

Building boats

Boats were originally made from wood, then iron and now steel, and built in docks or yards next to the waterways.

Materials used in boat building

Wood – used to build the main frame of most boats, although later boats were made of a wider variety materials. The wood had to be a hard wood, such as oak.

Iron – iron sections were used to strengthen the boat and for parts made for the rudder and towing. Iron was also used for nails and fixings. Sections were made by local blacksmiths.

Oakum – made from old bits of rope and used with tar to plug up gaps between the wooden planks to ensure the boat is waterproof.

Rope – an essential part of boating. Before engine, boats were pulled by horses attached to the boats by rope. Rope was also needed to moor boats to the side of the waterway and for fenders (which stop the boats getting damaged if they bump into anything). Rope makers began to work near boat building yards.



This is a yard where boats are made

Strange but True

During the two world wars a lack of resources and a need to build boats quickly led to **bizarre materials** being tried out for boat building, such as **concrete!** Not a popular material today but a few concrete boats still remain in museums.

Chapter 3



Fascinating Facts

Boats were often built parallel to the side of the waterways and launched into the water sideways.

Types of boats

There were many different boats on the inland waterways, often depending on the size and type of waterway.

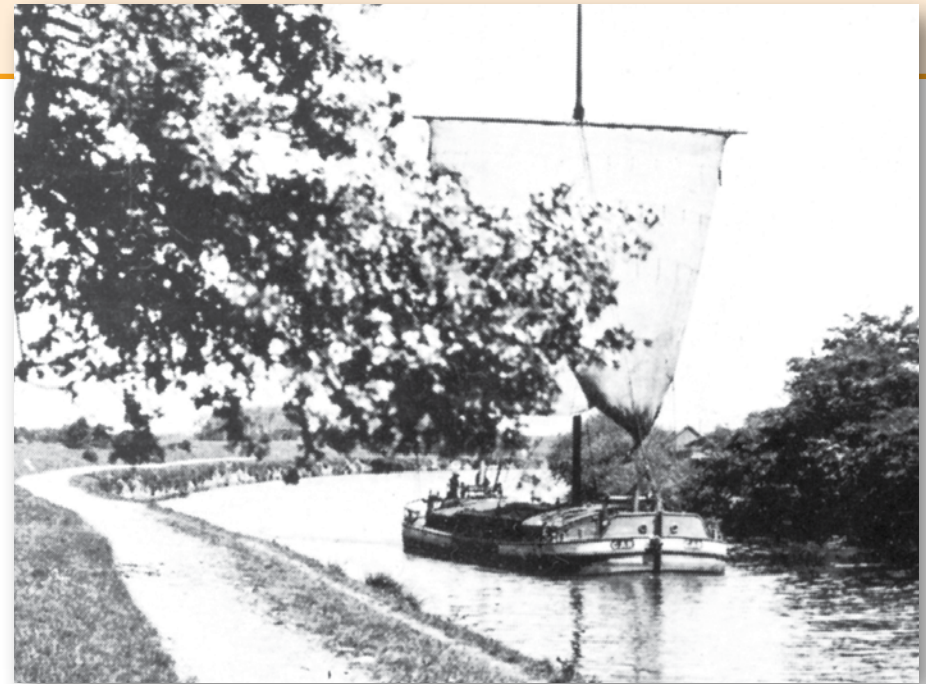


Narrowboat

earliest painted boats, basic geometric designs in bright colours. Horses pulled one or two boats together. Later when the engine was introduced, motor boats, which were also loaded up with cargo, could pull a non-powered boat (butty) as well – meaning that two boats were almost always operated at once. You can see a plan of a motor boat in Appendix B.

Narrowboats

Narrowboats were designed for narrow canals. They are traditionally 21m (70ft) long (but short enough to fit in the locks, which are usually 22m (72ft) long and 2m (6ft 10in) wide. Narrowboats in the Midlands area became famous for the 'roses and castle' style of painting. This is still popular on modern boats in all parts of the country. In other areas the designs were simple such as those of the



Barge

Barges

Barges are wider than narrowboats and in some places were operated by sail rather than being towed by a horse. Some had living accommodation on them, others were day boats. Later, as with narrowboats, barges were powered by steam or diesel engines. Different types of barges worked on different waterways and carried varied cargoes. They often had flat bottoms to avoid scraping the canal or river bed when they were fully loaded. Barges were much more resilient on larger rivers than narrowboats.

