

Travelling Hopefully

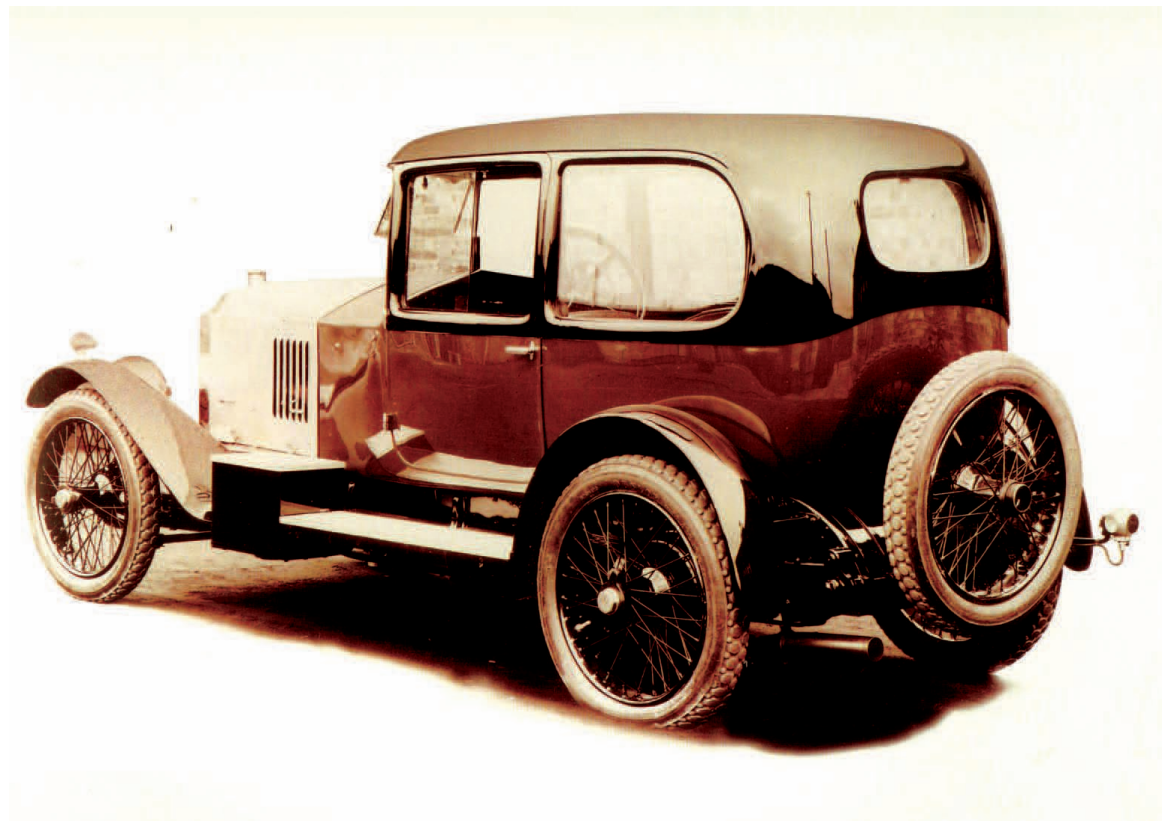
This is not a tale of how to build a car. If you want that, ask a professional. But some of us enjoy the process as much as the end result, and might recognise this strange long winded story.

I have always been grateful for Stephenson's adage that to travel hopefully is a better thing than to arrive. It excuses all manner of missed deadlines and reminds us to enjoy the journey.

This journey began around 2010. As a generation of children learned that trialling was allowed under a roof, their parents raced to build something suitable. A top hat bodied Nash, gluts of Model A Fords and saloon Austin 7s burst onto the hills. I had a different thought – I wanted to enjoy the build process. That was such a good idea that I'm still doing it now, 11 years later.

