

Morris Minor

Minor Adjustments - Modification Guide
by Rick Feibusch

As old British cars go, there are few that can REALLY be used as daily transport. I've met a few stalwart MG and Triumph loonies who can attest to years of regular service by their trusty ol' TC or TR-3, but these folks will usually follow that claim with: A. Hilarious tales of weekly adventures, or B. The fact that they have always worked freelance, or, C. They don't drive the roadster as much as they used to since they bought the Toyota in CE88. , or all of the above.

A car that can be, and is, used on a regular basis is the Morris Minor. I personally know a number of folks who use a Minor as their primary car. Robert Grant of Venice, CA. has driven his dark green four door to work for over ten years. George Kelson of San Francisco drives a bright green CE67 pickup daily as his work truck! My wife and I have used a Morris as at least one of our everyday cars since the late Seventies.

Though not generally the dainty little stockers that one might view at the local British car meet or see on the BBC, a modernized Minor can provide dependable and competent transportation with unforgettable style and verve. Many of these modifications consist of adding running factory upgrades to earlier cars as well as bolt on upgrades borrowed from Austin-Healey Sprites and MG Midgets that carried Minor based mechanicals into the late 1970s.

We will occasionally mention the dreaded ³D² word; Datsun. This Japanese firm, now called Nissan to confuse things a bit more, got back into the postwar car business by building English Austins under license. When Austin and Morris merged to form BMC in 1952, the original flathead Morris engine was replaced with an Austin OHV four. By the late CE50s, Datsun and Morris were manufacturing similar powerplants and even after their license ran out, Datsun continued to build a legally acceptable, upgraded version well into the CE80s.

The mighty little Minor has been upgraded and souped-up since it was new because it was a compromise from the start. During WWII, designer Alec Issigonis envisioned a revolutionary new small car with oodles of room. It was to have a one-litre flat four (like a VW) bolted to a front-wheel drive transaxel. All four wheels were to be small and independently hung on torsion bars all the way around. The flat floor and proposed bench front seat would allow for five post-war Englishmen in a pinch and a rack and pinion would provide light and direct steering.

By the end of the war, the Morris division of Nuffield Motors began to realize that the time and funds for proper development was just not there and while the prewar E-series ³8² model could be built to meet domestic demand for awhile, it was not the type of car that would do well in export markets. Since the British government would link steel allotments to meeting export quotas, the new car had to be rushed into production.

First to go was the flat four and front wheel drive and along with it went the independent, torsion bar, rear suspension. The car was fitted with the tried and true 918cc flathead four and running gear from the E-series cars. Simple leaf springs suspend the rear. The outcome was a commercially viable little car that was long on space and featured state-of-the-art steering and front suspension. Unfortunately it was also short on power and rear end gearing.

Within a year, speed equipment started to show up in British magazines. Road testers the world over praised the little Minor for what it had and said that more power would make the car a real sportster. In 1950, three Minors were entered in the first Sebring races here in the US. One was MGTD powered and another sported a supercharger. In fact, blowers were available from a number of firms as were cams, dual SU carb kits and straight through silencers (glasspaks). A company called Alta produced an aluminum OHV head conversion, with twin SU carburetors, that was the hot setup, but few made it to the United States.

The Austin OHV, 803cc engine was fitted to the Minor after the BMC merger in 1952, but it was only marginally faster than the flathead and actually had less usable torque. This engine was internally enlarged to 948cc in 1957. In 1963, displacement was increased again to 1098cc and the Minor was fitted with the more modern ³ribcase² gearbox and 4:22 rear end gears as well as bigger front brakes.

The Morris Minor received its first collectible interest here in the States in the early CE70s. Since the car was built for the home market until 1971, Minors were still considered late model used cars in the UK. Americans had seen less than 1500 since 1962 and parts were getting real hard to find. The early incarnations of what is today's Morris Minor Registry were formed out of desperation! Many of the pioneer Minor clubbers were masters of parts swapping and a wealth of information, both real and theoretical, on how to keep a cool

looking car rolling on a daily basis.

