

REPORT of SURVEY for REPAIRS, &c.

Date of Writing Report 14th June 1943 When handed in at Local Office 14th June 1943 Port of FREMANTLE. W.A.
No. in Reg. Book Survey held at Fremantle. Date, First Survey 17th Nov. 1942 Last Survey 17th June 1943.
(No. of Visits Continuous)30654 on the Wood, Iron or Steel Motor Tanker "ONDINA"
Built at Amsterdam By whom H. V. Baderl. Dok. Maats. When 1939 - 8
Owners H. V. Petroleum Maats. "La Bona" Owners' Address (if not already recorded in Appendix to Register Book)
Managers Port belonging to Willemstad.TONNAGE: 6341
GROSS 5540
UNDER DK. 3606
NET
Surveyed Afloat or in Dry Dock? Afloat Name of Dock Victoria Quay + Destined Voyage Coastal + Overseas
Cell DBor DBa feet; uESB feet; f feet }
total capacity tons. FPT tons; APT tons; MT feet tons. }
Particulars of Classification (which must be inserted precisely as in Register Book & Supplements)Last Report, No. 1507. Port Fre.
Only alterations in the existing records of tanks should be inserted.
N.B.—All Alterations in the existing records should be underlined.

(Periodical Surveys, when held, must be reported in detail and serialim in the terms of the Rules and items remaining to complete the Surveys should be summarised. State clearly the cause of repairs, if any, and, in detail, the nature and extent of Examinations and subsequent repairs. Repairs on account of Damage (the cause of which must be stated) should be separated from Repairs due to other causes; and besides being detailed in the body of the report, should be summarised in the form shown below. Whenever the replacement of Anchors or Chains is reported the particulars should be clearly stated in the space provided on the back of this form. State also the dates and initials of any letters respecting this case).

In damage cases where the Surveyor has not made a special damage report he is required to state whether he offered his services for this purpose and to whom and why they were declined

Society's Freeboard (if assigned) as painted on Ship and now verified } ft. ins.

Was a damage report made by anyone else? If so, by whom?

REPAIRS, OR EXAMINATION AS PER RULE, FOR the purpose of ① ascertaining the nature and extent of damage which is stated to have been caused by shells and torpedoes during enemy action in November 1942 while the vessel was on a voyage from Fremantle to Overseas Port and ② recommending necessary repairs. It is stated that, after the action, the vessel returned to Fremantle under her own power.

For further particulars see Log Books.

Upon preliminary examination with the vessel afloat in Fremantle Harbour found damage which could be grouped into three categories namely (1) minor damages caused by shell splinters and shrapnel at numerous places generally throughout the Hull, Decks, Superstructures and Masts (2) damage resulting from direct shell hits on Starboard Bow plating, Starboard Hull plating amidships, Bridge - Masts (3) Major damage caused

SUMMARY OF DAMAGE REPAIRS:—	Shell Plates	Frames	R. Frames	Floors and Bracket Floors	Beams	Inner Bottom Plates	Dk. Plates	Other Items:—
Renewed								(SEE OVERLEAF)
Removed and Fair'd or Repaired								
Fair'd or Repaired in place								

PRESENT CONDITION OF THE	Bulkheads	Engine Room Skylights	Copper, or Y.M.
Working of Docks	Ceiling	Coal Bunkers, Openings, Covers, &c.	(State if on Felt)
Platings	Cement or Asphalt	Oil Bunkers	When fitted: Month Year
Fastenings	Rudder	Scuppers	Boats
Plating	Steering gear and its connections	Cargo Hatchways	Masts, Yards, &c.
" In way of sidelights	Windlass	Hatches	Condition, how ascertained
	Have pumps been examined and found efficient?	Planking	(State if wedges removed)
	Have Sluice Valves been examined and found efficient?	Caulking	Equipment letter
	Have Watertight Doors been examined and found efficient?	Treenails	Anchors, No. of
	Have Ventilators and their Coamings been examined and found efficient?	Breasthooks & Stemson	Cables (State if now ranged)
	Have Ventilators and their Coamings been examined and found efficient?	Transoms, Pointers & Crutches	" length mean diamr.
	Air and Sounding Pipes	Timbers of Frame at openings	" Rule length size
	Doubling Plates under Sounding Pipes	" " at other places	Chain Locker
		Stringers, Clamps & Shelves	Hawser & Warps
		Salting	Standing and Running Rigging
		(State if examined)	Sails

General Observations, Opinion as to Class, Recommendation, &c.:—

State clearly whether any and, if so, what alteration is suggested to be made in the existing classification and notification of the vessel in the Register Book consequent on this survey, thus, for example:— "to remain as classed in the Register Book without fresh record of Survey," "to remain as classed and to have record of survey, 1,33," or "to remain as classed and to have record of survey, 1,38, and the notations of ss No. 1-38."

