

COPY.

Lloyd's Register of Shipping.

Port FREMANTLE. W.A.

14th June, 1943.

This is to Certify that

Wm.G. DAVIES,

undersigned Surveyor to this Society did at the request of Owners Representative, Survey the Steel Screw Motor Tanker "D I N A" of Willemstad 6341 Gross Registered Tons, 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. Further particulars see Log Books.

PRELIMINARY EXAMINATION with the vessel afloat in Fremantle showed four found damage, which could be grouped into three categories namely, (1) minor damages caused by shell splinters and shrapnel in 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, Deck, (3) major damage caused by torpedoes on Starboard Hull and Bottom plating in way of No.2 Starboard Tank and Bulkheads of Nos. 1, 2, 3 Centre and Starboard Tanks which were seen to be flooded.

Categories Nos 1 & 2 will be merged in the following report, so that the location of each item will follow a sequence throughout the vessel, irrespective of the extent of damage. Category No.3, however, will be described separately under its heading entitled "Major Damage".

The preliminary examination revealed such damage as to warrant permanent repairs being done inside a cofferdam or temporary underwater repairs of a certain nature to enable the vessel to continue her proposed voyage to Melbourne for Dry Docking. Actually, the vessel was required to proceed to an American Port for permanent repairs which necessitated greater strengthening of structures in way of No.2 Starboard Tank than would have been the case for the voyage to Melbourne, and conferences were held with Mr. McCowan (Principal Surveyor in Australasia to Lloyd's Register) and Mr. Kirkbright (Owners Representative) when a method of strengthening as set out by Mr. Pratt (Surveyor to Lloyd's Register at Fremantle) was discussed.

Certificate is issued upon the terms of the Rules and Regulations of the Society, which provide that:—
The Committees of the Society use their best endeavours to ensure that the functions of the Society are properly carried out, it is to be understood that neither the Society nor any Member of any of its Committees is under any liability whatever to be held responsible for any inaccuracy in any report or certificate issued by the Society or in any entry in the Register Book or other publication of the Society, or for any error of judgment, or for any loss or damage of any kind, or for any injury to the property of any of its Committees or any Member thereof, or the Surveyors, or other Officers or Agents of the Society.

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tested method of strengthening by means of horizontal channels the gap in the Hull in way of No.2 Starboard Tank and anchor- vertical stiffeners by means of struts at stated intervals bottom fastenings of the bulkhead between No. 2 Centre and Tanks or to transverse floors was then transferred by the and to a drawing of the Hull section of "ONDINA" in way of and submitted to the Principal Surveyor and to the Owners tive, and it was agreed that the methods be put into effect.

as shown on Drawing Nos. 1 & 2 W.G.D. "ONDINA" would strength, but it was fully expected that No.2 Starboard remain fully open to the sea, and No.2 Centre and No.3 would also remain completely flooded and unable to be pumped No.3 Centre was to have been made relatively watertight by patch fitted by a Diver to the longitudinal bulkhead separ- from No.3 Starboard.

The original recommendations have been adhered to in their insofar as longitudinal vertical and transverse stiffenings is a considerable amount of extra work had to be done through nessy, which resulted in No.2 Centre and No.3 Centre and Star- being made tight, and opportunity was taken to give double strength to the renewed bulkhead between No.2 Centre and Star- as will be seen under the heading of "Major Damage". The for building a local cofferdam and a watertight wall will on by reference to "Major Damage".

DRAWINGS, LETTERS ETC. Drawing No.3 W.G.D. "ONDINA" contains ate rough sketches which were originally attached to letters Principal Surveyor, Owners Representative and Mr. Pratt.

Drawing No. 1 & 2 W.G.D. "ONDINA" shows details of the proposed stren- drawing No. 1A W.G.D. "ONDINA" shows what was eventually e work.

Drawing No. 4 W.G.D. "ONDINA" shows the alterations to pipe lines found s a result of the vessel having been chartered (on complet- lrs) as a Mobile Depot Supply Ship, and at the same time diagrammatic view of the condition of the Hull and the after No.3 Starboard Tank and the extent of the opening in the o.2 Starboard Tank.

a summary of findings of damage and recommendations for ment or temporary repairs.

