

C.S.

Port & Marine

(H.M.C.S. Afterglow)

1923

(Reports)

No.

657/23

SHIVES/1 # 18

H.S. the

Acting Governor

SUBJECT.

~~191~~ 1923

8<sup>th</sup> Sept.

Report on the repairs to H.M.C.S. "Afterglow" executed at Punta Arenas.

Previous Paper.

348/23

MINUTES.

*Report from Lt. Toro, Punta Arenas. 16/8/23. Encl. ①.*  
*Report from Capt. C.E. Hockley. 29/8/23. Encl. ②.*  
*Report from Capt. C.E. Hockley. 5/9/23. Encl. ③.*

Copied from M.P. 348/23.

I wish the reports on the hull, deck and engine and boiler repairs to be detached from this minute paper and put up in a fresh jacket with Mr. Skelton's report.

2. It will be necessary to make a special report to the Secretary of State owing to the heavy expenditure incurred. It is apparent that the repairs can be classed as those which were necessitated by depreciation through use and those which are properly ascribable to bad construction. I shall be glad if the Harbour Master with the assistance of the Colonial Engineer will mark off those repairs which were due to faulty or negligent work in the construction from those due to wear giving the cost of the former. If there is any good reasonable doubt in any particular it should be given in favour of the Admiralty and Crown Agents. It must of course be a matter of opinion.

Subsequent Paper.

375/24

3./

3. When the relevant extracts from this minute paper have been made, with a copy of this minute, this jacket can go to the Harbour Master in order that he should proceed as suggested in para. 3 of the Treasurer's minute of 6th September.

(Itld.) H.H.H.

7th Sept. 1923.

Minute from Harbour Master of 17<sup>th</sup> Sept 1923 — Encl (b)  
Report from Mr Skelton — " (ba)

Y. E. Submitted.  
G.R.B.  
Di/Sec  
20 Sept 1923

Detach 34.8/23 to be dealt with for the present as an accounts inf.

The attach inf. containing report of inspection of Cestrylow for sale please

 20 Sept 23

3/5.  
M. P. 990/21 attached  
G.R.B.  
Di/Sec  
21 Sept 1923

I would be glad if the O.E. would review and summarize the engineering works necessary where it appears that the original construction or fitting etc. was faulty. The engineer of the vessel has reported what work has been done. This supplements Dr. Ford's report. The original inspection report in which the vessel was purchased is given in ref. 990/21 attached.

The Harbour Master might then see these pp. in case he wishes to supplement or alter anything in (3) after comparing the original inspection reports on the deck and hull.

H.H.H.

21 Sept. '23

Colonial Engineer.

Referred accordingly.

G.M.H.  
Di'Office

22 Sept 1923

The Hon. Col. Secy.,

Report submitted herewith

on separate sheet.

Encl (5)

R. Marsden

Colonial Engineer.

2/10/23.

The Harbour Master,

Passed to you accordingly.

R. Marsden

Colonial Engineer.

2/10/23.

The Hon. Col. Secretary.

Submitted -

2. Report on Hull & Deck - Itm. et. Afbanglo  
as in Encl (3). would appear in order.

Colin G. G. G.  
Stations Master.  
2-10-23.

Y. G. Submitted.

G. K. B.

Di'fsee

2nd Oct 1923

Despatch to S. of S. No. 129 of 4<sup>th</sup> of  
October, 1923. — Encl. (6)

Inspeccion de Maquinas.-

Apotadero Naval

Magallanes

16 August 1929.-



The Hon Col Secretary.

I beg to submit herewith a report of the repairs effected on the boiler and engine of U.S.S. Afterglow.

Boiler.-To undertake the repairs of the boiler it was found necessary to remove the boiler lagging, the port bunker bulkhead, and to lift the chimney and ventilators, also the boiler mountings. The boiler was turned and drawn aft.

It was also necessary to cut two access holes in the starboard bulkhead for the scum valve.

When the boiler was clear it was thoroughly inspected; it was found necessary to effect all the repairs that the Colonial Engineer Mr. W.B. Basely indicated in his report. In the bottom of the combustion Chambers there was not a lamination, the plates been only corroded to a considerable extent. The drill test showed that thickness of the plate in the starboard combustion chamber was  $1\frac{3}{32}$ " and  $7/16$ " the of the port combustion chamber.

As with this thickness of material the safe working pressure could not be more than 95 lbs. per square inch allowing the usual factor of safety of 4.5 I decided to put reinforcing plates of  $\frac{9}{16}$ " riveted to the underside of the bottom of the combustion chambers.

Welding was not considered, as there are not efficient

workers in this kind of work in this place and thought that a Joggle plate would not be satisfactory as it would hide the seam of the furnace and the bottom of the combustion chamber and Leaking might take place unobservedly under the joggle plate.

All the repairs effected on the boiler is detailed at the end of this report.

The bottom manhole door was found to have a large play about  $\frac{1}{4}$ ". It was necessary to filled it up with metal by oxy-acetylene.

The condition of rivets taken off showed that the boiler was built in a careless manner.

When ready the boiler was tested by hydraulic pressure to 250 lbs per square inch.

