

3 Decks.

## IRON OR STEEL STEAMER.

WED. FEB 6 1907

Received at London Office

State of Report is also sent on the Machinery of the Vessel

Date of completion of report 5th Feb 1907

Port of Newcastle

No. 52309

Survey held at Newcastle

Date, First Survey 31st May 1906

Last Survey 2nd February 1907

On the Twin Screw Steamer "Arawa"

Rig Schooner

TONNAGE under 6654.82

Tonnage Deck... 1963.32

Do. between Tonnage Dk. and 3rd and 4th Dk. 8618.14

Total under Upper Dk. 1963.32

Do. of Poop 44.40

Do. of Bridge House 709.42

Do. of Forecastle 44.40

Do. of Houses on Dk. 709.42

Do. of excess of Hatchways 44.40

Do. above Crown of Engine Room 44.40

Gross Tonnage 9371.96

Less Crew Space 323.43

Less above Crown of Engine Room 44.40

TONNAGE FOR FEES 9048.53

Less Engine Room 2999.03

Less Navigation Spaces 64.72

Register Tonnage 5984.78

as out on Beam 5984.78

THREE DECKED VESSEL.

CLASS 100 A1

Half Breadth (moulded) 29.87

Depth from upper part of Keel to top of Upper Deck Beams 35.25

Girth of Main Midship Frame (as per Rule) 60.54

deduct 7 feet 7

1st Number 118.66

Length on deck from after part of stem to fore part of stern post 457.92

2nd Number 54.337

Proportions—Breadth to Length 7.6

Depth to Length—Upper Deck to top of Keel 12.9

Main Deck ditto 18.6

Destined Voyage

If Surveyed while Building, Afloat, or in Dry Dock Building

LENGTH on Deck	BREADTH	DEPTH, ACTUAL	No. of Decks with flat laid
as per Rule 457 11	Moulded 59 9	Top of Floors to top of Upper Dk. Beams 31 2	3
		do. do. Main Dk. Beams 19 8	3

Dimensions of Ship per Register, Length 460 breadth 60.05 depth 31.0 Moulded depth, ft. 34 ins. 1 To Upper Dk. Round of Upper Dk. Beam, Actual 14 ins.

