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# Classic Cars

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spirit in an early S1

Road-tripping in  
Jim Clark's S3



Magical dancer **Debbie McGee** and her long-term  
**Mercedes SL** love affair

Long-lost **1921**

**Skeoch** resurrected

**Land Rover Discovery**

7 steps to avoid landing a bad one



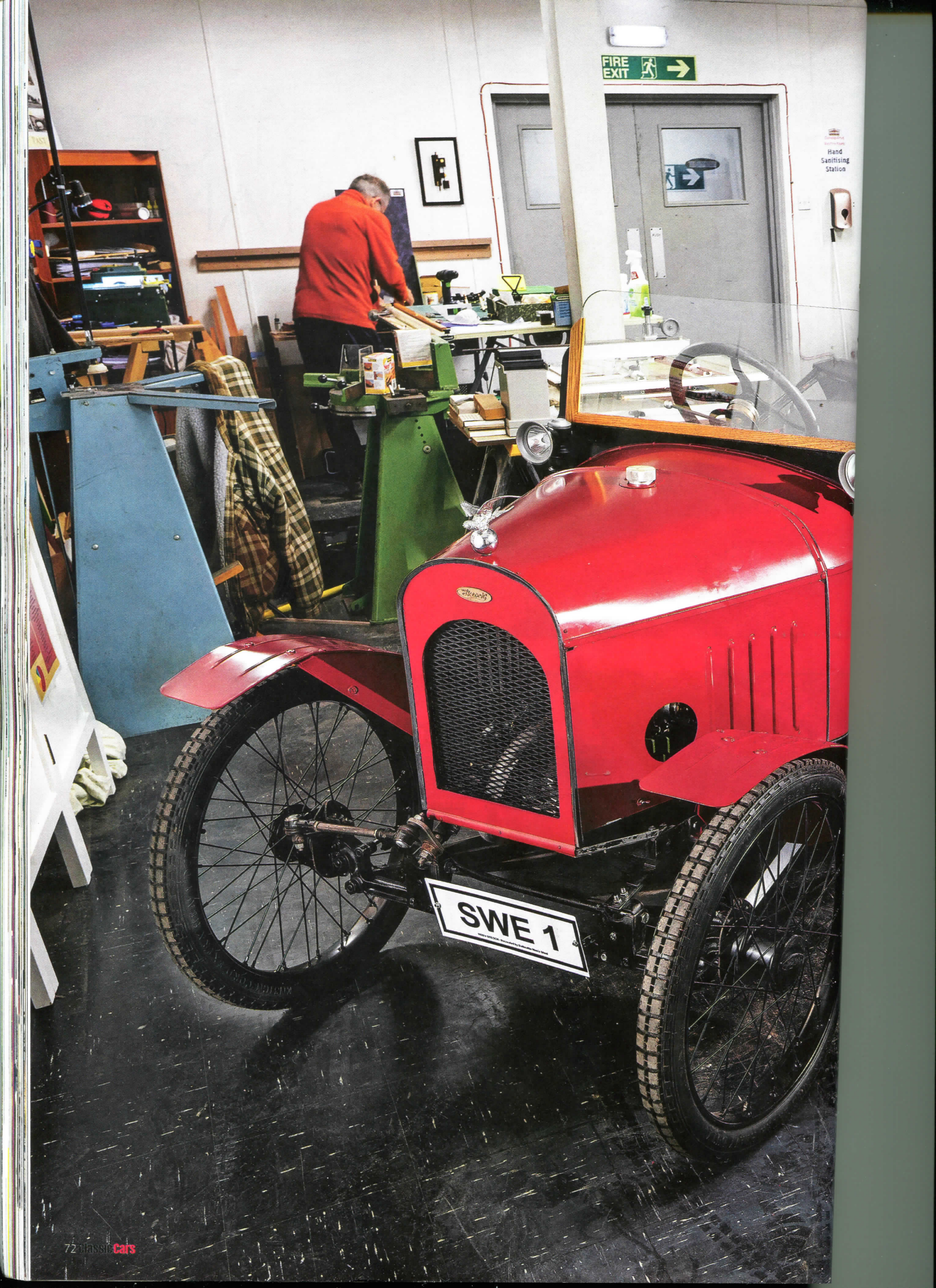
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FIRE EXIT →

