

Navigating the canals by hydrogen barge

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The University of Birmingham's hydrogen powered narrow boat 'the Ross Barlow' has set sail on its first major canal cruise.

The boat will start its journey at the University's mooring on the Worcester to Birmingham canal, it's final destination being the Tom Rolt Centenary Celebration rally at Chester on 26 & 27 June. Tom Rolt was one of the founding fathers of the inland waterways, who inspired the regeneration of the canals for pleasure cruising.

Before completing the final leg of the trip the 'Ross Barlow' will be showcased at a special event at Tattenhall Marina near Chester on Saturday 19 June. The boat will be used to demonstrate the silent electrically propelled system, and to promote zero emission canal and river boat travel using hydrogen as fuel.



Canal in Birmingham city centre

Professor Rex Harris and Dr Alex Bevan from the **School of Metallurgy and Materials (<http://www.eng.bham.ac.uk/metallurgy/>)** at the University of Birmingham, will be at the tiller during the journey, 'We are very excited to be embarking on our first long trip in the boat - it is a very relaxing way to travel as the engine is almost completely silent.

'The journey to Chester will take us approximately four days to cover the 70 miles and 58 locks. This trip will give us the opportunity to monitor closely the performance of the on-board equipment as well as to assess the viability of the hydrogen and fuel cell technology. We hope that the boat will provide a model for future waterways travel and for cleaner shipping in general.'

The Ross Barlow shows how a combination of rare earth magnet and fuel cell technologies can be used to power inland waterways craft. The hydrogen is stored on board in a large scale metal hydride storage system which was developed in collaboration with EMPA Laboratories in Zurich. This provides an effective means of storing large amounts of hydrogen at room temperature and at the modest pressure of around 10 bar. The hydrogen is released from the hydride by simply decreasing the pressure, providing the fuel cell with an ultra pure source of hydrogen. The metal hydride powder weighs 240 kg and is thought to be the only store of its kind in the UK.

When the boat reaches Tattenhall marina on 19 June Professor Harris and Dr Bevan will be giving lectures on how hydrogen can be generated, how it is used as fuel to propel the boat and the means by which boats could be refuelled on the canal network. A working model will be displayed which shows how hydrogen can be generated from water and then used in a fuel cell to drive an electric fan.

On Friday 25 June the final seven miles to the rally in Chester will be a charity 'pull' by a pantomime horse in support of the Starlight Children's Foundation for seriously and terminally ill children.

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