Dick Burzi meets Sid Vicious... Paul Preston's 150bhp Elf interpretation is Mini punk posh. Those grille piercings are swaged, to increase panel stiffness.

BLIMEY O'R1LEY

Having rebuilt Minis for himself and for others for over 20 years, professional Mini builder Paul Preston wanted to try a Riley Elf for the first time but it had to be a bit different.

Words and photos: Jim Jupp.

Elfs and Hornets are an interesting part of the Mini story and, for me, they really stand out among Minis with their quirky looks and retro fins. It's what makes them cool to me. But I think it's safe to say the Elf and Hornet fraternity err towards the unmodified or slightly tweaked. There have been notable extreme exceptions to this over the years and the Elf you see here has been added to that list, being the first ever bike-engined Elf we've seen.

So why did Paul decide to take the Elf route? "I'd never done an Elf before and saw it and it was the right sort of money. I thought it was going to be just a shell, but it was in fact a complete car, but in bits. So I bought it, but then didn't know what I was going to do with it, so stored it for six months. I started to get ideas on what I wanted to do with it, including a retro theme. But projects are never really finished are they? There are always new ideas and you're always onto the next."

Not much is known about this car prior to its previous owner. "It had not been taxed since 1983. It belonged to a mate of mine, who's an RAC man."

Paul's love of Minis goes back to when he was 17 years old, with a 1275 GT as his first car, and he's owned a large variety since then, including Vans and Pick-ups. He's been working on Minis for over 20 years now and he's very nostalgic about them. "They put a smile on your face when you drive them. They take you back to where you first started off." His business is all about restoring Minis. In fact, he worked on Martin Grewcock's modified Rover Cooper, which we featured in last month's *MiniWorld*. "We've done a lot of original restorations and it was interesting doing something a bit different."

This Elf is his own car and has been built purely for him. "I've always liked Elfs when I've seen them at shows and I knew what I could do with one. I just wanted to build something a bit different really. It wasn't originally going to have a bike engine conversion but I built a Mini with a bike engine for a customer and decided

to do the same as a show-piece." The bike engine conversion he's referring to is the LynxAE Yamaha R1 engine kit.

The proprietor of LynxAE, Jon Lee, is well known for his motorbike-engined track cars so was it Paul's intention to build this car as a race car? "No, what we've tried to do is make it period looking, with the seats and cage, but have some modern things such as the bike engine, as a twist, and keep it road legal and able to take it to the local shows. We may use it on track days."

Once the direction for the project had been decided upon the shell was medi-blasted and the relevant panel work carried out. Media blasting is Paul's preferred route for prepping the shell, as he explains: "As long as you've got someone that knows what they are doing with it, it's OK. There are some people about that will just blast the hell out of the shell and distort it but we've never had a problem with our guy. As long as you're gentle it's OK, as with anything really. We've never had one dipped, but as long as it turns out as you want it, it's all good." In certain cases Paul will just have the car 'striped' which means having it media blasted only on seams and panel edges. Panel work has been extensive, with a complete front end being required, along with door skins, heelboard, doorsteps, sills, lower rear quarters, front floors and numerous small repairs.

Some Elf and Hornet panels aren't available new, such as the distinctive rear fins, so how hard was it locating the Elf/Hornet metal? "You can struggle. M-Machine do the front panel but we needed to modify it anyway for the conversion so used a normal Mini front." You may have noticed the amalgamation of a Mini style grille and the Elf's vertical one. Normal airflow into the engine bay on an Elf/Hornet is mainly central but the LynxAE kit, which retains a side-mounted radiator, can also be supplied with a ducting system to feed the radiator. With a conventional Elf/Hornet front panel this may not have given the cooling system enough airflow as that side would be pretty much blanked off, so this grille has been devised, with a matching pattern of swaged holes on the driver's side.

Paul explains how they prepped the Elf for paint. "We mounted it on a rotisserie so we could seam seal it and spray the car underneath with an epoxy primer, stone-chip and paint. We then got it back the right way to paint the outside. We chose Speedwell Blue and were in two minds about giving it a white roof, but decided to go with one colour. There are always new paint processes coming out which we like to test to see what works." Even with new paints Paul prefers to work with isocyanate based two-pack paint.

Sourcing bike engines is quite easy. "We know a guy who breaks bikes so we went to him and saw the engine running and then totally stripped it. We bought the bike conversion package from Jon Lee. It drops straight over the engine and it's ready to install. The only thing we modified, other than the jetting, was adding paint to the top half of the engine and a new clutch."

Yamaha R1 instrument pod housed in Cooper-esque oval. All of the Elf's original '60s urban living room interior has been discarded.

