

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

Lloyd's Register of Shipping.
SURVEYS FOR FREEBOARD.

Computation of Freeboard for <u>Steamer, Sailing Ship, Tanker</u>		Port of Survey <u>Newcastle</u>	
having <u>Porto Bridge and Forecastle disconnected</u>		Date of Survey <u>13th - 18th Jan. 1932</u>	
(Type of Superstructures.)			
Ship's Name <div style="font-size: 1.5em; font-weight: bold;">TEAKWOOD</div>	Nationality and Port of Registry <u>British</u> <u>London</u>	Official Number <u>149878</u>	Gross Tonnage <u>6014</u>
		Date of Build <u>1927-8</u>	
Moulded Dimensions: Length <u>415.0</u> Breadth <u>54.5</u>		Depth <u>31.50</u> <i>See note letter 21/1/32</i>	
Moulded displacement at moulded draught = 85 per cent. of moulded depth <u>13710</u> tons			
Coefficient of fineness for use with Tables <u>.792</u>		Particulars of Classification <u>*100A1 Carrying Petroleum in bulk. Fitted for oil fuel 8.27 F.P. above 150°F.</u>	

<div style="text-align: center; font-weight: bold;">Depth for Freeboard (D)</div> <p>Moulded depth <u>31.50</u></p> <p>Stringer plate <u>.04</u></p> <p>Sheathing on exposed deck <u>-</u></p> <p>$T \left(\frac{L-S}{L} \right) =$</p> <p>Depth for Freeboard (D) = <u>31.54</u></p>	<div style="text-align: center; font-weight: bold;">Depth correction</div> <p>(a) Where D is greater than Table depth</p> <p>(D - Table depth) R = <u>(31.54 - 27.67) x 3 = + 11.61</u></p> <p>(b) Where D is less than Table depth (if allowed)</p> <p>(Table depth - D) R =</p> <p style="text-align: center;">If restricted by superstructures</p>	<div style="text-align: center; font-weight: bold;">Round of Beam correction</div> <p>Moulded Breadth (B) <u>54.50</u></p> <p>Standard Round of Beam = $\frac{B \times 12}{50} =$ <u>13.08</u></p> <p>Ship's Round of Beam = <u>13.5</u></p> <p>Difference <u>.42</u></p> <p>Restricted to</p> <p>Correction = $\frac{\text{Diff}^a}{4} \times \left(1 - \frac{S_1}{L} \right) =$ <u>$\frac{.42}{4} \times .573 = .06$</u></p>
---	---	--

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed ...	107.75 ✓	107.75	7' 6" ✓	-	107.75
" overhang ...	✓				
R.Q.D. enclosed ...	✓				
" overhang ...	✓				
Bridge enclosed...	27.97 ✓	27.97	7' 6" ✓	-	27.97
" overhang aft ...	✓				
" overhang forward					
F ¹ cle enclosed $\frac{1}{2}$ L ...	41.50 40.33	41.50	7' 9" ✓	-	41.50
" overhang aft $\frac{1}{4}$ L	1.16	.11			.11
Trunk aft ...					
" forward ...					
Tonnage opening aft ...		✓			
" " forward					
Total ...	177.44	177.33			177.33

Standard Height of Superstructure 7.5
 " " R.Q.D. _____
 Deduction for complete superstructure 42
 Percentage covered $\frac{S}{L} = 42.76$ ✓
 " " $\frac{S_1}{L} = 42.73$ ✓
 " " $\frac{E}{L} = 42.73$
 Percentage from Table, Line A.
 (corrected for absence of forecastle (if required)) ✓
 Percentage from Table, Line B. TANKER 33.73
 (corrected for absence of forecastle (if required))
 Interpolation for bridge less than $\cdot 2L$ (if required) Does not apply
 Deduction = $42 \times .3373 = - 14.17$ ✓

SHEER CORRECTION.

