ALEXANDER STEPHEN & SONS. LTD., LINTHOUSE. GLASGOW, S.W.1.

SEA TRIAL RECORDINGS OF M.V. "PIAKO"

ENGINE Nº 676.

ENGINE		
SULZER 8 R.D. 76	BORE	760 MM.
TURBOCHARGED 2 STROKE	STROKE	1550 M.M.
FIRING ORDER 1, 8, 3, 4, 7, 2, 5, 6.	CYLINDER CONST.	0·1085

PROPELLER
DIA. - 18'-9" ; MEAN PITCH - 15'-4½"
DEVᴰ. AREA - 156 ☐ft ; Nº OFF BLADES - 4 RH.
WR² (EXCLᴰ. ENTᴰ. WATER) - 581,500 LB. FT²

FUEL	HEAVY O.F.
VISCOSITY RED Nº 1. SEC. AT 120°F	592·5 SECS.
VISCOSITY RED. Nº 1. SEC. AT 140°F	334·5 SECS.
S.G. AT 60°F.	0·955
GROSS CAL., VALUE B.TH. U/LB.	18,310 B.T.U./LB.
FLASH POINT	202°F.

OIL		
	LUB.	CYLᴿ.
MAKE TYPE	SHELL 'TALPA' 30"	B.P. ENERGOL C.L.O. 5 O.A.

OWNER :- NEW ZEALAND SHIPPING CO. LTD.

SEA TRIAL DATA:	ENGINE Nº. 676	DATE: 10-1-62.	SHEET 1

SPEEDS, POWERS, FUEL CONSUMPTION.

	READING / MILE	TIME	SHIP'S SPEED KNOTS.	R.P.M. TACHO.	R.P.M. COUNTER	% SLIP	TORSION-METER	B.H.P.	FUEL LEVER.	LOAD INDICATOR	GOVERNOR INDICATOR.	B.M.E.P. P.S.I.	I.H.P.	M.I.P. P.S.I.	MECH'L. EFFICIENCY.	FUEL CONSUMPTION. DURATION OF TEST.	RECORD'D. FLOW GALLONS.	RECORD'D. FLOW G.P. HR.	CORRECT'N. FACTOR.	CORRECT'D. FLOW P.P.H.	SPECIFIC FUEL CONS. LBS./SH.P/HR.
NORTH	1 / 1	11-00	14·12	86	86	-8·175	30	2850	6	3·6	-	38·15									
S - SOUTH	2 / 1	11-30	14·16	86	86	-8·481	31·5	2990	6	3·6	-	40·0									
N	3 / 2	12-10	15·44	96	96	-5·96	40	4220	6·9	4·2	-	50·60									
S	4 / 2	12-40	15·56	96	96	-6·79	39·5	4180	6·9	4·5	-	50·20				INSUFFICIENT READINGS TO					
N	5 / 3	13-18	16·96	105·8	105·8	-5·617	47·3	5500	7·5	5·1	-	59·8				CALCULATE FUEL CONSUMPTION.					
S	6 / 3	13-50	16·94	105·8	105·8	-5·492	48·9	5690	7·5	5·25	-	61·8									
N	7 / 4	14-20	18·46	117	117	-3·954	60·5	7820	7·8	6·2	-	77·0									
S	8 / 4	15-00	18·32	117	117	-3·332	63	8150	7·8	6·45	-	80·25									
	9 / -	15-25	-	119	119·6	-	68·3	9000	8·4	7·15	-	86·75									
	10 / -	15-50	-	119	120	-	65·0	8600	8·4	6·65	-	82·75									
FUEL CONSUMPTION TRIAL	11 / -	16-15	-	115	115	-	58·0	7350	8·2	6·0	-	73·5									
	12 / -	17-00	-	115	115	-	58·0	7350	8·2	6·1	-	73·5									
	13 / -	17-45	-	115	115	-	58·0	7350	8·2	6·05	-	73·5									
	14	18-30	-	115	115	-	58·0	7350	8·2	6·05	-	73·5									

SEA TRIAL DATA. | ENGINE Nº. 676 | DATE 10-1-62. | SHEET 2

MAXIMUM –, COMPRESSION – AND MEAN INDICATED PRESSURE, AND INDICATED HORSE-POWER / CYLINDER.