Slight leakage was noticed in the front and back circumferential seams and in four stay nuts. Also the seams in the top of both combustion chambers slightly leaked. These defects were made good and a new test carried out with satisfactory results as the boiler under 250 lbs per square inch was quite tight.

The steam test to 165 lbs per square inch was also satisfactory After these tests the boiler was inspected and found in good order.

Main Engine.- The main engine was found to have set or sunk about  $\frac{1}{4}$ " It was decided to lift and put new wedges under the base bringing the bedplate in alignment with the Stern Shaft after this had been trued up.

The heads of the holding down bolts of the bedplate were carefully inspected and properly insulated from the

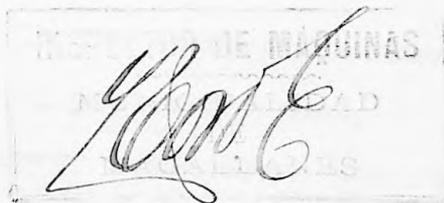
Sheathing.

● Propeller.-The edges of the blades were badly corroded. It was found convenient to fit the spare one.

The end of the stern shaft was eaten away as also the locking arrangement.

A new nut box-shaped was fitted to protect the end of the shaft.

The nut of the stern tube was badly corroded in the starboard side This defect was made good by oxy acetylene welding.



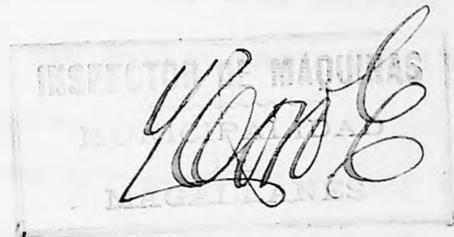
LIST OF REPAIRS EFFECTED ON U.S.S. ANTELOPE.-

- 1.- Removing of the boiler lagging relagging of same with Bell's asbestos composition.
- 2.- Removal of various broken studs for the lagging angle iron and new galvanized sheeting.
- 3.- Removal of the port bunker bulkhead smokebox, lifting chimney and ventilators, boiler mountings. Turned boiler and drawing same aft.
- 4.- Cutting two accessholes in the starboard bunker bulkhead for scum valve etc. and making plates for same.
- 5.- Replacing boiler port bunker bulkhead as before. After the boiler was satisfactory tested.
- 6.- Overhauling boiler mountings.
- 7.- Cutting and caulking the circumferential back seam of boiler as indicated and changing 25 rivets in this seam.
- 8.- Cutting and caulking the circumferential iron seam as indicated and changing 73 rivets
- 9.- Removing rivets in bottom of combustion chamber and reinforcing angle for the examination of furnace plate.
- 10.- Removing of 29 rivets in bottom and cutting and caulking the bottom seam in the starboard furnace.
- 11.- Cutting and caulking seam at bottom of port combustion chamber and renewing 37 rivets in same.
- 12.- The installation of the boiler circulating gear.
- 13.- Supplying and fitting Rolled Naval brass bolts for the main injection inlet in place of iron bolts and making and fitting of one <sup>plate</sup> 1" x 12"

Muntz metal plate for same

- 14.-Removing propeller, drawing propeller shaft; removing part of the wood bulkhead and refitting of same.  
Per  
Forging, machining and fitting one mild steel box type propeller nut. Making and fitting locking pin for same.  
Refitting and boring out the existing lignum vitae strips in stern tube.
- 15.-Turning up of I.P. valve spindle, rebushing of both glands and top guide.
- 16.-Building up with oxy-acetylene and trueing up of the boiler bottom manhole and refitting of door.
- 17.-Forging and machining one heavy ring propeller nut spanner of extra tough steel
- 18.-Turning up brass liner on propeller shaft, fitting spare propeller and making and fitting new mild steel key.
- 19.-Making patterns casting and machining bronze stern tube gland and neck bushes. Fitting same in stern tube on board.
- 20.-Making good four combustion chamber nuts.
- 21.-Making good three main stay nuts.
- 22.-Removing stern tube nut and building up defective parts with oxy-acetylene welding.  
Re-cutting the thread and refitting nut.
- 23.-Making four mild steel plates 3/8" thick for reinforcing the bottom of both port and starboard combustion chambers. Fitting riveting jointing of plates.
- 24.-Taking out and renewing one stay in the starboard combustion chamber and two stays in the port combustion chamber.

- 25.-Work done on main injection valve to ascertain if leakage was taking place between valve and hull.
- 26.-Lifting the main engine to the required level. Fitting new wedges of quebracho all round the base. Making the above quebracho
- 27.-wedges.
- 27.-Annealing three copper pipes in the engine room.
- 28.-Threading one piece of 1  $\frac{1}{2}$ " wrought iron pipe, and supplying one back nut for same.
- 29.-Building up with oxy-acetylene welding the door for the bottom manhole of boiler.
- 30.-Extra caulking of front and back circumferential seams and of various stay nut washers.  
  
Caulking of port and starboard combustion seams (After 1 st. hydraulic test)
- 31.- Making two brass distance rings in halves for safety valve.
- 32.-Forging and machining four mild steel nuts for combustion chambers. Threaded to gauge taken from sample nut.