FOUND

BRIDGE - all on Star-
Twelve concrete
ion slabs shattered
king of deck under
ly started and leak-
ainy weather.

et section of hand
to Standard Compass

lator Cowl holed
ng scored.

finder loop and
ged beyond repair.

ht glass cover

G BRIDGE - all on
s. Machine gun
board wing of

RECOMMENDED

(1) that these slabs be renewed
after caulking the decks.

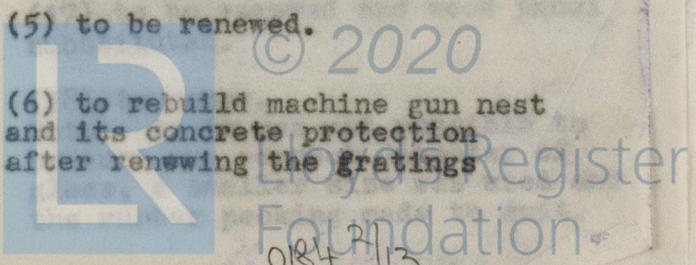
(2) this section be renewed,
faired, repaired and refitted.

(3) to be repaired.

(4) a new loop and standard to
be fitted.

(5) to be renewed.

(6) to rebuild machine gun nest
and its concrete protection
after renewing the gratings



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RECOMMENDED

badly damaged and the g and gratings in way nt.

(6) and the wood decking and caulking and paying same, in way thereof.

armour plate (3/4" thick) starboard entrance to torn and buckled and y from top fastenings ver.

(7) the top half to be cropped and renewed and welded to the lower half after the latter is removed and faired.

1 steel armour plate and buckled.

(8) to remove, fair and refit.

Deck at top of Wheel sent to items 7 & 8 1 torn.

(9) to crop damaged plate and renew 10 sq.ft. of plate.

Room concrete pro- ly damaged and the on bulkhead behind this ckled over an area t. and steel deck at top ea of 2 sq.ft. and its on fastenings torn.

(10) to crop and renew 16 sq.ft. of screen bulkhead and 2 sq.ft. of steel deckhead and renew damaged concrete protection.

et of fore and aft awn- arried away.

(11) to renew 15 feet of awning spar.

ximately 30 feet of fore lward teak rail (situ- e Bridge and outside the and immediately under- 11) shattered.

(12) to renew 30 feet of bulwark rail in "Wandoo" wood.

e fore and aft bulwark is attached rail mentioned) holed in seven places ximately 36 sq. inches d in numerous places.

(13) to square up ragged edges of holes and weld "insert" plates in position and fill in all possible scars by electric welding.

e Deck adjacent to item and torn in numerous

(14) remove approximately 120 linear feet of wood decking and renew in "Wandoo" wood and caulk and pay same.

side of steps (leading dard Compass Platform)

(15) to remove steps and fit new side and replace in position.

HOUSE. Starboard door gged and all front wood- glasswork shattered and rred in places. Kent on screens intact bu the low (in which the Kent fitted) was broken.

(16) to renew all damaged woodwork and glasswork, overhaul Kent screen and motor and refit into new glass. Note:- correct sizes of armour plate glass could not be procured, so that it was necessary to make most wind- ows fixed and to case in the window frames to suit the size of the glass as a temporary measure.

and Starboard side oken.

(17) to be removed and wood panel substituted.

etector glasses broken.

(18) to renew.

Note:- As it was not possible to procure the correct diameter of glass, a smaller size was used and the rubber packing made to suit.

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RECOMMENDED

Telegraph glasses

for safety latch deeply
ent and one of the
linders scored slightly.

Starboard window

DECK (COMPRISING
PORTERS). Front bulwark
in places. Starboard
in four places.

use front scarred in
places.

DECK (Starboard) gener-
ally and also in four places;
ranging from 6" x 6" to

Box and its glass doors

tilator Cowls holed.