READING MILE	TIME	MAXIMUM PRESSURE – P.S.I. / COMPRESSION PRESSURE – P.S.I. CYLR. 1	2	3	4	5	6	7	8	AV.	MEAN INDICATED PRESSURE – P.S.I. / INDICATED H.P. / CYLINDER. CYLR. 1	2	3	4	5	6	7	8	AV.
1 / 1	11-00	480 / 420	500 / 415	480 / 410	500 / 405	460 / 390	490 / 410	520 / 410	500 / 400	491 / 407·5									
2 / 1	11-30	485 / 410	510 / 410	490 / 410	500 / 410	510 / 400	525 / 420	475 / 400	500 / 400	499 / 407·5									
3 / 2	12-10	560 / 460	550 / 455	520 / 450	560 / 440	570 / 440	540 / 440	550 / 440	560 / 440	551 / 445·6									
4 / 2	12-40	555 / 440	550 / 450	560 / 450	550 / 440	580 / 440	580 / 460	550 / 450	545 / 440	559 / 446									
5 / 3	13-18	575 / 475	605 / 470	600 / 470	590 / 470	610 / 480	600 / 480	620 / 470	610 / 465	601 / 472·5									
6 / 3	13-50	625 / 485	650 / 480	590 / 465	630 / 485	630 / 480	615 / 480	610 / 470	590 / 455	617·5 / 475									
7 / 4	14-20	720 / 540	705 / 525	710 / 530	695 / 545	740 / 525	745 / 520	760 / 530	690 / 510	721 / 536									
8 / 4	15-00	730 / 540	730 / 535	725 / 520	730 / 540	735 / 535	750 / 525	725 / 520	710 / 495	729 / 526									
9 / –	15-25	760 / 570	790 / 555	755 / 530	750 / 550	790 / 545	830 / 560	775 / 525	810 / 520	782·5 / 544									
10 / –																			
11 / 12	16-15	650 / 500	705 / 515	655 / 500	695 / 510	750 / 530	750 / 515	755 / 505	745 / 505	713 / 510									
13 / 14	17-45	650 / 500	630 / 500	645 / 490	690 / 500	720 / 500	680 / 500	680 / 490	650 / 470	668 / 494									

SEA TRIAL DATA. | ENGINE Nº. 676 | DATE 10-1-62 | SHEET 3

EXHAUST TEMPERATURES.

	READING / MILE	TIME	CYLINDER EXHAUST °F. CYLR. 1	2	3	4	5	6	7	8	AV.	TURBINE INLETS °F. FORD. TOP	FORD. BOTT.	AFT. TOP	AFT. BOTT.	AV.	TURBINE EXHAUST °F. FORD.	AFT	AV.	TEMP. BEFORE EXHT BOILER °F	TEMP. AFTER EXHT BOILER °F
N	1 / 1	11-00	430	445	420	450	440	425	430	550*	434	520	495	470	515	500	480	470	475	450	325
S	2 / 1	11-30	430	445	420	445	445	420	430	500*	433	510	495	480	510	499	495	465	470	448	330
N	3 / 2	12-10	480	500	480	500	490	480	480	500	489	580	570	560	580	572	540	530	535	520	480
S	4 / 2	12-40	490	520	490	520	510	500	500	500	504	590	580	570	600	582	540	535	538	520	480
N	5 / 3	13-18	560	580	560	590	590	560	560	590	571	690	670	660	700	680	615	605	610	580	
S	6 / 3	13-50	560	590	570	600	600	560	570	590	580	700	680	670	705	689	620	615	617	615	
N	7 / 4	14-20	625	665	640	670	660	640	635	665	650	785	755	740	800	770	670	660	665	660	
S	8 / 4	15-00	640	690	650	700	675	660	650	685	669	785	815	770	830	800	695	690	692	690	
N	9 / -	15-25	675	730	690	735	710	700	690	730	706	855	825	810	880	842	725	725	725	720	
S	10 / -																				
	11 / -	16-15	620	670	630	670	660	640	640	660	649	800	760	750	820	782·5	680	670	675	665	
	12 / -	17-00	620	660	620	670	650	630	630	660	642·5	770	745	735	790	760	670	665	667·5	660	
	13 / -	17-45	610	660	620	665	650	625	630	650	639	775	745	730	785	759	670	665	667·5	660	
	14 / -	18-30	610	665	620	665	650	625	630	650	639·5	770	745	730	785	757·5	670	665	667·5	660	

FUEL CONSUMPN. TRIAL.