Station	Standard Ordinate	S M	Product	Actual Ordinate	Effective Ordinate	S M	Product
A.P. ...	51.5	1	51.50	66.0 ✓	66.0	1	66.00
$\frac{1}{6}$ L from A.P. ...	22.92	4	91.68	28.5 ✓	28.5	4	114.00
$\frac{2}{6}$ L " ...	5.66	2	11.32	7.0 ✓	7.0	2	14.00
Amidships ...	-	4	-	0.0 ✓	-	4	-
$\frac{2}{6}$ L from F.P. ...	11.33	2	22.66	13.0 ✓	13.0	2	26.00
$\frac{1}{6}$ L " ...	45.84	4	183.36	51.0 ✓	51.0	4	204.00
F.P. ...	103.0	1	103.00	111.0 ✓	111.0	1	111.00
Total ...			463.52		414.8		535.00

$$\frac{\text{Mean actual shear aft}}{\text{Mean standard shear aft}} = \text{Excess}$$

$$\frac{\text{Mean actual shear forward}}{\text{Mean standard shear forward}} = \text{Excess}$$

Length of enclosed superstructure forward of amidships = } Does not
 " " aft of " = } apply.

$$\text{Correction} = \frac{\text{Difference between sums of products}}{18} \left(75 - \frac{8}{2L} \right) = \frac{71.48}{18} (75 - 2.138) = -2.13$$

If limited on account of midship superstructure.

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

<p>Deduction for Tropical Freeboard.</p> <p>Addition for Winter and Winter North Atlantic Freeboard.</p> <p>Depth to Freeboard Deck = <u>31.54</u> Ft.</p> <p>Summer freeboard = <u>5.57</u></p> <p>Moulded draught (d) = <u>25.97</u></p> <p>Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = <u>6.49</u> (= 6 1/2")</p> <p>Addition for Winter North Atlantic Freeboard (if required) = <u>4.15</u> (= 4 1/4")</p>	<p>Deduction for Fresh Water.</p> <p>Displacement in salt water at summer load water line = <u>13335 tons</u> sec p.t.</p> <p>Tons per inch immersion at summer load water line</p> <p>T = <u>45.42</u> — "</p> <p>Deduction = $\frac{\Delta}{40 T}$ inches = <u>7.34</u> (= 7 1/4")</p>	<p>TABULAR FREEBOARD corrected for Fresh Deck (if required)</p> <p>Correction for coefficient $\frac{792 + .68}{1.36} = \frac{1472}{1.36}$</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th></th> <th style="width: 10%;">+</th> <th style="width: 10%;">—</th> </tr> <tr> <td>Depth Correction</td> <td>11.61</td> <td>—</td> </tr> <tr> <td>Deduction for superstructures</td> <td>—</td> <td>14.17</td> </tr> <tr> <td>Sheer correction</td> <td>—</td> <td>2.13</td> </tr> <tr> <td>Round of Beam correction</td> <td>—</td> <td>.06</td> </tr> <tr> <td>Correction for Thickness of Deck amidships</td> <td>—</td> <td>—</td> </tr> <tr> <td>Other corrections, scantlings, etc.</td> <td>—</td> <td>—</td> </tr> <tr> <td></td> <td>11.61</td> <td>16.36</td> </tr> </table> <p style="text-align: right;">Summer Freeboard = <u>66.85</u></p>		+	—	Depth Correction	11.61	—	Deduction for superstructures	—	14.17	Sheer correction	—	2.13	Round of Beam correction	—	.06	Correction for Thickness of Deck amidships	—	—	Other corrections, scantlings, etc.	—	—		11.61	16.36
	+	—																								
Depth Correction	11.61	—																								
Deduction for superstructures	—	14.17																								
Sheer correction	—	2.13																								
Round of Beam correction	—	.06																								
Correction for Thickness of Deck amidships	—	—																								
Other corrections, scantlings, etc.	—	—																								
	11.61	16.36																								

