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The Daniel Adamson Preservation Society

No. 10 | **November 2006** | **Editor: John H. Luxton**

The Tow Line

Chief Engineer John Deakin at the Engine Room controls on board the *Daniel Adamson*.

Contents

Supported by the Heritage Lottery Fund

www.danieladamson.com

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The Daniel Adamson Preservation Society is supported by The Heritage Lottery Fund and the Fund for the Preservation of Industrial and Scientific Material (PRISM).

Editor's Notes

Welcome to edition 10 of 'The Tow Line'.

Members will have noticed that recent editions of 'The Tow Line' have been running almost a month late.

To bring 'The Tow Line' back on schedule publication dates have, therefore, been changed with immediate effect. From this edition 'The Tow Line' will be published at the end of November, February, May and August.

Yes this does appear to be moving the goal posts – but it appears to be the most appropriate action. As usual you will find all the latest news from the 'Danny' as well as another interesting article by Tom Sherriff.

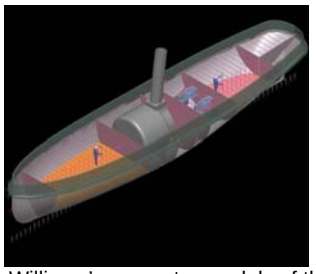
- John H. Luxton, Editor

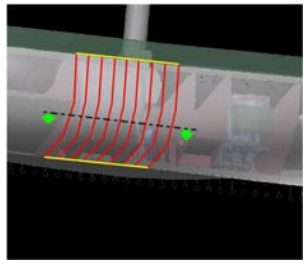
The Tow Line - published end of February, May, August and November.
Press date for contributions is the fifteenth day of the month prior to publication.

- Steering gear quadrant to remove from rudder stock and replace using original as pattern
- Wooden capping to remove from bulwarks and replace in entirety
- Mounting plate atop bulwarks to replace
- Steering gear quadrant gratings and stanchions to replace
- Port & Starboard side prom deck stairwell to replace/ crop
- E.R. casing to grit blast and repair
- Skylight covers to re-new
- Various railings on prom deck to re-new
- Upper deck canopy stanchions and mast bracket to renew in entirety

Engine room / Machinery

- Good working relationship with MCA
- Aware of our professional approach
- Lots of work already carried out
- No real defects
- Bottom end bearings some of them require attention to white metal
- Crank shaft show very little ovulation (7 thou)
- Piston calibrations acceptable
- Thrust bearings require some attention
- Crank shaft and intermediates also crack-tested
- Condensers……..Re-tube, clean out, new joints, refurbish valves/ cocks, new ferrules on tubes (750 approx tubes) 1500 approx ferrules.
- G.S Pump removed and Dawson Downie Lamont providing parts thanks to various phone calls and our deputation by Mr Huxley
- Dawson Downie Lamont's agree to re-furbish the Boiler feed pump
- Transport to Scotland
- Both M/Engine circ (Gwynn) pumps removed and one now overhauled





Mike Williams's computer models of the 'Daniel Adamson'. The drawing above right showing details of the hull repair proposals.

- **Dan Cross**

Photo Competition

There is no 'Mystery Photo Competition' in this edition due to lack of space. The previous competition was won by Neil Marsden who correctly identified the Mauretania leaving Gladstone Graving Dock.

their services and a second hand submarine salesman who could supply a suitable vessel at a beneficial rate or better still the loan of.

This is only one proposal, there are others: seaplane, rescue trained dolphins, etc. which I could expand upon if required. I eagerly await your comments.

Regards Kevin Lytton

Boiler Survey Findings

- Combustion chamber crown stays and girders OK
- Combustion chamber back plates ok
- Combustion chamber crown plates show pitting up to 3/16" and around 15 crown stays to be removed to allow repair
- Combustion chamber back stays wasted from slight to 80%. 30 to re-new
- Stays between chambers (inter stays) are ok but 20 may need removing to allow for welding to sides of chambers where pitting up to 3/16" was found
- Combustion chamber tube plates require some isolated welding
- Combustion chamber side sheets on all require some welding repairs and some side stays removed to allow for
- Shell of boiler and back plate satisfactory
- Furnaces- no cause for concern, built above spec and good for up to 145 psi
- Shell - tube plate requires a little welding IWO blotch pitting at smoke box area
- Bottom half of join from front plate to centre furnace to build up and repair
- Collision chock to repair
- Area at 6 o'clock under centre furnace requires welding repair
- Boiler in above average condition for age
- After being fully re-furbished and repaired would be better than new
- To be fully re-tubed
- New smoke box
- MCA and R+S wish to see boiler removed for repairs in suitable location by approved contractor
- Not many boiler makers could handle the size/ weight of boiler

MCA Hull / machinery / structure survey results:

- All doublers to be replaced with "crop & insert"
- Minimum 5 floor frames wasted under boiler
- Centreline girder corroded IWO void space under saloon
- Engine room/Port bunker b/head wasted plus 2 x floors
- Collision chock to replace on boiler
- Excessive wear/ grooving on Port prop shaft sleeve.
- Excessive corrosion on both shafts
- All wiring and switch gear to remove and replace on Bridge
- Sanitary tanks to replace
- Bridge support wood capping to remove and welded bar put on
- Various wood work on bridge to replace
- Steering gear rods and chains to renew in entirety

Chairman's Letter

The recent AGM demonstrated how far the Society has come in two and a half years. Over a third of the 200 plus members visited the tug and most stayed for the AGM presentations. We have cleared the debts incurred in rescuing the tug, we have raised more than the amount needed to undertake the Survey project and have a modest amount of money in the bank.

