

LOOSE FILLINGS

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NEW ZEALAND'S BIG-TWIN PIONEERS

by David McKinney

A Cooper twin first raced in New Zealand in 1951, and was joined by two more in 1952. In those years, and for a year or two afterwards, two of them could match the best of New Zealand's racing fleet – the ex-Nuvolari P3 Alfa Romeo and a couple of hot V8 Specials. But only in lap-times. In reliability terms the Coopers' chains and gearboxes rarely proved able to last the distances of the biggest races.

The third big-twin import had its engine replaced by a 500 after just one appearance. Other twins came and went over the next few years, becoming steadily less competitive as more modern GP and sports machinery was imported. But as in other countries, the Cooper twins dominated New Zealand hillclimbing from their first appearance, until the start of the 1970s.

Hec McLean, a Christchurch enthusiast who had raced MGs, was the first New Zealander to try a twin in the back of a Cooper. He had acquired the early car raced by Northern Irish immigrant Billy Lee to such good effect in the 1950 NZ Grand Prix and, after a couple of outings early the following season with the 500 JAP in place, installed an 1100 twin of the same manufacture.

Left: we have never had a cover-girl let alone two before, and couldn't resist this photo sent in by JMW enthusiast Tony Scanlon who is selling his car in our classifieds. The photo is understood to be a publicity shot for a nineteen-fifties Fishermens Bend race meeting. JMW builder John Wynn is on the left; the girls are Channel 7 dancers Jenny Alexander (in the car) and Robin Farquar. Photographer unknown.



The handicappers were wise to the potential of a Cooper-JAP 1100. For the NZ Championship road race at Mairehau, they set McLean to start 1min50sec behind the fastest V8 special and only 10sec ahead of Les Moore in the ex-Nuvolari Alfa. The Cooper was a non-starter, however, and an early retirement in the Ohakea Trophy, after dropping out of second place in the NZ Championship beach race at Oreti in Southland, an event as important in those days as the big road races. At Wigram the car was, for reasons lost to history, driven by McLean's associate Ron Symonds, but was never in the hunt and retired once more.

There was, however, a second Cooper-JAP 1100 at Wigram, Australian John Nind with his newly-acquired Mk4 (10/48/50). His first try-out had been in a local Christchurch standing quarter-mile sprint the week before, in which he made FTD. In spite of suffering from 'flu, and in pouring rain, Nind qualified fifth-fastest at Wigram.

The V8 specials went into the first two places at the start of the race, also wet, but Nind was next. He took the lead on the first corner, but the V8s motored past again on the straight. The Australian was still in third place as the opening lap approached its completion, but he went off into the haybales, damaging the suspension too badly to continue.

The next twin to appear was when another Wellington driver, English immigrant Arnold Stafford, wheeled out the ex-Eric Winterbottom Vincent 1000 for a Wellington quarter-mile sprint, setting FTD from a standing start but blowing the engine in the flying runs. Thereafter he ran the car with a 500 JAP.

Bob Gibbons had dominated 1951 hillclimbs in the Wellington area at the wheel of a Jaguar XK120, and for the following season Jack Shelly of Independent Motors, the local Jaguar agents, bought him a brand new Mk5 Cooper (Mk5-L8-51) complete with JAP 1100. Just days off the boat, the car made its debut in a hillclimb at Plimmerton on 16 February, where stiff opposition was expected from Australian Tom Sulman in his Maserati 4CM, winner of the NZ Hillclimb Championship the previous year. After some trouble getting the Cooper to fire, 34-year-old Gibbons set a time of 30.1sec, three full seconds under the record. Sulman, second fastest, could manage only 32.3sec.

A week later came the Lady Wigram Trophy race, the glamour event of the year. It was preceded by two heats, in the first of which Gibbons, worried about oiling up on the line, elected to be push-started. It nevertheless took him only three laps to

catch and pass Sulman and lead the race. Not only did the little blue Cooper win, but it established a new lap record of 1min 33sec (82.02mph, 132.0km/h).

McLean had retired in the South Island Championship Beach Race at the Brighton venue in Christchurch, but was second in the NZ title event at Oreti, and in the NZ Championship sprint in South Canterbury. He was in the other heat at Wigram and, inspired by Gibbons's performance, was soon battling out the lead with a V8 special.

His attempt to pass it on the outside of one of the corners resulted in a spin, but he was soon challenging for the lead again, and this time succeeded in getting ahead. But it was all too much, and on the second-to-last lap the maroon Cooper stopped on the back straight with broken gear-selectors.

Although no-one had bettered Gibbons' lap-time, he chose not to start from the pole position he had earned, but instead to be push-started from the back-row again. McLean, his car repaired, was alongside.

