



A	05.09.2024	ISSUED FOR APPROVAL.				MCM	MM	GC	
REV.	DATE	DESCRIPTION				MOD.BY	CKD.BY	APP.BY	
REVISIONS									
 <div>Goltens Singapore Pte Ltd.</div>		SHIP							
		JP 88 STORK							
		TITLE							
		ELECTRICAL LOAD ANALYSIS							
SCALE		DRAWN	MCM	DRAWING NUMBER			HULL NUMBER		REV
N.T.S.		CHECKED	MM	GSPL-P1482-EL-0001			--		A
SIZE: A4		VERIFIED	GC	DATE:-05.09.2024			SHEET:- 1 OF 7		

REV.	DESCRIPTIONS	REMARKS	DATE	BY
1	REVISE ACC. TO OWNER COMMENTS		30-6-05	WD
2	Amended as per as brief		27.02.06	PUM
	<p>NOTES:</p> <ul style="list-style-type: none"> - UPDATED ON PAGES 4 & 5. - UPDATES ARE MARKED IN RED FONT. 			

[illegible]

REFERENCE DRAWING		 PanUnited Pan-United Marine Limited	
DWG. NO.	DWG. TITLE		
PROJECT :		70M 12,000BHP AHTS VESSEL	
TITLE :		ELECTRICAL LOAD ANALYSIS	
DRAWN BY: Wu Die		SCALE : NA	REV : 2
CHECKED BY: WD		PROJECT NO : HULL 165/169	PAGE : 1
DATE : 18-05-05		DRAWING NO : E002	TOTAL PAGES : 6

APPROVED BY:—		DATE
OWNER	LEWEK	13/6/05
CLASS	LRS	13/8/05

PanUnited

Pan-United Marine Limited

PROJECT :

70M 12,000BHP AHTS VESSEL

TITLE :

