

= Stainforth and Keadby Canal =

The Stainforth and Keadby Canal is a navigable canal in South Yorkshire and Lincolnshire , England . It connects the River Don Navigation at Bramwith to the River Trent at Keadby , by way of Stainforth , Thorne and Ealand , near Crowle . It opened in 1802 , passed into the control of the River Don Navigation in 1849 , and within a year was controlled by the first of several railway companies . It became part of the Sheffield and South Yorkshire Navigation , an attempt to remove several canals from railway control , in 1895 . There were plans to upgrade it to take larger barges and to improve the port facilities at Keadby , but the completion of the New Junction Canal in 1905 made this unnecessary , as Goole could easily be reached and was already a thriving port .

The canal was a centre for boatbuilding between 1858 , when Richard Dunston moved his yard to Thorne from Torksey , and 1984 when the yard closed . Dunston 's company were pioneers in the use of welded construction and innovative tug propulsion systems . The operation was always restricted by the size of Keadby Lock , although vessels longer than the lock could pass through when the river was level with the canal and both sets of gates could be opened . The largest ship to be built required Dunston 's to build a dam across the canal , as the canal company feared that it might get stuck in the lock , resulting in flooding and draining of the canal .

The canal passes through a region which is largely rural , much of which is drained artificially . For most of its length , it is flanked by the North Soak Drain and the South Soak Drain , because it disrupted the established drainage scheme . Thorne Moors lie to the north and Hatfield Chase lies to the south . Until its demise in 1966 , the canal was crossed by the Axholme Joint Railway at Ealand . The swing bridge was retained for several years after closure , so that stators from the nearby Keadby Power Station could be taken away for repairs , as there were no road bridges which could support the weight .

= = History = =

The River Don , which flows through Sheffield and Doncaster , had originally split into two channels below Stainforth , one of which emptied into the River Trent near Adlingfleet , close to its junction with the River Ouse , while the other headed north to join the River Aire near Rawcliffe . Following the work of the Dutch drainage engineer Cornelius Vermuyden to drain Hatfield Chase , the Adlingfleet outlet was closed off , and the channel to the River Aire , passing through Newbridge , was improved to take all of the flow . The scheme was not entirely successful , and after severe flooding near Sykehouse , Fishlake and Snaith , accompanied by riots , a new channel was cut between Newbridge and the River Ouse near what became Goole . The old course of the Don gradually silted up . Navigation on the Don was improved by the construction of cuts and locks , with the lowest lock situated at Stainforth . From there to the Ouse , boats used the Dutch River , Vermuyden 's artificial drain , which was hazardous due to its fast flows , its tides and its shallowness at times .

The idea of reconnecting the Don to the Trent was first raised in 1763 , when James Brindley assisted the manager of the River Don Navigation to survey a route for a canal to do this . In 1772 a second survey was made , this time by John Thompson , the Don Navigation 's engineer , for a canal from Stainforth to Althorpe , some 1 @. @ 5 miles (2 @. @ 4 km) above Keadby on the River Trent . An agreement to build the canal , which would have had three locks and cost £ 14 @, @ 614 , was reached , but no further action occurred . The plan was revived in 1792 , by which time the cost had risen to £ 24 @, @ 200 , and an Act of Parliament to authorise the work was obtained in 1793 . This allowed the Stainforth and Keadby Canal Navigation Company to raise £ 24 @, @ 200 by issuing shares , and a further £ 12 @, @ 000 if necessary . Work began at the Keadby end in late 1793 . A second Act , obtained in 1798 , allowed the company to raise an additional £ 20 @, @ 000 from shareholders , instead of the original £ 12 @, @ 000 , and to raise £ 10 @, @ 000 by mortgage . The canal opened without ceremony in early 1802 .

The canal had a lock at Thorne and another where it joined the River Trent at Keadby . This lock had four sets of gates , so that it could be used whether the level of the river was higher or lower

than that of the canal . It could take keels up to 81 by 22 @. @ 5 feet (24 @. @ 7 by 6 @. @ 9 m) , which could carry up to 200 tons .