Jetting was modified with a Dynojet kit to tune the standard early Yamaha R1 carb engine. "I fitted the kit to give it a bit more power and smooth it out, as the fuelling was a bit lean, having come straight out of a bike and into the car. We could have run the more powerful later model, with fuel injection, but you have to run a Power Commander with that, so we just kept it simple and kept it to R1 carbs, but you need to use a Dynojet kit for it. This is possibly the cheaper option and easier."

Fitting a non-standard engine might entail numerous problems. So did Paul have any while fitting this engine? "We did have an issue as we had no neutral light, and that was just a dodgy neutral switch, which means the ECU won't let the engine start."

The stainless exhaust manifold, which comes with the LynxAE kit, sits neatly behind the Elf grille and is beautifully TIG-welded. The manifold doesn't retain the Yamaha EXUP valve. It is linked to a »

OWNER PROFILE

Paul Preston

Occupation: Mini restorer
Hobbies? Minis!
If you won the lottery? Buy more cars!
Fave food? Steak
Fave TV? *Chasing Classic Cars*

"With this much power you still get torque steer. When it comes into the power it really pulls."

Fresh out of the box. Paul has set up the suspension but will be taking it back to LynxAE to corner-weight the car to achieve optimal traction.

Maniflow 2-inch pipe and a centre-exit single-box exhaust. It's not excessively loud and sounds pure bike. It's not the kind of sound you would expect from one of BMC's posher Mini derivatives. Which is the point. On start-up the ECU looks for the EXUP valve, which is a small servomotor, so it has been retained and mounted behind the dash and kept within the loom, so the ECU can still test for it and won't throw up an error code.

We have featured other cars with the LynxAE kit before, including one of Jon Lee's first kits in a Cooper S. As with Graham Thorn's S, the idea of not having to modify the bodyshell was a key consideration. "It drops straight into the existing subframe, with no real modifications to the engine. You could take that back out and put an A-series back in, which is why we liked it really. We have beefed up the subframe but you don't really need to. Only a small nick needs to be taken out of the subframe front for the exhaust to clear."

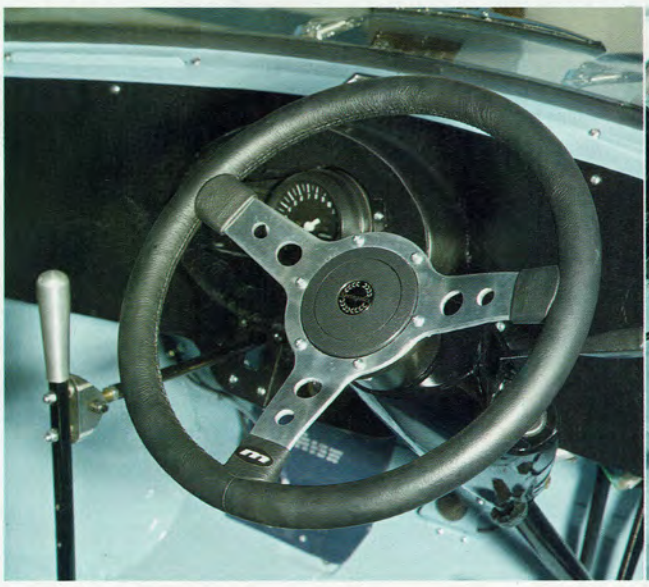
The Elf's Hydrolastic suspension has been replaced with dry cones, converting the original front to dry and replacing the rear subframe. "We've retained the wet top arms, as you can get it to sit lower, and just drilled out the damper mount hole. We've had the suspension components shot-blasted and painted red. The subframes are silver, with top-coat and clear." Polyurethane bushes have been used where possible too.

The front brake pipes now split into two equal length pipes and, where conventionally the single brake pipe would be run across the front of the subframe, this would not be such a good move for this set-up, as the exhaust manifold sits close to the front of the subframe, as Paul explains: "If we ran it over the front the brake fluid would boil so we've centred it behind the dash and run it down either side. So if we do hit the brakes hard then both sides should be quite equal." The same brake pipe configuration could have been achieved within the engine bay, but it didn't meet with the aesthetic requirements. "What we wanted was to have the engine bay as clutter free as possible. It was quite tricky and if we have to take anything off it's going to be a nightmare," he laughs. Where possible, brake and fuel pipes have been run inside the car.

The front brakes are 7.5-inch grooved discs with 4-pot KAD calipers but are they up to the job? "It's as good as it's going to get. You could never drive it to its fullest extent as it would be uncontrollable." Paul is used to riding motorbikes but how does using the clutch compare? "It's a different discipline. It's harder to drive than a normal Mini, because of the clutch, and it's hard to get the balance right with the revs and needs practice. It's hard to pull away without wheel spin. It's about balance."

