LOOSE FILLINGS

Fingers crossed, but the long-promised air-cooled revival may gradually be happening. Regular appearances by 1950s-type air-cooled cars, particularly in Victoria, seem to have opened people's eyes. We now have the remarkable situation where not only are people actually looking for air-cooled cars that might be for sale, but there is a distinct shortage of supply. Last issue we invited readers to check the classifieds to see what was available, only to have two of the three cars listed change hands while we were printing. Factory-built cars seem hardest to find, making Australian-built one-offs increasingly attractive as value for money. Not that anyone runs an air-cooled car as an investment!

FOUR AIR-COOLEDS at ROB ROY INTERNATIONAL

Above: Graeme Noonan's ex UK Manx-powered Mk7 Cooper at Rob Roy during the VHRR meeting. The car is approaching the crest on the exit from Tin Shed Corner before the drop onto the spillway.
Photo Gary Cooper Photography 0413 570 573

Four air-cooleds appeared at the special Penrite/Shannons International Challenge Hill Climb at Rob Roy held on Tuesday March 13, organised jointly by VHRR and MGCC, operators of the venue. The main purpose of a mid-week date was to give the interstate and international drivers who came out for Phillip Island Historics another opportunity to run their cars, and to keep them and their supporters entertained in the lead-up to the F1 GP the following weekend.

Graeme Noonan won the up to 500cc class in the Cooper Mk7 with 29.78 secs (finally achieving his aim to break 30 secs) from John Coffin (Robbins BSA) 31.22 and David Palstra (Newbound BSA) 35.34.

Ken Bedggood in the Penrite Oil Cooper Mk5 JAP twin (formerly driven by the late Mark Dymond many times at this venue, setting FTD on at least two occasions) won the 501-1100cc class with 26.04s. Mark Dymond's memory was also honoured with an action photo of him on the cover of the event program.

It was a welcome innovation to have the classes divided in this way, as was the decision to let the air-cooleds return via the track (wrong direction) immediately following their runs, rather than risk the delays and perils of the unsealed and unfriendly normal return road. In general the organisers were very accommodating and considerate towards the air-cooleds, giving priority at the start line to avoid overheating etc.

Graeme Noonan

BITS AND PIECES

- Kevin Shearer, neighbour of Cooper JAP racer Derry Greeneklee in South Australia, has taken over the air-cooled project car which Derek has owned for many years. This car may have been the one built in the 1960s by the late Don Blair and also raced by Stewart White and by Kurt Seeberg. Its chassis is an approximate copy of a Mk9 Cooper. The heaviest bits of it, Kevin says, are the dags of weld. He is looking for a JAP 500 and Norton gearbox. Kevin and his wife Joan have been pillars of the historic racing movement in South Australia, and Kevin built and raced a formidable single-seat Ford A historic special.
- One of the most frequent - and frustrating - causes of retirement with air-cooled cars is detaching of the plug lead. This seems to be completely unpredictable, but there must be a reason, or at least a cure. Reader comments are invited, and welcome.
- At the recent mid-week Rob Roy hillclimb Ian Tate, president of the organising club Victorian Historic Racing Register, made a special point of thanking John Coffin for the attendance and performance of the four air-cooled cars which ran on the day, saying our cars will be welcome at this meeting next year.
- The Victorian Spy reports Neil Videan is checking 2007 dates to see where he will have time to run his ex-Davison supercharged Mk5 Cooper Vincent, which has recently been thoroughly rebuilt by 500cc veteran Garth Rhodes.
- Flooding washed out the Lake Gairdner speed attempts planned for early March, frustrating Paul Schilling's aim to attack the 500cc record with his Kawasaki-powered RP500. This modern-style space-frame car with 13-inch wheels was built in the early 1960s by Lee Falkenberg with a 350 Velocette, and was initially known as the Jinx. It was raced by Leo Bates, later ran a 500cc BSA, then sometime in the 1970s acquired a three-cylinder H1 Kawasaki two-stroke. Paul Schilling has owned the car for about two years, and has it looking very professional. Earlier this year, after an engine failure at Heathcote, he bought an H1 methanol race motor which should give it useful performance when he can find somewhere dry to run it.
- The Editor recently bought the two cast aluminium wheel centres from the first Ralt. The wheels had been stored in a Sydney garage since 1961. Along with the remains of the special ES2-based Norton engine, also owned by the Editor, these are thought to be the only surviving components of Ralt 1. The Editor would be most interested in seeing any photographs which show front or rear suspension details of this car. Contact information elsewhere in *Loose Fillings.*
- During the Vincent Owners Club International Rally, which was centred on Ballarat in the last week of March, a plaque was unveiled marking the site of the 1920s Granter & Irving motorcycle shop in Doveton St, Ballarat. During the visit to Ballarat Airstrip which was part of the VOC's itinerary, Neil Videan, a great Vincent enthusiast, ran his ex-Davison Mk5 Cooper Irving.
- *The Vincent in Australia* is the self-explanatory title of a recently-published book by longtime motorcycle historian Brian Greenfield. While primarily concerned with the motorcycle side of Vincent history on Australian roads and tracks, the book includes some mention of Vincent-powered cars. Further comment will have to wait until *Loose Fillings* can get its hands on a copy. From Vinbooks, Box 152, Waverley 2024, price $49.95 plus $5 postage within Australia.