Members have undertaken over 16,000 hours work aboard the tug, plus a large and unrecorded amount in raising funds, generating credibility, publicity, public support and just making the organisation work.

We have almost finished the survey project, only the Conservation Management Plan is outstanding. The results of the work show that the tug is in many ways in a better condition that had been thought and there is nothing required to bring her back to full operational specification that can not be achieved with some money, support and the continued efforts of our members.

We are now entering another phase of preparing plans and bids for funding. A sub committee will shortly be detailing the specification and obtaining quotations for the work to be undertaken. The bids for funding will be based on the previous HLF bid but with a lot more detail and seeking much more money.

Work is not though slowing down on the tug. We are identifying projects that with modest funding and work by our members can be achieved prior to any further major funding and the work to be carried out by contractors. One already under way is to complete the overhaul of the engines. All the work has been identified and outline costs obtained. Already some materials have been donated or offered at well below the normal price. By undertaking these works not only will we reduce the major funding requirements but we will demonstrate that we can get on with the job with our own resources. This will along with other work be attractive to potential sponsors and will ensure a supply of work for our members while others are organising the major hull and saloon work and raising the funds needed to undertake their restoration.

Thank you to all those who have supported the project in any way, it has been a classic example of 'a team effort well done'.

- Tony Hirst October, 2006

The Future Specification of the Daniel Adamson

Below are some facts and thoughts on the future specification of the tug; these were presented at the AGM. We are now seeking more members' views on them. This is a first draft more detail will be developed as we progress with the project. What we end up with will in some ways be a compromise between one date and another as well as needing to accommodate some modern requirements now expected for passenger and crew comfort and needed for safety to operate as a passenger vessel. We must though wherever possible maintain the historic integrity of the tug

- There have been four major changes to the tug in the last 103 years and many lesser ones.
- We can never match any one exactly and there are changes needed to meet modern requirements.

- Compromise will be needed without damaging the tugs historic integrity.

First thoughts

- It can never return to be the 'Ralph Brocklebank'.
- 1936 version probably visually the most attractive but security, crew and passenger comfort far from satisfactory.
- 1950 wood cladding and closed bridge much more practical.
- 1960s green plastic screens out of character.

What are our objectives for the future of the tug?

Already agreed that we would: -

- Operate her as a passenger-carrying vessel on the sheltered waters of the Mersey, on the Manchester Ship Canal and River Weaver.
- Be attractive to a wide range of clients.
- Maintain wherever possible her historic integrity and value.
- Earn sufficient money to secure her future for at least 20 years.
- Be attractive to potential funders to support her restoration.

Who or what will influence the specification?

- Safety - the MCA, the boiler, hull & third party insurers & the navigation authorities.
- Historic integrity - National Ships Committee, Heritage Lottery Fund, English Heritage, recommendations from Conservation Management Plan.
- Market for use – Potential customers.
- Passenger and crew comfort.
- Income generation.
- Political and commercial support.
- Ease of maintenance.
- Communication and interpretation.
- DAPS members.

What operational additions are required?

- More toilets for passengers and crew.
- Sleeping accommodation for the crew.
- Improved washing facilities for passengers and crew.
- Catering, eating and rest area for crew.
- Catering for passengers to satisfy different clients.
- Sales area.
- Communication system with passengers.
- Interpretation and views of inaccessible areas.
- Secure closed wheelhouse
- Heating in the saloons & wheelhouse
- Secure supply of electricity
- Fresh water supply.
- Sewage holding tank.
- Weather protection over rear deck
- Fire detection and extinguishing equipment.
- Safety equipment including radio.
- And there will be more.

Some ideas for the outside appearance

- Hull as existing
- Roof over top deck solid as now but with canvas cover to replicate 1936 look.

This progress has only been made possible by ***your*** support, not just working party volunteers, but by all those who play a part in the society's activities, up front and behind the scenes, in point of fact by every member, near or far, so thank you all.

The AGM itself was well received with an excellent 'Power Point' presentation which explained in great detail many of the intricacies involved in fund raising, project planning, society accounts and the ongoing work as well as proposals for the way ahead.

Those attending the AGM made a significant contribution towards society funds with £315.90 being generated on sales, refreshments and the raffle.

