A History of Costello and the MG Conversion

Some notes about V8 modifications

There are quite a few myths about the Costello V8s, which have given rise to some argument in the club magazine (articles and letters). Perhaps this article will dispel some of the myths and start a few more arguments.

It might be worth a look at Ken Costello himself, first of all. When I first met him in 1972 he was a short, balding chap with a slight pot belly. He ran a small garage work-shop called Costello Motor Engineering Ltd., in Farnborough, Kent.

Ken is a very skilled, practical engineer, good at innovative design. He had made a name for himself in earlier years, aggressively winning lots of races with hairy Minis. When the V8 conversion idea came to him, he was of course able to drop the Buick/Oldsmobile/Rover unit into almost any car, but it was easily done to MGBs and it spectacularly transformed the car.

There was not a single 'Costello V8', there were different versions which are more easily defined as 'early' and 'late' versions. The early version had the V8 unit with twin SU carburetors, a bulging (fiberglass) bonnet and a noticeably different black, aluminum 'egg box' grille. The late version could be fitted with the standard MG bonnet – no bulge was required since the V8 unit was fitted with a single rearward-facing Weber 40 DCOE carburetor; the standard grille could also be fitted (black, plastic honeycomb type). The last of the late versions could either be Weber carbureted or SU carbureted engines, depending on customer preference and availability of engine units and parts.

The MG's which were converted were MGB roadsters and GTs, MGC Roadsters and GTs and even Leyland MGB GTV8s. The Costello V8s are fairly easy to distinguish in the case of the early version, with their bulging bonnet and different grille. The late version was not so easily to spot since it may or may not have had the different grille and it may or may not have had the (no longer necessary) bulging bonnet. The appearance depended very much on customer preference. Most of the Costello V8s would sport the aluminum V8 badge (from Rover) somewhere or other (usually the front) and specially made chrome and plastic badge was often stuck on the rear end of the car – 'V Eight Costello'.

Ken's MG customers either brought their MGs to him for conversion, or commissioned him to buy and convert new or second-hand examples. They all wanted improved performance and they got it, whether the car was MGB, C or V8. In the case of the Bs and Cs, they also got a remarkable improvement in road-handling; a fact which is perhaps not appreciated as much as it could be. This improvement came from an engine which was 50 lbs, lighter than the 4 cylinder unit, and a nearly 50-50 weight distribution between front and back wheels, the V8 unit sitting further amidships than either the 4 or 6 cylinder units.

Sometime in 1972 Leyland (MG at Abingdon) asked to inspect one of Ken's V8s, and he obliged. During 1973, Leyland sent their distributors a memo advising them not to sell complete Rover 3.5 V8 engine units to Costello. When I read this memo, it seemed, to me, to be a sad move by Leyland – but of course it coincided with the planned market launch of the MGB GTV8. However, the effect on Costello was interesting; unable to readily get the V8 assembly, he resorted to buying second-hand scrap/imported Buick/Oldsmobile and Rover engine blocks and rebuilding them with components bought from "tame" or friendly Leyland distributors and any other sources of the vital components. This means that some Costello V8 owners are driving around with Buick/Oldsmobile engine blocks in their cars.

The 3500cc aluminium Buick engine was produced in the US in the mid-60's and caused quite a stir amongst the racing fraternity, because of its advantageous power-to-weight ratio. Oldsmobile subsequently used the engine, changing the cylinder head and valve train to get more power. The significant differences between the two engines were just that (i.e. cylinder head and valve train), the block remaining essentially the same. The blocks were high pressure die castings, as opposed to the UK Rover low-pressure "sand" castings. Costello's engineering knowledge told him that the US blocks were stiffer and lighter than the UK Rover blocks and were therefore a better choice. The difference between the US and UK blocks can be seen and felt; the US one has a smooth finish, the UK one is rough.

