BARROWMORE
MODEL RAILWAY GROUP

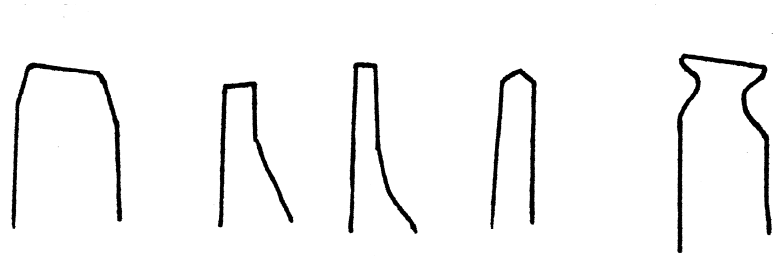
"Modelling to a high standard amongst friends"

Workshop Notes: WHAT TO DO WHEN YOU BREAK A HACKSAW BLADE

Hacksaw blades are quite expensive, so that when one breaks (as they tend to do, at the most inconvenient times!) there is an immediate reaction from most modellers. So, "what can I use the pieces for?" springs to the modeller's mind.

There are various handles available from tool-shops and DIY stores which will hold pieces of hacksaw blade to enable them to continue to be used in their sawing mode, but it has to be admitted that when separated from the hacksaw frame this sawing function is nowhere near as efficient.

So, what else do can you do with the pieces? My solution is to make small scrapers, which can be used on things as diverse as cleaning excess solder from etched brass, cleaning up white metal, or removing 'flash' from plastic kits.



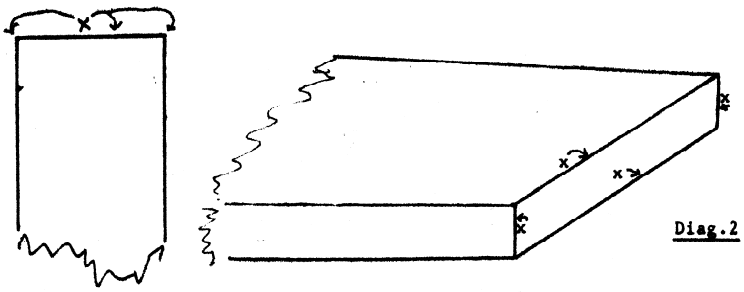
Diag.1

Some useful end shapes for scrapers

You do need access to a **bench grinder**; if you don't own one yourself (cheap ones cost in the region of £25 or so, and will also enable you to sharpen blunt drills, etc.) then you must prevail upon a colleague who has one, to let you use his machine. (Some clubs have communal grinders for use by members).
Safety first: industrial accidents don't always happen to other people! - so wear some sort of eye protection when using a grinder.

You first need a 3- to 5-inch piece from a normal half-inch-wide hacksaw blade, and this is when Murphy's Law comes into the act. You have already accidentally broken the blade once - and it was quite easy, wasn't it? - but when you want to snap a couple of inches off a too-long piece, it proves to be anything *but* easy! I find that a good method is to clamp the wanted piece of the blade in a bench vice, muffle the unwanted part in a rag (to avoid sharp bits of metal flying about), and hit it near to the vice jaws with a 2lb hammer. If it then snaps in roughly the right place, take the embryonic scraper out of the vice and grind most of the saw teeth away from the side - the aim is to remove proud areas of the 'set' and round-off any sharp bits. Also smooth off the handle (non-cutting) end. It is not too important to avoid 'burning' (and annealing) the metal at this stage.

Now decide what shape cutting end you want (*see* diag. 1), and slowly grind the end to this shape, avoiding overheating (‘burning’ - evidenced by discolouration) of the metal. The most useful end profile is shown in diag. 2, but there is no reason why you can't make chisel or knife shapes. It helps to cool down the metal and avoids blistered fingers if you dip the work-piece in a cup of cold water at frequent intervals.

