

NOTES

- BRASS PLUGS TO BE FITTED AT LOWEST POINTS IN PIPE LINE FOR DRAINING AND HIGHEST POINTS FOR BLEEDING
- STEAM INJECTION CONNECTIONS TO BE FITTED TO SEA VALVES
- SEA WATER SUCTION PIPES IN SEA BAY TO BE WITHIN 300mm OF THE BOTTOM OF THE SEABAY
- WHERE FERROUS AND NON-FERROUS PIPES ARE JOINED A WASTER PIECE MIN 300mm OF EXTRA HEAVY PIPE IS TO BE FITTED AND IS TO BE DESIGNED FOR EASY ACCESS AND REPLACEMENT.
- PENETRATIONS THROUGH NON-WATERTIGHT FLATS TO HAVE A MIN 75mm COATING.
- GALVANIZED PIPE BEING REWORKED TO BE RE-GALVANIZED AFTER RE-WORKING. GALVACON PAINTING WILL NOT BE ACCEPTED.
- ALL GASKETS TO BE NEOPRENE OR EQUAL
- PIPES HAVE BEEN SIZED TO KEEP VELOCITIES BELOW 2.4 M/S

MATERIALS

PIPING

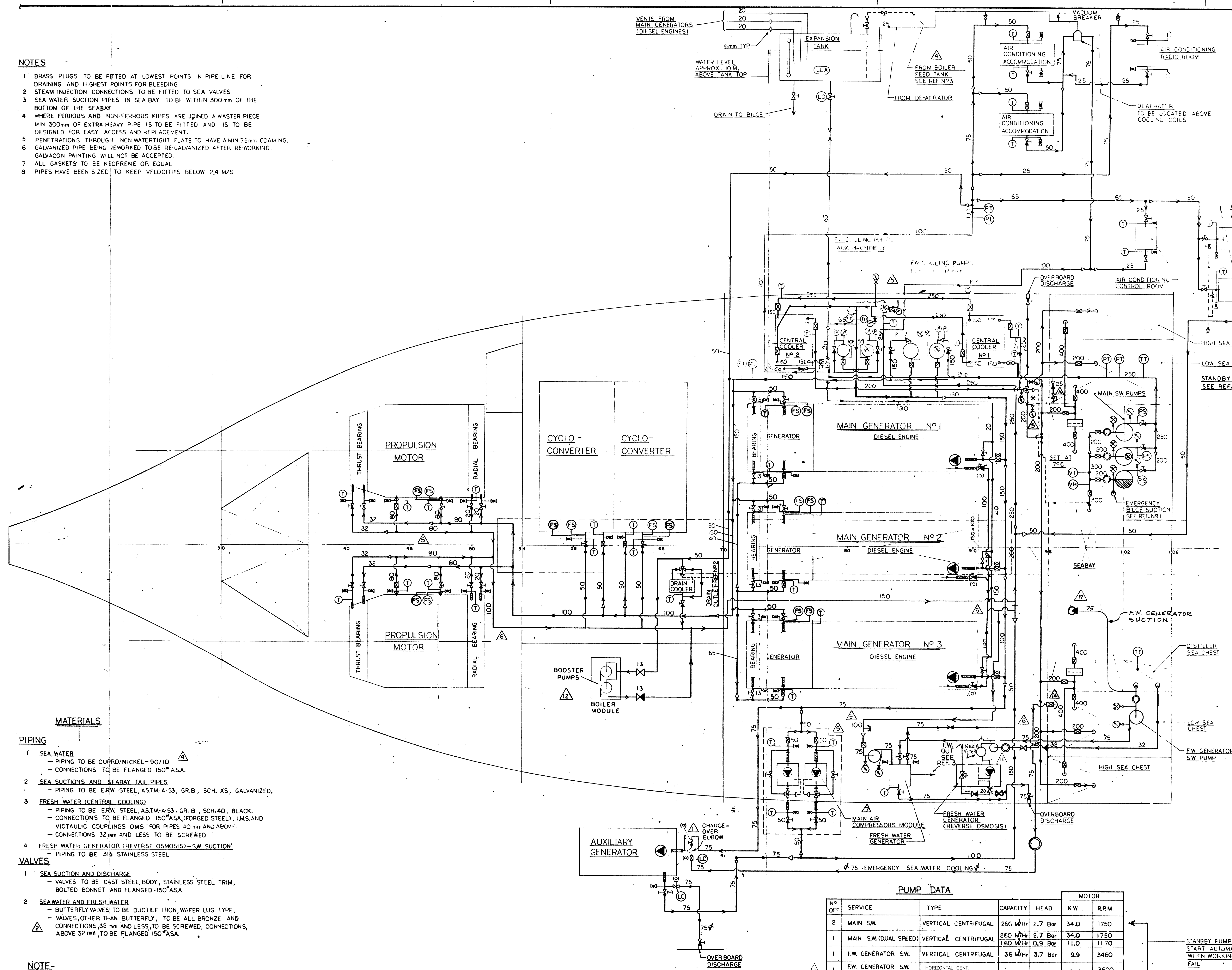
- SEA WATER
 - PIPING TO BE CUPRO/NICKEL-90/10
 - CONNECTIONS TO BE FLANGED 150°ASA.
- SEA SUCTIONS AND SEABAY TAIL PIPES
 - PIPING TO BE E.R.W. STEEL, ASTM-A-53, GR.B, SCH. XS, GALVANIZED.
- FRESH WATER (CENTRAL COOLING)
 - PIPING TO BE E.R.W. STEEL, ASTM-A-53, GR. B, SCH.40, BLACK.
 - CONNECTIONS TO BE FLANGED 150°ASA (FORGED STEEL), LMS AND VICTAULIC COUPLINGS OMS FOR PIPES 40mm AND ABOVE.
 - CONNECTIONS 32mm AND LESS TO BE SCREWED
- FRESH WATER GENERATOR (REVERSE OSMOSIS)-SW SUCTION
 - PIPING TO BE 316 STAINLESS STEEL