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SWE 1





[Epic Restoration]

# 'All we had was the drawings and a badge'

A piece of Scotland's rare motoring history could have vanished forever without the resourcefulness and commitment of a unique body of men

Words NICEL BOOTHMAN Photos ANDY MCCANDLISH, DALBEATTIE MEN'S SHED



**T**

his is a restoration story like no other we've covered. Indeed it's rather more than a resto story – it starts with very little but a set of factory drawings and a few spare parts. Those blueprints were for the Skeoch, which for non-Scots is pronounced 'skeech', with a Caledonian rasp on the ch-sound. The marque has one of the briefest entries in Nick Georgano's *Complete Encyclopaedia of Motor Cars*,

'This was a very light cyclecar powered by a 348cc single-cylinder Precision engine. It had a Burman two-speed gearbox and single-chain drive. Not more than 10 were made.'

The reason so few were completed is that James B Skeoch's works in Dalbeattie, Kirkcudbrightshire burned down in December 1921, destroying the workshop and six of the cars. Coming the same year as the car's debut at the Scottish Motor Show in Glasgow, this put paid to the business for good. Even the few Skeoch cars that survived the fire were soon lost to history.

Decades later, James Skeoch's son, Ronald, developed a wish to resurrect one example of his father's cars. He acquired an original Beardmore Precision engine, a Burman gearbox (from New Zealand), replica wheels (from the USA) and a steering column. Sadly, Ronald Skeoch died in 2017, before any real progress had been made. It was when James Skeoch's granddaughter Fiona Sinclair and her elderly parents Archie and Betty (Ronald's sister) were clearing Ronald's property that they came across the car parts. Not only that, they found some original linen drawings for the car in the attic, original photographs in a trunk and several radiator badges. Fiona felt inspired to keep her late uncle's project going. But how?

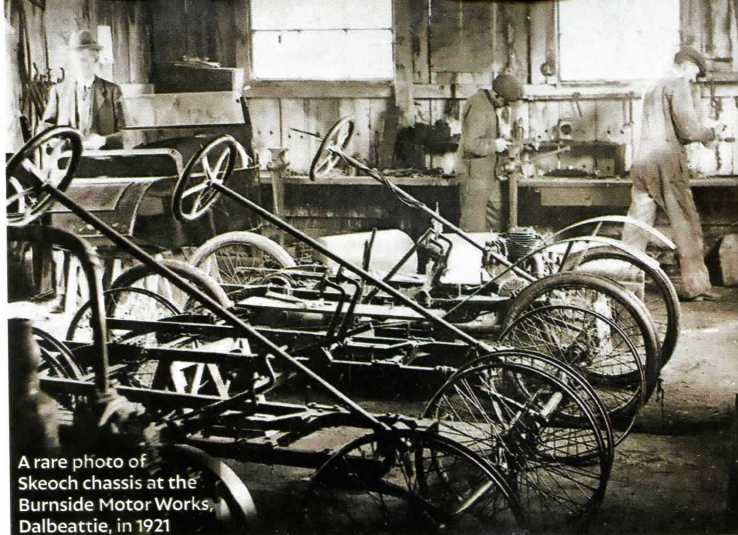
### The men for the job

Fiona contacted Martin Shelley, a cyclecar enthusiast who had assisted Ronald Skeoch in tracking down the components that were gathered before Ronald's death. She sought his help and advice in bringing the project to fruition, and while Mr Shelley felt unable to take the project on personally, he suggested the perfect solution. He had seen a piece on BBC Scotland about the Dalbeattie Men's Shed winning the UK Men's Sheds Association 2017 Shed of the Year.

The UKMSA supports hundreds of such organisations around the UK, each one offering free access to tools and workshop spaces for local men, with a particular emphasis on helping those who are lonely or isolated. That there was such a place – and a large and thriving one at that – in Dalbeattie, where the Skeoch was born, seemed like fate.