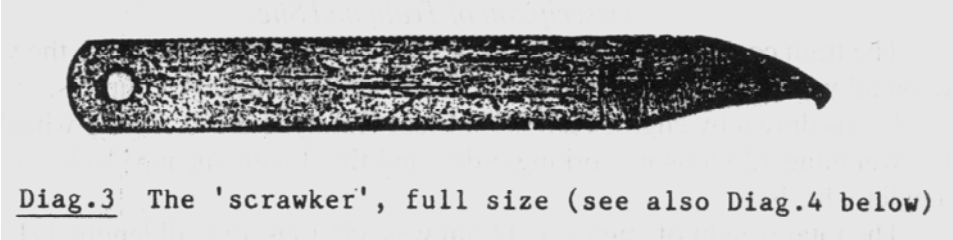


Diag.2

Enlargement of typical scraper end, showing cutting edges (x)

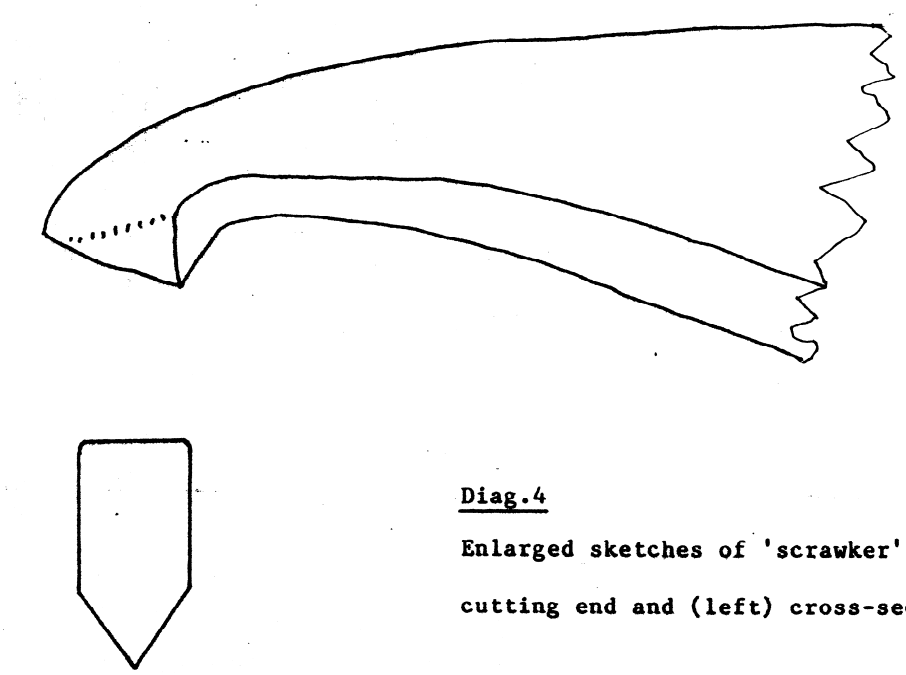
Finish the profiling of the scraper by stoning the cutting edges first on a fine Carborundum stone and then on a finer abrasive such as an Arkansas stone. Blunt scrapers can be re-sharpened in the same way. The last operation is to make the scraper easy to use, by covering the handle in something like a piece of tyre inner-tube held on with insulation tape.

One very useful tool which also can be made from a hacksaw blade is the 'scrawker' which cuts a '**V**' shaped groove in metal or plastic sheet (diagrams 3 and 4). This is described in



Diag.3 The 'scrawker', full size (see also Diag.4 below)

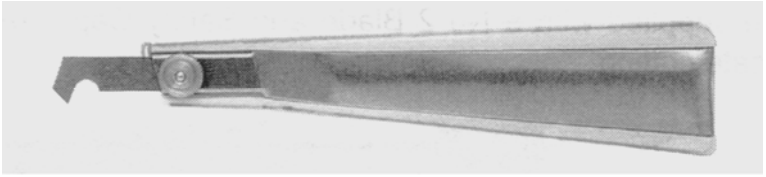
an interesting article by Colin Binnie in the November 1971 issue of *Model Railways*; the cutting action depends on pulling the tool towards you, guided by a straight edge. But unless you need a particularly