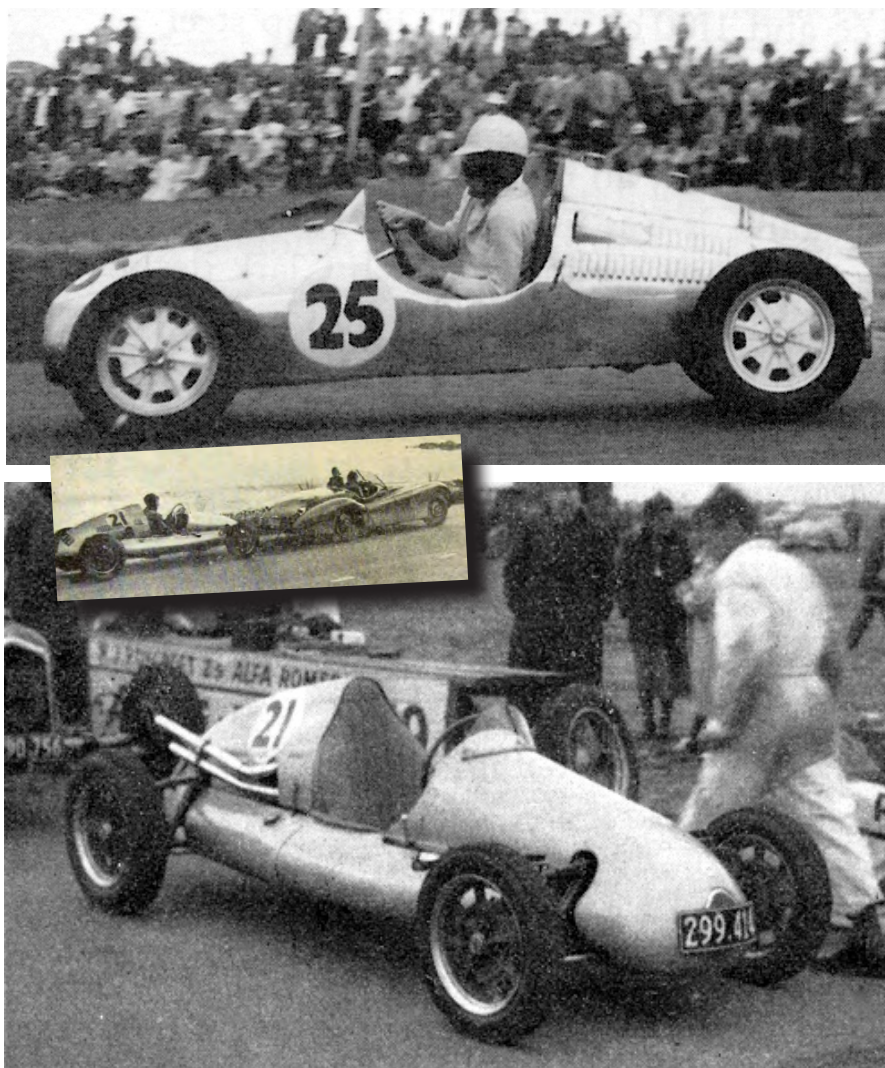
The South Island car was an early retirement with a broken chain, and Gibbons went out with an overheating

engine after he had got up to fourth place in the early laps. He was a late withdrawal from the Ohakea Trophy on 1 March and McLean, after losing two laps in the pits early on, retired with another broken chain after completing 8 laps.

Both cars failed in their heat at Wigram in 1953, McLean breaking yet another chain and Gibbons suffering fuel-starvation problems – after equalling his lap record. Both were allowed to start the Trophy race, from the back, but Gibbons was soon out with a melted piston, and poor McLean made no fewer than three stops to replace broken chains, eventually being classified eighth.

In an effort to overcome these problems, McLean fitted a JAP 500 for Ohakea, but was put out by a collision with another car. Gibbons carried on to place third, in spite of being jammed in top gear since just after the start, and was beaten on scratch only by Ron Roycroft in the P3 Alfa Romeo. Both

Below: Alan Freeman at Ardmore in the ex-Peter Collins lightweight Mk4.
Bottom: Bob Gibbons' Mk5, Inset: on tow.



lowered the lap record from 1min37sec (jointly held by McLean) to 1min30sec (86.64mph, 139.4km/h).

The 1953 NZ Championship road race was held on a new circuit around the wharves of Dunedin. McLean had discovered the cause of his continual chain-breaking and was trying an 1100 engine again. The circuit was perfectly suited to the Cooper twins, and McLean qualified to start from pole position, with Gibbons in the third front-row position, on the other side of the Roycroft Alfa. No-one could hold the ex-GP car in the race, but Gibbons finished second, McLean having lasted only six laps before losing control and crashing. That was the last straw and after three miserable seasons with the car he never raced it again.

