BHP, 450 revs per min, pressure 7 kgs/cm², direct driving one electric generator, 135 kW, 220 volt DC. Type LE-123. Maker of steam engine: Reader & Son Ltd, Nottingham. Maker of generator: ASEA, Västerås.
- 2 *motor generators* for lighting of 17 kW resp 15 kW, 220/110 volt DC, 1480 revs per min. Maker: ASEA, Västerås.
- 2 *manoeuvring air compressors*, direct electric driven, cap 4 m³ air per min each. Maker: AB Götaverken, Gothenburg. Motors: 53 HP, 410 revs per min. Type: LBA-64. Maker: ASEA, Västerås.
- 2 *cooling water pump sets* (combined sea and fresh water pumps), direct electric driven, each set consisting of one centrifugal sea water pump, type DCp 200, cap 275 tons per hour, and one centrifugal fresh water pump, type DCp 200, cap 225 tons per hour. Maker: AB Gustaf Terling, Gothenburg. Motors: 72 HP, 1460 revs per min. Type LD-29. Maker: ASEA, Västerås.
- 1 cooling water pump set for auxiliary engines (combined sea and fresh water pumps), direct electric driven, consisting of one sea water pump, type 2 H-60, cap 30 tons per hour, and one fresh water pump, type 2 H-60, cap 30 tons per hour. Maker: AB Pumpindustri, Gothenburg. Motors: 10,5 HP, 2000 revs per min, type LD-15. Maker: ASEA, Västerås.
- 2 *lubricating oil pumps* of screw-wheel type, direct electric driven, type IMO 180-3N2L, cap 230 tons per hour each, 800 revs per min. Maker: AB Imo-Industri, Stockholm. Motors: 55 HP, 800 revs per min. Type LASA-43. Maker: ASEA, Västerås.
- 1 *fuel oil transfer pump* of tooth-wheel type, direct electric driven, type ON-50/10, cap 50 tons per hour, 930 revs per min. Maker: Maskinfabriken Iron A/S, Copenhagen. Motor: 14 HP, 930 revs per min. Type LD-21. Maker: ASEA, Västerås.
- 1 *spare fuel oil transfer pump* of tooth-wheel type, direct electric driven, type ON-3, cap 4,7 tons per hour, 1400 revs per min. Maker: Maskinfabriken Iron A/S, Copenhagen. Motor: 1,7 HP, 1400 revs per min. Type LD-11. Maker: ASEA, Västerås.

- 1 set of *bilge pumps*, consisting of two bilge pumps, piston type, direct electric driven. Cap of each pump 25 tons per hour at a manometric height of 25 m. Maker: AB Gustaf Terling, Gothenburg. Motor: 14 HP, 930 revs per min. Type LD-21. Maker: ASEA, Västerås.
- 1 *fire extinguishing and sanitary pump*, centrifugal type, direct electric driven, type Z KGM 14, cap 55,5 tons per hour. Maker: AB Gustaf Terling, Gothenburg. Motor: 23 HP, 1430—1900 revs per min, type LD-21. Maker: ASEA, Västerås.
- 1 *ballast pump*, vertical double-acting piston pump, direct electric driven, cap 100 tons per hour at a manometric height of 25 m. Maker: Dawson & Downie, Clydebank. Motor: 20 HP, 950 revs per min, type LD-23. Maker: ASEA, Västerås.
- 1 *pump for the Butterworth system*, vertical double-acting duplex pump, steam driven, 14½"×9½"×12", cap 90 tons per hour at 32 double strokes per min. Maker: Dawson & Downie, Clydebank.
- 1 *heater for the Butterworth system*, 35 m². Maker: AB Götaverken, Gothenburg.
- 1 *hydrophor pump* for fresh water, rotary type, direct electric driven, type 12K, cap 5 tons per hour at 3 kgs/cm² working pressure. Maker: AB Calvert & Co, Gothenburg. Motor: 3,7 HP, 1400 revs per min, type LD-13. Maker: ASEA, Västerås.
- 1 *hydrophor pump* for sea water, rotary type, direct electric driven, type 12K, cap 5 tons per hour at 3 kgs/cm² working pressure. Maker: AB Calvert & Co, Gothenburg. Motor: 3,7 HP, 1400 revs per min, type LD-13. Maker: ASEA, Västerås.
- 2 *purifiers for lubricating oil*, type B 1719, direct electric driven, cap 1500—3500 litres per hour each. Maker: AB Separator, Stockholm. Motors: 3,7 HP, 1420 revs per min, type LD-13. Maker: ASEA, Västerås.
- 2 *purifiers for fuel oil*, type V1B-1929C, direct electric driven, cap 3500—7000 litres per hour each. Maker: AB Separator, Stockholm. Motors: 7,7 HP, 1400 revs per min, type FV-10. Maker: Elektriska AB Morén, Partille.
- 1 *streamline filter*, type P 37 ET, cap 22 litres per hour. Maker: Ingeniörsfirman Andrew Eriksson, Stockholm.
- 1 *pneumatic hoisting gear*, cap 3 tons, type MT7. Maker: AB Atlas Diesel, Stockholm.
- 1 *radio aggregate*, type K230. Maker: Elektriska Svetsnings AB, Göteborg.
- 1 *for the radio station*. Motor: 4 HP, 3000 revs per min. 3,0 kW, 3000 revs per min, type EON60. Maker: Copen, Copenhagen.

