

Rickmansworth Waterways Trust



LEARNING AT THE LOCK

Background Material for Teaching Staff



**"Tell me and I forget. Teach me and I remember. Involve me and I learn."
*Benjamin Franklin***



Life could be bleak

LIFE ON A NARROW BOAT

Those of us who live in a conventional house in an ordinary community will find it difficult to imagine what living permanently on a narrow boat must be like.

This pack contains information that will provide facts and descriptions of the life of a boater and a concise history of canals.

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Activity Sheet for Classroom

Batchworth Lock – Why Here?

Three rivers meet at Batchworth – the Gade, the Colne and the Chess. Before engines were invented the water from the river Colne was used to turn a large mill wheel which powered the machinery inside the first building at Batchworth – Batchworth Mill.

200 years ago workmen turned the river Colne at Batchworth into a canal by building a lock and weir and raising the water level so that it could be used by narrow boats to carry cargoes between London and Birmingham.

On the main canal there were a lot of narrow boats travelling through, whilst many others made deliveries and collections from Batchworth Mill as well as Batchworth Island where there were a number of businesses. There was a boat yard where they built wooden narrow boats. There were two sets of stables for the horses that pulled the narrow boats and there were also pubs and shops for the people who worked on and off the boats.

Off the canal the river Chess was also made into a short canal so that narrow boats could reach Rickmansworth. Here they delivered and collected goods from the brewery, the gas works and the town generally. They later linked up with the London and North Western Railway and also brought gravel out for H. Sabey and Co, which was used to build roads and houses.

Batchworth was a busy canal centre with as many as 500 people working in the area.

The open site opposite the lock centre was known as “Ricky Dock”. A number of cottages stood here as well as a shop called “Jon’s Stores”. Railways and motorways finally took all the business away from the canal and nobody could make any money at Batchworth any more so everything closed. The boat people left their boats to get jobs away from the canal. All but one of the pubs was closed and Jon’s Stores was taken down so that the road could be widened. The boat yard site was bought by Tesco’s for a supermarket.

However, property developers saw that Batchworth was an attractive place so they built offices here. Although nothing is manufactured at Batchworth anymore, over 500 people work in the area again in offices and small businesses.

A Short History of the Canal at Batchworth

Batchworth Mill 1790



The three rivers that meet at Batchworth (the Colne, Gade and Chess) made it a natural site for a mill. Used for cotton and silk spinning it was later operated by John Dickson’s during the nineteenth century for processing rags into paper.

Batchworth Mill – Now the home of Learning at the Lock

Batchworth Mill 1910

By the beginning of the twentieth century the mill had ceased to be profitable and it was largely demolished in 1910. In its place a bore hole was sunk to a depth of 300ft from which Rickmansworth has been supplied with water ever since.

London Road 1890

The combination of the canal and the Pinner/Harrow turnpike road made the parish of Batchworth a social and trading centre. There were six general stores, a butcher and at least six inns.

The Three Rivers

Without the river Chess, Colne and Gade there would be no Batchworth. First they provided an abundance of water for the mill and later the canal. This was particularly important for this section of the Grand Junction Canal: while a pair of boats climbing the 400ft from the Thames at Brentford over the Chilterns at Tring would use very little water because they used the same water as boats coming down from the summit, many boats went up and down without reaching the summit, and their water had to be supplied along the way.

The River Colne

Work on the Grand Junction Canal was completed locally in 1797. William Jessop, the canal's engineer, followed the line of the Gade from Hemel to Batchworth using the river to feed the canal with water. The Gade joins the Colne half a mile above Batchworth at Lot Mead. About 100 years ago a few boats went up to Watford on the Colne, but the intended work to make a proper branch to Watford was never done.

The River Chess

The River Chess, which rises at Chesham, was instrumental in the development of commercial canal traffic at Rickmansworth. In 1805 Samuel Salter raised the water level by building a weir and a lock next to the main lock at Batchworth. This enabled the boats to get nearer to the centre of Rickmansworth as well as making deliveries to the brewery, the gas works and the town. In 1903 H. Sabey & Co built another lock off the Chess into a small lake behind the main line from where gravel was extracted for the next 50 years. Just below Batchworth Bridge John Taylor constructed an arm (Taylor's Cut) to his bakery behind the Bury. The Chess joins the Colne by the iron footbridge 200 metres below Batchworth Bridge.

