Reprinted from March 2008 Morgan Ear

Long Distance touring **Vern Dale-Johnson**

It does not take long during my discussions with other Morgan drivers for the topic of long-distance touring to be raised. Often this is from owners of older (1950's – 1970's) Morgans who can't believe I (and many others) have often taken multi-month tours of many thousands of miles / kilometers in a Morgan. My list includes two full coast-to-coast Morgans over America (New Orleans to Nova Scotia in 2000, San Francisco to New York in 2005) tours, Morgans to New Zealand 2004 tour, with touring between these major events of over 3000 miles (5000 km) per year from 1990 through 2005. These trips, the majority taken in a 1966 +4 4-seater (we liked to room) but some in a 1978 +8, have not been without trauma. On the 2000 MOA we did drop an oil cooler line and fried most of the main and conrod bearings, and on the 2005 MOA we developed a stress crack in the oil pan but by and large the tours were issue-free and enjoyable. What made these trips enjoyable were modifications to make our +4 both comfortable and reliable. Over the next few issues of the Morgan Ear I'll discuss these mods and give you some hints on how to make the changes yourselves.

First, I'd like to recommend, for those who enjoy working on your own Morgan, two publications. Although these publications primarily relate to 4-cylinder models from the 50's through the 70's there are enough hints in them to make them invaluable to owners of all 4-wheeled Morgans. Both are available from David Crandall a Morganeer who took on the publishing and distribution activities from the authors. Dave can be contacted via www.morganstuff.com.

- Fred Sisson's **"Morgan Bedside Reader"**. Revised and expanded from my early example of this book you'll find 260 pages of wisdom, hints, improvements, diagrams, and sources of parts from Fred and other Morgan owners who have actually done the work and created the modifications. This book (reference MOG-101) is in 8.5 x 11 inch format. Price is US$50. Contact David for shipping costs.
- Gary Dubois-Bell's **"A Yank in Malvern"** is a 220 page tome in 8.5 x 11 inch format. Again full of hints, improvements, diagrams and modifications. Price is US$50. Contact David for shipping costs.

Topics I'll cover (with the help of extracts from Fred's and Gary's books) over the next few issues include:

- Suspension modifications for touring comfort (springs and shocks)
- Steering modifications (Burman to Gemmer conversion)
- Wheels, Tyres & brakes
- Generator to Alternator conversion
- High torque starters
- Radiators / oil coolers
- Oiling system
- Seats & interior trim
- Weather equipment
- Modifications of a 4-seater for touring without a luggage rack.

Today let's talk about springs and shocks. Richard Rogers talked about the back suspension mods to a 4-seater in his article published in the August 2007 Ear – well written. We used the Rutherford shock conversion with Koni's but added a change in the rear spring set – from 7 leaf to 6 leaf making a world of difference – no more crashing of the axle on the frame! The change in springs is not in either of the

manuals. In 1996 when I did my conversion I received a hand-written note directly from Dave Rutherford – discarding the 5th leaf (3rd shortest) and cut leaf 3, 4, and the old 6 to approximate the 6-leaf sets used in 2-seaters. Of course, if you are starting with a 2-seater the spring issue is different (as is the conversion kit)!

For the front suspension, the key is to have good kingpins. Here I refer you to Fred's manual – reproduced with permission. If you are doing a kingpin refit consider replacing the "dampers" - those flat steel plates between the kingpin and frame – with John Sheally's roller bearing conversion (available locally from MOCA member Roger Shawyer). When doing a conversion to roller bearings you will want to include a steering damper (available from another MOCA member Tony Heard). More details on these conversions will be discussed in my "steering" discussion.

Reprinted from the April 2008 Morgan Ear

Long Distance Touring part 2 **Vern Dale-Johnson**

Hope you enjoyed the first in this series of articles and have ordered (or at least considered ordering) one of both of the manual's available from David Crandall. As Neil Hurst (and others) have noted some of the parts listed in the manuals may be obsolete (Neil noted the Gabriel shocks were no longer available). Of course info in a book is only as good as the day it was written! Combined with a low volume manufacturer (Morgan) relying on various suppliers for low-volume items we are bound to see some errors from obsolescence.

