The Consuta Trust

The advancement of education in the history of steam launches, by preservation, maintenance and exhibition of the steam launch **Consuta**

Consuta Trust Newsletter - Winter 2023

Christmas greetings and a Happy New Year to all,

Hope you are keeping well.

Consuta being prepared for a day outing to Newbury

As you will know Consuta has now moved onto the K&A canal based at Kintbury. This is convenient for some of the few engineering works still to be completed for the project. The mooring on the private water of the mill stream is secure, and we intend to keep her afloat through the winter. Consuta will then be returning to the Thames in spring next year ready for the Thames summer boating season.

Fortunately we have been able to resolve the difficulties of obtaining a correct Thames Licence for the 2024 season with some helpful friends at the Thames Registration offices and Ian Lindsay of the Lechlade Marina.

While Consuta has been at Kintbury there have been several fault finding steamings and two supporter return trips, to Hungerford and to Newbury, these were very useful to sort out some of the engineering issues and provide some early training opportunities for our crew. It's clear that the new boiler is very much easier to manage than the old one, and it's quite a bit lighter as well.

Future fuels for Consuta

Trustees have had the opportunity of testing some possible future fuels for use with Consuta. The closure of the Welsh Ffos y Fran open cast coal mine has left many heritage steam powered organisations wondering what solid fuels are now still available and generally acceptable to the public (ie not too much smoke).

In the steamboating world there are two quite distinct classes of solid fuel fired boats, those which only require natural drafting and those that need the fire to be forced via a puffing exhaust. Consuta relies on the later when running fast as an umpire support launch. So the question is which fuel would be best when cruising at normal river speeds? and could it be forced when needed?

The Trust already have a 2 ton reserve stock of the Welsh steam coal, but the trustees thought it sensible to try out some of the other solid fuels now available. Most of these are sold as smokeless, however that does not of course mean smoke free.

Paul purchased some labelled Ecoal by Homefire, who have a range of various types of smokeless fuels, this one claims to be 50% made from crushed olive stone waste, perhaps a left over from the manufacture of olive oil, so I suppose it could be considered a partially renewable fuel? Lyn said the smoke from it looked green at times. During steaming tests this fuel seemed quite good and there were no problems using it on our trip up the K&A canal, although the fireman did say it was slow to respond if the fire was not fully burning over the whole grate. The other surprising fact was after use the coal remained alight even after knocking a hole in the fire, so the boiler could still be in steam the next day – wow. No doubt partly to do with the better lagging on the new boiler, however we did notice that there was never any unburned ecoal left on the grate, individual lumps of ecoal just kept burning until only ash remained.

It's been suggested by some in the traction engine world that Ecoal might have corrosion issues, all we noticed is that Consuta's funnel rain cap did result in a hard deposit from the flue gasses. At first it looked like the stainless was rusting, however this was only some sort of deposit which could be scraped off leaving the stainless surface unmarked and still shinny smooth?


Consuta's fire using Polish steam coal

We also purchased half a ton of Polish steam coal which surprisingly was slightly cheaper than the ecoal. This coal worked well, Paul said it cauliflowers like steam coal, however it did smoke more than the Ffos y Fran coal. I suppose that was to be expected as the Welsh coal only has about 8% volatiles, whereas the Polish coal had over 12%.

Our most adventurous supporter outing was to Newbury and back in a day, this involved a total of 14 locks. The boiler tubes had been a bit sooted up but a short fast sprint on a river section very quickly left them clean until the end of the day, although we did produce a very black cloud from the funnel during the speed burst, sorry no photo of this but it was quite

spectacular. The trip confirmed that the Polish steam coal works very well, our trainee firemen had trouble stopping the safety from blowing off a lot.

