

Daimler SP250 Restoration - Fred Butcher

Vehicle History

SP 250 Chassis N0 102551, Body No 737-0932, Engine No 89560 order Ref' No.11/905/10 Colour Red.

The purchase order was placed by Hercules Motors Sydney on 5 Dec 1960. The Vehicle commenced assembly as an "A" spec' however completion was delayed following the purchase of Daimler by Jaguar in 1960.

The vehicle was finally delivered in March 1961. By such a delay, the vehicle falls within a unique group of Australian ordered cars with chassis No's 102510 to 102834. This group were upgraded to "B" specifications. The vehicle was sold in 1962 to an unknown buyer.

I purchased the vehicle in 1974 with 35,000 miles. It was damaged and had been off the road for some considerable time. I have not been able to uncover the vehicle's history post purchase 1962-1974. In this period the vehicle had been painted Old English White. I repaired the vehicle and used it on a regular basis.

On moving to South Australia in 1987, with the Submarine Project, the vehicle was used occasionally, but following another 1st gear failure, I decided to lay-up the vehicle until I retired.

In September 2009 I commenced a complete ground-up restoration. This included painting the vehicle in the original colour. I completed the restoration in February 2011. The vehicle is in regular use for car club functions including interstate trips and has clocked up 20,000 plus miles.

SP250 - Background

The SP250 was the last unique model from Britain's oldest car maker and the brand's only true sports car. The car was very labour intensive to manufacture with hand laid fibreglass body panels. The moulds in use at the time were similar in design to that used for metal fabrication and the mould shop workforce consisted mainly of woman.

Over time various groups have taken moulds from good bodies. These

moulds greatly reduce the number of panels required and it is now possible to simply take a photo of any damage and a replacement section can be made.

In May 1958, the BSA Board formed a committee to study the feasibility of producing a Daimler sports car. The committee decided on the basic features of the car, the exceptional Edward Turner designed turbine smooth 2.5 litre 90 Degree V8 engine, four-wheel disc brakes, a slightly quirky fibreglass body with a conventional chassis were in the specification.

Two test cars were built. Tests were satisfactory however, it is interesting to note the engineers mentioned brake squeal, an issue that continues to characterise SP's. The business case was formulated on a sales numbers of 7,600 cars over a 3-year period with the bulk of sales in the USA. When Jaguar acquired Daimler in 1960, it had to play second fiddle to the E-Type launched in 1961. Only 2654 examples were made, making the SP250 a true limited edition.



1962 BATHURST 6 HOUR CLASSIC ~ DAIMLER SP250
LEO GEOGHEGAN ~ IAN GEOGHEGAN

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Australian Cars

The first SP250s reached Australia in 1960 with a total of 63 factory exports to Australia. Of those, 40 were distributed through Hercules Motors in Sydney, 16 through Joubert British Motors Melbourne, one through M S Brooking in Perth and the final six through Bryson Motors in Sydney. In addition to factory cars, a further 45+ cars have come to Australia as later imports. The Latest copy of passport, the SP world-wide register, lists 70 cars in Australia. There are however more sitting in sheds just waiting to be "restored".

SP250 - Reviews

Motoring reviews at the time of release were mixed. The British weekly automobile magazine 'Car Illustrated' concluded: "in spite of recent price increase the Daimler SP 250 is the least expensive 120 mph car on the British market and it is probably the most flexible 120 mph car in the world. It has fantastic acceleration, fabulous brakes and a surprisingly light thirst for fuel".

Gordon Wilkins writing in the July 1960 Sports Car World under 'First Impressions': The Daimler SP250 gave his first article a sub-heading, "Give it a new body, new chassis, new suspension and you might get something really worthwhile".

In contrast Bill Daly was surprised, in the road test in 'Modern Motor' of Jan' 1961, under the heading 'V8 Speedster', by saying, "But when the test time comes along it turns up trumps and you wonder how you could have misjudged such an obvious winner".



Motor Racing

In racing form the Turner V8 engine typically developed 190bhp with a top speed of 142mph at a rev limit of 8,000.

In Australia the SP250 quickly established itself in the production sports car races and rallies. Some of the best-known drivers were Max Brunninghausen, Brian Lawer, John Martin, Clive Hodgins and the Geoghegan brothers. Hercules Motors approached the Geoghegan brothers with a proposal they compete in the production sports car races using the Hercules demonstrator car, **which just happens to be one chassis number on from my car.**

Hercules wanted to demonstrate that the SP250 was fast, strong and reliable. For the Bathurst 6-hour Classic held on Mt Panorama they were given a racing budget of 50 Pounds (\$100) so preparation was limited. At the Easter 1962 sports car race Pete Geoghegan won the 6-hour race setting a top speed record for the category of 128mph. Second across the line was a TR4 five laps behind.

Police Pursuit

Because of its superior performance at that time, the SP250 was used by police for pursuit work both in the UK and Australia. The practice in the UK was to use the new motorway to test cars and the 100up club motorcycle boys had their Sunday run. The police used the SP250 for pursuit duties.

In Australia these sports cars were operated by the Federal police in the ACT to control speeding traffic heading for the snow fields. Two of the Federal police cars are still in Australia.