To help reduce torque steer, whilst putting down the R1 engine's 150bhp onto the road with front wheel drive, Paul has fitted the Elf with billet steel drive shafts, which are nearly of equal length and weight. "With this much power you still get torque steer. When it comes into the power it really pulls." The Elf is also to have its corner weights adjusted to try and dial it out further.

The Elf's shell has been stiffened with the help of a Safety Devices bolt-in cage but this has been further enhanced by welding it into place and gusseting into such areas such as the A-pillars. "The only thing we couldn't get was somewhere to mount the harnesses where we wanted it, so we fabricated our own bar for that." »



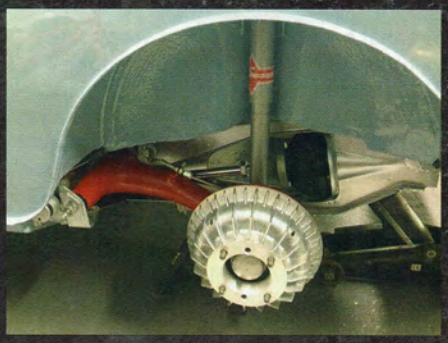
"I've never been a fan of centre-exit exhausts but they look right on a Riley Elf, admits Paul."

The build

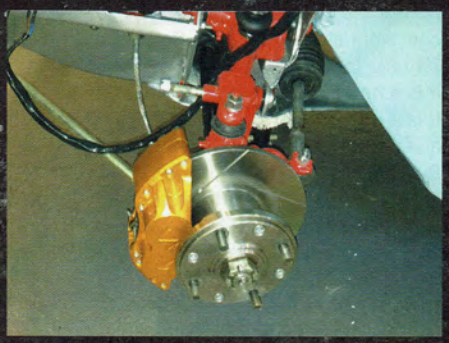
Once the Elf's bodyshell had been media-blasted, work could commence on replacing the sills, etc.

By now it was painted inside and out and sitting on a rolling bogie with the Safety Devices cage fitted.

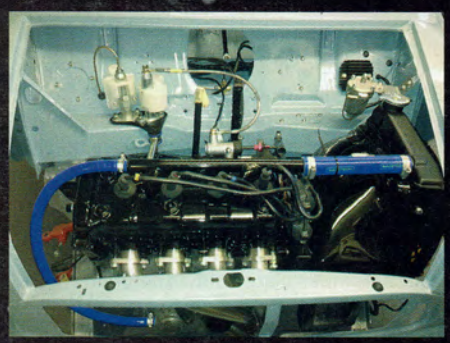
Freshly refurbished suspension components and conversion kit parts painted and ready for fitment.



Now sporting a dry rear subframe with adjustable trumpets, MiniFin-style drums and dry radius arms.



The non-servo front brakes have been beefed up with KAD 4-pots on 7.5-inch grooved front discs. The Hydrolastic top arms have been retained.



Yamaha R1 engine sits in the LynxAE cradle which, in turn, sits neatly inside a Mini front subframe. Inner wing removal is not needed for the conversion.

"It's not until you try and source bits for them you realise how different Elfs are."

Even with the Elf's cavernous boot space the rear bulkhead has been used to store the original Dunlop D1 spare wheel, making it into a feature. The battery has also been moved into the cabin. Dunlop D1s are becoming increasingly popular but centre caps are like hen's teeth so Paul's mate, Matt Slator, has machined some aluminium centre caps with the D1 logo. It looks very trick. "We refurbed the D1s and chose the best tyres we could to try and get some grip. I didn't like the aftermarket plastic centres so Matt machined them up for us."

The boot's floor has been replaced with a removable floor panel between the original wheel arches so the suspension can be adjusted in situ. "It makes setting up the suspension more accurate, as you're not continually jacking it up and altering it." To do so does require the removal of the baffled alloy fuel tank.

Even though the car was very complete when he got it, not that much has remained Elf. "We really struggled to find parts for the Elf so we've adapted." The rear lights are not Elf/Hornet items. They look very much like the originals but with a flatter face. They came with the car and are labelled 'Carello' and were originally from an Innocenti Morris IM3. The boot badge has also been replaced with a number plate light. "The grille we had was really bad but we did get one. Badges and bumpers seemed non-existent, which is why he didn't fit any bumpers. Door handles are different so we used Mini door handles turned upside down, which was a little trick. As we find the right bits, though, we'll swap them over." The removal of the waist level chromework was always planned. The parts they have picked up to date have been new or new old stock so no re-chroming has been needed. "It's not until you try and source bits for them you realise how different Elfs are."

