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## SPECIFICATIONS FOR RENEWALS AND REPAIRS TO THE S. S. "CHALLAMBAA"

THESE SPECIFICATIONS are for repairs and renewals to be effected to the above named vessel now lying at the Government Dry Dock, Esquimalt, B.C., where she may be seen, and are to cover the furnishing of all necessary labor, material and/or equipment to complete the items of work outlined in same unless otherwise specifically directed.

It is to be understood by the Contractor that the repairs herein specified and intended are to be carried out and completed in all details connected therewith; that the workmanship and materials must be of the best quality throughout; that the material must conform in size and other characteristics to that originally in the vessel, or approved equivalent; and that the work throughout must be done under the supervision and to the entire satisfaction of the Owners, Underwriters and Classification Surveyors and the United States' Steamship Inspectors - to the extent that their authority or jurisdiction shall apply.

Should any disagreement arise as to the interpretation of the Specifications, or concerning or relating thereto, the same shall be left to the determination of the Surveyors and Owners' Representative, whose decision shall be binding on all parties.

It is to be understood by the Contractor that all materials requiring a test shall be tested in accordance with the rules of the classification society, (Lloyd's) and must meet their requirements and all charges and costs for tests, inspections, etc., must be borne by the Contractor.

Should the contractor require the removal or shifting of engines, boilers, auxiliary machinery, or any other part of the vessel or her fittings, equipment, stores, fuel, water or ballast etc., or should temporary repairs be necessary for the removal of the vessel to his yard for the purpose of carrying out the work specified or implied therein, the same shall be done by him at his expense. All such removals shall be subsequently replaced and any damage or loss resulting therefrom shall be made good by the contractor. Should any portion of the vessel's structure, housing,



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fixtures, and/or equipment require alteration in order to carry out the work or provisions thereof, even though not specifically mentioned herein, the contractor shall make such alterations at his own expense.

All dirt and rubbish consequent upon the accident and/or the repairs to be removed from the vessel by the Contractor and she is to be delivered to the Owners in a condition for service.

All scrap and salvage material caused by the making of the repairs and/or alterations herein called for, shall become the property of the contractor unless otherwise specified.

Any parts specified to be removed which can be restored to their original condition by fairing, etc., also any parts specified to be removed for fairing, which can be faired in place to the satisfaction of all the Surveyors will be accepted, on the other hand any parts found broken or broken in removal or fairing to be renewed by the contractor at his expense.

These repairs shall be made and the work shall be carried out in such a manner as not to compromise the vessel's registry classification or insurance; and with regard to the respective rights, obligations and responsibilities of the owner and the contractor, as established hereby; and the work shall be subject to the inspection of the representatives of all parties so interested and shall be satisfactory to them.

It is to be understood that the particulars for the work involved are furnished "for the guidance only" of the bidders and later of the Contractor; but no responsibility therefore shall attach as affecting the contract obligations, and the contractor must obtain his own particulars and dimensions and be responsible for the same; as the intent of these specifications is to restore the vessel, insofar as damage is concerned, to the same good condition as she was in before the accident.

While the vessel is undergoing repairs or alterations at



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the contractor's yard or wharf, he shall be held responsible for and make good at his expense any and all damage of whatsoever nature or/and loss to the vessel or/and its equipment or/and its movable stores, except where the contractor can affirmatively show that such loss or damage is due to causes beyond his control and which by the exercise of reasonable care he was unable to prevent. The Contractor is to fully protect the vessel and the Owners by maintaining such insurance as will protect him from claims under Workmen's Compensation Acts and him and/or the Owners from any other claims for damage for personal injury, including death, which may arise from operations under this contract, whether such operations be by himself or by any subcontractor or by the Owners or anyone directly or indirectly employed by either or any of them.