Installation

- 1 *single ended marine boilers*, for oil firing, heating surface 16 sq feet each, working pressure 150 lbs/inch². Maker: Stockton Chemical Engineers & Riley Boilers Ltd, Stockton-On-Tees.
- 1 *exhaust gas economizer*, heating surface 1416 sq feet, working pressure 150 lbs/inch². Maker: AB Götaverken, Gothenburg.
- 2 *hot water pumps*, for exhaust gas economizer, cap 6 tons per hour at 19 m manometric height. Maker: Jönköpings Mek Werkstads AB, Jönköping.
- 1 *boiling installation*, maker: Todd Oil Burners Ltd, London.
- 1 *set of feed pumps*, consisting of 2 vertical single type boiler feed pumps 7½"×5½"×15" with one control tank. Maker: Dawson & Downie, Clydebank.
- 1 *circulation pump* for boilers, centrifugal type, direct electric driven, cap 6 tons per hour. Maker: Drysdale & Co Ltd, Glasgow. Motor: 3 HP, 1675 revs per min. Maker: Campbell & Iserwood.
- 1 *condenser pump*, vertical double-acting steam Duplex pump 12"×12"×12", cap 200 tons per hour. Maker: Dawson & Downie, Clydebank.
- 1 *air pump* for condenser, vertical single-acting simplex pump 10"×18"×15". Maker: Dawson & Downie, Clydebank.
- 1 *surface condenser*, cooling surface 100 m². Maker: AB Götaverken, Gothenburg.
- 1 *evaporator*, cap 20 tons per 24 hours. Maker: G & J Weir Ltd, Glasgow.
- 1 *feed water heater*, heating surface 4 m². Maker: AB Götaverken, Gothenburg.
- 1 *filter tank for feed water*, cap 1,75 m³. Maker: AB Götaverken, Gothenburg.
- 1 *fan for forced draught*, type TCMR 65, cap 300 m³/min at a head of 50 mm WL. Maker: AB Gustaf Terling, Gothenburg. The fan driven by
- 1 *steam engine*, vertical enclosed single cyl forced lubricated, type SF-6, 10 HP, 520 revs per min. Maker: Reader & Son Ltd, Nottingham.

Pumproom amidships

- 1 *cargo oil pumps*, double-acting horizontal steam driven duplex pumps. 18"×14"×24", cap 390 tons water per hour each at a pressure of 100 lbs per inch² and about 30 double strokes per min. Maker: Eureka Mek Verksted, Oslo.

- 1 *bilge and stripping pump*, double-acting vertical steam driven duplex pump, 11"×10"×12", cap 150 tons water per hour at about double strokes per min. Maker: AB Wilh Sonesson & Co, Göteborg.