Geoff Allison is the Secretary of Dalbeattie Men's Shed and would become deeply involved in the resurrection of the Skeoch. 'We met with Fiona and worked out how to move forward,' he says. 'In the end, we agreed to fund the work and Fiona agreed to donate what the family had from Ronald Skeoch's collection, and also various parts from a Riley 9 belonging to her father that could be sold to start the fund-raising.'

In February 2018 the Skeoch project, such as it was, arrived at the Shed in Dalbeattie and Geoff and his colleagues began to make plans. The Shed, by the way, is much more than that – a large section of an old factory kindly made available by owner Alan Mazza. Its numerous rooms and workshops have space for



A rare photo of Skeoch chassis at the Burns Motor Works, Dalbeattie, in 1921

dozens of 'shedders', which is just as well, because the size and scope of the task ahead of the Men's Shed was out of scale with the tiny car they were going to build.

'There were nine of those lovely linen drawings,' says Geoff, 'but they didn't describe everything. What was missing included details of the steering, the axles and the brakes. Our engine was short of a magneto, a carburettor and parts of the oil distribution system. The gearbox was missing a side casing and a starter sprocket and arm, and the four wheels turned out to be modern pressed-steel handcart wheels that didn't look like they could support the load, let alone take any drive.'

### A firm basis

The basis of a Skeoch Utility was as simple as could be – two 1in x 1¼in pieces of ash, plated on the sides with 3mm mild steel to make a pair of chassis members. Drawings of the side frames were reproduced and sent to local firm Paterson Engineering so that the steel plates could be laser-cut. Before the steel parts arrived in June 2018, the Men's Shed had a morale-boosting visit from another ageing Scotsman, comedian Billy Connolly. Robin Gilchrist, Chairman of the Men's Shed at that point, was one of those present on the day. 'He was filming a television program called Made in Scotland and he really seemed to enjoy having a look round, meeting everyone and seeing the range of things we got up to. Geoff showed him the Beardmore engine resting on the wooden chassis to mock up its position, which already looked like a bit of progress.'

The team assembled the two rails and crossmembers with their steel side plates, which allowed them to confirm the design of the rear gearbox support, chassis drop arms and other bodywork supports. Next, the bulkhead, 'We started gathering suitable hardwood to recycle for this and the flooring, mainly from unwanted old brown furniture,' says Geoff.

Meanwhile, investigations began into the state of the engine and gearbox. But before that was very far advanced, the project enjoyed one of its periodic leaps forward. New Shed member Dave Higginbottom brought computer-aided engineering experience to the team. He set about creating a virtual Skeoch from the drawings and even converting the aluminium casting drawings into .stl files, the input needed for stereolithographic CAD software. Now, various ancient parts could be 3D-printed or CNC-machined.

### Saveable... or scrap?

Donald Williamson, Chris Worley and Tom Parker stripped the little air-cooled two-stroke engine and the gearbox. Would they

### Low Point

**'The first covid lockdown – it closed the Shed from March 2020 to August 2021. It isolated our members, and apart from a few projects which we transferred to members' homes, it stalled our activities' – Geoff Allison**





One of the original Skeoch Utility cars in a period publicity shot



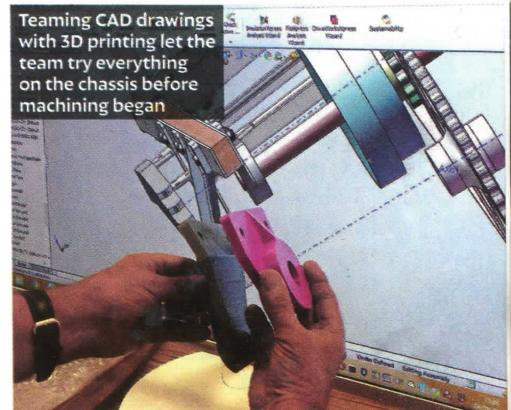
Geoff Allison shows us one of the hundred-year-old linen drawings



Chassis with bulkhead made from old furniture



Geoff shows Billy Connolly the engine



Teaming CAD drawings with 3D printing let the team try everything on the chassis before machining began