The inspiration

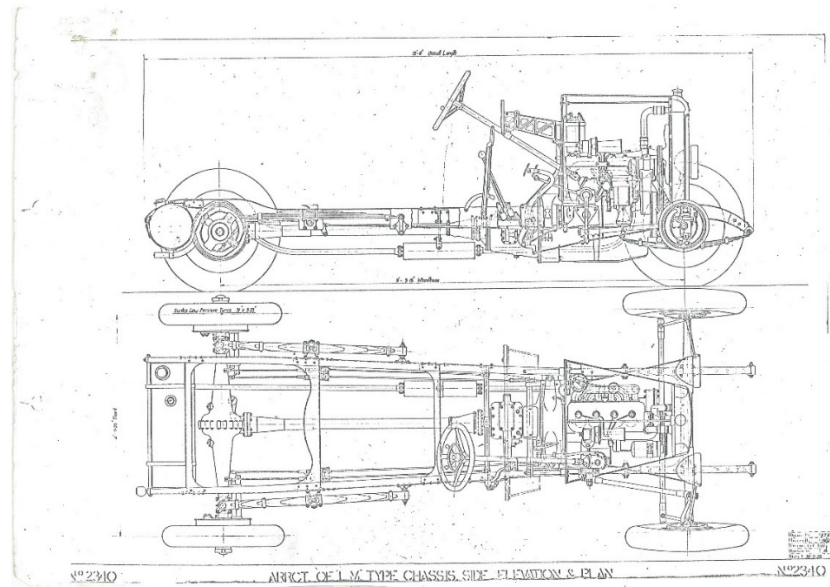
Flicking through Nic Portway's tome, I kept coming back to a three-quarter rear photo of the 1920 show car; a two door saloon body that looked light, simple and airy with a lot of window. To quote Baron Bombast: "I vont zat car!"



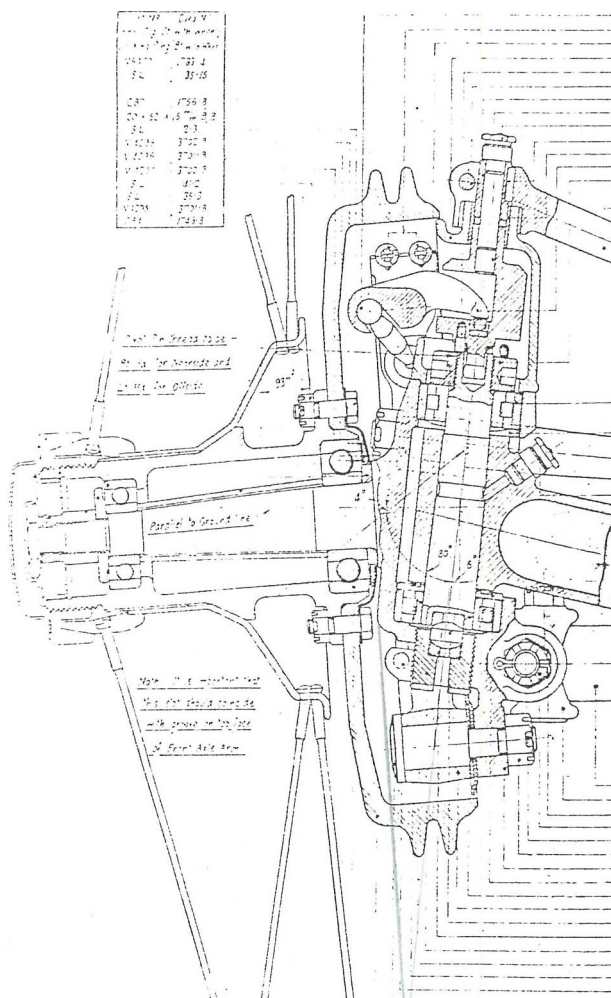
So started the search for raw materials. 30-98 chassis are thin on the ground, but John Kent was tripping over a 14-40 rolling frame that he was keen to move.