The Grand Junction Canal

Eighteenth and nineteenth century engineers used the three rivers at Batchworth to create a small industrial centre off the main line. As to the canal itself, the Colne was divided in two with some water flowing to the Mill whilst the remainder flowed directly to the new lock and weir at Batchworth. The bend in the original river (now canalised) was straightened, but only after 100 years. Below the lock the canal was cut straight to Frogmoor whilst the Colne was allowed to meander through meadows (now Batchworth Lake) before joining the canal once again below Springwell. This blending of river and canal operated under the name of Grand Junction Canal until 1929 when the amalgamation of several canal companies saw the creation of the Grand Union Canal.

There was much concern that the canal would take river water from the mill, and the mill and canal company agreed a level below which the water level should not fall without compensation being paid to the mill. It was measured in a stone basin, above which now stands an obelisk which can be seen across the canal above Batchworth Lock at the point where the Colne divides.

The Pubs

For the boat people on regular runs up and down the Grand Junction Canal, the pub was the one place where they could meet, exchange information and relax. There were four pubs within 50 metres of each other at Batchworth. On the road side were the White Bear and the Batchworth Arms and on the canal the Boat Inn (est. 1825) and, above it in the same building, the Railway Tavern.



The Railway Tavern

Jon's Stores

The Kings originally owned the general store, which stood on the open site. Later John and Edith McDonald ran it for 17 years until the building was compulsorily purchased to make way for the road widening in 1977. Jon's Stores was the epitome of the village shop where credit was given on the basis of trust to passing boats: shopkeepers willing to do this were rare indeed, so the shops open to boat people were few and far between.



Stables

Horses were in common use on this part of the canal until shortly before the Second World War, and continued for some time after it. Batchworth was a well recognised stopping point, especially as boats and barges were not routinely allowed to lie at the Croxley Mill. So there was a considerable need for overnight stabling, to which the boatman always paid close and personal attention.

Stables above the bridge

The stables which adjoined the Boat Inn have been converted into offices and the Batchworth Lock Canal Centre.

Stables below the bridge

These large stable were in use until the 1950's when, tragically, they were burned down killing two horses. The brick floor can still be seen

Walker's Boatyard

The company began building boats in 1905. In 1914 they opened up the lakes (now the Aquadrome) for leisure use and in 1927 launched the Picture House, the town's first purpose built cinema.

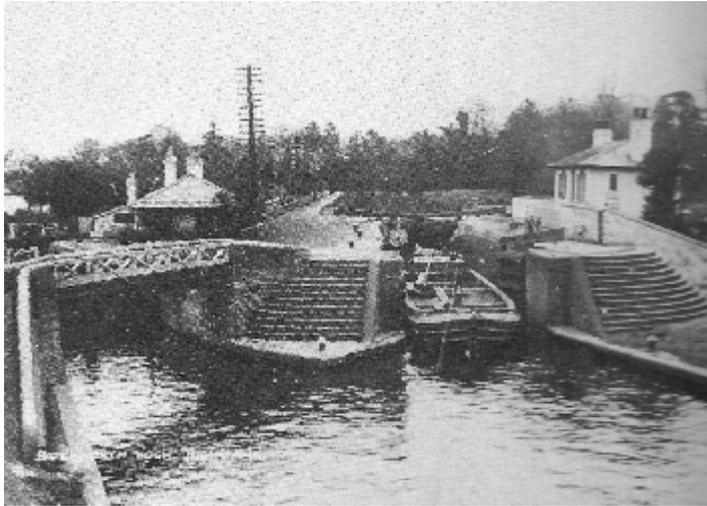
All the boats built by Walkers were of wood (eight oaks and one elm per boat). A peak of production in the 1930s, largely for the expanding Grand Union Canal Carrying Company- for a time a boat a week was being launched. Walkers also made boats for many famous companies, including narrow boats for Ovaltine, tugs for use in Birmingham, wide boats for rubbish carrying in London and gravel punts for use locally. They were also a builders merchant, a coal dealer, a timber yard and a manufacturer of timberroof trusses and fencing.