CHANGE OVER VALVE SWITCHED TO SILENR. OIL FIRED BLR. IN USE.

SEA TRIAL DATA: | ENGINE Nº. 676. | DATE: 10-1-62. | SHEET 4

TURBO-CHARGERS, EXHAUST PRESSURES.

READING / MILE	TIME	BLOWER R.P.M. FOR° / AFT	BLOWER R.P.M. AVERGE	ATMOS. PRESS: INS. Hg. / TEMP. °F	SCAVGE. MANO P.S.I. / GAUGE P.S.I.	AIR TEMPERATURES °F. AFTER BLOWER. FOR° / AFT	AFTER BLOWER. AVERGE	AFTER COOLER FOR° / AFT	AFTER COOLER AVERGE	EXHAUST PRESSURES. BEFORE TURBINE "Hg FOR° TOP / BOT.	BEFORE TURBINE "Hg AFT. TOP / BOT.	AFTER TURBINE. FOR° "H2O	AFTER TURBINE. AFT. "H2O.	BEFORE BOILER "H2O.	AFTER BOILER "H2O.	BLOWER AIR SUCTION PRESS. M.M. H2O. FOR°	BLOWER AIR SUCTION PRESS. M.M. H2O. AFT.	PRESS. DROP ACROSS AIR COOLER INS. H2O. FOR°	PRESS. DROP ACROSS AIR COOLER INS. H2O. AFT.
1 / 1	11-00	3250 / 3200	3225		1·7 / 1·8	100 / 102	101	75 / 77	76		2" / 2	1·2	1·0	0·1	0	45	60	1·8	1·75
2 / 1	11-30	3300 / 3250	3275		1·7 / 1·8	101 / 100	100·5	80 / 82	81		2" / 2·1	1·2	1·1	0·1	0	45	56	1·85	1·8
3 / 2	12-10	4000 / 3900	3950	29·13 / 41°F.	2·8 / 2·8	112 / 115	113·5	80 / 80	80		3·5 / 3·5	2·0	1·8	NEGLIGIBLE.		60	60	2·2	2·2
4 / 2	12-40	4000 / 4000	4000		2·6 / 2·6	113 / 114	113·5	80 / 80	80		3·5 / 3·5	2·1	1·9			58	62	2·3	2·3
5 / 3	13-18	4800 / 4700	4750		3·8 / 4·0	130 / 134	132	84 / 84	84		5·0 / 5·0	2·9	2·6			75	84	3·0	2·9
6 / 3	13-50	4900 / 4800	4850		4·0 / 4·5	131 / 132	131·5	85 / 83	84		5·0 / 5·0	2·9	2·7			80	90	3·0	3·0
7 / 4	14-20	5750 / 5700	5725		6·0 / 6·5	160 / 162	161	93 / 95	94		7·0 / 7·0	4·1	3·7			110	124	3·9	3·8
8 / 4	15-00	5800 / 5750	5775		6·05 / 6·5	154 / 156	155	94 / 91	92·5		7·2 / 7·2	4·25	3·8			110	124	3·8	3·75
9 / —	15-25	6100 / 6050	6075		7·4 / 7·0	169 / 177	173	99 / 99	99		8·5 / 8·5	5·0	4·5			128	140	4·1	4·0
10 / —																			
11 / —	16-15	5650 / 5600	5625		5·74 / 5·8	151 / 155	153	88 / 88	88		7 / 6·5	3·8	3·4			100	110	3·8	3·8
12 / —	17-00	5506 / 5450	5478		5·28 / 5·4	152 / 153	152·5	85 / 84	84·5		7 / 6·0	3·8	3·4			100	110	3·8	3·8
13 / —	17-45	5500 / 5450	5475		5·28 / 5·4	152 / 153	152·5	86 / 84	85		7 / 6·0	3·8	3·4			100	110	3·8	3·8
14 / —	18-30	5505 / 5450	5478		5·28 / 5·4	151 / 153	152	85 / 84	84·5		7 / 6·0	3·8	3·4			100	110	3·8	3·8

N S N S N S N S N S N S

FUEL CONSUMPN. TRIAL.

CHANGE OVER VALVE SWITCHED TO SILENCER.

OIL FIRED BOILER IN USE.

SEA TRIAL DATA. | **ENGINE Nº. 676** | **DATE 10-1-62** | **SHEET 5**

ENGINE COOLING.