CLASSIFIEDS

For sale: Scarab Triumph, history from at least early 1960s. Rebuilt Bonneville engine, new 4-speed box, single Amal, no trailer. $20,000, all offers considered. Graeme Worsley, 02 6362 8734.

Wanted: Fiat 500 15-inch wheels, to help complete US 500cc project. Tom Cecil, Rigger2TC@comcast.com

For sale: Gilbert JAP 500, built 1968 by Roy Gilbert with 1938 4-stud JAP 500, upright Norton box, 10-inch steel Mini wheels. Spares include registered trailer, small Shorrock blower, some engine, gearbox and carburettor spares. $10,000 or offer, John Cooper, 02 4982 6370, 0407 202 436

Wanted: *Any* JAP speedway rocker box bits especially valve spring covers, Terry Wright 02 9418 2974 or email tsrwright@gmail.com

THE LOG

By now, most readers know the story - that whenever your car fires up in public it isn't boasting to tell *Loose Fillings*, it's simply celebrating. Besides, nothing quite matches the way heads turn when the device comes to life. On which subject, Ian Garmey mentioned that he had by choice not started his Mk5 Cooper JAP, which was on display at the New Zealand Intermarque Concours in Auckland on February 11: "even at idle, [an unmuffled JAP single] is just too noisy for an enclosed area." Since mid-December, our cars have turned heads on the following occasions:

- Jan 26 - Mornington Race Course, RACV Australia Day rally: Penrite Mk5 Cooper 1100 (static display, but encouraged to be started. Spectators were 12 deep, John Coffin says)
- Feb 4 - Heathcote sprints, VHRR (36 degrees in the shade!): David Palstra (Newbound BSA, broke 18secs, terminal speed 71 mph); Graeme Noonan (Cooper Mk7 Manx, low 18s, 87 mph)
- Feb 25 - sprints, Vintage Car Club, Warkworth, North Auckland: Graeme Brayshaw, Cooper Mk8 Manx (Peter Bruin's JAP-powered car fitted with Graeme's Manx)
- Mar 13 - Rob Roy hillclimb: Graeme Noonan (Cooper Mk7 Manx); John Coffin (Robbins BSA); David Palstra (Newbound BSA); Ken Bedggood (Cooper Mk5 1100).

LOOSE FILLINGS BY E-MAIL?

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BUYER BEWARE - BMW SPECIAL

There is considerable confusion about the ownership of a BMW-powered aircooled car which was owned and raced by the late Hank Northey and bought from him by Chris Hill, who has not seen the car for some time. It currently has an overhead-valve BMW flat twin. It has a distinctive twin-tube chassis with beam front axle and de Dion rear, and 16-inch steel Morris 8 wheels. Anyone coming across this car is asked to contact Chris Hill via Pat O'Carroll on 02 6653 5585, or theocarrols@hotmail.com.

