



M.S. BREGAGLIA

CALL LETTERS: HBDV



OWNERS : OCEANA SHIPPING A. G.

PORT OF REGISTRY : BALE (BASEL)

TYPE : BULK CARRIER

PLYING LIMIT : OCEAN GOING

BUILDER : MITSUBISHI HEAVY INDUSTRIES, LTD.
NAGASAKI SHIPYARD & ENGINE WORKS
NAGASAKI JAPAN
DELIVERY 1ST FEBRUARY, 1985

CLASS : LLOYD'S REGISTER OF SHIPPING
+100A1, "Bulk Carrier Strengthened for
Heavy Cargoes, Holds 2 and 4 empty"
"Timber Deck Cargoes", with the descriptive
notation "Pt. H. T.". +LMC and UMS

PRINCIPAL PARTICULARS

Dimensions :	Length over all	182.80 m (abt. 599'—8 7/8")			
	Length between p.p.	174.00 m (abt. 570'—10 3/8")			
	Breadth moulded	28.40 m (abt. 93'—2 1/8")			
	Breadth extreme	28.434 m (abt. 93'—3 1/2")			
	Depth moulded	15.20 m (abt. 49'—10 3/8")			
	Depth extreme (From BOK to top of DK)	15.242 m (abt. 50'— 1/8")			
	Draught moulded at S. W. L.	10.79 m (abt. 35'—4 3/4")			
	Draught extreme at S. W. L.	10.815 m (abt. 35'—5 3/4")			
	Corresponding deadweight	37,451 metric tons (36,860 LT)			
	Draught moulded at T. S. W. L.	11.15 m (abt. 36'— 7")			
	Draught extreme at T. S. W. L.	11.175 m (abt. 36'— 8")			
	Corresponding deadweight	39,108 metric tons (38,490 LT)			
	Service speed (Normal output)	14.5 knots (Full load cond. 10% sea margin)			
Tonnage :		Registered (1969)	Suez canal	Panama canal	
	Gross tonnage	22342	22,625.14 T	23,305.68 T	
	Net tonnage	12775	19,138.74 T	18,599.63 T	
Main engine :	Type & No.	Mitsubishi Sulzer marine diesel engine (Derated engine) 6RTA58 (R2) 1 set			
	Output	Maximum rating : 9,600 BHP×116 rpm Normal rating : 8,640 BHP×112 rpm			
Fuel oil consumption :	about 25.9 t/day at normal rating (main engine only)				
Propeller :	Type & No.	Five(5) blades solid, keyless type			
	Material	Ni—Al—Br			
	Diameter	5,600 mm (pitch 4,200 mm)			
Generator :	Main diesel generator	Prime mover	Type & No.	Daihatsu "6PL—24".....3 sets	
		Generator	Output	800 ps×720 rpm	
			Type & No.	A.C. 3 phase, drip-proof marine type.....3 sets	
		Emergency diesel generator	Prime mover	Voltage	450 V 60 Hz 675 KVA (540 kw)
	Type & No.			MHI "S6B—MPT"1 set	
	Generator		Output	120 ps×1,800 rpm	
			Type & No.	A.C. 3 phase, drip proof Marine type1 set	
			Voltage	450 V, 60 Hz, 100 KVA (80 kw)	
	Aux. boiler :		Type & No.	Vertical cylindrical water tube type.....1 set	
		Evaporation	1,300 kg/h, Steam pressure 6kg/cm ² g		
Exh. gas economizer:	Type & No.	Mitsubishi Forced circulation fin tube type1 set			
	Evaporation	Saturated Steam 1,300kg/h, Pressure 6 kg/cm ² g			
Steering engine :	Type & No.	Electro hydraulically driven 1 ram 2 cylinder with 2 pumps and 2 motors			
	Capacity	60 t—m			
Anchor and chain :	Type & No.	Cast steel JIS type stockless anchor (7,800 kg each)...			
		3 sets Extra high strength steel flush butt welded stud link chain cable (68mm×632.5m×1)			
Cargo Hatch :	Hatch size	No. 1 cargo hold12.80 m(L) × 15.00 m(B) No. 2~5 cargo holds19.20 m(L) × 15.00 m(B)			
	Cover	Mitsubishi folding, single steel plated type			
	Cleating	Mitsubishi type quick acting dog bolt			
	Open/close	Hydraulic folding cylinder			