Like so many Vauxhalls, LM2500 was exported new to Australia and in due course the body, engine and gearbox fell apart or were robbed. But the dry, sandy outback left the rest reasonably sound. Along with the car, John helpfully sent the remains of engine OD1150, with clutch and gearbox casing. The plan was hatched. I just needed to bolt the engine together, slap on some paint and nail on a body.

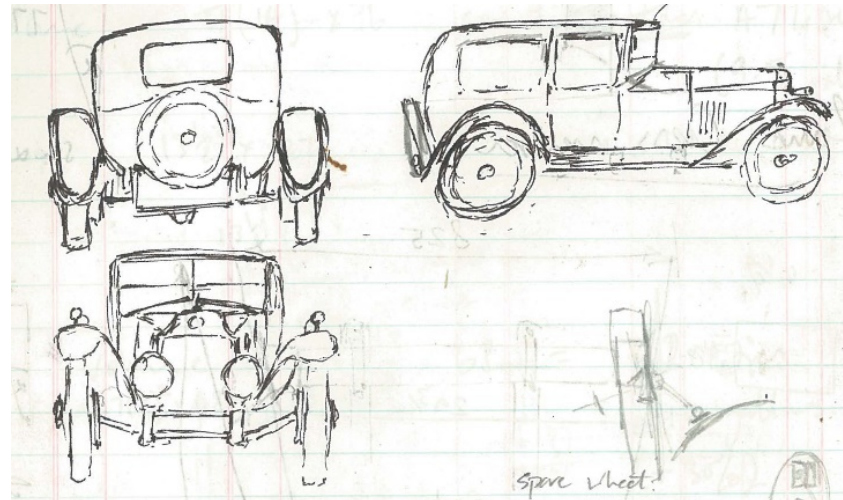
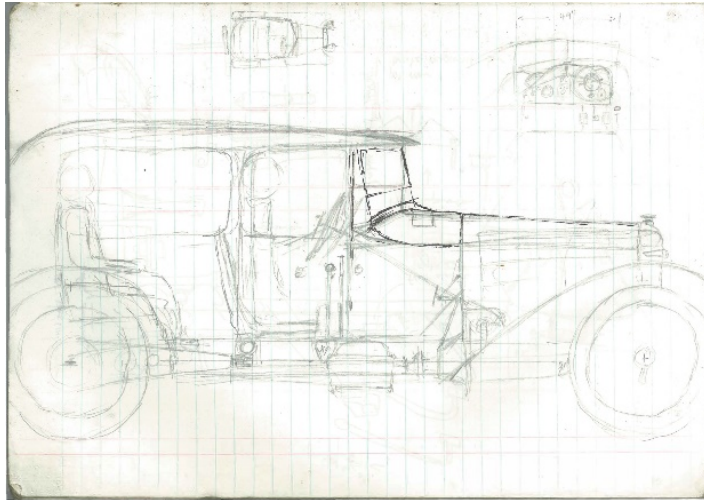


While the chassis was still rolling, it was a good time to measure up and draw some plans. To my shame I knew nothing of the LM 14-40, a very well made car. The Vauxhall lineage is clear in the chassis and axles, but with many improvements over the antiquated 30-98. The chassis is much better braced, with a deep rear cross member linking the cantilever spring pivots. (I don't understand the persistence with cantilever springs. They had been tried and discarded on Hancock's pre-war E type, on the 6 cylinder car and they reputedly made the 1914 TT cars almost undriveable.) The front brake arrangement is quite an improvement on the kidney box, with an ingenious system of balanced load levers and a thumbwheel adjustment, best understood from this drawing:



The overall chassis dimensions are almost identical to the 30-98, the most obvious difference being a continuous taper with the front about 2" narrower. With an integral gearbox, there is no need for a long subframe.