ELECTRICAL LOAD ANALYSIS

DRAWN BY: Wu Die

SCALE : NA

REV : 2

APPROVED BY:-

DATE _____

OWNER LEWEK

1316105

CLASS LRS

13/8105

CHECKED BY : *ind*

PROJECT NO : HULL 165/169

PAGE : 1

DATE: 18-05-05

DRAWING NO : E002

TOTAL PAGES : 6

ELECTRICAL LOAD ANALYSIS

5:04 PM 17-06-05

70M 12.000 BHP AHTS VESSEL

SERVICE	QTY	EACH K/W	TOTAL K/W	D/F	REST IN PORT		DYNAMIC POSITION		DISCHARGE TO RIG		CRUISING AT SEA WITHOUT TOWING		CRUISING AT SEA W/TOWING & ANCHOR HANDLING		EMERGENCY	
					C	I	C	I	C	I	C	I	C	I	C	I
COMPRESSORS																
STARTING AIR COMPRESSOR	1+1	4.6	9.2	0.8		3.7		3.7		3.7		3.7		3.7		3.7
BREATHING AIR COMPRESSOR	1.0	4.0	4.0	0.8				3.2		3.2		3.2		3.2		3.2
MAIN ENGINE																
M/E STBY L.O.PUMP	2.0	44.0	88.0	0.8		70.4										
M/E TURNING GEAR	2.0	3.00	6.00	0.8		4.8										
M/E S.W COOLING PUMP ✓	2+2	25.0	✓100.00	0.8			40.0	✓	40.0		40.0		40.0			
M/E STBY FW HT COOLING PUMP ✓	2.0	15.0	30.0	0.8		24.0										
M/E STBY FW LT COOLING PUMP ✓	2.0	21.0	42.0	0.8		33.6										
M/E STBY FO PUMP	2.0	1.8	3.6	0.8		2.9										
M/E FW PREHEATER	2.0	27.0	54.0	1.00	54.0											
M/E L.O. PURIFIER	2.0	4.0	8.0	0.80		6.4		6.4		6.4		6.4		6.4		
M/E L.O. PURIFIER PREHEATER	2.0	21.0	42.0	1.00	42.0			42.0		42.0		42.0		42.0		
M/E FUEL OIL PURIFIER	1.0	5.5	5.5	0.80				4.4		4.4		4.4		4.4		
CPP STBY LO/SERVO PUMP	2.0	27.0	54.0	0.80		43.2										
MISC. PUMPS																
FIRE/GS/BILGE/BALLAST PUMP	2.0	22.0	44.0	0.8		17.6		17.6		17.6		17.6		17.6		
EMERG. FIRE PUMP	1.0	22.0	22.0	0.8												17.6
WATER MIST PUMP	1.0	11.0	11.0	0.8												8.8
FO CARGO PUMP	1.0	45.0	45.0	0.8				36.0		36.0						
MUD PUMP	1+1	132.0	264.0	0.8						105.6		105.6		105.6		
MUD AGITATOR	1.0	65.0	65.0	0.8	52.0		52.0		52.0		52.0		52.0			
FW CARGO PUMP	1.0	50.0	50.0	0.8				40.0		40.0						
DRILL WATER CARGO PUMP	1.0	50.0	50.0	0.8				40.0		40.0						
CEMENT COMPRESSOR	1+1	150.0	300.0	0.8				120.0		120.0						
FOAM PUMP	1.0	15.0	15.0	0.8				12.0		12.0						
DIRTY OIL PUMP	1.0	1.1	1.1	0.8				0.9		0.9		0.9		0.9		
LO TRANSFER PUMP	1.0	2.2	2.2	0.8		1.8		1.8		1.8		1.8		1.8		
F.O. TRANSFER PUMP	1.0	3.7	3.7	0.8		3.0		3.0		3.0		3.0		3.0		
STERN TUBE LO PUMP	2.0	2.5	5.0	0.8		4.0		2.0		2.0		2.0		2.0		
STERN THRUSTER CPP SERVO OIL PUMP	1.0	6.4	6.4	0.8			5.1		5.1			5.1				
BOW THRUSTER CPP SERVO OIL PUMP	1.0	6.4	6.4	0.8			5.1		5.1			5.1				
RETRACTABLE B/T HYD. PUMP	1.0	2.0	2.0	0.8			1.6		1.6			1.6				
A/C S.W. COOLING PUMP	1+1	7.5	15.0	0.8	6.0		6.0		6.0		6.0		6.0			
MISCELLANEOUS																
STEERING GEAR	2+2	8.6	34.4	0.8			13.8		13.8		13.8		13.8		13.8	
SEWAGE TREATMENT PLANT	1.0	5.3	5.3	0.8		4.2		4.2		4.2		4.2		4.2		
F.W. PRESSURE SET	1+1	2.2	4.4	0.8	1.8		1.8		1.8		1.8		1.8			
S.W. PRESSURE SET	1.0	2.2	2.2	0.8	1.8		1.8		1.8		1.8		1.8			
OILY WATER SEPARATOR	1.0	0.55	0.55	0.8			0.44		0.44		0.44		0.44			
CALORIFIER	1.0	25.0	25.0	1.0		25.0		25.0		25.0		25.0		25.0		
FREQUENCY CONVERTER	1.0	64.0	64.0	0.8			51.2		51.2		51.2		51.2			
TOTAL PAGE (1)			1490.0		157.5	244.5	127.1	413.8	127.1	519.4	115.3	271.4	127.1	271.4	13.8	33.3