OUR QUARTER CENTURY

With this issue, *Loose Fillings* has reached its 25th edition since publication started in 1999. It is probably no coincidence that many of the people who have assisted with the magazine over that period, either directly in its production and distribution, or as very welcome contributors of articles or photographs, are also the people whose cars are now at the centre of the revival of Australian and New Zealand interest in pre-1960s air-cooled racing cars. Neither *Loose Fillings*, nor the revival itself, could have happened without you all.

A CD of the first 25 issues may be available in the not too distant future.

DEMON TWEAKS ON BRAKES

BY D TWEAKS

By definition many of our Group L race cars were specials, built pre 1960, usually on the cheap, using second-hand parts, sometimes by enthusiasts with more optimism than skill. It is logical that, 50 years on, we should be able to examine their handiwork, (and that of factory cars) and, without being unfairly critical, find opportunity for eligible safety improvements, something CAMS fortunately encourages.

Let's begin logically by examining the brake pedal. This needs to be strong enough to resist genuine panic pressure without bending or breaking. If it's not really sturdy, reinforce it or make a new one. Ideally in the 'off' position, it should be the same height as the throttle, and sufficiently separated from it that you won't accidentally apply both at the same time, or hook your shoe under the brake pedal coming off the throttle. Either event guarantees unwanted excitement! If you set the pedals up so you can 'heel and toe', the fragile gearbox will last much longer, especially in a big twin! Correct disposition of brake and throttle pedals for safe fast racing is vital. If your pedals are not well made, and/or not ideally located, this situation should be corrected before worrying about other improvements.

Now depress the brake pedal again, and see how far it moves. If it travels down more than an inch, adjust and bleed the brakes in that order. If it still moves much more than an inch, your braking reaction time will be slower than it need be. A nice high brake pedal gives driver confidence, feels good, works fast, and should be achievable. (Note: pedal travel can be reduced at the cost of slightly higher pedal pressure, either by reducing the mechanical advantage of the pedal from say 5:1 to 4:1, or by increasing the diameter/s of the master cylinders, or by decreasing the diameter of the wheel cylinders. However it's wise to leave these things alone until we're satisfied the rest of the brake system is as good as we can get it.)

The brake pedal is attached to an adjustable threaded bias bar which feeds two push rods into the open ends of the two master cylinders. By adjusting this bar sideways, we can easily tune in the optimum balance between the front and rear brakes. Bringing the front master cylinder pushrod closer to the pivot point increases the pressure to the front wheels, and vice versa. On the track, the ideal balance is for the front wheels to lock up just before the rears. A locked up front tyre will smoke and understeer. You can see it, and it's safe. A locked wheel at the back usually causes the car to swap ends, leaving the bewildered driver wondering what happened!

The other benefit of having two separate master cylinders is that, should a leak occur in one system, we should still have brakes on two remaining wheels.

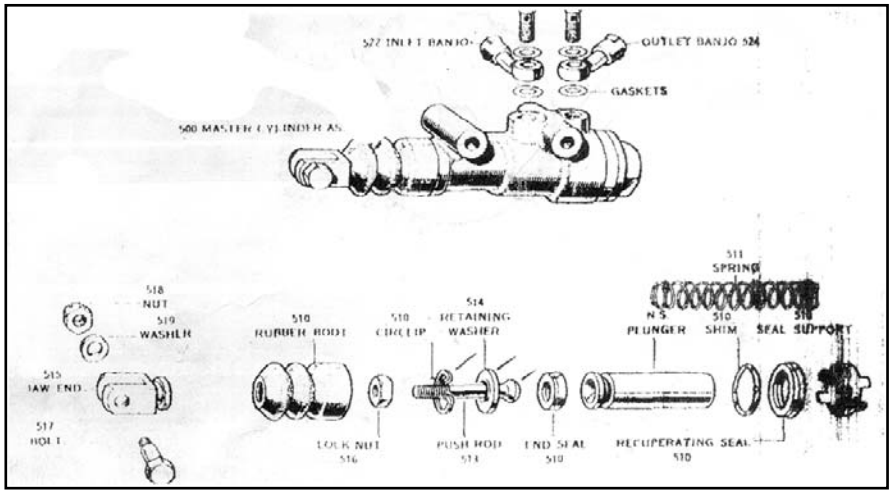
To check whether this is so on your car, jack up the rear axle, undo a bleeder screw on a front wheel cylinder, and have an assistant depress the pedal firmly. Catch the fluid, nip the bleeder up again, and with the pedal still depressed, scoot around to the back of the car and try to turn a rear wheel by hand. If you can turn a rear wheel by hand, there's something wrong with the design or with the setting of the bias bar. Repeat the above procedure, but this time jack up the front. Loosen a rear bleeder, apply the brakes, and check to see if the front brakes are on. They should be! If not, find out why. Because of poor original design, or incorrect adjustment of the bias bar, this safety factor often doesn't work.