Recommend in the case of this vessel that she be continued as classed, without fresh record, subject to permanent examination in Dry Dock at first opportunity and permanent repairs as may be determined, without further examination before vessel proceeds overseas after completion of six months being fit to carry Petroleum in Bulk except No 2 Tank (Starboard) whilst employed as a Depot ship and approximately 75% of original cargo capacity during coastal voyage and ballast only on voyage overseas.

Survey Fee (per Section 29)	£	:	:	Fees applied for,	19
Special Damage or Repair Fee (if any) (per Sec. 29)	£	157	10	Received by me,	19
Travelling Expenses (if chargeable)	£	21	5		
Second Surveyor's Fee (if any)	£	:	:		

Committee's Minute

Character Assigned

FRL 3 DEC 1943

Deferred for repairs

Surveyor to Lloyd's Register of Shipping



Lloyd's Register Foundation

003631-003639-0167/14

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Motor
Steel Tanker "ONDINA"

[illegible]

added to the work.
Drawing N°4/W.G.D "ONDINA" shows the alterations to pipe lines found necessary as a result of the vessel having been chartered (on completion of repairs) as a Mobile Depot Supply Ship, and at the same time it shows a diagrammatic view of the condition of the Hull and the, after bulkhead of N°3 Starboard Tank and the extent of the opening in the bottom of N°2 Starboard Tank.

No2 Starboard Tank.

Following is a summary of findings of damage and recommendations for either permanent or temporary repairs.

Minor damages and damage due to direct shell hits. Reference should be made to the attached typed Report for information concerning the abovementioned damages + recommendations on same which are detailed in Items 1 to 65 both inclusive.

Major damage due to Torpedo effects. This is detailed in Items 66 to 74m both inclusive but a repetition is given herewith.

MATCH DAMAGE.

MAJOR DAMAGE

FOUND

RECOMMENDED

FOUND	RECOMMENDED
<p>(66) No 2 Centre Tank Forward Port Gusset (attaching forward deep floor to longitudinal bulkhead between No 2 Port & Centre Tanks) pulled away at rivetting attaching the vertical angle to the bulkhead</p> <p>(67) Keelson buckled and twisted sharply at several places between the forward transverse deep floors and forward bulkhead</p>	<p>(66) that all rivets be cut out of the gusset angles and new rivets fitted and the heel and toe of both main gussets tack welded to the bulkheads.</p> <p>(67) that weakness caused by Keelson buckles be minimized by fitting a large gusset at each end of Keelson and attaching by welding to the bulkheads to form companion gussets</p>

(64) That weakness caused by Keelson buckles be minimised by fitting a large gusset at each end of Keelson and attaching by welding to the bulkheads to form companion gussets to those already originally fitted to Keelson & Bulkheads in Nos 1 & 3 Centre ^{Transoms}

See Overleaf

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RECOMMENDED.

- (68) Starboard section of forward deep floor buckled where attached to keelson and set up high at its outer end where originally attached to the bulkhead between Centre and Starboard Tanks and at the same time set aft about one foot at this outer end and its gusset badly buckled and rivets attaching it to the bottom plating slack. The bulkhead was non-existent from this position forward to the transverse bulkhead and the bottom set up sharply where not supported by the bulkhead.
- (69) All Starboard intermediate longitudinal floors of channel section ^{between} forward deep floor and forward bulkhead badly buckled and laid over slightly and rivets attaching these ^{to} bottom slack.
- (70) Transverse bulkhead between No 2 + 3 Centre Tanks set in sharply and holed over a space of 4 ft by 4 ft at Starboard bottom corner and indented above this over a space of 6 ft x 7 ft.
- (71) Longitudinal bulkhead between No 2 Centre and Starboard Tanks entirely missing for its full height between the vertical twin angles attaching to the forward transverse bulkheads and a position adjacent to the forward web stiffener of No 2 Starboard. The upper + lower stringers ^{also} are missing from this position. Aft of this forward web stiffener the bulkhead was bulged to Starboard generally over a large area extending to within three feet of the after transverse bulkhead. This caused the after web stiffener to be badly buckled as well as the gusset attaching the Starboard half of the after deep transverse floor. Steam heating coils in the Starboard side of No 2 Centre Tank were damaged as well as the Fuel + Ballast Pipes. Numerous loose and leaky rivets in addition to those previously mentioned.
- (68) to crop this section of floor and top angles to within two feet of keel fair and refit. Remove gusset plates and angles and fit new ones. Remove slack rivets and fit grommetted bolts in lieu thereof see item 71 relating to bulkhead.
- (69) to remove all slack and leaky rivets and fit grommetted bolts in lieu thereof make watertight and fill in this end Starboard half of this tank with cement up to the level of the channel tops, an extra depth of cement in the bottom next to the bulkhead when it is completed.
- (70) to bridge across this hole with a half inch thickness plate fillet welded and stiffened. A filling piece to be welded to the bulkhead to accommodate this plate because the bulkhead has been bulged forward at this location.
- (71) that prior to fitting the wooden water wall in No 2 Starboard Tank, the upper of the longitudinal bulkhead between and after fitting the wall and pumps No 2 Centre Tank dry, this bulkhead entirely renewed together with all necessary vertical and horizontal stiffeners and prepare same for attachments for lower struts. See Drawing No 1A/W.G.D. "ONDINA" which will save much description. All rivets to be removed and grommetted bolts fitted and to be covered with cement as stated in item 68.

