

## Restoration of a Wolseley WLB 8 Engine (or what can possibly go wrong now)

A number of years ago I bought a Wolseley WLB engine. Most of it was there just a few bits missing i.e. magneto and magneto gear and coupling.

It sat in the back shed until I retired and had the time to restore the unit. It was a tank cooled unit and when another Member found out what I was up to was generous enough to give me a magneto, coupling, gear and decorative head water jacket cover. The original was a rather plain piece of flat steel.

Eventually the engine was lifted on to the bench and after some hours effort with emery cloth Penetrene and a 100mm piece of U channel as a puller the flywheel was drawn off the shaft. Gentle rocking of the shaft revealed a slight amount of play, but always hopeful, I thought it may not be too bad.

Removal of the side plate revealed the whole sorry story. The oil dipper had at some stage had broken off the connecting rod and the engine had obviously run without adequate lubrication. The litany of despair is as follows. 1/8" play in big end (hardly any shells left), big end housing on conrod scored due to "spun" shells, conrod black from heat and burnt oil, crankshaft big end journal badly scored, crankshaft main bearing journals blue from the heat and slight scoring of piston where it had nipped in the bore. Surprisingly the bronze main bearings appeared to be in very good condition.

I seriously considered loading the bits in the scrap bin but the stubborn streak in me took over and it decided to have a go. Repairing the shaft and big end was not really an option as the cost of obtaining oversize bearings and another conrod would have been prohibitive.

Through successful bartering I managed to obtain the seized bottom end of a 2HP unit.

My engine was a 3.75HP but the manual stated that apart from the bore size the engines were identical. Famous last words!

Although the flywheel on the replacement unit was badly out of alignment (cracked), the shaft, conrod and big end were true and in serviceable condition. The spare unit was externally badly corroded, so the flywheel removal took even longer this time. Eventually the parts were stripped and cleaned. On comparing the timing marks it became obvious that the original engine was a left hand rotation unit and the replacement parts were right hand rotation. The only solution was to replace all the rotating parts in the original unit.

Time to clean up the valves on the 3.75HP unit! With the valve springs removed the inlet valve had excessive guide clearance. Further examination revealed "Holden" cast into valve head.

This was obviously an earlier repair and the engine must have run for a number of years with the replacement valve rattling in the guide. A second hand valve was obtained and the valves faced, lapped and installed in the block without any significant trouble.

Time to start replacing the rotating bits! The replacement crank was dressed and fitted into the crankcase. The camshaft was aligned and slid into place while holding the cam followers in place with my other two sets of hands.

With new rings obtained it was time to fit the old piston onto the new conrod. Problem! Despite what the book says, the gudgeon pins are a different size. Down to the local machine shop to have the conrod machined. The rings were fitted to the piston and the piston fitted to the bore. Tensioning the big end was interesting. While it doesn't indicate so in the book I suspect that the piston and conrod should probably be installed first as the



cam gear obscures the rear bolt. The task was eventually accomplished using a ratchet handle, two universal joints and a ground down socket.

The cylinder head was cleaned up and located on the head studs ready to install the decorative water jacket cover. Problem! Another difference of the so called identical engines, is the stud pattern. The 2HP and 3HP have different patterns. No alternative was left other than to install the original steel plate cover. The rest of the assembly for painting was relatively simple, right down to the point that I dropped the cast iron manifold/carburettor housing breaking a mounting tag off the end. After preparing the surfaces of the break I decided to silver solder the joint. Getting two pounds of cast iron evenly hot enough for soldering without oxy / acetylene and an oven was going to be a problem. The solution was a gas torch, three blowlamps and a row of fire bricks. I could have used an extra pair of hands with holding the gas torch, the silver solder rod and pumping a leaking blowlamp. With the repair completed, painting was underway. Like the man who launched his boat and it sank, I had forgotten to put the plugs in on the underside of the block which allows the removal of the cam followers. Quick trip to the hardware shop and the plugs were installed and the paint touched up.

Petrol tank and fuel line installed, the engine was mounted on a temporary frame for testing. No muffler at this stage, just an open pipe.

The last job was to install the magneto. Next problem; it would not fit the hole in the housing. After trying three different Wolseley magnetos it appears that my Wolseley must use a magneto of a different type.

Out with the micrometer, and the decision was made to machine the housing of the magneto. It was time to start dismantling the magneto to fit the flange in the lathe. Next sad story! Wolseley engines use impulse magnetos. Impulse magnetos have strong springs curled up in side. When the inexperienced are dismantling these units they have tendency to eject bits in all directions. The machining was the easy bit; the reassembly took hours even with the help of an extra pair of hands from my daughter in law, Carrina. I did overhear Sandy, my wife, warning her "it is better to leave him alone when he gets like this". Eventually the magneto was in one piece and located on the engine. The timing on these setups, if the gears are installed correctly, is either spot on or 180 degrees out. There is a procedure to get it correct the first time but by now I was getting a bit past it all and thought 50/50 chance was good enough. You guessed it, it was 180 degrees out and the flame from the exhaust port would have done a Howitzer proud. Simple adjustment and the engine fired. Unfortunately the governor, while adjusted to specification, must be a bit worn and the engine started to charge off across the shed floor with me grabbing at the sparkplug lead and Sandy laughing hysterically. A bit more fiddling with the governor and the engine now ticks over nicely.

There is a strange masochism that draws me to restoring these old bits of cast iron. This engine has proved to be a trial but I have a strange affection for Wolseleys, so all the tribulations have been worth it.

Allan Wheaton



Holden valve?



Main bearing journals, blue with heat, bigend scored



Damaged conrod cap