Pumproom forward

- 1 *fuel oil and ballast pump*, double-acting vertical steam driven duplex pump, 7½"×8"×8", cap 60 tons water per hour at about 45 double strokes per min. Maker: Dawson & Downie, Clydebank.
- 1 *bilge and ballast pump*, double-acting vertical steam driven duplex pump, 7½"×8"×8", cap 60 tons water per hour at about 45 double strokes per min. Maker: Dawson & Downie, Clydebank.
- 1 *Freon refrigerating machinery* for ship's stores and provisions (cold room 22 m³ for vegetables at +4°C, refr room for meat 17 m³ at -10°C and refr room for fish 5 m³ at -10°C. In cold room cupboard for dairy products for a temperature of +1°C).
- 2 electrically driven Freon compressors, type PA524G. Maker: Svenska Turbinfabriks AB Ljungström, Finspong. Each compressor connected to electric motor, 3 HP 1450—1800 revs per min, type LD-13. Maker: ASEA, Västerås.
- 2 cooling water pumps of centrifugal type ALS 20, made by Jönköpings Mek Werkstads AB, Jönköping. Cap 3 tons per hour. Direct connected to electric motor 0,35 HP, 2600 revs per min, type LD-7. Maker: ASEA, Västerås.

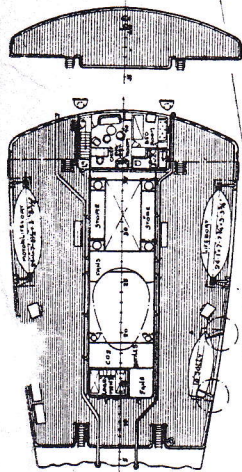
Pipe lines

Main suction pipes	12"	dia
Suction branches	10"	"
Main delivery pipes	1—10"	1—12"
Delivery pipes	8"	10"
Reduction pieces to shore connections	6"	"
Direct filling pipes	10"	"
" shore connections	8"	10"
Fuel oil filling pipes	5"	"

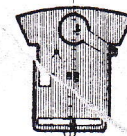
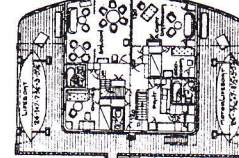
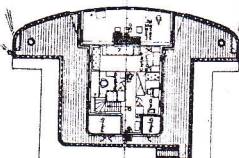
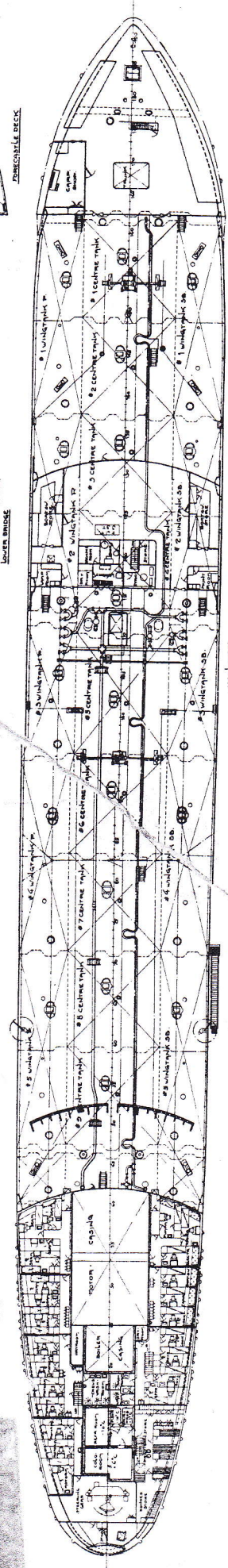
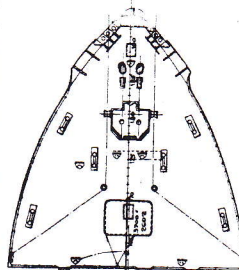
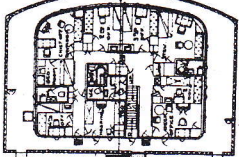
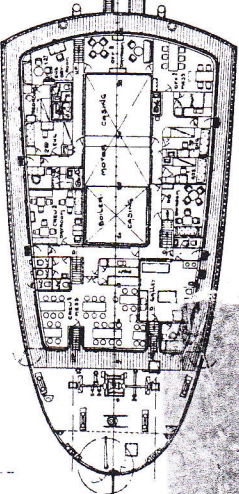
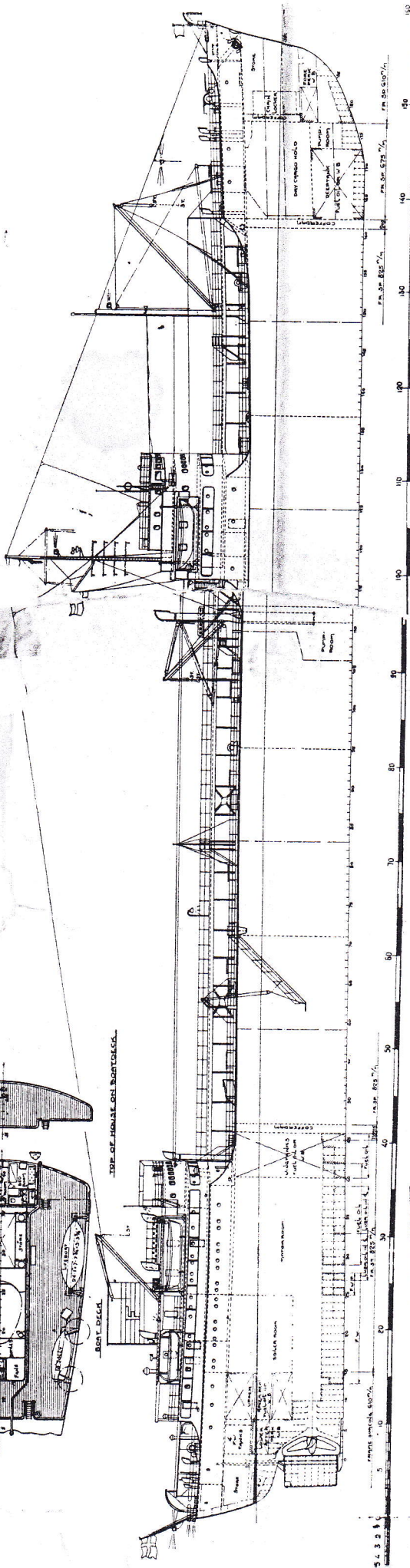
Air conditioning and ventilation