Instead he sold it to Peter Harrison of Rotorua, who entered it in the first international NZ Grand Prix, at Ardmore in January 1954. Also in the field was Alan Freeman of Wellington with a similar car, and a 1000cc JAP twin. Freeman actually qualified second-fastest among the New Zealanders, with only Roycroft faster, the two locals lining up seventh and eighth on the grid. Harrison was considerably slower.

Freeman was in an incredible fifth place overall on the first lap, Australians Jones (Maybach Special) and Brabham (Cooper-Bristol) being among those behind. It couldn't last of course, and by the end of the lap he was tenth, albeit with Roycroft the only local entry ahead. After only five laps however the Cooper was out with a broken rod, and thereafter raced with a JAP 500 engine. Harrison kept circulating to place tenth, though two Cooper 500s were among the cars ahead of him.

Gibbons had chosen not to enter the Grand Prix, running instead in a couple of shorter handicap races on the support programme. He finished fourth in the first of these, but won the other. He then came through from the back mark to place fifth in the Ohakea Trophy, still run on a handicap basis, with fastest lap and fastest time on scratch, though Roycroft and the Alfa were not in the field. Harrison had run in the preliminary race but scratched his entry from the Trophy race.

Gibbons concentrated on hillclimbs after that, but Harrison, after racing his car with a Matchless 500 engine in 1955, was back with JAP 1100 power for 1956. He ran in this form in the Ultimate Race Car Feature at the GP meeting, without success, and withdrew his entry from the inaugural Levin meeting one week later.

In the South Island meanwhile, Ronnie Moore, after one brief race in a supercharged Kieft-Vincent 1000 in 1952, had equipped

his Mk5 Cooper 500 (Mk5-L2-51) with a Vincent 1000 for the 1955 season. He entered the Mairehau and Dunedin races that year and the next, but didn't start any of them.

He did make one spectacular appearance in a major race, however, in the 1956 Lady Wigram International Trophy. He qualified seventh-fastest, and third among the New Zealanders. In the race he held a sensational fifth place overall, with only the foreign entries ahead, until an oil-line broke after five laps. For the following season he had a Cooper-Climax sportscar and the Cooper-Vincent was entered in the Grand Prix for his father, Les. Once again it was a non-starter, and thereafter limited its activities to lesser events.

The next Cooper big-twin driver to appear in major events was Auckland Wally Henwood, who acquired the Mk3 first run by Arnold Stafford, and since then by a variety of drivers with 500cc engines. Henwood equipped it with a 1000cc Vincent engine and new bodywork, and although entering the 1957 NZ Grand Prix was probably a bit ambitious, in the non-qualifier's handicap race he came home a clear winner. At Levin in March, in the last Gold Star round of the season, he finished in an excellent fourth place. Fifth was a 1500cc Cooper-Climax sportscar driven by Bruce McLaren.

The next Gold Star series started at Teretonga Park in November – too early for most of the major players. Henwood was thus able to hold third place until he spun at about half-distance, and retired soon afterwards. He qualified to start in the NZ GP heats but retired, and although he raced at other Ardmore meetings that season and also at Levin, met with no success.

The non-qualifiers' (and others) race

at the Grand Prix was run on a scratch basis in 1959, and Henwood ran in sixth place before dropping back and once again retiring. At Ohakea later in the season he won the 1100cc class of the warm-up race, from a pair of Climax-engined sportscars. K G Dalton entered the ex-Harrison Mk3, now with 1100 JAP back in place, in the same two races, but without success, before it reverted to 500 power once more.

Where the Cooper twins had excelled – and would continue to do so – was in hillclimbing. Bob Gibbons had won the NZ Championship event every year from 1954 to 1957, and the North Island title event in 1954, 1957 and 1958. The sport's governing body had introduced a Gold Star for this activity in 1957, run over several events, and Gibbons was a deserving inaugural winner, though he didn't travel often enough to repeat the success in 1958. He won the Houghton Bay event, the biggest hillclimb in the Wellington area, six years in a row, and a dozen other events in the southern half of the North Island in the same period.

Ken Sager then won the 1961 and 1962 Hillclimb Gold Stars, and Grahame Harvey made it three in a row with the same car in 1963. Steve Boreham in an ex-Syd Jensen late-type replica was runner-up in the 1965 series, and in the next three, before winning five titles in a row from 1969. He used a variety of engines, including 650, 700 and 750 BSA, a Vincent 1000 and, it is believed, a Norton 500; published results from the day don't make it clear which engine he used when. It must have been the air-cooled Cooper's last great run of success anywhere.

Below: the ex-Arnold Stafford Mk9 with Ken Sagar's championship winning 1100 JAP. Photo courtesy Derry Greenelee.



CLASSIFIEDS

For sale: Waye 500, built in 1953, CAMS log book, JAP 500 dry-sump engine, roll bar fitted, new upholstery, eligible to run overhead cam Norton, ready to run, \$15,000 ono, Andrew Halliday 02 9888 6175

For sale: 12V roller starting system to get your air-cooled car fired up. New and unused. Garry, 02 9958 3935, or gjsimkin@iprimus.com.au.