	READING MILE.	TIME	PISTON COOLING. PUMP SUCTION DISC.	PISTON COOLING. PRESS. AT ENGINE P.S.I.	PISTON COOLING. INLET TEMP. °F.	PISTON COOLING. CYL.R. OUTLET TEMPS. °F. 1	2	3	4	5	6	7	8	JACKET COOLING. PUMP SUCTION DISC.	JACKET COOLING. PRESS. AT ENGINE P.S.I.	JACKET COOLING. INLET TEMP. °F.	JACKET COOLING. CYL.R. OUTLET TEMPS. °F. 1	2	3	4	5	6	7	8	BLOWER COOLING WATER OUTLET. °F. FORD.	BLOWER COOLING WATER OUTLET. °F. AFT.	AIR COOLERS WATER TEMP. °F. INLET	AIR COOLERS WATER TEMP. °F. OUTLET FORD. BL.	AIR COOLERS WATER TEMP. °F. OUTLET AFT BL.
N	1	11-00	1" Hg	37	116	123	123	123	126	124	124	123	123	19	27·5	110	115	115	115	115	116	115	115	116	116	44	60	61
S	1	11-30	1" Hg	38	115	123	123	124	124	126	123	123	123	15	27·5	112	120	120	121	120	121	121	120	120	118	118	46	71	71
N	2	12-10	1" Hg	38	113	123	123	124	123	124	123	122	122	15	28	113	120	121	121	120	122	121	120	120	118	117	45	60	60
S	2	12-40	1" Hg	38	105	115	116	117	116	119	115	115	116	15	27·5	119	123	124	125	124	125	125	124	124	120	118	46	61	61
N	3	13-18	1" Hg	38	103	114	115	116	116	118	114	114	114	15	27·5	115	125	126	126	125	128	126	126	126	122	122	46	72	72
S	3	13-50	1" Hg	40	102	114	115	116	115	118	114	115	115	15	28	115	124	125	126	124	126	126	125	125	122	122	45	62	62
N	4	14-20	1" Hg	47	104	118	119	120	120	123	118	119	118	15	28	118	128	130	131	129	132	130	130	130	126	126	45	67	67
S	4	15-00	1" Hg	39	110	125	126	127	126	130	125	125	125	15	27·5	115	127	128	129	128	130	129	128	128	124	124	45	65	65
N	–	15-25	1" Hg	39	110	124	125	126	126	130	124	125	125	15	27·5	116	130	132	132	131	133	132	132	131	128	124	45	68	68
S	–		–																										
FUEL CONSUMPN. TRIAL.																													
	11	16-15	2" Hg	38	108	122	123	123	123	127	122	123	122	15	27·5	111	123	125	125	124	126	125	125	125	121	120	43	59	59
	12	17-00	2" Hg	38	110	123	125	125	125	128	123	123	123	15	27·5	110	123	125	125	124	126	125	125	125	118	122	43	59	59
	13	17-45	2" Hg	39	110	123	125	124	125	128	123	123	123	15	27·5	110	123	125	125	124	125	125	125	125	118	121	43	59	59
	14	18-30	2" Hg	38	108	122	123	123	124	127	122	123	123	15	27·5	110	123	125	125	124	126	125	125	125	119	122	43	59	59

SEA TRIAL DATA:	ENGINE Nº. 676	DATE: 10-1-62	SHEET 6

LUBRICATING OIL, FUEL VALVE COOLING, FUEL OIL, S.W. PRESS.

