M.V. COURAGEOUS GENERAL ARRANGEMENT AND CAPACITY PLAN

SCALE 1:200

PLAN HISTORY
26 June, 2006 : Prepared by Tsunishi Tec.

LOAD

LOAD	UNIFORM LOAD (KNEER BTM) mt/m²	UNIFORM LOAD (KNEER BTM) LBS/ft²	HOT COIL LOAD (KNEER BTM)	AXLE LOAD (KNEER BTM) ONLY IN PORT
No.1 CARGO HOLD	2.5	512.2		
No.2 CARGO HOLD	2.5	512.2	2 TIERS OF 10 mt	45 mt/4 WHEELS
No.3 CARGO HOLD	2.5	512.2		
No.4 CARGO HOLD	2.5	512.2		
No.5 CARGO HOLD	2.5	512.2		

HOLD CAPACITY TABLE

COMPARTMENT	LOCATION (FR.NO.)	CAPACITY CU.M.	CAPACITY CU.FT	CENTER OF GRAVITY MG (m)	CENTER OF GRAVITY KG (m)
— GRAIN —					
NO.1 CARGO HOLD	174~208	12,663.8	447,222	-68.30	10.84
NO.2 CARGO HOLD	137~174	14,535.8	513,061	-39.40	9.80
NO.3 CARGO HOLD	102~137	13,471.1	475,731	-6.16	9.75
NO.4 CARGO HOLD	66~102	14,532	513,201	21.04	9.74
NO.5 CARGO HOLD	32~ 66	12,453.5	439,795	50.56	10.19
TOTAL		67,656.2	2,390,011.3	—	—
Hatch coaming capacity is included in above.					
— BALE —					
NO.1 CARGO HOLD	174~208	12,419.6	438,583	-68.31	10.60
NO.2 CARGO HOLD	137~174	14,204.8	501,843	-39.51	9.35
NO.3 CARGO HOLD	102~137	13,043.9	460,641	-6.15	9.64
NO.4 CARGO HOLD	66~102	13,940.5	492,309	21.04	9.58
NO.5 CARGO HOLD	32~ 66	11,990.2	423,523	50.55	10.03
TOTAL		65,600.1	2,316,892	—	—
Hatch coaming capacity is included in above.					
— HATCH COAMING —					
NO.1 HATCH COAM.	178~202	612.2	21,619	-67.29	10.43
NO.2 HATCH COAM.	143~168	606.6	21,422	-38.61	10.44
NO.3 HATCH COAM.	108~133	548.3	19,369	-6.15	10.35
NO.4 HATCH COAM.	73~ 98	549.3	19,399	20.37	10.35
NO.5 HATCH COAM.	37~ 62	548.3	19,399	50.57	10.35
TOTAL		2,931.8	103,538	—	—

NOTE : 1. 1.1 CUB. M = 35.315 CUB. FT
2.(-) Signs in MG indicate forward midship.

TANK CAPACITY TABLE (HULL PART)

