

REINVENTING THE PAST

This may well be the newest car you ever see featured in *Classics* magazine, but we hope you'll agree that Morgan's 21st Century return to three-wheeled motoring is pretty close to being an instant classic.

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Goggles are essential, but with its non-standard screen Ian's M3W is more comfortable than you might think.

H.F.S. Morgan built his first three-wheeler in 1909. The final Morgan three-wheeler with the now iconic V-twin engine up front was made in 1946, and the last of the 20th century production three-wheelers to roll out of the Malvern factory was a four-cylinder F4 in 1953. However, Morgan aficionados tend not to refer to the cars by their engine types, but rather to the number of forward gears they possess, so the twins are two-speeders and the F2/F4 are three-speeders. Well, why buy a Morgan and then do things the same way as everybody else...?

However, that was not the end of the Morgan three-wheeler story, as the car in these pictures clearly shows. But while the Malvern company stunned the automotive world when it exhibited the brand new M3W (Morgan Three-Wheeler) at the Geneva Motor Show in 2011, this story really starts with a guy called Pete Larsen in Seattle at the turn of the century. Larsen

made a living from building retro sidecars for Harley-Davidsons, and was keen to buy a Moto Guzzi-powered Triking. When his search proved fruitless, he decided to build a Harley-powered trike for himself, called it the Liberty Ace and put it into limited production.

That is rather glossing over the years of hard work that went into developing the Ace, but we need to move the story swiftly on to 2009, when Larsen's project had caught the interest of various people at Morgan. They were no longer able to make Morgan cars drive through all the legislative hoops required to sell them in the USA, and that had got some of the management team thinking seriously about re-entering the market the company had left back in 1953 – a three-wheeler would be classed as a motorcycle rather than a car, and so subject to different (and much less onerous) rules.

Within two years the Morgan Motor Company had bought the rights to the Liberty Ace,

redeveloped it and exhibited their new M3W. And when I say redeveloped, I mean 'extensively' redeveloped. In fact virtually nothing of the Ace was carried over directly into the M3W, but that level of re-engineering is typical when moving from a prototype to a production model and it is important not to under-estimate the contribution made to the whole project by Larsen's creation. After all, the Ace was still a vital part of the development process and it probably saved Morgan two years of development time – without the Ace there might never have been an M3W at all.

Some of the changes made by Morgan were unavoidable (such as the transmission changes outlined below), some were forced on the company (for example, Harley-Davidson declined to sell Morgan engines), and others were done for stylistic reasons (the growth of the front wheels from 16in to 19in could be classed in that category). Not all of the changes Morgan made worked out, and certainly they messed up on the steering geometry, but as Peter Dron says (perhaps with tongue slightly in cheek) in his excellent book *The Morgan 3 Wheeler – Back to the Future*, they did all this on a development budget 'estimated to be around £200,000, which is about the cost of a redesigned rear-view mirror at Ford or General Motors.'

First though, let's look at the engine. Larsen had used a Harley-Davidson unit in his Ace, but the Wisconsin company were unwilling to supply Morgan for



The M3W currently retails for a shade under £40,000, so it's fortunate it is so much fun to drive!

“ An aggressive bark at idle rattles your rib cage as much as it bangs on your eardrums ”

« a larger production run. Moto Guzzi were also approached, but at the time Morgan were predicting a total production run of between 200 and 400 examples, and that was too small for the Italian firm to offer acceptable terms. However, Harley-Davidson did suggest that Morgan might try a company called S&S Cycle, who were also from Wisconsin. They made an air-cooled V-twin in three large capacities mainly for the custom bike market, all of them pre-certified with the USA's Environmental Protection Agency to be emissions-compliant. Morgan duly followed this advice, and an agreement was made to buy the X121 engine at a shade under two-litres (or 121cu.in. – hence the name).