FALKLAND ISLANDS.



1207

C.S. No.....

(2)

~~35~~

MINUTE PAPER.

Departmental Number.

From.....Harbour Master.....

Date.....29th August 1923

To.....Hon. Col. Secretary.....

SUBJECT.

Report in connection with work executed in  
Punta Arenas, H.M.C.S. "Afterglow", Deck Dept.

Reference  
Numbers.

Sir,

I beg to submit Report in connection with work  
executed in the H.M.C.S. "Afterglow" whilst at Punta Arenas.

2. Report deals with that work executed in the  
Deck Department.
3. Numbers of paragraphs correspond to the numbers  
against the items in the accounts rendered of Daniel  
Bonacich & Coy and the Taller Minerva ( Braun & Blanchard ).

I am, Sir,

Your obedient Servant,

*Colin Es/ochly*

Harbour Master

Item on A/C

1. Contract price for rigging vessel and re-rigging.

Vessel Name: 18 May 1922

\* Re-rigged 18 August 1922

H. M. C. S. "AFTERGLOW"

REPORT

on

WORK EXECUTED WHILST AT PUNTA ARENAS.

When work was done on ~~the~~ rigging vessel and re-rigged and planned in every place the nature of any work to be done. Further upon deck planking being damaged, yards were cleaned which lacked pitch.

It was considered advisable, owing to the apparent unsatisfactory condition of the rigging, to have the rigging examined by a competent authority. On 18th May -- 14th August, 1923, the rigging was examined and the following work done:

Total time elapsed 100 days.

2. On examination of the rigging it was found necessary to renew plates as follows:-

6 plates on Port bow.

3 " " " side amidships.

3 " " " quarter.

The above plates were worn, those amidships were badly torn, this may have been caused by the vessel lying at Itty. The plates on the Port bow and quarter, apparently through the action set up by iron fastening bolts not being covered with lead caps, plates being worn to that extent as to render them useless.

14 plates on Starboard bow.

Work was done on the rigging vessel and re-rigged and planned in every place the nature of any work to be done.

WORK DONE ON SLIPWAY BY DANIEL BONACICH & COY.

Item on A/C

I Contract price for slipping vessel and re-floating.

Vessel Slipped	18 May 1923
" Re-floated	14 August 1923
	-----
	88 days
	-----

Operations of slipping and re-floating were attended without accident.

2. Caulking, Decks and planking.

Upon deck seams and planking seams being scrapped and cleaned in many places no oakum of any quantity was to be traced. Further upon deck planking being scrapped, seams were disclosed which lacked pitch.

It was considered adviseable, owing to the apparent impracticability of tracing certain leaks which had been constant, to caulk the decks fore and aft, also side planking.

Total 3150 lineal feet.

3. On examination of the sheathing it was found necessary to renew plates as follows:-

6	plates	on	Port	bow.
9	"	"	"	side amidships.
3	"	"	"	quarter

The above plates were worn, those amidships were badly torn, this may have been caused by the vessel lying at Jetty. The plates on the Port bow and quarter, apparently through the action set up by iron fastening bolts not being covered with lead caps, plates being worn to that extent as to render them useless.

14 plates on Starboard bow.

Worn and torn, apparently by anchor, *Starboard anchor*  
*Starboard anchor being always used*

3 plates on the Starboard side  
Worn apparently through action of iron fastening bolts.

4 plates on stern and forefoot.  
Worn and torn possibly through riding athwart and over cable.

5 plates on Keel  
Worn and torn, apparently through action set up by iron fastening bolts of Keel band.

6 plates fore and aft utilised for patches.  
Under the counter it was found that a sea growth had set up to a height of 10 inches above the sheathing, it was therefore considered advisable to increase height of sheathing.

30 plates were utilised for this purpose.

TOTAL 80 plates.

4 The original fastening of the sheathing was carried out mainly with long copper tacks having small heads. The heads of these tacks had in many cases worn away, many were loose and many were missing. Several sheets of sheathing were found to be loose thereby rendering such sheets more readily liable to be torn, at the same time permitting the entrance of water and thus causing the felt to perish and also to hasten the action set up by the iron fastening bolts.

It was therefore considered advisable to remove all tacks and refastening sheathing with Copper sheathing nails.

18 sheets on Starboard side  
84 " " Port "  
were thus treated.

5. In order th t the sheathing might be raised around the it was necessary to remove the diagonal wood fenders of the stern.

Upon examination of same after removal it was found that two (2) were badly worm eaten and were rotten.

Upon further examination of the stern planking, after cleaning, it was found that two (2) planks, which had been adjacent to the aforementioned diagonal wood fenderx, were badly worm eaten.

In consequence the two (2) diagonal wood fenders and the two (2) stern planks, were renewed.

6. The Keel sheathing band, running fore and aft the whole length of the vessel was found to be broken and pieces were missing. Amidships 4 feet in length having broken away.

The sheathing bzd was found to be rotten throughout.

this was renewed full length.

7. Three (3) bolts securing rudder heel to the Keel extension were found to be corroded, these were replaced. Engine bed bolt heads, covering caps (14) were removed for the purpose of examination, bolt heads painted with anti-corrosive covered with felt, lead and the caps replaced.