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

Tropical Fresh Water Line above Centre of Disc	13 ³ / ₄ "	Tropical Fresh Water Freeboard
Fresh Water Line	"	"	7 ¹ / ₄ "	Fresh Water
Tropical Line	"	"	6 ¹ / ₂ "	Tropical
Winter Line	below	"	6 ¹ / ₂ "	Winter
Winter North Atlantic Line	"	"	10 ³ / ₄ "	Winter North Atlantic

22 MAR 1932

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
Description of Hatchway			No. 1 Upper deck	No. 2 Main hatches	O.T. Summer Land Hatches	O.T. Cofferdam Hatches	O.T. Bulkhead Hatches		
Dimensions of Hatchway			6'-0" x 5'-0"	6'-0" x 4'-0"	6'-0" x 4'-0"	24" x 16 1/2" Oval	6'-0" x 4'-0"		
COAMINGS	{	Height above Deck	2'-6"	9"	9"	9"	9"		
		Thickness { Sides	.44	.50	.50	.50	.50		
		{ Ends	.44	.50	.50	.50	.50		
		Stiffeners	✓	✓	✓	✓	✓		
		Brackets, Stays	✓	✓	✓	✓	✓		
HATCH BEAMS	{	Number	2	None	None	None	None		
		Spacing	10 1/2"						
		Scantling and Sketch	12 x 3 1/2" x 3 1/2" x .50						
		Bearing Surface	3 1/2"						
FORE AND AFTERS	{	Number	1	None	None	None	None		
		Spacing	12						
		Unsupported Lengths	12						
		Scantling* and Sketch	2 x 50						
Bearing Surface	3 1/2"								
HATCH COVERS	{	Material	Steel	Steel covers .64	Steel covers .64	Steel covers .40	Steel covers .64		
		Thickness	.60	Secured by 14	Secured by 14	Secured by 4	Secured by 14		
		How fitted	Thacking on timber	timbuckles	timbuckles	timbuckles	timbuckles		
		Bearing Surface	18 afters	18 afters	18 afters	18 afters	18 afters		
Spacing of Cleats			24	✓	✓	✓	✓		
Number of Tarpaulins			3	✓	✓	✓	✓		

*Are wood fore and afters steel shod at all bearing surfaces? ✓

Are battens and wedges efficient and in good condition? Yes

Are tarpaulins in good condition and in accordance with rule requirements? Yes

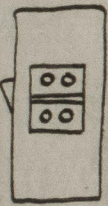
Are lashings provided in accordance with rule requirements? ✓

Particulars of fiddley, funnel and ventilator coamings:— The funnel and the E + B Room ventilators are on top of the machinery casing 7' 9" above top of Poot deck. ✓
Openings in fiddley tops are fitted with gratings and steel covers secured by clips. ✓

Particulars of Flush Bunker Scuttles:—

Yone

Particulars of Companionways :—



4 two pump room doors of steel on footboard deck 7'-6" high.
Plating $\frac{1}{4}$ " stiffeners $3 \times 2\frac{1}{2} \times .30$ spaced 24" apart.
Steel door with lock, 2 hinges and 2 clips workable from both sides.
Steel skylight on top 6'-0" \times 4'-6", 2 steel flats secured by clips and quadrons.

Particulars of Ventilators in exposed positions on freeboard and superstructure decks :—