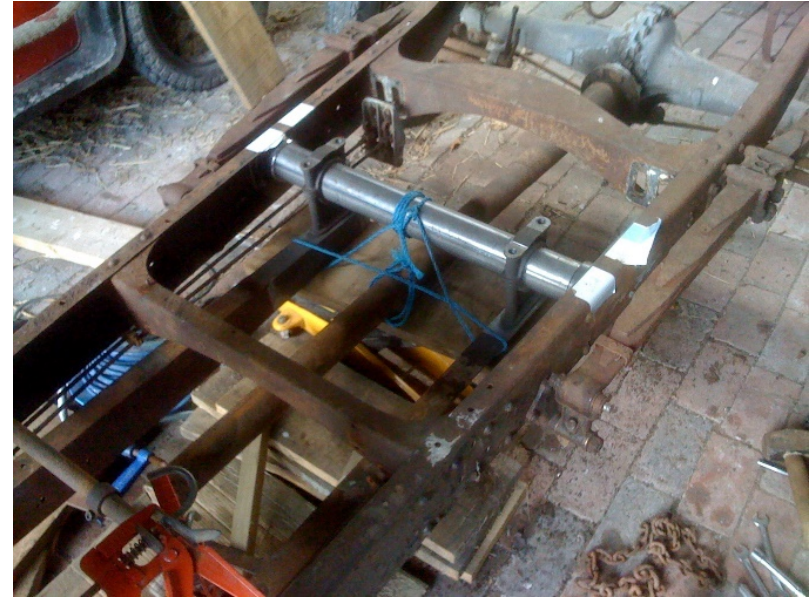
So the raw material looked good. And the kind of serendipity that turns up when you start looking; an original Auster 30-98 saloon sloping V windscreen turned up at auction, and Beaulieu produced a pair of doors in wonderful condition, complete with winding mechanisms and latches (thank you Winston), so the sketches started flowing:



Enough planning, time to get stuck in. Chassis stripped, and a discarded 23-60 subframe recycled:



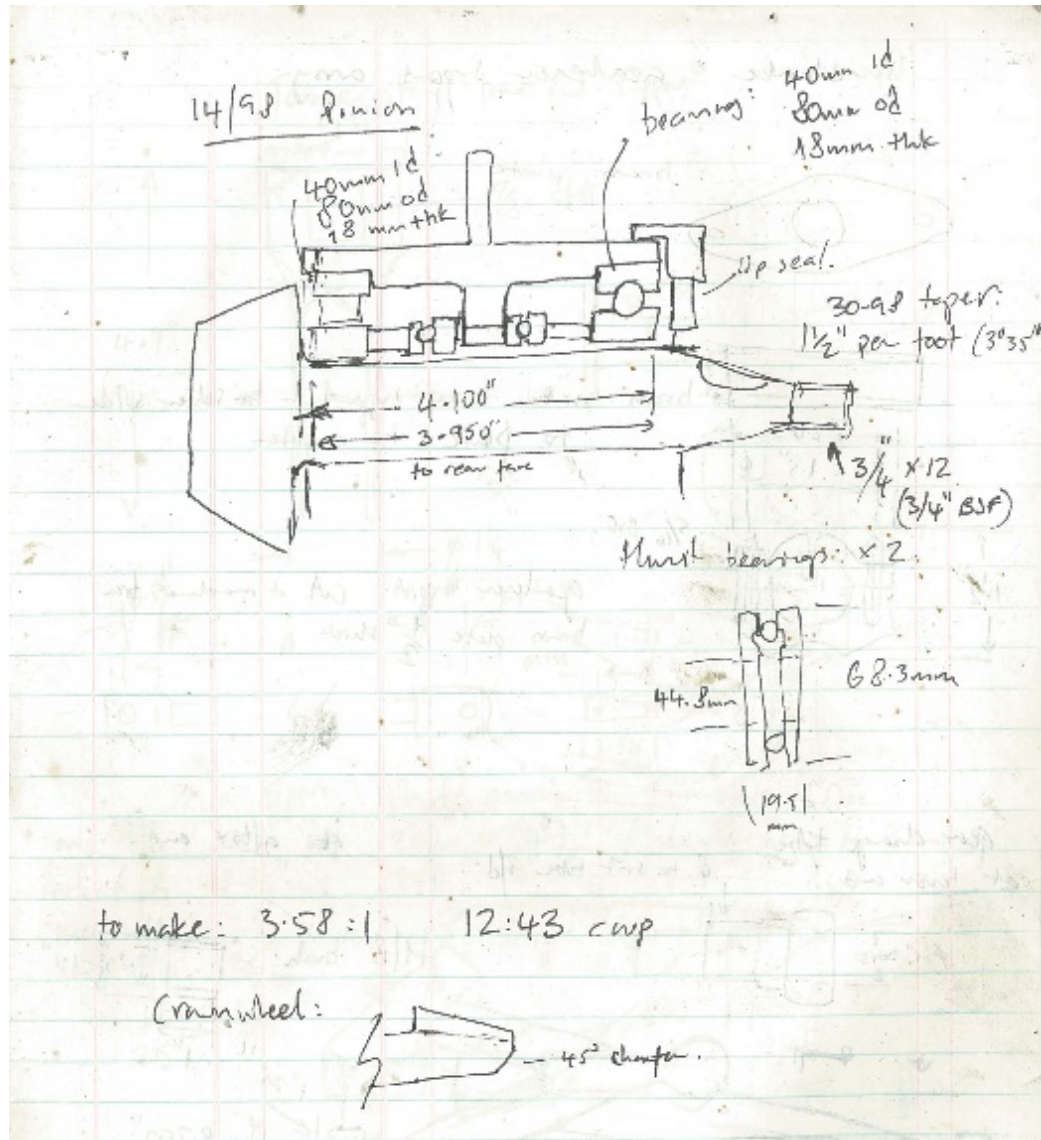
New cross tube and brackets cast and machined:



A bit of riveting and a lick of paint, hey presto:



Back axle:

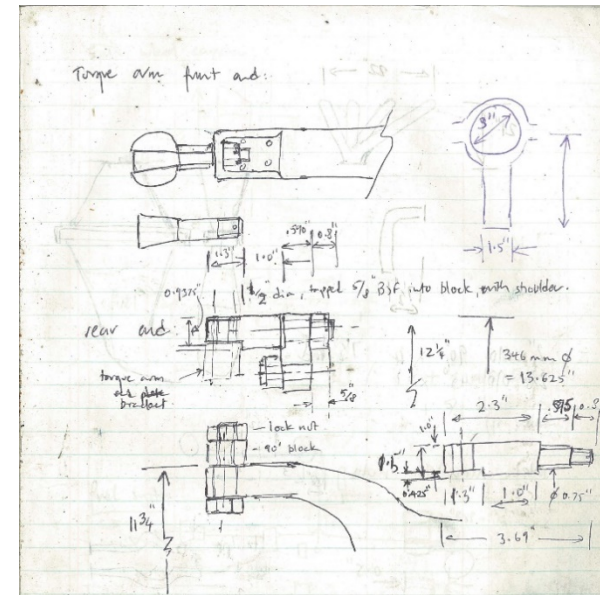
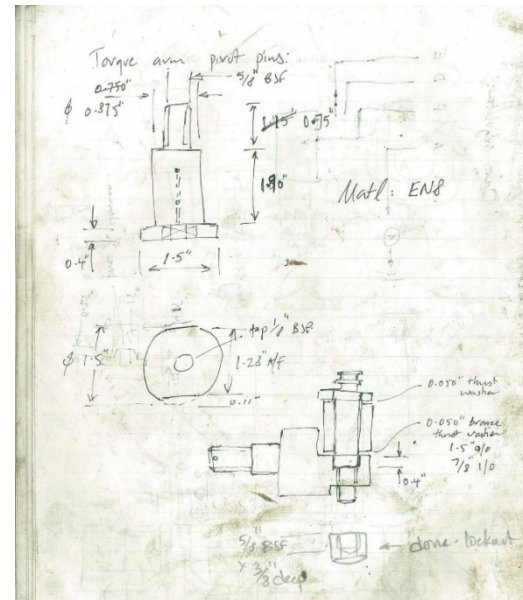
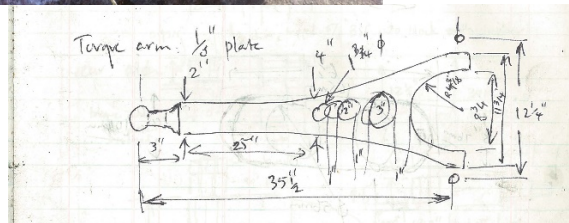