VALVES

- SEA SUCTION AND DISCHARGE
 - VALVES TO BE CAST STEEL BODY, STAINLESS STEEL TRIM, BOLTED BONNET AND FLANGED 150°ASA.
- SEAWATER AND FRESH WATER
 - BUTTERFLY VALVES TO BE DUCTILE IRON, WAFER LUG TYPE.
 - VALVES, OTHER THAN BUTTERFLY, TO BE ALL BRONZE AND CONNECTIONS 32mm AND LESS TO BE SCREWED, CONNECTIONS ABOVE 32mm, TO BE FLANGED 150°ASA.

NOTE:-

- AUXILIARY GENERATOR-EMERGENCY SEA WATER COOLING
 - PIPING TO BE E.R.W. STEEL, A.S.T.M.-A-53, GR.B, SCH.40, HEAVY GALVANIZED.



PUMP DATA

Nº OFF	SERVICE	TYPE	CAPACITY	HEAD	KW	RPM
2	MAIN SW	VERTICAL CENTRIFUGAL	260 M³/Hr	2.7 Bar	34.0	1750
1	MAIN SW (DUAL SPEED)	VERTICAL CENTRIFUGAL	260 M³/Hr	2.7 Bar	34.0	1750
1	F.W. GENERATOR SW.	VERTICAL CENTRIFUGAL	36 M³/Hr	3.7 Bar	9.9	3460
1	F.W. GENERATOR SW. (REVERSE OSMOSIS)	HORIZONTAL CENT. LOW PRESS PUMP			0.75	3600
2	AUXILIARY MACHINERY F.W. COOLING	VERTICAL CENTRIFUGAL	47 M³/Hr	2.5 Bar	8.0	1750
2	ELECTRIC MACHINERY F.W. COOLING	VERTICAL CENTRIFUGAL	105 M³/Hr	2.5 Bar	14.75	1750
3	MAIN GENERATOR J.W. CIRCULATING	ENGINE DRIVEN CENTRIFUGAL	125 M³/Hr	2.5 Bar		
1	AUXILIARY GENERATOR J.W. CIRCULATING	ENGINE DRIVEN CENTRIFUGAL	31 M³/Hr	Bar		
2	MAIN AIR COMPRESSORS F.W. COOLING	BELT DRIVEN CENTRIFUGAL	3.24 M³/Hr	2.0 Bar		

STANGE PUMPS TO START AUTOMATICALLY WHEN WORKING PUMPS FAIL
STANDBY PUMPS ARE MARKED THUS

SYMBOL	DESCRIPTION
	BUTTERFLY VALVE
	GLOBE VALVE SL
	GLOBE VALVE SDNR
	GATE VALVE
	CHECK VALVE
	DRAIN VALVE
	THERMOSTATIC 3 WAY VALVE
	ANGLE VALVE SL
	ANGLE VALVE SDNR
	REDUCER
	ORIFICE
	BASKET STRAINER
	PLATE STRAINER
	FLEXIBLE CONNECTION
	GAUGE GLASS
	VENT
	TUNISH
	PRESSURE GAUGE
	COMPOUND GAUGE
	LOCKED OPEN
	LOW LEVEL ALARM
	TEMPERATURE GAUGE
	TEMPERATURE TRANSDUCER
	HIGH TEMPERATURE ALARM
	PRESSURE SWITCH
	PRESSURE TRANSDUCER
	LOW PRESSURE ALARM
	HIGH VACUUM ALARM
	VACUUM TRANSDUCER
	FLOW SWITCH
	PUMP SUPPLIED WITH UNIT SHOWN
	LOCKED CLOSED
	A/R BLEEDER VALVE
	PRESSURE SENSING REGULATING VALVE
	ELECTRICAL INDICATOR VALVE OPEN

NOTE - THERMOSTATIC 3 WAY VALVE

- DISCHARGE TO SEABAY WHEN SEABAY TEMPERATURE IS 70°C OR BELOW.
- DISCHARGE OVERBOARD WHEN SEABAY TEMPERATURE IS ABOVE 70°C.
- VALVE TO HAVE MANUAL OVERRIDE.