The raffle for a book "Cory Towage Ltd" by W.J. Harvey raised £83. This book normally retails for £35 and was donated by author Bill Harvey to raise funds and is the only signed example. The book tells the full history of Cory tugs from 1895 until their sale to Wijsmuller Marine in 2000. [Rea Towing, Liverpool being part of the Cory group.]

Letter to the Editor

Just a thank-you note for what was an enjoyable and entertaining afternoon at the AGM, my first as a DAPS member.

At work I regularly duck and dive such presentations but each of yours was informative and descriptive without people looking at their watches every couple of minutes.

It also became evident to me the amount of work that has to go into funding, planning proposals, evaluating surveyors reports etc. which is not immediately apparent by those of us knocking the S***E out of the condensers or other bits. Well done to you all.

However, a question from the floor highlighted that there is no provision for a helipad on the afterdeck and lack of helicopter rescue facilities. I have given the matter some thought and would like to propose as follows:-

Once in steam and voyaging we should tow astern a small submarine which, if ever required would allow a safe and effective emergency evacuation. For example if we start to founder in the more remote upper reaches of the River Weaver or MSC then the submarine would surface, pull alongside and transport passengers to safety. It is probable that the size of the submarine would limit the rescue to women and children only once the cry had gone up 'ABANDON SHIP'.

Unfortunately the crew and male passengers would then have to stand fast on the upper deck to await their fate (issuance of side arms here to selected crew members to maintain discipline).

In this event I think that stirring music should be provided to comfort those awaiting a watery grave which would entail carrying a small orchestra or band on board. I think the Liverpool Philharmonic should be approached to provide a ship's ensemble.

I appreciate that a submarine and suitable crew may not be readily available but surely on the membership there must be one or two ex U boat commanders who could offer

main engines and their associated air pumps, next comes their integral reversing engines. The steering engine has been overhauled thanks to TTE and we are already well advanced with the general service and port main circulation pump. The feed pump is ready to be removed from the boiler room, which will just leave the Tangye sanitary pump and Sissons Generator to attend to.

No Saturday working party was held on September 9th, as we attended both the IWA Rally at Ellesmere, Shropshire and the 'Yesterday Steam Fair' at Malpas, Cheshire. Our new display stand debuted at Malpas, along with a lot more updated photographs of the work in progress. Both stands attracted a good flow of visitors.

October

Thanks to the skills of John Broomby our 'master joiner' we now have a new 'replica' name on the port bow. The letters (made from MDF!!) are a temporary substitute for the original brass letters which will be replaced in the future when their safety can be assured! John's replica letters are made from tracings of the originals so are accurate in style and size; they even look like they are brass. –

-Neil Marsden

Port bow view, showing the nearly completed re-paint of the funnel and bands, to original MSC Co. colours (1921-C1970 era) also the upper of the two hull bands undergoing application.

Working Parties

Tuesdays and Thursdays and alternate Saturdays.

Those wishing to attend working parties should contact::

Neil Marsden - Tel: 01516082868 Email: neil.marsden3@ntlworld.com

John Deakin - Tel: 01928573877.

AGM 2006

The society's second Annual General Meeting was held on Saturday October 07. Following the format followed in 2005 the day commenced with an open morning on board the 'Daniel Adamson' between 10:00 and 12:00 at Salisbury dock. The AGM took place at 14:00 in the lecture theatre of the Merseyside Maritime Museum.

Around 70 members visited the vessel with around 60 attending the AGM. Some members travelled a long way from the 'home counties', Wales, Midlands, Scotland and the Isle of Man.

Those who had not visited before or since the last AGM saw a lot of progress and a ship in a much healthier condition than she was back in early 2004

- Windows round top deck to be in wood frames and glazed, at least some removable, alternative to be clear plastic and capable of being rolled up
- Wind break below windows to be canvas as up to 1960s.
- Bridge to be covered as per 1960s but with removable security shutters.
- Removable canvas cover over rear deck as per 1920s
- Steel lockers to be slightly widened and one used for lifebelt store & toilet, other for basic catering.
- Two life rafts to be accommodated.
- Anchor & winch to be replaced.
- Colours, should follow MSC pattern
- Other ideas, what do you think?

The saloon specification

- Restore as per 1936.
- Add insulation, heating, re-wire electrics, replace carpets and curtains as per existing.
- Revert to 1930s furniture, but we may need smaller chairs for high passenger numbers.
- Although useful, remove chair stores as they detract from original bar design.

Promenade deck

- Little change to present.
- All brass steps to be reinstated as well as bound handrails.
- Reinstate gramophone and Tanoy speakers.
- Reinstate deck games.
- Reinstate steamer chairs for 'up market' visitors. More smaller chairs required for larger parties.
- Probable location for a removable sales stand.

Crew's quarters

- Add watertight steel skin below decking
- View coming down companion way to look as it was in the 1930s.
- Provide sleeping, eating, washing and rest areas.
- Some space needed for water storage and generator (silent)

Engine room and stoke hold

- As per 1930 or 50s specification.
- Install closed circuit TV cameras to enable visitors to view equipment and operation.