If your special has only one master cylinder feeding all four wheels, any fluid leak in the system will quickly result in a total loss of brakes. This is a highly undesirable racing situation. See your eligibility officer about a safety conversion to the above mentioned twin cylinder set up.

Having investigated the brake pedal and the balance bar, we will next look at the master cylinders themselves, their sizes, their pushrod adjustments, and their mountings, how they work and why they fail.

The most common master cylinders fitted to Group L and later race cars were the well known alloy Girling 'claypipe' centre-valve type. They were called 'claypipe' because they have a large bowl at one end suggesting you could smoke with them if you were desperate! There were obviously many other types of master cylinders used in the '50s and '60s, but the Girling claypipe was, and is, the most suitable for race car application. Early Coopers used two cast iron triangular flanged cylinders which were notoriously unreliable. Conversion to the alloy Girlings, which are available new in several diameters, gives us the opportunity to fine tune. Replacement PBR numbers are: 5/8-inch bore P4979, 0.7-inch bore P5926, 0.75-inch bore P4977.

(Used in conjunction with the bias bar mentioned before, two side-by-side 5/8 “master cylinders have the same fluid displacement as one 7/8” cylinder). Any necessity to bias one master cylinder heavily in one direction can be cured by substituting a larger or smaller cylinder to bring the bias bar to a more central position. As mentioned before, a low pedal can be



If you have one of these period Girling master cylinders (above) you could be in trouble. They are a notoriously bad design, and while serviceable, a replacement such as recommended (below) should give you years of happy carefree air-cooled motoring.

improved by fitting a larger cylinder, and vice versa.)

These 'claypipe' cylinders have a two-bolt flange mounting, a self-contained fluid reservoir, and a single central fluid outlet. They are simple and reliable. A solid steel piston with a single rubber seal serves the double purpose of keeping oil in the cylinder and pressurizing it when displaced inwards by the pedal pushrod. When this happens another tiny rubber at the far end of the cylinder, moves forward and seals off the reservoir. Oil is then discharged from the centre of the cylinder into the system. Simple!

The most common faults are these:

- If the cylinder doesn't discharge fluid out of the outlet, and the level in the reservoir rises and falls as you pump the pedal, it means the tiny rubber seal separating the cylinder from the reservoir is not sealing. If the problem persists after replacing the rubber, it means the internal face or seat on which the rubber is designed to seal is imperfect due to damage or corrosion. This can be carefully polished or refaced.
- Fluid leaking out of the rubber boot is a sure sign the rubber seal on the piston is worn or damaged, or that the bore of the cylinder itself is scored. The condition of the piston is not all that important. Cylinders can be repaired with a stainless sleeve.
- The brake pedal starts off at the right height but becomes higher and higher until it won't move at all, by which time the brakes are red hot and smoking. This is due to fluid getting trapped in the system and building up pressure. Releasing a bleeder will bring things back to normal, but the problem will return as soon as the brakes are used again. This can occur for two reasons. Firstly, examine the master cylinder pushrod assemblies. There should be a rubber boot, a wire circlip, a dished washer, and the pushrod with a knob on one end. The dished washer must fit into the open end of the cylinder with the bulge facing outwards, so that when the circlip is in place, there is at least 10 to 20 thou clearance for the knob between the dished washer and the concave end of the piston. This is vital! If the washer is reversed the brakes will hold on.