In the notes (from Sisson's manual) accompanying last month's Ear Fred talks about fitting grease zerks on the firewall for the front suspension and the clutch bearing... great idea. If you don't want to go the fittings-on-the-firewall route but still want the benefits of grease another option is to locate and install some self-pressurized grease reservoirs. I did this with our +4 (and +8) using “Lube Site Model 302” units (these or similar should be available from a local machinery supply house or buy them on-line directly from Lube Site – about US$37 each). You may need a brass “adapter” to screw this into your existing oil line fittings. An option for the clutch grease zerk is to mount the zerk on an “extension” bringing it to just below the transmission-bell housing cover for easy access through the inspection hole.

For steering, we changed our +4 from a very worn Cam Gears (I was reminded by John Merton these were Burman up until the early 50's, then Cam Gears through to the late 70's) to a new Gemmer box sourced from Melvyn Rutter (although most Morgan dealers should be able to get you one). I picked the new box up from Melvyn's shop and carried it to Toronto as “hand luggage”. They are not cheap! However this swap of steering boxes is the second most enjoyable change you can make to your Morgan... you will not believe how easily your Mog will steer, and how relaxed the trip becomes. Some dealers will graft your single piece steering shaft (that “spear” on your old Burman/Cam Gears box pointed at your chest) or, you can do what I did and buy the short shaft Gemmer, use the mods suggested in Fred Sisson's manual -- TR7 top shaft lengthened (for our +4 by 13.5 inches) with a MGB “universal” to join the two. If sourced from a Morgan dealer the Gemmer can be purchased with a new drop arm and the entire assembly dropped into your Morgan with only minor “opening” of one bolt hole! I used a hard plastic block and u-bolt to secure the short-shaft of the Gemmer to the inner front wing, mated the box to the extended TR7 top shaft (complete with collapsable section for your protection) and with very little additional fiddling had the +4 back on the road in less than a day.

Alternately you can go to a rack-and-pinion using something like the Ford Escort assembly or any of countless other small car units now available... more fiddling, and this does not look original, but most likely a less expensive option.

While we are on wheels a couple of additional changes are to consider replacement of your front brakes (if a drum setup) with a conversion to discs... if you have discs already, ensure the disc thickness is within specs and the calipers are sound. For pads, many Morganeers in North America source carbon-kevlar pads from Porterfield (they have a website and will make pads to order). For rear brakes, no real need to do anything but ensure you have sufficient shoe thickness (Porterfield can supply replacements), the pistons are working properly, and the pistons don't leak. One trick to increase the effectiveness of the fly-off handbrake is to

install a compression spring around the handbrake line between the fitting on the crosspiece where the cable is secured and the yoke on the cable near it's attachment at the brake drum (some cables have this spring installed, others don't). This will both ensure the handbrake is "off" when released and helps maintain pressure when you pull the handbrake "on".
If you are into cosmetics, Datsun Z finned aluminum (sic) drums can be machined to fit, replacing the Morgan cast iron drums. Again, Sisson's book has a "how to" on this. Won't improve your braking power by much but they sure look good behind spoked wheels!

With wheels, if your "older" Morgan has spoke wheels they are most likely 60 spoke 15 inch (I think these are 3.5 or 4-inch width). These are both flexible and if you use 165 x 15 or larger radials you do get interference with the front suspension uprights. Safety is the issue with these old spoke wheels so put an upgrade to 72 spoke "Cobra" wheels on your Christmas list (Dunlop manufactures these in India, they are available from Australian Classic Wire Wheel – painted, chromed, or stainless). These will be 5 inches wide, pull the track out about an inch on each side, eliminate interference with the uprights, ensure your exhaust does not rub on the tyre, and open up your options for radials. My 72 spoke wires, with Michelin XZX 165 x 15's, fit without any clearance problems. My last set of Michelin radials were purchased from Coker who now have the molds from Michelin... over US$200 each (plus you have to get them here and pay the customs man). A quick search in Australia suggests you might look at the Hankook K702 or Nankang N-812 both available in the 165/80R15 size. This change to 72 spoke wires is the third most enjoyable change you can make to your Morgan for long-distance touring!

Next month I'll talk about alternators, high-torque starters, spin-on oil filters, and oil coolers. Remember these are my personal experiences with the expectation they offer you food for thought – many Morganeers have found other solutions that work just as well! If you need clarification on any of my comments you can call me at (02) 9527 4818, 0416 397 124, or email vern.dalej@bigpond.com Happy Morganeering!