	READING / MILE.	TIME.	L.O. PRESS. P.S.I.				L.O. TEMPERATURES °F.					FUEL VALVE COOLING.				FUEL OIL.					S.W. PRESS
			PUMP SUCT. / DISCH.	AFTER FILTER	ENGINE HIGH / LOW	BLOWER AFTER FILTER	ENGINE INLET	ENGINE OUTLET	BLOWER FORº. / AFT.	BLOWER AFT. FORº. / AFT.	THRUST FORº. / AFT.	PUMP SUCTION / DISC.	PRESS. AT ENGINE P.S.I.	TEMP. °F INLET.	TEMP. °F OUTLET	PUMP SUCT. / DISC	PRESS AT ENGINE P.S.I.	HEATER INLET °F	HEATER OUTLET °F	HEATER SHELL PRESS. P.S.I.	P.S.I.
N	1 / 1	11-00	6"Hg / 72	58	54 / 36	22	100	102	107 / 104	100 / 117	105 / 95		26	29	104	130		45	125	175	45	12
S	2 / 1	11-30	6"Hg / 75	60	54 / 36	22	100	102	107 / 104	100 / 117	105 / 95		26	30	104	130		50	125	168	45	16
N	3 / 2	12-10	6"Hg / 74	60	54 / 36	22	100	103	110 / 108	102 / 117	105 / 95		26	30	105	115		50	125	168	45	16
S	4 / 2	12-40	6"Hg / 74	60	54 / 36	22	100	103	110 / 108	102 / 117	105 / 95		26	29·8	105	110		48	124	160	45	16
N	5 / 3	13-18	6"Hg / 72	58	51 / 34	22	101	103	115 / 118	106 / 119	106 / 100		26	29·8	105	108		43	124	160	45	13
S	6 / 3	13-50	6"Hg / 72	58	50 / 33	22	101	103	116 / 112	106 / 122	107 / 100		26	29·8	106	108		44	124	160	45	13
N	7 / 4	14-20	6"Hg / 68	53	47 / 31	23	101	102	122 / 115	112 / 129	108 / 102		26	30	106	108		45	124	161	45	11
S	8 / 4	15-00	6"Hg / 67	52	46 / 30	22	104	105	121 / 115	112 / 128	110 / 105		26	30	106	120		45	124	161	45	10
FUEL CONSUMPN. TRIAL	11 / -	16-15	6"Hg / 66	52	43 / 30	20	105	107	122 / 112	112 / 126	112 / 104		26	29	106	122		45	138	188	45	10
	12 / -	17-00	6"Hg / 66	52	46 / 30	20	105	107	123 / 112	112 / 126	112 / 105		26	29	114	128		40	138	185	45	10
	13 / -	17-45	6"Hg / 66	52	46 / 30	21	106	108	122 / 112	112 / 125	112 / 105		26	29	116	130		45	135	185	45	10
	14 / -	18-30	6"Hg / 67	52	46 / 30	21	106	108	122 / 112	112 / 124	112 / 105		26	29	116	125		45	134	180	45	11

SEA TRIAL DATA: | ENGINE Nº. 676 | DATE 10-1-62 | SHEET 7

COOLANT, CONDENSATE, AMBIENT, TEMPERATURES; BOILER PRESS.

	READING / MILE	TIME	SEA °F	L.O. COOLER OUTLET °F FOR°	L.O. COOLER OUTLET °F AFT	PISTON COOLER OUTLET °F FOR°	PISTON COOLER OUTLET °F AFT	JACKET COOLER OUTLET °F FOR°	JACKET COOLER OUTLET °F AFT	FUEL VALVE COOLER OUTLET °F	FUEL VALVE COOLER OUTLET °F	CONDENSER OUTLET °F.	CONDENSATE TEMP °F.	AMBIENT TEMPS. °F. MAN'G PLAT^M.	AMBIENT TEMPS. °F. MID ENG. PLAT^M	AMBIENT TEMPS. °F. TOP ENG. PLAT^M	AMBIENT TEMPS. °F. BOILER FLAT.	BOILER PRESS P.S.I. OIL FIRED	BOILER PRESS P.S.I. WASTE HEAT.	AIR RECEIVER PRESS. O/B^D P.S.I.	AIR REG^R PRESS IN /B^D P.S.I.
N	1 / 1	11-00	46	86	100	117	68	123	-	60	-	46	50	66	59	75	72	46	45	365	375
S	2 / 1	11-30	48	71	100	119	68	123	-	60	-	47	51	68	61	71	71	43	43	342	348
N	3 / 2	12-10	47	64	100	120	68	123	85	61	-	46	51	66	60	73	74	46	45	320	323
S	4 / 2	12-40	48	78	100	122	66	-	84	60	-	47	50	67	62	72	69	48	47	295	300
N	5 / 3	13-18	47	76	101	119	67	-	88	59	-	46	51	66	60	77	71	44	44	390	390
S	6 / 3	13-50	46	76	102	114	67	-	85	59	-	47	50	66	61	69	68	42	42	360	360
N	7 / 4	14-20	46	66	103	113	66	-	85	60	-	46	53	67	61	70	72	35	42	361	362
S	8 / 4	15-00	46	65	105	119	70	-	81	62	-	47	53	66	66	69	67	50	52	380	382
N	9 / -	15-25	46	64	105	122	69	-	81	61	-	46	52	65	61	77	62	51	54	350	358
S	10 / -																				
FUEL CONSUMPN TRIAL	11 / -	16-15	46	64	107	122	68	-	77	62	-	46	52	66	60	77	72	50	52	355	365
	12 / -	17-00	46	64	107	122	69	-	80	62	-	46	52	66	60	80	68	44	52	405	400
	13 / -	17-45	47	65	107	120	68	-	79	62	-	47	52	66	61	79	68	45	50	385	383
	14 / -	18-30	46	64	106	121	68	-	80	62	-	47	53	67	61	80	68	50	50	380	380