The LM axle is located by torque tube, and spherical bearings to the ends of the springs. To convert to torque arm, to suit the OE gearbox, needed a bit of thought. The absurdly competent Guest Gears made a new crown wheel and pinion from this sketch. Meanwhile on the trusty Colchester I set about making the pinion cage.

The standard OE torque arm is famously keen to buckle:



so, having neatly fabricated my facsimile:



A close-up photograph of a motorcycle's rear section. The engine is a silver, horizontally-oriented cylinder. The swingarm is a large, black, cast metal component. The rear wheel is visible, showing a black tire and a multi-spoke hub. The motorcycle is resting on a brick-paved surface.

Fig. 10

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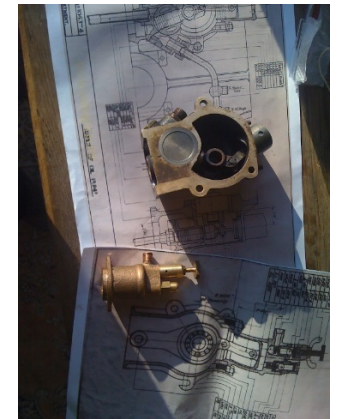
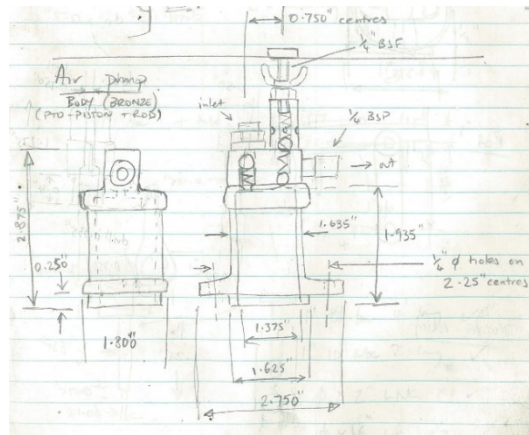


Engine:

There are few more therapeutic pastimes than building a large, good quality engine. Every part has light weight and directional strength built in, tolerances are precise and your detail care makes the difference between a rattling dog and a purring cheetah.

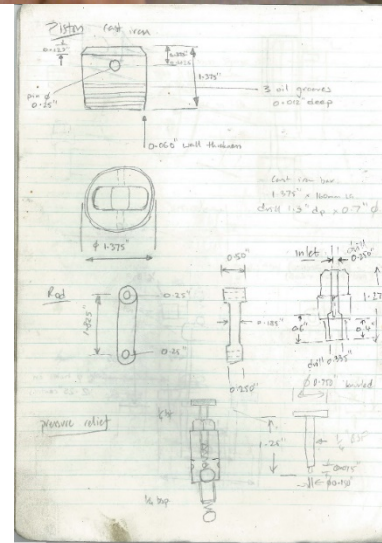
Starting without a crankshaft simplified some decisions. A new Farndon crank arrived, with standard size journals. So shell bearings were on the cards, meaning a new set of Arrow rods could work. And Arias pistons are just too good to ignore. With these internals there was every chance to build a cheetah for once, with patience and care.