After a full stripdown, the Beardmore Precision engine revealed little wear



The engine as it arrived

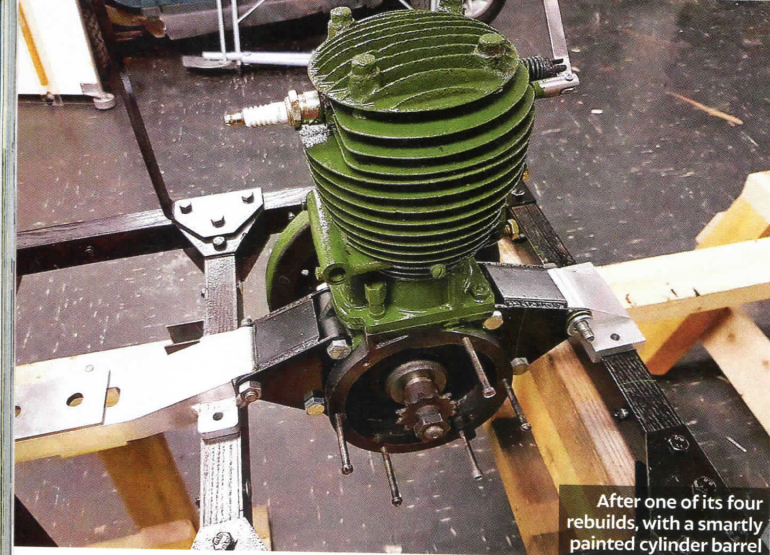


The gearbox comes to pieces – sturdy but partly seized

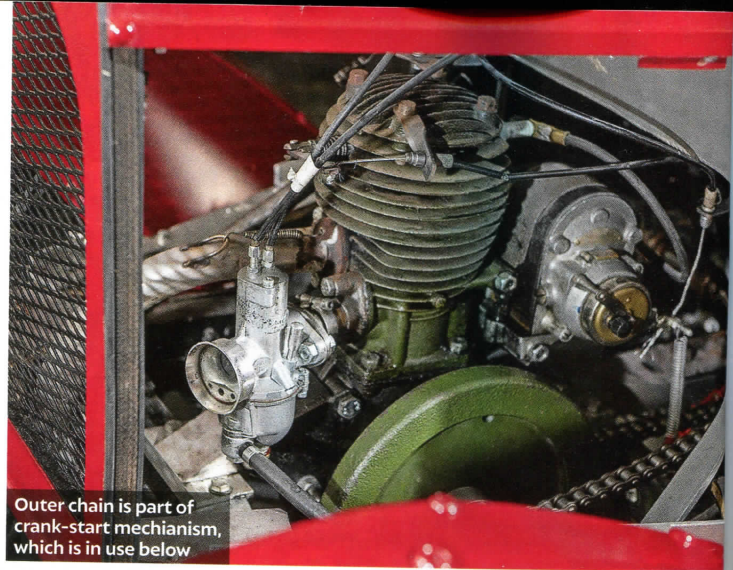


Room for two only – Skeoch's wheelbase is less than six feet





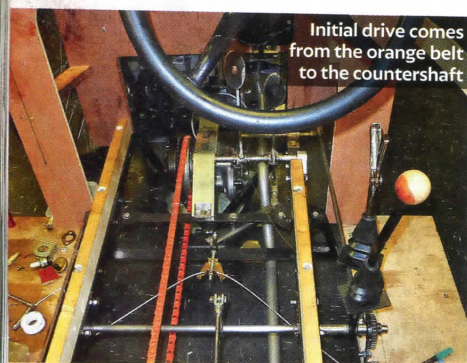
After one of its four rebuilds, with a smartly painted cylinder barrel



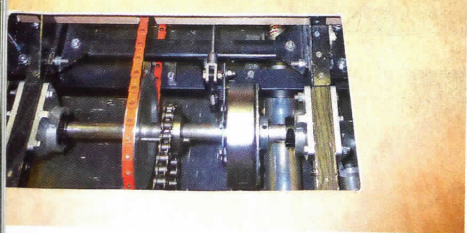
Outer chain is part of crank-start mechanism, which is in use below



