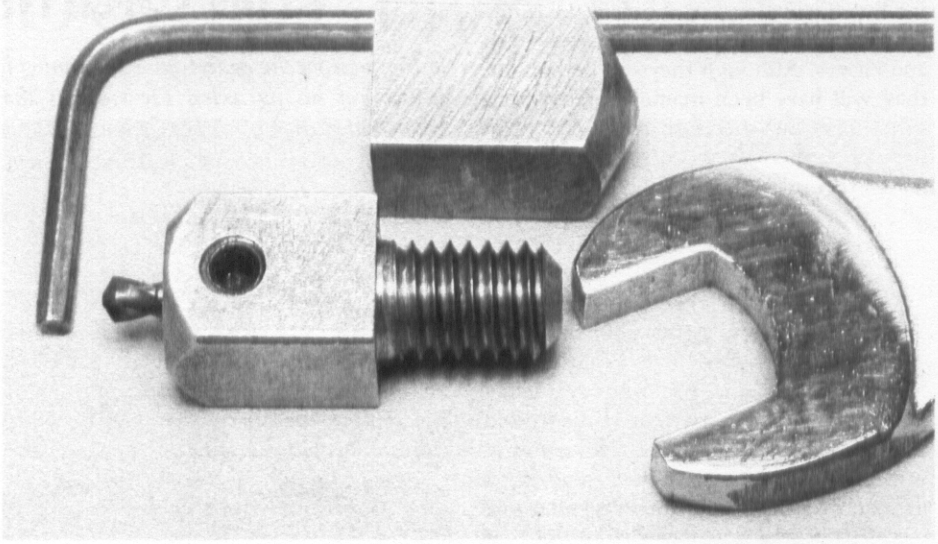
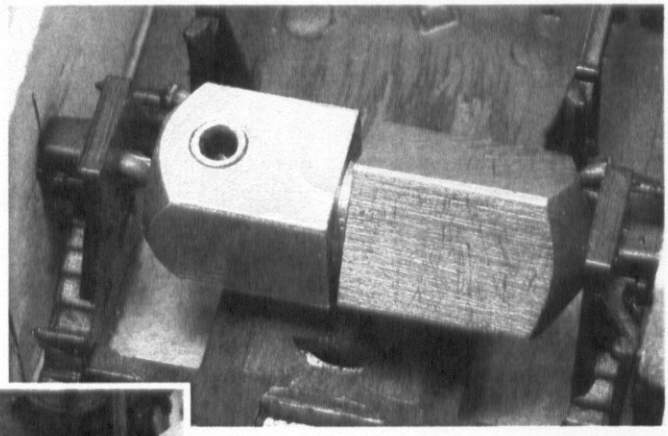
Mission Impossible

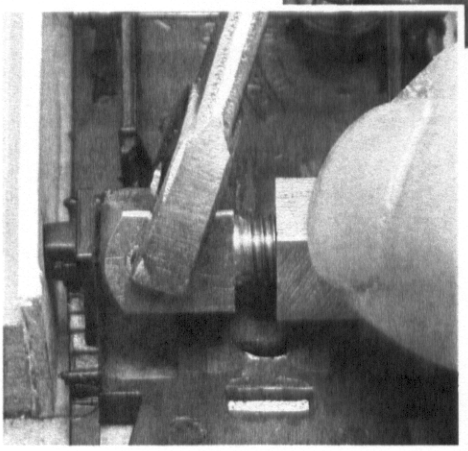
MRJ looks at something new for 2012

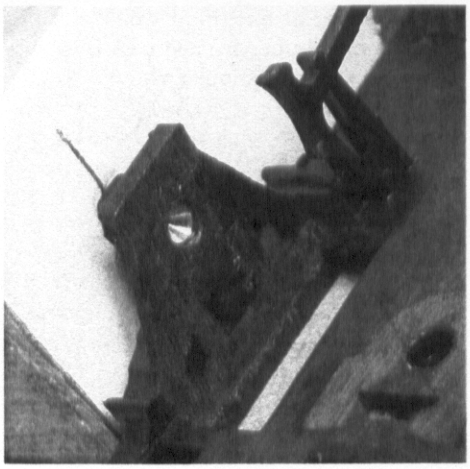


Whilst slipping EM wheelsets into some Hornby and Bachmann wagons, Bob Payne was wondering if it would be possible to add brass bearings to the axleboxes, and make the wagons freer running. To do this, he would have to enlarge the holes in the axleboxes, but this would be impossible to do using normal drill bits, and there seemed no other tool in his toolbox that would do the job. Being an engineer, he set about designing a special tool that would drill out each axlebox to the correct depth, so that when a top-hat or plain brass bearing was glued in place, the pin points of the axle would fit perfectly. The same tool could also be used to fit bearings to coach bogies and tenders.