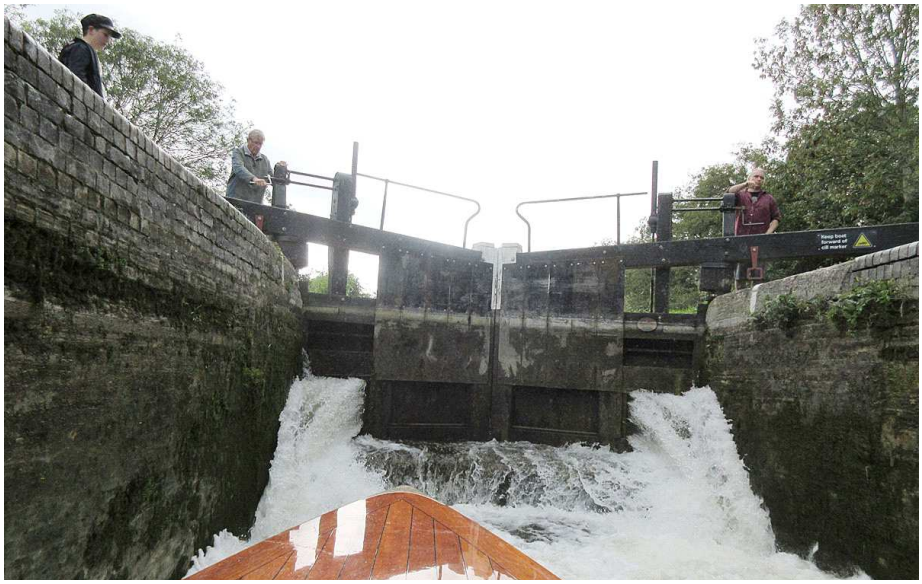
An important point to bear in mind while cruising on the K&A canal is to make sure that you plan where Consuta can be easily turned, because at 51 plus ft this manoeuvre needs some careful thought.

Other smokeless coals we will probably also need to try out properly are Homefire ovals (we have some sample bags), and others like Homefire “Bright Fire” which is claimed as anthracite based and is supposed to burn very hot, or

We are on our way back to Kintbury, Consuta had turned at a Newbury winding hole having just passed the swing bridge which is closing.

perhaps even some Anthracite coal, however anthracite coal was unavailable when we were steaming.

These are certainly interesting times but it looks as though the Polish steam coal will be OK to run Consuta fast for any umpire work, however we will certainly require our fireman to try to keep smoke emissions under control.



Guyers is the first lock West from Newbury and the top gates have gate paddles not ground paddles.

The majority of the canal section from Newbury to Bath uses ground paddles so not sure why Guyers is the odd one out.

Kintbury lock at the end of day, note safety indicating plenty of steam using Polish coal

Engineering work on Consuta.

While at Kintbury there have been several very useful steam tests in addition to the canal outings.

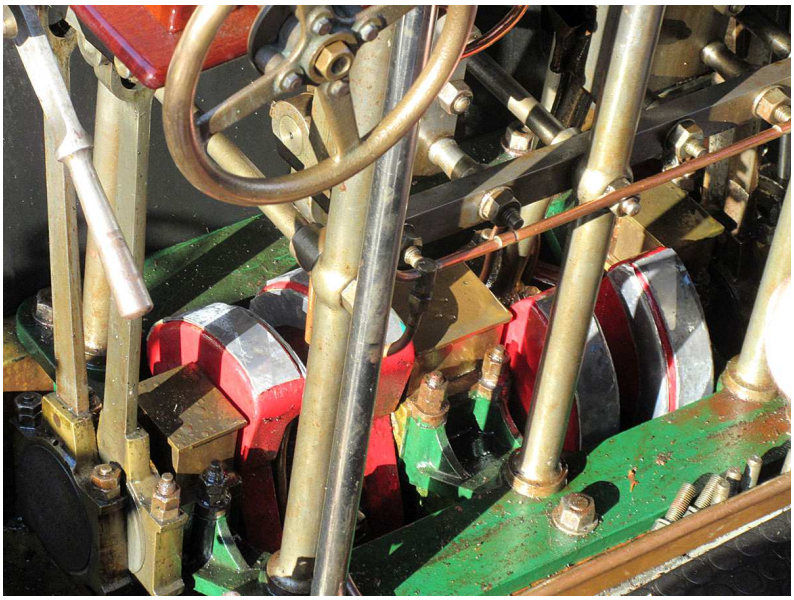
When Consuta's engine valve events have been carefully set up, the engine runs very smoothly. Some fast steam test runs seem to finally confirm that the silencer has been the cause of the strange piping howl at high engine revs.

