Con rod truth

When assembling an Austin Seven engine, it is very easy to check whether your con' rods are sufficiently straight. I understand alignment within two thou' over 4 inches length is deemed an acceptable tolerance.

The picture on the left shows a set of rods correctly torqued in place on a crankshaft (here a 'Phoenix' 5/16" splash feed type) and a length of ½" diameter ground silver steel fed through all four little ends. The silver steel rod should slide firmly but smoothly in-place without any binding or lose play. Very slight adjustments by cold twisting or bending the rods are considered permissible. Usefully, the Dorset A7 Club website Technical Pages show how rods can be straightened using a vice as a press.

Interestingly, I bought my Phoenix crankshaft new from one of our well known suppliers but discovered one big-end journal was nearly ten thou' smaller on diameter than the others. This probably occurred during the grinding process and may have left an insufficient thickness of nitriding. Happily, the supplier exchanged the shaft without any quibble for one that was well within a 'tenth' on all journals. The message here is that it is definitely worth checking such items.

Head nuts - all torque

My edition of the otherwise excellent 'Austin Seven Companion' (actually the 6th impression dated 1990) suggests on page 133 that cylinder head nuts should be tightened to a torque of 360 lb.in (which equates to 30 lb.ft) and is clearly a mistake. If you are using decent machined full nuts and tighten to this torque, the stud will almost certainly strip the thread in the cast iron block; or in the case of the centre stud – it might well completely wreck the block by dragging out a whole chunk of cast iron between cylinders two and three. Please also remember that torque figures are normally quoted for clean dry nuts and studs and should be reduced (often by as much as 25%) if the threads are lubricated. Woodrow (and others) suggest the suitable (dry) torque for Austin Seven head nuts is 18 lb.ft (much more like it!)