SERVICE	QTY	EACH K/W	TOTAL K/W	D/F	REST IN PORT		DYNAMIC POSITION		DISCHARGE TO RIG		CRUISING AT SEA WITHOUT TOWING		CRUISING AT SEA W/TOWING & ANCHOR HANDLING		EMERGENCY	
					C	I	C	I	C	I	C	I	C	I	C	I
DECK MACHINERY																
SERVO PUMPS	1.0	55.0	55.0	0.8									44.0			
TOWING WINCH FILTER PUMP	1.0	3.0	3.0	0.8									2.4			
WINCH HYD. OIL FILLING P/P	1.0	1.2	1.2	0.8										1.0		
HYD. P/P SW COOLING PUMP	1.0	30.0	30.0	0.8									24.0			
KARM FORK/TOWING PIN	1+1	34.0	68.0	0.8									27.2			
ANCHOR WINDLASS	1.0	63.0	63.0	0.8												
CAPSTAN	1.0	52.0	52.0	0.8		41.6										
TUGGER WINCH/ROPE REEL	1.0	94.0	94.0	0.8		75.2				75.2			75.2			
DECK CRANE	1.0	43.1	43.1	0.8		34.5				34.5						
RESCUE BOAT DAVIT	1.0	15.0	15.0	0.8		12.0				12.0						
VENTILATION/COLD RM./AIR-CON																
E/R FAN	2.0	45.0	90.0	0.8	72.0		72.0		72.0		72.0		72.0		36.0	
B/T ROOM SUPPLY FAN	1.0	5.5	5.5	0.8	4.4		4.4		4.4		4.4		4.4			
MISC. SUPPLY/EXHAUST FAN	1.0	7.0	7.0	0.8	1.4		5.6		5.6		5.6		5.6		2.8	
ECR AIR-CON. UNIT	1.0	6.2	6.2	0.8		5.0		5.0		5.0		5.0		5.0		
A/C FAN	1.0	15.0	15.0	0.8	12.0		12.0		12.0		12.0		12.0			
A/C COMPRESSOR	1+1	55.0	110.0	0.8		44.0		44.0		44.0		44.0		44.0		
REFRIGERATION PLANT	1+1	3.0	6.0	0.8		2.4		2.4		2.4		2.4		2.4		
GALLEY/LAUNDRY EQPT																
GALLEY RANGE(4 HOT PLATE)	1.0	23.0	23.0	1.0		23.0		23.0		23.0		23.0		23.0		
DEEP FRYER	1.0	10.5	10.5	1.0		10.5		10.5		10.5		10.5		10.5		
REFRIGERATOR	1.0	0.5	0.5	0.8		0.4		0.4		0.4		0.4		0.4		
WATER HEATER	1.0	3.0	3.0	1.0		3.0		3.0		3.0		3.0		3.0		
MICROWAVE RANGE	1.0	0.8	0.8	1.0		0.8		0.8		0.8		0.8		0.8		
RICE COOKER	1.0	1.95	1.95	1.0		2.0		2.0		2.0		2.0		2.0		
COFFEE MAKER	1.0	2.1	2.1	1.0		2.1		2.1		2.1		2.1		2.1		
BREAD TOASTER	1.0	2.3	2.3	1.0		2.3		2.3		2.3		2.3		2.3		
FOOD MIXER	1.0	1.1	1.1	0.8		0.9		0.9		0.9		0.9		0.9		
WASTE DISPOSAL	1.0	0.60	0.60	0.8		0.5		0.5		0.5		0.5		0.5		
5.5KG WASHING MACHINE	3.0	3.5	10.5	0.8		8.4		8.4		8.4		8.4		8.4		
DRYER	3.0	3.0	9.0	0.8		7.2		7.2		7.2		7.2		7.2		
WORKSHOP EQPT																
WELDING MACH.	2.0	11.0	22.0	0.8		8.8		17.6		17.6		8.8		8.8		
LATHE MACHINE	1.0	7.5	7.5	0.8		6.0		6.0		6.0		6.0		6.0		
PEDESTAL GRINDER	1.0	0.55	0.6	0.8		0.4		0.4		0.4		0.4		0.4		
BREATHING AIR COMPRESSOR	1.0	4.0	4.0	0.8				3.2		3.2		3.2		3.2		
BATTERY CHARGER	1.0	1.5	1.5	0.8		1.2		1.2		1.2		1.2		1.2		1.2
TOTAL PAGE (2)			764.9		89.8	292.1	94.0	140.8	94.0	262.5	94.0	132.0	266.8	133.0	38.8	1.2

