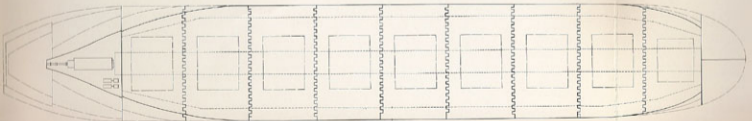
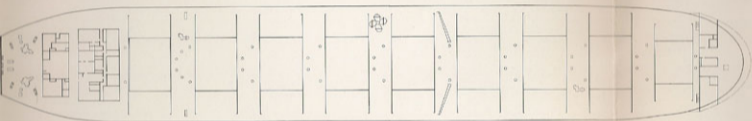


Castillo de Salas



DIMENSIONS:

Length overall	261.43 m	857'-8"
Length between pp.	249.83 m	819'-7"
Breath moulded	40.00 m	131'-3"
Depth moulded	20.00 m	65'-7"
Summer draught	14.569 m	47'-9"
Corresponding DW	109,488 mt	107,763.8 LT
Trial speed	14.58 knots	

Service speed	14.53 knots	
Endurance	27,500 miles	
Light ship weight	18,992.3 mt	18,693.2 LT
Fresh water allowance	33.7 cm	
Gross tonnage	56,455.7 mt	
Net tonnage	41,517.4 mt	

CLASS:

LLOYD'S REGISTER OF SHIPPING +100 A1 (BULK-CARRIER) +LMC,UMS
 "Strengthened for heavy cargoes" "Holds n. 2, 4, 6 and 8 may be empty"

MAIN MACHINERY:

PROPULSION ENGINE: One SULZER engine, type 7 RND-90, two stroke, turbo charged, arranged to burn H.F.O. up to 3500 sec. R1. Maximum continuous output: 20,300 BHP at 122 rpm.
PROPELLER: One NAVALIPS fixed propeller, made of CUNIAL.

AUXILIARY MACHINERY:

MAIN GENERATORS: Two AESA/SULZER Diesel engines, type 6 A SL25/30, 6 cylinders, each 1290 BHP at 720 rpm, direct coupled to FENYA-VAN KAICK alternators, type 6354.1 of 1063 KVA (850 Kw) each, 3 X 450 V-60 Hz.
TURBOGENERATOR: One PETER BROTHÉRHOD/FENYA turbine driving alternator type DIB 110 fg 14 d of 750 KVA (600 Kw), 3 X 450 V-60 Hz.
EMERGENCY GENERATOR: One BARREIROS Diesel engine, type A-26-E, of 28 HP at 1800 rpm direct coupled to a FENYA alternator, type NIC-1E29-4 of 40 KVA (32 Kw); 3 X 450 V-60 Hz.
MAIN BOILER: One AESA boiler, type AQ-3, with SAACKE burners, 3,750 Kg/h at 10.5 Kg/cm².
EXHAUST GAS BOILER: One exhaust gas boiler of 4,300 Kg/h reheated steam at 9 Kg/cm² and 900 Kg/h saturated steam at 10.5 Kg/cm².
FIRE FIGHTING SYSTEMS: NITTAN-GUARDIAN Fire-Detection installation, type NID-48 F.
 CO₂: fixed installation in engines room.

FIRE FIGHTING PUMPS: Two THUNE-EUREKA centrifugal pumps, type CGC-150 of 300/150 m³/h at 70/90 m.c.l.
 One Diesel hydraulic emergency pump, the engine is PERKINS, type 6305 of 64 H.P. at 1800 rpm, and the pump is SVANEHØJ, type NH-125-2-C, of 100 m³/h at 65 m.c.a.
FRESH WATER EVAPORATOR: One NIREX generator, type JWSP-36-125, make of 28/30 t/day.
ELECTRICAL COMPRESSORS: Two compressors for start the propulsion engine, each of 335 m³/h at 30 Kg/cm².
 One ABC emergency compressor, type VA-30; 15 m³/h at 30 Kg/cm².
 One HAMWORTHY-ABC general services compressor, type 2TF5, 180 m³/h at 9 Kg/cm².

COMMUNICATION AND NAUTICAL AIDS:

STEERING WHEEL: DECCA ARKAS 42 H 52.
GYRO COMPASS: Two Gyro ANSCHUTZ Type Standard 4.
COMPASS: PLATH GEOMAR.
RADARS: Two Radars SELENIA, "PRORA" series, mod. ARP-1660/12 "S" and mod. ARP 1645/12 "X".
ECHOSOUNDER: HRM Delta A Type A-705 SG.
FACSIMILE RECEIVER: FURUND Type FAX-10.
RADIOGONIOMETER: HRP Type RGX-2.
SATELLITE NAVIGATOR: MAGNAVOX Type MX-1142.
V.H.F.: SRA Type ME-60, 25 W, 61 channels.
LOADING GUIDE: LOAD-MASTER-COMPUTER D-50 Kockums.
TRANSMITTER P.: H.R.M. Iris, Type A-681-TGF-1500 W.
SPARE TRANSMITTER: H.R.M. CASTOR II Type A-710 TG 100 W.
RECEIVER: Two SKANTI Type R-5001 receivers.
AUTOALARM: HRM Type AA-5.
OTHER AIDS: Electronic logs, DECCA Navigator.