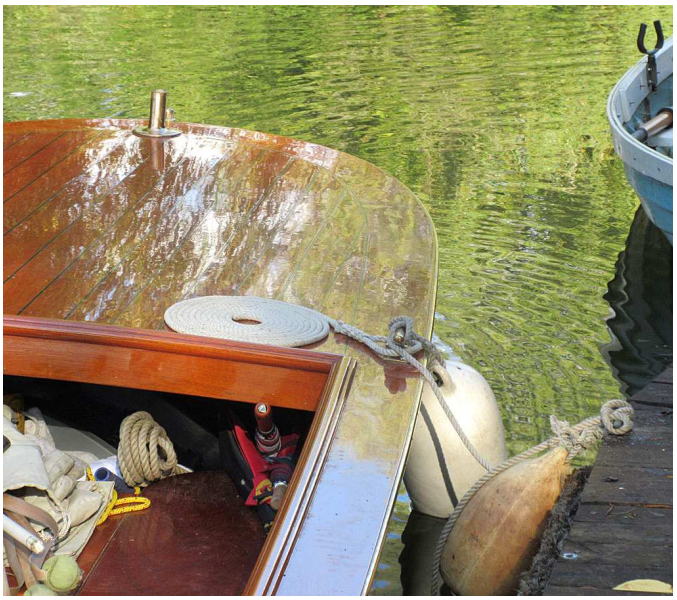
Just as a test, two temporary stays were fitted between the silencer end

Note exhaust being diverted overboard, and not through the silencer.

plates which cured the problem on short test runs, even when engine revs reported at over 550 rpm. You may be wondering how can we do this speed on a canal, surprisingly it was possible to run quite fast on the canal without serious wash, mind you only for short distances, maybe the sections we were using were deep.

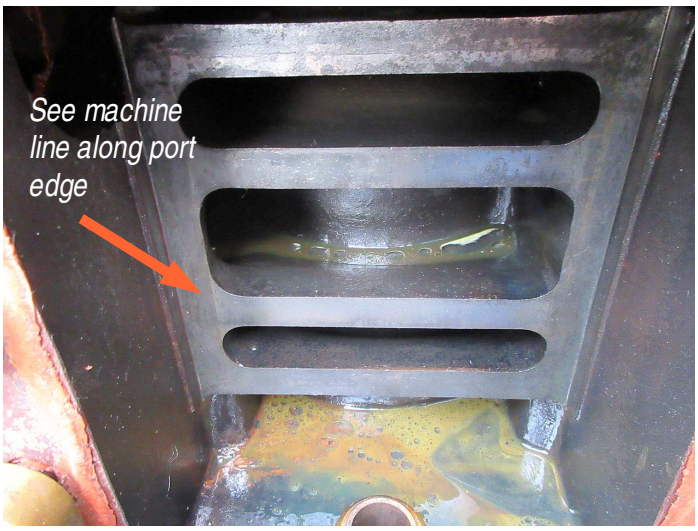
Many will be aware that Consuta's hull has a flexing resonance at specific engine revs, occurring at about 300 rpm. Paul thinks that the present engine balance weights are not big enough and could be increased perhaps with some benefit. For the balance test the engine was disconnected from the propshaft then run at different revs. This confirmed that the hull





resonance is definitely provoked at specific engine revs. Paul then attached some additional lead sheet weight to the crank balance weights see above, which may have reduced the engine imbalance slightly but thought more weight was needed, so more work is needed on this. John I Thornycroft conducted such tests with his early torpedo boats, and there are historic photos showing the water ripples from the hull when the engines were run fast. It had previously been thought that this imbalance on Consuta might be caused by the propeller, however this test without the prop, clearly had the bow and stern bouncing, and producing some ripples in the water from the hull at critical engine speeds. There is a short video of this on our facebook pages.