For sale: JMW 1956 rolling chassis complete as originally built by John Wynn and his dad. Original Adler 250 cc 2 stroke (dismantled). Original hand made wire wheels by John himself. A full history including pics of the car at many events and medals won in it. New original JMW badge. No time to finish this great, quick, air-cooled car located in Melbourne. Inspection welcome. Open to all reasonable offers: Tony 0411-707-547, ajsmax@optusnet.com.au.

BITS & PIECES

• Kerry Smith wrote to say he was delighted to read (and keep) the article written by Peter Molloy in LF42 on tuning for the use of methanol:

"I have not seen this subject addressed in such an easy to read, straightforward technical article before. I found the information to be clear and obviously based on long experience with the modern technology."

• Recently arrived from New Zealand for that enthusiastic Adelaide racer and collector of air-cooled Coopers, Derry Greeneklee, is Cooper Mk9-28-55 fitted with an 1100cc JAP engine. As per the law in NZ at the time, the car was issued with a certificate of registration, and number plates CN 852 on 30 December 1955 to Raymond (Ray) Victor Drew. The next owner was Jim Berkett who also owned - at the same time - the JBS Norton as still owned by *Loose Fillings* publisher Garry Simkin. Peter Slocombe of Wellington, Richard (Dick) Butters and Basil Brimelow were subsequent owners, the car at this stage still being powered by a long-stroke double-knocker Manx Norton.

• Anyone planning to be in Europe early this year should see the 500 Owners recreation of the Commander Yorke Trophy Race, at Silverstone on April 20th and 21st 2013, at the VSCC Spring Start Meeting. The event will consist of a 20 minute practice on Saturday morning and a 25 minute race in the afternoon. A second 20 minute race will follow on Sunday.

• The new owner of the Scarab is Ian Barton, from Bittern on the Mornington Peninsula. He owns the Bulant singleseater, six Jaguars, six motorcycles including two Velocettes. He plans to run the Scarab asap, with his son driving.

JOHN TROWBRIDGE

The Tasmanian motor sport community is mourning the loss of John Trowbridge on 26 January, after a long illness. John was a quiet fellow who was the practical experience behind a great number of Tasmanian racing cars.

John is reputed to have built 47 different racing cars between 1956 and 1984. The full extent of his involvement with aircooled cars is not yet determined, but is likely to have been at least 10. Three that we are sure of are the Five Day Special in 1959, the JAT Ariel in 1961 and the Trowjw Yamaha in about 1965.

Rob Saward

MORE ON THE MEIKLES

Regular readers of *Loose Fillings* will recall in edition 40 David McKinney's excellent article "Kieft Mysteries in New Zealand", and my response in *Loose Fillings 41* enlarging on the Meikle Kieft myth. I repeated my informant's statement that Jim Meikle, creator of the Cooper Jet Car, did not have a brother. *Loose Fillings* subscriber John Climo refuted that claim and supplied photos (c1962) from his old school, Wesley College, showing the two Meikle brothers, Jim and Eric, as teachers in their academic gowns.

A chance meeting and conversation at a

Below: Eric Meikle (left) with the Kieft, Jim Meikle with what is now Ian Garmey's Mk5 Cooper, and an unknown person, with a so-far unidentified car.

car club swap-meet led me to Eric Meikle's widow, Mrs Mavis Meikle - unbelievably living within 10 minutes' of my home! Mrs Meikle proudly told me that she was an OBE - "Over Bloody Eighty". She is indeed a very sprightly 80-plus with an excellent memory and wonderful sense of humour.

Mrs Meikle has the accompanying picture on her hall wall showing Eric Meikle with the Kieft, Jim Meikle with what is now my Mk5 Cooper, and an unknown person, possibly the factory manager of Meikle's Irish Tapestry Company with a so-far unidentified car. I was certain that this picture was taken at the rear of the Irish Tapestry Company's South Street, Newtownards (near Belfast) factory. I took a photo of the factory before it was demolished some years ago which showed an identical wall and door but I have since learned that the photo was taken at Bloomfield House, the Meikle family residence in Belfast. Perhaps those broken brick and concrete walls are a feature of Northern Ireland?

Mrs Meikle told me that Eric hadn't owned any racing cars as he was more of a motorcycle enthusiast, though he had on occasions driven Jim's cars.

Mrs Meikle was able to give me the address of George Meikle, Jim's only son, now living in Queensland. George has been able to greatly expand on and correct what little was known about father Jim and his cars, and his motorbike collection, but sadly he knew nothing about that mysterious Kieft. George's mother, Yvonne also lives in Queensland and has been following my probing and questioning with much interest.

It has been a fascinating exercise which I am sure will be ongoing, I have met some really interesting and helpful people, but, we still don't know where that Kieft is!