ON POOP		ON FCLE		FORWARD WELL	
2 off 1 st dia.	2'-6" = 3/8 to poop	1 off 1 st b' diam.	3'-0" x 1/4" to upper heads (6 bolts) ✓	1 off 18" diam.	3'-0" x 7/16 to upper + lower holds ✓
2 " 8 1/2"	" "	" "	to cables	1 " b'	" x 1/4 to lower hold stem ✓
2 " 8 1/2"	" "	" "	to cables (8 wires)	2 " 10 "	" x 5/16 to coffee room ✓
2 " 15"	" "	1 - 18"	7/16" upper + lower holds ✓	2 - 18"	" x 3/8 to salt room ✓
3 - "	" 1/4 - Slower + S. G.			AFTER WELL	
ON BRIDGE		MEANS OF CLOSING	Wood plugs and canvas covers	2 off 18" diam.	3'-0" x 3/8 to pump room ✓
4 off 6" x 4" oval, same neck type, 15" length to stores			scaffold O.F. humpback = screw down metal caps	2 - 10"	3'-0" x 7/16 to coffee chain ✓

Particulars of Air Pipes in exposed positions on freeboard, raised quarter, or superstructure decks :—

ON POOP

2 pipes 2'-3" high to upper & lower tanks ✓
2 " 1'-9" " Boiler Room tank ✓
(E.R. Tank air pipes are on top of Eng'g houses) ✓
1 pipe 2'-0" high to lighting up found in boiler ✓
O.F. branches are 1 pipe from a fluke and filled
with brass sheave caps.

ON FREEBOARD DEK

1 pipe 3'-0" high to fore deep tank ✓
Air vent surrounding pipes to cofferdam
in flush with deck and fitted with
brass screw caps. ✓

UNFLECE

2 pipes 18" high (1 to fore hatch
1 to fore deep tank) ✓

MEANS OF CLOSING
Wood plugs ✓

Particulars of Gangway Cargo and Coaling Ports:—

None

Particulars of Scuppers and Sanitary Discharge Pipes — Scuppers fitted to drain poop space, 3 each side of dished plate type, closed by wood plugs in deck opening.

<u>Sanitary Discharge Pipes</u>				
2 each side from forecabin discharging below foreboard deck				} All with wrought iron pipes and brass non-return valves at ship's side.
2 " " " Officers quarters " above " "				
5 port, 1 starboard from Eng' " " below " "				

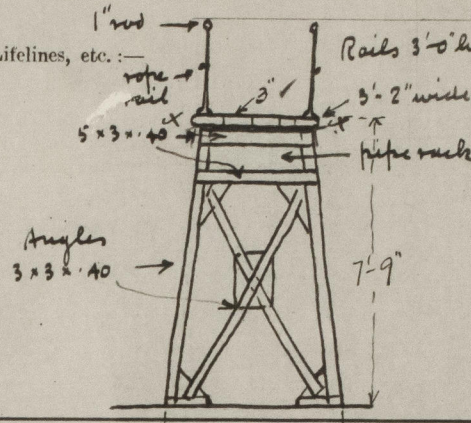
Particulars of Side Scuttles :

In forecath rides 10" diam. fitted with hinged deadlights ✓
 " " end 11" " without deadlights
 " Bridge rides 9" " with hinged deadlights ✓
 " " front 10" " without deadlights
 " Root ride (Store + S. 5) 9" diam with hinged deadlights ✓

Particulars of Guard Rails :—

On Pops 3'-6" high, 3 rails, stanchions 5'-0" apart ✓
 " Bridge 3'-6" " 3 " " 7'-0" " ✓
 " Forecastle 3'-6" " 2 " " 5'-3" " ✓

Particulars of Gangways, Lifelines, etc. :-



Stinger angles of $4 \times 3 \times .125$ B.A. fitted each side of forward
and after girders.
Gangway as per sketch fitted near centerline
between forecabin and bridge and from
bridge to poop at height of superstructures.
Supports spaced 8'-0" to 11'-0" apart.
Stanchion feet secured to the planking by
1 through bolt & 1 coach screw.
There are no F & A stinger angles & no F & A
bracing.

Particulars of Freeing Arrangements.

