



Ice could easily make a hole in a boat, which is why wooden boats had steel sheet ice plating to protect their bows from damage. Here a coal boat has been sunk by ice near Skipton, whilst they were trying to get coal to Skipton gas works during a long cold spell.



Conditions for the boatmen were very arduous, and some long distance boatmen went to work on the Liverpool coal traffic in winter to get away from the severe conditions on the summit. Here a boat has just worked down Bingley 5-rise in the snow.

Before winter set in, the carpenters at Bank Newton would install several 'ice shoots', used for clearing broken ice from the canal. Not only could ice damage boats, but it also made working through locks difficult. The ice was floated down the canal to a shoot, where it was raked out and then slide down into a stream or river, such as here at Priestholme aqueduct over the River Aire.



Water warmed by its underground passage through the Winterburn Reservoir pipeline was also used to help thin the ice. Branch pipes were fitted, and the moving water entering the canal helped to reduce the thickness of the ice. Today they are still used for supplying the Marton Pool of the canal, as here near West Marton.

Pall Mall, Liverpool, 8 January 1891
to D'Arcy Wyvill Esq, Ben Rhydding

Dear Sir,

I had hoped that the thaw, which set in on Friday last, would have enabled us with manual effort to get the navigation opened throughout, but a reappearance of the frost on Sunday evening (and which I am sorry to say still continues) has made all our energies of non-effect. Mr White and I visited Aintree Valley yesterday and new ice had frozen to a very great thickness, and when the thaw does come it will be several days before we feel its benefit. If you have never seen the canal frozen in this district it is almost worth your while to make a special journey to see it.

As to the loss we are unfortunately suffering, our expenses being principally fixed charges, our endeavours to reduce them will I fear not be very considerable. However, I may say the Boatmen are on half-pay and now that there does not seem any likelihood of the frost going, I am, wherever it is judicious, dispensing with the mates. Up to now, they have been engaged as far as possible in transshipping goods to rails etc, ice-breaking and other work which could be given them.

Yours faithfully,
Williams

A letter from the Traffic Manager, Williams, to one of the L&LC Directors which explains some of the problems ice caused when the canal was used for carrying. The Liverpool end of the canal froze very rarely, with most of the problems usually being between Barrowford and Bingley. In the industrial areas, condensing water from mill engines helped to thaw any ice.



Ice breaking with horses was hard work, and several were needed, even for fairly thin ice. Here three horses are towing the ice breaker at Gargrave. There are only a couple of men on the boat, so the ice was probably not very thick. The ice breaker would rise up onto the ice, which was then broken by the men rocking the boat from side to side. The thicker the ice, the more men were needed. Occasionally, the boat would be pulled out onto the ice and the horses could then fall over, such was the force needed. This may have happened below.



Several steam tugs were equipped for ice breaking. Here, the Skipton tug, **No. 57**, has had its iron ice-breaking frame fitted to its bow. This started the ice breaking and reduced the possibility of damage to the tug's wooden hull, even though it was fully protected with steel sheet ice plating. Several of the office staff have obviously come along to check on conditions.

ICE BREAKING