From the time this contract becomes effective and until the completion of same, the contractor shall be responsible for and pay all expenses of wharfage, towage, decking, running lines, electric light, water for testing and refilling tanks and/or boilers or for any other purpose. Should the contractor desire to shut down the ship's boiler plant or should the work outlined in these Specifications make it impracticable to use same for supplying steam for cooking or heating purposes, operating pumps, winches, prevention of damage through freezing, electric lighting, or for any other purposes whatsoever, the contractor is to supply such steam and/or electric lighting as may be required without extra charge.

All tanks under alterations and/or repair shall be cleaned and/or washed and/or steamed out by the contractor as may be necessary before any work is done thereto; and the oil or water tightness of that portion of the tanks affected by repairs shall at the conclusion of the repair be proven to the satisfaction of the Classification Society and the Owner or his accredited representative.

In case any of the vessel's machinery, equipment or fittings are used by the Contractor for any purpose whatsoever, he shall be held responsible for their reconditioning, if necessary, and shall



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make good any damage resulting from such use.

Tenders must include the cost of transporting the vessel from where she now lies to the works of the successful contractor and back to a wharf to be selected by the Owners at including pilotage, towage, insurance and all other expenses connected therewith.

The Owner reserves the right to demand from the Contractor at Contractor's expense, a satisfactory surety bond for the successful performance of this contract.

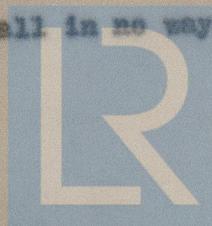
The Contractor's time and liability is to commence at the time set forth in the acceptance of this contract said acceptance to be delivered to the Contractor or his Representative at the time the contract is awarded and to cease only when all work specified herein has been completed to the satisfaction of the Owner or his accredited representative, and when all the contractor's equipment, tools, etc., and all rubbish have been removed from the vessel.

For the prosecution of the repairs to the hull, the vessel shall be docked on a drydock approved by the accredited Surveyors; at such a time and constantly supported in such a manner as to insure that there shall occur no deformation in the hull structure due to removing those portions thereof which have to be renewed or the renewal of which is entailed by the same; nor shall the ship be placed again in the water before an adequate amount of the new work is placed and fastened to satisfy the same requirement, and subject also to the approval of the accredited Surveyors.

Should the contractor exceed the time agreed on in his contract for carrying out the repairs, renewals or replacements, etc., specified or implied, the sum of Two Hundred Dollars (\$200.00) is to be paid by him as liquidated damages for each and every day in excess of the time named by him for the completion of this contract.

No extras will be allowed on this contract unless previously agreed to in writing by the Surveyors.

It is hereby mutually agreed that the issuance of requisitions for additional work shall in no way relieve the contractor



**COPY**M.S. "CHALLAMBA"SPECIFICATIONS - Cont'd.

from complying with the terms of this contract unless specifically agreed to in writing.

The Owners reserve the right to reject any and all bids.

The Contractor must furnish Owners with a Certificate from a certified chemist, stating that all tanks and other compartments have been tested and found to be free of explosive or dangerous gas or gases and that all said compartments are safe for riveting, burning and/or other hot work. The pipe lines in the way of above tanks or compartments are also to be cleaned and gas free. No repairs or renewals shall be commenced until said Certificate has been delivered as herein provided for. (The contractor will assume all responsibility for keeping the vessel free from gas during the entire period of repairs.)

Contractor to assume all liability and to protect owners and vessel against all claims or fines due to pumping fuel oil from the vessel into the waters of the harbour.

Tenders to be given in lump sum for all work specified or implied.

Tenders must specify the time required by the Contractor in continuous running days, to complete the repairs set forth in these specifications. Tenders are to be addressed and delivered to Owners' Representative, M.S. "CHALLAMBA", Temple Building, Fort Street, VICTORIA, B. C., and to be handed in at 2.30 P.M. Thursday, July 7th, 1927, and are to be drawn in the following manner:

"I, (or we) hereby agree to faithfully carry out and complete all the repairs renewals and replacements to the M.S. "CHALLAMBA", as set forth in Specifications under date of July 4th, 1927, and to abide by all the conditions expressed or implied therein, for the sum of \$\_\_\_\_\_, and to complete the same in \_\_\_\_ continuous running days."