That might have solved one problem, but it created another. The Ace had used a simple transmission system based on a Honda GL1800 Gold Wing motorcycle's shaft drive, but this was so offset to one side that it severely limited seat space on the right of the car, making it unfeasible to build the car as righthand drive. Morgan's solution was far more complex, but allowed for RHD as well as LHD options. They fed power to a Mazda MX5 gearbox (hence the new cars are referred to in

Morgan Three Wheeler Club circles as five-speeders), from which a short propshaft led back to a Quaife 90° bevel gearbox. An output sprocket on this pulled a big 1.5in toothed Kevlar belt, which in turn drove the single rear wheel.

So far so good, but while to the uninitiated the S&S engine may look similar to a Harley unit, it is not identical. For one thing the Harley engine has its cylinders set at 45° whereas in the S&S the angle is 56°. A more crucial difference is that the S&S unit lacks the Harley's harmonic balancer shafts, and its uneven firing pulses can create vicious torque spikes. What this means in practice is that it can destroy any drivetrain to which it is attached, even potentially a box as tough as the Mazda unit.

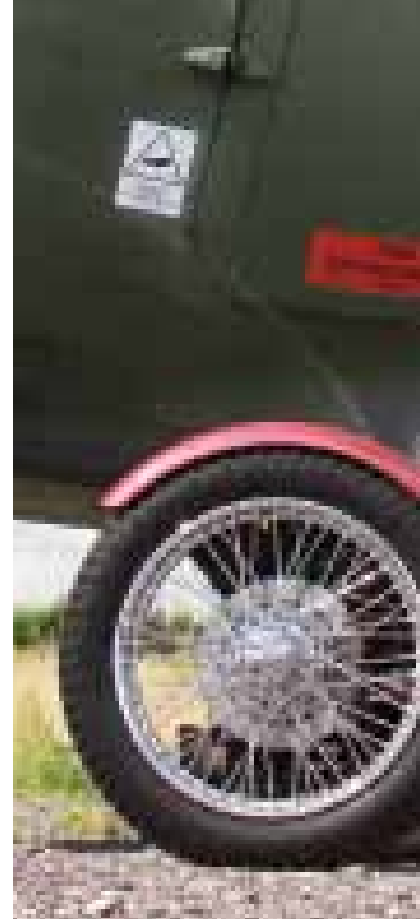
To cushion the drivetrain from these torque spikes, Morgan initially developed their own coupling to sit between the engine and the flywheel and absorb some of the pulses. This quickly proved unequal to the task, so they next adapted a Harley-Davidson compensator. That was an improvement, but it too failed in service. Eventually Morgan got a coupling from a company called CENTA and that appears to have done the trick.

There were other problems,

including poor steering geometry that resulted in unacceptable bump steer on the early cars and a chassis that was insufficiently braced and so prone to cracking. But the positives far outweighed the negatives, and the M3W was a runaway success from the very beginning – Morgan sold 438 of them in the first full year of production alone.

One of the first customers to plonk his money down was retired aircraft engineer Ian Brett, owner of the 2013 example in our pictures. At one point Ian had been well into his Gilberts, then moved on to more modern cars from Lotus, but always had a hankering for a three-wheeler. That came from watching the classic Morgans racing at Cadwell Park with the VSCC and trouncing far more illustrious opposition from the likes of Bugatti and Bentley.

Ian couldn't afford the real thing at the time, so he put his engineering skills to good use and built a couple of JZRs, which look similar to a Morgan – one was powered by a Honda CX500 engine, the other by a Moto Guzzi SP1000. They didn't handle brilliantly, but then he got a Grinnall Scorpion with the K1200RS BMW engine. That was a well-sorted trike which handled brilliantly and was very quick.



Finally, as a retirement present to himself in 2012, Ian decided to get the real Morgan deal. He was tempted initially to look for an original three-wheeler from the 1930s, but wanted something that he could use for long touring trips and soon decided that the new M3W would be just the ticket. And it was new – they had only just released the M3W when Ian put in his order. The infamous ten-year Morgan waiting lists were a thing of the past, but the company had been surprised by the amount of interest in their new baby and so Ian did have to wait 18 months before taking delivery.