The tool has been designed and manufactured to fine tolerances, and has been tried out by various modellers to test the usability of the design. All have given this innovative gadget a hearty thumbs up, so much so that they want one as well. With this in mind, Bob is in the process of arranging the production of this tool, which will be marketed under the Alan Gibson label later this Spring. When news of this original and long overdue invention arrived at the MRJ office, we were keen to share it with you, and although not yet available, we hope this step-by-step sequence will explain how it works, and whet your appetite.







The wagon needs to be clamped across the axleboxes, either with your fingers, or in a vice, or using a cotter clamp like this one. This will stop the axleboxes spreading as the drill is wound into the plastic. The drill is set to the correct depth using the two set-screws in the side of the tool. This depth will vary, and relates to the thickness of the moulded W-irons on the Hornby or Bachmann wagon. On some RTR wagons, top-hat bearings can be used, but on others the distance between the two opposing W-irons is too narrow, requiring a deeper hole and plain bearings. Once the tool is placed between the axleboxes finger tight, a spanner is used to wind the drill into the plastic until the body of the tool touches the W-iron. The bearing can then be slipped in and the axle sprung in place. If it is too tight, the holes can be drilled deeper, but once the exact depth of the hole has been worked out, it can be recorded and used for all similar wagons. The bearings can be held in place with a dab of super-glue or just left loose. It is as simple as that!

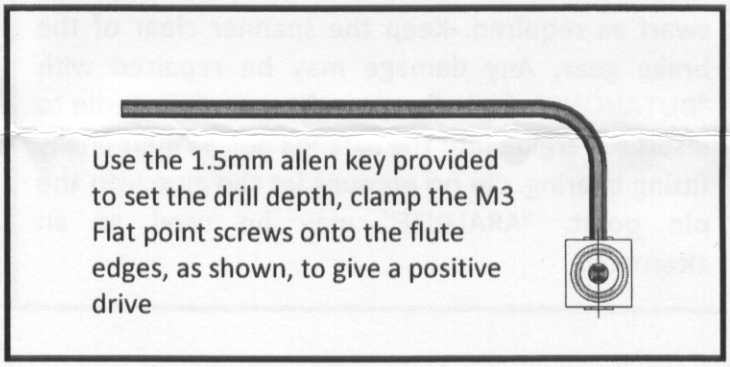
THE R-T-R DRILL

INTRODUCTION

The tool is designed to enable the drilling out of a variety of ready to run 4mm scale wagon axle boxes, to allow the fitting of shoulderless pin point brass bearings. It should be noted that to use the drill the tension-lock coupling must be removed. On the latest Bachmann stock this can simply be unscrewed. Other types will need this pad snipping off. It is anticipated most users will be using ALEX JACKSON, 3 LINK or other fine scale coupling systems, so the loss of the mounting pad should not matter. Screw-on mounting pads and couplings can be bought in packs of 10 as a BACHMANN spare, number 36-030.

The successful use relies on the outside faces of the axle boxes being supported by a vice or even thumb and forefinger to provide some resistance whilst cutting. It is, in the case of the vice, wise to use a layer of 1/16th (1.5mm) thick card between the vice jaws and wagon chassis to preserve moulded detail. The template overleaf can be used to cut these out. Do not attempt to drill without support, as the force needed to drill out the plastic will only splay out the axle boxes and may result in irreparable damage.