FRAMING.	Inches in Ship.	Inches in Ship.	10ths or 20ths in Ship.	Inches per Rule Or as Approved.	10ths or 20ths in Ship.	Inches per Rule Or as Approved.	FORGINGS or CASTINGS.	Inches in Ship.	Inches per Rule Or as Approved.
FRAME, Angles, or 7, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70, 72, 74, 76, 78, 80, 82, 84, 86, 88, 90, 92, 94, 96, 98, 100, 102, 104, 106, 108, 110, 112, 114, 116, 118, 120, 122, 124, 126, 128, 130, 132, 134, 136, 138, 140, 142, 144, 146, 148, 150, 152, 154, 156, 158, 160, 162, 164, 166, 168, 170, 172, 174, 176, 178, 180, 182, 184, 186, 188, 190, 192, 194, 196, 198, 200, 202, 204, 206, 208, 210, 212, 214, 216, 218, 220, 222, 224, 226, 228, 230, 232, 234, 236, 238, 240, 242, 244, 246, 248, 250, 252, 254, 256, 258, 260, 262, 264, 266, 268, 270, 272, 274, 276, 278, 280, 282, 284, 286, 288, 290, 292, 294, 296, 298, 300, 302, 304, 306, 308, 310, 312, 314, 316, 318, 320, 322, 324, 326, 328, 330, 332, 334, 336, 338, 340, 342, 344, 346, 348, 350, 352, 354, 356, 358, 360, 362, 364, 366, 368, 370, 372, 374, 376, 378, 380, 382, 384, 386, 388, 390, 392, 394, 396, 398, 400, 402, 404, 406, 408, 410, 412, 414, 416, 418, 420, 422, 424, 426, 428, 430, 432, 434, 436, 438, 440, 442, 444, 446, 448, 450, 452, 454, 456, 458, 460, 462, 464, 466, 468, 470, 472, 474, 476, 478, 480, 482, 484, 486, 488, 490, 492, 494, 496, 498, 500, 502, 504, 506, 508, 510, 512, 514, 516, 518, 520, 522, 524, 526, 528, 530, 532, 534, 536, 538, 540, 542, 544, 546, 548, 550, 552, 554, 556, 558, 560, 562, 564, 566, 568, 570, 572, 574, 576, 578, 580, 582, 584, 586, 588, 590, 592, 594, 596, 598, 600, 602, 604, 606, 608, 610, 612, 614, 616, 618, 620, 622, 624, 626, 628, 630, 632, 634, 636, 638, 640, 642, 644, 646, 648, 650, 652, 654, 656, 658, 660, 662, 664, 666, 668, 670, 672, 674, 676, 678, 680, 682, 684, 686, 688, 690, 692, 694, 696, 698, 700, 702, 704, 706, 708, 710, 712, 714, 716, 718, 720, 722, 724, 726, 728, 730, 732, 734, 736, 738, 740, 742, 744, 746, 748, 750, 752, 754, 756, 758, 760, 762, 764, 766, 768, 770, 772, 774, 776, 778, 780, 782, 784, 786, 788, 790, 792, 794, 796, 798, 800, 802, 804, 806, 808, 810, 812, 814, 816, 818, 820, 822, 824, 826, 828, 830, 832, 834, 836, 838, 840, 842, 844, 846, 848, 850, 852, 854, 856, 858, 860, 862, 864, 866, 868, 870, 872, 874, 876, 878, 880, 882, 884, 886, 888, 890, 892, 894, 896, 898, 900, 902, 904, 906, 908, 910, 912, 914, 916, 918, 920, 922, 924, 926, 928, 930, 932, 934, 936, 938, 940, 942, 944, 946, 948, 950, 952, 954, 956, 958, 960, 962, 964, 966, 968, 970, 972, 974, 976, 978, 980, 982, 984, 986, 988, 990, 992, 994, 996, 998, 1000							KEEL, Bar or Side Plates, depth and thickness		
Do. for 1/2 at each end							STEM, moulding and thickness		
Do. in way of Double Bottoms at Solid Floors							STERN-POST for Rudder do. do.		
Spacing of Frames from centre to centre							for Propeller		
REVERSED FRAME, Angles							MAIN PIECE of Rudder, diameter at head		
DEEP FRAMING, depth of girder							do. at heel		
FLOORS, depth and thickness of Floor Plate at mid-line for 1/2 length amidships							RUDDER, how constructed		
in way of Engines and Boilers							Can the Rudder be unshipped afloat?		
thickness at the ends of vessel									
depth at 1/2 the half breadth, as per Rule							KEELSONS & STRINGERS.		
height extended at the Bilges							CENTRE LINE KEELSON, Vertical Plate above floors, Through Plate, or Intercoastal Plate		
FLOORS & BRACKETS in Cell Dble Bottoms							Rider Plate		
state if flanged (top & bottom)							Bulb Plate to Intercoastal Keelson		
Spacing							Horizontal Plates on Floors		
CENTRE GIRDER, in Double bottom, depth and thickness							Angles		
Angles, Top							SIDE KEELSON, Angles		
Bottom							Bulb or Plate above floors, for		
SIDE GIRDERS, number on each side & thickness							Intercoastal Plate, for		
state if flanged (top and bottom)							Attached to outside Plating with Angle		
Angles							BILGE KEELSON, Angles		
MARGIN PLATE, depth (exclusive of flange) and thickness							Bulb or Plate above floors, for		
Angles to Outside Plating							Intercoastal Plate for		
Floors							Attached to outside Plating with Angle		
Height of Floors at the Bilges							BILGE STRINGER Angles		
INNER BOTTOM PLATING, breadth and thickness of Middle Line Strake							Bulb Plate for		
in Engine and Boiler space							Intercoastal Plate for		
Remainder in Holds							Attached to outside Plating with Angle		
BEAMS, Upper Deck, Single Angle, Bulb, Angle, Plate or Tee Bulb							SIDE STRINGER Angles		
Angles on upper edge							Bulb or Intercoastal Plate, for		
Spacing							Attached to outside plating with Angle		
BEAMS, Middle Deck, Single Angle, Bulb, Angle, Plate or Tee Bulb							Upper Deck Stringer Plates, br'dth & thickness		
Angles on upper edge							Angle on ditto		
Spacing							Tie Plates, outside Hatchways		
BEAMS, Lower Deck, Single Angle, Bulb, Angle, Plate or Tee Bulb							Deck, * Iron or Steel, for		
Angles on upper edge							Wood Deck. Material & thickness		
Spacing							Middle Deck Stringer Plate, br'dth & thickness		
BEAMS, Hold, or Orlop, Plate or Tee Bulb							Angles on ditto, No. 2		
Angles on upper edge							Tie Plates outside Hatchways		
Spacing							Diagonal Tie Plates, No. of pairs		
BEAMS, Poop Deck, Angle, Bulb Angle, Plate or Tee Bulb							Deck, * Iron or Steel, for		
Angles on upper edge							Wood Deck. Material & thickness		
Spacing							Lower Deck Stringer Plate, br'dth & thickness		
BEAMS, Bridge Deck, Angle, Bulb Angle, Plate or Tee Bulb							Angles on ditto, No.		
Angles on upper edge							Tie Plates, outside Hatchways		
Spacing							Deck, * Material and thickness		
BEAMS, Forecastle Deck, Angle, Bulb Angle, Plate or Tee Bulb							Hold, or Orlop Stringer Plate, br'dth & thckn's		
Angles on upper edge							Angles on ditto, No.		
Spacing							Tie Plates outside Hatchways		
PILLARS, In 'tween Deck, size and spacing							Deck. Material and thickness		
Hold							Poop Deck Stringer Plate, breadth & thickness		
Quarter 'tween Dks., in Hold							Angle on ditto		
in Hold							Tie Plates		
WEB-FRAMES, In Fore Body, No. and spacing							Deck. Material and thickness		
br'dth. & thickness							Bridge Deck Stringer Plate, br'dth & thickness		
No. of Side Stringers							Angle on ditto		
WEB-FRAMES, In E. & B. Space, No. & spacing							Tie Plates		
br'dth. & thickness							Deck. Material and thickness		
WEB-FRAMES, In After Body, No. and spacing							Forecastle Deck Stringer Plate, b'dth & th'kns		
br'dth. & thickness							Angle on ditto		
No. of Side Stringers							Tie Plates		
Size of Angles or Tee Bars to Web-Frames							Deck. Material and thickness		
BRACKET PLATES to Stringers between Web Frames, depth and thickness									

