

A taboo subject

We all have our opinions on modifying the older car. Some like to tune them to the state-of-the-art at the time they were built and so enjoy the car as it would have been in its hey-day. Others like to modify and update their cars and modernise the more vulnerable items to get better reliability. Others prefer to keep the car as standard as possible and live the dream of driving all those years ago. The Y Type is a rather good car to update, as it is over-engineered for its engine power. Luckily it also has far better handling than it has power, as well as quite good brakes for its era. The independent front suspension and rack-and-pinion steering, along with its stiff chassis and very low build will absorb quite a bit of tuning before the car becomes dangerous. Even today a Y Type parked in amongst lots of computer designed modern cars will still have a roof-line below about 50% of them. Any Y owner can vouch for this, as sometimes it can be hard to find the car hidden amongst the huge, gas guzzling Chelsea Tractors.

Tuning for the car's era

Tuning the Y to the state-of-the-art of its time really means getting hold of a copy of *Tuning and Maintenance of MGs* by Phillip Smith. This well-read and excellent book has all the information one would need, and copies can be had from a well-known pre-1956 MG club. The car will cope with Smith's book easily, as all one is really doing is tuning the engine to road-racing TD standard. This extends the power of the car to well within the handling and road-holding capabilities of the little MG saloon. Obviously your insurance company will want to know of any extra power modifications.

Legal modifications

As your Y Type is getting on a bit, the Law has overtaken it in a few areas. For instance, no Y Type ever left the factory for use in the UK fitted with rear reflectors. In about 1956 a law was passed that retrospectively insisted your Y had rear reflectors added. That is why every car appears to have a different set of them. Also, if you seal up your windscreen so it cannot be wound open, then you must



fit windscreen washers. Only vehicles with opening screens (or no screen) are exempt. You must also have two rear lamps, though the Y did have them from new. You need not fit reflective front and rear number plates, even if your Y has a modern number.

Desirable modifications

Modifying and updating the Y Type can cover quite a wide range of things. For instance, the fitting of flashing indicators, a high-level rear brake light, electronic ignition, a solid-state SU fuel pump, and even hardened steel exhaust-valve inserts to cope with lead-free petrol, are all 'updates'. Going a little further, the fitting of a brake-line hydraulic rear-light switch is common on the YA/YT, as sold by this very Register. It fits to the rear of the brake master cylinder, and cures all the problems of the old pedal-box fitted 'motorcycle' type switch. The Register will assist in the fitting of items like an alternator to improve the lights, etc. The fitting of flashing indicators is also assisted by using the sheet written by Jack Murray. The 'help' is in the form of Register Help Sheets available from the regalia chap, David Hague. Modifying the cylinder head for lead-free fuel is a job for a machine shop, and adverts for this service appear in all MG Club magazines. Getting better headlights often means buying a set of seven-inch round light units sold for the BMC Mini, most often fitted with quartz-halogen bulbs; hence the need for an alternator! All the lights can be improved by buying modern bulb units that are in fact LEDs. One chap who specialises in these is Paul Goff, details found in any motorcycle magazine for old British Iron. A rear eye-level brake light is a popular fitment to the Y. The beauty of this higher light is that it tells cars beyond the one directly behind, that you are braking. Alas, this does not work if the vehicle behind is a big van or HGV, (now called LGVs). These LED brake lights are polarity sensitive. Luckily they are mounted in plastic, so it will not matter that you are actually connecting it the 'wrong-way-around' if you are still Positive Earth. Fitting

the Register's improved dash light bulbs helps you to actually see the instruments at night. Fitting seat belts is a specialist subject, and requires quite extensive reinforcing points fitting to the chassis. And 'NO', the door 'B' post is not strong enough for a seat belt fixing without extra reinforcing. If the belts are not fitted in accordance with the current Construction and Use Regulations, you may fall foul of being sued in a case of injury in any accident. Your insurance company may well refuse to pay out.