Ballast pump :	Water ballast pump
	Type & No. Vertical centrifugal pump electric motor driven ...1 set
	Capacity 600 m ³ /h×20 m TH×(1)
	Cooling sea water and ballast pump
	Type & No. Vertical centrifugal pump electric motor driven ...1 set
	Capacity 600/440 m ³ /h×20/30 m TH×(1)
Deck machinery :	
Anchor windlass	Electro-hydraulically driven open type, combined with an open type mooring winch (10 t×15 m/min.), having one (1) wild cat (22 t×9 m/min.).....2 sets
Mooring winch	Electro-hydraulically driven, open type, with auto-tension device, combined with windlass, having one (1) hawser drum and one (1) warping head.....2 sets
	Electro-hydraulically driven open type, with auto-tension device, having one (1) hawser drum and one (1) warping head.....2 sets
Deck Crane	Mitsubishi electro-hydraulically driven single crane (30 t×22 m/R)3sets, Hoisting.....30/12/6 t×17/34/60m/min.
	Luffing.....47 sec.(at the working radius 22—4m), Slewing.....0.7rpm (360 deg.)
	Mitsubishi electro-hydraulically driven. Twin crane (30 t (15 t×2) ×22 m/R).....1 set
	Single mode : Hoisting.....15/6/3 t×17/34/60 m/min.
	Luffing.....47 sec. (at the working radius 22—4m)
	slewing.....0.7 rpm (about 186 deg)
	Twin mode : Hoisting 30/12/6 t×17/34/50 m/min.
	Luffing.....47 sec. (at the working radius 22—4 m)
	Slewing.....0.3 rpm (360 deg)
Boat winch	Portable air motor driven.....2 sets
Acc. ladder winch	Fixed electric motor driven (3.7W).....2 sets
Provisions & engine	
Provisions & small engine parts handling crane	Electric motor driven (8.5 kw).....2 sets
	Hoisting 2.5 t×10 m/min, slewing.....0.5 rpm
	Luffing...abt. 50 sec. working radius.....max. 9.5m
Refrigerating	Electric motor driven R-22 reciprocating.
	for prov.....7.5 kw (2 sets), for air cond.....33 kw (1 set)
Navigation Equipment:	
Gyro compass	TKC (TG—5000)1 set
Auto pilot	TKC (PR—4507—PE)1 set
Radio direction finder	IMRC (ADF 790)1 set
Satellite navigator	JRC (JLE—3800)1 set
Radar	JRC (JMA—650—9)1 set
Radar (integrated arpa)	JRC (JMA—860—CA)1 set
Echo sounder	JRC (JFE—570S)1 set
Electro magnetic speed log	YEW (EML112—HD)1 set
Loran C	JRC (JNA—760)1 set

Radio Equipment :

Main SSB transmitter	JRC (NSD-50)	1 set
Main SSB receiver	JRC (NRD-92)	1 set
Reserve transmitter	JRC (NSC-17)	1 set
Reserve receiver	JRC (NRD-91)	1 set
Watch keeping receiver (2182KHZ)	JRC (JXA-7)	1 set
VHF telephone	JRC (JHV-212)	1 set
Transmitter whip ant.	JRC (NAW-100)	1 set
Automatic alarm receiver (500 KHZ)	JRC (JXA-15A)	1 set
Direct printing telegraph	JRC (NCL-550A)	1 set

Life saving equipment :

Life boat	One (1) F.R.P. Open type sea water cooled diesel engine (35 Persons)
	One (1) F.R.P. Open type oar boat (35 persons)
Life raft	Two (2) inflatable life rafts 10 P each and (1) inflatable life raft 6 persons.