Further thoughts

- This is not a simple process, a range of sometimes conflicting requirements have to be evaluated. There can be conflict between the needs of the passengers and the historic integrity of the vessel.
- The end result has to satisfy many people and organisations.

We would like to hear your views. Please contact one of the committee by phone or e-mail if you have some ideas to add to the above.

- Tony Hirst October, 2006

The Port of London Authority Dredging Service

By the mid 1950's the Port of London Authority operated a fleet of about ten dredgers, in addition there were about four tugs in the dredging service. As well as these tugs, there were also four twin screw diesel ship handling tugs; "Plagal", "Platina", "Plangent", and "Plateau", each were fitted with two 600 bhp Crossley two stroke

diesel engines; the two remaining steam tugs "Beverley" and "Walbrook", were also a part of the ship handling fleet at the Royal Docks: each being propelled by Two 400ihp two crank compound engines, steam was generated at about 180 psig in a single ended three-furnace scotch boiler.

In addition to the Salvage Department and Floating Cranes, the Authority operated a network of 121 miles of railway, around the Royal Docks and The Isle of Dogs, using a fleet of 31 steam and diesel locomotives. To maintain the level of water in the docks at low tide a number impounding stations were held on stand by, and also to provide hydraulic power for the lock gates and hydraulic cranes at “Surrey” Docks, Millwall and West India Docks at least two hydraulic power stations were required. The station at Millwall Docks was located by the dry dock, a two crank horizontal tandem compound engine generated power: the hydraulic rams being driven by tail rods. These engines, as was much of the machinery in the London Docks, were manufactured by the West Ferry Road Engineering Works, Millwall.

My first real contact with a large bucket dredger was with Dredger No 7, built and engined by Lobnitz of Renfrew in 1911. There were two of these vessels to be delivered to the PLA, but No 6 was lost while being towed from the Clyde to London.

No 7 was the largest vessel in the dredging service, being mainly employed in the lower reaches of the Thames. She was fitted with a large triple expansion engine of about 2100 ihp; steam was generated in two large single ended Scotch boilers, each coal fired with three furnaces to maintain a pressure of 180 psig.

The main engine drove the bucket chain via gearing and vertical shafts to the top tumbler, but did not drive any of its auxiliaries. The air pump was a vertical double acting pump by G&J Weirs of Cathcart, (with a single wet bucket, the "Parragon" air pump having wet and dry buckets), as were the two boiler feed pumps. Other auxiliaries included the generator and it engine, a Gwynne’s circulating water pump and its engine and a large Dawson and Downie duplex general service pump, for deck wash, bilge and fire fighting duties.

In its own engine room on the port side was the ladder hoist engine, a substantial duplex vertical engine, which drove the cable drum via a worm and wheel in an oil bath. Vertical engines also drove the three large dredging winches; as was the steam deck crane, in addition there was the duplex chute engine, for raising and lowering the mud chutes. The Dredging Master controlled dredging operation from a square "wheelhouse" on the port side of the ladder well; it contained the controls for the hoist engine, and also the main engine repeater telegraph, and three telegraphs for controlling the dredging winches.

The bucket chain was driven through vertical shafts and bevel wheels, to the pinion shaft that drove the top tumbler via a surge wheel. The surge wheel comprised a large diameter hub over which the rim with the gear teeth fitted, bronze friction pads slotted into pockets in the rim, being held against the hub by bolts with locknuts. This arrangement was to prevent any serious damage should the bucket chain strike an object.

As dredgers tended to work in heavily silted water, the condensers required a lot of cleaning; a job that was very often given to the apprentice, as well as the large amounts of fluid silt removed, large quantities of latex objects, which for some reason were referred to as "Noddies", were often stuck on the ends of the condenser tubes.

As is often the case when contact is made with such firms, it is not unusual for one or more of the directors to request a personal visit to see the job first hand. Not only is this mutually beneficial so that everyone understands what can and cannot be done, it also allows a valuable dialogue in discussing other options which may be considered. In many cases it provides experts in a particular field an opportunity to see machinery of a type and age they may never have encountered before, or if so, not since their early careers. It is also pleasing to learn that the necessary skills are very much 'out there' and in some instances if a particular company cannot assist, chances are 'they know a man who can!'

As most readers will know, many of our original gauges, including the main steam pressure gauge, were stolen or badly damaged before the formation of DAPS. However, during August Alan Hughes was able to secure a steam gauge from an eBay auction.

What could be more fitting to mark the occasion of our return to steam, but to see the pressure gently rising once again and recorded on a gauge manufactured by our namesake Daniel Adamson & Co. Duckinfield.?

Alan kindly donated the steam gauge and presented it to Chief Engineer John Deakin.

September

On board we were as busy as ever and welcomed another new volunteer, Graham Dean to our growing numbers. The main ongoing work continued on the port condenser which was in the process of having all 368 tubes removed, along with two ferrules on each.

These have to be carefully removed to avoid damaging the tube plates and after many years most are reluctant to part company without a struggle! It's a long, laborious process and of course there's another one to do when the port condenser is finished.