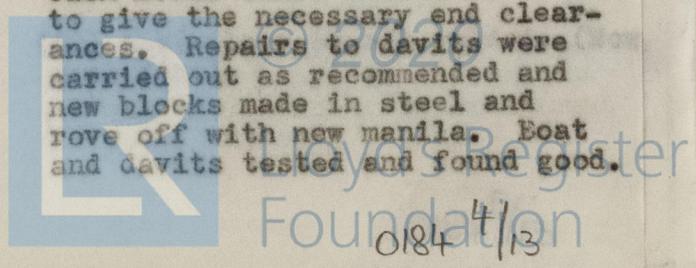
Deck under Captain's life-
boat in seven places each
of 6" x 6".

approximately 200 linear feet
of (adjacent to steel
deck) burnt and scarred.

eight deck lights and
equipment.

Lifeboat and its
equipment and the after
two and its differential
and steel seatings under.

- (19) Renew glasses suitably marked and test Telegraph.
- (20) the latch to be renewed, but the cylinders to be permanently repaired at the Owners convenience.
- (21) to fit wood panel as a war time measure and renew glass after cessation of hostilities.
- (22) holes to be squared up and insert flush plates welded in.
- (23) scars filled in by means of electric welding and dressed up and painted.
- (24) scars to be filled in and dressed and holes squared up and flush plates electrically welded.
- (25) to be renewed.
- (26) holes to be cleaned up and insert pieces welded in and dressed up.
- (27) holes to be cut square and flush inserts welded in.
- (28) damaged decking to be removed and new "Wandoo" wood decking laid, caulked and payed.
- (29) to be renewed.
- (30) a new Lifeboat be placed aboard and fitted out and the after davit repaired by fitting an internal sleeve and electric welding same and a new differential screw made and fitted. Note:- a steel boat of approximately similar dimensions was procured and certain minor repairs done thereon in order to place it in efficient condition. The boat was then equipped as far as possible to meet the requirements of Netherlands Government Regulations, and the davits were each moved three inches in order to give the necessary end clearances. Repairs to davits were carried out as recommended and new blocks made in steel and rove off with new manila. Boat and davits tested and found good.



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DUND

RECOMMENDED

LIFEBOAT (MOTOR BOAT).
Smashed and holed (by
in bullets while afloat
action) and small items of
damaged caused elsewhere
at, such as punctured
and tanks.

(31) that damaged planks be renewed
and other small items of damage
made good.

BRIDGE DECK (COMPRISING
QUARTERS.) Starboard
deck house scarred in
places.

(32) fill in scars and dress smooth
(now done).

deck and bulwark stan-
scarred in numerous places.

(33) fill in scars and dress smooth
(now done).

deck pipe holed.

(34) to be welded (now done).

DECK. Steel Foredeck
deply in approximately
abreast the Foremast.

(35) to be filled in by means of
electric welding and all welds
dressed.

DECK BUNKER LINE holed
ace.

(36) to have a patch welded on.

TANK. Steam heater pipe
leaking near lower

(37) to be brazed.

WARD PUMP ROOM. Both ven-
holed each in several

(38) holes to be cleaned up and
insert patches welded in.

Starboard side (between
& Centre Castle and
major damage) plating
ored in approximately 20
th four small holes.

(39) Holes and scores to be filled
in with electric welding and welds
dressed.

MAST. Two gas lines badly
numerous places. Two top
blown away. Four lower
on the Starboard side
the Port side either
or blown away. One back
away. Jumper stay
Lightning conductor
lips and insulators torn
eel Mast generally holed.
floodlights and fittings

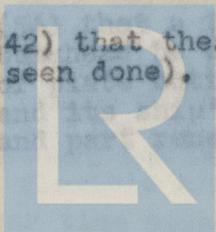
(40) to fit flush insert patches
electrically welded. To renew all
stays. Note:- Owing to shortage
of materials it was not possible to
procure correct size of stay wire
or any stay wire at all, so that
2 3/4" flexible wire had to be used
as a war time measure. To fit
lightning conductor and new insula-
tors. To fit flush insert patches in
steel mast electrically welded. To
fit new lights and fittings. All
items under this section have now
been seen done.

CASTLE HEAD (Starboard
ck buckled (due to heat
which had occurred in
below during shelling) and
ghtly generally between
nd starboard gunwale.