Spec	Number	Type	Cap	Rpm	Motor		
					Type	HP	Rpm
Air conditioning, accommodation aft:			m ³ /hour				
Aggregate	2	KDD-56	6000	1300	LD-12	3,5	2000
"	1	KDD-20	2000	2000	LD-7	0,65	2000
Supply screw fan ...	1	FMA-40	2000	1700	LD-6	0,21	180
Accommodation amidships:							
Aggregate	1	KDD-56	6000	1300	LD-12	3,5	2000
"	1	KDD-14	1200	2300	LD-6	0,38	2300
Ventilation in engine room:							
Propeller fans	2	PFH-80	22500	1480	LD-14	3,3	1480
Exhaust fans: (centrifugal)	1	KDD-20	2000	2000	LD-7	0,65	2000
	1	LHB-30	2300	1400	LD-8	0,8	1400
	1	LHB-30	1750	1400	LD-8	0,8	1400
	1	MLA-25	1200	1500	LD-4	0,15	1500
	1	LHB-25	500	1350	LD-6	0,23	1350
	1	LHAT-45	5000	750	LD-13	1,6	750
	1	LHA-25	1200	1500	LD-4	0,15	1500
Pumps:			l/h				
Circulation	1	ZKA-11 ¹ / ₂	2500	1400	LD-8	0,8	1400
" (spare)...	1	ZKA-11 ¹ / ₂	2500	1400	—	—	—
"	1	ZKA-21 ¹ / ₂	5000	1400	LD-8	0,8	1400
" (spare)...	1	ZKA-21 ¹ / ₂	5000	1400	—	—	—
"	2	ZKB-13	600	2200	DV-2	4,5	2200
Cooling water	1	ZKBVB-13	650	2200	DV-2	4,5	2200
			kcal/hour				
Freon compressor...	1	PAK568C	142000	375	LD-29	75	1450/ 1800
Laundry drier	1	TKB-402	16000	1150	LD-4	0,08	1150

- Maker of air conditioning aggregates: AB Svenska Fläktfabriken, Gothenburg.
- Maker of fans: AB Svenska Fläktfabriken, Gothenburg.
- " " pumps: Jönköpings Mek Werkstads AB, Jönköping.
- " " compressor: Svenska Turbinfabriks AB Ljungström, Finspong.
- " " laundry drier: AB Svenska Fläktfabriken, Gothenburg.
- " " motors LD: ASEA, Västerås.
- " " " DV: AB Elektromekan, Hålsingborg.



TOP OF HOUSE ON BOW DECK.



TOP OF MAINSAIL HOUSE.

MAIN DECK.

UPPER DECK.