= = = Development = = =

In 1828 , there was a proposal to build a canal from West Stockwith on the River Trent to the River Don at Doncaster , which would have bypassed the Stainforth and Keadby . There was also a plan for a lower Don bypass , to connect direct to the Goole Canal , avoiding the difficult Dutch River . Neither scheme progressed any further , but the Keadby end of the canal was improved , and a new deep water jetty was constructed on the Trent in 1833 . Traffic improved , with boats using the canal as an easier way to reach the Don than the Dutch River . The Don Navigation Company then proposed a new canal from Stainforth to the River Ouse at Swinefleet in 1836 . They needed to buy 2 miles (3 @. @ 2 km) of the Stainforth and Keadby from the Don towards Stainforth , and started to negotiate , while applying for an Act of Parliament . The Stainforth and Keadby opposed the bill , and an agreement was reached in May 1836 that the Don would buy the whole canal for £ 48 @, @ 000 . A bill to authorise the sale was opposed by some of the Stainforth and Keadby shareholders and was rejected by the House of Lords . After several more abortive plans at amalgamation , where the Stainforth and Keadby pulled out at the last minute , agreement was finally reached , and the Don Navigation took control of the canal on 1 January 1849 . A year later , it became part of the South Yorkshire Railway and River Dun Company , after the Don Navigation and the Doncaster and Goole Railway companies merged .

Under an Act of Parliament of 1874 , the South Yorkshire company was absorbed into the Manchester , Sheffield and Lincolnshire Railway . Despite the railway competition , traffic levels remained healthy , with the waterways carrying a total of 982 @, @ 000 tons in 1878 , but there was a growing dissatisfaction with the situation , particularly the high tolls compared to the railways , and the refusal to allow steam haulage , which had been in use on the neighbouring Aire and Calder Navigation for over 50 years . In an attempt to improve the situation , the Sheffield and South Yorkshire Canal Company Ltd was formed in 1888 , with the intention of buying back the canals from the railway company , and upgrading them to offer effective competition to the railways . As a result of their efforts , the Sheffield and South Yorkshire Navigation Co was created by an Act of Parliament dated 26 August 1889 , with powers to raise £ 1 @. @ 5 million to purchase and improve four canals . These were the Sheffield Canal , the River Don Navigation , the Dearne and Dove Canal and the Stainforth and Keadby Canal . The intention was to upgrade the Don and the Stainforth and Keadby to take 300 or 400 ton barges , to investigate the use of compartment boats , and to build a new port facility at Keadby , where coal could be trans @-@ shipped to seagoing vessels . Negotiations with the railway company were long and bitter , and the Navigation company only managed to raise £ 625 @, @ 000 of the £ 1 @. @ 14 million purchase price , with the result that although ownership of the waterways was transferred to them , the railway company still nominated five of the ten directors , and thus retained significant control .

During the protracted negotiations , the company had also been talking to the Aire and Calder about compartment boats , which resulted in a proposal to jointly fund and build a canal from Bramwith to the Aire and Calder . The 5 @. @ 5 @-@ mile (8 @. @ 9 km) New Junction Canal was authorised in 1891 , and finally opened in 1905 . This removed the need to build a new port at Keadby , and the planned upgrade to take larger vessels was also shelved , because the company were unable to raise significant working capital . Despite the lack of investment and the difficulties of the First World War , the waterways were still quite busy , with traffic recovering from 381 @, @ 727 tons in 1926 , the year of the general strike , to over 800 @, @ 000 tons in 1937 . Bramwith lock , the first on the Stainforth and Keadby , was lengthened in 1932 , and a new colliery layby was constructed to enable compartment boats to reach Hatfield Main Colliery . Stainforth lock , which connected the canal to the River Don , was closed in 1939 . The winter of 1947 was particularly severe , and the Stainforth and Keadby was closed for a period due to ice . After the Second World War , the canals of the Sheffield and South Yorkshire Navigation were nationalised on 1 January 1948 , together with most other operational canals in Britain .

They were initially managed by the British Transport Commission , but control passed to British Waterways with the passing of the Transport Act 1962 , which also disbanded the Transport Commission . The Transport Acts of 1968 and 1983 divided British canals into Commercial waterways , which were still carrying commercial traffic , cruising waterways , which had potential for leisure use , and remainder waterways , for which no economic use could be seen at the time . The Stainforth and Keadby was designated as a commercial waterway , and traffic was restricted to working boats carrying freight . With the steady demise of freight traffic , British Waterways encouraged the use of the canals for leisure cruising , walking and fishing , and later recognised their environmental value . Following the cessation of coal carrying from Hatfield Main colliery , and the closure of Dunston 's boatyard at Thorne , all use of the canal is now by leisure boaters . A further change of ownership took place in 2012 with the creation of the Canal & River Trust , which took over all of the assets of British Waterways .