Diag.4

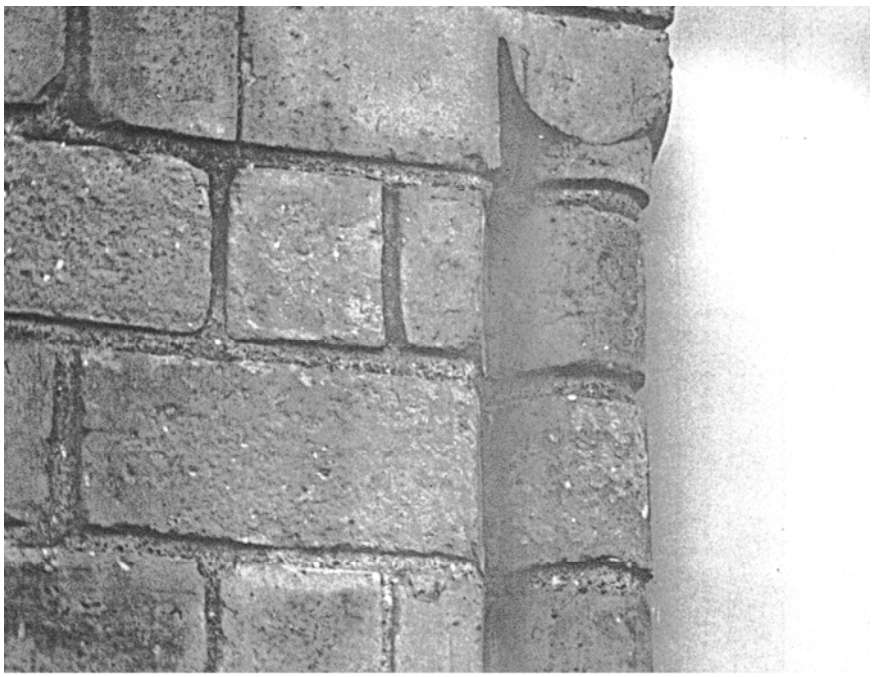
Enlarged sketches of 'scrawker' cutting end and (left) cross-section

deep or shallow 'V', or a different shape groove, the easiest solution is to buy the excellent 'Olfa plastic cutter P-450' (diag. 5) which is sold by Squires Model & Craft Tools and other arts and crafts shops, for £7; it includes spare blades.



Diagr. 5

This also suggests that you can make scrapers with other profiles – the obvious limiting factor is your ability to grind the required end profile. An example of using a scraper to solve a modelling problem may suggest possibilities: the task was to model the decorative brickwork at the sides of doorways and window apertures on a building dating from L.N.W.R. times, thus –



Diagr. 6

The scraper end was shaped (diagr. 7) using a combination of a normal size bench grinder wheel, and a thin 19mm diameter Carborundum slitting disc, such as is sold for use with 12V mini-drills. The sequence of operations was as follows: stage 1 – the broken end of the broken blade is cleaned up on the bench grinder; stage 2 – the blade is held in the vice and a Carborundum disc used to create the shape shown; stage 3 – the side of the top of the blade is reduced on the bench grinder to shape the groove-cutting part to a point. Then the edges of the blade marked 'A' are slightly rounded with wet-or-dry paper so that the tool does not cut here – this part of the blade acts only as a guide for the cutting section.

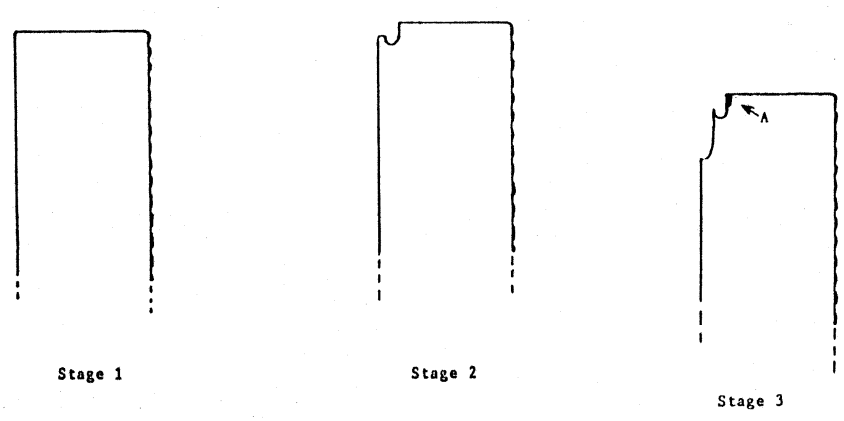


Diagram 7

So next time you are about to put a broken blade in the bin - think again!