

# Lloyd's Register of Shipping.

## SURVEYS FOR FREEBOARD.

Index. No. 34838  
(For London Office only.)

24 FEB 1936

Computation of Freeboard for Steamer, Sailing Ship, Tanker

having SHELTERDECK WITH TONNAGE OPENINGS AND OPEN FORECASTLE.

Port of Survey WEIERMÜNDE

(Type of Superstructures.)

Date of Survey FEBRUARY 1936

Ship's Name	Nationality and Port of Registry	Official Number	Gross Tonnage	Date of Build
<u>ETHIOPIAN</u>	<u>BRITISH LIVERPOOL</u>	<u>164279</u>	<u>5424.19</u>	<u>1936</u>

Name of Surveyor A. Holte

Moulded Dimensions: Length 400.76, Breadth 57.5, Depth 25.67,  
Moulded displacement at moulded draught = 85 per cent. of moulded depth 10420 tons  
Coefficient of fineness for use with Tables 0.725

Particulars of Classification 100 A1  
WITH FREEBOARD

Depth for Freeboard (D)	Depth correction	Round of Beam correction
Moulded depth ... .. <u>25.67</u>	(a) Where D is greater than Table depth (D-Table depth) R = <u>✓</u>	Moulded Breadth (B) <u>57.5</u>
Stringer plate ... .. <u>.03</u>	(b) Where D is less than Table depth (if allowed) (Table depth-D) R = <u>1.02</u>	Standard Round of Beam = $\frac{B \times 12}{50} = \underline{13.8}$
Sheathing on exposed deck <u>✓</u>	(26.72-25.70) <u>3.00</u>	Ship's Round of Beam = <u>13.8</u>
$T \left( \frac{L-S}{L} \right) =$	If restricted by superstructures <u>✓</u> = <u>-3.06</u>	Difference = <u>0</u>
Depth for Freeboard (D) = <u>25.70</u>		Restricted to
		Correction = $\frac{\text{Diff}}{4} \times \left( 1 - \frac{S_1}{L} \right) = \underline{\text{Nil.}}$

### DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S) FEET	Equivalent Enclosed Length (S <sub>1</sub> ) FEET	Height FEET	Height Correction	Effective Length (E) FEET
Poop enclosed ... ..	<u>28.42</u>	<u>28.42</u>	<u>12.0</u>	<u>✓</u>	<u>28.42</u>
„ overhang ... ..	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>
R.Q.D. enclosed ... ..	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>
„ overhang ... ..	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>
Bridge enclosed... ..	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>
„ overhang aft ... ..	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>
„ overhang forward ... ..	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>
„ overhang forward ... ..	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>
Trunk aft ... ..	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>
„ forward ... ..	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>
Tonnage opening aft ... ..	<u>5.0</u>	<u>2.50</u>	<u>12.0</u>	<u>✓</u>	<u>2.50</u>
„ „ forward ... ..	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>
Total ... ..	<u>400.76</u>	<u>398.26</u>			<u>398.26</u>

Standard Height of Superstructure 7'-6"  
R.Q.D. ✓  
Deduction for complete superstructure 42.00  
Percentage covered  $\frac{S}{L} = \underline{100\%}$   
 $\frac{S_1}{L} = \underline{99.38\%}$   
 $\frac{E}{L} = \underline{99.38\%}$   
Percentage from Table, Line A.  
(corrected for absence of forecastle (if required)) 99.24%  
Percentage from Table, Line B.  
(corrected for absence of forecastle (if required))  
Interpolation for bridge less than 2L (if required)  
Deduction =  $42.00 \times .9924 = \underline{-41.68}$