8. One (1) plank on Port side and one (1) plank on the Starboard side, were cut and pieced.

Rudder pintles and gudgeons renewed.

Roat refastened on Port Side, three (3) planks.

Caulked on the Port bow.

9. In 22 cases it was found that frame bolts had, through corrosion on their own part, acted on the sheathing, but not sufficiently to render the whole plate being renewed. These heads were scrapped, painted with anti corrosive and ~~XXXXX~~ covered with felt and lead.

10. Rubbing strake on Starboard side was continued to Stem and raised in conformity with the Port side.

This takes the chaff of the cable when cable leads ahead or across the bow.

11. Steam pipe casings on deck were removed in order that the deck might be caulked and also the starboard side of fore accommodation hatch coaming.

A bollard on the fore side of the capstan which may have been intended to have been of service as a cable guide, was removed and hole through deck covered.

Stern cabin skylight caulked and made watertight.

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On examination of the Fresh Water Tank, situated in the main cross bunker it was found that the wash plate had broken away from the starboard side of the tank, tank was badly bungled and the port after corner was leaking.

Wash plate has been repaired. Fern after copper anodized. All four corners of the tank have been resealed.

DECK WORK UNDERTAKEN BY THE TALLER MINERVA.  
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tem in A/C

- D.1. Rudder was dismantled and lifted.  
It was found that rudder was down  $\frac{1}{4}$  inch.  
Adjustement was made accordingly.
- D.2. During the process of weighing the Starboard anchor the cable shackles would jamb by catching in the lower lip of the pipe, which lip was worn down through use. This necessitated surging the cable on the ~~winches~~ capstan and jerking the ~~capst~~ capstan in the attempt to force the shackles over the worn lip of the hawse pipe. This caused great strain on the capstan.  
Hawse Pipe was removed and a new pipe cast and fitted.
- D.3. The Starboard bow had become badly scored through the anchor flukes chaffing the planking of the vessels side in the process of weighing and catting and fishing.  
A steel plate had been originally fitted but was not of sufficient size fore and aft.  
A new steel plate has been fitted adjacent to the original plate.
- D.4. On examination of the Fresh Water Tank, situate in the fore cross bunker it was found that the wash plate was broken away from the starboard side of the tank, tank was badly buckled and the port after corner was leaking.  
Wash plate has been repaired. Port after corner soldered.  
All four corners of the tank have been cemented.

D.5. Fresh Water from the fore F.W. Tank is obtainable by means of a hand pump, situated within the galley, in close proximity to the stove.

Members of the crew wishing to obtain water have, therefore, had to have egress, at all times, to the galley.

Owing to the pump being in such close proximity to the stove the leather washers readily become dry and perish. These ~~wash~~ washers have had to be constantly renewed.

It was therefore considered adviseable to removed pump from the galley and refix outside the galley.

Pump was removed and refixed on the Port side against the galley bulkhead.

Piping to the F.W. Tank was choked, on examination it was found that 24 feet required to be renewed, being choked with corrosion.

In construction of the vessel, piping was laid from tank to a after pump, beside of and below the boiler on the starboard side. in which position it was impracticable for an examination to be made.

On replacing the piping, piping was refitted leading from ~~the~~ tank into Starboard bunker, rising height of bunker and ~~runnin~~ running aft immediately below Upper Deck, in which position the piping will be redadily accessible for purposes of examination.

D.6. The bulkhead of the fore ceoss bunker was, when vessel was constructed, apparently ( according to blue print ) intended to form a wooden Watertight Bulhead.

At the time vessel was being fitted out for the voyage to this Colony it was considered adviseable to increase the coal capacity. This was effected by the construction of a thwartship ~~bulk~~ bulkhead, forward of the original cross bunker bulkhead, thus forming a reserve bunker. Egress to this reserve bunker was ~~xa~~ made possible by cutting the permanent cross bunker bulkhead in three (3) places, thus forming manholes, irregular in shape.

Upon arrival of the vessel at Stanley from the U.K., the forward accomodation was reconstructed, the permanent cross bunker bulkhead being patched and a lining of covering boards placed on the fore side as a finish to the forward accomodation.

This bulkhead has not proved to be even dust proof, coal dust penetrating from cross bunker into the fore accomodation.

It was therefore considered adviseable to construct a bulkhead, dustproof, of galvanized sheet iron, 1/32, which bulkhead will further be of immense value in the event of coal in the cross bunker becoming heated.

D.7. Two cast iron patent roller fairleads were fitted aft , one on either side.

During a severe gale in Stabley, whilst tlying alongside, the Port Fairlead was badly smashed.

Fairlead has been replaced by a pattern more suitable for the work in which the vessel is employed.

D.8. Two W.C.'s are constructed in the vessel.

D.9.

D.10. The discharge pipes from each W.C. fork into one main discharge which pipe, at the joint, was leaking into the Engine Room. The aftermost of the two W.C.'s is adjacent to the galley. the galley stove being directly against the after bulkhead. The heat set up by the stove on the bulkhead rendered this W.C. impracticable of use.

