

Steel IRON SHIP.

5428

No. 5428 Survey held at Dumbarton Date, First Survey 14 May 1880. Last Survey 6 July 1881
On the S.S. Lydian Monarch 4 masts. Master Constable

Official Number
TONNAGE under Tonnage Deck 2855.10
Ditto of Third, Spar, or Awaiting Deck 1020.20
Ditto of Poop, or Raised Or. Dk. 38.40
Ditto of Houses on Deck 3915.70
Gross Tonnage 116.37
Less Crew Space 3799.33
Less Engine Room 1253.02
Register Tonnage as cut on Beam 2546.31

ONE, OR TWO DECKED, THREE DECKED VESSEL.
WITH ~~SHIELD DECK~~ DECKED VESSEL.
HALF BREADTH (moulded) 21.25 Feet.
DEPTH from upper part of Keel to top of Upper Deck Beams 28.25
GIRTH of Half Midship Frame (as per Rule) 45.12
1st NUMBER 94.62
1st NUMBER, if a 3-DECKED VESSEL, deduct 7 feet 7.00
LENGTH 87.62
2nd NUMBER 314.11
PROPORTIONS—Breathths to Length 8.43
Depths to Length—Upper Deck to Keel 12.69
Main Deck ditto 17.70

Built at Dumbarton
When built 1880/81 Launched 2 May 1881
By whom built A. McMillan & Sons
Owners Royal Exchange Ship Co. (Ld.)
Port belonging to London
Destined Voyage uncertain
If Surveyed while Building, Afloat, or in Dry Dock. While Building, afloat & in Dry Dock.