(41) that this be faired at the
Owners convenience.

CASTLE HEAD (Port side).
l holes and a number of
steel deck.

(42) that these be all welded. (Now
seen done).



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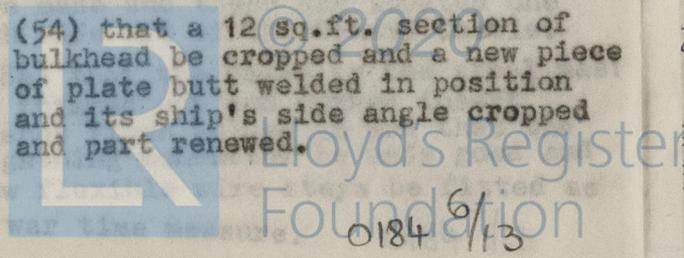
M.T. "ONDINA" AT FREMANTLE 14th JUNE, 1943.

FOUND

RECOMMENDED

MIDDLE SPACE (aft of [?]). The four deck [?] of the Verf Bergplatz [?] slightly buckled (Star- [?])
 [?] up slightly due to [?] our frame spaces [?]
BERG PLATZ. Paintwork [?] ackened by smoke.
PEAK STORE. Paintwork [?] ackened by smoke.
 [?] gratings and benches [?] board portion of this [?] store.
 [?] side of Chain Locker [?] splinters in six [?]
 [?] bulkhead (on Starboard [?] end of Chain Locker [?] Middle Peak from [?] holed and buckled [?] locker and ship's [?] stiffeners buckled [?] their brackets also [?] valve rod (to Forward [?] Valve) adjacent to [?] bent.
 [?] Starboard side plating [?] Sheerstrake (in way of [?] mentioned in item 49) [?] places, one each side [?] ad and approximately [?] s. These holes were [?] ately 6 sq.ft. area, [?] mes including the bulk- [?] dly buckled.
 [?] gastight light fitting [?] ed by heat.
PEAK STORE. Paintwork [?] erally by smoke.
MIDDLE (STARBOARD) BE-
STARBOARD TANK AND THE
ROOM. Plate below sheer- [?] n shell holes similar [?] Starboard Bow plating [?] approximately 4 ft. [?] side of the bulkhead [?] Room and No.3 Star- [?] two horizontal members [?] on ship's side torn in [?] ale.
 [?] between Pump Room and [?] Tank buckled (Star- [?] ver an area of approx- [?] ft.

- (43) that these be faired at the Owners convenience.
- (44) that these be faired at the Owners convenience.
- (45) to be painted at Owners convenience.
- (46) to be painted at Owners convenience.
- (47) to be renewed at Owners convenience.
- (48) that the holes be cut clean and flush insert plates welded in. (Now seen done).
- (49) that the damaged portion of bulkhead be cropped and a piece of 3/8 plate 4 ft. x 4 ft. be inserted and welded and three new stiffeners and gussets welded in position and a new section of valve rod made and fitted with a new universal joint.
- (50) as a permanent repair, that the damaged plate be cropped and a new plate 12 ft. x 7 ft. x 1/2" thick be rivetted and welded in position and one section of one frame renewed and three frames cropped, faired and refitted. (Now seen done).
- (51) that these glasses be renewed. (Now seen done).
- (52) to be painted at Owners convenience.
- (53) release plate at a rivetted joint and crop at a position forward of the damage and rivet and butt weld and strap a new piece of plate approximately 10 ft. long by 5 ft. wide by 5/8" and fit new (two) horizontal members.
- (54) that a 12 sq.ft. section of bulkhead be cropped and a new piece of plate butt welded in position and its ship's side angle cropped and part renewed.