It was, therefore, considered adviseable, that owing to the ~~zk~~ absence in the vessel of a wash place for the members of the crew, especially for the Engine Room Staff, to convert the aftermost of the two W.C.'s into a wash house.

Discharge pipe has been repaired.

W.C.pan has been removed together with the supporting plate and discharge to the main waste pipe.

A Wash basin and new waste pipe has been fitted.

Discharge pipe from basin will cause the water to be discharged in the same manner as in the previous W.C.discharge.

Water supply to wash house is through original flush pipe.

Water storage being maintained in Sanitary tank, by which means hot water can be supplied.

D.11. During working the Starboard papent roller fairlead whilst on the slipway, lug, maintaining bottom roller broke off.

To make this roller fairlead efficient for use it was necessary that this lug should be welded on to its frame. y

D.12. During overhaul of Starboard cable, it was found that six (6) studs required to be renewed.

Two ventilators are fitted to the Engine Room, through casing, one each side of the vessel.

D.I3. Starboard Engine Room Ventilator, bottom flange, was found to be badly cracked.

This has been welded

Both ventilators were originally stayed athwartships but owing to their height, the working of the vessel and the pressure of wind, a severe strain falls on the bottom flange which is rivetted to the Engine room casing.

It was, therefore, considered advisable to stay both the ventilators in a fore and aft direction.

D.I4. A Flat iron band has been fitted around each ventilator, immediately above ash door, and connected by a mild steel (7/8 round) stay to the funnel, to which it is bolted.

The upper stay being athwartships and the new stay fore and aft, will together take a very considerable amount of the strain from the bottom flange of each ventilator and also make ventilators more rigid.

*Colin E. Hockley*  
Harbour Master,

FALKLAND ISLANDS.



1208

C.S. No.....

3



MINUTE PAPER.

Departmental Number.

From.....The Harbour Master....

Date..... 5 September 1923

To..... The Hon.Col.Secretary.

SUBJECT.

Report on Hull and Deck of the H.M.C.S. "Afterglow",  
whist at Punta Arenas, Repairs etc.,.

Reference  
Numbers.

Sir,

I beg to submit report on the condition of the  
Hull and Deck of the H.M.C.S. "Afterglow" as found upon  
examination whilst on the Slip at Punta Arenas.

2. Report on the Boiler etc, will be submitted as  
soon after the return of the H.M.C.S. "Afterglow" from her  
present voyage, as possible.

I am, Sir,

Your obedient Servant,

*Colin Esbody.*

Harbour Master.

REPORT ON CONDITION OF HULL OF THE "AFTERGLOW"

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I beg to report on the condition of the Hull and Deck of the H.M.C.S. "Afterglow" as found upon examination whilst on the slip at Punta Arenas, South America, May 1923.

Vessel was sheathed in the United Kingdom at the order of the Colonial Government through the Crown Agents of the Colonies in 1921.

Sheathing (Muntz Metal) was found to have been placed over the heads of fastening bolts, without lead caps over the latter. Fastening bolts were ascertained to be of iron.

This has caused a galvanic action to be set up, which action has completely destroyed the heads of those fastening bolts which were exposed to view during the process of re-conditioning and also has had a very destructive effect upon the sheathing.

The use of copper tacks in lieu of copper sheathing nails has not proved effective, many heads having been found to have been wasted away.

During the process of re-conditioning the sheathing the felt backing the Muntz Metal plates was found to be of a very poor quality,

The galvanic action caused by the Muntz Metal sheathing versus Iron rudder post, is denoted by corrosion at the heel of the rudder post.

The vessel is constructed with an Iron rudder post and a Cast iron propeller and the galvanic action set up by these in combination with salt sea water versus Muntz Metal sheathing has caused corrosion to take place to a very serious extent.

This galvanic action has caused the edges of the propeller blades to become corroded and ~~were~~ so softened that pieces were broken off by hand.

The extreme end of the Tail end shaft was badly corroded, thus,, causing the locking piece of Nut to fall off, the Nut itself being badly corroded.

The cement covering having almost entirely fallen off, broken away.

The Heads of the Engine bed bolts show signs of corrosion, due also to galvanic action, a ction having been set up through the x sheathing ( Muntz Metal ) being in contact with bolt heads, there having been an absence of lead caps to the bolt heads.

The plate securing the Inlet to the Main Injection valve was found to have disappeared, owing to the heads of the iron bolts which should have secured it to the vessel's side, having been completely eaten away.

At the time of purchase of the vessel the question of the material to be used in the sheathing of the Hull, I venture to suggest, should have been verified by the Consulting Engineers of the Crown Agents who were supervising the ~~Reconditioning~~ re-conditioning of the vessel, and in view of the vessel having been constructed with Iron frame bolts, Iron rudder post and Cast Iron Propeller, Zinc sheathing, I venture to suggest, should have been the sheathing material used.

Decks.

Upon arrival of the "Afterglow" at Stanley from the United Kingdom, 1st December, 1921, it was noted that a very considerable amount of pitch had been used upon the deck seams and that the vessel's sides were thickly covered with this substance.