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RECOMMENDED.

(72) No 2 STARBOARD TANK

- (a) Forward and after web stiffeners and their gussets torn and buckled beyond repair
- (b) Bottom torn and set upwards + inwards
- (c) The plating was torn
- (d) Deck beams generally chipped and slightly buckled
- (e) Twin angles attaching the longitudinal bulkhead to the bottom plating were laid over sharply and rivets slack and leaking in the space where the bulkhead was non-existent.
- (f) Forward bulkhead has large hole approximately 8 ft x 9 ft in one part while the remainder is crumpled and furled
- (g) Ballast + Cargo Pipe line with all valves, struts, expansion glands, valve spindles, carried away entirely.
- (h) Steam heating coils completely demolished.

- (72) To cut away all extraneous steelwork with the aid of the Oxy Hydrogen torch underwater, then all the following work to be done after fitting a wooden watertight wall. Remove stiffeners and gussets and the remains of deep transverse floors from the longitudinal bulkhead, and after renewing the bulkhead fit new stiffeners vertical and horizontal and make ^{short} pieces of transverse floor at the foot of each of the five vertical stiffeners. Then fit a longitudinal stiffener at the ends of these short sections of floors just inside the wooden wall to stiffen the projecting bottom plating against "flexing" and so disturbing the bottom fastenings of the bulkhead when at sea. Fill in the space between this bottom stiffener and the bottom of the bulkhead with cement. Heat bottom of strake below sheerstrake and straighten preparatory to fitting channel stiffeners. Deck beams to be left until dry docking as they do not impair the strength of the vessel. Fit cofferdam 16 x 16 ft and standing 3 ft away from bulkhead and weld new plate over the 8 x 9 ft hole and fit stiffeners to same. See under No 3 Starboard Tank for repairs to remainder of bulkhead. See Drawings No 1-2 + 3 W.G.D. "ONDINA" for details of the repairs which were recommended and seen satisfactorily completed. These Drawings should be read in conjunction with this Report.

(73) No 3 CENTRE TANK.

- (a) Ballast + Cargo pipe line broken at the Starboard bulkhead of this tank
- (b) Transverse stiffener on after bulkhead and the trussing brackets under same buckled.
- (c) After Transverse Bulkhead bulged sharply over an area of 4 ft x 4 ft and holed near its bottom Starboard corner and bulkhead

- (73) See Drawing No 4 W.G.D. "ONDINA" for details of actual work done on these pipe lines. (This is not on account of damage but for American Navy requirements) Remove, fair and refit stiffener and brackets. See item 70 which covers the repairs to this location.

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(73c) Continued otherwise lightly bulged over its full width up to half height and indented over a space of 6 ft by 7 ft.

(d) Starboard longitudinal bulkhead damaged generally (from its after end extending forward) for a length of approximately 12 feet and from the bottom up to the second stringer or two thirds of the height. This damage consisted of the starboard longitudinal bulkhead being torn away from the after transverse bulkhead and holed (approximately 6 ft high by 5 ft wide) and bulged inwards.

(e) Longitudinal bulkhead locally split in one position and rivetted seams started with many loose rivets.

(74) N°3 Starboard Tank.

(a) Ship's side plating pushed inboard from bulge keel up to strake below sheer strake and from after bulkhead to the middle transverse strut. The plating was split in numerous places.

(b) The after end of the hull plating in this tank was closely furled into many laps and these merged into similar furls in the after bulkhead. There were many splits at each furl.

(c) The upper + lower stringers were twisted beyond repair for half their length of the tank.

(d) The after web frame and its bulge bracket were buckled beyond repair and the corresponding deep floor was twisted and buckled as also was the gusset attaching it to the longitudinal bulkhead.

(e) The lower strut attached to the after web frame was twisted and pushed so that its inboard end buckled and split the plating of the longitudinal bulkhead. The same applies to the strut above this.