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FOUND

RECOMMENDED

- between Pump Room
board Tank buckled
(de) over an area of
20 sq. ft.
- overboard valve
cked on flange.
- Steel top mast
and hanging and its
away. Lowermast was
cept for several stays
nters and a mast band
- ng conductor carried
pmast stay, but later
tact on deck except
nsulators.
- DAMAGE ON AFTER DECK.
ndle hand wheels for
S. and Nos. 3 P.C & S.
- up several inches
th of 32 feet in line
itudinal bulkhead
2 C & S. Tanks.
- section of Deck copper
plit slightly near
age.
- ill along platform cut
- Two ventilators to
holed.
- as scores on hull plat-
side aft.
- liferrafts lost off after
eel skids intact.
- ast holed in a number
and stays shot away and
ing conductor torn off.
- (55) that a 20 sq.ft. section of
bulkhead be cropped and a new piece
of plate butt welded in position
and its ship's side angle cropped
and part renewed. Items Nos. 54
& 55 have now been seen done as a
permanent repair).
- (56) to be welded as a temporary
repair.
- (57) that this mast be cut away and
sent down and the top of the standing
mast to be cut level and a steel
truck or cap fitted, which in turn
is to be fitted with pulleys for
Radio Aerial, flag halliards etc.,
This Main mast top to be renewed at
Owners convenience. Note:- that
pieces were cut out of this top mast
to make flush welded patches for the
Fore topmast.
- (58) repair conductor, make new clips
and fair some original clips, fit
new insulators into clips every 3 ft.
along lowermast stay and weld necess-
ary clips on mast between stay band
and truck.
- (59) to amke and fit new hand wheels
to replace damaged wheels,
- (60) to be faired at the same time as
permanent repairs are being carried
out.
- (61) that, as steam ~~ea~~ was in use
continuously during repairs a short
section of steel pipe be made and
fitted at first opportunity to enable
the copper pipe to be repaired.
- (62) to be filled in with welding.
- (63) to be welded. (Now done).
- (64) to be filled in by means of
electric welding and dressed. Now
done.
- (65) that new Rafts be made and fitted
and secured in position.
Note:- To Owners requirements two
more steel liferaft skids and rafts
were made and these are located one
each side aft of the Centre Castle.
- (58a) that the holes in the steel mast
be trimmed out and curved insert
pieces flush welded in and that the
lightning conductor be made good and
new flexible wire stays be fitted as
a war time measure.

Repair Fee (if any) £ \$55.00
15.00
50.00

Fees applied for
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MAJOR DAMAGE.

Major damage due to torpedo occurred in No.2 Centre and Starboard Tanks and Starboard Tanks and Hull plating and structural in way of Nos. 2 & 3 Starboard Tanks, while some minor damage in No.2 Port Tank.

It can be said that Nos. 2 & 3 Centre and Starboard Tanks (4 tanks in all) were open to the sea principally owing to the entire side and bottom of No.2 Starboard Tank being torn and/or pushed and furred inwards, (2) the bulkhead between No.2 and No.2 Starboard having the forward section for one third length missing entirely from top to bottom and the remainder outboard with buckled stiffeners and badly holed in places for a strip of undamaged plating 3 feet wide by full height at its after end, (3) the bulkhead between Nos. 2 & 3 Centre being buckled and holed near Starboard bottom corner, (4) the bulkhead between No.3 Centre and Starboard being buckled and badly holed towards its after end and (5) the bulkhead between Nos. 2 & 3 Starboard tanks being badly holed in the small remaining flat portion buckled over the remainder and the ship's side in way of No.3 Starboard Tank at its after end being curved inboard, and causing the bulkhead and side plating to have so many furred buckles that it is not possible to distinguish the junction of the ship's side and bottom.

The bottom and side plating in way of No.2 Starboard Tank was so badly damaged inboard with all frames, stringers, floors etc., that further repair by the Diver was not possible, until the undersigned decided that all this extraneous steel be cut away with under-oxy-hydrogen torches, leaving the bottom plating projecting approximately 4 feet beyond the line of longitudinal bulkhead and level thereto except towards the after end where it was considered to leave the up-turned bottom and turned in side to act as a vertical stiffener and a protection against heavy wash causing velocity pressure on the forward bulkhead of No.1 Starboard Tank when the vessel eventually left Port.