Fire fighting equipment : Froth fire extinguishing System (For engine room)
CO₂ fire extinguishing System (For cargo hold)

Total complement : 28 persons

Container loading capacity : On hatch cover (2 tiers) 168 TEU
(based on 20' ISO containes) On upper deck (2 tiers) 136 TEU

Total 304 TEU

CAPACITY TABLES**CARGO HOLD : (INCLUDED HATCH WAYS)**

ITEM NAME		POSITION FRAME No	BALE CAPACITY		CENTRE OF GRAVITY	
			100% FULL			
			CUB. M.	CUB. FT.	LCG (m)	K G (m)
No 1	CARGO HOLD	176—207	7,443.5	262,865	—65.32	8.82
No 2	”	140—176	10,034.0	354,347	—39.63	8.64
No 3	C. H./W. B. T.	104—140	10,052.6	355,004	—10.86	8.65
No 4	CARGO HOLD	68—104	10,135.5	357,932	18.06	8.64
No 5	”	35—68	8,909.4	314,633	45.38	8.93
TOTAL			46,575.0	1,644,781	—	—

CARGO HOLD : (INCLUDED HATCH WAYS)

ITEM NAME	POSITION	GRAIN CAPACITY		CENTRE OF GRAVITY	
	FRAME No	100% FULL			
		CUB. M.	CUB. FT.	LCG (m)	K G (m)
No 1 CARGO HOLD	176 – 207	7,653.4	270,277	– 65.32	8.82
No 2 "	140 – 176	10,215.5	360,757	– 39.63	8.64
No 3 C. H./W. B. T.	104 – 140	10,233.5	361,393	– 10.86	8.65
No 4 CARGO HOLD	68 – 104	10,316.9	364,338	18.06	8.64
No 5 "	35 – 68	9,054.9	319,771	45.38	8.93
TOTAL		47,474.2	1,676,536	—	—

WATER BALLAST TANK (S. G.=1.025)

ITEM NAME	POSITION		CAPACITY		CENTRE OF GRAVITY		
	SIDE	FRAME No.	CUB. M.	CUB. FT.	100% FULL S. W. (t)	LCG (m)	KG (m)
F. P. W. B. T.	ATH	207-F.E.	1,055.5	37,275	1,082	-82.45	6.13
No. 1 T. S. W. B. T.	P	176-207	225.2	7,953	231	-63.27	14.28
No. 1 "	S	"	225.2	7,953	231	-63.27	14.28
No. 2 "	P	140-176	425.7	15,033	436	-39.11	13.99
No. 2 "	S	"	425.7	15,033	436	-39.11	13.99
No. 3 "	P	104-140	428.9	15,146	440	-10.40	13.98
No. 3 "	S	"	428.9	15,146	440	-10.40	13.98
No. 4 "	P	68-104	428.9	15,146	440	-18.40	13.98
No. 4 "	S	"	428.9	15,146	440	-18.40	13.98
No. 5 "	P	35-68	391.2	13,815	401	-45.95	13.99
No. 5 "	S	"	391.2	13,815	401	-45.95	13.99
No. 1 D. B. W. B. T.	ATH	176-207	971.7	34,315	996	-64.82	1.50
No. 2 "	P	140-176	849.7	30,007	871	-38.97	1.50
No. 2 "	S	"	849.7	30,007	871	-38.97	1.50
No. 3 "	P	104-140	465.0	16,421	477	-10.40	2.17
No. 3 "	S	"	465.0	16,421	477	-10.40	2.17
No. 4 "	P	68-104	461.1	16,284	473	-18.30	2.18
No. 4 "	S	"	461.1	16,284	473	-18.30	2.18
No. 5 "	P	33-68	601.8	21,252	617	-46.58	2.42
No. 5 "	S	"	601.8	21,252	617	-46.58	2.42
A. P. F. W. T. OR W. B. T.	ATH	A.E.-9	224.2	7,918	230	-83.75	10.14
SUM			10,806.4	381,622	11,080		
No. 3 C. H. W. B. T.	C	104-140	10,104.7	356,844	10,357	-10.89	8.53
TOTAL			20,911.1	738,466	21,437		

☆Full volume of No. 3 C. H. W. B. T. for water ballast is up to underside level of air pipe fitted on hatch coaming.