Reprinted from the May 2008 Morgan Ear

Long Distance Touring part 3 **Vern Dale-Johnson**

Wow! Lots of comments on the first two articles in this series – thanks for the comments, clarifications, and questions – this is a learning experience for us all. With that, a reminder – this is not a "how to" series, more a "what to" series concentrating on "information" rather than "instruction". For those of you interested in performing all or some of these mods to improve driveability and performance I encourage you to seek further instruction and/or help from the experts (and no, I don't consider myself an expert!). Every Morgan is different, every owner has different thoughts regarding originality vs reliability vs innovation so let your own experience and heart guide you.

I promised this month to talk about alternators, high-torque starters, spin-on oil filters, and oil coolers. I'll add electric vs mechanical fuel pumps to that list and mention engines/ transmissions. Before starting on ancillaries it is best to discuss engines/transmissions. In our 66 +4 we worked with the TR4A engine / Moss 4-speed transmission that came with the car. If I was going to do it again – build a tourer from a "restoreable" shell – I'd be looking at a more modern drivetrain. In 16 years our +4 went through two engine rebuilds that cost as much as sourcing a Toyota twin cam and 5-speed! Our +4's transmission was really sweet however, it could have benefited from an overdrive or a transplant of a Toyota 5-speed (conversion kits available). Tom Henderson, of the MOG NW group (and editor of their newsletter) recently made the decision to swap his 4/4's Ford engine / transmission for a Honda S2000 twin cam and 6-speed. So, back to what you want – originality (you can always keep the pieces you remove) or performance and reliability? I do understand there are some government restrictions in certain jurisdictions to making such conversions however, might be worth some investigation before spending your money.

If you're keeping your original power train the next question is reliability. Fuel delivery, electrics, oil temp and cleanliness, air filters, even carburation might be on your list. Let's start with fuel. In our +4 the fuel pump was mechanical, driven from the camshaft – worked OK but with wear suffered when asked for delivery at full throttle. We moved to a Facet electric pump with two inline fuel filters, one before the pump (to remove crud from the ageing fuel tank before it hit the pump) and one before the carbs. Our SU carbs were rebuilt (although we did consider Webers but wanted simplicity while travelling the boondocks – we did learn to carry extra SU jets with their attached flexible lines) and had the right side of our bonnet "massaged" to give room for some pancake air filters – to keep out the coarser bits that can be sucked up from the road. If we had kept the +4 the next change on our list would have been a tubular exhaust manifold to improve exhaust flow and stop the burn-out of gaskets and flexpipe between the old cast manifold and the entry pipe into the SS silencer. We did go with a enlarged exhaust pipe and silencer – looked and sounded great!

Electrics? Several items here. We retained the old Lucas distributor on the +4 only because we had too many friends who switched to electronics and had problems. However, if the Lucas does need replacing a good option to investigate may be a Mallory dual-point (our friend Ken Miles put these in his +4, 4/4, and +8). When our +4 starter disintegrated we tried another 40-year old Lucas unit without success, moving to a high-torque Japanese conversion unit (I note these are available from several Australian suppliers). When our 3rd Lucas generator failed, we referred to Sisson's "Bedside Reader" (page 191-196) and asked

our mechanic to make the conversion to an alternator – this had three additional benefits 1) moving to negative from positive ground (our cig lighter socket could now power a wider variety of toys), 2) doing away with the voltage regulator (and the ammeter – replacing the ammeter guts with the guts of a voltmeter in our 4-way instrument), and 3) replacing the heavy & wide fan belt in the +4 with a thin belt reducing strain on the water pump. All these changes increased both reliability and driveability of the +4.