An entrepreneurial and successful company, Walker's made a lasting impact in Rickmansworth.



Walker's Boat Yard, about 1912

Boats at Batchworth



Until the late 19th Century all canal carrying craft were horse drawn, and Batchworth will have seen both narrow and wide beam boats, with barges being used as far north as Berkhamsted. Steamers began to be seen from about 1880, but in small numbers: motor boats began to appear from about 1910, and by the end of the 1930 most, but not all, of the boats passing Batchworth were in pairs, with a motor boat towing an unpowered butty.

Wide beam boat pulled by horse at Batchworth c 1910

Note the towrope extending from the wide beam barge in the photograph to a horse, presumably under Batchworth Bridge. Over the years such ropes scored deep grooves in the corners of the bridge and remain clearly visible to this day.

From about 1840 increasing numbers of the long-distance boats were operated by families, and they will have been well-recognised visitors to Rickmansworth, which was a registration authority for family boats (Watford never was).

Decline of commercial traffic

In 1948 the waterways of Britain were nationalised. The newly created British Waterways inherited some 368 boats. However, canal carrying was uneconomic and by 1956 the number of working boats had been reduced to 100 pairs. By 1962 only 45 pairs remained. The inevitable decline was hastened by the cold winter of 1962/3, when canal traffic was stopped from Christmas to March and many customer companies (including Dickinsons) switched to road transport. Eight years later the last three pairs of boats (now under the ownership of Blue Line) passed through Batchworth with their last delivery of coal to Southall. Although some small traffic continued until into the 1980s, it was the end of a way of life which had continued virtually unchanged for 150 years.

Life on a Narrow Boat – an introduction

C1840 – 1860 the boaters had to contend with a reduction in wages. This was caused by:

- The considerable number of people taking to the canals to make a living. Compared with road transport, the canals were a great success but there was now less work and slower times due to so much competition.
- Many agricultural workers came to the canals, accepting low wages after losing their jobs and tied cottages when agricultural mechanisation was introduced.
- Competition from that new and rapidly developing phenomenon, the railway.
- As the number of boats increased, so the problem of water supply increased, and in a dry summer canals were often so shallow that the boats could only take half a load.

So, as boaters could no longer afford crew members, and a pair of boats needed three, it was logical that they brought their families aboard, thus supplying a crew and saving on the cost of running a family home. Traditionally boats had been manned by men folk who lodged in canal side pubs during working tours, returning to their families at the end of the contract.

Boaters preferred the outdoor life and freedom of running their own boat to that of factory life. Children at this time were still being sent down mines and up chimneys.

Types of Boat

The Flyboat – carried a maximum of 20 tons. They were fast and often carried perishable goods, but not dirty cargoes like coal. They were manned by single men working long hours, often working stages of the canal changing boats and going back and forth so that they could return home. Many lodged in pubs and had a reputation for fighting. Fast horses were kept for the fly boats and they were changed frequently.

The Rodney boat – were considered to be the slums, being the worst kept boats whose crews had a reputation for brawling and drunkenness.

Dayboats - Mainly used around Birmingham, sometimes know as Joey boats, they were less colourful and often carried factory waste. They were sometimes in the hands of different crews for each journey. Having no real cabin, just a shelter, they were perhaps neat and clean but lacked the style of the family boats. Some were double ended so that the rudder could be hung at either end avoiding time to turn around.

Packet boats – were fast and had priority. Some had an ‘S’ shaped blade mounted on the bow to cut through the tow rope of boats impeding their passage! They carried passengers and their luggage as well as small packages. Some had 1st and 2nd class cabins, served coffee and had entertainment.

Number ones – owner-operated family boats where the boatman’s wife and children were an essential part of the unpaid crew.

“Joshers” – a name given to boats built by the Fellows Morton and Clayton Company, derived from the name of Mr Joshua Fellows, one of the proprietors. Their hulls have a distinctive style.