LENGTH on deck as per Rule	BREADTH Moulded	DEPTH top of Floors to Upper Deck Beams	DEPTH Do. do. Main Deck Beams	Power of Engines	Horse	No. of Decks with flat laid	No. of Tiers of Beams
358 6	42 6	25 0	32 6	500	500	4 including shade str.	4 including shade str.
Dimensions of Ship per Register, length, 360 breadth, 43.0 depth, 24.85							
side Bars vertical plate 51 x 9/16 steel							
KEEL, depth and thickness	Iron 12 x 1 1/32	Iron 12 x 1 1/32	Iron 12 x 2 3/4	Iron 12 x 5 1/2			
STEM, moulding and thickness	Iron 12 x 2 3/4	Iron 12 x 2 3/4	Iron 12 x 5 1/2				
STERN-POST for Rudder do. do.	Iron 12 x 5 1/2	Iron 12 x 5 1/2	Iron 11 5/8 x 5 7/8	Iron 12 x 5 1/2			
" " for Propeller	Iron 11 5/8 x 5 7/8	Iron 11 5/8 x 5 7/8	Iron 12 x 5 1/2				
Distance of Frames from moulding edge to moulding edge, all fore and aft	24 ins	24 ins	24 ins	24 ins	24 ins	24 ins	24 ins
FRAMES, Angle Iron, for 2/3 length amidships							
Do. for 1/3 at each end	Steel 5 1/2 3 1/2 13	Steel 5 1/2 3 1/2 11	Steel 5 1/2 3 1/2 13	Steel 5 1/2 3 1/2 11	Steel 5 1/2 3 1/2 13	Steel 5 1/2 3 1/2 11	Steel 5 1/2 3 1/2 13
REVERSED FRAMES, Angle Iron	Steel 3 1/2 3 1/2 13	Steel 3 1/2 3 1/2 13	Steel 3 1/2 3 1/2 13	Steel 3 1/2 3 1/2 13	Steel 3 1/2 3 1/2 13	Steel 3 1/2 3 1/2 13	Steel 3 1/2 3 1/2 13
FLOORS, depth and thickness of Floor Plate at mid line for half length amidships	Bracket plate as approved	Bracket plate as approved	Bracket plate as approved	Bracket plate as approved	Bracket plate as approved	Bracket plate as approved	Bracket plate as approved
thickness at the ends of vessel	as per app. sketch	as per app. sketch	as per app. sketch	as per app. sketch	as per app. sketch	as per app. sketch	as per app. sketch
depth at 1/4 the half-bdth. as per Rule	as per app. sketch	as per app. sketch	as per app. sketch	as per app. sketch	as per app. sketch	as per app. sketch	as per app. sketch
height extended at the Bilges	as per app. sketch	as per app. sketch	as per app. sketch	as per app. sketch	as per app. sketch	as per app. sketch	as per app. sketch
BEAMS, Upper, Spar, or Awaiting Deck	8 13 8 13	8 13 8 13	8 13 8 13	8 13 8 13	8 13 8 13	8 13 8 13	8 13 8 13
Single or double Angle Iron on Upper edge	3 1/2 3 12 3 1/2 3 12	3 1/2 3 12 3 1/2 3 12	3 1/2 3 12 3 1/2 3 12	3 1/2 3 12 3 1/2 3 12	3 1/2 3 12 3 1/2 3 12	3 1/2 3 12 3 1/2 3 12	3 1/2 3 12 3 1/2 3 12
Average space	5 3 13 5 3 13	5 3 13 5 3 13	5 3 13 5 3 13	5 3 13 5 3 13	5 3 13 5 3 13	5 3 13 5 3 13	5 3 13 5 3 13
BEAMS, Main, or Middle Deck	48 ins 15 48 ins 15	48 ins 15 48 ins 15	48 ins 15 48 ins 15	48 ins 15 48 ins 15	48 ins 15 48 ins 15	48 ins 15 48 ins 15	48 ins 15 48 ins 15
Single or double Angle Iron on Upper Edge	9 3 14 9 3 14	9 3 14 9 3 14	9 3 14 9 3 14	9 3 14 9 3 14	9 3 14 9 3 14	9 3 14 9 3 14	9 3 14 9 3 14
Average space	6 3 15 6 3 15	6 3 15 6 3 15	6 3 15 6 3 15	6 3 15 6 3 15	6 3 15 6 3 15	6 3 15 6 3 15	6 3 15 6 3 15
BEAMS, Lower Deck	48 ins 18 48 ins 18	48 ins 18 48 ins 18	48 ins 18 48 ins 18	48 ins 18 48 ins 18	48 ins 18 48 ins 18	48 ins 18 48 ins 18	48 ins 18 48 ins 18
Single or double Angle Iron on Upper Edge	4 3 14 4 3 14	4 3 14 4 3 14	4 3 14 4 3 14	4 3 14 4 3 14	4 3 14 4 3 14	4 3 14 4 3 14	4 3 14 4 3 14
Average space	4 8 ins 4 8 ins	4 8 ins 4 8 ins	4 8 ins 4 8 ins	4 8 ins 4 8 ins	4 8 ins 4 8 ins	4 8 ins 4 8 ins	4 8 ins 4 8 ins
KEELSONS Centre line, single or double plate	51 18 51 18	51 18 51 18	51 18 51 18	51 18 51 18	51 18 51 18	51 18 51 18	51 18 51 18
" Rider Plate	36 18 36 18	36 18 36 18	36 18 36 18	36 18 36 18	36 18 36 18	36 18 36 18	36 18 36 18
" Bulb Plate to Intercoastal Keelson	4 4 16 4 4 16	4 4 16 4 4 16	4 4 16 4 4 16	4 4 16 4 4 16	4 4 16 4 4 16	4 4 16 4 4 16	4 4 16 4 4 16
" Angle Irons	4 4 16 4 4 16	4 4 16 4 4 16	4 4 16 4 4 16	4 4 16 4 4 16	4 4 16 4 4 16	4 4 16 4 4 16	4 4 16 4 4 16
" Double Angle Iron Side Keelson	3 1/2 3 1/2 13 3 1/2 3 1/2 13	3 1/2 3 1/2 13 3 1/2 3 1/2 13	3 1/2 3 1/2 13 3 1/2 3 1/2 13	3 1/2 3 1/2 13 3 1/2 3 1/2 13	3 1/2 3 1/2 13 3 1/2 3 1/2 13	3 1/2 3 1/2 13 3 1/2 3 1/2 13	3 1/2 3 1/2 13 3 1/2 3 1/2 13
" Attached to outside plating with angle	3 1/2 3 1/2 13 3 1/2 3 1/2 13	3 1/2 3 1/2 13 3 1/2 3 1/2 13	3 1/2 3 1/2 13 3 1/2 3 1/2 13	3 1/2 3 1/2 13 3 1/2 3 1/2 13	3 1/2 3 1/2 13 3 1/2 3 1/2 13	3 1/2 3 1/2 13 3 1/2 3 1/2 13	3 1/2 3 1/2 13 3 1/2 3 1/2 13
BILGE Angle	3 1/2 3 1/2 13 3 1/2 3 1/2 13	3 1/2 3 1/2 13 3 1/2 3 1/2 13	3 1/2 3 1/2 13 3 1/2 3 1/2 13	3 1/2 3 1/2 13 3 1/2 3 1/2 13	3 1/2 3 1/2 13 3 1/2 3 1/2 13	3 1/2 3 1/2 13 3 1/2 3 1/2 13	3 1/2 3 1/2 13 3 1/2 3 1/2 13
" do. Bulb Iron	3 1/2 3 1/2 13 3 1/2 3 1/2 13	3 1/2 3 1/2 13 3 1/2 3 1/2 13	3 1/2 3 1/2 13 3 1/2 3 1/2 13	3 1/2 3 1/2 13 3 1/2 3 1/2 13	3 1/2 3 1/2 13 3 1/2 3 1/2 13	3 1/2 3 1/2 13 3 1/2 3 1/2 13	3 1/2 3 1/2 13 3 1/2 3 1/2 13
" do. Intercoastal plates riveted to plating for length	12 12 12 12	12 12 12 12	12 12 12 12	12 12 12 12	12 12 12 12	12 12 12 12	12 12 12 12
BILGE STRINGER Angle Irons	6 4 9 6 4 9	6 4 9 6 4 9	6 4 9 6 4 9	6 4 9 6 4 9	6 4 9 6 4 9	6 4 9 6 4 9	6 4 9 6 4 9
Intercoastal plates riveted to plating for	as approved	as approved	as approved	as approved	as approved	as approved	as approved
Bilge keel - Bulb 1 1/2 x 1/2, angle 2 1/2 x 1/2 x 1/2	as approved	as approved	as approved	as approved	as approved	as approved	as approved
SIDE STRINGER Angle Irons	as approved	as approved	as approved	as approved	as approved	as approved	as approved
Transoms, material. Knight-heads. Hawse Timbers.	Steel	Steel	Steel	Steel	Steel	Steel	Steel
Windlass Patent	Patent	Patent	Patent	Patent	Patent	Patent	Patent
Pall Bitt	Patent	Patent	Patent	Patent	Patent	Patent	Patent