And now a short diversion –

> *It is interesting to note that Rover only got hold of the V8 unit by chance. A "History of Rover", read several years ago in Enfield Public Library, told that a Rover or Leyland marketing executive stumbled across the engine as it was lying in a Mercury Marine workshop in the US. Mercury had been examining it for potential marine applications, since it was such a light engine. This same engine found its way back to the U K – and went into the Rover 2000 body as a prototype. From that came the 3500 and 2500S Rover, with Rover manufacturing the engineundern licence from Buick. Incidentally, Leyland Australia produced a car in 1973/74 called the P76, which uses the same basic design Rover V8 unit, but with the capacity increased to 4.4 litres so that it could drag along the large-bodied P76. Disenchanted Triumph Stag owners have for years been discarding the poor Triumph V8 in favour of (usually) Ford 3 litre V6s or Rover 3.5 litre V8s. In New Zealand and Australia, they use the P76 4.4 litre V8 which gives a startling improvement.*

Early Costello MG V8s used the Rover 3500S engine, which produced more power than the lower compression engine fitted to the standard Rover 3500. In order to fit the V8 engine into the engine bay, the bulkhead and other engine bay parts had to be cut into and reshaped; the consequential weakness was overcome by adding stiffening and bars at the front of the bay. In this as in everything, Costello and his company did a first-class engineering job and no corners were cut where safety was concerned.

As well as this, changes were made to the braking system with the addition of power-assist and competition disc pads if not already fitted. The exhaust manifold was made by "Mike the Pipe" and was very efficient, despite the lack of space to accommodate it. The MGB GTV8 manifold by contrast, was not so efficient. On the intake side, the SU carbureted models were basically Rover copies, then GTV8 copies. The Weber carbureted models were fitted with a stubby aluminium inlet manifold (designed by Costello) housing a large paper-element type air filter, probably a Bedford van component.

The eventual freeing-up of Leyland's embargo enabled him to stop doing "special runs" and he then just installed GTV8 engine units complete. By about 1975, Ken was probably losing interest in his V8 business as he was by then trying to get UK car manufacturers interested in a 5-speed gearbox which he had designed. He eventually joined up with a partner in Farnborough, moved his workshop a short distance and the company became V8 Conversions Ltd. The last time I saw them, they were putting V8s into the then relatively new TR7s, before Leyland started producing the TR8 for the US market.

Ken meanwhile had left for the US where an American manufacturer was putting his 5-speed box into limited production – limited in US terms, that is. The prototype of that box had rested in one of Ken's own MGV8 conversions and I often wander if anyone is still using it now. It was a good gearbox, an improvement over the 4-speed and overdrive on 4th which the V8 owners have.

Costello MGV8 and Leyland MG GTV8 owners may be interested in what could be done to improve their pride and joy. The rear springs can be uprated to the six leaf police GT springs. Never really available ex-stock, these have to be made up to order. They fit all chrome bumper models of GT or Roadster. These springs eliminate the V8 wind-up on

A History of Costello and the MG Conversion
Some notes about V8 modifications

hard acceleration and having 6 (stiffer) leaves, do not carry a weight penalty.

Be warned that those 6-leaf springs will give a firmer ride and may make the wife complain. The SPAX rear shocker conversion is really a safety must if you drive the car reasonably hard; the SPAX front shocker conversion should also be seriously considered. A front spoiler improves stability at high speeds and is therefore strongly recommended.

Things in the V8s ignition department are begging for improvement. Put in some colder plugs such as NGK BP6HS, set them to 20 thou' and throw out your single or double contact breakers in favour of a Lumenition ignition system. The latter item is well worthwhile, being technically better and more precise than the more conventional and low tolerance proximity induction systems, which have recently assailed the market. You could also consider discarding the oil cooler, if fitted, since the V8 never runs hot enough anyway. Use an oil viscosity index increaser such as ST or WYNN'S to thicken up the oil and get rid of annoying hydraulic tappet noise, which may be particularly evident when cold.

In the performance improvement department, SU carbureted models are a bit stuck unless owners wish to go to the expense and trouble of discarding the whole, tortuous SU input/air filter side and installing a Weber and associated inlet manifolds and piping. The exhaust end can be improved by going for a decent exhaust manifold. Do not bother going to twin exhaust pipes (one from each bank of 4) since these provide a dubious advantage, the pulses of one cylinder tending to cancel another out in the same bank. Pulse timings from opposite cylinder can assist each other and if you wanted to pipe things correctly to enable this you would end up with an impractical arrangement with pipes all over the place.