Serious modifications

We then begin to venture into serious modifications. These will often require your insurance company to be informed, as they will want to know of the higher risk. Often such modifications will disqualify the car as a 'classic'; for instance changing its engine for a post-1971 modern one. You may well lose the free road tax as well! Fitting a five-speed Ford Sierra gearbox is an expensive way of getting an overdrive. Many will argue it is one modification too far; others will say it makes driving more relaxed and reduces engine wear on modern roads. Modern car engines have very poor low-speed-torque due to their very short strokes. The light flywheels do not help either. Very few 1300cc cars weighing a ton can be trickled along on the clutch; with the engine idling as you can do in a Y. Most will simply stall. This modern poor low down torque and narrow power-band is why a five-speed gearbox is required today, as well as the need for a 'high' top, or 'overdrive' ratio for motorway driving. Alas I seem to spend a lot of time sitting stationary in traffic jams in my area, so five speeds are a bit extravagant. The XPAG engine is of its day. It was a very powerful little unit back in the late 1930s. Even in 1947 it gave the YA 45bhp per ton power ratio when other cars like the Daimler 2.5 only had 40.1bhp per ton, and the Riley 1.5 with 39bhp per ton. So if you are going to fit a five-speed gearbox, the car really needs an engine that can use such a gearbox. The best one around is the 1.4 or 1.8 (if you can find one) Rover 'K'



as to make the car unable to be returned to its 1947–53 specification. With a 1.8 K series engine, a five-speed Sierra gearbox, MGA/MGB disc brakes and a servo, telescopic dampers, radial-ply tyres, and an insurance company prepared to cover you, you are ready for the road. Perhaps a set of full-harness seat belts might be



prudent, fitted to welded mountings on the chassis. The car would certainly go well once tuned and make a few sit up and take notice. But then again all that time and money to sit in a traffic queue (in the UK)? A cheaper method would be to transplant the engine, gearbox, rear axle, and front suspension complete, from an MGB. Again, this has been done in Australia a few times, and produces a very nippy Y Type. See the photos of Richard Prior's YT with MGB running gear. The MGB wheels can be used, as well as a nice set of chromed spoke wheels. The car will sit lower as the MGB wheels are only 14". Fitting 14" wheels will mean that the speedo will need re-calibrating. The distributor will require a flexible drive to clear it from the path of the steering column. Or you could go for electronic lost-spark ignition by using a pick-up mounted on the clutch housing, of a magnet mounted on the flywheel, as on the last Rover Mini 1275s 'A' series engines, and a mapped ignition advance.

But we are getting very far away from the original Y Type. Again, a few will say one might as well buy a MG ZR, as it already has a Rover K series engine, and a decent heater, electronic ignition, servo, discs, tele-dampers, and so on. If you ever attend the MGCC Silverstone events, you will have seen the firms who advertise the five-speed gearbox conversion and the companies who will fit a Rover K series to your car (they had a beautifully modified 1960s MG Midget last year on show.)

You will also need a massive bank balance, as well as an understanding insurance company. But the question that will

raise its ugly head is, "Is the car still a MG Y Type. Is it still a MG even?"

Of course there are mods your car has that you are completely unaware of. The engine oil today is far better than the crude monograde the car was first filled with. Even the cheapest oil from a superstore is better quality, though it will lose its multigrade ability very quickly. The compound the tyres are made of is miles away ahead of the stuff used just after WW2. This is as true of today's cross plies as it is of radial ply. The Y never had radial ply tyres when it was new, its steering ratio is too high for them, hence the heavy feel once you fit them. If your Y has been resprayed, the paint will be far superior to the old cellulose used by Pressed Steel. (Did you not know that all MGs delivered to Abingdon after WW2 were already painted? Some models also arrived fully trimmed. Abingdon had become a simple assembly plant by then.)