### AT SHELTERDECK SHEER CORRECTION.

Station	Standard Ordinate	S M	Product	Actual Ordinate INCHES	Effective Ordinate	S M	Product
A.P. ... ..	<u>50.07</u>	1	<u>50.07</u>	<u>63.78</u>	<u>117.78</u>	1	<u>117.78</u>
$\frac{1}{6}$ L from A.P. ... ..	<u>22.285</u>	4	<u>89.14</u>	<u>27.88</u>	<u>52.40</u>	4	<u>209.60</u>
$\frac{2}{6}$ L „ ... ..	<u>5.508</u>	2	<u>11.02</u>	<u>6.57</u>	<u>12.96</u>	2	<u>25.92</u>
Amidships ... ..	<u>✓</u>	4	<u>✓</u>	<u>✓</u>	<u>✓</u>	4	<u>✓</u>
$\frac{3}{6}$ L from F.P. ... ..	<u>11.016</u>	2	<u>22.03</u>	<u>13.19</u>	<u>19.94</u>	2	<u>39.88</u>
$\frac{4}{6}$ L „ ... ..	<u>44.52</u>	4	<u>178.28</u>	<u>58.03</u>	<u>80.65</u>	4	<u>322.60</u>
F.P. ... ..	<u>100.14</u>	1	<u>100.14</u>	<u>127.24</u>	<u>181.24</u>	1	<u>181.24</u>
Total ... ..			<u>450.68</u>	<u>+54"</u>			<u>899.02</u>

ACTUAL T.D HT = 12.00  
STANDARD = 7.50  
DIFFERENCE = 4.50  
Mean actual sheer aft = EXCESS  
Mean standard sheer aft = 54"  
Mean actual sheer forward = EXCESS  
Mean standard sheer forward = EXCESS  
Length of enclosed superstructure forward of amidships = ✓  
„ „ aft of „ = ✓  
} C.S.S.

Correction =  $\frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) = \frac{446.34}{18} (.75 - .50) = \underline{-6.20}$

If limited on account of midship superstructure. ✓

If limited to maximum allowance of  $1\frac{1}{2}$  ins. per 100 ft. YES 6.01"

Deduction for Tropical Freeboard.

Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck = 25.70  
Summer freeboard = 1.94  
Moulded draught (d) = 23.76

Deduction for Tropical freeboard and addition for

Winter freeboard =  $\frac{d}{4}$  inches = 5.94 = 6"

Addition for Winter North Atlantic Freeboard (if required) = ✓

Deduction for Fresh Water.

Displacement in salt water at summer load water line

$\Delta = \underline{11906}$

Tons per inch immersion at summer load water line

$T = \underline{47.5}$

Deduction =  $\frac{\Delta}{40T}$  inches

= 6.27

= 6 1/4"

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient  $\frac{.725 + .68}{1.36} = \underline{1.405}$

74.74  
74.11

Depth Correction ... ..

Deduction for superstructures ... ..

Sheer correction ... ..

Round of Beam correction ... ..

Correction for Thickness of Deck amidships ... ..

Other corrections, scantlings, etc. ... ..

Summer Freeboard = 23.36

SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood, Steel, Deck:—

Tropical Fresh Water Line above Centre of Disc ... ..

Fresh Water Line „ „ ... ..

Tropical Line „ „ ... ..

Winter Line below „ „ ... ..

Winter North Atlantic Line „ „ ... ..

Tropical Fresh Water Freeboard ... ..

Fresh Water „ „ ... ..

Tropical „ „ ... ..


Winter „ „ ... ..

Winter North Atlantic „ „ ... ..