'I can't really explain why the M3W was such a hit,' says Ian. 'I do know that all the people who have them really enjoy their cars as they are so much fun to drive. It is probably the most conspicuous car I have ever driven – people can certainly hear it coming from a long way away, and then when it arrives the reactions are usually thumbs-ups and smiles. That can even be a hazard on motorways and dual carriageways when you go to pull out and find that somebody is sitting in your blind spot, filming you on their phone. That happens a lot – we must be on hours of YouTube videos.'

Ian has made a few discreet tweaks to his car. 'For the first two years it had to go back to Morgan for servicing and



Ian has fitted taller aftermarket screens instead of the original aeroscreens for more comfortable touring.



warranty work, so in a strange way I was quite glad when the warranty ran out because then I could start to modify things,' he says. 'In standard trim my M3W would have been 82bhp. I've got it up to around 100bhp with different air filters, exhausts and an ECU remap. You can go further, but then you start to run into problems with the transmission, and really you don't need more power than that. I have also fitted a bigger screen, cut out a glove box in the dash, added USB chargers and made a number of minor upgrades to improve reliability, such as a better fuel pump.'

Ian has also, like many owners, retrofitted later improvements that Morgan made to the design and offered to existing owners at a price rather than issuing a recall and fitting them under warranty. This includes the erroneously named 'Comfort Kit' which was really designed to reduce the bump steer, and also the Urban Cooling Kit that was standard from January 2014.

This latter modification was necessary because the S&S engine would have been an in-line V in a bike, but Morgan had turned it through 90° for the M3W. In certain conditions that could cause excessive temperature gradients across the cylinders from one side to the other because the cooling fins had been designed to cut

through the air in a different orientation. The UCK is essentially a cooling shroud to duct air to what is now the back of the cylinders, and when the car drops below 10mph the ECU switches on a cooling fan to blow air onto them.

Naturally, I was very excited to have a run out in this M3W. Getting in and out is not too difficult, but you do have to think about what you are placing where. I wouldn't like to do it with a dodgy knee, but Ian points out that plenty of owners are on the elderly side and seem to manage fine. Perhaps it is a knack you need to develop.

Once settled in position, Ian fires up the engine and the assault on your senses is immediate. There is an aggressive bark from the exhausts at idle that seems to rattle your rib cage as much as it bangs on your eardrums, and you'd swear you can feel each pulse from the engine thumping into the small of your back. Manoeuvring out of the garage and onto the road is made trickier by the ludicrously small steering lock, but at least visibility is superb all round.

And then we are away and it all starts to make total sense. Acceleration from 0-60mph is realistically achievable in around seven seconds, the need to change up into third knocking it back slightly because the ratios are better suited to the



The aluminium bracket at the inboard end of the upper wishbone corrects the steering geometry and drastically reduces bump steer.

road than to headline-grabbing sprint figures. The noise and your exposure to the elements make actual numbers irrelevant though, as you really do feel like you are flying.

S&S recommend that to avoid lugging the engine, you should aim to stay above 2700rpm. Certainly from 3000rpm the noise and the thumping from the engine smooth out considerably, though they do start to return as you head into the 4000s.

'To be honest,' shouts Ian, 'it drives a bit like a turbo diesel, with bags of torque and quite a narrow power band. It doesn't like to be revved above 5000rpm, while below about 2500rpm it is not especially happy and the transmission starts to get a little shunty. It is

happiest around 3000-3500rpm because then it smooths out a lot, and that happens to correspond to round about 70mph in top, which is perfect for the motorways.'

Motorways – surely this is not a car for motorways? 'It is surprisingly comfortable even for long distances,' maintains Ian. 'Many of us in the club have done trips to far flung parts of Europe with group trips to Switzerland, Norway and Spain. Some have even shipped cars to New Zealand and the USA for tours. Several M3Ws have accumulated over 30,000 miles in their short lives. I did these trips with my wife as passenger *and* got some luggage in without resorting to a rack; some of the luggage was even mine! Many

“It is a visceral pleasure that wraps you up in the moment”

« owners are ex-bikers, and we think of it as a well-equipped, spacious motorbike rather than a small, poorly equipped car. We have driven over 500 miles in a single day on some previous trips abroad, and it has not been too bad. 300-400 miles in a day is probably more comfortable, though. There is no stereo and you must shout to each other to be heard, but when the engine sounds this good, what else do you need?'