Form No. 1B. 250, 6, 5

008863-008870-0030 1/2



PLATING.										RIVETING.									
STRAKES.	AS IN SHIP.						PER RULE OR AS APPROVED.		EDGES.				BUTTS.						
	AMIDSHIP.		FORWARD.		AFT.		AMIDSHIP.		Single or Double.	Breadth of Lap.	RIVETS.		Double or Treble and for what Length.	RIVETS.		STRAPS.		IF LAPPED.	
	Breadth.	Thickness.	Thickness.	Thickness.	Breadth.	Thickness.	Diam.	Spacing or. to or.			Diam.	Spacing or. to or.		Breadth.	Thickness.	Breadth.	For what Length.		
FLAT PLATE KEEL..... (If Bar Keel, state Riveting.)	48	22	15	15	48	22			Double	6 3/4	1 1/2	4 1/2	treble	1 1/2	4	2 1/2	15 1/4		
GARBOARD OR A Strake...	72	15	14	14		15			"	"	"	"	Quad 1/2	1	4			14	free
State actual thickness in way of Double Bottom.	B		14	10	10		13		"	"	"	"							
C		14	9	9		12			"	"	"	"							
D		14	10	10		13			"	"	"	"							
E		14	11	11		14			"	"	"	"							
F		15	12	12		15			"	"	"	"							
G		14	11	11		14			"	"	"	"							
H		14	11	11		11			"	"	"	"							
J		13	10	10		12			"	"	"	"							
K		14	11	11		14			"	"	"	"							
L		13	10	10		13			"	6 3/4	1 1/2	4 1/2							
M. Sheer	M	60	15	13	13	46	16		"	"	"	"							
Sholten	N		15	9	9		13		"	"	"	"							
Dk. Sheer	O	50	18	9	9	42	16		"	"	"	"		1 1/2	4 1/2			16	
P																			
Q																			
R																			
S																			
DOUBLING of Flat Plate Keel																			
Length of Bilges																			
and of Sheerstrakes																			
thickness of Strake below																			
POOP SIDES																			
BRIDGE SIDES																			
FORECASTLE SIDES		9/20																	