SP252 Prototype

Under the guiding hand of Sir Williams Lyons, two prototypes were built as the potential new model. Changes included an updated more modern body, improved suspension, rack and pinion steering etc. If put into production the model would have become the SP252/SP250 Mk2. One of the prototypes still exists in the UK and is a very smart looking sports car. The dash is similar to the E-Type and the vehicle is trimmed in leather. Headlights are inset into the guards as with the E-Type of the day.

Restoration

On retiring in 2009, I immediately commenced work on restoring the vehicle which I had laid up several years earlier. The plan was to undertake a full body-off restoration with every nut and bolt removed etc.

Being a fibreglass body, I was fully aware of the dangers of using any form of paint stripper as it damages the gel coat and is almost impossible to remove, resulting in issues when attempting to paint the vehicle.

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The SP252 prototype was designed and conceived by Sir William Lyons as a replacement for the SP250. A viability study found that the manufacture of the fibreglass body took 2½ times as many man-days to build as the Jaguar E-type, and so the project was shelved.

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Having worked in the ship building industry I was familiar with low pressure wet blasting to remove material from fibreglass. I managed to locate a local operator with a suitably portable blast unit who was happy to bring his rig to my home to blast both the fibreglass body and the chassis.

I then set about stripping the vehicle in preparation for paint removal. With the car not having been exposed to extremes of weather I was pleased to find that the body fasteners were easy to undo. Removing the body involved structurally bracing the body shell. The fibreglass body tends to flex in the floor when not secured to the chassis.



Engine being removed ready for body removal. The better option in hindsight is to remove the body with the engine and transmission in place.



Paint removed using a low-pressure wet blast system. It took less than two hours to have all paint removed.



Chassis with paint removed and a coating applied to prevent surface rust prior to being painted in Chassis black

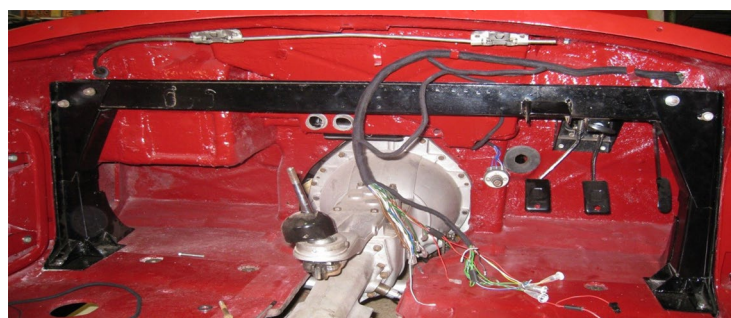


Rear wheel arch with paint removed.

On inspection no structural damage to the chassis and no rust. Some of the fibreglass body mounting points had suffered damage, in particular the point in the boot area. The SP chassis does suffer from flexing in this area and there are certain modifications that help reduce the flexing.



Chassis out rigger rails, A posts and B posts. These rails were designed and installed by Jaguar under the B spec modifications. The earlier A spec cars suffered scuttle shake and were prone to having doors fly open in heavy cornering. B Spec' modifications included: The fitment of two vertical metal posts to form the traditional A post to which the door hinges were then attached with a fabricate metal cross beam bolted to the fibreglass firewall to strengthen the assembly. In addition to the X-bracing two vertical braces bolted to the outrigger beams were bolted to the fibreglass B post assembly. Doors were fitted with pin and latch assembly termed "door silencer assembly" to prevent the doors from rattling in the door locks



B Spec' modification: "A" post and cross bracing installed. The uprights are bolted to the chassis outriggers through the floor and the brace is bolted to the fire wall. The photo shows the New wiring harness installed through the firewall. Brake master cylinder and callipers were refurbished with new pistons fitted to the callipers. The brake lines and flexible hoses were replaced with new components.

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Front end assembled. The SP250 was originally fitted with a worm and peg style steering assembly. This system proved problematic in that it was heavy to park and mechanical wear in the steering box made the car difficult to steer, especially at high speed. I converted my car to rack and pinion in the early seventies; I didn't like the design where the steering box is underslung to the chassis with a rigid steering column aimed at one's chest. Also "Silent Cop" traffic management devices in road interceptions were to be avoided.

The front suspension is identical, for most part, to the Triumph TR3A, having brass trunnion block for the lower swivel joint with a vertical threaded link connecting to a standard ball joint assembly. The thread in the trunnion block has a tendency to wear requiring the complete trunnion to be replaced. Over the years of ownership, I had collected spare trunnion blocks mainly at auto swap meets; several other British models use the same type of front suspension as the lower pivot. All items were renewed. By setting the suspension at the ride height I was able to adjust steering and suspension geometry with the body off.



Chassis with engine and gearbox fitted ready to accept the body. Tail-shaft and exhaust system were fitted prior to fitting the body. The chassis outrigger rails installed. A & B post attach to these rails.

The engine had excellent oil pressure before the car was laid-up and a quick check to confirm big end bearing clearances confirmed that clearances were in spec. There was no detectable lip in the cylinder bores and the engine had not shown signs of an oil leak from the rear crank shaft seal which is a ring type sealing arrangement. I decided not to disassemble the engine.