Monkey boat – a name used in the Birmingham area for the passenger boats operated by Thomas Monk between about 1820 and 1850.; and more recently on the Thames and Grand Union to refer to narrow boats generally, and motors in particular. Monk may have been responsible for building some of the first long-distance boats, and so for their general cabin layout, although there is no evidence that “monkey boats” are named especially after him.

Cargoes

Cargoes carried could and did include most things, but pottery was one of the earliest manufactured goods to be carried owing to the high breakage rate when carried over the appalling roads of the time. A figure of 80% to 90% has been mooted.

Bulk goods such as coal, coke, charcoal, peat, timber, bricks, slate and sundry building materials, as well as animal feed, grain, footwear, salt and manure were typical cargoes.

Horse drawn boats carried up to 25 tons but this dropped to 23 tons after conversion to engine power. Flyboats would carry only 20 tons.

To protect some cargoes in bad weather, tarpaulins were stretched over the top plank which ran the length of the hold and sheeted up the sides. But this was time consuming, and was not done for coal, sand, gravel or other “robust” cargoes.

Some of the last commercial cargo to be carried from London was the lime juice for the Roses Lime Juice Co. at Boxmoor, but in the 1980s the road tanker took over even that.

The work on the boats

It was not a glamorous job for many reasons:

Very long hours. Boaters often sat up overnight to ensure that they were not overtaken to a lock. There was great competition to get to dockside first because half a day could be lost if you didn't.

The day often started at 5 am and went in until 8 or 9pm. Sometimes they would be up at 3 am to meet a tug which would tow them through a tunnel.

much work was done in darkness and in frosty weather, when there was considerable danger – especially at locks, given that the usual footwear was hobnailed boots.

The canals could be iced up for weeks on end in winter: few boats could proceed in other than the thinnest ice, and a wooden boat would be badly damaged. . In 1929 icing lasted for 11 weeks, and in 1963 about the same. When iced up, the boatman had almost no income, and the company lost revenue. So many canal companies employed horse-drawn ice breakers, in which a gang of men held onto a rail running the length of the boat and rocked it from side to side as it was pulled by a team of horses, which were capable of hauling the boat bodily onto the ice.

Rain, wind, mud and even floods, especially on the river navigations: not only was the flow dangerously severe, but even the line of the canal could be disguised.

Delays due to factory and bank holiday closures and weekends, especially after 1935.

The sheer amount of hard work: the boatman was responsible for his cargo, loading, levelling and off loading. It could take two men two hours to level a cargo of coal to balance the boat. Then it might take a day and a half to bag it up for the merchant, sorting out the choicest coal for their best customers.

Because of the need to compete with the railway, and later the roads, the boatman's day had to be very long- usually 12 hours, often much longer.

Pay was for tonnage delivered, a bonus for speed. From a typical wage of £20 - £25 in 1930 a skipper would have to pay out £1 a trip for extra hands plus board and lodging. Then fees to tunnel tugs at 50p per loaded boat and 25p empty.

Toll fees paid to the Canal Companies were set by parliament and calculated at pence or parts thereof per ton per mile. Milestones are set up along the canal side for this purpose. Lower tolls were paid for bulk cargoes such as coal and grain. Finished goods, groceries and general merchandise being charged the most.

Horses had to be cared for, stabled, fed, harnessed and shod. The horses needed new shoes about once a fortnight.

Wives were tough and often domineering: besides the usual household chores in cramped conditions, and child minding, they had to be skilled boaters. Children would be steering the boat by the time they were five years old, whilst by the time they were

eleven or twelve they would take charge of the second boat or 'butty', occasionally crewing for other boats where an adult had died and there was no other help.

It's not surprising, therefore, that after the last War crews began to drift away to jobs much less arduous, and often more lucrative.

The Cabin

The cabin began to need to provide real accommodation, as opposed to day shelter, once the canals began to be connected and so permit long-distance carrying. The first cabins in the classic layout begin to be recognisable in illustrations from about 1810, and may have derived from boats built by the Birmingham builder Thomas Monk (1765 to 1842), who was responsible for some of the early long-distance boats.



The average size would be approximately 10ft x 7ft and the traditional form of decoration was comb-grained and varnished woodwork with painted door panel, often with a castle scene. Roses and good luck signs are also commonly used motifs. Decoration was sometimes done by the boatman, but more usually at the boatyards when in for repair. Styles varied from area to area, and there was a degree of competition between boat owner-operators to have the best decorated boat, partly as an advertisement for their business.