What else indeed, although packing for such long trips takes care and a Spartan nature. Open the boot and you'll find most of the room is taken up by the 15in Rimstock car wheel, with just a little room left on either side for small and squashy bags. There is room for another soft bag at the end of the passenger footwell, and you can put another small one under the passenger's knees, but if that is not enough for you, the next step is to fit a luggage rack on the back. Allegedly, having a bag on that reduces some of the buffeting!

Fortunately we are not putting the car's long-distance credentials to the test today, but instead enjoying it on some of the UK's rural B-roads. On these, the steering proves to be fairly direct, with no power assistance but remaining light

on a 500kg machine with skinny tyres despite having a small steering wheel and that heavy S&S engine hanging out the front. The front wheels are 19in wires from MWS in Slough, (MG TA items in fact,) fitted from the factory with Avon tyres designed for sidecars. Like many owners, Ian has switched to Blockley racing tyres, which have stiffer sidewalls and so give less slip. With such small contact patches the predominant characteristic is always going to be understeer on the limit, though.

'Some people do fit motorcycle tyres,' says Ian. 'In a way you don't want the rounded profile of a motorcycle tyre because the M3W doesn't lean in the same way as a bike, but they do seem to work well because you can get seriously sticky rubber designed for motorbikes. They might not last long, but they do burn brightly.'

Perhaps that is best left to the racers and track day warriors though, because on the road Ian's car feels fast and exhilarating, a visceral pleasure that wraps you up in the moment and makes you forget the everyday. Clearly he is delighted with his car, especially now that he has completed some of the development work that Morgan had left unfinished in



The S&S is a thumping brute of an engine, two air-cooled cylinders producing 82bhp at 5250rpm and 103lb.ft at 3250rpm in Euro 3 trim.

the early years. However, I did wonder what sort of welcome the M3W received in the Morgan Three Wheeler Club because my experience is that in many clubs, people who have an original car can look down their noses at anything later and easier to own.

'There was probably a little bit of that initially,' concedes Ian, 'especially when some of the first owners never did anything more technical on their cars than put petrol in the tank. But I think people have now realised that many of us M3W owners are doing a lot of our own development and maintenance, and as a result they have become far more accepting. There are owners who have no interest in how their car works and are happy to have it cared for by a garage; if you get a car that is properly sorted, then that is certainly a viable option, but I think it does help to be at least a little hands-on with the spanners.

It helps with the acceptance issue that the supply of original three-wheelers has been severely

limited for so many years, meaning that it was difficult to attract new blood into the club. They were naturally cautious initially, but soon realised this was in fact a rare opportunity for the club. There is now a very active forum which is popular among the M3W guys. I am the club liaison for the five-speeders, and I pick out the most relevant discussions and make sure that those members who are not online can read about it in the magazine too.'

So all in all, everyone is a winner – the club with previously limited growth potential gets an unexpected influx of new cars and new owners, people like Ian get the car of their dreams, and Morgan have yet another unexpected sales success on their hands! Full credit to Pete Larsen for kickstarting the project, to Morgan for putting it into production, and to people like Ian for polishing off the rough edges to turn what was initially something of a rough diamond into such a sparkling jewel. **CMV**



Most of the 'boot' space is taken up by the rear wheel, but you can buy a rack to go on top for extra luggage.

Thanks to Metheringham Airfield Museum in Lincolnshire for the photo location. This was an RAF base during WW2, and is now a memorial to the crews of 106 Squadron who flew from there, but many of whom never returned. The Dakota in some of the pictures was acquired by the museum four years ago, and Ian is helping to rebuild it as an additional attraction for visitors alongside the displays from 106 Squadron. The museum is open on Wednesdays, Saturdays and Sundays during the summer season of April through to October. Check it out at www.metheringhamairfieldmuseum.co.uk