28 FEB 1936

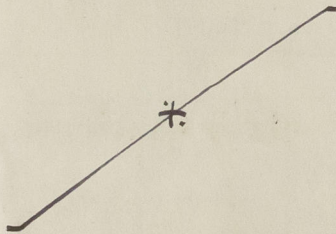


# PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS													TWO OILTIGHT HATCHWAYS FOR VEGETABLE OIL TANKS
ON DECK: ORDINARY AT FRAMES		HATCHWAY No I	HATCHWAY No II	HATCHWAY No III	HATCHWAY No IV	HATCHWAY No V							
		SHelter	FREEBOARD	SHelter	FREEBOARD	PORT-DECK	FREEBOARD	SHelter	FREEBOARD	SHelter	FREEBOARD	FREEBOARD	
Description of Hatchway		132-145	132-145	110-122	110-122	86-92	86-92	38-54	38-48	19-28	19-28	50-54	
Dimensions of Hatchway		29.21x20.00	29.21x20.00	30.33x20.00	30.33x20.00	14.10x20.00	14.16x20.00	40.13x20.00	25.26x20.00	22.76x20.00	22.76x20.00	12.14x8.53	
COAMINGS INCHES	Height above Deck	30"	9"	30"	9"	33"	9"	30"	9"	30"	9"	18"	
	Thickness	.43	.79	.43	.79	CAIMED TO .31"	.45	.51	.71	.43	.59	.43	
		Ends	.43	.71	.43	.71	SHelter DECK .31"	.49	.51	.54	.43	.59	.43
	Stiffeners	6x3x.43	✓	6x3x.43	✓	6x3x.43	✓	6x3.5x.47	✓	6x3x.43	✓	✓	✓
Brackets, Stays		3 STAYS	✓	2 STAYS	✓	1 STAY	✓	3 STAYS	✓	2 STAYS	✓	1 STAY	
	Number	5	5	5	5	2	2	7	4	4	4	NONE	
	Spacing	58.47	58.47	60.61	60.61	56.31	56.71	60.61	60.61	54.55	54.55		
	Scantling and Sketch	2x3.88	2x5.23	2x2.8	2x5.23	2x2.8	2x5.23	2x2.8	2x5.23	2x2.8	2x5.23		
	X	11.83	13.79	8.27	13.79	8.27	13.79	8.27	13.79	8.27	13.79		
	a	6.31	8.67	6.31	8.67	6.31	8.67	6.31	8.67	6.31	8.67		
	b	5.50	8.67	6.31	8.67	6.31	8.67	6.31	8.67	6.31	8.67		
	c	.55	.63	.55	.63	.55	.63	.55	.63	.55	.63		
	d	.79	.63	.55	.63	.55	.63	.55	.63	.55	.63		
	e	.39	.39	.39	.39	.39	.39	.39	.39	.39	.39		
	Y	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00		
FORE AND AFTERS	Number	NONE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	Spacing	NONE	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	Unsupported Lengths	NONE	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	Scantling* and Sketch	NONE	✓	✓	✓	✓	✓	✓	✓	✓	✓		
HATCH COVERS INCHES	Material	PINE	PINE	PINE	PINE	PINE	PINE	PINE	PINE	PINE	PINE	J.M. STEEL	
	Thickness	2.50	3.00	2.50	3.00	2.50	3.00	2.50	3.00	2.50	3.00	.43	
	How fitted	FORE AND AFT. BATTENED	BATTENED	BATTENED	BATTENED	BATTENED	BATTENED	BATTENED	BATTENED	BATTENED	BATTENED	HINGED AND SEWED DOWN	
	Bearing Surface	2.75	3.50	2.75	3.50	2.75	3.50	2.75	3.50	2.75	3.50	BAITS WITH HARP PINE	
Spacing of Cleats		2	2	2	2	2	2	2	2	2	2	COVERS STIFFENED BY PANS	
Number of Tarpaulins		3	1	3	1	3	1	3	1	3	1	5x31"	
													30.3" APART.
*Are wood fore and afters steel shod at all bearing surfaces?													NONE
Are battens and wedges efficient and in good condition?													YES
Are tarpaulins in good condition and in accordance with rule requirements?													YES
Are lashings provided in accordance with rule requirements?													YES

Particulars of fiddle, funnel and ventilator coamings:—ENGINE AND BOILER CASING = 8.30' ABOVE SHELTERDECK, STRONGLY CONSTRUCTED. SIDES PROTECTED BY STEEL DECK HOUSES. ✓  
 FUNNEL AND VENTILATOR COAMINGS ARE RIVETED TO THE PLATING. ✓  
 FIDDLEY OPENINGS ARE PROVIDED WITH STRONG STEEL HINGED COVERS. ✓  
 ENGINE SKYLIGHT OF STEEL STRONGLY CONSTRUCTED. ✓