Today, the Morris Minor has attained cult status over much of the world. Since the little car was exported to the far reaches of the earth and performed admirably in all of them despite heat, cold, urban traffic and back road dust, clubs of enthusiasts banded together to restore and collect this little reminder of everyman's past. In England, the Minor is the most popular collector car, much like a CE55 - CE57 Chevy is in the States. Even with all of this attention, prices have never gone beyond the reach of the average enthusiast.

Here is a review of popular updates along with some comments as to how well they work and if they're worth considering. Many of these updates will also work on other BMC cars of the era. Remember; modifications, despite their cost, rarely add much value to a clean stocker, but as long as one stays away from radical body mods and flame paint jobs they won't detract much either.

□ Radial Tyres

This is an upgrade that has almost become mandatory because there are so few cross-ply tyres available anymore. These really bring out the best in the torsion bar front suspension and rack and pinion steering. They also lessen the excessive rear wheel hop that plagues Minors because they adhere to the road better. The down side is that original Minor sizes, while readily available from British Wire Wheel in Santa Cruz, CA and the usual tyre specialty houses, have become a bit pricey. If stock is the look that you're after, these generally work great but there are other alternatives.

□ 13 inch Wheels

Changing to 13" wheels allows you to improve handling a notch or two while totally eliminating the rare tyre size problem. This size has been popular since the late CE50s and even more so today as the average car has become much smaller. You can buy 13" tyres that will fit almost anywhere. The up side is that these can provide a lower center of gravity and a wider track for better handling. The down side is that you lose that standard Masterpiece Theater, "pedal car" look.

Suggested alternatives are Sprite, Midget and Chevy Vega wheels. "Spridget" wheels bolt right on and look pretty stock. The early Bugeye units with the brake cooling holes look best but are getting harder to find. Unfortunately, these wheels are no wider or offset than the stock wheels and will correctly accept tyres no larger than 165X13 (175/75X13). Later "Spridget" styled steel and Rostyle wheels are a bit wider and offset and will take a small 70 series tyre but really change the look of the car and are not for everyone.

Vega wheels come in two styles and two widths. They also were fitted to Buick Skyhawks, Olds Starfires, and Pontiac Sunbirds in the mid-seventies. The standard wheel has a ring of square cooling holes that surround a plain conical hubcap. It looks a lot like a prewar British "Easiclean" wheel. The other style looks like a four spoke mag. Available widths are five and six inches and the offset of both are perfect on a Minor. Both styles must be modified. The standard disc wheel needs the center hole bored out to 2 3/4 inches to clear the beefy Morris front hub while the mag styled units need some internal filing to fit. Almost any 13" tyre will fit these wheels so wheel arch clearance is more important than the size.

□ Custom & Wire Wheels

Any custom wheel that was manufactured for Spridget or Vega (or its derivatives) will usually fit a Minor. As with any custom installation, measure and measure again. Some owners have fitted wire wheels and these do have a look of their own on a Minor. They must be adapted but this is especially easy when also fitting disc brakes as Spridgets (where the brakes come from) used wire wheels extensively. I've seen 13, 14, and even 15 inch MGA wire wheels used on a Minor with good results. 14" MGB 60 spoke wires look best and can take up to an 185/70X14 tyre with no clearance problems.

□ Disc Brakes

The brakes from a later model Spridget will bolt to a Minor with an adapter bracket that is available from a number of parts suppliers. There are two types of front hubs -- one for wire wheels and one for bolt-on wheels and parts don't interchange. Unless you really want wires stay away from the splined hub units.

Though these make a huge stopping improvement on their own, Some owners like to add a vacuum power booster and others insist on a brake proportioning valve from an Austin America to keep the back brakes from prematurely locking. At this point it becomes a custom installation and either you or your mechanic must be hip to this type of work.

□ Poly or Nylon front bushings

Standard Morris bushing sets are made of soft rubber. It has been said that this was a designed in feature that "softened" the ride and added a little "flexibility" to the front end. I've never had a set that lasted a year! Hard bushings last forever and tighten up a relatively tight front end. The down side is a bit more road noise is transmitted into the body. A good, square pothole hit will jar your teeth and ruin a good mood. It's still a good tradeoff. Watch out for potholes!