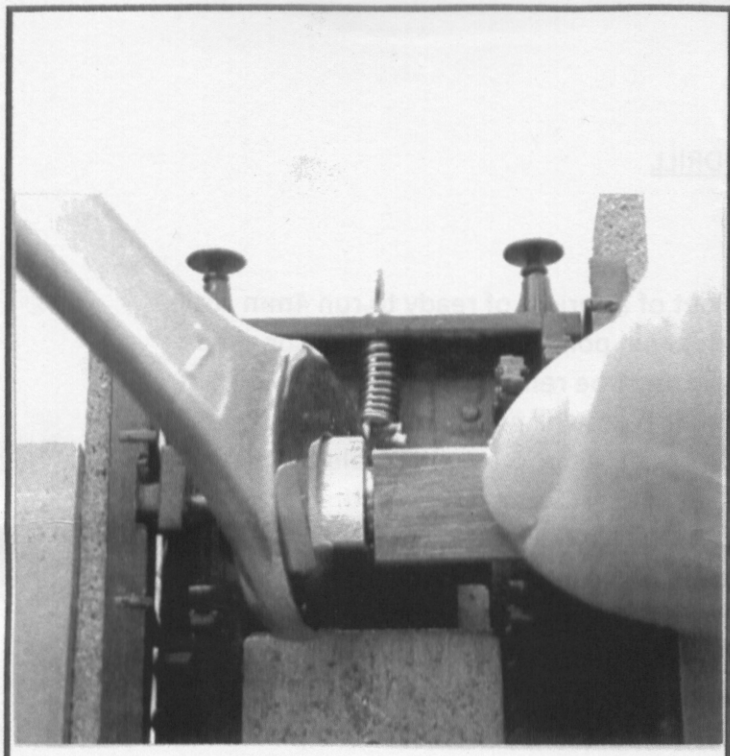
METHOD



To achieve the correct running clearance for the pin point axle in the bearing, the drill depth will have to be adjusted, as shown right. A drill size of 2.05mmhas been chosen to give an easy fit for the bearing. This can be offered up and knocked out as the drill is adjusted, until the correct depth is achieved, when the drill face is rubbing against the w-iron. Ensure swarf is removed from hole, with tweezers if necessary, to give correct depth when the bearing is inserted. Initially the bearings should be fitted dry, the wheels angled in and should run freely with a little end float. In certain instances, a burr on the pin point end of the bearing may prevent it from being removed from the axle box. It may be hooked out with a needle point, failing this, drill the outside of the axle box on the centrelines with a 0.5mm drill in a pin vice until it hits the bearing. Turn the drill round and push the bearing out with the plain end of the drill. Fill hole to complete.

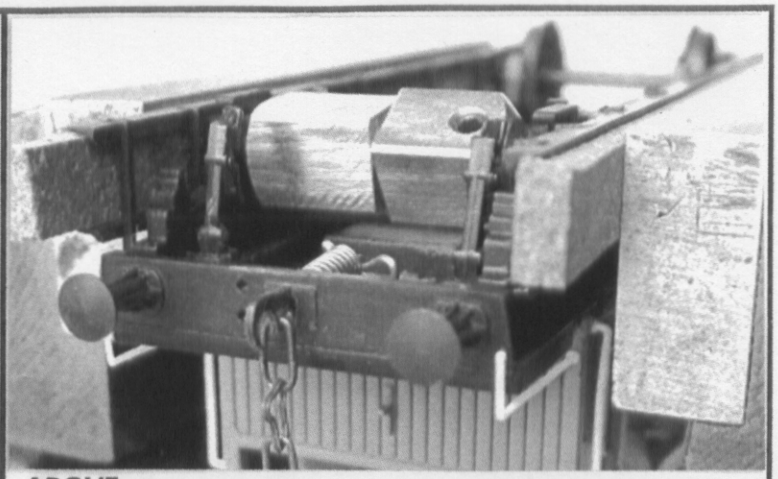
USING THE DRILL

Screw the drill together and angle into the chassis. Then unscrew and centre up the drill point into the pin point. The anvil end will locate in the opposite pin point and give true alignment.