HEAVY FUEL OIL TANK (S. G.=0.950)

ITEM NAME	POSITION		CAPACITY		CENTRE OF GRAVITY		
	SIDE	FRAME No.	CUB. M.	CUB. FT.	100% FULL F. O. (t)	LCG (m)	KG (m)
No. 3 D. B. F. O. T.	P	104-140	404.0	14,267	384	-10.47	0.74
No. 3 "	S	"	404.0	14,267	384	-10.47	0.74
No. 4 "	P	68-104	404.7	14,292	384	-18.35	0.74
No. 4 "	S	"	404.7	14,292	384	-18.35	0.74
No. 5 "	P	33-68	136.8	4,831	130	-44.74	0.75
H. F. O. SETT. T.	S	28½-34	31.9	1,127	30	-62.38	13.51
H. F. O. SERV. T.	S	"	31.9	1,127	30	-62.38	13.51
SUM			1,818.0	64,203	1,726		
F. O. DRAIN T.	S	30-31	1.4	49	1	-62.78	2.79
TOTAL			1,819.4	64,252	1,727		

DIESEL OIL TANK (S. G.=0.870)

ITEM NAME	POSITION		CAPACITY		CENTRE OF GRAVITY		
	SIDE	FRAME No.	CUB. M.	CUB. FT.	100% FULL D. O. (t)	LCG (m)	KG (m)
No. 5 D. B. D. O. T.	S	33-68	115.3	4,072	100	-42.55	0.75
D. B. D. O. T.	ATH	20-35	90.4	3,192	79	-63.52	1.16
D. O. SETT. T.	S	25-27	10.5	371	9	-66.40	13.23
D. O. SERV. T.	S	25-27	11.6	410	10	-66.39	13.29
TOTAL			227.8	8,045	198		

LUB. OIL TANK (S. G.=0.900)

