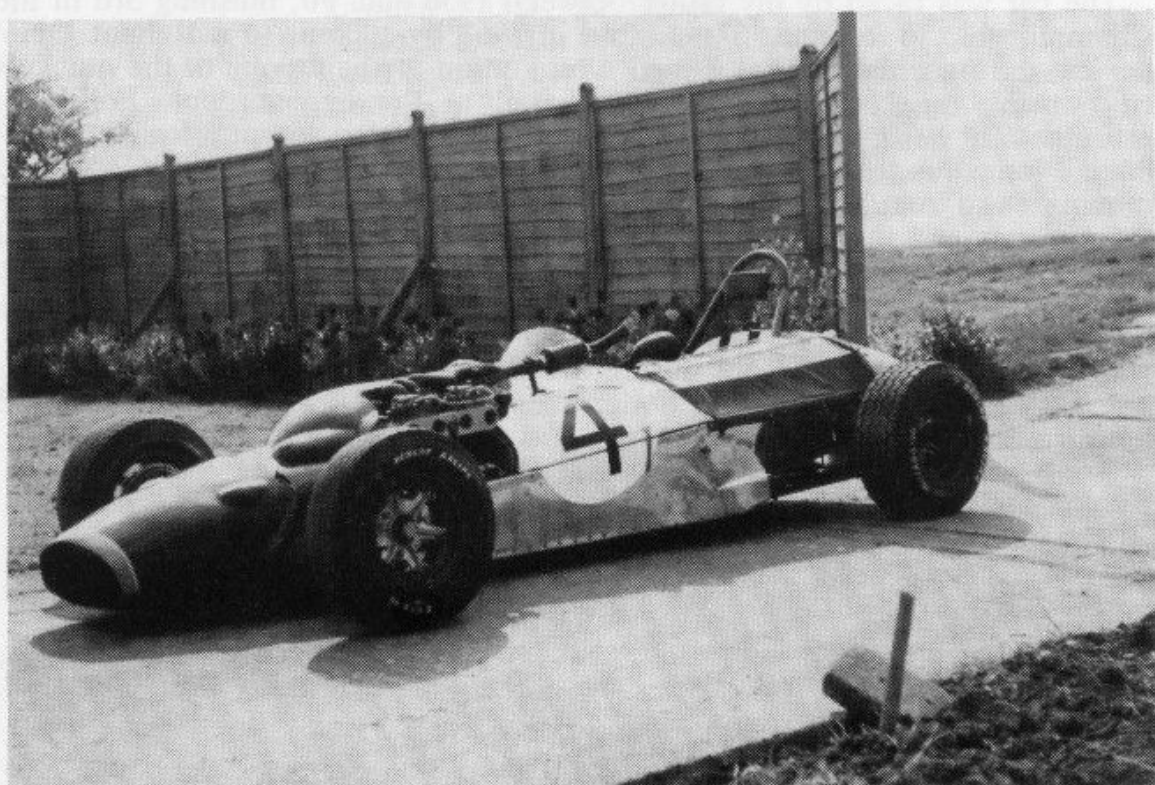


# Cowley Mk III Austin Seven

Mk III as the name implies is the 3rd Austin Seven based special built by my late father Bill Cowley. Mk I being an Ashley bodied road going special built over a period of 2 years in our back garden.

Mk II, although road registered was built to comply with the Formula 750 regulations. It was constructed in the front living room of our semi in Rotherham. This car finished 3rd in the 750 Championship in 1964 when driven by Trevor Heygarth.



Neat Cowley outline

Mk III was built over a period of 4 months during the Winter and Spring of 1964/65 at a cost of £150, of which £30 went on a new set of racing tyres. The basis of the car was a very rotten '37 Ruby which yielded bottom chassis rails, back axle, gearbox and hubs. The Ruby chassis was so rotten that the rear 18" had to be replaced with 2" x 2" square tube for the  $\frac{1}{4}$  elliptic springs to sit on. Mk III chassis is a tubular space frame made from  $\frac{7}{8}$ " square tube brazed together atop said boxed Ruby side members with a central bulkhead to which the engine is mounted. The front of the engine being supported by a single tripod affair attached to the n/s crankcase mounting. The body panels of aircraft spec. L72 alloy are stressed, being rivetted directly to the chassis frame with monel metal pop rivets. The exception is the bonnet which is of L16 alloy and the nosecone and bonnet blister which are of fibre glass. This car has the distinction of being the first F750 car to use Mini 10" wheels, this being possible by the use of a home modified 4 speed Ruby gearbox with an indirect top gear, ie. Old 3rd became Top and the ratios are:

3rd. 1:1.28  
Top. 1:1  
2nd. 1:1.58  
1st. 1:2.62 and used together  
with a 5.125 diff ratio.