Particulars of Flush Bunker Scuttles:—**NONE**

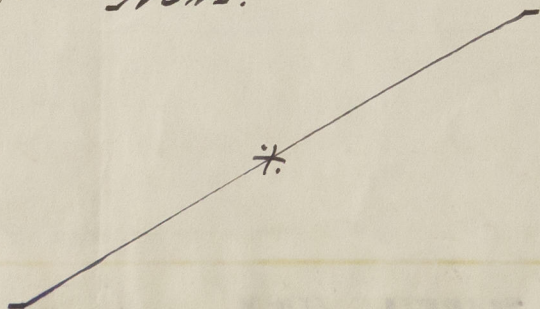


Particulars of Companionways:—ALL COMPANIONWAYS SITUATED INSIDE SUPERSTRUCTURE. (SEE SKETCH ON THE OTHER SIDE)  
 ENTRANCES TO ENGINE AND BOILER SPACES OF SUBSTANTIAL CONSTRUCTION. ALL DOORS MADE OF STEEL, SILLS 18", CAPABLE OF BEING OPERATED FROM BOTH SIDES. (SEE SKETCH ON THE OTHER SIDE.) ✓

Particulars of Ventilators in exposed positions on freeboard and superstructure decks:—**NO VENTILATORS IN EXPOSED POSITION ON FREEBOARD DECK.** ✓  
 ALL VENTILATORS IN EXPOSED POSITIONS ON FORECASTLE AND SHELTER DECK TO SPACES BELOW SHELTERDECK HAVE COAMINGS 36" ABOVE DECK, ALL OTHER VENTILATORS HAVE COAMINGS 30" ABOVE DECK. ✓  
 ALL VENTILATOR COAMINGS ARE SUBSTANTIALLY CONSTRUCTED AND EFFICIENTLY CONNECTED TO THE DECK PLATING AS PER RULES. ✓  
 ALL VENTILATOR COAMINGS FITTED WITH WOODEN COVERS AND PROTECTING CANVAS. ✓

Particulars of Air Pipes in exposed positions on freeboard, raised quarter, or superstructure decks:—ALL AIR PIPES ARE OF SUBSTANTIAL CONSTRUCTION. ALL AIR PIPES ARE PROVIDED WITH EFFICIENT MEANS OF CLOSING (BY STEEL COVERS) HEIGHT OF THE AIR PIPE OPENINGS ABOVE SHELTERDECK = 18" - 27". ✓

Particulars of Gangway Cargo and Coaling Ports:—**NONE**



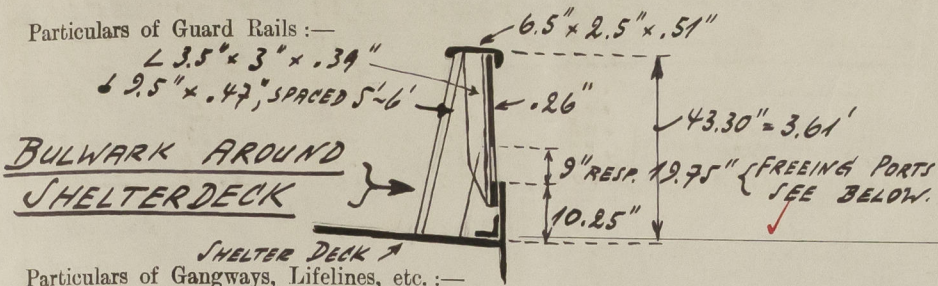


Particulars of Scuppers and Sanitary Discharge Pipes *NO SCUPPERS FITTED TO OUTBOARDS BELOW SHELTERDECK IN WAY OF CARGO SPACES. ONE 5" SCUPPER EACH SIDE FITTED IN WAY OF TONNAGE WELL WITH NON RETURN SCREW DOWN VALVE OPERATED FROM SHELTER-DECK. ARRANGEMENT OF SCUPPERS SEE SKETCH ON THE OTHER SIDE. ✓*  
*ONE 5" SCUPPER PIPE EACH SIDE LED TO ENGINE BILGE IN WAY OF SHELTER TWIN DECK SIDE BUNKERS. ✓*  
*ALL SANITARY- AND DISCHARGE PIPES FITTED WITH STORM VALVES AS PER RULES. (SEE SKETCH ON THE OTHER SIDE.)*