DECK MACHINERY

STEERING GEAR: KAWASAKI electrohydraulic 4 cylinders
 2 elect-pump set Type FT, 280.
WINDLASS AND WINCHES: 2 combined hydraulic windlasses
 BK 277 with W10m winch,
 2 constant tension winches clutch-barreled type,
 2 set of constant tension winches with clutch barreled each,
 One 7 tons monorail mounted crane on after superstructure.

CARGO SPACES				
Location	Volume		Vertical CG	XG to \bar{X}
	m ³	ft ³		
Hold and hatch n ^o 1	10,793	381,151	11.80	101.96
Hold and hatch n ^o 2	14,179	500,727	11.49	80.83
Hold and hatch n ^o 3	14,546	513,687	11.36	57.87
Hold and hatch n ^o 4	14,386	508,037	11.43	34.81
Hold and hatch n ^o 5	14,386	508,037	11.43	11.86
Hold and hatch n ^o 6	14,386	508,037	11.43	-11.09
Hold and hatch n ^o 7	14,430	509,591	11.46	-34.07
Hold and hatch n ^o 8	14,364	507,260	11.44	-56.98
Hold and hatch n ^o 9	12,698	448,426	11.84	-79.28
Total holds and hatches	124,168	4,384,953	11.51	10.31
Hatch n ^o 1	267	9,430	21.48	103.12
Hatch n ^o 2	376	13,279	21.48	81.02
Hatch n ^o 3	376	13,279	21.48	58.07
Hatch n ^o 4	376	13,279	21.48	35.12
Hatch n ^o 5	376	13,279	21.48	12.17
Hatch n ^o 6	376	13,279	21.48	-10.78
Hatch n ^o 7	376	13,279	21.48	-33.73
Hatch n ^o 8	376	13,279	21.48	-56.68
Hatch n ^o 9	376	13,279	21.48	-79.63
Total hatches	3,275	116,662	21.48	9.05

UPPER AND LOWER TANKS				
Location	Volume		Vertical C.G.	XG to \bar{X}
	m ³	ft ³		
Hold n ^o 1 tanks (P and S)	2,614	92,313	8.04	100.15
Hatch n ^o 2-3 tanks (P and S)	7,234	255,466	8.86	67.20
Hatch n ^o 4-5 tanks (P and S)	4,264	150,582	1.90	21.09
Hatch n ^o 6-7 tanks (P and S)	6,422	226,791	10.06	-21.95
Hatch n ^o 8-9 upper tanks (P and S)	2,986	105,450	18.27	-68.00
TOTAL	23,520	830,602	9.03	21.00

FUEL OIL TANKS ($\delta = 0.93$)				
Location	Volume m ³	Weight MT	Vertical CG	XG to \bar{X}
P and S store DB	1,954.4	1,817.6	2.08	-59.07
P and S store DB	1,532.8	1,425.6	3.22	-79.85
Settling tank port	168.2	156.4	17.93	-93.02
Daily tank port	189.9	176.6	17.99	-99.34
Daily tank (motor) port	107.5	100.0	18.10	-105.51
Daily tank (boilers) port	11.7	10.9	17.97	-107.85
Centr. DB overflow tank	15.9	14.8	1.18	-91.06
Total fuel oil tanks	5,149.0	4,789.5	3.67	-63.85

FRESH WATER TANKS ($\delta = 1.00$)				
Location	Volume m ³	Weight MT	Vertical CG	XG to \bar{X}
Upper tank (STB.)	155.2	155.2	18.75	-119.42
Total fresh water tanks	310.4	310.4	18.75	-119.42

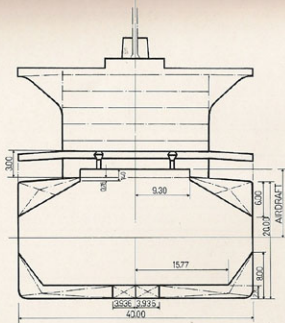
LUBRICANT OIL TANKS ($\delta = 0.90$)				
Location	Volume m ³	Weight MT	Vertical CG	XG to \bar{X}
Cylinders oil tank (P)	52.2	47.0	18.04	-103.38
Oil storage tank (S)	34.8	31.3	18.08	-105.45
Auxiliary machinery oil tank (S)	37.8	34.0	18.17	-107.63
Cylinders daily oil tank (S)	3.9	3.5	17.98	-104.26
Turbines oil tank (S)	9.7	8.7	17.95	-106.85
Reserve tank D.B. (centr.)	28.2	25.4	1.72	-96.65
Dirty oil tanks (P)	10.8	9.7	1.47	-106.85
Total oil tanks	210.3	189.2	12.47	-104.26

