Horse Boating

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Sorry I couldn't tell you about this before but I was sworn to secrecy. The event was set up by BW, the Boat Museum and the historic Narrow Boat Owners Club and the object was to obtain on film an authoritative record of the techniques used with loaded boats on the Worcester and Birmingham Canal. Organisation had taken over a year and all the usual waterway media were told to blanket out any rumours - but were invited to a special filming day.

The reasons for not making this a public even were twofold - firstly to avoid the constant need to “shoo” people out of shot, secondly to avoid the constant need to shoo people into a safe area.



The setting was the Astwood flight on the Worcs and Brum. BW had replaced the hydraulics with old gear (which will remain) and also replaced any necessary blocking hooks (the strange bent iron spikes which are a feature of the offside approaches to W&B locks) which are used for the “low gear” acceleration of horse boats. (See Appendix at end of article if you don’t know how this works.)

Any doubts I may have had about keeping this a private event were quickly dispelled when I met the horses and things started in earnest. These beasts (supplied by hNBOC member Jenny Roberts, who is also horse trip boat operator, from the River Wey) *don’t* respond to single lever controls and to see the two of them passing on the towpath with Nb ***Northwich*** (well laden with *all* the section’s spare pile stock) on one and Nb ***Gifford*** (well laden with her tanks filled with bricks) on the other was just not something you wanted to be in the way of!

The most amazing thing though (and potentially most dangerous) was the speed with which things happened. Under the expert guidance of old boatman Tom Mayo, aged 81, who leapt around nimbler than most of us, and choreography by Tony Lewery, I have never seen *any* boat pass up through a narrow lock so fast. Approximate timings were,
from entering the lock:

Open first top paddle - (yes minus!) 3 seconds;
Close bottom gates +5 sec;
Open second top paddle +10 sec;
Rig lines on blocking hooks and move horse to end of tow and lay out line with lock full ~1.5 minutes;
Leave lock <2 minutes.

This was with a crew of two - a boat steerer and a horse driver.

No, the gates didn't slam; no, no water was wasted and no, the boat didn't hit any gates. Opening the first paddle “prematurely” did nothing other than stop the boat (no bollards were used - nor were there even any available!) by providing a huge watery “fender” to be squashed by the bows. By the time any managed to flow round the hull down the chamber, the bottom gates had been simultaneously shut by the boat steerer with a hooked shaft.

The way it works uphill is this. The horse reaches the lock but does not stop until it reaches the top gate (both gates having been left open - with paddles still up - *either* by the lock wheeler *or* by the previous downhill boat).



The tow line is cleared over the inside gate by the horse driver who also drops this one paddle, before walking up the lockside, and over the top gate, ready to raise the offside ground paddle.



Meanwhile the steerer stands the spiked shaft, point upwards and leaning forwards and to the outside, in the boat hatches. The tiller too is left vertically in the hatches but pointing to the *inside*. The steerer leaps off the boat on the offside as he reaches the steps just outside the lock. (See photo)



He drops the offside paddle and lifts the shaft out the hatches at about the same time as the horse driver lifts the first paddle to stop the boat (Marked with arrow in photo). While the driver crosses back over the top gate to lift the second paddle, the steerer puts his backside against the



balance beam of the offside gate and the point of the shaft on the end of the beam of the inside gate - thereby shutting both - just as the

water from the top paddles reach them and the boat rises 12 inches in an instant.

The steerer then replaces the shaft on the roof and walks forward to put the loop on the end of the tow line on the blocking hook beyond the top gate. The horse driver meanwhile has cleared the line round the paddle gear and starts to open the gate before walking the horse forward to take the strain.



The lines go tight and the boat starts forward using the 2:1 purchase obtained with the pulley block attached to the mast (as in photos). As the toggle reaches the mast, the horse is in top gear but, instead of the horse being held back, the boat appears to leap forward! The end of the line with the loop on the blocking hook goes slack and then falls off as the steerer gets back on and the boat leaves the lock.