SERVICE	QTY	EACH K/W	TOTAL K/W	D/F	REST IN PORT		DYNAMIC POSITION		DISCHARGE TO RIG		CRUISING AT SEA WITHOUT TOWING		CRUISING AT SEA W/TOWING & ANCHOR HANDLING		EMERGENCY	
					C	I	C	I	C	I	C	I	C	I	C	I
TEL PA/ENTERTAINMENT																
TELEPHONE SYSTEM	1.0	0.05	0.05	0.7		0.04		0.04		0.04		0.04		0.04	0.04	
PUBLIC ADDRESS	1.0	0.10	0.10	0.7		0.07		0.07		0.07		0.07		0.07	0.07	
LIGHTINGS																
FLOODLIGHTS	6.0	1.0	6.0	1.0	6.0		6.0		6.0		6.0		6.0			
GENERAL LIGHTING	1.0	12.0	12.0	0.8	7.2		9.6		9.6		9.6		9.6			
SEARCH LIGHT	4.0	2.0	8.0	1.0				8.0		8.0				8.0		
EMERGENCY LIGHTING	1.0	4.0	4.0	1.0	2.4		4.0		4.0		4.0		4.0		4.0	
NAVIGATION/RADIO COMM																
GYRO COMPASS	1.0	0.5	0.5	0.8			0.4		0.4		0.4		0.4		0.4	
AUTO PILOT	1.0	0.5	0.5	0.8							0.4		0.4		0.4	
NAVIGATION RADAR	2.0	0.8	1.6	0.8		1.3	1.3		1.3		1.3		1.3		1.3	
DOPPLER LOG	1.0	0.05	0.05	0.8			0.04		0.04		0.04		0.04		0.04	
ECHO SOUNDER	1.0	0.05	0.05	0.8				0.04		0.04		0.04		0.04		0.04
GPS NAVIGATOR	2.0	0.05	0.10	0.8			0.08		0.04		0.04		0.04		0.04	
WINDOW WIPER	4.0	0.3	1.2	0.8				1.2		1.0		1.0		1.0		1.0
CLEAR VIEW SCREEN	2.0	0.3	0.6	0.8				0.6		0.5		0.5		0.5		0.5
ANEMOMETER	1.0	0.04	0.04	0.8			0.03		0.03		0.03		0.03			0.03
NAVIGATION LIGHTS	1.0	1.8	1.8	0.8		1.44		1.4		1.4		1.4		1.4	1.4	
MAGNETIC COMPASS	1.0	0.05	0.05	0.8			0.04		0.04		0.04		0.04		0.04	
WHISTLE	1.0	0.20	0.20	0.8				0.16		0.16		0.16		0.16		0.16
RADIO EQUIPMENT	1.0	3.0	3.0	0.6		1.80		1.80		1.8		1.8		1.8	1.8	
TOTAL PAGE (3)			39.8		15.6	4.6	21.5	13.3	21.4	13.0	15.8	11.0	15.8	19.0	9.5	1.7
+ BWTS LOAD						15.69		15.69		15.69		15.69		15.69		
BOW THRUSTER/STERN THRUSTER																
BOW THRUSTER	1.0	590.0	590.0	0.8			472.0		295.0				472.0			
STERN THRUSTER	1.0	590.0	590.0	0.8			472.0		295.0				472.0			
ANCHOR HANDLING/TOWING WINCH	2.0	299.0	598.0	0.8									478.4			
ANCHOR HANDLING/TOWING WINCH	2.0	118.0	236.0	0.8									188.8			
TOTAL PAGE (4)			2014.0		0.0	0.0	944.0	0.0	590.0	0.0	0.0	0.0	1611.2	0.0	0.0	0.0