The layout of the cabin was designed with the boater at work in mind and everything was to hand, like the ticket drawer which could be reached without taking a hand off the tiller. Soap and dipper could be reached without entering the cabin. The windlass, used for opening and closing the paddles which control the filling and emptying of locks, was always kept to hand, usually on the cabin slide, when boating. The coal box doubled as a step into the cabin.



The ticket drawer contained the waybills and other details of the cargoes, as well as details of the load gauging of the boat. As tolls were paid according to the weight of the load some method had to be adopted which could measure this. At first, when boats were built a mark was made showing the draught of the boat when empty whilst other marks were made with known loads of different weights. Later on this was simplified by measuring and marking the depth of the hull out of the water when empty and when full, with those figures recorded in the Canal Company's register, of which each toll clerk had a copy. The toll clerk would use a gauging stick to measure the freeboard, check it against the register and calculate the toll.

*Gauging a boat loaded with coal.
The gauging stick can be clearly seen.*

The sleeping arrangements consisted of a locker top bunk on one side of the cabin and a folding or cross bunk at the head of the cabin that let down from a section of the wall known as the bed-hole at right angles to the bench end. This section could be curtained off for privacy. A cupboard above the bed-hole often had air holes and could be used to sleep a young child. Often someone would sleep on the floor under the bed.

Officially the living quarters were usually for three persons, but boaters, like other people in the nineteenth century, often had large families. With a butty boat there was, of course, more room, and it was usually used as the main family accommodation, with the second (latterly motor) boat as "overflow". Three children could sleep in the main bed, one on the bench bed, one on the floor and even one on each side of the engine on later boats. On the horse drawn boats there was bow storage for harness and ropes, and this was used to bed the casual labourers sometimes known as Hufflers. After about 1880 some boats began to have small fore-cabins, usually for children.

Cooking and Eating

Just inside the cabin on the left is a small coal fired stove with a chimney pipe passing through the roof, the top section being decorated. A black iron kettle stands on top or on a trivet, always on the boil.

Breakfast was usually bread and jam and strong tea.

Dinner was sometimes, and in some parts of the country, cooked in a 7lb stone jam jar in a bucket. The jar would contain meat, vegetables and water and on top would be a suet crust on top of which would be potatoes, carrots and other vegetables. This was followed by another suet crust. Then, perhaps, apple slices in a flavoured bag tied and suspended from a wooden spoon resting across the bucket rim. Water surrounding the jar in the lower half of the bucket would steam the rest. Boaters enjoyed many types of bag puddings both sweet and savoury.

Living off the land was cheap and tasty. Much game would be poached and rabbit, pigeon, duck, pheasant and hare would all be on the menu as well as duck and moorhen eggs. The water itself would yield eels and fish. Canal-side shops were to be found at intervals,

although most village shops made the boaters unwelcome. Fresh water was obtained from standpipes and taps at pubs.

Washing and Cleaning

Water from the canal was used for washing down the boat deck. Rag mops with red and white striped handles were kept on the roof. A painted and decorated 'dipper' was used to scoop water from the canal.

Clothes were washed on the canal side with a 'dolly-stick' or 'scrubbing board' with soap in a tub, hung on lines on the boat, then over brass rails over the stove for airing.

Personal hygiene was difficult and rudimentary. Most washed from a bucket of cold water on deck. A special compartment below the ticket drawer kept the soap safe and handy at all times.

The toilet was a bucket kept in the engine room or in the front of the fore deck in a horse drawn boat. The bucket was emptied over the side. Brass work was highly polished, usually every two or three days, with rags and metal polish sometimes kept in a special ¼ circular drawer near the cabin door called the monkey drawer or box. There were bands of brass on the stove chimney, as well as chains, horse brasses, knobs and small ornaments.

Other bits and bobs in or on the Cabin

Clothes were kept in the lockers. The crockery cupboard was kept shut whilst on the move. The front could be let down to make a table. Small bars across the shelf kept the china safe and the best china would be here as well as any photographs.