The other cause of hydraulic buildup is over-adjustment of one or both the pushrod threads. The vital clearances mentioned above can be taken up if the pushrod(s) are too long. Adjust them if necessary, but be absolutely sure that the vital clearances between them and the pistons in the master cylinders are not lost. Simply put… if the pistons cannot return fully, the little end seal will be pushed forward and permanently isolate the fluid reservoir and the brakes will build up.

This is a little understood but very common problem! Note: the above notes relate particularly to Girling centre-valve master cylinders, but the principle of pushrod adjustment and piston clearance applies to all master cylinders.

Look out for more on brakes in the next issue.

JOHN HARTNETT'S COOPER

John Hartnett sent these photographs of the Mk5 Cooper he ran in 1959-60, showing the car as collected from the wharf after purchase, parked outside John's parents' house behind his ex-Bruce Walton 48-series Holden, and later in action at Templestowe.

This car was originally raced in Europe with a JAP 500 by Bill Patterson and Tom Hawkes. Back in Australia Patterson ran it with both a 500 and an 8/80 JAP, using the latter to win the 1954 Australian hillclimb championship. Ken Wylie ran a remarkable 2min.18sec. at Albert Park in 1956, using a Manx engine, then it was bought by Tasmanian Jock Walkem (of the Walkem special, now owned by Jeff Hodges) and raced successfully with an 8/80.

Its next Tasmanian owner found the car daunting and sold it to John Hartnett, who found its power did indeed arrive very suddenly at around 4000 rpm ('it was bloody lethal"), and replaced this engine with an ex-Walton JAP 500.

In 1961 it was sold to Dave Powell senior in Tasmania with both the 500 and an alloy 1100 lifted from the ex-Phil Boot Cooper Mk4 after its conversion to the JHM Climax. The dry-sump 8/80 engine was bought by the Sunderland brothers for use in a road motorcycle. The car was raced and hillclimbed in Tasmania, later ran a BSA single and had its front suspension converted to wishbone and coil springs.

It was in this form, and very tired, that Brian "Brique" Reed bought the car from Queensland in 1975. He restored it to its correct suspension and fitted another JAP single. It was bought by Queensland collector and historic competitor Peter Harburg in 2003.

NB. This history differs from that published by the late John Blanden but is believed to be correct.

MORE TWEAKS-FOR YOUR IGNITION

This article was originally written as a submission to the Confederation of Australian Motor Sport's Historic Eligibility Committee and it resulted in approval being given for a self-contained electronic substitute for magnetos on air-cooled cars. Here Terry Wright looks at the history of ignition systems and some of the problems they pose for the air-cooled car.

Historic race engines are inherently unreliable when key components have long exceeded their intended service life and/or conditions.

This can be especially so in the case of ignition instruments whose repair may be beyond all but the most skilled technician. Magnetos need to be spot on mechanically, as well as electrically, and finding someone who can reliably deal with the mechanical side of things, as well as the electrical, is not easy.

This has long been the case, as the following in a 1948 book (1) on ignition testifies:

"The rotary armature magneto … can only be really successful when constructed to precision limits. The initial assembly and also the servicing of this type of instrument is a highly skilled job"

If, like me, you find yourself with seemingly unreliable magnetos, what are your options? We can first learn a bit about ignition systems from history.

Right back to the internal-combustion engine first able to perform continuously under industrial conditions (Lenoir 1860/1) there is a common thread - a rapid drop in voltage in a primary coil induces a high voltage in a secondary coil which produces a high-tension spark to ignite the compressed fuel.

The coils may stand-alone (as in points-triggered coil-ignition) where the current is usually supplied by a battery, or be part of a self-contained unit (magneto-ignition) where the current is generated internally.

The collapse of the primary voltage was almost universally triggered by 'make-and-break' or 'contact breaker' points driven by the engine. But an orthodox contact breaker is not an accurate timing device, with errors of 1½ degrees of crankshaft angle being reported (2).

So along came various 'electronic' aids. Transistor-assisted ignition was an early one where contact-breakers could control higher primary currents (thus producing fatter sparks) without overloading the points and causing them to erode.