The majority of the large jagged holes in the longitudinal and transverse bulkheads (the largest being 8 ft by 9 ft. and the smallest by 5 ft.) were so close to the intersection of all the four bulkheads that a hole in one longitudinal bulkhead merged into a transverse bulkhead, so that, in my opinion, any patches made underwater by a Diver would have been an improvisation, and I have recommended that a wooden cofferdam approximately 16 feet by 16 feet deep be fitted over an 8 ft. by 9 ft. hole in the bulkhead of No.3 Starboard Tank and standing 3 feet away from the bulkhead to allow steel plate patches to be welded on. This cofferdam was fitted through the large aperture caused by the missing longitudinal bulkhead between No. 2 Centre and Starboard Tanks, and also a 4 ft. by 4 ft. hole in the Starboard bottom corner of the bulkhead of No.3 Centre Tank. This cofferdam together with a number of wooden wedges and sheepskins wedged into the outer bulkhead of No.3 Starboard Tank allowed No.3 Centre and No.2 Starboard to be pumped dry and substantial repairs to be carried out on these two tanks. This cofferdam took 12 days to make and fit; the repairs proceeding concurrently with other repair work, and it was well worth the time and money spent, as these two tanks were eventually made tight, and together with No.2 Centre which was also made tight, the vessel to be usefully employed for six months as a mobile repair depot ship, thus tiding her over winter months, so that her return overseas to Port of Repair should actually commence and be completed before the end of our Summer.

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be noted, that, owing to the continued presence of oily No.2 Centre Tank, the Diver was not able clearly to define the damage in same, and it was not until this condition was finally cleared itself after some months that any damage could be seen at all, and then from the surface it was apparent that serious damage existed to warrant having this Tank dried and repairs rather than trust to underwater work. Consequently, it is signed recommended that a watertight wooden wall be fitted between the length of No.2 Starboard tank parallel to and approximately 10 feet away from the damaged longitudinal bulkhead between No.2 Port and Starboard Tanks.

When completed enabled, not only the repairs effectively to be carried out in the No.2 Centre Tank, but also allowed the bulkhead between this tank and No.2 Starboard Tank to be renewed and fitted with stiffeners (vertical and longitudinal) twice as strong as the original, and the tank made perfectly watertight, and it also allowed the main stiffening to be fixed to the otherwise unsupported plating projecting into No.2 Starboard beyond the bulkhead, to prevent this plate from flexing during rolling at sea, as it would have a tendency to strain the bottom fastenings if not properly erected bulkhead. Also, it was possible to arrange the stiffeners at convenient locations and have holes drilled in the vertical stiffeners for the Diver to fit the five bottom transverse struts between the new bulkhead and the proposed channel framing over the top of the ship's side in way of No.2 Starboard Tank, after the removal of the wooden wall.

It is considered that the work eliminated a considerable amount of doubtful under-keel in connection with the repairs and enabled a perfectly sound No.2 Centre Tank to contribute towards the vessel becoming a fully useful mobile supply ship, and in company with the other tanks gives the vessel a larger margin of safety than would otherwise have been the case for her proposed voyage Overseas to Australia.

The items included in the area of major damage found with the following alterations made thereon are continued below.

FOUND

RECOMMENDED

NO.2 CENTRE TANK. Forward bulkhead (attaching forward keelson) to longitudinal bulkhead between No.2 Port and Centre Tanks to be cut away at rivetting level and the vertical angle to be replaced.

(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.

Keelson buckled and twisted at several places between transverse deep floors and bulkhead.

(67) 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 and bulkheads in Nos. 1 & 3 Centre Tanks.

Starboard section of forward keelson buckled where attached to bulkhead and set up high at its top end where originally attached to bulkhead between Centre and Starboard Tanks and at the top end set aft about one foot from its original position and its gusset cut out and rivets attached to bottom plating slack.

(68) to crop this section of floor and its top angles to within two feet of Keelson, fair and refit. Remove gusset plate and angles and fit new ones. Remove slack rivets and fit grummetted bolts in lieu thereof. See item 71 relating to bulkhead.