Ian Garmey



BALANCING YOUR LOOSE FILLINGS

by Demon Tweaks

Graham, Terry, and Garry gave this newsletter its name based on their experiences and observations of motorcycle-engined race cars. They knew about the temporary loss of feeling in extremities, and blurred vision, as a result of high-frequency vibrations from bike-engined cars. So from those early life challenging experiences came the title ...actually suggested by Peter Addison ... *Loose Fillings*. According to the *Macquarie Dictionary*, 'to vibrate' is to 'move to and fro and up and down quickly and repeatedly.' ... And that describes vibration perfectly!

But why is this phenomenon universal in our bike-engined cars, particularly in singles and V twins? Surely in 2012 we must know enough about engines to eliminate this dreaded vibration. Man has gone to the Moon! So why can't we eliminate the vibes from our bike engined cars? Sadly we can't ... and the following explanation may help us understand why we can't.

Let's imagine we have a 500 speedway JAP engine stripped on the bench. Let's focus on the crankshaft assembly ... because that's where the vibrations come from. It's not the head, or the cylinder, or the crankcases. Those parts are the victims, not the culprit! We can see a pair of flywheels held together by a crankpin, to which is attached the connecting rod and piston assembly. So far so good.

Next question? What is the vital difference between these two items, between the flywheels and the con rod piston assembly?

The answer is simple. When the engine runs, the flywheels go round and round, whereas the rod assembly goes up and down. And there, in a nutshell, is our problem. Whereas the flywheels generate CONSTANT CENTRIFUGAL force, the piston rod assembly creates a totally different RECIPROCATING force. And to complicate things, they do this only twice per revolution at TDC and BDC! So here we have two distinctly different forces at work simultaneously, one constant, the other variable and intermittent.

Now it is very difficult to balance reciprocating mass. In fact about the only way to successfully balance a reciprocating mass is to have an equal reciprocating mass acting in the opposite direction, like

in a opposed twin BMW. But our engines are single cylinders or at the best V twins. So what can we do to achieve a reasonable degree of smoothness in our JAPs, BSAs and Nortons etc?

It's a good question. And the answer is ... WE COMPROMISE! WE COUNTER BALANCE THE RECIPROCATING FORCES OF THE CON ROD AND PISTON ASSEMBLY BY UTILIZING SOME OF THE CENTRIFUGAL FORCES OF THE FLYWHEELS.

But you say ... 'That can't work! The rotating flywheels generate a constant centrifugal force whereas the weight of the rod and piston act mainly at TDC and BDC! They are two different forces!'

Agreed ... but remarkably, if we get it right, the compromise works tolerably well. Not perfectly, but tolerably. It's a bit like apples and oranges. We have to use apples to balance oranges because apples are all we've got to work with! So with our motorcycle engines we have to use a rotating force to balance the reciprocating forces because that's all we've got to work with.

So ... next question? How much centrifugal force do we need to counter-balance the reciprocating forces in a single or V twin motorcycle engine? The answer is ... nobody knows exactly ... because it varies with every engine in every installation! So what do we do?

We start by measuring things. First of all we weigh the reciprocating parts. That's the rod and piston. Let's say the piston weighs 20oz. (We'll work in oz because I understand oz). Now the rod.

That's not so easy to weigh because the big end section of the rod is purely rotational. We just want to know the weight of the part that goes up and down. To do this we support the flywheels so the rod is hanging out horizontally, with the little end resting on the scales. Say that weighs 5oz. Now we add the 5oz of the rod to the 20oz of the piston and we get 25oz. So for our calculations we will consider 25oz as being our total reciprocating weight. Now ... how much of the 25oz are we going to



add to the weight of the flywheels opposite the crankpin to counter-balance the combined weight of 25oz of rod and piston? Well the logical answer would be 25oz ... that would be a 100% balance factor. And certainly 25oz on the flywheel would balance the rod and piston perfectly. BUT ONLY AT TDC AND BDC. We have to also consider what would happen at mid stroke when there was no reciprocating force taking place? With a 100% balance factor we would have cancelled out the vertical loads only to create the same loads horizontally! So obviously a 100% balance factor won't give smooth running. Nor will a 0% balance factor for the reverse reason. (A 0% factor is NO extra weight on the flywheels to balance the rod and piston).

The answer lies somewhere in the middle. Experimentation has taught us that most racing singles and twins will run tolerably with a balance factor somewhere between 60 and 70%. In simple terms that means we balance 60 to 70% of the reciprocating weight of the rod and piston with extra rotational weight on the flywheels. However depending on bores and strokes, rpm, engine mountings, and a dozen other significant factors, there could be a dramatic difference in vibration in the 60 to 70% range. The best factor can only be found by trial and error. 62% could give good results whereas 72% might result in destructive vibration.