DETAILED COPY WORK

M.S. "CHALLANNA"

STEM

The stem iron to be removed, fair'd and refitted as before.

The stem fastenings are to be overhauled and made good and additional fastenings fitted up to approximately the ten foot mark.

STEM KNEES

The forward and bottom seams of the stem knee are to be reefed out; the stop water removed; the knee refastened and additional fastenings fitted as required; the stop waters renewed; the seams caulked and cemented as before.

STERN POST

The stern post to be entirely removed from the vessel and replaced by new of the same type and dimensions as before. The old rudder gudgeons and any other fittings are to be removed and refitted in the new stern post. The old fastenings are to be clenched over clinch rings and the stern post is to be refastened as before. The repair to the stern post must extend to the deadwood knees and backing pieces at the forward side of the post.

RUDDER

The rudder is to be removed from the ship, repaired and rebuilt as required and refastened; the pintles overhauled and the rudder fitted to the new stern post. The removal of the rudder will entail removal and replacement of the rudder trunk. All the fittings at the upper end of the rudder are to be removed and after the repair to be refitted as before.

KEEL

The entire length of the keel is to be removed and a new keel of the same type and dimensions as before is to be supplied and fitted. The old fastenings are to be cut off, clenched over clinch rings and well set up; new fastenings are to extend through the keelson wherever possible. For this purpose, it will be necessary to dock the vessel on high keel blocks to permit of driving full length bolts. The new keel is to be fitted in three lengths and a new shoe fitted for the full length of the same size as before and jointed with ship felt.



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SHELL PLANKING - Port Side (Planks numbered from forward)

- Garboard Strake #5: To be removed and replaced by new.
- "G" Strake #2 - The damaged portion to be dressed up.
- "G" Strake #3 - To have a graving piece fitted in the way of the damage bedded in white lead and well fastened.
- "G" Strake #1 - To be removed and replaced by new.
- "H" Strake #2 - To be removed and replaced by new.
- "H" Strake #3 - To have a graving piece fitted in the way of the damage bedded in white lead and well fastened.
- "H" Strake #4 - To have a graving piece fitted in the way of the damage bedded in white lead and well fastened.
- "I" Strake #2 - To be removed and replaced by new.
- "I" Strake #3 - To have a graving piece fitted in the way of the damage bedded in white lead and well fastened; the after end of this plank to be refastened.
- "J" Strake #1 - The after three feet of this plank is to be refastened.
- "J" Strake #2 - To be removed and replaced by new of sufficient length to meet the new butt of "J" Strake No. 1.
- "J" Strake #4 - To be removed and replaced by new.
- "K" Strake #2 - To be removed and replaced by new.
- "K" Strake #3 - To be removed and replaced by new.
- "L" Strake #2 - To be removed and replaced by new.
- "M" Strake #2 - The damaged portion at the after end of this plank is to be removed.
- "N" Strake #3 - Is to be removed and replaced by new of sufficient length to meet the new butt of "N" Strake #2.
- "N" Strake #5 - To have a graving piece fitted in the way of the damage bedded in white lead and well fastened.
- "O" Strake #5 - To have a graving piece fitted in the way of the damage bedded in white lead and well fastened.
- "P" Strake #5 - To be removed and replaced by new.



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TOP PLANKING:

- Stroke #1 (Lower) One plank amidships is to be removed and replaced by new.
- Stroke #2 - To have a graving piece fitted in the way of the damage bedded in white lead and well fastened.
- Stroke #3 - To have the damaged portion dressed up.
- Stroke #4 - To have the damaged portion dressed up.
- Stroke #5 - To have a graving piece fitted in the way of the damage bedded in white lead and well fastened.