Eventually points were superseded altogether by magnetic or optical switches and transistorised circuits. Without points the currents in the coils and the energy of the sparks can be much higher because the deterioration of the points is eliminated and much greater precision and control of the spark is possible.

In the 1990s, insulated gate bipolar transistors (IGBT) or 'smart switches' became available leading to new developments in inductive ignition. The switches have a lower voltage drop and, therefore, low power dissipation. They also have internal circuitry to dump the induced transient voltage and thus protect the switch.

A early and different kind of electronic system is known as capacitor discharge (CD). In this the energy created in the coil is stored in a separate capacitor allowing each of these components to be optimised. It is the capacitor which discharges the primary current through a step-up transformer to generate the spark. A problem can be that the spark is of very short duration.

Compared with CD systems, modern inductive ignition systems (3) are said to have *"high energy and long, programmable arc duration [which] are an advantage since they provide better lighting of lean or non-homogeneous air/fuel mixtures"*.

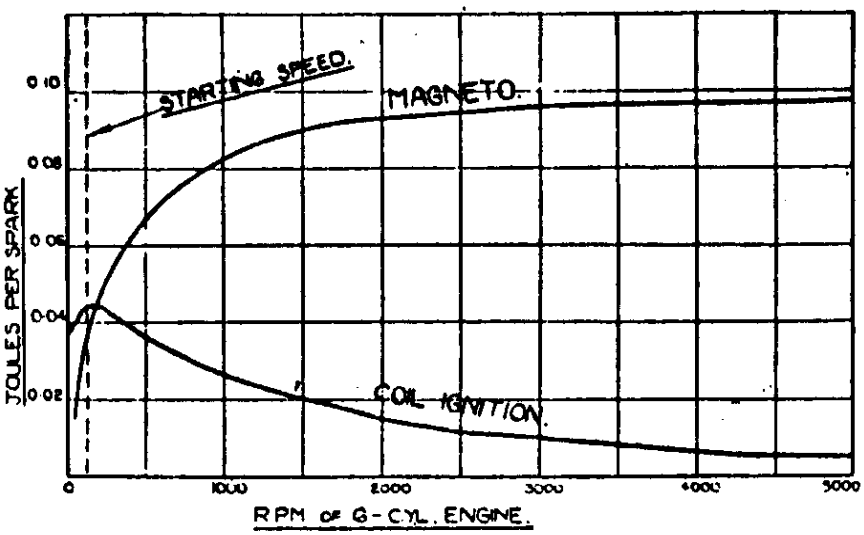
One authority says that while a points-triggered system can only produce enough sparks for 9,000 r.p.m. in a four cylinder engine a modern high energy system is good for 15,000 r.p.m (4).

Apart from having fewer cylinders to worry about, none of this matters much to *Loose Fillings* readers, as conversion of distributors, and magnetos, to electronic or 'breakerless' operation is widely prohibited in historic competition. e.g. FIA, CAMS (Australia), VSCC, 500OA, HFJRA (UK).

However conversion from magneto ignition to points-triggered coil-ignition is often permitted. It requires the installation of a battery and one or more coils as well as modification or replacement of the magnetos themselves.

In the case of air-cooled (that is mainly motorcycle-type engined cars) the ubiquitous rotating-armature magneto is not easily converted to points-triggered coil ignition. This is because of the difficulty of finding contact breakers small enough to fit within typical housing dimensions with the contact breakers rotating inside the cam-ring.

One solution is to modify a rotating-magnet type magneto which has a fixed contact breaker operated by a rotating cam similar to a conventional distributor. It is relatively simple to use just the contact breaker in conjunction with an external coil and battery in a way that just isn't possible with the traditional type.



Spark energy curves of magneto and coil ignition (Westbury). When you look at the energy produced you can see that the magneto just gets better and better as the r.p.m rises. However there is a significant limiting factor rpm-wise in the physical quality of the magnetos coil windings (if rotating) and the level of internal insulation that can be achieved. (

This is the path I went down with the Walton-Cooper, using, as others have, the relatively common Lucas SR1 which was first introduced in the late 'forties or early 'fifties and, in a racing version, was fitted to the Manx Norton amongst others.