It's as sensitive as that. At no % factor will the engine be in perfect balance through its entire rev. range. Obviously the engine needs to be stripped each time a change is made, because it involves drilling holes in the flywheels, either opposite the crank pin to reduce the balance factor, or around the crankpin to increase the factor.

Every engine has a balance factor to begin with. It's usually around 65% unless someone has previously fitted a heavier crankpin, substituted a steel rod for an alloy one, or used a heavier or lighter piston without considering the previous balance factor.

Left: to check your balance factor you can make a simple jig using two parallel rails which are absolutely smooth and level. This may sound hard but sturdy angle iron, carefully welded to form a frame, held one end in the vice, overhanging the bench and propped up with an adjustable tube will do the trick. When in position, check the rails are perfectly level by rolling a solid bar at least 1" in diameter along the rails. This is more sensitive than a spirit level.

So if vibration is spoiling the enjoyment of driving your car or things are falling off all the time, it's a good idea to find out what your balance factor actually is. Place the flywheels (less piston) carefully on the parallel bars. If the two mainshafts are of a different diameter, make up a steel bush to slip over the smaller mainshaft to equal the larger.

Now irrespective of the existing balance factor, the wheels should always roll along the bars and stop with the crankpin at 12 o'clock. Hang a piece of bent wire through the gudgeon hole in the rod, and gently add weights (Sockets and nuts do fine) to the hook until the flywheels remain static in any position they are placed.

Now remove the wire and weights from the rod and put them on the scale. Let's assume for easy arithmetic the total weight of the wire and weights is 10oz. To this we will add the 5oz weight of the rod. This totals 15oz. If the flywheels remained static on the bars with 10oz hanging on the 5oz rod, we know we must have a 15oz weight opposite the crankpin to achieve that balance. Now, this 15oz is 60% of 25oz (weight of piston and rod). In other words if our tests produced these figures, we could say we are using 15oz of centrifugal weight to counter balance 25oz of reciprocating weight ... which is a balance factor of 60%! If this is a bit hard to grasp don't worry ... just grab a calculator and think about it for a while.

Say we wanted to increase our balance factor to 65%. We would carefully drill holes in both wheels on the crankpin side of the flywheels until we needed 11.25oz hanging on the rod in weights to achieve equilibrium on the bars. And vice versa. To decrease the balance factor we would drill holes opposite the crankpin.

The formula for checking your existing balance factor is easy. Just divide the total weight of your piston and rod, into the combined weight of the rod and weights added to the rod to achieve balance and multiply by 100. In the above example 25 divided into 15 equals 0.6 multiplied by 100 equals 60%.

However despite all the above technical stuff, reducing vibration is essentially a trial and error exercise. 'Balancing' a single engine is a misnomer. We are really only making the best of a bad situation.

Finally ... irrespective of balance factors, it is vital to have our engines mounted as rigidly as possible. Make sure all engine bolts are tight, and that slotted engine plates are not worn wider than the bolts. If they are, try filing them out and fitting larger diameter bolts. Try a head steady to the chassis or a roll bar ... It may or may

not help ... but it's worth a try. Knowing current balance factor is essential if you want to change it. As a guide if it's lower than 60% raise it. If it's higher than 70% try lowering it. If it's tolerable in the rev range you are using, best leave it alone. No engine is smooth throughout its entire rev range and it's easy to make it worse.

Apart from using up precious horsepower, vibration is destructive. It breaks things. Then the car stops. And the race is over. And it's quite possible you could shake loose a filling ... and swallow it. And you can bet it will be ... the gold one!

POSTSCRIPT

Demon Tweaks' notes on engine balancing are mostly correct, except that he missed emphasising one all-important point.

It's this.WHEN AN ENGINE VIBRATES, THINGS INSIDE THE ENGINE FLEX...AND IF THEY FLEX

ENOUGH TIMES THEY BREAK.

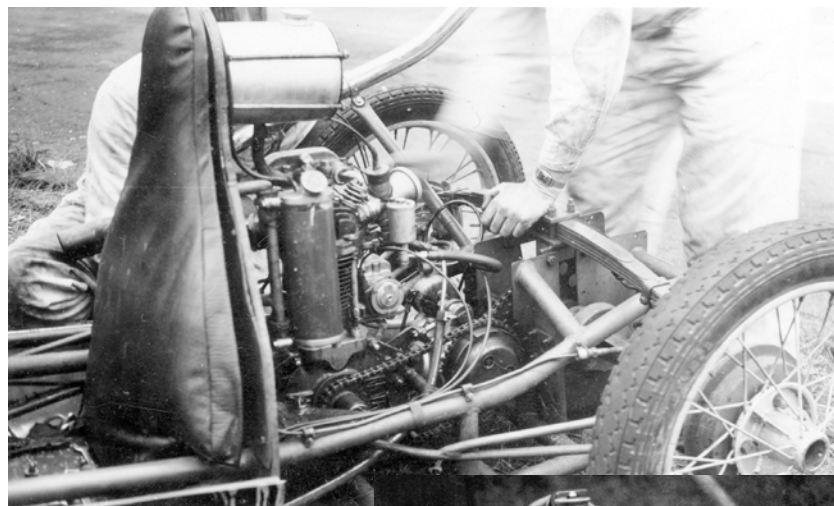
It has taken Tweaks and I twenty years of breaking crankpins and regularly replacing timing and drive side main bearings to fully comprehend the above self evident truth.