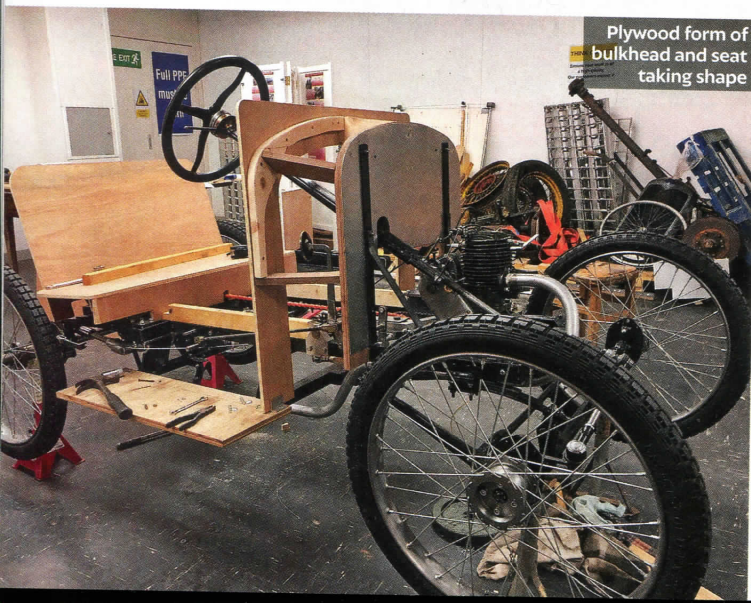
Tom Parker assembles the countershaft



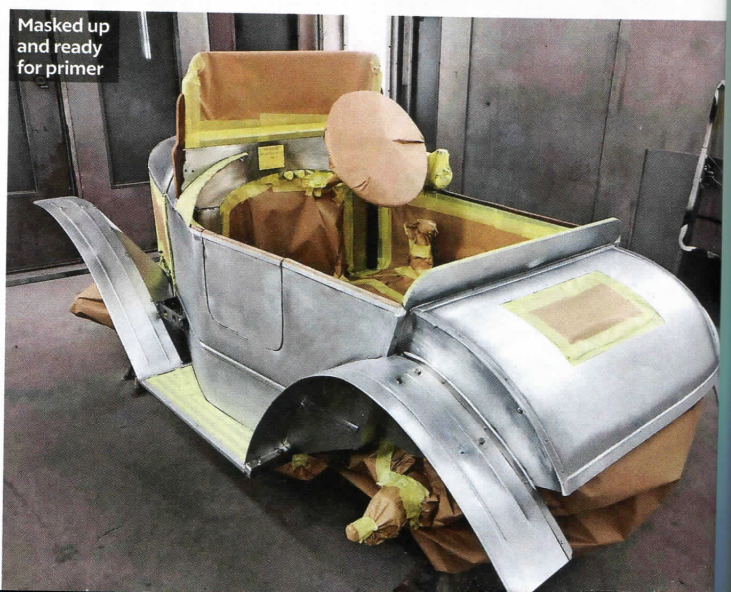
Initial drive comes from the orange belt to the countershaft



Donald cranks while Chris controls hand throttle and ignition advance



Plywood form of bulkhead and seat taking shape



Masked up and ready for primer



even be usable? The first signs were surprisingly positive. 'The piston rings were seized but they freed up fairly easily,' says Donald. 'The bores themselves were almost perfect. But we were dubious about the seals on the crankcase, so we decided to use curved spring washers on each end of the crankshaft to hold the seals in place... sourced from China in the end.'

They found that the piston and connecting rod were sound enough to re-use, and they turned their attention to the ancillaries. 'We found Dr Keith Dennison who rebuilt a small BTH magneto of the right type, and we tried various carburettors, ultimately settling on an Amal,' explains Donald. The gearbox would offer more of a challenge.

'The casing was broken and the internals were seized,' Donald continues. 'The kickstart was missing - we assume the engine probably originated in a motorcycle - and we needed to replace an input shaft. There was also no gearlever, so I had to make a toothed end to the selector on my lathe at home.'