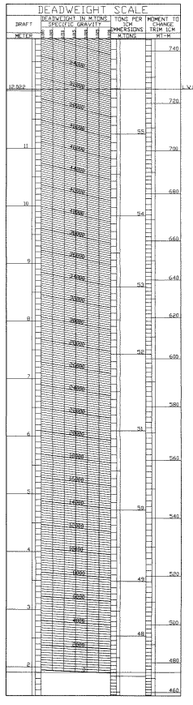
COMPARTMENT	LOCATION (FR.NO.)	CAPACITY (100%)	WEIGHT (mt)	CENTER OF GRAVITY (m) MG	KG	MAX. INERTIA (m⁴)
WATER BALLAST TANK			1.0~1.025			
CORE PEAK TANK	208 ~ 212	1,340.3	1,330	-87.20	7.84	1,610
NO.1 STW.BKTK.	P 174 ~ 208	1,009.3	1,000	-68.31	1.61	4,000
	S 174 ~ 208	809.8	800	-67.51	1.61	4,000
NO.1 T.S. & STW.BKTK.	P 174 ~ 208	1,187.6	1,217	-67.44	6.44	4,000
	S 174 ~ 208	1,187.6	1,217	-67.44	6.44	4,000
NO.2 STW.BKTK.	P 137 ~ 174	1,127.7	1,129	-38.75	1.47	10,787
	S 137 ~ 174	1,127.7	1,129	-38.75	1.47	10,787
NO.2 T.S. & STW.BKTK.	P 137 ~ 174	1,663.7	1,705	-38.77	6.50	10,787
	S 137 ~ 174	1,663.7	1,705	-38.77	6.50	10,787
NO.3 STW.BKTK.	P 101 ~ 137	698.7	716	-8.02	1.61	1,583
	S 101 ~ 137	698.7	716	-8.02	1.61	1,583
NO.3 T.S. & STW.BKTK.	P 101 ~ 137	1,218.9	1,249	-8.33	7.74	1,583
	S 101 ~ 137	1,218.9	1,249	-8.33	7.74	1,583
NO.4 STW.BKTK.	P 66 ~ 102	667.0	684	20.82	1.61	1,491
	S 66 ~ 102	667.0	684	20.82	1.61	1,491
NO.4 T.S. & STW.BKTK.	P 66 ~ 102	1,230.5	1,263	21.56	8.17	1,491
	S 66 ~ 102	1,230.5	1,263	21.56	8.17	1,491
NO.5 STW.BKTK.	P 31 ~ 66	768.4	818	51.85	3.20	2,423
	S 31 ~ 66	768.4	818	51.85	3.20	2,423
NO.5 T.S. & STW.BKTK.	P 31 ~ 66	1,217.5	1,250	51.86	8.15	2,423
	S 31 ~ 66	1,217.5	1,250	51.86	8.15	2,423
AFT PEAK TK.	9 ~ 31	576.2	581	88.34	11.68	1,100
CORE TANK		15,407.1	15,188			
NO.1 CARGO HOLD (WB)	102 ~ 137	13,520.9	13,861	-8.16	9.75	80,862
WATER BALLAST TOTAL		28,928.0	29,050			
FRESH WATER			1.0~1.025			
CORE WATER TANK	P1AC ~ 5	204.7	205	88.57	13.75	344
FRESH WATER TK.	S1AC ~ 9	204.7	205	88.57	13.75	344
FRESH WATER TOTAL		409.4	410			

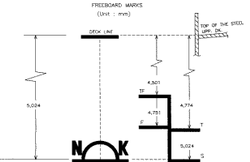
TANK CAPACITY TABLE (MACHINERY PART)