There has been a lot of discussion discouraging the use of modern oils in old engines. I refer you to the experts on that one! What you can consider as worthwhile changes for your old engine are modernization to improve filtration and cooling (especially in Australia where the ambient temperature is usually much warmer than in England). Modern spin-on oil filter conversions are available for most engines. Oil cooling is a more difficult question. You might first look at the efficiency of your radiator and, if considering a replacement or repair consider moving to a new higher efficiency rad in the process. This could eliminate your cooling concerns. Alternately if your rad is still OK, but additional cooling is needed, consider using an auxiliary "oil" cooler but use it as an auxiliary "water" cooler mounting it below or in front of your rad and plumbing it into the heater line of your engine – a simple approach. If you do go the oil cooler route, a couple of suggestions: First go with Aeroquip or similar lines with very strong connections to the engine and cooler (I can tell you about blowing a line off a connector resulting in complete loss of oil, destruction of bearings, rebuild of engine, etc). Second, have your hydraulic line manufacturer make a hose with appropriate connections so if your cooler fails you can remove the cooler from the circuit (that is, connections to mate to the connectors on the leaking cooler). Keep this emergency line with your on-board toolkit and spares! Yes, we have used it!

That should do for now. Next month let me finish this treatise with a discussion of interior trim, weather equipment, and other mods to keep you and your partner happier during those long tours. Remember these are my personal experiences with the expectation they offer you food for thought – many Morganeers have found other solutions that work just as well! If you need clarification on any of my comments you can call me at (02) 9527 4818, 0416 397 124, or email vern.dalej@bigpond.com Happy Morganeering!

Reprinted from the June 2008 Morgan Ear

Long Distance Touring part 4 **Vern Dale-Johnson**

A reminder before I finish this series – this is not a “how to”, more a “what to” concentrating on “information” rather than “instruction”. For those of you interested in performing all or some of these mods to improve driveability, performance, or comfort I encourage you to seek further instruction and/or help from the experts (and no, I don't consider myself an expert!). Every Morgan is different, every owner has different thoughts regarding originality vs reliability vs innovation so let your own experience and heart guide you.

This last article will look at interior and weather equipment modifications to make touring more comfortable. Many of these modifications or improvements can be made to your current equipment, others can be incorporated if / when you are doing some refurbishment work.

Lets start with sound and heat protection... with the added bonus, as you remove the old horsehair padding, of improving moisture evaporation (very worthwhile if you've been out over the past few months in the Sydney area!). Two types of matting are available – sound adsorption and heat reflective. The heat reflective matting I've used also cuts down on sound transmission. Engine heat and sound can be significantly reduced by insulating the inside of the firewall with an aftermarket heat reflective mat placed under any “trim” you may have on the firewall. Use this same material under the fabric covering your doorsills to reduce the incursion of heat from the exhaust system, and under the fabric on your transmission / bell housing cover to further limit engine / transmission heat incursion. I've also used this material (it has a waterproof core of closed-cell foam) under my floormats for driver & passenger. Use adhesive sparingly (or not at all) so you can remove matting temporarily for work or drying after a torrential rain. Sound adsorption material behind your inner door panels, and inside the panelling around the tail section in your Mog (including under the panel covering your differential / axle) will cut down on road noise. Both types are available from most automotive interior trim shops or sourced through auto supply houses. Make sure what you use is waterproof!

While you have the differential cover panel off, consider adding some fuel tank protection behind the emergency brake (hand brake) toggle where it is mounted to the axle. This toggle can pierce the tank in the event of a rear end collision potentially leading to a fire. I've seen Lorne Goldman's +8 after such a collision and fire – he and Audrey were very lucky to have escaped the accident and subsequent blaze. John Mott has an article on the MOCA website “Rear end collision risk” that describes the “fix” - a 5 mm or thicker steel plate about 250 mm wide (and the depth of the tank) attached to the tank to spread any collision force and reduce the chance of a fuel tank rupture. When I made mine I created about a 60 mm 90° top-edge fold to “hook” this plate over the fuel tank (John went further with folds over both the top and bottom of the tank). Secure the plate with adhesive (you can make double sure it won't move by using a couple of wraps of plastic “strapping” around both plate and tank).

High mount brake lights are another consideration – this addition to help minimize the risk of a rear end collision. Neil Hurst has an article on the MOCA website describing a simple “how to” mount for a traditional light. When I did a central brake light on our 4-seater I sourced a “LED” unit from GM and mounted it (slightly modified) to the panel behind the spokes of the vertical spare tyre – effective and discreet. LED lamps can be brighter and faster than normal

incandesant lamps thus are a good choice for this auxiliary lamp.