Donald is a self-taught engineer, who started 28 years ago by building a functional miniature engine. Almost three decades on, his skills allowed him to dismantle this unfamiliar gearbox with its concentric shafts, polish up the bearing surfaces in his lathe and fit new roller bearings sourced from a local firm called Galloway Industrial. The worn main gearbox pinion was taken to Alan Young Engineering for precision metrology before machining a replacement. Donald taught himself to braze and to weld aluminium, so he was able to fix the gearbox casing too.

One minor battle was lost. The Pilgrim oil lift, the primitive method by which Beardmore lubricated the engine's solitary gudgeon pin, uses a chain from the oil bath at the bottom of the engine running up to a spray bar, carrying oil with it. Though the team replicated missing parts, it's not a brilliant system by design. 'We couldn't get the metering right,' says Donald, 'so we decided to use a 50:1 addition of oil to the petrol, which gives enough lubrication.'

Mounting the mechanical components in the chassis became a sophisticated marriage of old designs and new technologies. The drawings of the mounts, now turned into .stl files, were 3D printed and offered up to check for fit. The 3D prototype and the files in question were then used to mill billet aluminium.

### Running up some running gear

With the drawings for the axles, steering and brakes absent, the team from the Men's Shed had to find suitable substitutes. Early in the project, they'd heard about a local man with an Austin Seven Special who had a few parts that might suit. That man was Tom Parker, who himself became so interested in the project that the Skeoch ended up in his garage during the first covid lockdown. Before that it could be transferred there, the Sheddies had to give the little car something to roll on.

A front axle should be straightforward enough - a solid beam that would be mounted on quarter-elliptic springs on the ends of the chassis members. The purchase of a Ford

Model T front axle and steering column soon showed that the Ford axle would be far too wide, so it was back to an Austin axle donated by a friend of the project called Dave Dickinson. But the Model T's column worked nicely. 'It has planetary gears in the steering wheel boss that give a 4:1 reduction,' explains Geoff Allison. 'This means we didn't need a steering box. We cut the end off the shaft in the right spot and turned a taper onto it, to take the steering arm that links to the track rod.'

They found that the Model T hand-throttle and advance-retard ignition controls could both be used in the Skeoch too, solving several problems at once. The back axle, however, was more complex. There are two of them - the first is a cross-shaft or countershaft driven by a long belt from the gearbox. This has a small sprocket on it that in turn drives a large sprocket on the rear axle proper, via a chain. Tom Parker describes what they built, 'Within the drive pulley on the cross-shaft is a transmission brake drum, which is operated by a lever we found on a Model A Ford van. The drum, like the two contracting-band drums on the rear axle, came from a place we found online

in the USA that makes go-kart components.'

The drillings for the cross-shaft's position, mounted in bearings in the chassis rails, had to be extremely precise, because there's no adjustment designed into a Skeoch to compensate for varying belt and chain lengths. 'Get the orange drive belt tight, then increase the chain length by 10%,' says Tom, explaining the amount of slack they found they needed. The axle shafts themselves were donated by a timber machinery company called Jas P Wilson, whose apprentices made them in very hard and expensive EN16T steel and machined the ends to fit the hubs and bearings - one of the many jobs made easier by Dave Higginbottom's invaluable digitised drawings.

The wheels themselves came from a motorcycle wheel builder in Fife, Barrie Brown, and were hand-made to suit and shod in 26 x 2½in Ensign tyres. The springs, once again made to order, came from Jones Springs in Birmingham at £457 for four. In May 2019, a year after Billy Connolly's visit, the chaps had the engine mounted in the chassis and managed to get it up and running for the first time by spinning the flywheel.

Tom explains, 'We'd had the engine apart and back together four times and the gearbox twice or three times by then. So it was good moment when it came to life.'

As the Skeoch came together, the team devised a starting mechanism that allows a crank-handle start, via a chassis-mounted chain wheel, a chain and smaller chain wheel attached to the flywheel by a sprag bearing. Sounds complex but isn't - just picture the usual starting handle procedure, but with the handle inserted behind one front wing rather than under the radiator.

