

ABSTRACT OF ENGINEER'S LOG BOOK AUX. SCHOONER "ELIZABETH  
RUTH" FROM TUESDAY SEPT 3rd to Dec 4th 1918.

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Sept 3rd: Departed from Mobile in tow at 4.30 P.M. anchored at Fort Morgan 12 Midnight, pumped air tank up and left everything ready for a start in the morning.

Sept 4th: Engines ordered for 7 a.m. but as man holes on air tank were leaking could not get enough air till 10 a.m. Engines running unevenly for 6 hours. 1st and 2nd Asst. 6Hrs watches. Chief 4 a.m. till 12 midnight 20 hrs.

Sept 5th: Started port engine 6 a.m, Starboard Engine 7 a.m. Port engine stopped 9.20 a.m. away again 1.30 P.M. Both engines running very unevenly and require careful nursing, constantly stopping. When first starting engines they turn about 100 revolutions, but gradually slow down and eventually stop. Engines won't start under 120 lbs air which requires about three hours to get air as compressor engine is working badly. Port Engine Stopped 2.30 P.M.  
1st and 2nd Asst. 6 hrs watch, Chief 4a.m. to 10 p.m. 18 hrs.

Sept 6th: Engine running about 9 hrs constantly stopping, Starboard calculating pump out of order, took it adrift and found several trans wings under valves, while doing so we had to stop both engines as there is no shut off for the discharge water between the two engines. 1st and 2nd Asst, W and W Chief 4a.m. to 12 p.m. 20 hrs.

Sept 7th: Engines running worse than ever, Starboard compressor joint blew out, remade joint and overhauled valves. Had to stop the two engines again? 2nd Asst 14 hrs Chief 6 a.m. to 3 a.m. 21 hrs.

Sept 8th: Stopped engines and took out all fuel nozzles and water feed nozzles. Trouble with bilge pump. 2nd Asst took off lead suction pipe and clean holes, got badly burnt with caustic on hands and legs, had to clear suction and delivery valves every few minutes, Chf Engr had his hands and arms badly burnt, Reported to the Captain at 2 P.M. and he put the hand pump on and sounded the hold and found vessel had made considerable water since soundings in the morning. Hand pump pumping all the time and occasionally engine bilge pump when we could clear the valves. 1st and 2nd Asst, W and W Chief Engr 6 a.m. to 12 p.m. 18 hrs.

Sept 9th: Engines worked 5 hours this morning with several stops. Port Engine ran metal out on after bottom end and slightly overheated after bearing. Starboard engine doing very little good, constantly stopping. And getting very much overheated. Consulted with the Captain and decided to put into Havana, as ship is still leaking and water getting to the caustic soda, also for engine repairs. Forward bilge pump too small for suction pipe and engine pump giving so much trouble with the caustic soda we have only the main bilge pump to depend on which will soon give out with the pumping to do much caustic. 1st and 2nd Asst. W & W Chief 18 hours.

Sept 10th: Starboard engine running occasionally but stopping very little, while running very hot and cylinders heads full of carbon. Engine bilge pump going when we could get valve and suction pipes clear. 2nd Asst. lending a hand on deck with the hand bilge pumps Chief Engineer 6 a.m. to 10 p.m. 16 hours 1st and 2nd W & W.

Sept 11th: Starboard engine starting from 2 to 5 a.m. doing no good. Tried again from 7 to 10 p.m. no results. Could not get any more air with compressor engine. Took compressor piston out and found ring all stuck with oil and found piston head full of carbon.



Chief Engineer 6 A.M. till 8 P.M. 14 hours 2nd Asst. taking a watch at deck pump, 1st and 2nd W & W.

Sept 12th: Overhauled compressor engine and got same in working order at 5 P.M. Tug boat came out and towed us into Havana harbour. 1st and 2nd Asst. W & W Chief Engineer 6 A.M. to 8 P.M. 14 hours.

Sept 13th: Took bilge pump adrift and found plunges packed with leather, which the caustic soda had burned away leaving only the metal piston which was  $\frac{1}{8}$ " slack in pump chamber. Plunders should be solid brass in brass chamber. A survey is to be held on Monday. Deck hands pumping on deck 2 hours.

Sept 14th: Chief Engineer and 1st Asst. working in store all day arranging tools gears etc and cleaning up engines room general. Deck hands pumping hand bilge pump. Lindon not working, incabable.

Sept 15th: Deck hands pumping hand bilge pump.

Sept 16th: Surveyors came on board at 8-30 a.m. and decided to send two fitters onboard to assist to overhaul engines and renew bottom end brasses and after bilge. Bilge pump to have solid brass plunger and rod.