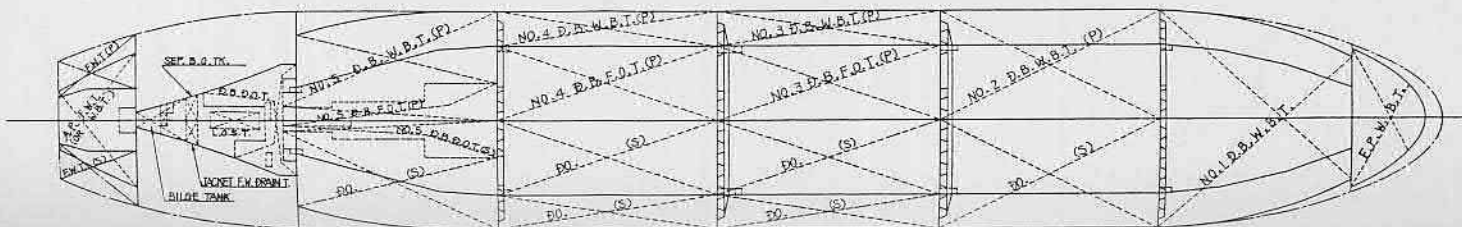
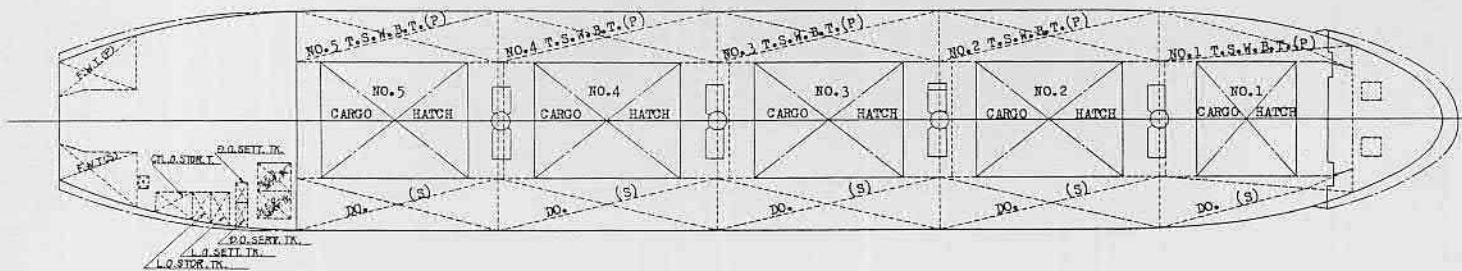
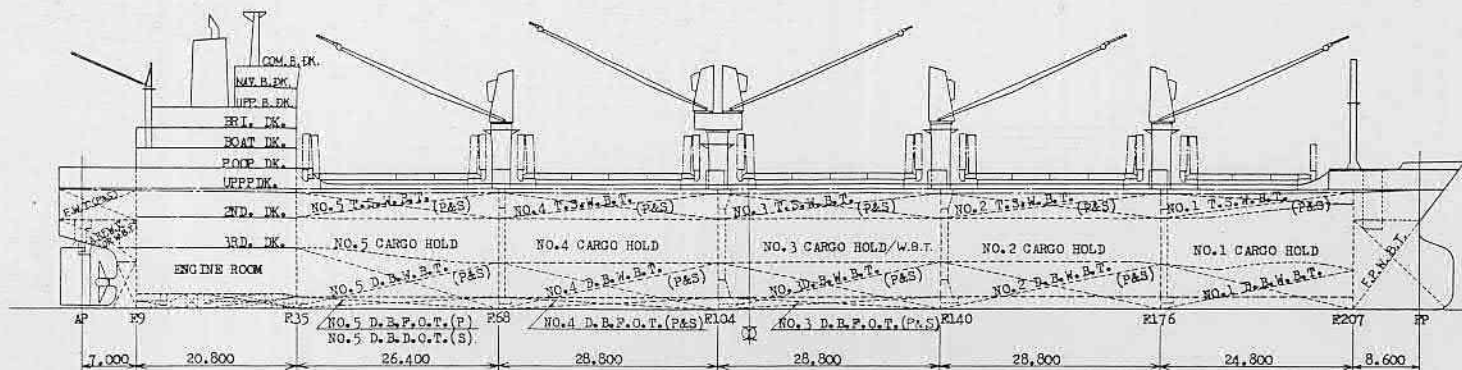
ITEM NAME	POSITION		CAPACITY		CENTRE OF GRAVITY		
	SIDE	FRAME No.	CUB. M.	CUB. FT.	100% FULL L. O. (t)	LCG (m)	KG (m)
MAIN L. O. SUMP T.	C	21-29	16.0	565	14	-67.26	1.33
L. O. SETT. T.	S	21-24	18.0	636	16	-69.18	13.54
L. O. STOR. T.	S	18-21	19.8	699	18	-71.57	13.31
SUM			53.8	1,900	48		
S. T. L. O. DRAIN T.	C	13-14	1.0	35	1	-76.40	1.54
TOTAL			54.8	1,935	49		

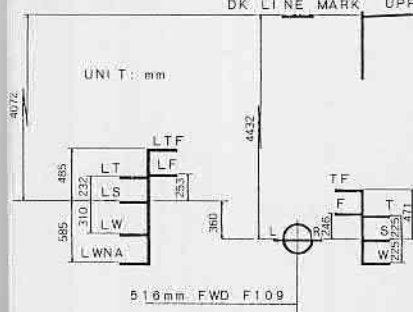
FRESH WATER TANK (S. G. =1.000)