SHELL PLATING - Starboard Side

- Starboard Stroke #5 To be removed and replaced by new.
- "B" Stroke #4 - To have a graving piece fitted to the lower edge at the after end bedded in white lead and well fastened.

PLANK FASTENINGS:

- Treenails - All disturbed treenails are to be revedged and recemented and a new treenail fitted adjacent to and in the same frame as the damaged one.

DRIFT & GLEICH BOLTS: All disturbed bolts are to have the old cement removed; the bolts set up and to be recemented. A new bolt must be fitted adjacent to and in the same frame as the disturbed bolt.

SPIKING: All disturbed planking is to have the cement removed from the spike heads; the spikes set up and recemented and two additional spikes fitted to each butt end frame.

GAUING: The scarpes in the garboards are to have the old oakum reefed out; any broken stop waters removed and replaced by new; seams caulked with two or more threads of oakum as may be required and well hosed and cemented as before. All disturbed plank seams and butts are to have the old oakum reefed out; caulked with two or more threads of oakum as may be required and well hosed in.



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The seams and butts below the water line are to be cemented and those above the water line are to be painted.

WIRELESS GROUND:

The yellow metal ground secured to the starboard side of the vessel is to be removed and replaced by new of the same type and dimensions as before. All joints are to be soldered and a proper connection made to the ground lead from the wireless apparatus.

KEELSONS:

Hardwood keys approximately 4" x 4" square are to be fitted to the keelson scarphs. All the keelson scarphs are to be properly wedged with hardwood wedges. All the existing fastenings in the keelsons are to be well set up. Additional intermediate one and three eighth inch through bolt fastenings are to be fitted to the keelsons; well set up and their ends clenched over clinch rings.

SISTER KEELSON:

The limber stroke of ceiling is to be lifted on each side of the existing keelson throughout the length of the vessel. An additional keelson 13" x 24" placed on edge, is to be fitted to the existing keelsons and landed on the frames. This keelson is to be securely drift bolted both vertically and horizontally to the main keelson and the frames, and is to have 1-5/8" iron screw bolts fitted at every frame extending through the entire keelson, including the new sister keelson. Care must be taken to make a proper shift of scarphs and scarphs are to be keyed with hardwood keys about 4" square. The additional keelsons are to be fitted in as long lengths as can be worked and are to be efficiently secured to the deadwood at both ends of the vessel.

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CHILING:

All of the existing ceiling fastenings are to be hardened up and new fastenings of the same size as those now in the vessel are to be fitted where necessary and practicable. All of the scarpes and seams in the ceiling throughout the vessel are to be rewedged and well hardened up.

POINTERS:

The upper ends of the pointers are to be fitted with hardwood wedges and well hardened up. The fastenings in the pointers are to be overhauled and set up and additional fastenings of the same size as now in use are to be fitted where possible.

DEADWOOD:

The fastenings in the deadwood are to be overhauled and well set up and additional fastenings provided wherever possible. The ends of the timbers are to be fitted with hardwood wedges and well hardened up.

WATERWAYS:Lower Waterway -

All split wood in the lower water throughout the vessel is to be removed to existing batte, replaced by new and scarphed as before. The old fastenings are to be cut off and clenched over clinch rings and the new fastenings are to conform in type and size to those now in use. The fastenings in the remaining part of the watervay are to be hardened up and the scarpes are to be wedged with hardwood wedges and keyed with a hardwood key approximately four inches square.

Upper Waterway -

All the scarpes in the upper watervay are to be fitted with hardwood wedges and well hardened up and a hardwood key approximately four inches square to be fitted to each scarp. All the old fastenings are to be hardened up and one additional 1-1/8" headed drift bolt is to be fitted at each frame, extending into the second strake of ceiling.