### Clothing, cladding, completion

After some of the challenges of the mechanical side of the project, Geoff's description of the body construction makes it sound straightforward. 'Mike Sandes, a Shed member

### High point

**'At Annandale Distillery, a building that I'd restored. It was my birthday and it was the best birthday present ever to see my Mum being driven around in the Skeoch in the company of a group of amazing, inspirational men' - Fiona Sinclair**

### MY FAVOURITE TOOL



#### My Favourite Tool

#### The Shed's 3D Printer

'Computer design and manufacture greatly assisted this project,' says Geoff Allison. 'We soon discovered that we had an incomplete set of manufacturing drawings, and photos of cars in build and complete also confirmed that the existing drawings were aspirational - the cars were not built precisely to them. Recreating the car in CAD allowed us to fill in the gaps and see where designs were impractical. Output files from computer-aided engineering provided the basis for CNC machining, it also allowed us to 3D-print components to check for clearance and fit, cutting out iterative manufacture. We are now 3D-printing a 1:3 model for display in the Town museum.'





Spindly wheels and axle  
- 'light car' or 'cyclecar'?  
Either is appropriate



Only two pedals?  
Throttle is lever on  
the steering boss

who's a furniture maker, made pieces in ply and pine to drawings from Dave Higginbottom's files, and Tom Parker and Si Price covered them in aluminium. Mike also made the original ash pieces for the chassis! What that doesn't reveal is that Tom was working on the car's body either by himself or with one socially-distanced partner in those strange, uncertain months in 2020 when the first lockdown came into effect. The guys took a swage roller, a folder and a wheeling machine to Tom's place and manufactured what they needed there. Donald made the bonnet louvres by copying the ones on his barbecue.

The seats were also cut and constructed in ply by Mike Sandes, then trimmed with foam cushioning and hide by Alan Knott. In October 2020, when almost complete but still in bare aluminium, the car was filmed for an appearance on an ITV show, *Border Life*. It could have been ready for the January 2021 centenary of the Skeoch's original launch at the Scottish Motor Show, but the second lockdown spoiled that party. Still, it was soon painted in a cheerful pillar box red by Sanderson Accident Repair just four miles away and back in the shed in February.

Finishing touches included a lovely bird mascot of a type used on a Skeoch in period, sourced on eBay, and an old acetylene lamp on the rear. Those at the front are Chinese replicas built for vintage push-bikes, loaded with LEDs. The Klaxon horn (donated by Dr Neil Oliver) is on the side, where the driver's door would be if there were one. 'The original badge adorned the top of the grille and a numberplate was fixed on, showing SWE 1 - a registration number from an original Skeoch, but now on a 2019 Range Rover,' says Geoff.

At last, after more than three years of pandemic-defiant effort, the Skeoch was ready to show off.

### Credit where it's due

It made appearances at a few static displays during the summer of 2021 but it was an event at the Annandale Distillery in August that really felt like the culmination of all the work. Fiona's mother, Betty Sinclair, finally had a ride in a Skeoch as she got her first taste of what her father's little cars would have been like.

Registering the car for the road seems unlikely, because it would have to meet the requirements for an IVA test, like a new kit-car. But Tom and others have experienced it on private roads. 'It seems pretty good on the move,' says Tom. 'It'll pull away in high gear and it might do 35 or even 40mph. It's not that noisy and seems quite smooth at higher revs. We were trundling around all day at Annandale.'

The Skeoch's build was funded by a remarkable list of donors numbering almost 30 and including local companies, charitable organisations and even distant members of the Skeoch clan as far away as Canada and the USA, all of whom are credited on the Shed's website - look for Dalbeattie Men's Shed. Geoff Allison reflects on a project that's not only resurrected a piece of history but has grown and strengthened the Shed, 'To get a challenge like this, especially for a group of guys this age from the make-do-and-mend generation, has been great. We've built all sorts, from puissance walls for show-jumping to a trebuchet that throws bowling balls, but this has been a bit special. We're restoring a Raleigh Autocycle that came from Archie Sinclair's garage with the Riley 9 parts next - there's always something to do.'

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