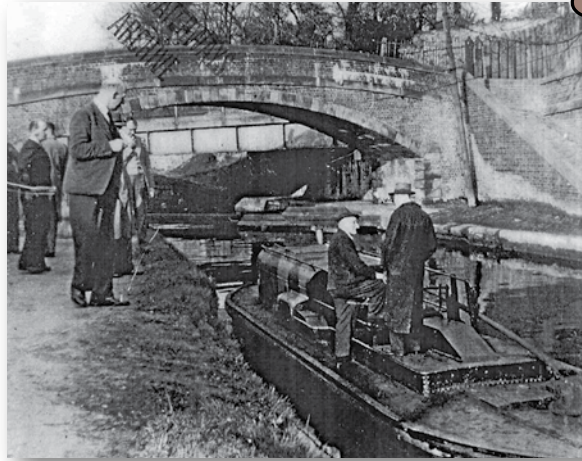
Types of boats



Pleasure boat

Some boats were built for passenger transportation although most waterways primarily carried cargo rather than people. The paddle steamers on the Caledonian Canal were popular with tourists and Queen Victoria went along the canal by boat. By the 1950s, cargo carrying on the canal reduced and people began to boat for pleasure.

They adapted old working narrowboats or had special ones built that were more like a floating house. Cruisers also became popular, some made of wood but more commonly made of fibreglass or plastic.



Tug

Tugs were designed to pull other boats. On some rivers, currents and the tide made other methods of powering boats risky. Tugs could pull several boats at once. Tugs on narrow canals were less popular as the wash could damage the banks. However tugs were used to pull boats through tunnels, which was quicker than the earlier system of 'legging' (moving the boat along with feet against the sides of a tunnel).



Fly boat Fly boats travelled without stopping. They carried lighter and often valuable products as well as passengers and had priority over other boats, but paid higher tolls. They worked through the night in order to get to their destination as quickly as possible. They could also carry food, which on a slower boat would have gone off before it arrived at its destination.

Types of boats

Tall ship

On rivers and large canals such as in Gloucester and Manchester, seafaring vessels could travel inland to the docks to load and unload. These waterways were deep enough to take these boats but had to have very large locks.

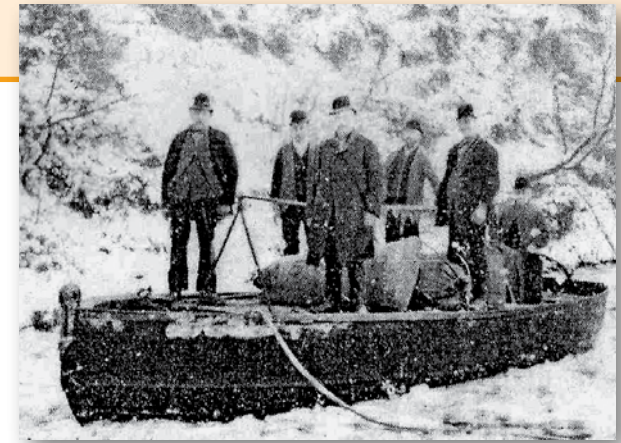


Ferry

In some places ferries are used to transport people or things across a wider river or canal, such as on the Manchester Ship Canal.

Fishing boat

Fishing boats were particularly common on canals such as the Caledonian and the Crinan, where they provide an alternative, shorter route to the sea. Boats can travel across Scotland instead of going all the way around the coast.



Ice breaker

Boats relied on keeping moving in order to deliver their cargo and get paid. Ice breaker boats had an iron hull and were worked by men leaning backwards and forwards on a bar in the middle of the boat to rock it and break the ice. Ice breaker boats could be pulled by up to 24 horses.




Fishing keel

Who owned the boats?

Boats were owned by individuals, by boaters or by companies

Number ones

Some boats were owned by individuals or families who took on work where it could be found. They were paid when they delivered a cargo so it was important to work quickly and have an empty boat for as little time as possible. In the 1920s a narrowboat pair was earning £8 a week on average for the boatman and his family. This was quite a good wage.

 Do you think it was better to work on your own boat or for a company?