The side effects

Now it is time to take a hard look at the subject of modifying. Is your car up to it? Just how thin have the chassis plates corroded from the inside? How much of the inside has rusted away? The car might pass an MoT, but will it hold together under the stress of a 120bhp 1.8 Rover K series powering it? Have you carried out any NDT (non destructive tests on primary safety components? Are the half-shafts un-cracked? Are the stub axles on the front suspension solid? What is the state of the single brake pipe system? Would it be better to convert to a twin-pipe fail-safe system? Will the radiator cool a modern engine with its tiny coolant content? Will it take the 15psi pressure they now run at? Is the steering wheel in good order, or is it breaking up in your hands? Are the wheel centres OK? They can crack around the bolt holes if subjected to enormous side thrusts. How good is the wiring? Rear spring leaves might not like the extra bending they are going to get with the extra power. Will the power cause the axle to tramp? Are the windscreen wipers up to 80mph speeds? The whole subject is very subjective. Are the front seats OK being screwed onto a wooden floor? You cannot do one improvement without affecting something else. Will the chassis take the 'racking' it will be subjected to at high speeds when hitting bumps or pot-holes? Racking is when one side tries to move forward or back without the other side. The Y chassis has no cruciform fitted to stop this action. At the speeds it was built for originally it did not

series. There are lots of 1.4 Rover Metros going for scrap with good engines. With a 1.8 Rover K engine and five speeds, the brakes will need attention. Here the fact that the Y Types IFS was used up until the MG RV8 helps. Fitting the disc brakes from an MGA or MGB is not difficult. It is easiest to use the whole suspension, simply bolting it to the Y's cross member. The YB will take it as found, but the YA/YT will need the YB's lower suspension wishbone mounting; done to lower the car's roll centre. It is bolted to the cross member, but on the MGA and MGB the cross member is modified in the pressing. The stub axle might need modifying to take the original Y's wheel bearing. (MGA and MGB wheels only have a four stud fixing.) An anti-roll bar would be of great assistance as well as the fitting of a brake in-line servo unit. In-line servos are, once again, still being sold by BMC Mini specialists. You will need the servo as the brake pedal pressure required with older small discs is very high. The car will still have old lever-arm dampers so a telescopic damper modification would be in order, for both front and back. Telescopic dampers are much more efficient than lever-arm types. Gilles Banchard has been publishing how to fit rear teles on the website. Down under in Australia, the fitting of telescopic dampers to Ys is common. Their rough country roads wreck lever arm dampers in a very short time, so the control leaves of the lever arm dampers are removed when tele-dampers are fitted, making the item just a well lubricated upper-wishbone. Alf Luckman of our Australian Y Register will certainly assist with any technical details required to fit teles (he can be contacted via australasia@mgtypes.org). Or you can use the coil-over-damper unit kits now sold for the MGB for the front end. Radial-ply tyres are a must for any such modified cars. Photos of cars are by Neil Cairns; photos of dampers and brakes by Alf Luckman.

A second look

By now you will have realised that we are getting into serious spannering, but not so far

Y TYPE



need such strengthening. Is the body tub in good condition? Are its sills firm and capable of holding the body to the chassis mounts under duress? There are only eight bolted bits holding it all together. Or are the sills rusted out and bodged to look OK?

Really, we are back to the fact that if you really want a fast modern MG then why not buy a ZR, ZS or ZT? But one thing is certain, no car is still original after so many years. Some items will be updated one way or another, even if it is just the oil it uses and the compound the tyres are made of.

What can be better than to hear from Richard Prior all about his modified YT:

"YT3208 is a wolf in sheep's clothing, outwardly it looks like any other YT apart from its very low stance and chrome 15" wire wheels that were specially made for the car. Together with the wheels the dark blue paintwork and grey upholstery it makes a very attractive package. However, lurking underneath are its hidden secrets. MGB suspension with disc brakes, B series engine with OD gearbox and MGB banjo rear axle.

"The car was purchased in the 70s as a very rusty basket case with basically no mechanicals or engine and gearbox. A plan was hatched to build a fast reliable road car that would enjoy an occasional thrashing in a motorkhana or on a circuit but it had to be all MG. Unfortunately the car did not get on the road until 1992 so the car is now 16 years and 75,000 miles old and has hardly missed a beat and picked up quite a few competition awards on the way.