As you might expect from this Elf's retro racer style, the car's original half-leather interior and walnut dash are a distant memory. Paul made his own dash, which is covered in crackle-effect vinyl, to continue the retro race styling. Mounted on it is a Yamaha R1 gauge which was easily hooked up to the bike loom. A replacement Autosparks loom was then used in conjunction with the Yamaha loom. "We've lengthened the loom too, so it can be hidden away. With fuse boxes, regulators and relays all behind the dash." Below the dash a bladder type screenwash container sits alongside a floor-mounted switch. You could be mistaken for thinking it is a headlight dip-switch but, in fact, it is a reverse button, which engages a starter motor to give a reverse gear. Better than having to get out and push!

Paul modified the kit's gearshift, which passes through the custom dash, to link to the sequential R1 gearbox. The R1's wet clutch has also been upgraded, to cope with the increase in weight, to a Barnett aftermarket kit. With bike engine conversions people often talk about clutchless gear changes. "You can hammer it into gear without using the clutch, but I don't like doing that." It doesn't feel mechanically sympathetic, even on a motorbike, but LynxAE actually does a computer-controlled gear-change kit that allows you to do this safely but that obviously comes at a price.

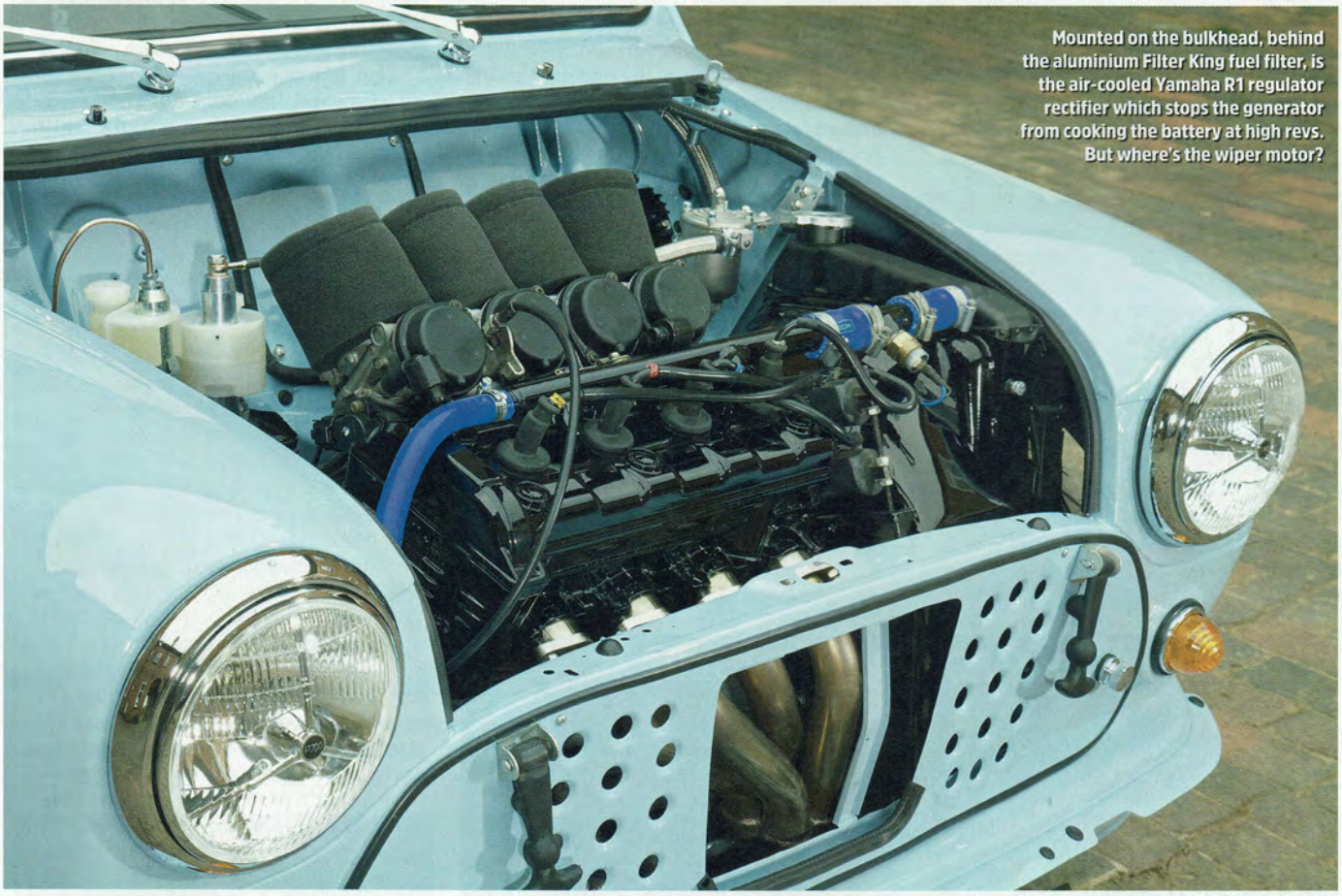
So what's it like to travel in this Elf, particularly because of the stripped out interior and lack of sound-deadening to stop the resonance? "It's not as loud as other bike kits but it is loud." Paul took me for a short drive and it doesn't seem as loud as a racing A-series with a straight-cut gearset.