ITEM NAME	POSITION		CAPACITY		CENTRE OF GRAVITY		
	SIDE	FRAME NO.	CUB. M.	CUB. FT.	100% FULL F.W. (t)	LCG (m)	KG (m)
FRESH WATER TANK	P	A.E.-9	178.5	6,304	179	-84.40	13.76
"	S	"	178.5	6,304	179	-84.40	13.76
A.P.F.W.T. OR W.B.T.	ATH	A.E.-9	224.2	7,918	224	-83.75	10.14
SUM			581.2	20,526	582		
S.T. COOL. F.W.T.	C	5½-9	11.6	410	12	-80.75	3.51
TOTAL			592.8	20,936	594		

OTHER TANK

ITEM NAME	POSITION		CAPACITY		CENTRE OF GRAVITY		
	SIDE	FRAME NO.	CUB. M.	CUB. FT.	100% FULL LCG (m)	KG (m)	
CYL. O. STOR. T.	S	12-18	28.9	1,021	74.98	-13.36	
BILGE T.	C	9-17	25.3	893	75.81	-0.97	
SEP. BILGE O. T.	P	17-19	6.9	244	72.78	-1.12	
DIRTY OIL T.	S	31-34	6.4	226	61.10	-2.75	
JACKET F.W. DRAIN T.	S	17-19	6.9	244	72.78	-1.12	





516 mm FWD F109

LIGHT CONDITION
CORR. DRAUGHT 2.087 M
DISPLACEMENT 7.647 T

DEADWEIGHT SCALE

[illegible]

TIMBER
SUMMER L.L.
SUMMER L.L.

DEADWEIGHT

ITEM		DEADWEIGHT			
		FREEBOARD METRES	DRAUGHT METRES	DEADWEIGHT METRIC TONS	DISPLACEMENT METRIC TONS
TROPICAL FRESH WATER	TF	3,961	11,286	38,467	46,114
FRESH WATER	F	4,186	11,061	37,455	45,102
TROPICAL	T	4,207	11,040	38,486	46,133
SUMMER	S	4,432	10,815	37,451	45,098
WINTER	W	4,657	10,590	36,420	44,067
TIMBER TROPICAL FRESH WATER	LTF	3,587	11,660	40,158	47,805
TIMBER FRESH WATER	LF	3,819	11,428	39,108	46,755
TIMBER TROPICAL	LT	3,840	11,407	40,179	47,826
TIMBER SUMMER	LS	4,072	11,175	39,108	46,755
TIMBER WINTER	LW	4,382	10,865	37,681	45,328
TIMBER WINTER NORTH ATLANTIC	LWNA	4,657	10,590	36,420	44,067

VARIOUS INFORMATION

Distance from fore bridge till extreme bow. : 152.80m (501.31FT)
Distance from fore bridge till extreme stern : 30.00m (98.43FT)
Distance from front bridge till fore end No. 1 hold : 132.00m (433.07FT)
Distance from bottom line till the heighest point on the mast : Abt. 45.43m (149.04FT)

Height from water line till top of hatch cover/coaming in full and ballast cond.

Full Load (summer) : 7.01 m (23.00 FT)/6.21 m (20.37 FT) at No. 3 C. H.

Full ballast (Arr.) : 10.56 m (34.65 FT) /9.76 m (32.02 FT) at No. 3 C. H.

Clear distance between railing and hatch coaming : 6.70m (21.98FT) at No. 3 C. H.

Maximum load on main deck : No. 1 H. side.....3.30t/m²,
: No. 2~5 H. side.....3.85t/m²

Maximum load on hatch cover : No. 1 H. C.1.95t/m²,
: No. 2~5 H. C.....2.50t/m²

Maximum load on tank top (ore loading) : No. 1&5 C. H.....19.29t/m²,
: No. 3 C. H.21.43t/m²

Maximum load on tank top (homo. loading) : All holds12.86t/m²