Following relaxation of the rules in 1969, a Morris Minor type back axle was fitted, with a standard type close ratio Super Accessories gearbox with either 3.7:1 (too high) or 4.22:1 (too low) diffs. Has anybody got a 3.9:1 diff? Front suspension is by crossover swing axles made from a Ford E93 beam, Girling type stub axles being modified to accept Ford's much more substantial king pins. Springing is by rubber bands in tension cut from old Mini inner tubes and damping being by Armstrong lever type filled with EP90 gear oil. Steering is modified Triumph Herald rack and pinion with divided track rods. The rear suspension is Softride  $\frac{1}{4}$  elliptic spring as dictated by the then current regs. Damping is controlled by Mini telescopic units and the rear axle is located with a Panhard rod. The all up weight of the car is around 6cwt.

The car was raced by my father between 1956 and '70, finishing 3rd in the Championship in '65 and '67 and 2nd in 1968 by 1 point to a Reliant OHV device, during which time it gained a reputation for being one of the quickest (if not the quickest), but somewhat frail in the engine dept. Following retirement in 1970, Mk III underwent drastic surgery to accept a Reliant OHV engine for yours truly to race, but unfortunately, due to joining the RAF and moving away from home, it was never raced in this form. The car lay in a barn for 15 years and then, after reading an article in Practical Classic magazine I found out that the car in original Austin 7 powered form was eligible to race in the 750 MC Pre-War handicap series as a "Historic 750". Fortunately, my father had something of a jackdaw mentality and all the parts, tube work etc. which had been chopped out during the Reliant conversion had been saved. The restoration of the car was undertaken by me during the Winter of 1985 and has been raced by me with much success ever since.

### Engine Development

1965 Twin  $1\frac{1}{8}$ " SU's M9 needles

4 straight exhaust pipes 36" long

Modified '37 head, then later a Coldwell alloy item

Mk I Cowley cam, In. open 54 BTDC, In. close 80 ABDC (0.275" lift, Ex. open 54 BBDC, Ex. close 20 ATDC 2" rad. tappets)

1966 Twin  $1\frac{1}{8}$ " SU's (Tried  $1\frac{1}{4}$ " but no good)

Cowley 8 plug head 7.2:1 CR

Mk II Cowley cam, In. open 44 BTDC, In. close 90 ABDC (0.300" lift, Ex. open 44 BBDC, Ex. close 30 ATDC 2" rad. tappets)

1967 Engine inclined in chassis. Cyl block updraughted.

Single twin choke 35 DCO Weber (28mm chokes)

$1\frac{1}{4}$  in. valves.  $1\frac{5}{16}$ " ex. valves.

8 plug head 7.5:1 CR

Mk III Cowley cam In. open 40 BTDC, In. close 90 ABDC (0.275" lift, Ex. open 90 BBDC, Ex. close 60 ATDC 2" rad. ex. flat in. tappets)

1968/69/70 Two engine types used;  $1\frac{1}{2}$ " 2brg and 3brg.

2brg - Desiamesed updraughted inlet ports, offset valves  $1\frac{5}{16}$ " in. and  $1\frac{1}{16}$ " ex. Twin 35 DCO twin choke Webers (28mm chokes)

Cowley 8 plug head 7.8:1 CR. 32" exhaust pipe length.

Mk IV Cowley cam, timing secret and being used by me to this day.

3brg-Siamesed with updraughted inlet ports,  $1\frac{1}{4}$ " in. 1" ex. valves

Single 40 DCOE Weber

NB All engines had 4 jet spit and hope lubrication which is no good with the revs involved. 25 blow-ups in 5 years.