(f) The after bulkhead was furled on its outboard half into the numerous deep furls merging into those in the hull plating and the vertical and horizontal stiffeners were twisted into shapeless masses.

RECOMMENDED

(73) continued To remove damaged portion of bulkhead and send Note:- that the cofferdam 16 ft fitted over the forward bulkhead N°2 Starboard Tank not only a N°3 Starboard Tank to be pumped out but N°3 Centre Tank.

(74) Fair along the top of that plating which pushed inboard and then weld a plate position and extending up at an angle meet the ship's side plating on the strake below the sheerstrake. This may be a false side to the ship at this location. Then the leaks in the furls be temporarily stopped by sheepskins and cement. As no could be done to remove these furls would be necessary to fit a curved plate on the inside of the tank to extend the first reasonably good frame on ship's side to the first similar stiffener on the remaining flat portion of the bulkhead. This curved plate to fit closely as possible to the furls so as to keep the amount of concrete required this space as small as possible. The to be fitted with closely pitched vertical stiffeners and two wide horizontal stiffeners which are really intended to be continuations of the upper and lower stringers and to connect on to horizontal stiffeners of after and longitudinal bulkheads. The bottom of this structure to be well secured to the (ship's) bottom and to those longitudinal and transverse floors which were still intact and then

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(74g) This after bulkhead was also holed (8 ft x 9 ft approximately) on the remaining flat portion. This is mentioned under item 72f. The top of this bulkhead was fairly intact for a height of 8 ft (eight) for full width.

(h) Longitudinal floors of channel section twisted for 8 ft (eight) towards their after ends.

(i) Bulk section frames more or less badly buckled in after section of the N°3 Starboard Tank.

(j) Numerous rivets slack in way of the worst damage.

(k) Ballast + cargo pipe lines at after end carried away and valves, stems, expansion glands and valve spindles broken.

(l) Steam heating coils damaged at their after ends.

(m) The struts attached to the middle web frame were slightly twisted.

RECOMMENDED

74 Continued

floor bays to be filled in with cement. After this was all done, the annular space between the curved plate and the furls was filled in with concrete for strength rather than watertightness because the curved plate ($\frac{1}{2}$ " thick) had already been made watertight, then the top was plated over and welded. This repair automatically took care of all items 74a, b, c, d, f, g, h, i + j. In regard to the other items, recommended that item 74(e) be removed and a new temporary horizontal strut and in addition a companion diagonal strut fitted. Also the buckled floor of 74(d) where buckled outside the newly fitted curved plate be strengthened by means of bridging pieces to preserve end strength. Reference to be made to Drawing N°4 W.G.D "ONDINA" for details regarding temporary layout of item 74(k). Item 74(l). These heating coils to be left as they are. Item 74(m) To be faired + refitted if time permits.

Temporary Repairs

The following items are to be considered as temporary repairs. Item 16 (Glass windows) Items 17-18-20-21-43-44-45-46-47-52-56-57-58a-60-67-68-69-70-71 partly - 72 a b c d e f g h - 73 a + c - 74 a b c d e f g h i j k (partly) l + m.

Permanent Repairs

The following items are to be considered as permanent repairs. Items 1 to 15 both inclusive, items 19-22 to 42 both inclusive, items 48-49-50-51-53-54-55-58-59-61-62-63-64-65-66-71 (partly)

N°1 Starboard Tank.

Forward Bulkhead In order to provide additional strength against undue pressures on this bulkhead, recommended that extensions be made to the gusset bracket attachments at the foot of each vertical stiffener. This has now been seen satisfactorily completed.

Bolts in ship's side plating. These bolts approximately 380 in number are used for attaching the 15x4 channel stiffeners to the ship's side and they were fitted with the heads outboard, so that the nuts inside the tank could be tightened at will during the voyage in ballast originally contemplated. When the vessel was intended for use as a Mobile Repair Ship

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it was realised that the gummets would not stand up to the effects of Petrol therefore the undersigned recommended and it was agreed by the Owners Representative that ~~the~~ pipe sockets be welded over each nut and each fitted with a screwed plug. This would isolate the gummets from the effects of Petrol and when the vessel eventually departed for dry dock in ballast, bolts could be inspected and tightened at will by the simply simple expedient way of removing the screwed plugs and inserting a pipe sp. It is understood that the cost of fitting these sockets and plugs was to be borne by the American Navy, as it was done to enable them to load Petrol the after section of the vessel.

Conclusion The vessel's behaviour was noticed on two occasions during trial runs in Gage Roads after repairs were completed and although the sea was comparatively rough on the second occasion, the repairs appeared to be quite stiff and satisfactory.

The whole of the recommended work has now been seen satisfactory completed and an Interim Certificate issued and attached to this Report

Wm. G. Davies.



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