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FOUND

RECOMMENDED

head was non exist-
s position forward to
and the bottom set
here not supported by

board intermediate
floors of channel
gen forward deep
head badly buckled
r slightly and rivets
ese to bottom slack.

re bulkhead between
entre Tanks set in
holed over a space
ft. at starboard
r and indented above
space of 6 ft. x 7 ft.

dinal bulkhead between
and Starboard Tanks
sing for its full
en the vertical twin
hing to the forward
ulkheads and a posi-
t to the forward web
No.2 Starboard. The
er stringers were
from this position.
forward web stiffener
was bulged to Star-
lly over a large area
within three feet of
ansverse bulkhead.
he after web stiffen-
ly buckled as well as
taching the starboard
after deep transverse
heating coils in the
e of No.2 Centre Tank
as well as the Fuel
Pipes. Numerous loose
ets in addition to
sly mentioned.

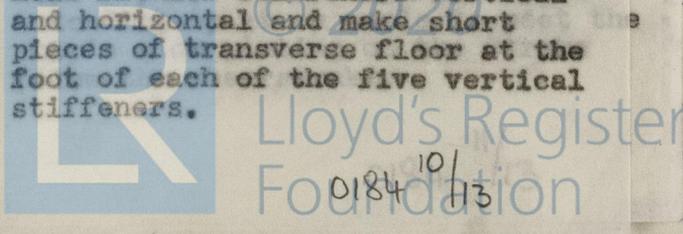
STARBOARD TANK (a) Forward
stiffeners and their
and buckled beyond
om torn and set up-
ards. Hull plating
torn and folded
st forward and after
e plating was torn
the bottom row of
strake below sheer-
is plate was split
several places and
ng its lower edge.
is generally chipped and
ne reeled.

(69) to remove all slack and
leaky rivets and fit grummetted
bolts in lieu thereof to make
watertight and fill in the entire
starboard half of this tank with
cement up to the level of the
channel tops with an extra depth
of cement in the bay 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 watertight wall in No.2
Starboard Tank, the upper half
of the longitudinal bulkhead be
renewed, and after fitting the wall
and pumping No.2 Centre Tank dry,
this bulkhead be entirely renewed
together with all necessary vert-
ical 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 loose
rivets to be removed and grummett-
ed bolts fitted and to be covered
with cement as stated in Item 69.

(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 water-
tight wall.
Remove stiffeners and gussets and
the remains of deep transverse
floors from the longitudinal bulk-
head, and after renewing the bulk-
head fit new stiffeners vertical
and horizontal and make short
pieces of transverse floor at the
foot of each of the five vertical
stiffeners.



Repair Fee (if any)	£ 55.00	Fees applied for	6-2-19 44
	15.00		
	50.00		

Handwritten signature or initials

M.T. "ONDINA" AT FREMANTLE 14th JUNE 1943.

RECOMMENDED

Twin angles attaching longitudinal bulkhead to the plating were laid over and rivets slack and in the space where the was non existent. Bulkhead has large approximately 8 x 9 ft., while the remainder and furled. and Cargo pipe line valves, strums, expansions, valve spindles may entirely. heating coils demolished.

(72) 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 Nos. 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.

CENTRE TANK.

and Cargo pipe line the Starboard bulkhead. Transverse stiffener on after and the tripping brackets same buckled. Transverse Bulkhead apply over an area of ft. and holed near its board corner and bulkwise lightly bulged full width up to half indented over a space 7 ft. and longitudinal bulkhead generally (from its extending forward) for approximately 12 feet the bottom up to the longer or two thirds of . This damage consisted board longitudinal being torn away from the transverse bulkhead and approximately 6 ft. high by and bulged inwards. longitudinal bulkhead locally the position and rivetted with many loose

(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.

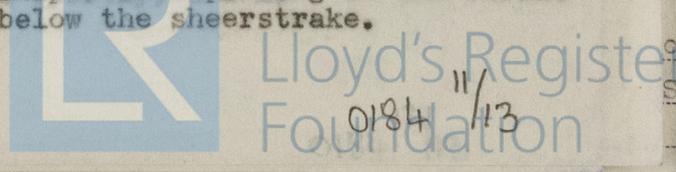
See item 70 which covers the repairs to this location. To remove damaged portion of bulkhead and renew.

Note:- that the cofferdam 16 ft. by 16 ft. fitted over the forward bulkhead of No.2 Starboard Tank not only allowed No.3 Starboard Tank to be pumped out but No.3 Centre Tank.