SEA TRIAL DATA.	ENGINE Nº 676.	DATE 10·1·62.

ELECTRICAL LOADS.

READING MILES	TIME.	VOLTS.	AMPERES																
			Nº. 1 GENR.	Nº. 2 GENR.	Nº. 3 GENR.	S.W. PUMP Nº 1	S.W. PUMP Nº 2	P.C. PUMP	L.O. PUMP	FUEL VALVE COOLG. PUMP	FUEL BOOSTER PUMP	AUXY CIRC. PUMP	SANITY PUMP	F.W. PUMP	VENT FANS	GENR SERV PUMP	FIRE & BILGE PUMP	AIR COMP
1 / 1	11-00	220	620	600			95	56	105	Nº 2 13	12·5	21·5		56	10 / 10	70	62	–
2 / 1	11-30	220	550	580			95	57	105	13	12·5	21·5		57	10 / 10	70	–	–
3 / 2	12-10	220	640	580			95	56	105	13	12·5	21·5		56	10 / 9	70	–	–
4 / 2	12-40	220	770	710			96	56	100	13·5	12·5	21·5		56	10·5 / 9·5	70	65	–
5 / 3	13-18	216	650	600			100	56	100	13·5	12·5	21·5		56	10·5 / 9·5	70	66	–
6 / 3	13-50	220	560	570			100	56	100	13·5	12·5	22		56	10·5 / 9·0	–	–	–
7 / 4	14-20	220	660	600			115	57	95	13·5	12·5	22		57	10·5 / 9·0	–	–	–
8 / 4	15-00	220	540	550			117	57	95	13·5	12·5	21·5		57	10·5 / 9·0	–	–	AIR COMPR ON.
9 / -	15-25	220	650	500			118	57	95	13·5	12·5	22		57	10·5 / 9·0	–	–	–
10 / -																		
																	BALL & FIRE PP.	
11 / -	16-15	220	740	700			140	57	95	13	12·5	21·5		57	10·5 / 9·0	45	40	2 AIR COMPRS ON.
12 / -	17-00	220	690	625			140	57	95	13·5	12·5	22		57	10·5 / 9·0	47	–	–
13 / -	17-45	220	650	600			138	56	94	13·5	12·5	22		57	10·5 / 9·0	47	–	–
14 / -	18-30	220	600	570			138	57	94	13	12·5	22		57	10·5 / 9·0	45	–	–

SEA TRIAL DATA.	ENGINE Nº 676	DATE 9-1-62.	SHEET 9

MANOEUVRING TRIALS

TIME :- 14-29.