There would be lace plates with ribbons, Staffordshire ware such as a pair of dogs or a cow creamer. Then there was Goss china, often crested ware of places visited. The large decorated brown earthenware teapots known as Measham ware often had inscriptions or mottos or even people's names moulded into the decoration. Given on special occasions, they were handed down from mother to daughter, though it is questionable whether they were usually kept on board. They were made near Burton on Trent, especially near Measham on the Ashby Canal, between 1870 and 1910.

Two sets of fire irons, one set of polished brass for show. A trivet to keep the kettle hot. A clock above the crockery cupboard would be a sign of prosperity. Also highly prized were oil lamps, either on a gimbal or hung from the roof. Later, the portable radio and even the treadle sewing machine made an appearance.

The floor had a rag rug or a rush mat made by the women and children from scraps. Crochet work was also used to decorate shelf edges, bonnets also edged with crotchet work and even the horse would have a crocheted heap cap and the bird cage a crocheted cover.

Outside on the cabin roof you find the decorated freshwater can chained beside the chimney and next to it the dipper upside down with its handle resting on the edge of the cockpit side. The mop would lie between them with its handle through the water can handle to the right of a neat coil of rope. There might be a boat hook and sometimes a potted plant and birdcage.

A painted bowl was used for feeding the horse instead of a nosebag; the ropes had painted bobbins threaded onto them to prevent chafing, since ropes took a lot of hard work and were expensive.

Clothing

Boatmen, like other working men of the day, might wear corduroy or moleskin trousers with bell-bottoms, large collarless shirts with bone buttons and a neckerchief called a “belcher” round their neck. A flat cap or bowler hat was worn on their head. In the winter a short duffle like coat called a pea jacket would be worn with a sack over their shoulders if it rained. On Sunday embroidered shirts, fancy braces and a wide doubled o webbing belt embroidered in a spider pattern which could be used as a purse, would be worn with a cord waistcoat with brass buttons. Jackets often had velvet edging.

Company employees sometimes wore uniform in the company colours.



wore clogs.

Some women wore bonnets with long flaps down over their necks to keep the rain and sun off. They were made from 5 yards of material, gathered and ruched, usually with a floral pattern, although the older women would wear black. They were no longer in common use after World War I.

Flannel petticoats were worn, their number depending on the weather and age of the wearer, but could be up to nine plus up to three pairs of flannel knickers! Then a long skirt and a long white or check apron.

The Sunday blouse was a check “leg o’ mutton” sleeved one with a broach worn at the neck.

A smacking whip would be worn over the shoulder – this was to signal when manoeuvring into tunnels or under bridges before the introduction of brass horns. It was never used on horses. Both men and women wore black lace up boots, but a few

Canal Children

As commented previously, families tended to be large, and in 1881 it was estimated that 40,000 children lived on canal boats! In 1877 George Smith, a midlands industrialist and single-minded reformer, tried to limit the number of people living on boats, and the first Canal Boats Acts were passed in Parliament. In 1884 the government appointed inspectors to try to oversee the plight of children living on boats. Fearful that their children would be taken into care, boaters would often get the children to walk around town or hide in the bushes when the inspectors were expected or where they were known to operate.

The very young ones would be tied by harness to the eye of the chain fixed to the water can and sat back to the funnel. As they got older the empty cargo space made a good playground. At 5 years they would learn to steer and look after the horses and later would run or cycle ahead to open locks for swift passage. These children would be known as “Lockwheelers”. No children under the age of 14 were supposed to raise the paddles of a lock.

Going to School!

Schooling was very sketchy, as no boat could afford to stop for several hours while children went to school. A few went to boarding schools specially set up, but most were needed as cheap labour. Few boaters could read much beyond the canalside notices, company names and tonnage figures.

The 1920 Education Act stated that boat children should attend 200 days of schooling per year but this proved impractical for the families on the boats. After 1948 British Waterways in particular tried hard to provide education opportunities, but economic conditions were against it.

Despite this, boaters developed a great oral tradition of songs and tales.

It was, however, a hard and dangerous life for children, and many died from drowning, crushing and from smallpox and waterborne diseases like typhoid and cholera.