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SPECIFICATIONS -cont'd

H. M. S. "CHALLAMB"

## LOCK STRAKES

All split wood in the upper and lower lock strakes throughout the vessel, is to be removed to existing butts, replaced by new and scarphed as before. The old fastenings are to be cut off and clenched over clinch rings and the new fastenings are to conform in type and size to those now in use. The old fastenings in the lock strakes are to be hardened up and one additional 1-1/8" headed clinch bolt fitted at each frame driven from the outside of the planking through the water way and clenched on the inside over clinch rings. An additional headed drift bolt is to be fitted at each beam to the main deck lock stake and well set down; one threaded bolt is to be fitted at each beam to the lower lock stake. All the remaining scarps in the lock strakes to be wedged with hardwood wedges and a hardwood key approximately four inches square to be fitted to each scarp.

## BEAMS

All split beams throughout the ship to be removed and replaced by new of the same type and dimensions as before and the fastenings are to conform with those now in the vessel.

## KNEES

All split knees throughout the ship are to be removed and replaced by new of the same type and dimensions as before and the fastenings must conform to those now in the vessel. The remaining knees must have the fastenings hardened up.

## DECKS

The main deck, Fo'castle and poop decks are to be properly secured wherever they are disturbed with one additional spike at each beam. The caulking throughout all the decks is to be searched, horsed, caulked with one or more threads of oakum and payed.



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- STANCHIONS: All stanchions and stanchion steps throughout the ship, wherever they are split, are to be removed and replaced by new of the same dimensions as before. The fastenings in the stanchion clamps are to be set up and additional fastenings provided where necessary.
- BULKHEADS: All the fastenings in the bulkheads throughout the ship are to be overhauled and set up and additional fastenings provided where necessary.
- HATCH COAMINGS: The fastenings of the hatch coamings are to be overhauled and set up and new fastenings provided where necessary. The seams in the coamings must be reefed out, hoisted and caulked with one or more threads of oakum as may be required.
- DECK HOUSES: All the fastenings in the deck house coamings are to be overhauled and set up.
- BULKARMS: The fastenings in the bulkarms to be overhauled and set up where necessary. The scarps in the clamp strakes are to be fitted with hardwood wedges and well hardened w. The curved portions of the main rail at the break of the bridge, poop and fo'castle where they are broken, are to have the damaged portions cut out and a new piece of rail fitted. The fastenings in the rail on the starboard side of the fo'castle head are to be overhauled and well set up. The butts in this part of the rail are to be refastened.
- MASTS: The wedging in both the fore and main mast at the main deck is to be removed and the mast rewedged and new mast casts fitted. The iron clamps are to be fitted to the main mast where it is split below the main deck. After the wedging of the masts is completed, the rigging is to be well set up.



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IG. & LADDERS:

The iron railing and deck ladders throughout the ship are to be overhauled. The holding down screws of the rail stanchions are to be refitted wherever they are loose and the rails faired wherever necessary. The fastenings of the ladders are to be overhauled and the ladders left secure. The fastenings of the rope cleat on the starboard side of the poppy deck are to be renewed.

DECK GEAR, FOUNDATIONS: The foundations for the windlass bitts fairleads, winches, are to be overhauled and the fastenings hardened up where necessary. The seams at the sole pieces of all deck fittings and machinery are to be reefed out and recaulked.

RESTORATION: The after end of the vessel is not now in its true form. The contractor is to remove such planking, decking, long fastenings etc., and let go such beams, knees and other structural members as to make the vessel sufficiently limber that she may be restored to her true form without further straining. The vessel must then be restored to her true shape to the satisfaction of the Owners' Representative, after which the planking and other removals must be replaced or renewed, and so fastened, wedged and caulked and otherwise hardened up as to maintain the ship in her proper form.



MACHINERY:Main Engines -

The port and starboard main engines are to be opened up throughout. All cylinder, piston, cylinder heads, valves, compressors and compressor pistons, pipes and connections are to be cleaned, rings freed, valves ground in and all jointed up and left in good order. The crank shafts are to be lifted; the main bearings and crank pins cleaned and adjusted; the wrist pins must be opened out, cleaned and examined and all working parts including cam shafts, handling gear, fuel pumps, thrusts, governors, lubricating and air systems must be thoroughly cleaned and left in good working order. The holding down bolts are to be tested and tightened up. Any broken holding down bolts are to be removed and replaced by new. The sheathing is to be removed from the holding down bolt heads on the outside planking. Any bolts found to be damaged are to be replaced by new. The heads are to be cemented and the sheathing replaced as before.