Company boats

Companies owned whole fleets of boats, which were worked by a captain and his crew (often members of his family). Work was regular and organised by the company, which also paid the tolls and charges. Some boaters were only paid when they delivered the cargo; others were paid a weekly wage. Many companies were taken over by railway companies when railways started being built around the country.

Fascinating Facts

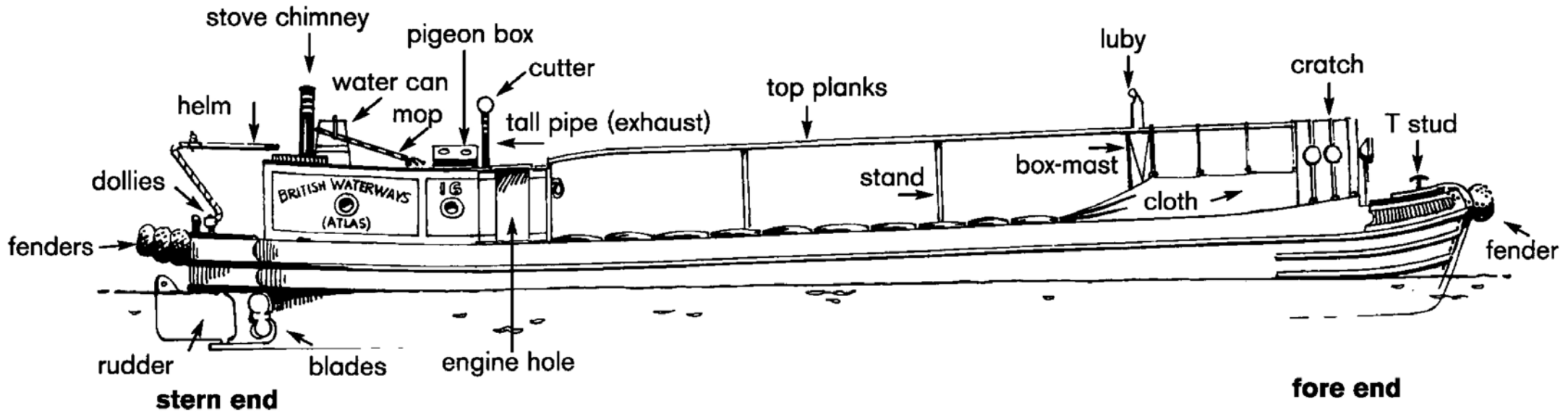
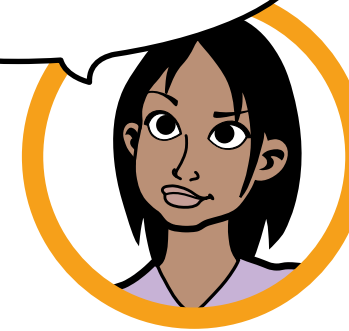
As work became less well paid and less frequent, **families moved on to the boats** to help out. This avoided the cost of having a house as well as a boat. The family could also help crew the boat, although **only the captain was paid**. However, if he didn't have his family as a crew, he would have had to pay some one else. An exception to this was Cadbury's boats who also paid women on boats.

“Joe took lime in barges down to ICI Ltd at Manchester and brought back coal for Bollington.”

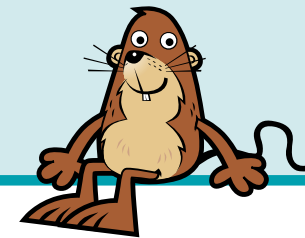
The Memoirs of Mrs Martha Barnes.
Courtesy of the IWPS

The parts of a boat

Next time you visit the canal, see if you can spot any of these parts on the boats.



Cargo is the name for goods that are carried on boats.
Different cargoes came from different areas.



- A** asphalt, ashes
- B** bark, barite (a mineral used in chemical processes), breeze and coke ashes, bricks, brick rubbish, builders' materials
- C** cement, chalk, clay, clinker, coal, coke, concrete, concrete slabs, creosote, cocoa, calcified flint, chocolate crumb, cotton, cheese
- D** drainpipes, drainpipes/glazed
- E** empties
- F** fibre dust, fibre, flints for road marking, flint, food
- G** grain, gravel, gunpowder
- H** hard core, hay and straw
- I** iron
- L** lime, litter peat or moss, limestone
- M** manure, machinery, mangel wurzel (a vegetable used to feed farm animals), mineral waters, mud
- N** nuts, bolts and other building material
- O** oil, oil cake, old bagging, old junk
- P** paper, paper bags, plaster, pottery
- R** rubbish
- S** sand, sweepings, soda-spent oxide, sugar, strawboards, sulphate of ammonia, sundries, salt, stone, sawdust
- T, U** tan or spent bark, tiles, timber
- V, W** vitrol, whiting, wood pulp, wood chips, waste paper or cotton waste, wool
- X, Y, Z**

Memories of carrying



They'd teach you how to steer a boat for a start off, at an early age, and then they would set you off getting the locks ready for the boats to travel into, so they would gain time.