Manufacturer's name or trade mark of the Iron or Steel (state process of manufacture of Steel) used for Frames, Floors, Beams, Keelsons, Tie and Stringer Plates, Plating, &c. ? Siemens-Martin

J. Spencer & Sons. Consett Iron Co. Palmers S & C

Lanarkshire Steel Co. South Durham S & C

Guest Keen & Nettlefold & Co

Has the Steel been tested as required by the Rules? yes

Upper Deck Butts, treble riveted for free length amidship.  
Stringer Plate Straps, single, double or overlapped for free length amidship.  
Middle Deck Butts, treble riveted for free length amidship.  
Stringer Plate Straps, single, double or overlapped for free length amidship.  
Butts of Bilge & Side Stringers and Tie Plates, treble or double riveted? treble  
Inner Bottom Plating, riveting of Edges Double Butts treble & double  
Centre Girder Butts, Quad riveted Keelson Butts, treble riveted.  
Frames, riveted through Plates with 1" in. Rivets, about 7 apart.  
Rivets, state whether Iron or Steel Iron

FRAMES extend in one length from Keel to luncheon thence to gunwale State if ordinary or joggled Ordinary  
REVERSED FRAMES on floors and frames extend from in 2 room only State if ordinary or joggled Joggled

#### MASTS, SPARS, &c.

	Material.	Total Length.	DIAMETER AND THICKNESS.				No. of Plates in round.	ANGLES.		RIVETING.		
			At Partners.	Heel.	Hounds.	Head.		Number.	Size.	Seams.	Butts.	
LOWER MASTS.....	Fore <i>Pole</i> .....	<i>Steel</i>	<i>105 ft</i>	<i>26 1/2 x 9/20</i>	<i>25 x 7/10</i>	<i>21 1/2 x 7/10</i>	<i>9 x 9/16</i>	<i>2</i>	<i>✓</i>	<i>✓</i>	<i>Single</i>	<i>Treble</i>
	Main .....	"	<i>108</i>	"	"	"	"	<i>✓</i>	<i>✓</i>	"	"	"
	Mizen .....	"	"	"	"	"	"	"	"	"	"	"
Bowsprit	✓											

Bowsprit

Topmasts, Yards and Remainder of Spars PPms

Rigging, Material and Size, Shrouds 5 1/2 g.s. wire

Sails. none Suit of ✓ Stays 5 1/2 g.s. wire

Sails, and the following spare sails

#### EQUIPMENT No. 66907 LETTER e t ANCHORS.

Number of Certificate.	Anchors.	WEIGHT, EX. STOCK.			WEIGHT OF STOCK.			TEST, PER CERTIFICATE.			WEIGHT REQUIRED BY TABLE 22.			Description of Anchor.	Makers.	Where and when tested and Superintendent.	
		Cwts.	qrs.	lbs.	Cwts.	qrs.	lbs.	Tons.	cwts.	qrs.	lbs.	Cwts.	qrs.				lbs.
58614	1st Bower ...	103	3	8	-	-	-	68	15	0	0	85	2	0	Halls' Stockless	Huyler & Sons	htn 19/1/07 <u>gun</u>
58616	2nd „ ...	103	1	5	-	-	-	“	“	“	“	85	2	0	do.	do	“ „ “
58569	3rd „ ...	89	2	0	-	-	-	63	5	0	0	73	2	0	do.	do	“ 10/1/07 “
	4th „ ...																
	Collective weight	296	2	13								244	2	0			
6244	Stream .....	25	1	7	6	1	7	25	0	0	0	25	0	0	Rodgers	Sykes & Sons	Cff 18/9/06 Penn
6245	Kedge.....	12	0	21	3	0	7	14	0	0	0	12	0	0		do	do. do. do.