Going downhill is, predictably, somewhat different. Again the horse keeps pulling until it passes the far gates. The horse driver closes the inside top paddle and then walks down the lockside and, as before, crosses over the far gates and prepares to open the first bottom paddle.

The steerer meanwhile, using a short strap off the stern ‘T’ stud, takes it round the strapping post on the gate and then takes a full turn round the T stud and holds the end of the strap at a safe distance, so that as the strap takes the strain of shutting the gate and slips round the stud, their fingers are not drawn into it (photo).



As the top gate starts to shut, the first bottom paddle is raised, followed immediately by the second. The steerer then lays the strap out along the cabin top - to avoid it getting tangled up in the hatches. They then step off to go and lay out the blocking line - between the breast posts of the bottom gates - to the blocking hook on the offside below the gates. The horse driver will similarly lay out the horse’s end of the line.

Both steerer and driver will then open their respective gates before getting

hastily back on the boat or driving the horse as the case may be. The blocking line falling off the hook when the toggle (arrowed in photo) reaches the mast as before.

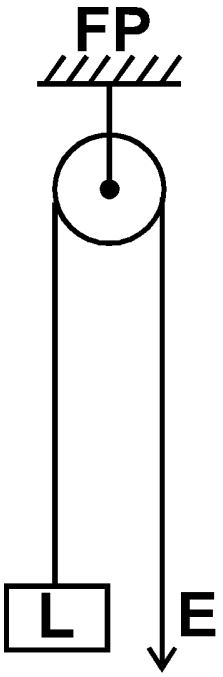
It is interesting to note that the steerer never sets foot on the towpath side of the lock - either uphill or downhill.

And so it went all Saturday, practising, refining and adapting until we reached the point where the two boats were sent out from two locks towards each other (we even had to train the horses first to get used to passing each other!). This had all been though out carefully - except for one completely unexpected thing, Northwich's new steel bottom didn't have a skeg to protect the rudder. Gifford was to give way and dropped her towline for Northwich to ride over - fine until it took the chance to leap up between her stern post and 'elum. This was then abruptly unshipped and the tiller snapped like a twig. Butty 'elums are d**ned heavy and difficult to get back on!

At the end of the weekend, the amazing thing to me was not just the amount I had learnt, but how much I realised was still *unlearned*. You could not apply the same techniques for example to the Trent and Mersey, the paddles cause the water to behave so differently you would smash, not merely the tiller, but the elum in the first lock using Worcs & Brum techniques. Another veteran boatman who was present on another day said as much!

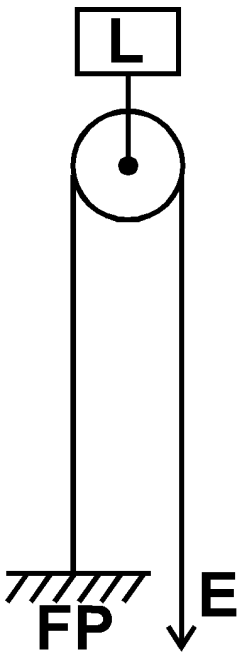
Fascinating stuff. It is intended to bring out the (professionally filmed) video for sale eventually - probably including "yet to be filmed" items. If you care about lost techniques you should buy it.

Appendix: How to get a 2:1 purchase with one block.



On the left is a typical "single purchase" block - commonly used for lifting. The effort (E) and the load (L) are both supported by the upper fixed point (FP) and moving the effort a small distance will move the load the same amount.

On the right, the load and fixed point have changed places. The load is now our boat and the fixed point is the bank. Now, a small movement of the effort will only move the load *half* that amount as the movement is shared on either side of the pulley. However, because the strain in the rope is the same throughout, *two times the effort acts on the load.*



In practice, this is reduced slightly by friction, changes in angle, weights of rope and pulley etc, but a considerable advantage is still obtained. With *any* system of blocks, the ratio of the distance moved by the load to the distance moved by the effort (the Velocity Ratio) gives the theoretical maximum gain.