Edward Ward remembering his childhood in
Voices From the Waterways, Jean Stone



What do you think this boat is carrying?



It was a good form of transport. Cheap and safe. They reckon it saved a terrific amount of breakages because the journey was so smooth.

Jim Morgan in *Voices from the Waterways, Jean Stone*



This boat is empty. What do you think it might carry next?

The wagons used to come up and tip the coal down a shoot and it used to go on the boats. Later it would be unloaded with a crane that grabbed it, but before that, there was a big bucket and we used to have to shovel it in.

Leonard Waller in *Voices from the Waterways, Jean Stone*


Loading boats

Boats had to be loaded carefully to get the maximum amount in without causing the boat to lean in one direction or worse, sink.

When loading a boat (this was done by hand or cranes), it was important that the weight was spread out.

Loaded boats were sometimes covered with tarpaulins and ropes to protect the cargo from weather and theft. This depended what was being carried. The cargo could be all the same or sometimes a mixture of different goods. The amount of weight carried depended on the type of cargo. For example pottery had to be packed in straw and barrels and so did not weigh as much as a cargo of coal.



 **Where do you think all this coal might be going?**

Boats often carried more than one type of cargo and had to be cleaned in between. Cargoes such as coal could be very messy and manure was also unpleasant! If a boat had to travel empty to get to its next cargo, it would be cleaned while on the move.




Loading boats



This boat is being loaded with salt

Strange but True

When boats are loaded they sit **lower in the water**. How much weight a boat is carrying can be worked out by seeing how low they are in water. This was important so the boat could be charged the **right amount of tolls**.

 **What do you think would happen if too much weight was loaded at one end?**

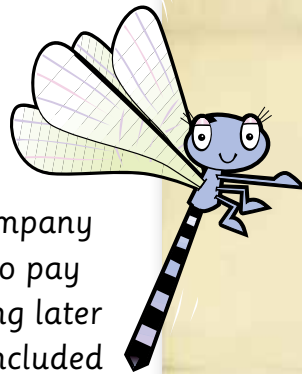


Tolls

It wasn't free to carry cargo on most waterways and boats had to pay tolls to the canal companies.

The tolls helped to pay for maintenance and repay the cost of building the waterways. It was not a new idea; tolls had been charged on boats travelling along rivers for centuries. Canal and Navigation Acts passed by the government helped to fix the tolls. There were different amounts depending on how much a boat was carrying and the type of cargo being carried, as cargoes varied in value. Fly boats, which travelled through the night, had to pay high tolls for their priority to pass other boaters in order to deliver their important cargoes as quickly as possible. Toll tickets were also set for using inclined planes, lifts and tunnel tugs.

Tolls were paid in cash to the toll collector unless the company had an account, in which case they would be sent a bill to pay after a certain amount of time. Whether they were paying later or by cash, they received a toll ticket as a receipt. This included information, such as the name of the boat, the owner and the cargo carried.



 Why do you think toll tickets were important?

TELEGRAPHIC ADDRESS-
"CANAL LIVERPOOL"
TELEPHONE No. 3960 CENTRAL.

Leeds and Liverpool Canal Company.
SECRETARY & ACCOUNTANTS' OFFICE.
Ball Mill,
Liverpool. 3 7th Jan 1938

Dear Sir,
Your Toll debit for the Month of Dec. 1937
is as follows :-

For week ending <u>4th Dec</u>	: 2 : 6
• <u>11th</u>	: 6 : 8
• <u>18th</u>	2 : 10 : 0
• <u>25th</u>	1 : 13 : 8
• _____	: : :
	<u>24 : 12 : 10</u>

Yours truly,
W. H. Bell,
per W.H.B.

Mr. Sperry
Lland

Payment of tolls letter