There were still a few missing parts, but all fun things to make. I like the Vauxhall air pump. Ok, Bugatti achieved the same result with one moving part, but the Vauxhall pump is much more easily understood. The very helpful Andrew Sharp at local White Eagle foundry gave me some pattern making clues and produced an excellent body casting. A 4 jaw chuck is all you need to machine every dimension:

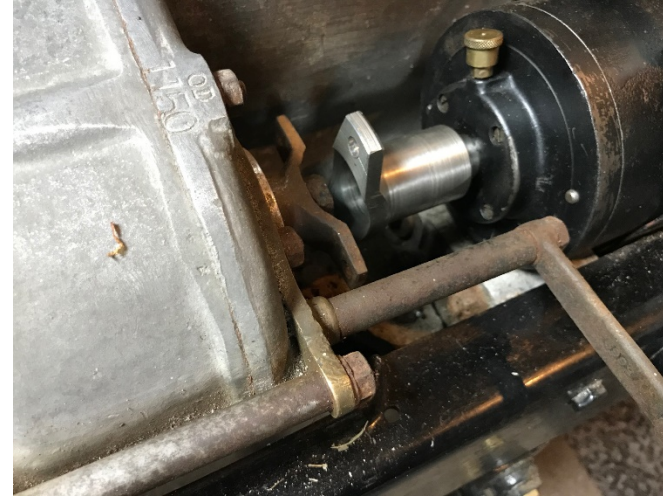
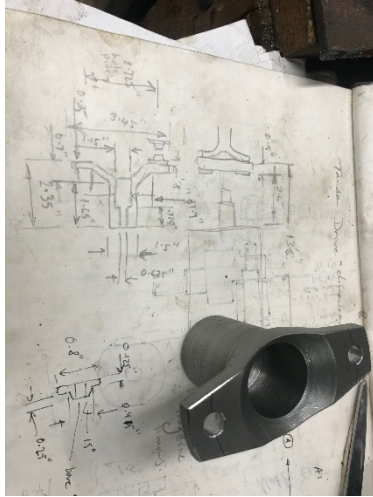


Model engineering suppliers stock the cast iron solid bar needed to machine the piston:

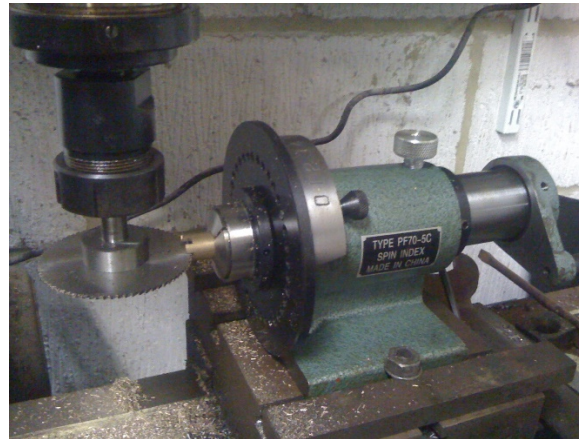
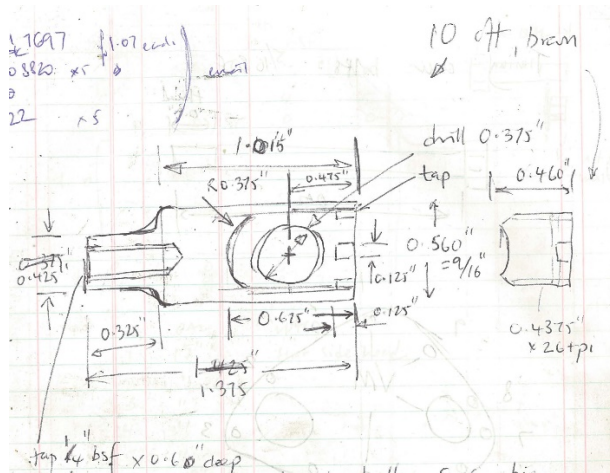
Which leaves the fun of finding the right compression springs to make it work. There are three, all slightly different and very light pressure.