If you really insist on maximum power, you could supercharge the V8 with, say, a Shorrock conversion. This is expensive; and if done properly it does not detract from the engine's low speed torque to any noticeable extent. The effect on hard acceleration is shattering. The lump in the bonnet may obstruct your view through the windscreen, however. Incidentally, a lower compression ratio is likely to be required for supercharging.

Should your V8 engine and/or gearbox be in need of an overhaul, consider going to a Rover SD1 engine (with solid tappets which don't froth at high rpm); the 5-speed SD1 gearbox is an improvement, but remember that the SD1 engine is less powerful that the high compression 3500S engine.

For Weber carbureted models, Costello may already have provided you with the settings which I gave him in 1974 or thereabouts. These are:

	Slow run Jets	40F8
*	Main Jets	130
*	Emulsion Tube	F2
*	Air Corrector	170
	Accelerator Jet	55 (richer is 60)
	Accelerator Return Valve	0
*	Float Chamber Needle Valves	225
	Main Venturi	30
	Auxiliary Venturi	4.5

***Note:** These settings can eliminate the annoying power drop or cut-out at between 110mph and 120mph which occurred on some models because the relatively small, single float chamber ran dry. If however this trouble persists then discard the SU petrol pump in favour of a Bendix blue-top or similar high pressure petrol pump. If you do this, try to fit an in-line petrol filter between pump and petrol tank.

With the above settings, mpg (never very important to a V8 owner) should improve from about 16 or 19 mpg to an average of 21 around London, or 25 on long (fast) runs. Your right foot will be the final decider on this.

Two points on the Weber: Unless you have a stubby inlet manifold pipe (as designed by Costello) which is water-heated, then you will probably experience symptoms of icing with the above settings; these symptoms will only tend to occur on cold damp days on, say, a wintertime trip down a UK motorway. You may already experience these symptoms anyway, but the above settings will only tend to exacerbate the symptoms since atomisation is greatly improved, thus increasing the cooling effect. One cure for this is to warm up the input air. The other point is that the richer accelerator jet will probably be preferred by heavy right-foots since it gets you under way a mite quicker than the smaller (weaker) jet, throwing out a few unburned hydrocarbons behind you.

Incidentally, if your V8 gives 70 mph in 4th overdrive at about 2,400 rpm then OK, otherwise, you may have an unusual final drive ratio. These were fitted by Costello to suit the 'urgency' of the customer involved, different ratios providing different rates of acceleration.

This brings us to the performance aspect. How powerful were the Costello V8s? How fast were they? The Costello V8s with the 10.5:1 compression engine. Mike's exhaust manifolds (there were two types, one using slightly larger diameter piping than the other) and the Weber 40DCOE, are the most powerful of Costello's conversions. As to power, Ken was never really concerned – dynamometer readings had indicated 175 bhp could be expected as typical; but once the high compression engines had been run in, and fitted with electronic ignition, Weber 40DOE (with correct settings) and Mike's larger diameter pipe exhaust manifold, then 185 to 200 bhp was possible. These were only numbers anyway; what mattered was how the car handled.

How fast? The Weber carbureted models were usually the quickest and of course a Roadster was quicker than a GT, other things being equal, by virtue of its lighter weight and consequently superior power-to-weight ratio. Acceleration of 0-60 mph in 6.5 seconds, from the roadster (carrying two people) was typical. Which final drive ratio you have makes a difference. Certainly the Weber carbureted Roadster had no difficulty keeping up with a Porsche 911S (both being driven flat out). Costello often joked about incidents where he had diced in his GT with perplexed Porsche 911S owners whilst touring across France and Germany. But the comparison ends there; the Porsche is a finely tuned race-bred car; the Costello V8 is a long-legged, easy-going, economical mile eater.

IAIN M S BARRACLOUGH

Enjoying MG
Volume 10, Issue 1
January 1990.