Free- time

In the canal-side pubs much singing, dancing and music-making went on as well as drinking. Favourite instruments were the melodeon and the mouth organ. Games were “Nine-pins” and “Ring the Bull”, a bit like pinning the tail on the donkey. Apropos pub life, a quotation from George Smith mentioned above gives a very jaundiced view:

“Not far from Bulls Bridge I came upon a public house ... here I saw a lot of boatmen, boat women and children who might not have washed in their lives. One of the men showed me into what I thought to be the stable under the upper room. In going in I was met by a coarse, bloated, vulgar and dirty looking boat woman whose face seemed to be almost the colour of a piece of raw beef a week old ... finding my way into a kind of horse-boxy looking place I began to take stock of the surroundings. The fire place consisted of a few iron bars and bricks ... a boatman engaged upon a “flour boat” would leave a white mark upon the settle where he had been sitting to enjoy his “fourpenny”. A boatman engaged in the coal trade would leave his black mark, and in like manner those engaged in the London Sewage and Birmingham gas-tar business; some of this “fourpenny” I once tasted and to me it was a decoction of saltpetre, vinegar, treacle and mint. There were several poor boat children in the place who seemed to enjoy the “fourpenny” quite as well as either the men or the women. Of course the little boat children had not the legs long enough to cause them to leave impress upon the settle, consequently their tiny marks were left upon the floor as they toddled and paddled about.”

Men would make stools from driftwood, paint the decorations and make elaborate rope-work such as Ram’s Heads and Horsetail decorations for the rudder as well as fenders for the vulnerable parts of the boat. The women would make rag rugs and mops and often, when gifted with a needle, embroidered the men’s braces, sewed bonnets and crocheted all sorts of items for the horse, canary cage or hangings.

On the whole people kept themselves to themselves, tending to travel very little beyond the canal side. There was, of course, a great deal of intermarriage and great family gatherings for weddings, christenings and funerals.

There were strict taboos, and men and women tended to be segregated at large gatherings.

Horse Power

A horse did the work of six men working as a team towing a boat – these were called bow-hauliers, and worked mainly on the rivers where there wasn’t a towpath.

A loaded boat pulled by one horse moved at 2 mph and when empty at 3mph. Two loaded boats pulled by one horse at 1½ mph and when empty at 2½ mph.

Although horses might work 12 a day and walked up to 40 miles, they were the limiting factor in how far and how fast a boat could go. They were well looked after, being fed and groomed perhaps by the children, who also sometimes led the horse.

Horse might be owned by the boatman, or by the operating companies. Stabling was compulsory - horses could not be turned loose into the fields to graze, and stabling was usually available every 5 to 6 miles at pubs. Often a farrier would be at hand at a nearby village. Stabling was necessary at frequent intervals for the flyboats, which changed horses often (every few hours) in order to maintain their high speeds, which sometimes required the horse to gallop . They also used horses of a lighter build.

A horse could pull two boats, a mule one, with pairs of mules or donkeys used in tandem for a pair of boats. They were hard working and cheaper, but (it is said) lacked reliability, willingness and obedience.

In a Manchester museum is the skull of a canal horse, “Old Billy” who died in 1822 at the age of 62 years.

The arrival of the motor boat removed from the boatman the constraint of having his horse become tired or lame – he could work as long as he felt like it!

Here are a few ideas to take back to the classroom!

- **Floating and sinking – towards best boat shape**
- **Child's life on a boat**
- **Schools on the canal**
- **Plan for the canal boat's cabin – fitting in all the essentials**
- **Cranes / lifting**
- **Bending wood – twigs soaked first to soften the wood / repeat with larger planks / best wood to bend**
- **Waterproofing cloth and other materials**
- **Canal boat cabin in a shoebox – interior modelled**
- **XL cardboard boxes creating a walk-in cabin**
- **Model boats from balsa using shaping tools**
- **Boat names – reason why**
- **Canal songs – traditional and original**
- **Create a large plan of the boat's journey along the canal, indicating stopping places and displaying pictures of them**
- **Bridges over the canal - construction, modelling**
- **Costumes of the 19c. Canal people and why they developed in that way**