EXHAUST PIPES:

The two broken ten inch diameter cast iron exhaust pipes are to be renewed, expansion glands overhauled and repacked and piping placed in good alignment and refastened. The special ten inch cast iron elbow from muffler to funnel must be renewed and all exhaust pipes recovered as before.

TAIL SHAFTING:

The propellers are to be removed from the shafts and the port and starboard tail shafts drawn for examination. The parceling on these shafts must be removed and renewed after examination. The stern bearing castings on port and starboard sides are to be removed, refitted and refastened in good alignment. The lignum vitae in stern bearings and struts is to be renewed if required. The shafting to be replaced, glands packed and main engines and shafting coupled up in true alignment after the vessel is afloat and the whole repairs completed.

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SEA CONNECTIONS, SCUPPERS & OVERBOARD DISCHARGES:

These fittings are to be removed from the ship's side; sleeves through ceiling and planking to be carefully examined and any parts found damaged to be renewed. The connections to be refitted and fastened with strainers where fitted.

PUMPS:

All pumps and connections below the top platform (eight in number) to be opened up throughout, cleaned, adjusted, repacked and rejoined in good working order.

CONDENSER:

The condenser to be opened up, cleaned and tested. A new cast iron water box to be supplied and fitted at the forward end. The combination air and circulating pump to be opened up, overhauled, repaired as necessary and left in good working order.

GENERATOR:

The 7½ K.W. Engberg Generator is to be opened up throughout, thoroughly overhauled and adjusted. The armature and field coils are to be rewound with new wire; commutator to be re-insulated and all wiring between generator and switchboard to be renewed.

SWITCHBOARD:

To be overhauled and cleaned. All wiring, switches, and terminals to be repaired or renewed as necessary and tested out.

WIRING:

All wiring in lower engine room to be removed from conduit; conduits blown out with air and new wiring installed. Sockets and outlets to be overhauled or renewed. The electric lines throughout the vessel above the top platform and the fittings for lighting and navigation lights, to be tested out, repaired as necessary and proven in good order.



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BOOSTER AIR COMPRESSOR: To be opened up and overhauled; valves ground in, pump repacked and all closed in good working condition. Motor to be completely rewound with new wire and commutator reinsulated. The rheostat for this motor and attached wiring to be renewed.

TANKS:

The port and starboard manoeuvring air tanks to be replaced in position and refastened. The pipe connections to be overhauled and repaired as necessary, rejoined and tested out. The air bottles to have all connections and piping overhauled, repaired as necessary, and tested out. The port and starboard fuel oil tanks to be replaced and secured in position, piping and connections overhauled, repaired or renewed as required and tested out in good order. The port and starboard fresh water tanks are to be replaced in position and secured. The pipes and connections repaired or renewed as required and tested. The daily supply tank on main deck is to be replaced in position as before and secured, and the connections for same overhauled and made good.

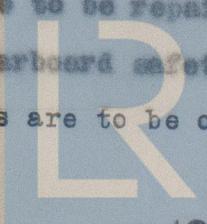
FUEL OIL TANKS:

The six fuel oil tanks in the midship house and one in forward tween deck, are to be replaced in position and firmly secured as before. All valves, pipes and connections between tanks and engine room are to be overhauled, repaired as necessary and tested out in good order.

BOILERS:

The two boilers and connections are to be opened up and thoroughly cleaned on water and fire sides. The breeching bolts are to be set up or renewed as found necessary. The wood foundations are to be repaired or renewed as required. Any broken or

damaged pipes are to be repaired or renewed and the casing of the starboard safety valve is to be renewed. The safety valves are to be overhauled and adjusted under steam.



