THE WATERWAYS MUSEUM
STOKE BRUERNE.

On the Grand Union Canal - midway between Northampton & Towcester.

It was set up in a disused corn-mill by the British Transport Commission and opened in 1963.
Displays an astonishing display of relics, from prints and photographs to boat people's clothing, boat models, steam and diesel engines, replicas of a traditional narrow-boat cabin and the Anderton Lift, company seals, painted ware, canal ropework, boatbuilding and maintenance equipment and notice-boards of all types.

THE BOAT MUSEUM
ELLESMERE PORT.

This leading collection of canal and river craft was formed by enthusiasts in 1974, using some of the buildings and basins of the former canal port.

More than 20 types of working boat are to be seen, together with building craft and maintenance displays and a restored steam engine house. Vessels include a Mersey flat, Thomas Clayton tar boat, a BCN dayboat, two wide boats from the Leeds & Liverpool Canal, tunnel tug Worcester, and the horse-drawn boat Friendship.

The largest exhibit is the 1947-built River Weaver coaster Cuddington, 98ft in length with a (loaded) draught of 11ft 3in; she remained I trade until the end of 1979.

As many of the craft as possible are kept in working condition, with several travelling to boat rallies during the summer season.

SALTAIRE
LEEDS & LIVERPOOL CANAL.

A remarkably early 'new town' of the 1850's, Saltaire represents the determination of Sir Titus Salt to remove his mohair and alpaca mills from Bradford to the open country.

The great mill, opened in 1853, 6 storeys high and 550ft long, is to the design of Sir William Fairbairn, and makes full use of fire-resistant materials such as cast-iron columns and a roof of iron beams.

Salt was deeply concerned to provide better than normal housing for his workers, and in 20 years had built 820 homes in the town, arranged on a formal grid pattern, each with some Italianate decoration.

Public buildings erected by this enterprising man include a school, institute, and a Congregational Church. Four lions, originally considered too small for Trafalgar Square in London, can be seen near the Saltaire Grammar School. Streets are named after Sir Titus' children.

There are no pawnshops and no pubs. Saltaire Bridge, built in 1871, crosses railway, canal, and river to a park that was described in 1903, 27 years after Salt's death, as 'one of the most beautiful in the world'.

BINGLEY FIVE RISE LOCKS
LEEDS & LIVERPOOL CANAL.

The canal banks are thickly tree-lined, but from a long way off one can glimpse the famous Five Rise Locks, which certainly live up to their nationwide reputation as one of the wonders of the British canal system.

The lift is 60ft and is rather daunting to even the most seasoned canal user.

The resident lock-keeper will give advice...

FOULRIDGE TUNNEL
LEEDS & LIVERPOOL.

Foulridge village is a short distance fro the northern portal of the great tunnel, where a photograph in the bar of the Hole In The Wall Inn substantiates the famous story of the cow that swam the tunnel from end to end in 1912 and was revived with quantities of brandy!

As there is no towpath, boats were 'legged' through the 1 640 yd bore until a steam tug was provided in 1880.

Two years later, after a fatal accident to a legger, the use of the tug became compulsory.

About 1956, a sophisticated system of traffic lights was instituted to control the one-way working.

BURNLEY EMBANKMENT
LEEDS & LIVERPOOL CANAL.

Rightly selected as one of the Seven Wonders Of The Waterways, Burnley's canal embankment runs quite straight for a mile across the middle of the town at rooftop level, spanning Yorkshire Street by an aqueduct.

The claim that many townspeople are unaware of the canal above is purely apocryphal.

The sight of rows of slate-roofed streets and hundreds of chimneys from the canal is awe-inspiring. During World War 2, the canal was drained every evening and refilled in the morning in case a German bomber managed to hit the canal with catastrophic consequences.

THE ANDERTON LIFT
TRENT & MERSEY CANAL &
RIVER WEAVER NAVIGATION.

The trustees of the Weaver Navigation, with the encouragement of trading interests, determined to link their waterway with the Trent & Mersey Canal, which ran past the river at Anderton but 50ft 4in higher.

It was primarily designed. in 1875 by the trustees engineer, Leader William, who subsequently moved to the Bridgewater Canal, However, it was Edwin Clark who actually built it. The brief was to lift cargo boats from the River Weaver to the Trent & Mersey Canal.

The resulting Anderton Lift is an incredible edifice, perched on the banks of the River Weaver. It is like a giant three-storey high iron spider.

A wrought-iron aqueduct 162ft 6in long connects the upper level of the lift with the canal via a small basin.

Like all great things, the concept is simple: two huge water tanks, each with watertight sealable doors, can carry a pair of narrowboats up and down.

Electricity replaced steam in operating the whole structure in 1903, and by 1908 counterbalance weights had replaced the hydraulic system. However, the lift now works hydraulically again.