REFERENCES

- DIAGRAM BILGE SYSTEM
BYC. DRAWING Nº 67-10-01 SHEET 1 OF 2
- DIAGRAM M. STEAM AND CONDENSATE
BYC. DRAWING Nº 65-10-01 SHEET 1 AND 2 OF 2
- DIAGRAM DOMESTIC AND SANITARY FRESH WATER SYSTEM
BYC. DRAWING Nº 65-30-01
- DIAGRAM AIR AND SOUNDINGS
BYC. DRAWING Nº 67-30-01
- DIAGRAM COMPRESSED AIR
BYC. DRAWING Nº 75-00-01
- DIAGRAM F.W. GENERATORS
BYC. DWG. Nº 65-10-03

		SHIPBUILDERS, SHIP REPAIRERS, GENERAL ENGINEERS Vancouver Division P.O. Box 8009, North Vancouver, British Columbia, Canada V7L 4J6 Victoria Division P.O. Box 100, Victoria, British Columbia, V8W 2S9	
DIVISION		HULL 1-08	
VANCOUVER		OWNERS CANADIAN COAST GUARD	
TITLE			
DIAGRAM - CENTRAL COOLING			
APPROVALS	REPRESENTS	DATE	DRAWN
LOCAL OWNER	9-3-84	CHECKED	9-3-84
CCG 553	23-5-84	APPROVED	DATE 15-2-84
LLD-053	9-5-84	SCALE NTS	DWG. No. 71-10-01

DISTRIBUTION					
DEPARTMENT	QTY.	DEPARTMENT	QTY.	DEPARTMENT	QTY.
Owner		Operations Manager		Shipwright	
Classification		New Const. Supt.		Joiner	
Steamship Inspection		Outfit Supt.		Pipe Fitter	
LOCAL D.S.	1	Repair Supt.		Machine Shop	3
PLANT D.S.	1	Steel Supt.			
JIC-10-B A.D.W.	1	NOCKEL SHOP			
Welding					
Machinery D.O.	1	Loft		Sheet Metal	
Electrical D.O.	1	Painter		Electric Shop	1
Welding Engineer		Welder		Engine Fitter	2
REVISION					
No.	REVISION	BY	DATE		
1	BUTTERFLY VALVE RELOCATED WITH 3-2-2 CHANGES OVER B.L.C. ADDED	PHL	21 MAY 1984		
2	DEAERATOR RELOCATED	ERIC	26-3-84		
3	VALVES NOTES REVISED TO READ FLANGED CONNECTIONS 40mm AND UP SCREWED CONNECTIONS 32mm AND LESS	ERIC	11-4-84		
4	FAUCET VALVES RELOCATED FROM SEABAY TO DECK	ERIC	11-4-84		
5	EXPANSION TANK FILLING LINE REVISED TO READ "FROM BOILER FEED TANK"	ERIC	25-4-84		
6	SEA WATER PIPING CHANGED TO 90/10 CU/CR/NICKEL	KING	27-7-84		
7	GAUGES AND F.W. GEN. HEATING WATER CIRC. PUMPS AND LINES ADDED	MED	11-5-84		
8	AFT LINES FROM PROPULSION MOTORS RE-ROUTED	C.P.	30/85		
9	FLCY DIRECTION CHANGED IN LINES TO F.W. GENERATOR PUMPS	C.P.	30/85		
10	MAIN AIR COMPRESSOR CHANGE TO MODULE	C.P.	30/85		
11	TEMP SWITCH ADDED TO REV. DEMOSIS FEEL WATER IN.	C.P.	30/85		
12	THERM. 3-WAY VALVE DELETED FROM F.W. GEN. OUTLET	C.P.	30/85		
13	STANDBY COOLING TO REFRIGERATION UNITS ADDED	C.P.	30/85		
14	FLOW SWITCHES ADDED	C.P.	30/85		
15	FLOW SWITCHES ADDED	C.P.	30/85		
16	COOLING TO BOILER BOOSTER PUMPS ADDED.	C.P.	30/85		
17	FLEXIBLE ISOLATION HOSES ADDED TO PROPULSION MOTOR BEARINGS	C.P.	30/85		
18	AS FITTED	C.P.	30/85		
19	AS FITTED, TO STERILIZE PH. FROM SUCTION	C.P.	30/85		
20	AS FITTED, F.W. MAIN PRESSURIZATION	C.P.	30/85		
21	INSTALL 2" MIL DAVE	C.P.	30/85		
22	R.O. REMOVED IN 86	C.P.	30/85		
23	NEW R.O. INSTALLED C/W LOW PRESSURE PUMP MEDIA FILTER	C.P.	30/85		

Rev. No.	Revisions	Date
App'd/APP'n		
Date		
Contractor Entrepreneur BARRARD YARROWS CORPORATION		
Vessel Name: TYPE 1100 NAVAL TENDER / LIGHT ICEBREAKER		
Drg. Title: DIAGRAM CENTRAL COOLING		
Date: 15-2-84	Scale/Echelle: NTS	Rev. 1
Contractor Drg. No. 71-10-01		