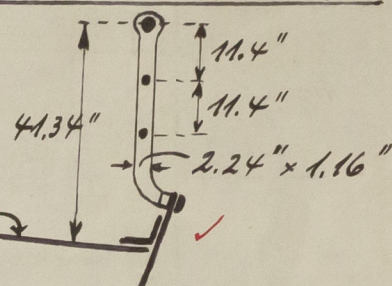
Particulars of Side Scuttles:

*NO SIDE SCUTTLES BELOW SHELTERDECK.*  
*ALL SIDE SCUTTLES ABOVE SHELTERDECK HAVE DEAD LIGHTS. ✓*

Particulars of Guard Rails:—



OPEN RAIL ON FORECASTLE:



Particulars of Gangways, Lifelines, etc.:—

*NONE.*

#### Particulars of Freeing Arrangements.

	Length of Bulwark	Height of Bulwark	Size of Freeing Ports FEET	Number each side	Area each side SQ. FEET	Rule area each side
After Well <i>BULWARK ...</i> <i>AROUND SHELTER DECK</i>	✓	43.30' = 3.61' ✓	9 PORTS EACH SIDE 9.186' x .754' AND 2 PORTS EACH SIDE 2.132' x 1.640'	9 2	62.33 6.99 69.32 ✓	RULE FOR 7 L (C.S.S.) = 28.54 ✓
Tonnage Well ...	✓	✓	✓	NONE	✓	✓

State position of each freeing port ... *TONNAGE Well:— WITHOUT OPENING IN VERTICEL'S SIDE. ✓*  
 (F. and A. position and height above deck edge) Forward Well:— ✓  
 State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:— *THE TWO PORTS 2.132' x 1.640' EACH SIDE ARE FITTED WITH SHUTTERS. ALL OTHER WITHOUT SHUTTERS & BARS. ✓*  
 Additional area where sheer is less than standard. ✓

#### Particulars of Superstructures, Trunks, Casings, Deckhouses.

	Coaming INCHES	Plating INCHES	Stiffeners INCHES	Spacing INCHES	End Attachments of Stiffeners	Size of Openings FEET	Height of Sills	Height of Casings FEET
Poop Bulkhead <i>AS TONNAGE OPENING.</i>	NONE ✓	.23 ✓	6 4.5 x 2.5 x .31	28.4 ~ 30.0 ✓	NONE ✓	4.10 x 3.02 ✓	2' ✓	12' ✓
Raised Quarter Deck Bulkhead ...	✓	✓	✓	✓	✓	✓	✓	✓
Bridge, After Bulkhead <i>AS TONNAGE O.</i>	NONE ✓	.23 ✓	6 4.5 x 2.5 x .31	27.6 ~ 30.0 ✓	NONE ✓	4.10 x 3.02 ✓	2' ✓	12' ✓
Bridge, Forward Bulkhead ...	✓	✓	✓	✓	✓	✓	✓	✓
Forecastle Bulkhead ...	✓	✓	✓	✓	✓	✓	✓	✓
Trunk, Aft ...	✓	✓	✓	✓	✓	✓	✓	✓
Trunk, Forward ...	✓	✓	✓	✓	✓	✓	✓	✓
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...	✓	✓	✓	✓	✓	✓	✓	✓
Exposed Machinery Casings on Super-structure Decks ...	17.75 x .33 ✓	.31 ✓	6 3.0 x 2.5 x .31	30.35 ✓	ALTERNATE BRACKET AT TOP ONLY ✓	5.09 x 2.3 ✓	18" ✓	8.3' ✓
Machinery Casings within Superstructures not fitted with Class I Closing Appliances ...	17.75 x .43 ✓	.31 ~ .49 ✓	6 4.5 x 2.5 x .31	60.70 ✓	ENGINE CRUISING - NONE P.S. 3.84 x 4.59 ✓ BOILER " " = ALTERNATE BRACKET AT TOP ONLY ✓	5.5 x 3.18 x 4.59 ✓	7.05' ✓	12' ✓
Deckhouses on <i>SUPERSTRUCTURE</i> <del>Flush Deck</del> Ships ...	10.00 x .39 ✓	.29 ~ .25 ✓	6 4.5 x 2.5 x .31	30.25 ✓	NONE ✓	5.91 x 2.3 5.91 x 4.5 ✓	10" ✓	8' ✓