BALLAST TANKS ($\delta = 1.026$)				
Location	Volume m ³	Weight MT	Vertical CG	XG to \bar{X}
Hold and hatch n ^o 4	14,386	14,760	11.43	34.81
Hold and hatch n ^o 6	14,386	14,760	11.43	-11.09
Hold and hatch n ^o 8	14,364	14,737	11.44	-56.98
Upper tank n ^o 4 and 5 (P & S)	3,133	3,214	18.25	22.79
Fore peak	4,759	4,883	11.00	118.22
Aft peak	1,638	1,681	15.21	-118.66
Total ballast tank	66,845	68,583	11.83	16.54

DIESEL OIL TANKS ($\delta = 0.85$)				
Location	Volume m ³	Weight MT	Vertical CG	XG to \bar{X}
Starboard store D.B.	134.3	114.2	1.31	-95.45
Settling tank STB.	235.3	200.0	17.94	-94.17
Daily tank STB	42.7	36.3	17.98	-99.05
Total diesel oil tanks	569.2	483.9	9.44	-95.47

FEED WATER TANKS ($\delta = 1.00$)				
Location	Volume m ³	Weight MT	Vertical CG	XG to \bar{X}
Pistons refrigerating water tanks D.B. (STB.)	30.1	30.1	1.42	-104.85
Total feed water tanks	185.6	185.6	15.94	-117.06

SUEZ CANAL:
 GR = 60.329.50 MT
 NR = 53.253.28 MT



HATCHES: "MAC GREGOR" CORRUGATED Hold N° 1 _____ 15.00 m × 12.75 m
 Holds N° 2 to 9 _____ 18.60 m × 14.45 m

BALLAST CONDITION AND CORRESPONDING AIRDRAFT (APROX.)

	Hold N° 1	Hold N° 5	Hold N° 9
100% BALLAST AND 100% BUNKERS AND OTHERS DW = 69.748 MT, MEAN DRAFT = 10.32 m (33'-10")	13.00 m	12.50 m	12.20 m
100% BALLAST AND 10% BUNKERS AND OTHERS DW = 65.687 MT, MEAN DRAFT = 9.87 m (32'-5")	13.00 m	13.00 m	12.90 m
BALLAST HOLDS N° 4, N° 6, FORE PEAK AND AFT PEAK AND 10% BUNKERS AND OTHERS DW = 36.275 MT, MEAN DRAFT = 7.77 m (25'-6")	15.30 m	15.00 m	14.20 m

FREE BOARD, DRAUGHTS AND DW

	Summer	Tropical	Fresh water	Winter
FREEBOARD mm	5.481	5.178	5.144	5.784
DRAUGHT. m	14.569	14.872	14.906	14.266
. Feet	47'-10"	48'-9"	48'-11"	46'-10"
SEA WATER DENSITY	1.025	1.025		1.025
DEAD WEIGHT MT	109.488	112.378	112.702	106.598
. LT	107.763.8	110.608.3	110.927.2	104.919.3

CALADO AL CANTO BAJO QUILLA		PESO MUERTO	MOMENTO PARA CAM BIAR EL TRIMADO	TONELAD. FOR DE INVERSION	FRANCO BORDO DESDE CUBIERTA	DESPLAZA MIENTO
METROS	PIES	LONG TON	TONxMET	TONELADA	METROS	TONELAO
		120000				140000
	51					
	50			96		
15000	49				5000	
	48	100000	1800			130000
	47					
14000	46			95	6000	
	45	100000				120000
	44					
13000	43				7000	
	42	90000	1700	94		100000
	41					
12000	40				8000	
	39			93		
	38	80000				100000
11000	37		1600	92		
	36				9000	
	35					
10000	34	70000		91		90000
	33				10000	
	32		1500	90		
9000	31	60000				80000
	30				11000	
	29			89		
8000	28					70000
	27	50000			12000	
	26					
7000	25		1400	88		60000
	24				13000	
	23	40000				
	22					
6000	21				14000	50000
	20	30000				
	19					
5000	18			87		
	17				15000	40000
	16	20000				
	15					
4000	14				16000	
	13			86		30000
	12	10000				
3000	11		1300			
	10			85	17000	
	9					20000
	8					
2000	7			84		
	6				18000	
	5		1200	83		
	4			82		10000
1000	3			81	19000	
			1100	80		