1986 to date All tuning parts as 1968 with the exception of 4 into 1 exhaust system for quietness. 3brg crankcase used with centre main machined out. Allen 2brg pressure fed crank with Renault 4 rods and pistons. Pace external oil pump driven via a rubber toothed belt from cam. Oil pressure 40psi at 1800 RPM and 90psi at full bore ie. 7000-7300 RPM. Castrol R30 used. Power output = 50BHP at back wheels.

Score to date is 18 wins, 2 seconds, 1 third. 3 non starts: (1) Crash in practice. (2) Knocked sump plug off exiting paddock. (3) Loose flywheel. Three retirements which were all water pump related.

Lap records held at: Cadwell 1.22.5 - 64.42mph

Donnington 1.37.0 - 72.64mph

Lydden 53.3 - 67.54mph

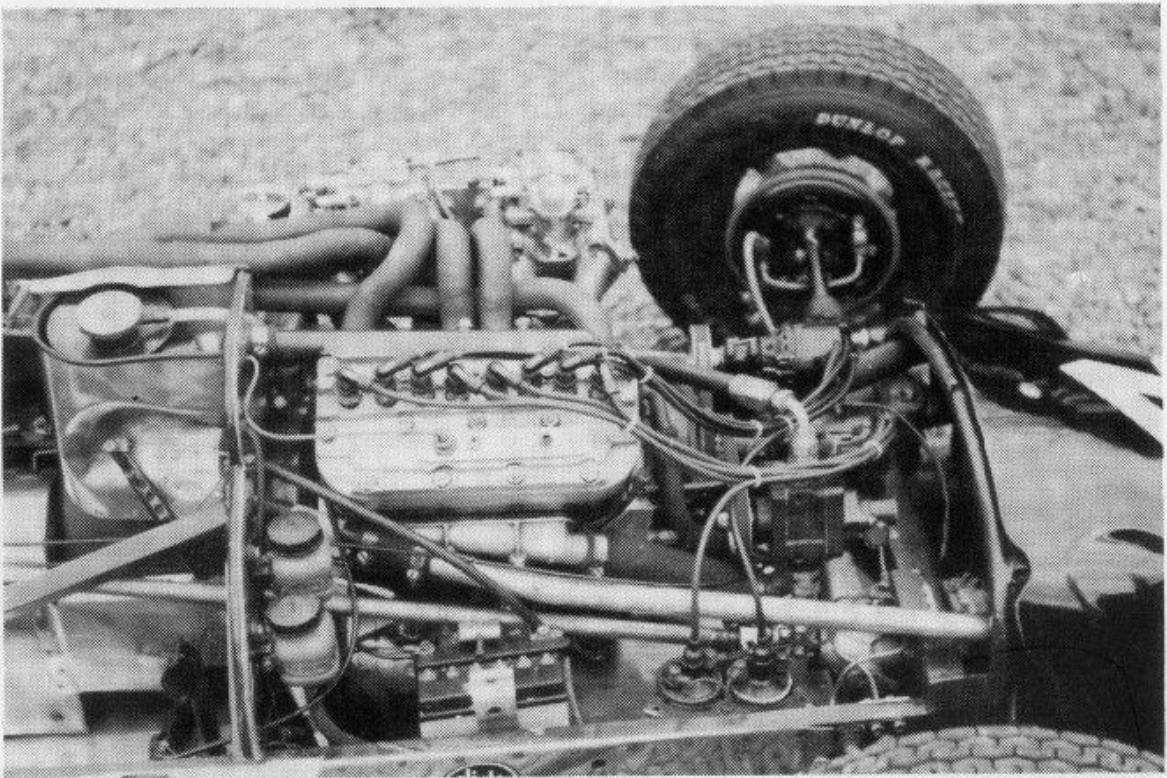
Mallory 1.00.1 - 80.86mph

Silverstone 1.18.5 - 74.52mph (New chicane)

Snetterton 1.30.7 - 76.08mph (1.15.7 without chicane)

The only A7 parts replaced in the last 4 years have been 1 flywheel - cracked, 2 clutch plates - cracking up, and 1 rear hub - crash damage and I hope this goes some to dispell the myth that A7 racers use up vast quantities of valuable spare parts. Well I don't anyway.

Nigel Cowley - 750MC



Cowley Mk III Austin Seven engine bay