It was considered adviseable not to remove this pitch as leaks, from the Upper Deck, were found in the Fore part of the vessel. As the pitch began to wear off the Upper deck, leaks commenced to become more pronounced. Attempts to trace the source of these leaks failed, though the caulking of certain seams was resorted to..

It was found, during scrapping and cleaning of seams whilst on the slip, that an insufficient amount of Oakum had been used in places and further that several seams had been forced and pierced through. Pitch had been poured thickly onto seams, but in many places, though covering the seam with a good surface, had not

actually sunk into the seam.

This may possibly have been due to pitch not having been in a sufficiently molten state when used, having cooled to a solid ~~via~~ immediately on leaving the ladle.

The planking seams of the vessel were also found to be deficient in oakum and in many places, the pitch on being scrapped off ~~xxxx~~ exposed an open seam.

*Colin E. Lockett*  
Harbour Master.

REPORT ON INSPECTION OF THE VESSEL "MIRANDA" OF THE PORT OF DUBLIN

On the 14th day of August 1914, the vessel "Miranda" of the Port of Dublin was inspected by me, the Harbour Master, at the request of the Dublin Harbour Commissioners.

The vessel was found to be in a satisfactory condition for service, and the crew were found to be sufficient in number and qualified for duty.

The cargo was found to be properly stowed, secured, and lashed, and the vessel was found to be in a satisfactory condition for service.

I am, Sir,  
Your obedient servant,  
*Colin E. Lockett*  
Harbour Master.

FALKLAND ISLANDS.

C.S. No.....

## MINUTE PAPER.

(4)

Departmental Number.

From... Harbour Master.....

Date..... 17 September 1923

To... The Hon. Col. Secretary.....

## SUBJECT.

Report by Engineer H.M.C.S. "Afterglow" ,  
Work done at Punta Arenas, Boiler etc,

Reference  
Numbers.

Sir,

I beg to submit Report by the Engineer of the  
H.M.C.S. "afterglow", Mr J. Skelton. on the work executed  
whilst at Punta Arenas on the Boiler etc.

2. Numbers of paragraphs correspond to the numbers against  
the items in the accounts rendered by the Taller Minerva,  
Braun & Blanchard.

I am, Sir,

Your obedient Servant.

*Colin Estocley*

Harbour Master.

(44)

WORK UNDERTAKEN BY THE TALLER MINERVA .  
-----

LAGGING  
-----

- E 1 Lagging was replaced on boiler in good order as was possible. The difficulty was the small space to work in.

BOILER FITTINGS.  
-----

- E 2 Bunker bulkhead, Smokebox, Ventilators and Boiler Mountings removed for turning the boiler. These replaced in good order, Boiler replaced in original position.

SEAMS .  
-----

- E 3 The back circumferential seam on Port side was cut back to allow for good caulking of seam. Seam caulked and holes closed up. Portion of seam on Starboard side caulked 25 rivets on Port side cut out and new rivets replaced.
- E 4 Front circumferential seam cut back in parts to allow for good caulking and seam caulked along part that had been leaking, 78 rivets taken out and replaced with new rivets.

STARBOARD COMBUSTION CHAMBER  
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- E 5 In the bottom of the Starboard combustion chamber and furnace 39 rivets were removed. On drill test being made it was found that the bottom of the combustion chamber had wasted and thickness of plate in parts only  $7/16$ ". Senior Toro recommended that for safety the bottom of the combustion chamber should have steel plates fitted to give strength to the wasted part of the plate. Difficulty was found to design plates to give strength and at the same time such that could be fitted in the boiler.

Working space inside being small and only a limited size

E 5 of plate could be passed inside the boiler through the manhole.

Two steel plates  $3/8$ " thick have been fitted on the bottom of the combustion chamber covering as much as possible the wasted portion of the bottom of the combustion chamber. The seams of the combustion chamber and furnace that had been leaking have been well caulked, 39 new rivets and <sup>two</sup> one stay nut put in.

#### PORT COMBUSTION CHAMBER

E 6 In the Port combustion chamber it was found when a drill test had been made that the plate up the Port side opposite the part of the seam that had been leaking, had wasted. The thickness of this part of the plate was only  $7/16$ ". The bottom of the combustion chamber appeared also to have wasted. These wasted parts have been reinforced in the same way as was done in the Starboard combustion chamber, by fitting  $3/8$ " steel plates. 37 rivets have been taken out and new rivets put in. Two new stays have been fitted.. Seams that had been leaking have been well caulked.

#### CIRCULATING SYSTEM .

E 7 The circulating system was fitted as contained in the Colonial Engineer's specifications.

#### PROPELLER NUT .

E 8 9. Propeller Nut was found to be badly effected by corrosion and locking piece gone. New Propeller Box Nut was made and put on. Wear down of Tail Shaft at outer Bush only slight,  $3/64$ ".

#### MAIN INJECTION.

E 8 The plate holding the Main Injection to the ship's side was found to have gone and the bolts holding it to have been

E 8      wasted away by corrosion. A Brass plate and brass bolts have been fitted.

VALVE SPINDLE.

E 10      I.P. Valve spindle turned up and new top bush fitted to guide.

MANHOLE AND DOOR

E 11      Bottom Manhole and face of Door trued up and part that was thin built up by oxy-acetylene welding. The welding was done on the side of Manhole.