	Length of Bulwark	Height of Bulwark	Size of Freeing Ports	Number each side	Area each side	Rule area each side
After Well	120.78 ✓	3' - 3" ✓	3'-0" x 1'-7" 5'-0" x 2'-0"	5 8	103.7 sq ft	98.13 f ✓
Forward Well	116.78 117.78	3' - 3"	3'-0" x 1'-7" 5'-0" x 2'-0"	5 8	103.7 sq ft	94.88 f ✓

State position of each freeing port } After Well :— "from bridge end, 12'-0", 16-8, 22-6, 30-0, 40-6, 46-4, 53-2, 58-0, 63-10, 69-4, 75-4, 82-6, 105-6
(F. and A. position and height above deck edge) } Forward Well :—" " from " 6'-5", 11-0, 21-6, 28-5, 33-4, 39-3, 45-2, 52-0, 56-9, 62-6, 68-2, 74-9, 96-6

State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such :— 1 fore & aft rail across small ports ✓
2 " " " large ports ✓

Additional area where sheer is less than standard. ✓

Small ports
marked —

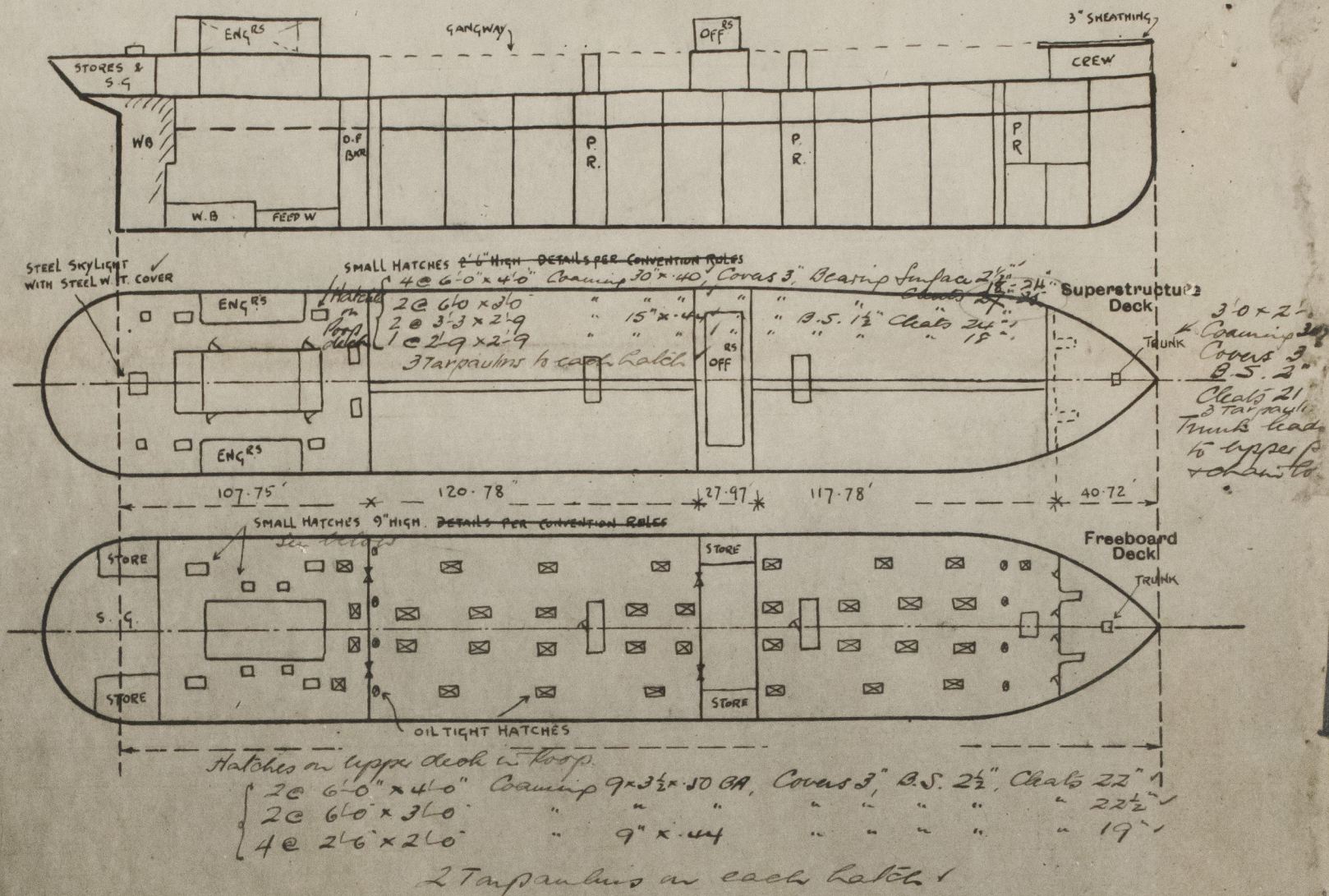
Particulars of Superstructures, Trunks, Casings, Deckhouses.