□ Tube Shocks and Anti-Sway Bars

The original Minor lever type shock absorbers seem to work fine as long as they are still in good condition. As they wear out they get softer and softer and start to leak. New and rebuilt shocks are available but need to be mail ordered and are somewhat pricey. Some folks opt for a tube shock conversion at this time as it

costs little more and tightens up the handling. On the front, the original shocks are kept, as they also serve as the upper control arms, and the tube conversions bolt between the unibody and the lower control arms. The rear units replace the stock shocks. These can be installed at home by an amateur with good results.

Anti-sway bars are available from a number of sources and reduce ³lean² in cornering. They seem to be easy to install. I have driven a few cars equipped with these improvements and they do indeed handle like little racing cars. As these cars also were uprated in many areas, I'm not sure how much was the shocks and ³sway-bars² and how much was the bushings, tyres or lowering. Together, they all worked great. Again, road noise and steering wheel feedback is a factor but what fun!

□ Engines

Let's start with the 948cc (called the 950) mill found in 1957 -62 Minors. Earlier engines are a cruel joke for anything other than show cars. The 950 is a competent little powerplant that will work well as long as you don't rush it or spend much time at over 60mph. Though these little wonders have been race prepared for Sprites for years, the heavy (in comparison) Minor body will cancel much of the get-revs-right-now willingness one will find in an H production Bugeye.

This engine works best when left stock and balanced. Dual carbs tend to load it up in traffic and headers and low restriction exhaust seem to provide more noise than power. If faster is what you want, try a bigger engine.

Many Minorites consider the 1098cc (called the 1100) the best all around engine. There are actually two versions of this engine; the regular Minor and earlier Sprite unit with smaller main bearings and a rarer later Sprite unit with big mains like a 1275. The big main model, while a must for racing, is not a big advantage in street use.

The 1100 is a considerable improvement over a 950, even in stock form and can be modified to scoot along pretty well. This mill has enough displacement to use more carburation and low restriction exhaust. Dual SUs will brighten it up but a single carburetor is easier to tune and there are a few that will really do the trick. A single HS4 SU from an Austin America will get you all the gas that you will ever need and is as easy to tune as the stock HS2. You will need the complete intake/exhaust manifold, carb and air cleaner to do a pro looking bolt on job.

High rollers and street racers will opt for a Weber downdraft carb on a Cannon manifold and tube headers. These combined with the right cam and ignition can make your car go much faster than you might want it to!

The 1275 version of the A series engine has been with us since late 1966 and is still available in the UK in one form or another today. It has been raced and ralleyed successfully in both Minis and Spridgets and there are a world of parts available for these little powerhouses. While the REAL hot rodders out there should consult David Visard's book , How To Modify Your Mini, and get the full picture on how to bore one out to 1400cc and install a whiz-bang crossflow head, a standard 1275 with a stock Minor carb and manifold is sufficient in day-to-day use. This is what I have in my everyday sedan and it does quite well, even on the LA freeways. I'm sure that one would run faster with one of the uprated single carb options mentioned in the 1100 section and since most of these came from the factory with dual SUs, tuning as such should provide excellent results.

□ Electrics

Two upgrades that seem unimportant but really make a difference are a Alternator conversion and electronic ignition. The alternator is available from many suppliers and generally bolts right in. It requires the car to be changed from positive to negative ground - a incredibly simple task. The advantage is that an alternator charges the battery ALL of the time the car is running - even at idle. A generator charges only at speed and can barely keep up in traffic, at night or during heavy winter weather. The conversion cost about twice as much as a generator rebuild but should last at least twice as long.

The electronic ignition replaces the points and condenser in your distributor and will give you hot and accurate spark all of the time. Distributor shaft worn and wobbly? No problem -- this baby's optical/electric and only uses the shaft to index the spark position. There is no current through any points, therefore, nothing to pit or burn. Sure one cost about 150 bucks but it will pay for itself after four or five tune-ups.