Another issue discovered with the silencer removed was that there seemed to be a slight steam blow by in the forward valve chest during a part of the slide valve travel this is a steam chest leak direct to exhaust.



We decided to check the forward valve chest to see what could be causing this slight blow by. The valve links had to be disconnected to drop the valve rod out to allow the slide valve removal. It was then clear there was a slight machining mark

height change on the valve face (see photo) which was probably causing the blow by. My estimate there is less than a thou height difference on part of the port face, but this could easily cause the valve to be lifted off slightly so allowing valve chest steam to escape direct to the exhaust port. On this engine the valve port face is sunken into the cylinder casting so cannot easily be rectified by normal surface grinding. This clearly is not something new and had obviously existed for the last 20 years at least.

Consuta has been sheeted up for the winter, we've increased the height of the cover support poles and are adding some additional lightweight poly covers as well. For the last few weeks a dehumidifier has been fitted in the engine compartment to keep on board humidity down, and this seems quite successful so far with no condensation in the boat. We will also put a small heater (55w) in the boiler as well.

The family decided to visit the Internal Fire Museum in west Wales near Aberporth. The museum policy is that all machinery will be displayed working if not broken. The museum is mainly big IC engines but they have a large steam hall, a fully working old Strowger telephone exchange from Aberporth and so very much more. A bit off track but well worth a visit.

