

HIGH TIMES

Rising high above the Dee Valley in Wales, the Pontcysyllte Aqueduct on the Llangollen Canal has been designated Britain's newest World Heritage Site. We sent virgin canal boater David Cawley to test the water and views along this marvel of 19th-century civil engineering



Those with a nervous disposition and anyone carrying children are told to stay safely seated below deck. Those who have to remain outside to steer – namely me – fix their eyes firmly on the wooded terra firma of the southern slope of the Dee Valley, 1,007ft away. Encouraged by the promise of some nerve-calming ale at a pub on the other side, we slowly drift across the awesome Pontcysyllte Aqueduct.

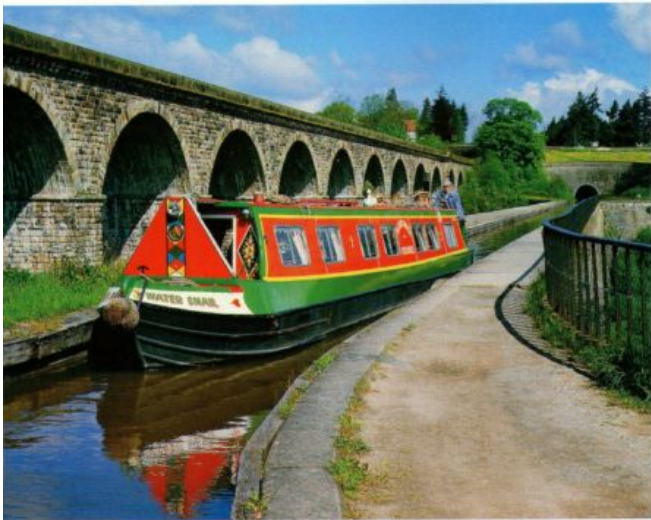
At the time of our cruise it's late February and Britain's canals are deep in their silent winter slumber. The majority of the narrow boats moored along the towpaths are draped in frosty tarpaulins, waiting for the spring to arrive when their diesel engines sputter back into life, announcing the beginning of another 4mph pleasure cruising season on the canal network.

In stark contrast our 48ft craft, 'Hurley', is unveiled, heated throughout and chugging happily as my wife Andi and I prepare to navigate this very special 11-mile stretch of Llangollen Canal. Recognised by UNESCO as a site of 'outstanding universal value' and 'a feat of civil engineering of the Industrial Revolution', this section of the canal was designated Britain's newest World Heritage Site in June 2009, placing it alongside a host of other man-made masterpieces, including The Great Wall of China, Machu Picchu and the Taj Mahal.

With 14 tons of narrow boat beneath our feet, we take the sharp left turn from our base at Trevor Marina, a former hotbed of 19th-century trans-shipment, and are immediately confronted by the aqueduct, which stretches ominously into the distance.

Walking the towpath is nerve jangling enough, but as we cross the valley on a shallow bed of water there are only three-inches of cast iron lip between one side of the

Facing page:
over 1000ft long
and 126ft high,
Pontcysyllte
Aqueduct is a
vertigo-inducing,
engineering marvel.
Above:
in its time, the
Llangollen canal
was a "high-speed"
mineral and coal
trade route



Facing page: the huge gulf between the banks of the Dee posed a formidable challenge. Above: in places historical transport routes run side by side. Below: just three inches of cast iron separate boats from a 126ft fall

boat and a 126ft fall through chilly Welsh air into the Dee Valley and gushing river below.

Upon reaching the other side, we are greeted by the peace and calm of steep wooded dells. From here the canal continues southwards through the Whitehouse and Chirk tunnels to a second Aqueduct built in 1801. Straddling the border of England and Wales, the Chirk Aqueduct runs parallel to the handsome 1859 Shrewsbury to Chester railway viaduct, just a short cruise from Gledrid Bridge and pub, the pretty canal-side village of Rhoswiol and eastern end of the World Heritage Site.