The recent installation of a new flywheel assembly in our 1100 MK9 Cooper JAP using parallel pressed in crankpin and mainshafts, all with 4 thou interference and with no nuts at all, has been a revelation.

Using the same 65% balance factor as before, the new motor spins freely to 6000rpm like a turbine. (That's maybe a slight exaggeration...). Conclusion.....

THE NEED FOR RIGIDITY OF THE FLYWHEEL ASSEMBLY IN REDUCING DESTRUCTIVE VIBRATION AND CONSEQUENT BREAKAGES CANNOT BE OVERSTATED.

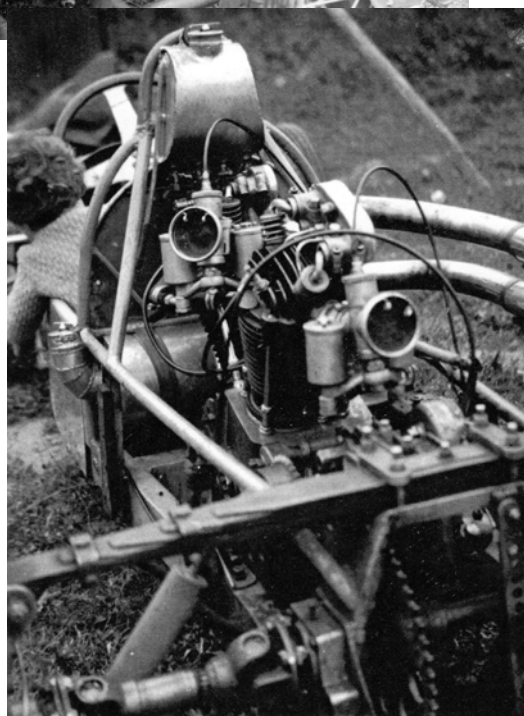
Chas McGurk



THE BUSINESS END

Rob Saward kindly sent in the above picture of the engine of the Reg Hunt Special, one of the earliest and most successful of Australian 500s. The simplicity and compactness of the set-up is quite clear. Photo by Jack Nelson.

Ditto the picture, right, of the Walton-JAP in its original 8-80 twin sprint form before Bruce decided to fit a 500 and go racing. The editor has been building a replica of this engine for the car and hopes to have it running again this year.



LIONEL HART & HIS TASSIE RACING CARS

Part 2 by Rob Saward

In 1951 it emerged that Lionel Hart was constructing a very nicely built racing car using the BMW engine/transmission unit from Byron's motorcycle. I have no doubt that Don Gorringer was involved in the project, if only for support and assistance, being the state's leading special builder by that time. It is likely the car was constructed at one of Gorringer's several business premises in Hobart, as Lionel Hart was always a man of modest means.

In June 1951, when Lionel and Don were returning home after a late night session working on either Lionel's BMW or Don's Skoda Special, they were involved in foiling a break-and-enter at Hobart City Bodyworks after they spotted two burglars entering the premises. Our intrepid duo apprehended the offenders; the result was several days spent in court as witnesses.

The 494cc BMW Special, as it was initially known, had its debut at the two-day Valleyfield meeting in November 1951. In a preamble to the meeting in the *Hobart Mercury*, it was described as "probably the best looking racing car yet built in Tasmania". The car was based on a shortened and narrowed pair of vintage car chassis rails of unknown origin. The front suspension used a solid axle with transverse leaf spring and Renault hubs and wheels. The rear end used an Austin 7 rear axle and wheels, probably employing the original BMW shaft drive to the Austin axle. The attractive aluminium body had a very long tail.

The BMW special was unplaced in the (handicap) races at its first meeting; it became a feature of the car's results over subsequent years that it always went better at hillclimbs than it did on the airfield circuits which hosted Tasmania's only road racing in the 1950s.

In his first appearance with the car at the Muddy Creek hillclimb on the West Tamar near Launceston in May 1952, Lionel achieved both fastest time of day and the overall event win (decided on handicap). Other Muddy Creek successes came over the next few years.

In the 1953 Tasmanian Redex Trial (a mini version of the mainland trials) Lionel Hart was part of a three-man team comprising Don Gorringer, Bill Caldwell and himself, in a Jowett Javelin. During 1954, Lionel assisted Mick Watt in the building of one of Australia's prettiest and fastest small

Ford specials, the Watt Prefect Special.