The FRAMES extend in one length from Bilge to Bilge and from Bilge to Shelter Str. Riveted through plates with 7/8 in. Rivets, about 7' apart.
The REVERSED ANGLE IRONS on floors and frames extend from middle line to wing plate & alter. between girders and to main up str. alternately
KEELSONS. Are the various lengths of Plates and Angle Irons properly connected? Yes And butts properly shifted? Yes
PLATING. Garboard, double riveted to Keel, with rivets 1/8 in. diameter, averaging 5 1/2 ins. from centre to centre.
Edges of Garboards and to upper part of Bilge, worked clencher, double riveted; with rivets 7/8 in. diameter, averaging 3 1/2 ins. from centre to centre.
Butts from Keel to turn of Bilge, worked carvel, double riveted; with rivets 7/8 in. diameter averaging 3 1/2 ins. from centre to centre.
Butts of 3 Strakes at Bilge for 2/3 length, treble riveted with Butt Straps 1/16 thicker than the plates they connect.
Edges from bilge to Main Sheerstrake, worked clencher, double or single riveted; with rivets 1/8 in. diameter, averaging 4 x 3 1/2 ins. from cr. to cr.
Butts from Bilge to Main Sheerstrake, worked carvel, double riveted; with rivets 1/8 in. diameter, averaging 4 x 3 1/2 ins. from cr. to cr.
Edges of Main Sheerstrake, double or single riveted. Upper Sheerstrake, double or single riveted.
Butts of Main Sheerstrake, treble riveted for 1/2 length amidships. Butts of Upper or Spar Sheerstrake, treble riveted 1/2 length amidships.
Butts of Main Stringer Plate, treble riveted for 1/2 length amidships. Butts of Upper or Spar Stringer Plate, treble riveted for 1/2 length.
Breadth of laps of plating in double riveting 6" x 5 1/2 Breadth of laps of plating in single riveting ✓
Straps of Keelsons, Stringer and Tie Plates, treble, double or single Riveted? Treble & Double
Waterway, how secured to Beams Riveted (Explain by Sketch, if necessary.)
Beams of the various Decks, how secured to the sides? Forged knee ends No. of Breasthooks, 4 Crutches, 3
What description of Steel is used for Frames, Beams, Keelsons, Tie, and Stringer Plates, Outside Plating, &c.? "Steel C^o of Scotland", Messrs J. & J. Beadmore, "Krupp"
Manufacturer's name or trade mark, "Kallide", "Parkhead", or "Krupp" J. & J. Beadmore, "Krupp"