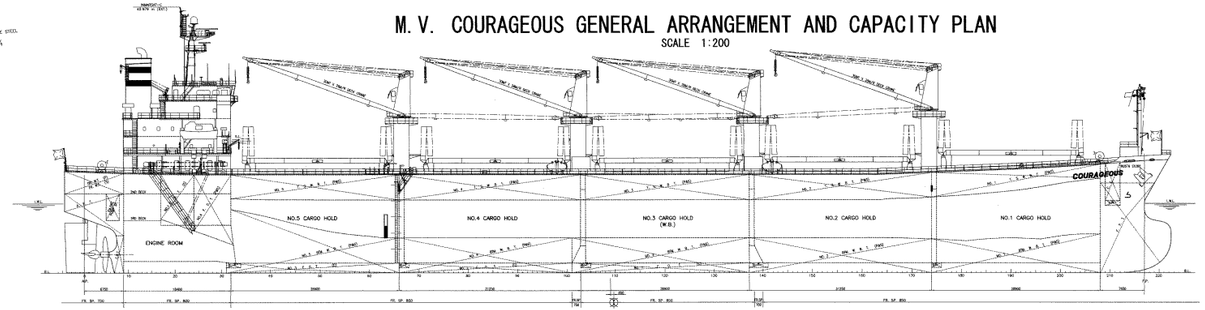
COMPARTMENT	LOCATION (FR.NO.)	CAPACITY (100%) FULL	CAPACITY (100%) F.O.S.L.	WEIGHT (mt)	CENTER OF GRAVITY (m) MG	KG	MAX. INERTIA (m⁴)
FUEL OIL TANK				1.0 ~ 0.970			
NO.1 FUEL OIL TK.	C1 101 ~137	763.7	734.5	687	-8.03	0.80	8,757
NO.2 FUEL OIL TK.	C2 66 ~102	763.7	739.4	693	20.69	0.80	8,826
NO.3 FUEL OIL TK.	C3 32 ~ 66	364.7	302.6	283	48.50	0.80	1,253
	P3 24 ~ 32	354.1	293.8	275	48.50	0.80	1,253
NO.4 FUEL OIL TK.	P1 24 ~ 32	224.6	210.4	202	50.83	12.13	63
D.F.O. SETT. TK.	S1 24 ~ 31 *	224.6	210.4	202	50.83	12.13	63
D.F.O. SERV. TK.	S1 25 ~ 28 *	24.0	22.5	22	51.25	12.51	1
FUEL OIL TOTAL		2,306.8	2,213.1	2,143			
DIESEL OIL TANK				1.0 ~ 0.900			
NO.1 DIESEL OIL TK.	S1 17 ~ 24	157.5	157.5	141	74.94	13.98	62
NO.2 DIESEL OIL TK.	S1 27 ~ 31	20.4	18.4	16	86.04	1.11	27
DIESEL OIL TOTAL		177.9	175.9	158			
LUB. OIL TANK				1.0 ~ 0.900			
M/E LUB. SUMP TK.	C1 17 ~ 27	15.2	14.6	13	74.33	1.10	6
MISCELLANEOUS TANK							
WASTE OIL TK.	P1 18 ~ 26	25.3			72.20	1.24	15
SALVE TK.	8 ~ 16	26.4			89.82	1.00	22
COOL. W. TK.	5 ~ 9	8.3			84.79	3.08	1

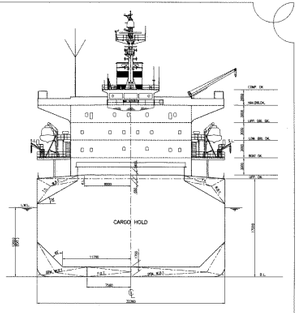
Note : 1. (-) Signs in MG indicate forward midship.
2. (*) Signs in capacity mean full of overflow position.
3. Weight of F.O. and D.O. are corresponding to 98% full capacity.