	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead42 ✓	.42 ✓	9 x 3 x .50 B.A.	30" ✓	Brackets ✓	2 openings 4' 3" x 3' 9" ✓	21 1/2" ✓	✓
Raised Quarter Deck Bulkhead ...	✓							
Bridge, After Bulkhead26 ✓	.26 ✓	3 x 2 1/2 x .30 ✓	30" ✓	None ✓	2 openings 4' 3" x 3' 9" ✓	21" ✓	✓
Bridge, Forward Bulkhead42 ✓	.42 ✓	8 x 3 x .46 B.A.	30" & 33" ✓	Brackets ✓	No openings ✓	✓	✓
Forecastle Bulkhead26 ✓	.26 ✓	3 x 2 1/2 x .30 ✓	27" ✓	None ✓	4 down 4' 8" x 24" ✓	19" ✓	✓
Trunk, Aft	None ✓							
Trunk, Forward	None ✓							
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...	✓							
Exposed Machinery Casings on Super-structure Decks44 ✓	.30 ✓	3 1/2 x 3 x .30 ✓	33 ✓	Brackets ✓	4 down 4' 9" x 25" ✓	19" ✓	7' 9" ✓
Machinery Casings within Superstructures not fitted with Class I Closing Appliances30 ✓	.30 ✓	4 x 3 1/2 x .30 longitudinal webs 12" webs	30" ✓ 8' 3" ✓	Lugged ✓	None ✓	✓	7' 6" ✓
Deckhouses on Flush Deck Ships ...	✓							

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

Poop Bulkhead	✓	Storm boards fitted full height in riveted channels ✓
Raised Quarter Deck Bulkhead ...	✓	
Bridge, After Bulkhead	✓	Storm boards fitted full height in riveted channels ✓
Bridge, Forward Bulkhead		No openings ✓
Forecastle Bulkhead		✓
Exposed Machinery Casings on Fore- board or Raised Quarter Decks ...	✓	✓
Exposed Machinery Casings on Super- structure Decks		✓
Machinery Casings within Superstructures not fitted with Class I Closing Appliances		✓
Deckhouses on Flush Deck Ships ...	✓	✓

Superstructure bulkheads, trunks, deckhouses, casings, cargo and coaling hatchways, extent and thickness of sheathing on the freeboard deck, gangway, cargo and coaling ports, and any other openings, etc., which would affect the seaworthiness of the ship are to be shewn on the following sketches:—



State any special features in the construction of the ship:—

Yankee

FW allowance

From W.C. letter of 21/1/32

$\Delta_{med} @ 26'0" \text{ med} = 13285 \text{ tons}$
 $" @ 25'0" " = 12740 "$
 $T.P.F. = 545 "$
 $T.P.I. = 45.42$

S.M.D. = 25.97'

Diff in Δ — $.97 \times 545 = 529$

$\Delta_m @ 25.97 = 12740 + 529 = 13269 \text{ tons}$
 $= 13335 \text{ tons} \text{ etc.}$