While many of the tubes appear in good condition on removal, unfortunately the ferrules which secure them in place are mainly beyond further use and will need to be replaced, nearly 1500 of them!! They are not cheap and some alarming individual prices for new ones have been quoted, as much as £7,500 for a complete set in one case!! That's two and half times what the boat cost to buy in 1921!!

Carrying out this work ourselves, while a long drawn out and tedious process, will mean considerable savings over contractors’ prices.

Work on the main engines continued and after considerable effort I can report that the securing nuts which hold the pistons to the piston rods were at last freed thanks to modern technology in the form an air hammer and a suitably impressive socket set!! Even so it was still necessary to heat the assembly before even an impression was made, but it took all day to remove just four nuts!!

We re-assembled the steam side of the port main circulating pump after a thorough clean up and the removal of a century's worth of old paint. It looks considerably better than it did and we will hopefully soon be able to test it on air.

In all there are eleven separate steam engines aboard, so the fact that we are able to do much overhauling ourselves is of great value. We are well on the way with both

All being well after further testing the fully refurbished condensers will be completed; great deal of work, but as ever, essential for the success of the project.

The port condenser, forward water box dismantled for cleaning, once again our faithful 'Hilti' needle gun is used to good effect.

Port quarter view

The good weather allowed a little 'cosmetic' sprucing up of the paintwork. In most cases this has been a temporary 'lick' of paint over surfaces that will ultimately be grit blasted back to bare metal or in some cases even replaced with new steel. On deck, the old flaking paint of the promenade deck awning (interior) has been scraped, rubbed down, undercoated and a fresh coat of 'eau de nil' applied. It's brighter, cleaner and helps preserve materials which might otherwise deteriorate long before the funds are available to completely restore or replace them. This cosmetic work projects an improved external image of the vessel to the outside world and demonstrates that somebody is looking after 'the old girl'.

The main deck bulwarks received much needed attention, after chipping and brushing back to bare metal, they were coated with a generous application of 'Rustroy' to stabilise the surfaces before a primer coat of red oxide was applied. This work serves a dual purpose in that it helps identify plating that will require remedial attention or replacement, whilst at the same time preserving good steelwork. White hull bands have been applied to the bulwarks, restoring both upper and lower bands to replicate 'DA's well maintained appearance when in service.

Down below in the engineroom detailed measurements of the main engine cylinder bores, bearing clearances and other details have been meticulously recorded and already a locally based firm of specialists have visited to discuss practical, cost effective methods of addressing some of the adjustments and repairs required.

There is much still to do, but each task performed is a step nearer to our goal, moreover, using our own volunteer labour considerable financial expenditure is saved, which we hope will reduce the overall cost of the restoration.

As evidence of this, quite a significant milestone was passed during August with the completion of 15,000 hours of voluntary labour completed since records commenced in May 2004.

Away from the vessel, Vice Chairman Dan Cross was busy as ever liaising with a wide range of potential suppliers of necessary replacement parts and other contractors.

The "India" was also one of the larger dredgers owned by the PLA, she had been built in 1911 by Flemming and Ferguson of Paisley; her bucket chain was driven by a two crank compound steam engine, a "Matchbox" slide valve on the LP with a piston slide valve to the HP cylinder. A steam hydraulic reversing engine reversed the Stephenson valve gear. During her life the" India" had been enlarged to enable her to work in deeper water; to carry the extra weight of buckets her main engine was fitted with balance weights to the crankshaft, turning it into one of the most loutish engines that I have ever come across.

Steam was generated at 180 psig in two single ended scotch boilers, each coal fired with two furnaces; each boiler was in its own boiler room located on the port and starboard sides of the ladder well.

Dredgers No's 4&5 were both slightly smaller sisters of the "India"; No 5 was fitted with new boilers in 1952, her old boilers laid by the Lavender Dock until they were sold for scrap. No 5 was also fitted with a new bucket ladder, in those days welding techniques were not as highly advanced as they are today: nor did we have the facilities to stress relieve such a large fabrication. The finished ladder had a very distinct twist to it, and if I remember correctly a specialist company was called in to attempt to resolve the problem.

Dredger No 10 was different from the others in the fleet in a number of respects, one of them being that her main engine drove its "Edwards" air pump, and the bilge and feed rams by pump levers from the HP crosshead; while on the "India" as with dredgers 4&5, the engine that drove the circulating water pump also drove the Edwards air pump by levers from its crosshead.

Probably the youngest vessel in the fleet was the "Tilbury 2", built and engined by Ferguson Brothers of Paisley. Her main engine, a two crank compound, was set athwart ships with a large pulley fitted to each end of the crankshaft driving the top tumbler by flat woven balata belts.

One of the smallest dredgers was No 1, she was Dutch built and was maintained in a spotlessly clean condition by her crew. I first saw her on a depressing day in February 1951 at St Katharine's Dock, which at the time was about the most depressing place in the Kingdom. Her neat little compound engine was set athwart ships in the engine room, which also housed the single furnace coal fired scotch boiler, this boiler had a steam dome, which apart from a small canal tug owned by the PLA, was the only boiler of this type to be fitted with this feature.