STARBOARD TANK.

side plating pushed in bilge Keel up to sheerstrake and bulkhead to the middle strut.

(74) Fair along the top of that plating which was pushed inboard and then weld a plate to this position and extending up at an angle to meet the ship's side plating on the strake below the sheerstrake.



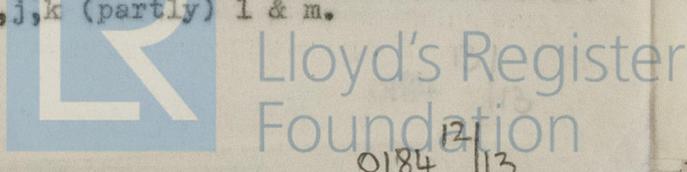
M.T. "ONDINA" AT FREMANTLE 14th JUNE 1943.

RECOMMENDED

ing was split in
 es.
 end of the hull
 is tank was closely
 any laps and these
 imilar furls in
 khead. There were
 t each furl.
 and lower strin-
 sted beyond repair
 r length of the
 web frame and its
 were buckled
 and the corres-
 floor was twisted
 s also was the
 ing it to the
 bulkhead.
 strut attached to
 frame was twisted
 that its inboard
 nd split the plat-
 ngitudinal bulk-
 e applies to the
 his.
 bulkhead was
 outboard half into
 furls merging into
 Hull plating and
 and horizontal stiff-
 isted into shape-
 er bulkhead was
 ft x 9ft approxim-
 e remaining flat
 s is mentioned under
 The top of this
 fairly intact for
 3 ft. for full
 inal floors of chann-
 isted for 8 feet
 r after ends.
 tion frames more or
 uckled in after
 he No.3 Starboard
 rivets slack in
 orst damage.
 and Cargo pipe line
 carried away and
 ms, expansion
 alve spindles broken.
 ating coils damaged
 er ends.
 ts attached to the
 rame were slightly

(74) This in effect would be a false side to the ship at this location. Then the leaks in way of the furls be temporarily stopped by means of sheep-skins and cement. As nothing could be done to remove these furls, it would be necessary to fit a curved plate on the inside of the tank to extend from the first reasonably good frame on the ship's side to the first similar stiffener on the remaining flat portion of the after bulkhead. This curved plate to fit as closely as possible to the furls so as to keep the amount of concrete required for this space as small as possible. The plate 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 the horizontal stiffeners of after and longitudinal bulkheads. The bottom of this structure to be well secured to the bottom and to those longitudinal and transverse floors which were still intact and then several 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 (1/2" thick) had already been made watertight, then the top was plated over and welded. This repair automatically took care of all items 74 a,b,c,d,f,g,h, i & j. In regard to the other items recommend- ed that item 74 (e) be removed and a new temporary horizontal and in addi- tion 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 No.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 and refitted if time permits.

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



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M.T. "ONDINA" AT FREMANTLE 14th JUNE 1943.

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

NO.1 STARBOARD TANK.

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

IN WAY OF NO.1 STARBOARD TANK

SHIP'S SIDE PLATING. These bolts approximately 380 in all are used for attaching the 15 x 4 channel stiffeners to the side and they were fitted with the heads outboard, so that the side of the tank could be tightened at will during the voyage as originally contemplated.

The vessel was intended for use as a Mobile Depot ship it was found that the grumets would not stand up to the effects of petrol therefore the undersigned recommended and it was agreed with the Owner's Representative that pipe sockets be welded over each bolt head fitted with a screwed plug. This would isolate the bolts from the effects of the Petrol, and when the vessel even-berthed departed for dry dock in ballast, the bolts could be inspected and tightened at will by the simple expedient way of removing screwed plug and inserting a pipe spanner. It is understood that the fitting of these sockets and plugs was to be borne by the Navy, as it was done to enable them to load Petrol in the fore section of the vessel.

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

The result of the recommended work has been seen satisfactorily completed and an Interim Certificate issued and attached to this report.

Wm. G. Davies,

SHIP & ENGINEER SURVEYOR
TO LLOYD'S REGISTER OF SHIPPING.



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