= = Boatbuilding = =

Large numbers of boats were built beside the Stainforth and Keadby Canal . Richard Dunston set up a boatyard at Thorne , on the north bank just below the lock , in 1858 , after selling his previous boatyard at Torksey . He initially constructed clinker @-@ built sailing barges , capable of carrying up to 80 tons . The boatyard was fairly self @-@ contained , using timber which was grown locally and was sawn by hand at the yard . It included a ropewalk , which made ropes for many industries in the locality , as well as for rigging of the boats , and supplied sails , masts and chandlery to much of the Humber region . Gradually , carvel @-@ built barges with their smoother hulls replaced clinker @-@ built ones , and boat sizes became more standard , with Sheffield @-@ sized keels and larger sloops . Shortly after Richard 's grandson took over the yard in 1910 , it was remodelled to build iron and steel ships , and only one wooden boat was built subsequently .

One of the issues with the yard was that the size of boats that could be built was restricted by the locks at either side of the site . Sheffield @-@ sized boats were around 61 @. @ 5 by 15 @. @ 5 feet (18 @. @ 7 by 4 @. @ 7 m) , and could leave the yard either by passing through Thorne Lock and on to the Don Navigation , or by travelling to Keadby and entering the Trent . Sloops were restricted to the Keadby route , because of their larger size , and the largest boats built at Thorne before the 1940s were 700 @-@ brake @-@ horsepower (520 kW) tugs , 300 @-@ ton coasters and 300 @-@ ton lighters . From 1933 , the yard began experimenting with welded rather than riveted construction , and their first all @-@ welded steam tugs were constructed for the Admiralty in 1942 . They continued to lead the field with developments in tug propulsion in the 1960s , and by the last 1970s had build seventeen tugs with Kort nozzle or Kort rudder steering and twenty tugs with Voith @-@ Schneider propulsion systems at Thorne . With the yard at Hessle on the Humber , bought from Henry Scarr in 1932 , they were one of the largest un @-@ nationalised shipbuilders in Britain .

The Empire Laird , a self @-@ trimming diesel collier measuring 140 by 21 @. @ 5 feet (42 @. @ 7 by 6 @. @ 6 m) with a draught of 10 feet (3 @. @ 0 m) , was one of the largest vessels ever constructed at Thorne . It was built for the Admiralty in 1943 for use in the Bristol area , delivering coal to power stations . It was fitted with a 275 bhp (205 kW) Crossley engine and a single propeller . Keadby Lock is much shorter than the ship , and so it had to sail through when the river made a level with the canal , and both sets of gates could be opened at the same time . However , the canal company were worried that because of its width , it might jam in the lock , which would cause flooding of the hinterland at high tide , and draining of the canal at low tide . Dunston 's had to build a dam across the canal beyond the lock , to prevent both consequences . Once built , the ship successfully passed through the lock , and the dam was removed . During the Second World War , Dunston 's designed and built TID (Tugs in Dock) tugs . They were constructed from eight pre @-@ fabricated sections , manufactured by companies who were not normally involved in shipbuilding . The sections weighted less than 6 tons , with a maximum size of 10 feet (3 @. @ 0 m) by 17 feet (5 @. @ 2 m) by 13 feet (4 @. @ 0 m) , and were delivered by lorry to the yard . There they were joined together by welders , many of whom were women , and fitted with steam engines .

The first TID tug was completed in February 1943 , and for more than a year , one left the yard every five days .

In the early 1980s , there were still 80 workers involved in construction work at Thorne , and 15 other staff . A total of 1 @, @ 358 vessels were built there between 1932 and the end of shipbuilding in 1984 . The yard closed completely in 1987 , and had been cleared by 1993 . Subsequently , it has become a housing estate , where a number of the roads reflect the former use of the site , including Capstan Rope Way and Dunstan Drive , although the spelling of " Dunston " is not quite the same .

= = Route = =

The Stainforth and Keadby follows a fairly direct course from west to east , running for 14 @. @ 9 miles (24 @. @ 0 km) from Bramwith Junction , where it meets the New Junction Canal and the River Don Navigation , to Keadby Lock , where it joins the River Trent . There is a lock at both ends and one part way along at Thorne , which is smaller than the other two . Maximum boat sizes over the entire canal are 61 @. @ 7 feet (18 @. @ 8 m) long by 17 feet (5 @. @ 2 m) wide . Boats can draw 7 @. @ 25 feet (2 @. @ 21 m) and headroom is restricted to 10 @. @ 9 feet (3 @. @ 3 m) .