No description can adequately convey the sheer scale of this engineering feat. The lift worked until 1983 when serious deterioration of the structure was discovered. Some £7m was raised to fund the restoration, which was completed in 2002.

BARTON SWING BRIDGE
BRIDGEWATER CANAL.

This Victorian engineering structure is just one of a series of opening bridges over the Manchester Ship Canal, a waterway that brought canal building in Britain to its peak and virtually its completion in 1894.

Brindley's old Barton Aqueduct had carried the Bridgewater Canal over the River Irwell for 130 years, but as the line of the river was to be absorbed into the channel of the Ship Canal, with its intended draught of 75ft, the old crossing was demolished in the 1890's.

One early plan was to build a high-level fixed aqueduct approached at each end by vertical lifts similar to that at Anderton. But this was rejected on account of the serious delays that would have been experienced by the then very heavy Bridgewater traffic.

Sir Edward Leader Williams was diverted from Anderton, being charged with the task of designing a trough of wrought-iron plates, pivoted at the centre on an island in the middle of the Ship Canal.

The tank, 234ft long with a navigation width of 19ft and 7ft depth of water, had to be swung full open, as to drain it and refill it would have been costly in supplies and wasteful of time. Total wt 1600 tons (good old-fashioned Imperial tons, that is!).

Wasteful of time & costly in supplies if had to drain & refill.

Wedges & rubber seals make gates virtually watertight.

Trouble-free operation depends on aqueduct swinging in a perfectly horizontal plain.

THURLEWOOD STEEL LOCK
TRENT & MERSEY CANAL.

This steel lock was built at considerable expense in 1958 to combat subsidence that necessitated the removal of the brick twin-arched road bridge.

The new structure was fitted with guillotine gates, obviating the need for conventional paddles, and is similar to a steel aqueduct 106ft long and 26ft high, supported every 8ft on concrete piers.

In the event of further subsidence hydraulic jacks could be used to lift the lock to its required level. Ironically, the conventional chamber is still in operation, whilst its modern steel counterpart was demolished in 1988!

PONTCYSYLLTE AQUEDUCT
LLANGOLLEN CANAL.

William Jessop and Thomas Telford between them were responsible for this awesome structure. They decided, in 1795, on a 1 007ft iron trough standing on a series of slender stone piers, each solid at the base but hollow from about 70ft upwards. There are 19 arches, each with a span of 45ft.

Local materials were used exclusively, stone being quarried nearby. A mixture of ox blood, water, and lime was used as a mortar for the stonework joints. The many flanged iron plates that were to comprise the trough were conveniently cast at the Plaskynason Foundry, within view of the aqueduct. They were bolted together and the joints made watertight with Welsh flannel and lead dipped in boiling sugar!

Working conditions must have been alarming, what with the dangerously flowing River Dee (it falls more than 150ft in the 5 miles between Llangollen and Pontcysyllte), the difficulty in placing dams around the foundation sites, and the problems associated with setting large blocks of stone in position more than 100ft in the air!

In 1805 8 000 people witnessed the opening ceremony. Pontcysyllte had cost £47 000, with labourers receiving 40p to 60p per week.

A sheer drop of up to 121ft confronts the boatman standing in his cockpit. If you do suffer from heights, concentrate your gaze on the protected towpath side or get someone else to steer. This is the nearest you will probably come to knowing what it is like to be a steeplejack!

STANDEDGE TUNNEL
HUDDERSFIELD NARROW CANAL.

This is the longest, deepest, and highest through tunnel ever built. It is 3 miles 3 furlongs in length. There are four passing points in the form of broad caverns, one of which still retains its original mooring rings.

Benjamin Outram estimated in 1793 that the tunnel could be cut in 5 years. It proved a more complicated task than that, however, with the final section being overseen by renowned engineer Thomas Telford in 1811. Standedge was finally opened to traffic in March of that year, 17 years after work had begun, at a total cost of about £160 000, and a considerable loss of life.

The Tunnel is 196 metres (645 feet) above sea level, and burrows 194 metres (638 feet) underneath the Pennines. For much of its length, it is of unlined rock, rough-blasted and displaying a rainbow assortment of subtle colours. Adits connect with the railway and, when the line was worked by steam locomotives, smoke and exhaust belched into the canal tunnel.

In 1948, Tom Rolt and Robert Aickman - founders of the Inland Waterways Association - took a boat along the abandoned Huddersfield Narrow Canal. They were the last people to boat through Standedge Tunnel for more than 50 years

The campaign to restore the Canal took off in 1974 with the formation of the Huddersfield Canal Society. Initially there was little support for the scheme, which was dubbed the 'impossible restoration'. Over the years, however, the Society won over the sceptics and the impossible was achieved with the canal's reopening on 1 May 2001. Regular passages through the tunnel are organised, and there is usually space for hikers in the passenger boat which forms part of the convoy.