"Many of the miles travelled were four treks across Australia, a round trip of 3,375 to 5,000 miles depending on where you go. However, the greatest adventure of all was in 2003 when we toured the UK and Europe and covered 10,000 miles and only had to replace a switch and HT lead.

"The modifications to the car are quite extensive but many very minor and none detract from the car or are that radical that the car could not easily be returned to

original. The front suspension basically bolts straight on to the original configuration with thanks to a 1936 Alex Issigonis design that hardly changed right up to 1980 and the last MGB. The back axle required the spring mounts moving to suit the Y and at the same time the original Y Panhard Rod and Jackall mounts were incorporated. Spacer blocks were required under the rear axle to achieve a level ride height to suit the shorter and stiffer front coils. Telescopic dampers were fitted to the rear which were soon replaced with more robust Koni gas adjustables and to control that Y Type lurch a 24mm anti sway bar was fitted up front.

"Under the bonnet quite a few things had to change. Even very basic items like the inlet and outlet on the radiator, front engine mount to suit original centre location, purpose built wiring harness and the list goes on. Initially I started with original MGB carburettors and ZB Magnette air cleaner manifold and large oil bath air cleaner but an engine rebuild fairly early resulted in a significantly worked over engine that would not idle on SUs. The gurus recommended a Weber, however, there is not enough room inside the bonnet for a side draught Weber and a hole in the bonnet side was not an option. What was an option was to locate the carb on top of the engine with quite long sweeping inlet tubes fixed directly to the head. The petrolheads just love the concept and rave about improved torque but for me it was a practical solution that looks fantastic. When I open the other side of the engine bay I wait then ask them to take a close look at the distributor. I just love the look of amazement on their face when they see the distributor sitting atop a curved stork and they ask how does that work? I usually have a spare 8mm cable handy to explain it is just an overgrown speedo cable. The cable does develop some slack over time but then stabilises. With the distributor fitted with optic eye ignition system, thus no points, this handles any fluctuations well and I set the timing at 320 advance at around 4,000rpm rather than worry about timing at idle, yet idle is very smooth at around 600 – 800rpm. Why was all this necessary? Well with the MGB distributor on the wrong side and low down it fouled the Y steering column so something had to go and great access to the distributor was a bonus.

"In hindsight there are very few changes I would make as it has been a fantastic machine. Using the MGB brake and clutch master cylinders mounted as original on the



chassis below the floor board required fabricating a one off pedal shaft and meant that the clutch pedal is too close to the larger G/box cover to rest your left foot. A dual piston master cylinder would be better, however, the system works well and the extra mechanical advantage of the long Y pedals is just like power brakes but with a slightly longer throw. If my engineering skills had been better I would have done the G/box rear mount differently but it is functional. The only other little niggle was the need for an inline reduction box to alter the cable turns to suit the difference between the late TD speedometer and MGB gearbox. The reduction box in recent times has worn resulting in two stripped G/box speedo drives rather than break cables. When I get some time I will convert the handbrake to operate hydraulically rather than by cable which is hopelessly inefficient. Even extending the levers has not had a major benefit but then the MGB park brakes were never all that good for handbrake turns. I have some regrets that I had to replace the original leather upholstered bucket seats with comfortable ergonomic velour covered seats with high backs and headrests however the original seats were very unsafe and absolutely hopeless if you want to throw the car around.

"I have absolutely no regrets in making the modifications to create such a fantastic car which has given my wife, Barbara, and I such enjoyment but I am sure that had the parts been available from the Austin Morris Empire at the time and had one particular gentleman (Cecil Kimber) been around he would have done just the same! All this is reinforced when effortlessly cruising down the highway at just under 3,000rpm and 70mph and a great memory from 2003 was chasing Ferraris and Lambos down the French motorway to Lemans at 90mph!"

Photos of his car were taken by Neil Cairns when he visited the UK in 2003.

Larger copy pictures of some of the ones used in the Safety Fast article, and some others.