STEAM TUBE

E 12      Inside main steam tube badly worn. New bush was made and fitted and new ends to joints.

STAY BUSH

E 13      In the removal of lagging from the boiler it was found that 4 Connection, number stays had been leaking and Nuts wasted in consequence new Nuts had to be fitted.

MAIN STAY BUSH

E 14      It was also found upon the removal of the lagging from the boiler that 3 Main Stays, top of boiler at the back, had been leaking. Nuts and Washers were removed and made good.

STEAM TUBE NUT

E 17      The Nut holding Steam Tube was found to be wasted by corrosion. This was taken off and built up by oxy-acetylene welding and replaced.

ADDITIONAL WORK .  
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PROPELLER SPANNER .  
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- E I2 As there was no spanner for the new Propeller Nut, it was thought adviseable that a spanner should be procured.

PROPELLER AND SHAFT .  
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- E I3 Liner on Tail End Shaft was badly worn on forward end, in consequence liner was turned up. Old Propeller was found to be effected by corrosion along the edge of the blades, New Propeller was put on. Old Key being too small, a new Key was made.

STERN TUBE .  
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- E I4 Inside neck bush of Stern Tube badly worn. New bush was made and fitted and new bush to gland.

STAY NUTS .  
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- E I5 On the removal of lagging from the boiler it was found that 4 Combustion chamber stays had been leaking and Nuts wasted in consequence new Nuts had to be fitted.

MAIN STAY NUTS .  
-----

- E I6 It was also found upon the removal of the lagging from the boiler that 3 Main Stays , top of boiler at the back, had been leaking. Nuts and Washers were removed and made good.

STERN TUBE NUT .  
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- E I7 The Nut holding Stern Tube was found to be wasted by corrosion. This was taken off and built up by oxy - acetylene welding and replaced.

RE-INFORCING PLATES.  
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E 18

Plates for Combustion Chambers for reinforcing Port and Starboard as in E 5 and E 6.

MAIN INJECTION.  
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E 19

Examination was made around the Main Injection to make sure no leakage had been taking place when holding plate came off, vide E 8.

ENGINE.  
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E 20

On replacing shafting it was found that the shafting was put off line. The Engine Crank Shaft was lifted, but it was found that the Engine Bed Plate required lifting, this was accordingly accomplished, Engine Main Bearings, and lining up of the crankshaft to the thrust shaft examined by Senor Toro.

A part of this work was executed by the Ship's staff.

PIPPS .  
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E 21

Three Copper pipes from Engine connections. These pipes were annealed to prevent fracture on lifting up of the Engine.

FEED PIPE.  
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E 22

Pipe connection for internal feed pipe.

MANHOLE DOOR .  
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E 23

On examination of the bottom manhole door by Sener Toro, he recommended that for safety the door should be built up, this was executed by oxy - acetylene welding. The side of the manhole had been welded, vide E II.

TESTS.  
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- E 24 When the boiler was under the first hydraulic test of 250 lbs, various parts of the seams, chiefly in the combustion Chambers, leaked slightly. It was considered to have these made tight.
- The second hydraulic test of 250 lbs was satisfactory. Senor Toro was present at the testing of the boiler.

SAFETY VALVES .  
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- E 25 Safety Vaves floated at 160 lbs instead of 180 lbs as originally set. *(This was done in accordance with the Colonial Engineer's specifications.)*

GIRDER STAYS .  
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- E 26 On conclusion of the boiler tests it was found that 3 girder stays, on the top of the boiler, were slack. The nuts holding the stays could not be moved, these nuts were cut and new nuts procured and the girder stays made tight. Nuts were made by contractors, work executed by the Ship's Staff.

NOTES ON WORK DONE AT PUNTA ARENAS.  
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On the Steam trial of the Boiler, the boiler was found to be tight except a small leak from one rivet, this was caulked.

On Engine trial, Engine and shafting found to ~~be~~ run well giving satisfaction.

Senor Toro was present during the trial run.

During the refit difficulty was experienced in getting the work done quickly, often the men had no one to supervise them,

I wish to mention that great assistance was given me by Senor Toro  
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both in advice and seeing the work was done in a satisfactory way.

*A. J. Skellon* Engineer.  
H.M.C.S. "Afterglow".

5

FALKLAND ISLANDS.

C.S. No.....

LETTER FORM.

Departmental Number.

From The Colonial Engineer.....

Date 2nd October 1923.

To The Hon. Colonial Secretary.

SUBJECT.

General summary of purchase of Steam Drifter "AFTERGLOW", with reference to boiler and to main injection.

Reference Numbers.

The Hon. Col. Secy.,

It would appear, when the inspection of the "AFTERGLOW" was made by a representative of the Crown Agents, on the 4th August 1921, that the boiler and engines were not then examined, but that the record of tests, made in 1920, as produced by the Engineer of the Mother ship (H.M.S. "HERMIONE") was accepted as giving the condition of the boiler on the 4th August 1921. It would have been of great advantage had a copy of the above mentioned record of tests been submitted as, from this, the condition of certain seams etc. could probably have been ascertained. The specification of repairs and alterations, by Messrs John I. Thornycroft & Co., only provided the following under main boiler:-

"To be opened up for examination, dirt removed and heating surface to be wire brushed down throughout. All mountings to be opened up for examination, ground in and repacked".