If Patent state Name of Patentee.

If Stockless, state Mechanical Tests.

#### CHAIN CABLES.

Number of Certificate.	Length and size supplied.		Test per Certificate.		WEIGHT OF CHAIN CABLE.		Length and Size per Table 22.		Description.	Makers of Cables.	Where and when tested, and Superintendent.	Material.	Length and Size supplied.		Breaking Test of Steel Wire Towline.	Length and Size per Table 22.		
	Length.	Diam.	Statu- tory.	Break- ing.	Supplied.	Per Table 22.	Length.	Diam.					Length.	Cir.		Length.	Cir.	
6097	Fathoms.	Ins.	Tons.	Tons.	Cwts. qrs. lbs.	Cwts. qrs. lbs.	Fathoms.	Ins.					Fathoms.	Ins.	Tons.	Fathoms.	Ins.	
6098	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
					496.0.21													
					991.1.27													
Iron Stream Chain or Steel Wire	120	5 1/4	✓	70	✓	✓	120	5 1/4		Burks mrs								

#### HAWSERS AND WARPS

Number of Certificate.	Length and size supplied.		Test per Certificate.		WEIGHT OF CHAIN CABLE.		Length and Size per Table 22.		Description.	Makers of Cables.	Where and when tested, and Superintendent.	Material.	Length and Size supplied.		Breaking Test of Steel Wire Towline.	Length and Size per Table 22.	
	Length.	Diam.	Statu- tory.	Break- ing.	Supplied.	Per Table 22.	Length.	Diam.					Length.	Cir.		Length.	Cir.
6097	Fathoms.	Ins.	Tons.	Tons.	Cwts. qrs. lbs.	Cwts. qrs. lbs.	Fathoms.	Ins.	Stud	Sylkes & Son	Cff 31/8/06 Penn	TOWLINE	Fathoms.	Ins.	Tons.	Fathoms.	Ins.
6098	"	"	"	"	"	"	"	"					"	"	"	"	"
					496-0-21					do	do do do	HAWSERS&WARPS	360	3 1/2	26	200	2 3/4
					991-1-27												
Iron Stream Chain or Steel Wire	120	5 1/4	✓	70	✓	✓	120	5 1/4		Smith, mrs			1250	3 1/2	30	200	2 3/4
													2080	2 1/2	18 1/2		

Boats 12 Boats

Pumps, Number 2 Downton

Windlass is by Wilson & Co.

Diameter of Barrel 5" State whether they are in efficient working order yes

Capstan

Engine Room Skylights.—How constructed? Steel plates

What arrangements for deadlights in bad weather? Steel flaps

Coal Bunker Openings.—How constructed? Flush scuttles

How are lids secured? Bayonette joints

Height above deck? ✓

Number of Scuppers, and numbers and dimensions of Freeing Ports, &c. 9 scuppers each side

Ceiling in Holds, thickness and material 2 1/2 pine

Cargo Battens, thickness and material 2" pine

Cargo Hatchways.—How formed? Steel cramping

Hatches, If strong and efficient? yes

State size No. 1 Hatch (Forward) 17-4 x 16-6

No. 2 Hatch 21-8 x 16-6

No. 3 Hatch 17-4 x 16-6

No. 4 Hatches 13-0 x 16-6

Number of Web Plates, Shifting Beams and Fore and Afters to each Hatch 3 web in No. 1 & 2 4 web in No. 3 2 web in No. 4 & 5

No. of Breasthooks 6

No. of Crutches Deep floor

Bulwarks, height above deck and description Open rail

Main Rail, material and size ✓

The above is a correct description.

Builder's Signature (here only)

SWAN, HUNTER, & WISHAM RICHARDSON, LTD.

Surveyor's Signature

Surveyor to Lloyd's Register of British and Foreign Shipping.