Other changes you might consider to improve touring comfort include:

- When rebuilding seats, build in an orthopaedic back and bum rest. In Canada these are available from most pharmacies, manufactured by “Obus Forme” (a web check tells me they are available in Australia through Axis Medical in Bowral NSW). Incorporating these into the seat structure underneath your seat fabric will give you fewer complaints at the end of each day. While your rebuilding those seats, build large “map pockets” with cover flaps into the back of your bucket style seats...
- Your tonneau cover has a single zip down the center. Any auto trimmer can add two more zips to your tonneau – down each side – to create “kidney covers” that do wonders if you travel without sidescreens on cool or damp days. Your tonneau has several lift-a-dot post across the cockpit edge of the scuttle, placing your side zips just inside the outermost post on each side will leave a “kidney cover” from your shoulder to the scuttle complete with the snaps to attach to the door. You may find this eliminates the need to carry your sidescreens!
- A “sun top” will do wonders both in terms of keeping the sun off you and your passenger and in reducing wind buffeting. Many fabrics are available, my choice is “sunbrella” as used in those large outdoor shade umbrellas. You can make a “sun top” yourself or have your auto trimmer create one for you.
- When having your weather top redone, have the auto trimmer include a zip-out rear window. This modification will allow you to use the weather top as a “sun top”.
- Pulling your Mog's hood over the windscreen's lift-a-dot fasteners can be a real chore, especially in cool wet weather. Consider a set of “hood frame swivel pivots” available from most Morgan dealers (I paid £33 from the manufacturer). These make the job “simple and effective without bruised fingers, broken windscreen, torn hood, or use of colourful language”!
- Many of us like to travel with a car cover to protect the Mog at night or in public car parks however, these can be bulky. An option is to create a “storm cover” that fits over the entire windscreen and cockpit. These are available custom made from Morgan agents (Melvyn advertises these for about £90) or you can make one yourself. I've created one for our +8 from a “tent footprint” from the Kathmandu adventure store (Eurus tent footprint – even comes with a nylon stow bag), for about A$30. Just needed some stretch cord additions to hook over things like bonnet buttons, sidecreeen knobs, and taillamp assemblies to provide a snug waterproof cover a fraction of the size of a full fledged car cover.
- Our 4-seater was a great tourer because we could pull out the rear seat cushion and seat back and replace these with a plywood open top (and open bottom) “box”. I mocked mine up in cardboard and masking tape before transferring to plywood, using thin aluminium 90° angle (as used by roofers for soffiting) at the corners, and bolts / T-nuts to hold it all together. Make the box high enough to just fit under your tonneau – discreet and keeps the luggage out of the weather. I covered ours with Everflex to approximate the interior leather, and secured it with a couple of “L” angles to existing fasteners in the floor.
- Another 4-seater trick is to place a wooden crosspiece at tonneau height just behind the front seats. This can be attached to the tonneau via a 90° flap sewn onto the tonneau and secured to the front side of the crosspiece with several button snaps. Holds the rear of the tonneau taut, stops the wind from lifting the tonneau, and with the 3 zips allows the front section of the tonneau to fall behind each seat for added

protection from prying eyes and weather. Boxes, crosspieces, and triple zips can also be used on 2-seaters.

- I'm not really a fan of luggage racks – an individual taste. Regardless of how you pack, buy some large “dry bags” for use inside your case(s). These will ensure your VSOP* has dry clothes for the dinner & dance! (* Very Significant Other Person)
- Morgan's have lots of little nooks & crannies where with some imagination you can “stow” equipment. Some examples – when we rebuilt the interior of our 4-seater I took the rear seat back apart, discarded the “bedsprings” and created two “leaves” with enough space inside to stow our weather hood... always there (except when we used the box), always out of the way. I located plastic oil bottle holders and used these, mounted inside the engine compartment, to hold those extra litres of oil and coolant. Under the seats and beside the differential are great places to store items in waterproof bags or built-in lock boxes.

That's it folks. I hope you've enjoyed this series and found one or more mods you'll make to keep you and your partner happier during long tours. I started this series by mentioning the publications from Fred Sisson and Gary Dubois-Bell – these are worthwhile starting points.

Remember these are our personal experiences with the expectation they offer you food for thought – many Morganeers have found other solutions that work just as well! If you need clarification on any of my comments you can call me at (02) 9527 4818, 0416 397 124, or email vern.dalej@bigpond.com Happy Morganeering!