I have not seen any report as to the result of the examination. On the 17th August the vessel was purchased, it being clearly understood that the contract for the sale of the vessel was for "the vessel 'as she lies' at Southampton".

On the 14th September/

On the 14th. September 1921 the vessel left Plymouth for this Colony. On the 1st. December 1921 the vessel arrived in Stanley. The Engineer-in-Charge did not report any leakage of boiler when on passage. On the 19th. January 1922 heavy leakage of seams etc. was reported to me - see my report dated 9th. June 1922, M/P 990/21. During the period from the 19th. January 1922 to the 9th. May 1923, when vessel left for Punta Arenas, temporary repairs had frequently to be made and special attention given to the faulty seams to endeavour to arrest leakage and wasting of plates.

There were three serious defects in the boiler, which involved considerable expense to rectify, being the back circumferential seam and the starboard and port combustion chambers: the wasting of the bottoms of the combustion chambers was uniform throughout the length of plate. As may be seen by the various reports, submitted both by Senor Toro and myself, the above sections of the boiler were in a most unsatisfactory condition and it seems hardly possible that such defects could have commenced and developed since the vessel left England on the 13th. October 1921. When the boiler was examined by me in January 1922 the plate of the back circumferential seam was pitted and wasted, the seam had undoubtedly been re-caulked on more than one occasion, also the seams of combustion chambers. The principal and most serious defects were all below the line of fire-bars, clearly showing that the first cause of leakage at seams was unequal expansion of boiler plates due to sluggish circulation. Seeing the nature of the service upon which the vessel was employed during the late war, there is every reason to believe that the boiler frequently had to be ~~forced~~<sup>forced</sup> and may have had practically a full head of steam, the bottom of the boiler being virtually cold. Leakage of ~~lower~~<sup>lower</sup> seams would be the natural result, hence the severe wasting of combustion chamber bottoms and back circumferential seam. Now that a hand circulating system has been installed, with proper attention, the failure of sea

through the above-mentioned cause should not recur. In my opinion the repairs that it was found necessary to undertake are due to excessive depreciation and wear, brought about by raising steam too quickly in the boiler when cold. As I was not at Punta Arenas when the boiler was being repaired I am unable to offer any opinion as to careless or faulty construction of the boiler, but, from the report submitted by Senor Toro, the rivetting would seem to have been done in a "careless manner".

From the list of repairs furnished by Senor Toro and the report by Mr Skelton, Chief Engineer of the "AFTERGLOW", it would appear that the original fastenings for the main injection were of iron. These had corroded leaving the bolts in the ship's side without heads or compensation rings. Considering that the vessel was dry-docked in Southampton in 1921, when the sea-cocks and fastenings would be examined, the galvanic action appears to be excessive. Seeing that there are no docking facilities in this Colony I consider that the extra expense incurred in Punta Arenas for supplying brass bolts and plate in place of iron is a most wise expenditure.

In conclusion it is most essential that any machinery or boilers required for service in the Falkland Islands should be of first class quality and in good order, as it is practically impossible to effect repairs of any magnitude in this Colony; also that the bottom of any vessel required to work in these waters should be in first rate order and all metals required for fastenings, propeller etc. be such as will not be subject to galvanic action, as it is not possible to dock the vessel for examination and renewal in these Islands; consequently the vessel has to be sent either to Punta Arenas or to Monte Video for examination and, in the case of the "AFTERGLOW", at considerable and unavoidable expense.

*R. B. Ashley.*

Colonial Engineer.

2/10/23.

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FALKLAND ISLANDS.

No. 129.

GOVERNMENT HOUSE,

STANLEY,

4th October, 1923.

My Lord Duke,

I regret to have to report that heavy expenditure has had to be incurred by the docking and repairs of H.M.C.S. "afterglow" at Punta Arenas. The total cost chargeable to extraordinary expenditure has been £1,755 and I have signed special warrants for this amount. Of this sum it may be said that roughly £1,000 has been entailed by the defective state of the vessel on purchase and the balance by normal docking and repair charges, which will be recurrent every two or three years.

2. I attach copies of reports from the Harbour Master, the Colonial Engineer and Senor Toro the Inspector General of Machinery at Punta Arenas.

3. The original cost of the vessel was £1,000, bought as she lay. Her cost as delivered in the Colony was £8,887. Such defects as have since appeared may be

attributed/

Enclosures I, II, III and IV, in duplicate.

HIS GRACE THE DUKE OF DEVONSHIRE,

P.C., K.G., G.C.M.G., G.C.V.C.,

SECRETARY OF STATE FOR THE COLONIES.

attributed to war time construction and usage: taking all the circumstances into account I do not think that further action with respect to faulty construction or inspection on sale will benefit the Colony in any way.

4. The repairs were satisfactorily completed at Punta Arenas.

I have the honour to be,  
My Lord Duke,  
Your Grace's most obedient,  
humble servant,

H. Henniker-Heaton.