Sept 17th: Engineers overhauling engines, lifting cylinder heads, making water joints, <sup>sound</sup> cylinder etc.

Sept 18-19-20-21 Overhauling engines.

Sept 22nd: No work done today.

Sept 23rd. Overhauling engines dogs on air tanks casing replaced with wrought steel ones. Sent connecting rod and spare bottom end brasses to shop to be fitted. Also had small lever made for the 3 H.P. Z engine. Spanner made for bottom end bolts.

Sept 24. Overhauling engine, taking off port eccentric sheave so as to get after bearing adrift. Lindon under the influence of drink, doing no good.

Sept. 25th: Second Asst. off duty ashore at hospital, overhauling engines good piston rings when required and new bottom end brasses for aft Pat bottom end. Ordered pinching pins for all bottom ends.

Sept 26th: Putting back starboard forward piston also after port piston. Boiler makers taking down funnel found the end all choked with carbon, also mufflers practically full of carbon. Will have to have hole cut in side of muffler to clear carbon out. General overhaul of engines all pipes, water, oil, feed, air and circulating pipes examined and replaced. Oct 2nd: Floated in dry dock and found leak in stern of ship, water pouring out through a  $\frac{3}{8}$ " hole; stopwater plug slack; oakum very bad in ships bottom. Took all bolts out of top flanges of shuts, and slacked bottom ones; shifted tom arm of shuts  $\frac{3}{4}$ " aft and burnt holes instead of taking shute right off. Shafts made to work easy and one man can pull same round by propeller blade.

Oct 9th: Floated out of dock and lying alongside. Putting new suction pipe from bilge pump to hold, also having a small engine fitted to dock pump. One strake of ceiling taken out of each side of keelson spaces between frames cleaned out, but could not clear timber holes in frames, which means that the ship will always have water through the depths of frames, except where the pumps suctions are. The new air tanks installed in Mobile were fitted with doors which had cast iron dogs and  $\frac{7}{8}$ " stud. While trying to get the doors tight one dog broke so I had to replace them with wrought steel dogs and  $1\frac{1}{8}$ " studs.

Oct. 21st: New Asst. engine started (Johansen) overhauling compressor engine and fitting new plunger in engine bilge pump. Ship about half loaded. starboard shafting coming more in line as ship is loading.



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Oct 21st to Nov 28th: In Havana Harbour General work going on in engine room. Took a turn out of both engines but could only run for five minutes as ship was anchored too close to other vessels in harbour. The starboard thrust-block had worked slightly forward which caused the main bearing to run as the web of the cranks was bearing hard against it.

Nov 9th: Departure from Havana and cleared Light-house at 2-30 p.m. Got both engines away at 3 p.m. 3-20 p.m. stopped starboard engine as all bearings were warming up. Port engine ran until 4 p.m. and then I had to stop as all bearings were warming up. Spelled both engines for three hours and started again but would only run one hour before warming up. Started again at 11-30 p.m. and went until 12-30 p.m. I took base plate off and found starboard forward main bearing and forward bottom end had run metal out. Also forward and middle bottom ends brasses on port engine. Myself and assistant started at 6 a.m. Monday and worked until 9p.m. worked all the week from 6 a.m. to 9pm. and finished on Saturday a.m. early. Started both engines away, but port engine forward having started to heat up so stopped her. Starboard engine for about 30 hours. While running both engines we discovered that the "Y" casting under the muffler had either carried away at the flange or the joint had blown out, as it was almost impossible to stay in the engine room for the smoke. After running the engines alternately for an hour or so, the bottom ends kept warming up. On examination we found the three bearings had run two on port engine and one on starboard. We took the two good pairs of brasses off the port engine and fitted them on the starboard engine. The starboard ran for 2 hours and the after bottom end started to warm up. I took off the doors and found it had just started to run. I could not do any more as all my brasses were used up. The great trouble seems to be with the lubricators, I found that although they show oil pumping through the glass gauge, the corresponding amount of oil does not go to the engine as is supposed to do. On taking off some of the little oil pumps I found the ball valves kept sticking up. We arrived at Colon on Novr. 26 at 2.30 p.m.

Nov 27th to Dec 4th: Taking off all oil pipes, feed pipes and water feed pipes; lifting cylinder heads ready for piston to be lifted to work at crank pins. Disconnecting lubricators, etc. On taking off asbestos lagging from exhaust pipes, I found that the flange is cracked half way round, and also a portion of the pipe, in my opinion due to the heavy rolling of the ship after leaving Havana.



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