The New Junction Canal and the Stainforth and Keadby Canal leave the end of the River Don Navigation , and both head broadly north east , but whereas the New Junction Canal continues in a straight line for its entire length , the Stainforth and Keadby gradually turns to the east . Shortly after the junction , Bramwith Lock lowers the level of the canal . The River Don , after flowing under the New Junction Canal , joins the canal and continues close to the north bank for several miles . Bramwith Swing Bridge is the first of several swing bridges , most of which are operated by boaters . The tiny village of Kirk Bramwith is just to the north of the canal and river . Its notable buildings include the church of St Mary , much of which dates from the fourteenth and fifteenth centuries , with a twelfth @- @ century southern doorway . The building is a grade II * listed structure . The hamlet of South Bramwith lies to the south , with Bramwith Hall , a grade II listed 3 @- @ storey , 5 @- @ bay eighteenth @- @ century country house , which was rebuilt in the early nineteenth century , situated close to the canal . The canal passes to the north of Stainforth , where there is a fixed bridge . A basin , with its former connection to the Don , is now used as moorings by Thorne Cruising Club . This first section is now generally considered to be part of the Stainforth and Keadby Canal , although it was originally part of the Don Navigation as far as Stainforth Lock .

After a large pipe bridge , the canal widens to form a loading bay where coal from Hatfield Main Colliery was transferred to barges . A railway , which has now been dismantled , connected the site to the mine . About 1 mile (1 @. @ 6 km) from Stainforth , the Don turns towards the north , while the canal continues to the east , passing under the M18 motorway . As it approaches Thorne , it passes under the Sheffield to Hull Railway near Thorne North railway station . Immediately beyond the bridge is Stanilands Marina , followed by Thorne Lock , with a swing bridge crossing its head . The canal turns briefly to the south , to pass under the A614 road and the Doncaster to Cleethorpes railway near Thorne South railway station . The railway remains close to the northern bank for most of the way to Keadby . There is another marina near Wykewell Lift Bridge , and after Moor 's Swing Bridge , the canal crosses open countryside .

The land besides the canal is low lying , and there is evidence of strip farming , with a series of farms each with a long thin strip of land behind it . In this case the strips were 1 acre (0 @. @ 4 ha) strips , approximately 220 by 22 yards (201 by 20 m) in size . The land is crossed by drainage ditches . To the north are those of Thorne Moors , while to the south , the drains include Boating Dyke , which was used for the export of peat during the seventeenth and eighteenth centuries . The network of peat canals were largely destroyed by the cutting of the canal in 1802 , and Boating Dyke now feeds into the North Engine Drain , which crosses Hatfield Chase and discharges into the River Trent at Keadby . After Maud 's Swing Bridge is a long straight stretch , with the railway on the north bank . The North Soak Drain and South Soak Drain flank the canal on both sides , and were built because the canal disrupted the natural drainage of the area . Near to Crook o 'Moor Swing Bridge was Medge Hall peat works , which exported peat from the moors by railway until it was closed in 1966 .

Just before Godnow Swing Bridge , the northern soak drain crosses to the north side of the railway . As the canal approaches Ealand there are some large lakes to the north , which are now used for sailing . Crowle Bridge carries the A161 road over the railway and the canal , and Crowle railway station is sandwiched between the canal and the North Soak Drain . A little further east are the remains of Crowle railway bridge . It carried the Axholme Joint Railway over the canal , and consisted of four arches built from bricks , with a central swinging section , to allow keels to sail along the canal . The bridge was retained after the railway was closed in 1966 , because stators from Keadby Power Station were too heavy to be transported over the A161 road bridge . The stators were carried by road to Ealand , loaded onto the railway , and crossed the bridge to Belton , where they were transferred back to a road vehicle . The process became unnecessary when Lindsey County Council rebuilt the A161 bridge in 1970 , and the railway bridge was demolished in 1972 .

On the outskirts of Keadby , there are two more bridges . Vazon Swing Bridge is a conventional swing bridge , but the railway crosses to the south side of the canal on a sliding bridge . The bridge deck is only around 2 feet (0 @. @ 6 m) above the level of the water . When boats need to pass , the deck is winched sideways , and clears the waterway because it crosses it at an angle . The bridge was built in 1925 @-@ 26 and rebuilt in 2004 , and is controlled from a signal box nearby . Beyond the bridge , Keadby gas @-@ fired power station is located on the north bank . The final bridge is Keadby Swing Bridge , situated at the head of Keadby Lock . The lock controls passage to the River Trent , which is tidal at this point , and it therefore has four sets of gates . The main structure of the lock dates from the opening of the canal , and is grade II listed . The gates and sills were replaced in 1932 . There are wharves on the river for larger ships , and Keadby pumping station is situated just to the south . It was built in the 1930s , and pumps water from Hatfield Chase into the Trent . Since 1945 it has also dealt with water from the North and South Soak Drains . When the South Yorkshire Railway opened their line along the banks of the canal in 1859 , it terminated beside the lock , but was diverted to the south to cross the Trent on Keadby Bridge in 1864 .

= = Points of interest = =