□ Transmissions

The earliest OHV cars used a transmission that was similar to the 1957-63 ³smoothcase² trans except that it had a long shift lever that came out of the floor by your foot rather than the ³remote² unit that had a short lever that came up at about the knee. These are not bad gearboxes if treated gently and can last a long time. They will go away in months if mistreated and are impossible to rebuild due to lack of parts. They are called ³smoothcase² because the outside is smooth.

The later ³ribcase² or ³wafflecase² trans is called so because of the ribbed reinforcements that crisscross the bellhousing and top. These newer boxes feature helical cut low gears and replaceable synchronizers and

are rebuildable. Most Minors have been upgraded to these years ago. They bolt right in, though you might have to change the engine backing plate on a 950, and are a substantial improvement.

□ Clutch Linkage Upgrade

Datsun Transmission conversions, engineered by Morriservice, of Portland Oregon, needed a new linkage to connect the Morris clutch parts in the car to the Datsun internal linkage. This was done using stainless steel aircraft joints and threaded shafts to replace the wood, brass and thin tin pieces found in a stock Minor. This inexpensive kit is infinitely adjustable to allow for variations in both the Minors and the various year Datsun gearboxes. The outcome was so good and so adjustable that it has been found to be a tremendous improvement on stock Minors. It reduces clutch effort by at least 50% and makes lubrication and adjustment a snap. I have one on all three of my minors and don't know how I ever lived without them.

□ Datsun 4 or 5-Speed Transmission Conversion

This conversion will give you a synchro in first gear and an overdrive if you select the 5-speed unit. This is not a job for the amateur but it can be preformed by a competent home mechanic. The Kit contains a custom aluminum backing plate, trans mounts, clutch linkage and a modified flywheel. The builder supplies a good Datsun B210 or later 210 gearbox and driveshaft. Sometimes the driveshaft must be shortened and balanced but often it is the correct length. The Datsun rear u-joint will bolt right up to the Morris rear end! For more details Contact Morriservice at 503-452-0432

□ Complete Datsun 210/B210 Engine & Transmission

Again not a job for an amateur, this one will require a bit of cutting and fabricating. The gearbox part is about the same as the trans conversion but the engine bay floor requires some notching and alot of hoses and pipes have to be changed and aligned. The good news is that everything is in about the right place and clean methodical work will be rewarded with a top notch conversion.

Once completed, the new powerplant will provide smooth and quiet power that is about double of what came in the car. While the car will feel newer, more powerful and easier to drive, this is not a hotrod motor and frankly a 1275 can be pumped up to blow away one of these. On the other hand, I know folks that have put over 100,000 trouble free miles on these conversions and are still going strong!

If REAL fast is what you are looking for, seek out another car. A OE48 Chevy coupe looks quite similar and has plenty of room for American V8 power. There have been people who have installed big engines in Minors and it works, but it generally requires an engineering degree and the ability to build another car under a Morris body.

□ Rear End Gears

Pre-1100 cars (before 1963) came with 4:55 gears. These are perfect for 950 powered cars. All post-1963 Minors sported higher 4:22 gears. These allowed for quieter operation at higher speeds (65 - 70mph). 1275 powered Spridgets came with 3:90 gears but consider that these are lighter cars with smaller wheels. All are interchangeable.

Rules of thumb (whatever that means). Unless you live in an extremely flat area with few stops leave the 4:55s in a 950 Minor. Installing 4:22s will trade low speed tractability for a higher cruising speed. The same can be said for putting 3:90s in an 1100 powered car. It will work OK but there still is a serious tradeoff. 1275 cars will easily pull 3:90s but consider your wheel size as larger wheels and tyres will effectively raise the ratio and can really deaden the low end acceleration.

Datsun powered cars can all pull 3:90 gears. If you are fitting a Datsun 5-speed gearbox, fifth gear is overdriven so the lower ratios will improve acceleration and fifth gear will allow quiet and economical high gear cruising. The 3:90/5-speed combination will be great for land speed records at Bonneville.

Modifications should be well thought out and not taken lightly. Much like time travel - if you change one thing everything else changes along with it. Don't take my word for it - call shops, suppliers and individuals who have been involved with these projects and plan yours carefully. Sometimes your needs are such that a stock Minor will work just fine.