#### Particulars of Closing Appliances (state if capable of being manipulated from both sides).

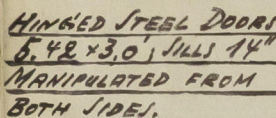
Poop Bulkhead ...	CHANNELS WELDED ON BULKHEAD WITH SHIFTING BOARDS OF 3" THICKNESS FOR FULL HEIGHT. ✓
Raised Quarter Deck Bulkhead ...	✓
Bridge, After Bulkhead ...	CHANNELS WELDED ON BULKHEAD WITH SHIFTING BOARDS OF 3" THICKNESS FOR FULL HEIGHT. ✓
Bridge, Forward Bulkhead ...	✓
Forecastle Bulkhead ...	✓
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...	✓
Exposed Machinery Casings on Super-structure Decks ...	HINGED STEEL DOORS 27.6" WIDE, SILLS = 18" HIGH, MANIPULATED FROM BOTH SIDES. ✓
Machinery Casings within Superstructures not fitted with Class I Closing Appliances ...	{ NO OPENING, WITH EXCEPTION OF ONE COAL TRIMMING OPENING IN CRUISING EACH SIDE. DIMENSIONS OF OPENINGS = P.S. 3.84' x 4.59' AND S.S. 3.18' x 4.59'; CLOSED BY STRONG HINGED STEEL COVERS. LOWER EDGES ARE 7.05' ABOVE DECK, BOTH SIDES. ✓
Deckhouses on <i>SUPERSTRUCTURE</i> <del>Flush Deck</del> Ships ...	NO ENTRANCE TO SPACES BELOW SHELTERDECK AS ONLY SITUATED INSIDE DECKHOUSE, SEE SKETCH OTHER SIDE. ✓



coaling ports, and any other openings, etc., which would affect the seaworthiness of the ship are to be shown on the following sketches.

TONNAGE OPENINGS 4.1 x 3.02', SILLS 2' HIGH ✓  
PORTABLE SHIFTER'S BOARDS FOR FULL HEIGHT OR 3' ✓  
TUNNEL EXIT 4.59 x 1.8' STEEL DOOR, HINGED.  
SILL 18', MANIPULATED FROM BOTH SIDES. ✓

TONNAGE OPENINGS 5.91 x 3.94', SILLS 18", SHIFTER'S BOARDS 2 1/2' FOR FULL HEIGHT. ✓  
COALING OPENINGS P. 3.84 x 4.59', JS 3.18 x 4.59' HINGED STEEL COVER, MANIPULATED FROM BUNKER ONLY.  
COALING HATCHWAYS  
7.55 x 2.00' ✓  
2.24'



MOULDED DISPLACEMENT IN SALT WATER AT 22' DRAUGHT = 10790 TONS									
"	"	"	"	"	"	23'	"	=	11360 "
"	"	"	"	"	"	24'	"	=	11930 " ✓

Fee £ WILL BE CHARGED WITH  
FIRST ENTRY FEE Received by me ☒