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SPECIFICATIONS cont'd

H.S. "CHALLANDA"

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LAGGING:

The damaged boiler lagging is to be renewed and all lagging on pipes, fittings, steam cylinders, etc., in engine room is to be renewed where damaged by water.

PIPING:

All piping throughout engine room has been subjected to severe stresses and must be thoroughly overhauled, repaired and rejoined, secured in position, and satisfactorily tested. The steam, exhaust, fire sanitary and fresh water lines throughout the vessel, to be overhauled, repaired, firmly secured and satisfactorily tested out.

GAUGES:

The gauges, telegraphs, speaking tubes, and all similar fittings, must be overhauled or renewed and left in good working condition.

THE IRON TEST:

On completion of repairs, the main engines are to be given a four hour deck trial at full power and proven satisfactory, and all auxiliary machinery must be satisfactorily tested out under working conditions. The contractor to furnish all fuel and lubricating oils for this test.

VENTILATORS:

The engine room ventilators are to be overhauled and made good and firmly secured in position and all gratings and ladders refastened as necessary. One new step in engine room ladder to be supplied and fitted.

CLEANING:

The engine room throughout from top to bottom including bilges, to be thoroughly cleaned; all dirt removed and repainted in colours as before.

STEERING ENGINE:

The steering engine is to be opened up throughout, overhauled, repaired as necessary adjusted and satisfactorily tested out. The holding down bolts are to be tightened up and made good. All steering gear connections and control from wheel house to engine, to be overhauled and placed in good alignment. The chains are to be readjusted and the whole gear tested under working conditions.



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WINDLASS:

The anchors and cables are to be ranged for inspection and afterwards restored. The chain locker is to be cleaned. The windlass must be opened up, overhauled, adjusted, and placed in good working condition.

FASTENINGS:

The iron, drift and screw bolt fastenings used in this repair must conform in size to those now in the vessel. All exposed fastenings must be galvanized. Drift bolts must be clenched over clinch rings wherever possible. The heads must be sunk and cemented over on the outside and all bolts must have fresh bored holes. Any remaining holes in the beams or frames must be plugged with wood plugs, after being filled with paint or tar as required.

TREENAILS:

Treenails are to be of locust wood or straight grained oak and are to project beyond the timbers when driven home, wedged across the fibre of the planking and caulked or wedged on the outside. Not less than two thirds of the treenails are to be through and wedged on the inside of the ceiling.

HOLDS:

All holds are to be bored; those for through bolts being one sixteenth inch less diameter than the bolt. Holes for drift bolts are to be one eighth inch less and treenails are to be a driving fit. Holes in the deck are to be dovetailed.

CAULKING:

All planks are to be a close fit inside and the caulking edges are to be as close as consistent with good workmanship; the first thread to be caulked down about two thirds the thickness of the plank in longitudinal seams and to the bottom of the plank in the butt. The Oakum is to be of the best quality and is to be thoroughly and evenly caulked and should finish from one quarter to three eighths



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CAULKING - Cont'd.

of an inch from the surface of the planking; where the thickness of the plank exceeds four inches, the caulking is to be horseed. The shell planking is to receive five threads and the seams below the water line cemented and those above the water line to be painted.

MATERIAL:

All material used for repairs and/or renewals is to be up to the original standard with respect to quality and dimensions. The lumber is to be of good merchantable grade, well seasoned and free from hearts, sap pockets, knots, shakes and other imperfections.

PAINTING:

All new and repaired work is to receive a priming coat; the entire bottom of the vessel is to be washed down with fresh water and receive two coats of approved copper paint. The top sides are to receive two coats of paint to conform in colour with that now in use. The engine room and poop deck house is to receive one coat of paint to conform in colour with that now in use. The draft marks must be painted in white on both sides of the vessel's stem and stern posts.

VICTORIA, B.C.

JULY 5th, 1927.



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