One useful discovery was that CAV continued to make the tandem dynamo in a slightly shorter 2 brush regulated version. With a longer drive spider, it bolts straight on and gives a reliable, regulated 20 amps:



The little control rod ends are a Vauxhall trademark, and it would be lazy to use a proprietary substitute:



All good things come to an end, and eventually you run out of bits to make, and might as well bolt it together:



Time to think about the gearbox and pedals. For brakes, the plan was to combine the original rear rod brakes and the hydraulic fronts, via the very neat original compensation mechanism, the front lever pushing on the cylinder rather than pulling on rods. The pedal positions are all dictated by the clutch cross shaft, and thankfully the original toe board brackets and high radiator OE bulkhead all lined up. The gear lever quadrant was missing: a complex bit of pattern making, but as a one-off it lends itself to fabrication:



Body

At some point I had to bite the bullet that was the body frame. A good second hand ex-college Startrite bandsaw, a plane, a few chisels, a flexible steel to judge contours and a lot of tea are all it takes, plus a bit of patience. Starting with the fixed points – the bulkhead, chassis rails, screen and doors, the frame started to take shape with a lot of standing back and walking around. The radiator was away at Star Engineering, so a plywood mock-up was used to get the bonnet and scuttle in line. To build in strength, there is a steel frame linking the A posts and roof. The ash dashboard is integral to the frame, jointed and glued to the A posts and scuttle. It should prevent any scuttle shake.

Knowing very little about coachbuilding was a good starting point. I had assumed that all joints would be housed (with the smaller spars rebated into the longitudinals). That joints would be glued. That the wood should be cut to the right shape. When I finally got to see a bit of original coachbuilding, it turned out that none of that was true. Butt joints were held together with single screws, packing pieces all over the place and gaps wedged out. It does make me think that my effort will be decently strong.

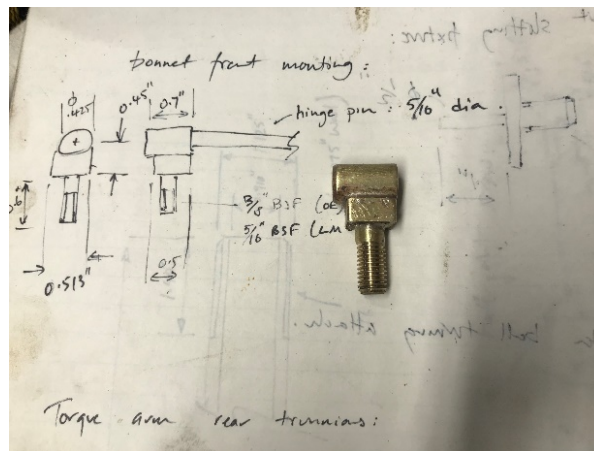




At this point, things stalled. I could cover the roof with some very forgiving 1.5mm aircraft birch ply, but panelling the frame needed the kind of machinery and learning time I couldn't justify. It seems there is a great shortage of the kind of skills needed, and it took me two years to find someone willing to take this on. Eventually the knight in very shining armour arrived in the form of Fintan Ellis (F H Ellis, Odiham). It strikes me that a good way to judge a coachbuilder is by how few welded joints they need to use, and this is a masterclass. Fintan is a joy to work with, and always comes up with a better solution than you had thought of.



Fintan timed it to perfection, and the body was back in the workshop in early summer, when the weather was right for coachpainting. Using the very forgiving Craftmaster paint (and their helpful advice), it only took a couple of days to get a decent finish:



Now it is February 2021. With a bit of plumbing I could be driving around, while I summon up the strength to teach myself the upholstery skills I need.

The whole process has been a great learning curve. There are very few parts of a Vintage car that need specialist skills; most of it needs just perseverance and lateral thinking. If there's a project in your mind, or in your shed, that looks like a big task I would encourage you to just take that first step, and learn to enjoy the whole journey. Just don't promise anyone "it'll be done by Christmas".