However a problem of an elusive top-end misfire held me back until late 2006. when I sorted it with the addition of a Dyna 'ignition booster '. Sounding a bit too good to be true, this little box of tricks

cleans up and reinforces the primary voltage from the contact breakers to the coils.(5). I used dual-fire Harley-Davidson after-market coils with one for a pair of plugs on each cylinder. Those that I bought in my innocence (Andrews street coils) just weren't up to the job of trying to fire two plugs under compression at the same time in conjunction with supercharging. I probably should have used the highly regarded coils also made by Dyna, which have proved themselves in a multitude of conversions in the UK.

Although I think I have solved my early problems, my enthusiasm for coil-ignition is now much diminished and I am making a new effort to service my aging BT-H dirt track magnetos and give them another chance. I also hope to be testing a UK developed self-contained unit that looks roughly like a 1950's magneto and which comprises a generator with electronic ignition components internally i.e. no points.

These are being made for twins and singles and are being supplied under the BT-H trademark; for further particulars see http://www.bt-h.biz.

BT-H platform mounted electronic magneto

In a recent review of its policy on ignitions systems, the CAMS Historic Eligibility Committee decided not to allow any further penetration of electronic components except as follows (from the minutes):

The Committee further discussed the replacement of magnetos with distributors which has been approved in the past. The Committee agreed that this practice will be permitted to continue.

The Committee then discussed permitting the use of an electronic magneto substitution. It was the decision of the Committee to permit the use of an electronic magneto substitution for single and twin cylinder air-cooled motors only. These units must be self-contained and require no external battery, or external electronic controls, mount in the same position as the original magneto and have an appearance similar to a period magneto.

A conversion to points-triggered coil-ignition will cost you anything up to $500 per cylinder for coil, instrument purchase and conversion and rewiring. Buying and rebuilding a period magneto will cost you somewhat more. A new BT-H unit will come to about $1100, so it's not cheap.

But the premium for a *new* box of tricks, which automatically retards to aid starting, may be well worthwhile in performance and reliability. I'll let you know what I think when I have tried a couple out.

REFERENCES

1.Ignition Equipment by Edgar T Westbury, first published 1948, reprinted Tee Publishing 1993.

2.See the now available reprint (Ricardo plc) of the 5th edition (1968) of the classic High Speed Internal Combustion Engine by Sir Harry Ricardo and J G Henson.

3.When the energy developed in the coil during the dwell period (when the ignition trigger is closed) is stored within the coil or coils the system is described as "inductive". (See 'Inductive ignitions yield reliable firing', by Don Weaver and Kathy Boutin at http://www.dynalco.com. and http://www.chevyhiperformance.com/tech articles/45618_inductive_cd_ignitions_basics/).

4.Graham Bell's Four stroke Performance Tuning, published by Haynes has a very good chapter on ignition systems.

5.The unit is simply inserted in the circuit between the contact breaker and the coil.

THE CULLEN SPECIAL - A 1950s NZ SURVIVOR

One of the first New Zealand-built 500s, the Cullen Special built in Dunedin around 1952-53, is still active in South Island classic events at Ruapuna, driven by the son of the car's original constructor and jointly owned by him and his sister.

Jim Cullen built the car as a 500, initially using a JAP single, later various Nortons. It used a two-tube chassis with wishbone front suspension, swing axle rear, and Cullen's own alloy bodywork and cast alloy wheel centres. In the mid-'50s he hillclimbed the car, and raced it at Waimate, Oamaru and Wigram.

His family still has a number of trophies he won with it. Bill Ingle in Dunedin bought the car in 1962 less engine, modified it, and had some hillclimb and sprint successes with it.

Many owners further down the line, in the late 1980s, Kevin Telford bought the car from Ted Giles, extensively rebuilt it and installed its present overhead-valve 1000cc Harley Davidson engine and gearbox. The car now also has new wheel centres, made by Phil Ingles from patterns made by Trevor Timms. Chris Cullen of Christchurch and his sister Denise Dymand, children of Jim Cullen, bought the car in the mid-'90s and since 1995 it has appeared regularly in classic events at Ruapuna.

Below: The Cullen Special as raced today

LOOSE FILLINGS

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