ABOVE DRILL IN USE

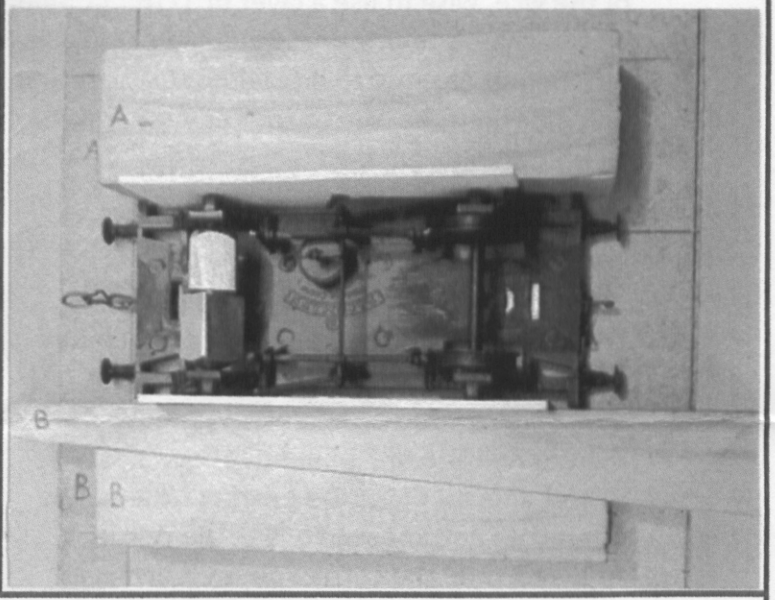
Turn the drill with the 7mm spanner whilst intermittently holding the anvil with your finger to feed. Remove the tool to clear the flutes of plastic swarf as required. Keep the spanner clear of the brake gear. Any damage may be repaired with "BUTANONE" or similar. Use the eye of a needle to insert superglue into the axlebox holes when finally fitting bearing. **On no account let the glue into the pin point.** "ARALDITE" may be used as an alternative.



ABOVE

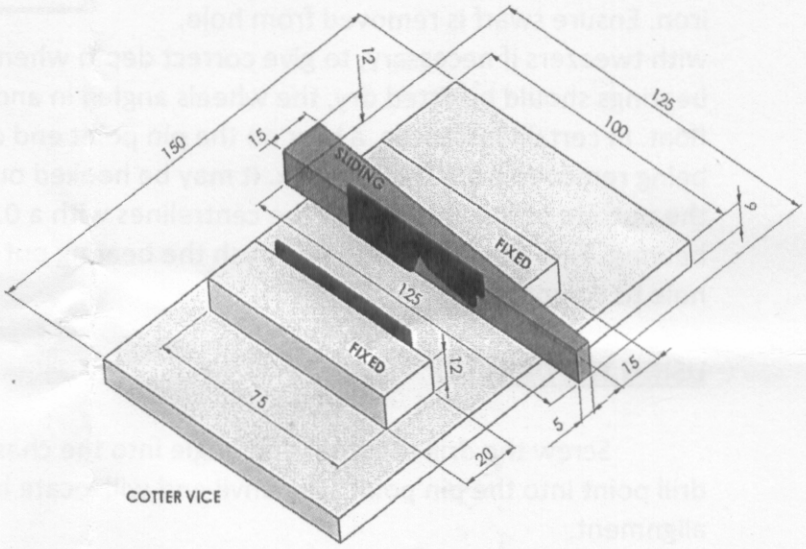
BACHMANN brake van held in vice with 1/8th cork strips in between steps to give some drilling resistance.

BELOW COTTER VICE IN USE

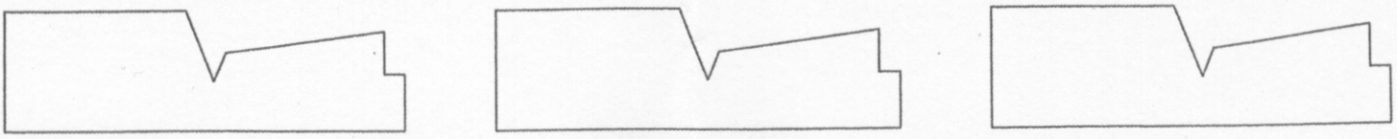


SIMPLE VICE DIMENSIONS in mm

This drawing shows the dimensions for a simple vice, which is an effective way to hold the wagon chassis whilst drilling. Where the wagon body and chassis are difficult to separate, deeper jaws and cotter may be made to allow the wagon to be held .In practice strip wood was used for the jaws and cotter ,M.D.F for the base. Lay in the chassis to obtain correct position for jaws.



Template for card insert for 9ft & 10ft wheel base rolling stock.



Many thanks to Paul McCartin for the origination of these instructions. Bob Payne, designer of the R-T-R drill