There were also two very small bucket dredgers, “Surrey” and “Surrey 2”; the “Surrey” was powered by a horizontal single cylinder steam engine. Steam was generated in a small vertical cross tube boiler, coal fired, which could also be fed by a live steam injector; it was protected from the weather by a wooden housing, rather like a round topped dog kennel.

“Surrey 2”; was driven by a single cylinder water cooled diesel engine, driving the top tumbler by fast and loose pulleys, As with the “Surrey” her small crew had to sleep in the engine room; this situation on this vessel was improved by constructing a tank shaped accommodation module on the jetty at the Surrey Docks yard; which when complete was launched into the Norway Dock by the 7 ton Booths steam crane.

“Surrey 22 and her new addition were then floated on to the floating dry dock, where they were welded together.

In addition to providing clean accommodation for the crew the new living space gave the added advantage of greater buoyancy aft, enabling her to dredge deeper than had previously been possible, it had been necessary to stack old fire bars up forward in order to gain the required depth. Both of these small dredgers were fitted with manual dredging winches.

Attached to the dredging service were three tugs, "Westbourne", "Thorny" and "Brent"; the "Westbourne" was the largest of the three, and like the "Harty" she was propelled by a triple expansion engine with a coal fired scotch boiler. The "Brent" was an oil fired tug built in 1945 by W Pickerskill & Sons Ltd, at Sunderland, for the Ministry of Transport as TID 159.

She was Propelled by a two crank compound engine, and as with the other two tugs in the service she was fitted with a drag and under running gear. This was virtually a large fabricated rake suspended over the stern from a gallows; it could be raised or lowered by a duplex steam winch located just abaft the engine room. When dropped to the bed of a river adjacent to a wharf it would be used to drag silt out to a point where it could be removed by a dredger or carried away by the flow of the river.

In addition to this task and servicing the dredgers, they were fitted with a small jib up in the bows; from which a stout roller was suspended through which would run the heavy chains for the dredgers large kedge anchors, to enable the tugs to move these anchors to a new location on the river bed.

The three grab dredgers in the service were the "Tolverne", "Hopper 14", and the "Gallions Reach". The "Gallions Reach", and the "Brent" being the only oil fired vessels in the fleet.

During the 1950's there were still a number of ocean going coaled fired ships at sea, and I can remember seeing such a vessel being bunkered in the Greenland dock. A large bunkering vessel lay alongside, together with a couple of coal barges. Cawoods owned this vessel, and her machinery was steam driven. Bunkering the PLA fleet was a much more basic affair, Cawoods were one of the bunkering contractors to the PLA, and for this contract they had adapted a swim ended dumb barge by adding a vertical cross tube boiler and a Clarke Chapman steam winch. A couple of stout timber poles were lashed together with a pulley to form a gallows.

This barge would lie alongside the vessel being bunkered, with the coal barge next to her, coal was manually shovelled into large wicker skips which when full were, by using the winch and gallows, swung across to the vessel being coaled, and manually tipped into the bunker. When empty the skip was swung back to the coal barge and the whole process would start again, an operation that took a good part of a working day to complete. Hard manual labour of the sort totally unknown to the romantic steam enthusiast.

Of the company's that built these craft most have long since gone, though I understand that Ferguson Bros are still in business as Ferguson Shipbuilders with a modern shipyard at Port Glasgow, though no longer building dredgers. Lobnitz also built their own engines, and during the 1950's they manufactured a totally enclosed triple expansion engine. During the mid 1950's they supplied two of these engines to propel

etc. As expected there will be much work to be done, but we are cautiously optimistic that with luck the boiler can be restored to steam once again.

Certainly the boiler shell is, as had been hoped, in excellent condition. However, there will be a lot of work required internally, certainly a good deal more than merely replacing the tubes, which now in retrospect looked like a relatively straightforward job.

The main concern is, as expected, the corrugated furnaces. If it is not possible to repair these to a satisfactory standard, then we have a considerable task ahead. We are tentatively looking to identify companies who may be able to manufacture new furnaces though sadly it appears no UK firm remains capable of this work.

In the meantime, whilst we resolve the issue of the boiler repairs, we have cleaned it up and applied some 'black oil' to the shell surfaces to protect it.

The boiler front after 'oiling' (Volunteer John Pickering adds the final touches)

Another view showing the conservation of the boiler shell.

The high summer temperatures, whilst a very pleasant change from the driving rain, snow and gales we've experienced made the work a little more uncomfortable. We do realise of course, that come the day we raise steam we can expect temperatures in the stokehold to be staggering!

Examination and tests of the condensers have revealed not only one or two leaking tubes, but on replacing the faulty items, further leaks to the tube plate seals. It is likely that these will not have been replaced in a great many years, if at all and to ensure this problem is resolved will require new joints to be made. Regrettably the reason that the joint has not been replaced previously is due to the fact that it is necessary to remove all 372 tubes and the 744 ferrules securing them in place!