	TOTAL K/W		REST IN PORT		DYNAMIC POSITION		DISCHARGE TO RIG		CRUISING AT SEA WITHOUT TOWING		CRUISING AT SEA W/TOWING & ANCHOR HANDLING		EMERGENCY	
			C	I	C	I	C	I	C	I	C	I	C	I
TOTAL PAGE (1)	1490.0		157.5	244.5	127.1	413.8	127.1	519.4	115.3	271.4	127.1	271.4	13.8	33.3
TOTAL PAGE (2)	764.9		89.8	292.1	94.0	140.8	94.0	262.5	94.0	132.0	266.8	133.0	38.8	1.2
TOTAL PAGE (3)	39.8		15.6	20.29	21.5	28.99	21.4	28.69	15.8	26.69	15.8	34.69	9.5	1.7
TOTAL LOAD EXCEPT THRUSTER :	2294.7		262.9	556.89	242.6	585.59	242.6	810.49	225.1	430.09	409.8	438.99	62.1	36.2
THRUSTER LOAD :	2014.0		0.0	0.0	944.0	0.0	590.0	0.0	0.0	0.0	1611.2	0.0	0.0	0.0
MAXIMUM DEMAND = C +0.3I			429.9	418.3	944.0	485.7	590.0	354.1	541.5	1611.2	73.0			
[MAX.DEMAND/NO OF GEN. RUNNING] (%)			74.1%	72.1%	26.2%	83.7%	32.8%	61.1%	19.4%	93.4%	44.8%	76.8%		
NO.OF GEN. RUNNING			1x580KW	1x580+2x1800KW	1x580+1x1800KW	1x580KW	1x1800KW	1x580KW + 2x1800KW	1x95KW					
NO.OF GEN. ON STANDBY			1x580KW	1x580KW	1x580KW	1x580KW	2x580KW	1x580KW	NONE					
NO.OF GEN. INSTALLED			2x580KW(DIESEL GEN.) + 2x1800KW(SHAFT GEN.) + 1x95KW(EMERG. GEN.)											1x95KW

NOTE : D/F = DEMAND FACTOR

C = CONTINUOUS

I = INTERMITTENT

NOTE: THRUSTERS & TOWING WINCH HYD. PUMPS ARE POWERED BY SHAFT GENERATOR.

24V DC LOAD ANALYSIS
H165/169 - 70M 12,00BHP A/H SUPPLY VESSEL

SERVICE	EACH WATTS	EACH (AMPS)	D/F	DEMAND HOURS	LOAD IN AMP HOUR
FLOODLIGHT FOR LIFERAFT	100	4.2	1	0.5	2.1
PA SYSTEM	450	18.8	1	0.5	9.4
AUTOMATIC TELEPHONE	570	23.8	1	0.5	11.9
AIR WHISTLE/MORSE LIGHT	60	2.5	1	0.5	1.3
ALDIS LIGHT	60	2.5	1	0.5	1.3
WINDOW WIPER	200	8.3	1	0.5	4.2
GYRO COMPASS	100	4.2	1	0.5	2.1
AUTOPILOT	50	2.1	1	0.5	1.0
MAGNETIC COMPASS	40	1.7	1	0.5	0.8
ECHO SOUNDER	50	2.1	1	0.5	1.0
STEERING GEAR	250	10.4	1	0.5	5.2
MAIN ENGINE CONTROL	600	25.0	1	0.5	12.5
TELEGRAPH	150	6.3	1	0.5	3.1
CPP CONTROL	400	16.7	1	0.5	8.3
BOW THRUSTER CONTROL	320	13.3	1	0.5	6.7
RETRACTABLE B/T CONTROL	600	25.0	1	0.5	12.5
JOYSTICK CONTROL	100	4.2	1	0.5	2.1
FI-FI VALVE CONTROL	40	1.7	1	0.5	0.8
FI-FI MAIN CONTROL CABINET	50	2.1	1	0.5	1.0
WATERTIGHT DOOR INDICATION PNL	50	2.1	1	0.5	1.0
TOWING WINCH CONTROL	650	27.1	1	0.5	13.5
KARM FORK/TONG PLC PNL	350	14.6	1	0.5	7.3
MAIN SWITCHBOARD	600	25.0	1	0.5	12.5
CENTRAL ALARM SYSTEM	750	31.3	1	0.5	15.6
ENGINEER CALL SYSTEM	50	2.1	1	0.5	1.0
CEMENT TANK CONTROL PANEL	400	16.7	1	0.5	8.3
CO2 ALARM	100	4.2	1	0.5	2.1
HOSPITAL CALL SYSTEM	50	2.1	1	0.5	1.0
COLD ROOM LOCK-IN ALARM	50	2.1	1	0.5	1.0
TOTAL	6120				150.8
NO. OF BATTERY INSTALL	2x200AH > 150.8AH				

D/F = DEMAND FACTOR