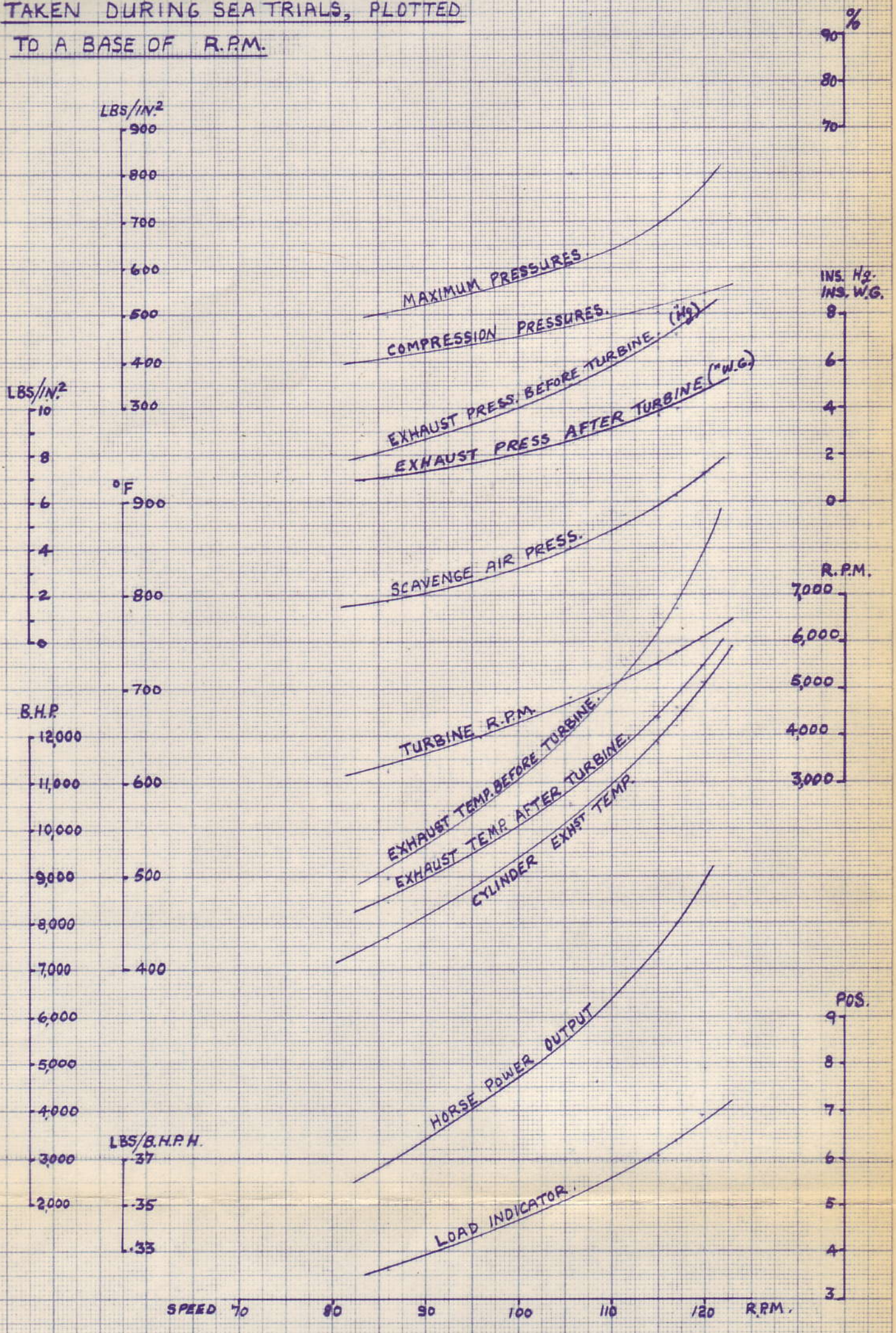
ASTERN TRIALS.

TIME :-

STOP & START TRIALS.

	AHEAD / ASTERN.			ASTERN / AHEAD.			AIR RECEIVER. CAPACITY :-		AIR RECEIVER CAPACITY :-	
	R.P.M.	MINS.	SECS.	R.P.M.	MINS.	SECS.	STARTS AHEAD.	AIR PRESS.	STARTS AHEAD.	AIR PRESS.
TELEGRAPH ORDER	80	0	0	80	0	0	-	-	-	-
TIME TO REDUCE TO	50	0	3	50	0	10	"CONDUCTED DURING DOCK TRIAL,			
SHAFT STOPPED TURNING.	-	0	11	-	0	14	NO RECORDS		WERE TAKEN"	
SHAFT TURNING AHEAD / ASTERN.		0	11½		0	14½				
TIME TO REACH.	50	0	16	50	0	20				
" " "	60	0	25	60	0	25				
" " "	70	1	30	70	0	40				
" " " FULL AHEAD / ASTERN.	100	3	0	80	1	5				
TIME TAKEN TO STOP (FROM BRIDGE)	-	1	20	-	0	38				
" " FOR SHIP TO GO FULL AHEAD / ASTERN	-	3	45	-	2	0				

GRAPH OF AVERAGE PRINCIPLE READINGS TAKEN DURING SEA TRIALS, PLOTTED TO A BASE OF R.P.M.



GRAPH OF AVERAGE PRINCIPLE READINGS TAKEN DURING SEA TRIALS PLOTTED TO A BASE OF B.M.E.P.