Modifying a car, particularly to this impressive level, isn't for everyone. "You don't intend on upsetting anyone, you just build what you want at the time." Should he ever want to return to the an A-series then the fact that the LynxAE kit is not destructive of the car's bodyshell would make it a straightforward task. We can't see that happening any time soon as he's rightfully happy with his highly modified Elf. "It's what keeps the Mini scene going anyway. And the next generation of people coming into it to keep the Mini alive." And it's true, you've got to have something fresh coming into the scene every so often.

Paul would like to thank: "Julian at Mini-Its; Jon Lee at LynxAE; Brian Partridge; my wife Julie and daughter Sadie for support and endless tea."
***MiniWorld* would like to thank:** Stanford Hall in Lutterworth, Leicestershire for the photoshoot location (+44 (0)1788 860250 www.stanfordhall.co.uk).

There's no external fuel cap so the boot needs to be opened for a fill up.

Refurbished original Dunlop D1s are fitted with detailed custom-made aluminium centre caps.



Mounted on the bulkhead, behind the aluminium Filter King fuel filter, is the air-cooled Yamaha R1 regulator rectifier which stops the generator from cooking the battery at high revs. But where's the wiper motor?

TECHNICAL SPECIFICATION

Modified **1968 Riley Elf Mk3**

Engine: Yamaha R1 998cc engine (1998) . Yamaha OE carburettors with Dyno-Jet upgrade kit (year-specific) . standard R1 water pump . ITG foam air filters . Mini Spares 2-core radiator . electric cooling fan . LynxAE air ducting system . Malpassi alloy Filter King fuel filter . standard R1 ECU . LynxAE stainless steel 2-inch-exit exhaust manifold . Maniflow mild-steel, 2-inch single-box, centre-exit exhaust system . R1 motorbike coil pack . NGK Iridium spark plugs . Facet electronic fuel pump . Yamaha voltage regulator/rectifier . **Gearbox:** Yamaha R1 6-speed manual sequential gearbox . limited slip diff . Barnett uprated wet clutch kit . electric motor reverse . LynxAE gearshift . **Brakes:** AP Lockheed single-circuit brake master cylinder . stainless-steel-braided Goodridge brake hoses . KAD 4-pot billet calipers . 7.5-inch Tar-ox grooved front brake discs . Mintex brake pads . MiniFin rear drums . Mintex rear brake shoes . OE pedal box . twin-cable handbrake . internally-run brake pipes . pedal-mounted brake switch . **Suspension:** 4-bolt wet manual front subrame (seam-welded), converted to dry . solid front subframe mounts . rubber cones . Hi-Lo trumpets . adjustable tie bars . Paul Preston Minis brace bars . polyurethane bushes . KYB gas dampers . dry rear subframe . dry rear radius arms . **Wheels/Tyres:** 5x10-inch Original Dunlop D1 alloys . Yokohama A032R 165/70R10 radial tyres . **Interior:** Stripped out interior . Securon 4-point harnesses . relocated wiper motor behind dash . Safety Devices bolt-in 6-point cage . OMP Silverstone Classic front seats . R1 motorbike instrument pod . Mountney steering wheel . floor-mounted dipswitch . relocated switches . vinyl-covered door cards . LynxAE gearshift mechanism . Mini, Elf door furniture . bespoke crackle-effect vinyl-covered dashboard . **Exterior:** 1968 Mk3 Riley Elf bodyshell . Speedwell Blue two-pack paint (BU1) . partly de-chromed . bumpers removed . replacement panels: front panel (now Mini), door skins, door bottoms, doorsteps, outer sills, inner sills, lower rear quarters, rear heelboard, inner flitch panels (minus inner wing) . P700 headlights, H4 halogen bulbs . OE chrome door mirrors . removable Elf bonnet . inverted Mini door handles