No easy task at all and as we must do one condenser, then it follows that it is safer to attend to both at the same time and avoid a repetition later on. The end result will be condensers that will be virtually as good as new, will be more efficient and will hopefully last many more years before requiring further major overhaul.

As the condenser bodies are an integral part of the main engine frames, it can be appreciated how important it is to do the job properly. The first task is to remove the water boxes at either end of the condenser body, then the tubes/ferrules and finally the tube plates. With everything removed, access to the condenser interior will be possible and will allow a thorough cleaning. The tube plates will then be cleaned and re-tapped before replacing with new joints. The tubes will then be replaced and finally the water boxes refitted, again with new joints.

adjoining rooms, aft of the boiler-room. This space was needed to provide new access steps between the main and promenade deck. I can confirm from measuring the width of the stairway today that this is exactly 42” or 3’6” as per the 1935 plan notes!

The final piece of major surgery involved the engine casing, bunker hatches, tow hook, skylights and engine-room access doors. While new deckhouses would be required to replace the crew toilet, lamp room and the galley, now displaced from its original location at the after end of the upper saloon.

These deckhouses were installed on the aft main deck roughly in the location of the aft tow-bow, which they in turn replaced. As will be seen from photos of the time, these deckhouses were of the same size, the starboard one containing a coal fired galley, the stovepipe of which led up from the aft bulkhead.

A modified ‘tow-bow’ joined the two deckhouses across the deck, the arched sides of the structures completing the design. Twin bollards originally (according to the plan) sited immediately aft of the engine casing were removed and replaced by a single set aft of the line of the deckhouses, to allow the towrope to be ‘gogged’ (or ‘gobbed’ ** dependent on preference!) as required.

So at last we have arrived in 1936, hopefully with a clearer idea of what alterations were decided upon and in some cases why.

I realise that I have used a number of terms in these articles which readers may not be familiar with. I also concede that, insofar as the detailed use to which these terms apply I am woefully unqualified to comment with authority.

I do hope to persuade one of my more qualified fellow members to provide an explanatory glossary to accompany this series.

Finally, another view of the ‘Charles Galloway’ in this case dated after 1925.

Only the addition of a mast appears readily evident, yet it clearly demonstrates her dual capability as a tug and inspection vessel. It is tempting to suggest that her forward saloon may have inspired the modifications of her successor?

- Neil Marsden

Restoration Diary

August

The excellent weather during late July and early August resulted in a lot of progress on board, with a dozen or more volunteers attending most working parties.

The Project Planning surveys are nearing completion, but we still await some final measurements to confirm what exactly is required in the way of repairs, replacements

quarter stern wheel passenger vessels to operate on the Sudan Governments River Nile services. Lobnitz often advertised in the technical journals of the day with the slogan "Lobnitz! A Name to Remember in Dredging".

- **Thomas Sherriff (196)**

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Membership Matters

I am delighted to say that there has been a steady influx of new members since the last Tow Line - listed below - a very warm welcome to you all

255 V.A. Boardman, Runcorn
256 Kevin Price, Warrington
257 Graham Dean, Liverpool
258 Kenneth Baglee, Manchester
259 Roy Quirk, Isle of Man
260 David Jones, Flintshire
261 Donald Shaw, West Yorks
262 Arthur Taylor, Warrington
263 Peter Ware, Liverpool
264 Ken Morgan, Widnes
265 Johnathon Betts, Greenwich
266 E. McCormick, St. Helens
267 E.E. Whiston, South Croyden
268 John & Liz Gregory, N.Yorks
269 Mrs. M. Sykes, Cheshire
270 Miss P. Whitworth, Manchester

Many more members who were in arrears have kindly renewed now, so we have at least some 220 members - 240 if the remainder renew.

If you are one who hasn’t got round to completing the form, or has lost it - just pop that cheque in the post (to DAPS).

We keep saying how vital everyone’s membership is - it really is - so once again, a huge thank-you to all our loyal members, who have made our project possible. Many of you regret being unable to help further - but simply being a member is a huge asset to us, especially in securing major grants.

- **Pat Crecraft Secretary**

A Remarkable Survivor – Part 4

In Part 3, we included the plan elevation and having discussed bunker and stokehold alterations, I had planned to move swiftly on. That was until my next visit to the ship. I wanted another look in the stokehold to see where those ‘wing bunkers’ on the plan had been.

There is very little evidence of them now. Those circular scuttles have long been plated over, or replaced with new plates entirely, as no sign of them remain in the stokehold. It would also seem that the existing ‘hotwell’ tank is a later addition and could only have been installed after the wing bunkers were removed.

It seems unlikely that the port wing bunker would have been of much value with the hotwell in place. Chief Engineer, John Deakin, points out that the original system may not have included a hotwell, the basic boiler feed arrangements being adequate to the task.

