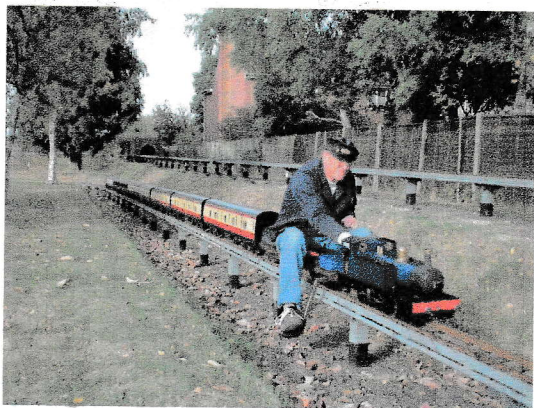


WORKSHOP TOPICS 1

AXLE PUMPS AND THE POWER THEY USE

Malcolm "Brad" Bradford



My Simplex is now over twenty five years old and has given stout service as is the norm for this design. The axle pump was made and fitted as drawn by Martin Evans. I have always thought that the pump used a large amount of the power produced by the engine even with the by-pass open, so when I realised that I had not used the pump for years and that the by-pass had only been closed on a few occasions by other drivers, the time had come to do a few tests. With a pump ram of 5/8" and a one and a half times action large amounts of water had to be moved

around the 3/16" o.d. pipework even when not pumping. The route of this pipe is also very long and tortuous with huge frictional losses. My mathematics are quite good but not good enough to do all of the equations on paper so it was decided to do the tests with rolling stock on the club track. this should give a good idea of the power used by the pump given the long and steep gradients that are involved.

For the first run six of the clubs coaches were connected to the engine, no trouble was encountered by the loco whilst using the injector but as soon as the by-pass was closed a marked drop in pressure was observed, revert back to injector and the run continued without any problems,

For the second run a seventh coach was coupled on to the train and although the engine could pull the load, only one lap at a time can be driven without stopping for a breather, The next stage was to remove the axle pump completely and to fit a second injector to the engine. To do this I had to extend the steam manifold to take the second steam valve and then pipe a second water supply for the new injector and whilst I was at it I used the now defunct by-pass valve as an auxiliary tap for the side tanks to enable water to be taken from a tank wagon, " tender ". I had forgotten just how long it takes to knit copper pipe under a small footplate floor.

All of this was done just to replace the pump with another injector.

" Hang on a second, I've been running on one injector for years." "Ho hum."

Now for the third run. Loading up the train, trying to decide on six or seven coaches to start the test when Gordon Ross, bless his heart, said "Put the lot on !" So, on went the eight coaches and Gordon's large box wagon. The Simplex pulled away with ease, and proceeded to do lap after lap of the track without any trouble. Mind you, the coal was burnt at a fair old rate.

Next test, stop on the up hill inner curve just before the road bridge.

The engine pulled away slowly but without too much effort and carried on for a few more laps of the track. When I stopped to fill the tanks with water I noticed that Andy Hope was close up behind the train with Gordon's Britannia and a couple of empty passenger cars. Thinking that we now had a two loco unit I started off from the station through the tunnel

and up the hill, at the top the loco started to slip and slow down but I carried on to complete the lap.

Now at the station tap to get more water, looking back I see a beaming Andy under the road bridge. He had slipped a coupling onto the rear of the train and Simplex had pulled the lot!

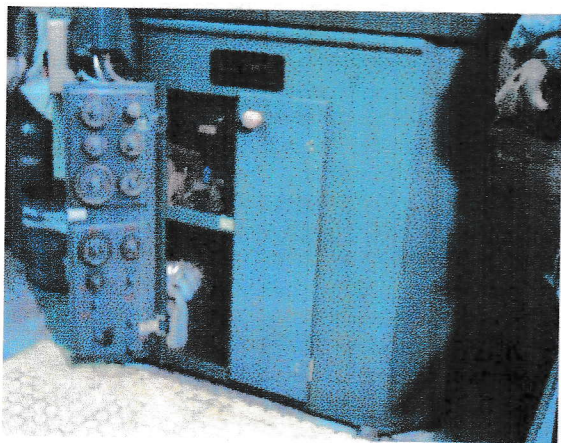
To conclude, removal of the axle pump gave an increase of available power for the train of at least a third!. Food for thought with model injectors now so reliable.

I was very interested to read Malcolm's article as over the summer I have had a problem with the feed pump on a steam boat. The pump was noisy and the noise sounded curiously high frequency and after much head scratching I opened out the passage way from the pump ram to the valve box. This resolved the problem and had the byproduct of allowing the engine to run more slowly without stalling. Clearly the water was throttled, much as I suspect Malcolm's was, and if you have a pump fitted and are unhappy it might be worth a try opening up the passage ways and fitting larger pipework. Ed.

WORKSHOP TOPICS 2

DOORS FOR A MYFORD LATHE CABINET

Alan Illett



Dear friends if you have a ML7 with an open fronted cabinet you may find the construction and installation of these doors a great help to keep out dust and swarf.

First of all you will need four 2" cranked cabinet hinges, a piece of ply big enough to overlap the opening by about an inch on all sides, another piece to fit inside the opening. I used good quality 9 mm ply for my doors, 12.5 mm would be fine but 6 mm is far too thin.

You will need to fit the hinges onto the cabinet first. Offer up the hinge to the opening with the cranked part around the

edge and the hinged knuckle at the front about an inch or so from the corner and mark and drill the two holes in the front, repeat for the other hinges. I bolted my hinges on with 6 BA csk. bolts but I found it a bit of a job to get the nuts on from inside the cabinet. A better idea would be to place a length of hardwood in the cabinet behind the hinges so that wood screws could be used instead.

Now that the hinges have been installed carefully measure across the opening between the hinge knuckles then cut the ply for snug fit. Trim the top and bottom square overlapping the opening by about three quarters of an inch. Position the ply across the opening and make sure the margins at the top and bottom are correct. Then mark the on the edge of the ply where the hinges are to go. After that draw a vertical line at the centre