The cylinder heads were overhauled and fitted with Nickel aluminium bronze valve guides fitted with VW Passat stem seals. Being a double valve spring arrangement, this style of stem seal was small enough to fit inside the inner valve spring. The water pump bearing and mechanical seal were replaced. The SU carburettors were disassembled and new throttle shafts and shaft seals installed. Starter motor, generator and regulator were also serviced. The Lucas RB3 regulator contact points were replaced.

The gear box was rebuilt with a new first gear. The SP was notorious for breaking 1st gear. This was the 3rd replacement gear fitted to the car.

The differential axle tubes had moved in the housing allowing the differential to twist under acceleration. The assembly was stripped and taken to Rod-Tech Street Rod and Machine Centre who specialise in shorting rear axle assemblies for street rods. The axle assembly was fitted with a jig to ensure correct axle tube bearing to differential housing alignment and the tubes were then refastened to the differential housing.



Back from the paint shop ready for reassembly. The earlier type of fibreglass was prone to 'star cracks' in the jell coat which then caused the baked enamel paint to separate; this also happens with duco type paint. I elected to use the newer two pack epoxy which has proven to be a winner with 10 years in service and no star cracks visible.



Preparing to lift body onto chassis. The body is easily managed by four people, one on each wheel arch. The more difficult part is getting the packing shims to stay in place while positioning the body onto the chassis.

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Body mated to Chassis. When removing the body, it helps to identify the canvas shims used when fastening the body. This makes reassembly much simpler as the body has to be adjusted using shims to ensure the correct door gap is achieved.



Fuel tank installed. Tail lights installed. Both original tail light finishers were replaced with remanufactured parts. The original finisher were made from poor quality cast material causing the chrome to blister. Both bumper bars were re-chromed along with the windscreen and dash panel holding the gauges, Inner and outer door and winder handles were replaced with remanufactured parts. The original handles had suffered from a similar problem to the tail light finishers.



I purchased a complete trim kit from the UK. The kit included all items required to trim the complete car including soft top, hood bag, tonneau, tool roll, jack bag, seat foam, fasteners, hockey stick, and the list goes on. Included with the trim kit were seat belts; my late wife insisted seat belts be installed. The belts are lap and sash type with top anchor point fastened through the top of the rear wheel arch to a stainless-steel strap which is in turn bolted around the inner circumference of the rear wheel arch.

One of the more difficult tasks was the fitting of the new windscreen rubber. The frame is made up of four sections screwed together with BA counter sunk brass screws. The originally frame must have been assembled by hand as the positioning of the screws varies. I had a spare top part but this would not fit correctly so the original and was re-chromed. The trick to fitting the frame to the curved glass with seal installed is washing-up liquid and tie-down straps applying gentle pressure to the sections of the windscreen frame.

I was not confident to shape the leather around the top of the seats so off to the trimmer went the seats, with what I thought would be ample time to finish the seats in time, as the car was entered in the February 2011 All British Day (ABD). This proved to be a challenge. The seats had been with the trimmer for a considerable time and after numerous phone calls I had given up, when the phone rang very late on the Saturday evening prior to the ABD. Your seats are ready. So down to the trimmer and back, and by 2.00 am I had seats installed.

Remembering at this time the car had not turned a wheel. Early on the Sunday morning I set off to the petrol station and at the bottom of the hill the brakes locked on with a solid brake pedal. Not to be phased I cracked the brake pipe at the master cylinder to release the pressure in the system. From then on to and back from the ABD, with braking achieved using both the hand-brake and gears. I didn't dare tell my wife. I was comfortable knowing that in an emergency I did have brakes.

With all this drama we arrived at Uraidla just gone 10.00 am and were greeted by a rather officious marshal who said we were late and couldn't enter. Fortunately, another marshal had a word and we were allowed in.

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I chose not to fit the overriders to the bumper bars. I think it is a much cleaner look.

Before the refurbishment the car had been fitted with steel road wheels and the aluminium style dress wheel hub-caps with imitation spinners. Over the years I had collected the proper wire wheel splines (not bolt on) and these were fitted during assembly.

The wire wheels are 15in 5½ J tubeless with 80 profile radial tyres giving as near as possible the running diameter to the original tyres. This gives 110Km (70 mph) at 2,800 RPM.

It is now nearly 10 years since I completed the refurbishment and the car has travelled just over 20,000 trouble-free miles with many fast interstate trips to various car Rallies.

The flexible Turner V8 engine coupled to a four-speed gear box makes the car very easy to drive. If feeling lazy, the engine is happy to pull away in top gear from 10-15 mph.



I have also fitted a vacuum cruise control which makes it a breeze to drive the dreaded Hay Plain et al.

The major suppliers to the restoration were:

- David Manners UK mechanical parts
- Bryan Purvis UK Trim and body fittings
- Australian Classic Wire Wheels

Fred Butcher



Daimler 60th Anniversary



Daimler SP250 publicity photograph. The model in the photo, who has since passed away, was from Jaguars Sales Department