ENGINEERING SHOWCASE

This is our signal to turn around and head back towards Llangollen town at the opposite end of the World Heritage Site. After another white knuckle ride across both aqueducts and past the boatyard, the cut veers sharply left, clinging to the northern hillside above the Dee Valley and ploughing gentle waves through woods and parkland covered with a patchwork of snowdrops and sheep.

Approaching the town of Llangollen, the bird song that has provided the soundtrack for our journey so far is silenced by the low rumble of traffic along Thomas Telford's early 19th-century London to Holyhead road, as well as the blare of train whistles echoing across the valley from the local heritage railway. At the canal's terminus in the town centre, all three transport routes briefly run side by side, providing an unexpected showcase of pioneering 19th-century engineering.

Beyond the navigable end of the canal, up the Vale of Llangollen to Llantysilio, the narrowed cut continues to the Horseshoe Falls. Here, at the western end of the waterway, a large semi-circular weir spans the River Dee to siphon off six million gallons of mountain water a day into the canal and marks.

Travelling the canal today, one can only be in awe of the enterprising and seemingly impossible vision of the canal's creators. Plans to create a navigable water course between England and Wales were first mooted in 1791 when local entrepreneurs recognised the potential sense and commercial value in having "high-speed" mineral and coal trade routes between the River Dee in Chester, the River Severn in Shrewsbury and the River Mersey in Liverpool.

Senior engineer William Jessop employed Thomas Telford to help overcome the challenges posed in constructing a canal through this undulating terrain, with the gulf between the banks of the Dee valley providing a particularly awkward challenge.

The traditional method of overcoming such a hurdle would be to employ a series of locks to lower and raise the canal gradually up and down the sides of the Dee valley, with perhaps a traditional low squat aqueduct over the river, built with brick arches and a water trough lined with puddle clay. However, this would have been financially prohibitive in its construction due to the large volume of water needed to constantly supply lock chambers and the subsequent delays this would make to the journey.

AUDACIOUS SOLUTION

Jessop and Telford's solution was to be one of the most brilliant and audacious constructions in large scale civil engineering. Although initially greeted with derision and scepticism, their revolutionary proposal to lay a cast iron trough on top of 116ft-high stone piers was finally set in motion in 1795.

Masonry for the 19 supporting pillars connected internally by iron arches was sourced from nearby sandstone quarries and cemented using mortar made of lime, water and ox-blood. To form the 11ft wide by 5ft 3in-deep trough, iron sections created by local iron master William Hazeldine were dovetailed and then caulked, using a mixture of pure Welsh linen sealed with lead dipped in boiling sugar.

Built over a period of six years, with another six months testing for leaks, the aqueduct was completed at a cost of £47,000 (£1.5 million today) and was officially opened in front of 8,000 cheering spectators on 26 November 1805. Upon seeing the completed aqueduct for the first time,



Pontcysyllte Aqueduct



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novelist and poet Sir Walter Scott is said to have described it as the greatest work of art he had ever seen.

Over 200 years later, the aqueduct continues to be regularly checked for its safety. In November 2009 the span was closed for four days while the aqueduct was plugged and drained. Over a period of five hours, around 3,300 gallons of water were sent cascading into the valley floor before the iron trough was swept with echo sounding equipment to ensure the solidity of the structure and original caulking and seals.

STAR OF THE SHOW

In 2010, the aqueduct still remains as it was when it was built, apart from the towpath and balustrade renewal. This structural authenticity played a significant role in influencing UNESCO's decision to honour the site. Meeting at Seville in 2009, the international panel also recognised its bold and ground-breaking civil engineering and the creative genius in cutting 11 miles of canal through such challenging terrain. Alongside this, acknowledgment was also made of the profound effects it had on global developments in transport and building during the industrial revolution and beyond.

As we chug our way across the aqueduct for the fourth time in as many days the vertigo-inducing anxiety never ceases until we return "Hurley" to her home. Back on dry land the magnitude and skill of this undertaking and its surrounding beauty can again be fully appreciated. While the 11 miles of canal engineering have been rightly recognised by UNESCO, the Pontcysyllte Aqueduct is undoubtedly the heart-stopping star of the show.

For more details of hiring a narrowboat on Llangollen canal, go to www.anglowelsh.co.uk