The above is a correct description.
Builder's Signature, A. McMillan & Sons Surveyor's Signature, J. A. Dodd
Surveyor to Lloyd's Register of British and Foreign Shipping.

542898

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

Do the edges of the carvel work and of the butts lay close together throughout their length without requiring any making good of deficiencies? *Yes*

Are the fillings between the ribs 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 facing surfaces? *Yes*

Do any rivets break into or through the seams or butts of the plating? *a few.*

Masts, Bowsprit, Yards, &c., are *of steel* in *good* condition, and sufficient in size and length. If of Iron or Steel give Scantlings of Plating, Angle Irons, &c., and further explain by a Sketch showing how the lower Masts and Bowsprit are constructed, showing the number of Plates and Angle Irons, mode of riveting, quality of Materials, and if stamped with Maker's name.

State also Length and Diameter of Lower Masts and Bowsprit *The four masts are built in accordance with the approved sketch, see Secretary's letter of the 24 Sep. 1880. The steel for these masts were tested at Messrs Krupp's Works, Essen, in accordance with the requirements of the Rules.*

N ^o .	NUMBER for EQUIPMENT	SAILS.	CABLES, &c.	Fathoms.	Inches.	Test per Certificate.	Inches per Rule.	Machine where Tested & Suprntd.	ANCHORS.	N ^o .	Weight. Ex. Stock.	Test per Certificate.	W'ght req'd per Rule.	Machine where Tested & Suprntd.
	39298			149 1/2	2 7/8	107.1	300 fms		Bower Anchors	1	40-1-0	35-10-3-0	40 cwt	Kelkerton
				150 1/2		76.5	of 2 1/8 in	Kelkerton	(State Machine where Tested, Date, or No. of Certificate, & Name of Superintendent.)	1	8-2-0		Total	Kelkerton
				14 7/8	April	1881.	90 of 3/8	signed		1	40-0-0	35-15-0-0	114 cwt	signed
				90	1 3/8	38		by	13 April	1	35-0-11	32-9-1-14		by
				15 1/2	April	1881.	90-12"	D.G.	1881.					
				120 fms	15" steel	Certified	90-12"	Lewis.	Stream	1	11-2-16	13-10-0-0	12 cwt	D.G.
				2 of 100 fms	1/2" steel	rec-	90-8"		Kedge	1	6-2-27	9-0-0-0	6	Lewis.
				90	12" Manila				Ditto	1	2-3-15	5-10-0-0	3	
				90 of 8"	10" Jarned						2-2-4			