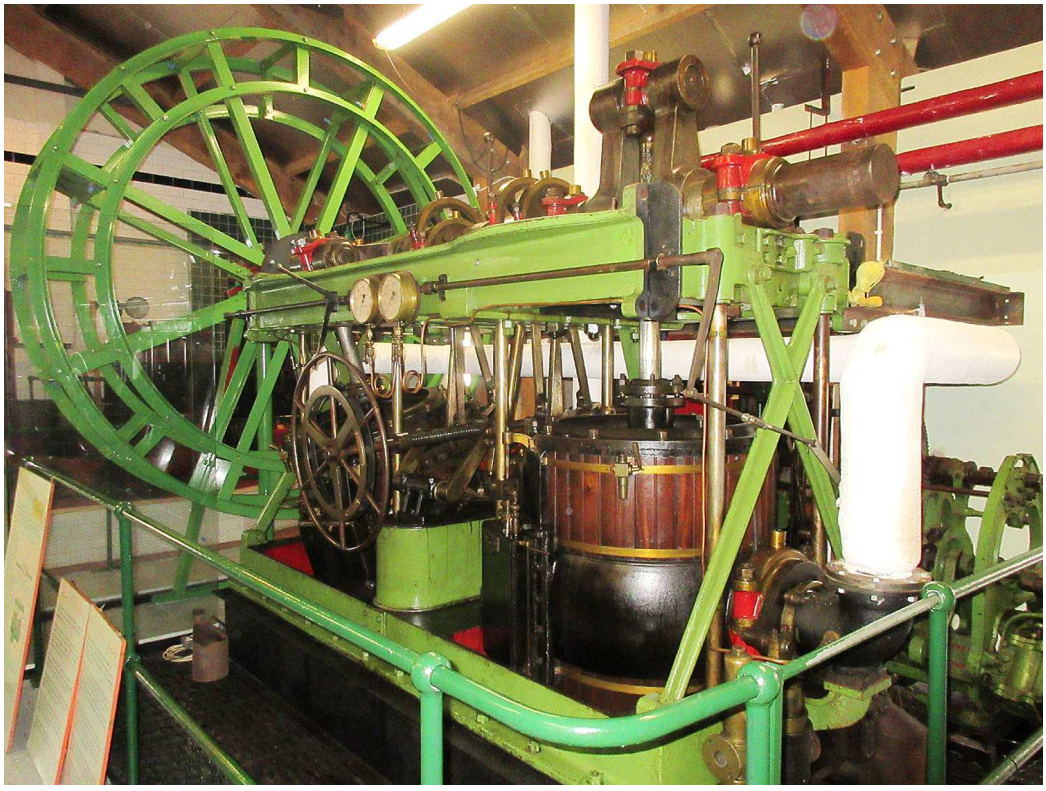


Photo here is the superb oscillating twin cylinder paddle engine built 1879 by J Penn & Son for PS Empress a south coast paddler scrapped in 1958. This engine is complete and all plumbed up with large bore copper pipe and ready to run at the museum, hopefully next year.

The engine is a twin 30" bore by 33" stroke. There is no info about Empress's working pressure but it was probably quite low.

An update on Consuta winterisation.

Consuta's funnel has now been lifted off , this has significantly reduced the humidity in the boat to under 60%, no condensation at all on anything under the cover. No heater installed to date possibly not needed?

The following still require some work:-

- Add at least two welded stays between silencer end plates to cure that exhaust steam pipe resonance noise.
- The engine main 1½" bore steam pipe is to be replaced by copper pipe instead of the screwed steel pipe and Malleable Iron screwed fittings; can anyone recommended coppersmiths for this work??
- We need to consider how and where to fit Consuta's Windermere Kettle, which was so useful for providing any form of hot drinks – so where is the best place on Consuta for it? Your suggestions please.
- The engine steam lubricator slowly leaks oil over time mainly from the ratchet drive shaft so will require some attention. We will probably need to grind and chrome finish the present shaft – it is worn where it's in contact with the packing gland.

The Aldermaston canal lifting bridge on the A340 is due for some major refurbishment work after over 20 years of service, so this main road to Basingstoke will be closed from January to March 2024. I was surprised to find that Berkshire council is responsible for the bridge maintenance not the CRT.

So looking to potential events in 2024

We usually have a winter social (Feb/March), so would you be interested in coming along and have you suggestions. The Rowbarge was very good for our last one, but we are planning to check out a few other places shortly. If you have suggestion why not let us know as well?

Possible Consuta steaming events during 2024

Visiting Crofton Pumping station on one of their early 2024 steam days is possible; this would be early or late April 2024. The trip from Kintbury would involve a total of 17 locks, so being practical, would be a three day event, First day steam to Bedwyn, second day steam the short distance to Crofton for the visit, and return to Bedwyn, The third day return to Kintbury. If interested please let me know.

We will need to move Consuta back onto the Thames during May, this could be managed in two days (maybe three days if not too hurried).

Once on the Thames there are three potential events for Consuta's participation:-

- The Reading Town Regatta (only one day). Saturday 29th June
- The Henley Women's Regatta (only one day). A three day event but only Sat 22nd June with Consuta.
- The Thames Traditional Boat Festival, a three day event 19th - 21st July.

We will need full crew and helpers for these events. Both the Reading and Henley Womens regatta's require Consuta to run fast; Reading is not too busy but the Womens Regatta can be very busy. The Henley Trad event is fairly relaxed Consuta normally only moves in the appropriate parades, but is usually kept in steam each day while moored up.

There may be an SBA Rally on the Thames but no info at present.

We have plenty of good welsh steam coal and Consuta is running well now. So if we have the necessary crew and volunteer helpers for these events participation at all is possible. Please let me know if you would be able to come to any so that we start planning our 2024 operational programme, thank you.

I think that is all for the present.

Hope you are all keeping well and have a happy Christmas.

Best wishes,

Brian Smith and the team.

Photo was taken leaving Brunsdon lock during a very enjoyable day trip to Hungerford.