The plan shows what appears to be another anomaly in that the engine-room entrance door is shown as amidships in the aft bulkhead of the engine casing, which itself differs considerably from the present version.

In the drawing, the engine casing is effectively 3’6” shorter in length (a notation marked on the amended plan, visible between the two ‘hypothetical lifeboats’ reads, “Tow

Hook moved forward 3'6") and by the plan's scale, a total of 4' narrower than the main casing. The narrower casing allows for doors, port and starboard, accessing the crew toilet (port) and lamp room (stb'd) in the aft bulkhead of the main casing.

The engine-room skylights comprise two panels as now, but incorporate three ports apiece in a more conventional style. Judging by the position of the towing gear it would seem unlikely that the panels themselves could be opened, or removed as with those fitted today, so that ventilation would appear to have been limited.

Another major difference is the presence of two, tow bows, one immediately in line with the aft bulkhead of the engine-room casing and the second aft of the crew companionway. Both extend to the ship's sides in conventional style.

It is doubtful that as built, the vessel would have been provided with a comprehensive electrical system, if at all and more likely oil lamps would have been used for the majority of artificial illumination.

Considerable use was made of natural sunlight with much evidence of skylights and deck-lights on the plans. In the latter case no fewer than ten are shown and clearly marked as 'Hayward Lights'.

The 'Hayward Lights' are very interesting in their own right. Four 'escaped' all the vessel's transformations, to survive to the present. Sadly they have suffered badly at the hands of vandals, but some lenses remain and it is hoped to fully restore them in due course.

'Hayward Lights' are pavement glass, of the type one might see set into the foot-walk outside older shops, offices etc. Usually they provide illumination to a cellar or basement area of a building.

'Hayward Lights' were patented by a London glassmaker of that name. His patent, notes that he developed the idea from ship's deck-lights, so in effect the wheel has come full circle. As far as is known it appears these remaining examples are the sole survivors 'afloat' today.

The final puzzle of the plan (so far!) concerns the crew's accommodation; this shows just four berths for the Captain, Engineer and two crew, whereas we know this area actually provided berths for seven persons. It is inconceivable that four crew could operate the vessel before 1935, while it needed seven, excluding catering staff to operate in the 1980's.

Again if the plan is not wrong, where did the remainder of the crew sleep? No further accommodation is denoted on the plan.

In reality both the Captain and Chief Engineer had a small separate room, each with a bunk running fore and aft, as well as a seat lying athwartships. Each 'cabin' had a 'Hayward Light' set in the deck-head, as did the adjoining cabins for the Mate and Second Engineer; the deck-lights are shown, but not the smaller cabins. In these the bunks lay athwartships, with drawers under.

Finally the aftermost section contained a further three berths, plus locker space. All in all the accommodation was sufficiently commodious as to allow a separate small mess area for the Captain and Chief, with another for the remaining crew.

Sadly we currently possess no known photographs of this space prior to 'DAPS' acquisition of the vessel, by which time, vandals, water ingress and twenty years had done their worst. If anyone does have a photo or photos of this area, however, poor they would be of great value in ensuring the accuracy of the restoration.

I believe this now covers the general arrangement plan and the apparent questions arising from it.

'Charles Galloway'

Registered: LR25-26: 16318/(GBR)
Official Number:105668
127GRT.
Length: 27.48m Breadth: 5.84m Draught: 2.62m
Steel hull, twin screw,
2 x Compound 2cyl. Engines - G.T. Grey, 72 nhp.
1895: Builder: J.T. Eltringham & Co. South Shields
1895: Delivered to Manchester Ship Canal Co.
1929: Broken up.

'Charles Galloway' (prior to 1900)
Percy Dunbervand Collection.

As we know the Ship Canal's inspection vessel, 'Charles Galloway' was scrapped in 1929 and thereafter her duties fell to 'Ralph Brocklebank' We can only speculate as to why she was chosen over her running mates, 'W.E. Dorrington' and 'Lord Stalbridge' which were, presumably, originally fitted with similar passenger facilities. Whatever the reason it was six years before the 'Ralph Brocklebank' was considered in need of modification.

In the meantime, it would seem she soldiered on with basically the same passenger facilities as installed when she was first built. Judging by the plan drawing these could best be described basic, from photographs it appears the fitting of awnings to the bridge and aft main deck added some improvement and would seem to have provided the germ of an idea for her future modifications

As mentioned previously the principal alteration concerned the enlargement of the saloons, the uppermost requiring the most drastic work

It will be seen from the plan that this involved extending the upper saloon forward, whilst at the same time extending the bridge/promenade deck to the ship's sides.

The promenade deck was also to be fitted with a permanent framework for a removable awning and canvas side screens to the ship's rail. Clearly this would mean that the steering position could not be neglected and a new, elevated wheelhouse was required to overcome the restricted view from the original location.

In turn, modifications would be required to the steering arrangements and the steam steering engine re-located to the wheelhouse. This would also allow alteration of the existing system and the freeing up of the space previously used for this machinery and