Standing and Running Rigging *Wire & Hemp* sufficient in size and *good* in quality. She has *2* Long Boats and *4* others

The Windlass is *Paul's Patent*, *good* Capstan *good* and Rudder *good* Pumps

Engine Room Skylights.—How constructed? *Teak on Iron Coaming* How secured in ordinary weather? *By bolts*

What arrangements for deadlights in bad weather? *Deadlights hinged to skylights*

Coal Bunker Openings.—How constructed? *Cast Iron* How are lids secured? *Bayonet fixing* Height above deck? *Flush*

Scuppers, &c.—What arrangements for clearing upper deck of water, in case of shipping a sea? *Open bulwarks above shelter deck.* And there are *2* ports above main deck, fastened *oats* factory with bar & screws, and

Cargo Hatchways.—How formed? *As usual* 2 ash chotts. Also *8* scuppers above main deck with plugs fitted

State size *Main Hatches 19ft x 10ft* Forehatch *11'9" x 8' x 6ft x 8ft* Quarterhatch *8ft x 8ft* *near them in case of need.*

If of extraordinary size, state how framed and secured? *not of an extraordinary size.*

What arrangement for shifting beams? *One plate frame in main hatchways*

Hatches, if strong and efficient? *Yes*

Order for Special Survey No.	Date	Order for Ordinary Survey No.	Date	No.	in builder's yard.	DATES of SURVEYS held while building as per Section 18.
1417	28 th Feb 1880			231		1st. On the several parts of the frame, when in place, and before the plating was wrought
						2nd. On the plating during the process of riveting
						3rd. When the beams were in and fastened, and before the decks were laid....
						4th. When the ship was complete, and before the plating was finally coated or cemented..
						5th. After the ship was launched and equipped

General Remarks (State quality of workmanship, &c.) *The workmanship is good. She is built of steel and is a sister vessel to the Iron S. S. "Persian Monarch" and to the Iron S. S. "Egyptian Monarch".*

She has been built in accordance with approved tracings, and instructions contained in Secretary's letters of the 22nd Jan, 18th Mar, 23rd April, 18th May, 21st June, 6th July, 12th & 26th Aug, 24th Sep and 20th Dec. 1880.

The double bottom extends for the length of 292 ft, divided into three separate compartments with a space of frames for well to each compartment, the capacity of this double bottom (cellular) is 600 tons, and each compartment was tested with a head of water as required by the Rules.

She has a shade deck constructed as approved see sketch attached herewith, and there are inside bulwarks enclosing the hatchways, these bulwarks enclose for a space of 98ft x 20ft and aft 94 x 20. Instead of pillars in hold there is a fore & aft bulkhead 4/6 steel stiffened with double T bars 5 x 3 x 8/16, 4ft apart.

The steel has been tested as required by the Rules and the whole of the requirements of Circulars 4th 392 & 414 have been complied with, and the sheerstakes, stringers and garboard plates, together with the whole of the butt straps exceeding 8/16" in thickness have been annealed or rimed after punching.

A part of the steel was tested at the Glasgow testing machine and the other part at the manufacturer's works.

Houses on shelter deck & casing 43ft x 18ft & Chart house 11ft x 13ft 6 ins. with shelter deck all fore & aft. draught of 23ft 6 ins, as in Egyptian Monarch 292 ft.

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

I am of opinion this Vessel should be Classed **100 A.1. "2 steel dks", "3 dks Rule" & "shelter deck" "Load line 23'6".*

The amount of the Entry Fee ... £ 5 : : : is received by me, *July 1881*

Special ... £ 119 : 19 : : *7th July 1881*

Certificate ... : : : *J. J. Dodd*

(Travelling Expenses, if any, £ 9.9/6.)

Committee's Minute *Friday, July, 8th 1881.*

Character assigned *100 A.1. Speed*

The Surveyors are requested not to write on or below the space for Committee's Minute.