By 1955, Lionel Hart's car was being entered as the Hart BMW. It was developed continuously, sporting shorter and even prettier rear bodywork by 1956, telescopic dampers at the front and even twin rear wheels for hill climbs. However, as more racing cars were built, or imported into Tasmania, the car became less competitive.

During 1957, a new Hart BMW special appeared, smaller and lower than the original, with smaller wheels. Little is known about this car, and the only photograph I have is not very clear. It appears certain the original BMW engine unit was transferred to the new car; the original car re-appeared in early 1958 with a single cylinder 500cc engine of unknown make, as the Saanen Special, owned by John Watt. The ultimate fate of this car is unknown.

The second Hart BMW had a short life,



being replaced in late 1958 by the Hart Norton, a new car powered by a 500cc Manx Norton engine. This car appears quite different to the BMW engined cars, being built on a twin-tube ladder frame, having a very short nose, wire wheels and curved lower panels. It appears to have used a swing-axle rear end with a transverse leaf spring and located by long trailing arms. The car was painted a very pretty deep blue. Very little evidence of the Hart Norton remains, except for 7mm movie footage from the November 1959 Australian Hill Climb Championship at Hobart's Queen's Domain course, shot by Hobart man David Cramp and which recently appeared on the internet. Lionel was third in the under 500cc racing car class at the AHCC, though some way behind the leading 500cc pair of Dave Powell (Cooper Norton) and Alan Staton (BRM Norton).

The 1959 hillclimb championship appears to have been Lionel Hart's last appearance in a racing car, though he did make at least one start, in a Holden, at a Richmond quarter mile sprint in late 1964. Although Lionel Hart defied the odds in his early motorcycling and working life, the injuries he suffered in the 1944 wall of death crash

Left: the second Hart BMW, with apparently different chassis and bodywork, and what look like smaller wheels, probably at Hobart's Domain hillclimb. Photo courtesy Mick Watt. Below: Alan Davey in the 'Cooper' Norton, taken at Baskerville in 1966. The cockpit section is unchanged from the Hart Norton, but nose shape and suspension front and rear have been heavily modified. Photo courtesy oldracephotos/Geoff Harrison.



left him with a severe limp, and those who knew him later remember that as a distinguishing feature. He was accident free with his racing cars, and died in Hobart aged 81 in 1994, having retired in the late seventies from his job at South Hobart company Transport Industries (making truck and trailer bodies) where he had a reputation as being a very quiet person and a clever engineer who could make anything. Lionel was never a wealthy man but in the early seventies was able to indulge himself with owning an XW Falcon GT. Relatively little is known about the man and his cars and I hope we can now correct that.

After many years of wondering about the fate of the Hart Norton, I can now say with certainty that the car was sold, and remained in Hobart until it was destroyed in the Forest Road section of the February 1967 Black Tuesday bushfire, whilst in the ownership of Alan Davey. Alan likely purchased it as the result of an advertisement in the October and November 1964 editions of *Tasmanian Motorist* magazine, as he first entered it at Symmons Plains on 29 November 1964, and thereafter raced it regularly at Symmons Plains and Baskerville. Its last appearance was at Symmons Plains two days before it was lost to the fire.

By the period of Alan's ownership, it had been heavily modified, with different nose (more modern perhaps, but not as nice as Lionel's original) and redesigned front and rear suspension. A Fiat *topolino* front-end was grafted onto the Hart chassis at the front, with coil-over damper units replacing the leaf spring at the rear. Through all this the cockpit section of the chassis and body remained unchanged, identical to the way Lionel ran it in 1959. Alan Davey always ran it with a Norton Manx engine.

During the period after Lionel sold the car, it became known as a Cooper Norton, even though it had no connection with the Cooper Car Company. In those days, many in Tasmania used the name Cooper as generic for 'small racing car with a motorcycle engine in the back'. All the entries I have found for the car list it as 'Cooper'.

In between Lionel Hart and Alan Davey I believe the 'Cooper' Norton had at least two other owners, probably including Dave Powell Senior (who may have bought it from Lionel and done the modifications) and Richard Snow. A 'home made Cooper' was entered by these two at Symmons Plains in February 1963 (though with 1098cc engine, which precludes the Norton fitted before and after), but I have so far been unable to prove it was this car, or locate Richard Snow.



Above: More JMWs but just blokes this time, at what looks a bit like a 1950's version of Top Gear. In fact it's scrutineering for a Fishermens Bend race meeting but we don't know the details other than that's clearly John Wynn on the right. Photographer unknown.



Left: the editor has been most impressed by this catalogue of Amal parts and complete carburettors from pre-war models through GP racing types to the latest Concentrics. With diagrams and full parts lists this is a magnificent effort by the successors to the original company. The obvious thing to do for more information is to go online at www.amalcarb.co.uk



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