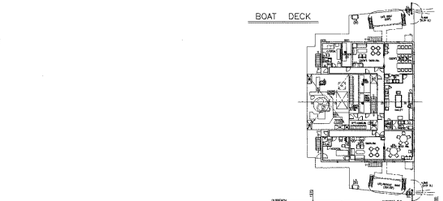
DEADWEIGHT SCALE

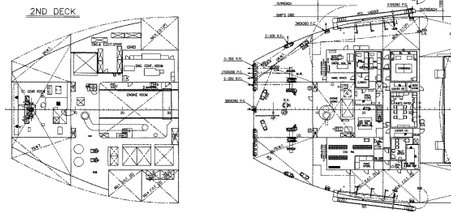


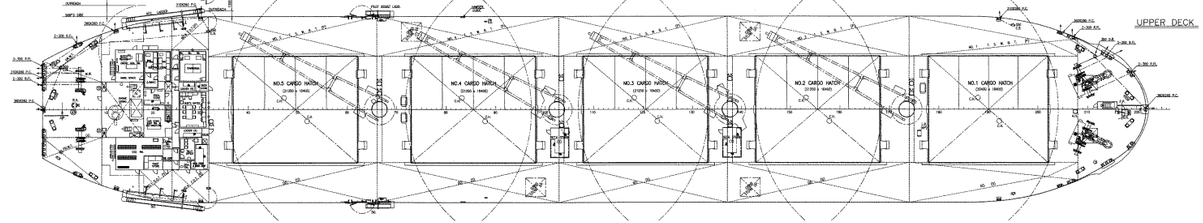


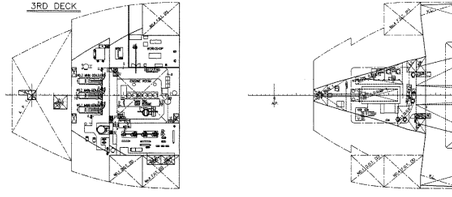


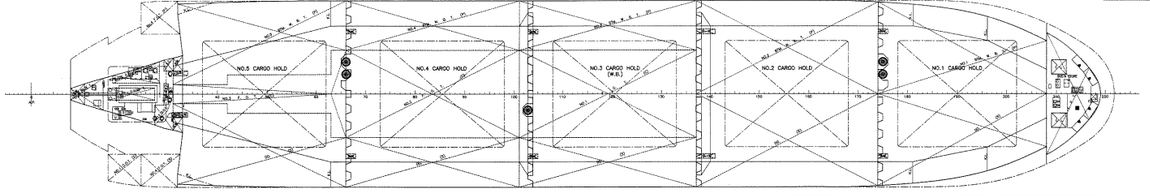












PRINCIPAL PARTICULARS

1. PRINCIPAL DIMENSIONS		
LENGTH	O.A.	190.04 M
LENGTH	B.P.	182.00 M
BREADTH	MLD.	32.26 M
DEPTH	MLD.	17.800 M
DRAFT (LOAD LINE)	MLD.	12.800 M
DRAFT (LOAD LINE)	AFT.	12.800 M
2. TONNAGE CLASS ETC.		
GROSS TONNAGE (INTERNATIONAL)		29,546
NET TONNAGE (INTERNATIONAL)		16,325
CLASS	NIPPON KAIJI KYOKAI	
	AFT DRA (LOAD) Displacement for mean draft (Kg/cm²)	
	(Kg/cm²)	
	FOR WINTER NAV.	
NAVIGATION AREA		OCEAN GOING
FLAG		PANAMA
3. DEADWEIGHT & CAPACITY		
DEADWEIGHT (ABOT.+12.012 M)		55,546 MT
CARGO HOLD CAPACITY (GRAIN)		67,656.2 M³
4. MAIN ENGINE		
MAIN ENGINE MOTOR M.A.N.-B&W DIESEL		1 Unit
M.C.R.	7,800 kW (MAX. 10,800 PS) × 114 rpm	
C.S.R.	6,630 kW (MAX. 9,210 PS) × 110 rpm	
(MAN M.E.C.)		
5. SPEED		
SERVICE (APPROX.)		14.5 KTS
6. COMPLEMENT		
CREW	ENGINE	BUSINESS
CAPTAIN 1	CHIEF ENGINEER 1	
CHIEF OFFICER 1	1ST. ENGINEER 1	
2ND. OFFICER 1	2ND. ENGINEER 1	RADIO OFFICER 1
3RD. OFFICER 1	3RD. ENGINEER 1	
		OFFICER TOTAL 3P
BOATSWAIN 1	AB. 4 OILER 1	ENGINE DEPARTMENT 6P
		PERT-SAILOR TOTAL 5P
AB SEAMAN 3	OILER 2	OS. LOOPA 1
SEAMAN 2	WIPER MAN 1	STEWARD 1
		CREW TOTAL (17P)
OFFICER'S NAME (LIFT, CARGO)		1P
CREW'S (MAX)		1P
		CRANE TOTAL 2P

KEEL LAID	19TH NOV. 2004
LAUNCHED	12TH MAR. 2005
DELIVERED	15TH JUNE 2005

DESIGN & PROCUREMENT CHIEF DESIGNER	SHIP NAME COURAGEOUS	SHIP NO. SC-066
GENERAL DESIGN GROUP		
APPROVED BY	一般財團法人 船舶安全協會	
CHECKED BY	GENERAL ARRANGEMENT AND CAPACITY PLAN (WITH DEADWEIGHT SCALE)	
DRAWN BY		
DATE	SCALE 1/200	DRAWING NO. 11001
LIST NO. HG-3	TSUNISHI CORPORATION	

FINISHED PLAN