Correspondence.—State dates and initials of letters respecting this case (Reference should be made to any correspondence connected with the case)

9.10.23 Apr 1906 3.8.11.18.17.23 May 1906 1.9.12.16.15.19.20 June 1906 12.17 July 1906 20 Aug/06 1. Oct/06

Workmanship. Are the butts of plating planed or otherwise fitted? Overlapped

Is the riveted work properly closed? Yes

Are the liners between the frames and plates solid single pieces? Yes

Do the holes for riveting plate to frames, butt straps, or plate

to plate, &c., conform well to each other? Yes

Are the rivet holes well and sufficiently countersunk in the plate and punched

from the faying surfaces? Yes

Do any rivets break into or through the seams or butts of the plating? No

Are the butts of Plating, Stringers, &c., properly shifted and strapped? Yes

Have all the upper and weather decks been tested as required by the Rules (Sec. 23, par. 24)? Yes

State results of tests

Have all the gutterways been tested as required by the Rules (Sec. 23, par. 25)? Yes

State results of tests

General Remarks (State quality of workmanship, &c.)

This vessel has been built in accordance with the approved plans, the Secretary's letters of the above dates & in other respects in conformity with the Society's rules. The material & workmanship are good throughout. The scantlings of shell & deck are increased beyond the rule requirements.

The following spaces are insulated for carrying frozen meat:—  
Nos 1, 2 & 3 holds, Nos 1 & 2 lower tween decks & No 2 upper tween deck.

The shelter-deck tween deck is enclosed & measured in the tonnage & is given up in great part to passenger accommodation.

The Surveyor should state the Number of Report and Name of any Sister Vessel.

PARTICULARS FOR RECORD in the REGISTER BOOK.—Length of Poop ☒ ft., R.Q.D. or Break ☒ ft., Bridge Dk. ☒ ft., F'castle 48 ft. (in feet and tenths). When the Poop is joined to the B.D., this should be distinctly stated ☒

No. and Material of Decks (if Iron or Steel) and whether wholly or partially covered with wood, and No. of tiers of Beams (this information is to be given as it should appear in the Register Book) 2 Pls (stl. U.S.) & shelter Pl (stl. ws) & deep framing

Official No. 124461; Signal Letters H K B L

State if Machinery is fitted aft No

How are the surfaces preserved from oxidation? Inside Paint & Cement

Outside Paint

PARTICULARS OF WATER BALLAST.—State whether the Double bottom is constructed on the cellular system or with girders on floors Cellular

Where Fitted.	*Length. Feet.	Water Capacity. Tons.	Where Fitted.	*Length. Feet.	Water Capacity. Tons.
Double bottom, aft,	91	197	Fore peak tank,	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Double bottom, under Engines and Boilers,	82	382	After peak tank,	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Double bottom, if under Engines only,	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Deep tank, aft,	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Double bottom, if under Boilers only,	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Deep tank, forward,	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Double bottom, forward,	231	868	Other tanks, if fitted,	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Total capacity	1447		(If necessary, furnish further information by sketch.)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

\* The wells are not to be included in the lengths of the tanks.

State whether the above have been tested as required by the Rules Yes

Order for Special Survey No. 3854

Date 21.6.06

No. 783 in builder's yard.

DATES of Surveys held while building

1906 May 31 June 1.6.11.13.19 July 3.5.9.11.24 Aug 29 20.24 Sep 12.18.19 21.24.26.29 Oct 14.9.16.17.19 22.29.30 Nov 2.6.7.12.14.20.24.28 Dec 7.1907 Jan 1.5.22.23.24.26.29 Feb 2

Total No. of Visits 48

The amount of Entry Fee ..... £ 5 : : : : : 6 FEB 1907

Special Survey Fee.... £ 251 : 4 : 6

Travelling Expenses, if any £ : : : : :

Fees applied for,

Received by me,

12.2.1907

Certificate to be sent to

Newcastle-on-Tyne.

State whether the Vessel has been built under Special Survey Yes

I am of opinion this Vessel should be Classed 100 A 1 "Shelter Deck"

With, or without Freeboard, as condition of Class With freeboard

A Campbell Holmes

Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute

Character assigned

FRI. FEB 8 1907

100 A 1  
shelter dk with fbd 5.5: 2"

Lloyd's Reg. P.

+ Lmb 2.07  
elec. lgt  
Ref. mach



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Lloyd's Register  
Foundation

3  
13/2/07

0030 2/2