LOOSE FILLINGS

BITS AND PIECES

☛ Vincent crankcases being manufactured in Australia by Terry Prince have been approved by CAMS as acceptable for use in the restoration of historic cars. There were more than 30 locally-built Vincent-powered cars, but unfortunately very few of them survive.

☛ Rob Roy "historic" hillclimb on Sunday November 26 should see a number of Victorian air-cooled cars, and may also bring some interstate visitors. Gary Simkin will have supp. regs closer to the event, and more info is available from David White, phone/fax 03 9850 4795, 12 Ardgower Court, Lower Templestowe 3107.

Unbelievably, Murphy's Law of Calendars ensures Rob Roy clashes with HSRCA's Wakefield Park meeting!

THE LOG

HERE we record and applaud those occasions since the last Loose Fillings where air-cooled racing cars not merely appeared in public but actually ran.

No air-cooled cars ran at Historic Winton in May!

☛ June 18: Mark Dymond, Cooper Mk V JAP 1100 - Rob Roy.

☛ August 19-20: Mike Gosbell, Cooper Mk IV JAP 1100 - Leyburn (Qld) sprints.

☛ August 20: Garry Simkin (JBS Norton), Andrew Halliday (Cooper Mk V Norton), Rob Gunnell (Cooper Mk 3 JAP), Mike Bendiech (JMW CZ150) - Eastern Creek.

☛ August 23: Garry Simkin, Andrew Halliday, Rob Gunnell, Cameron MacMillan (Sidney Vincent) - G.E.A.R. day, Wakefield Pk.

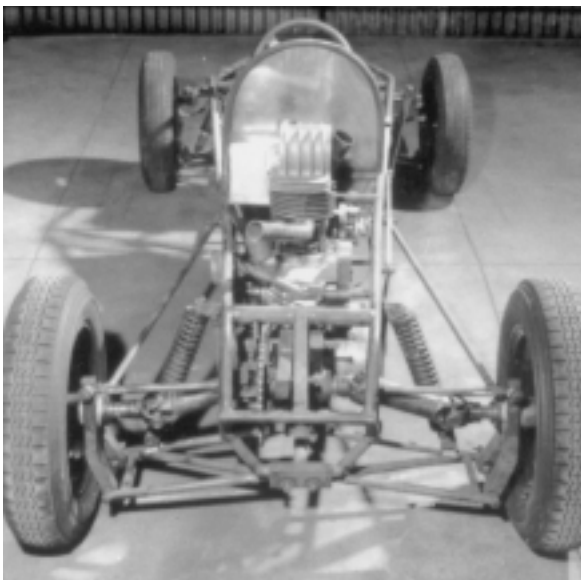
GOOD VIBRATIONS

Movement at the station: pictured below is Chris Tracey's BB Ariel, Brian Schureck's early '60s Red Hunter powered car which appeared in public for the first time since the 1980s at Eastern Creek in August, and which will be a runner pretty soon. Meantime, John Coffin in Melbourne has bought the mid 50s BSA-powered Robbins 500. We're getting there!

A NEW ZEALAND COOPER

Craig Pidgeon in the South Island races the ex Syd Jensen Mk 10 Cooper 10/20/56 which Craig's father Bruce bought from Gavin Bain in 1995. The car originally ran an ex-works Manx, but was sold less engine to Richard Anderson, who fitted a 4B JAP and raced it successfully for many years before seling it to Gavin Bain.

After a lot of problems the car is now reliable and provides enjoyable racing, although there are not many other 500s racing in the South Island and Craig has to try to keep up with Formula Fords and Zephyr and Jaguar-powered specials. In last year's Waimate meeting he started 13th and finished 11th in all his races.



ROSS STEWART'S 1960s CARS

AS mentioned in Loose Fillings #4, a photograph from John Holmes in Toowoomba of the late Vince Carsberg at Echo Valley (Qld) hillclimb in 1966 was confirmed by Ross Stewart in Melbourne as showing the first of two air-cooled cars Ross built and hillclimbed in Victoria in the early 1960s.

Laid down about 1960, the first car was initially called the Stewart Velocette, later the Olev 350 and 500. It had wishbone/transverse leaf suspension at both ends, a Fiat steering box, 12-inch Fiat rear wheels and possibly Vespa fronts using R4 Vibrac stub axles carried in Vincent motorcycle backplates converted to hydraulic brakes.

The car originally had a highly developed overhead cam KSS 350 Velocette engine which needed to be kept between 6000 and 8000 rpm and was eventually replaced (a fairly simple conversion) with an almost standard pushrod MSS 500. Second owner Ron Perry (brother of exhaust-system guru Ric) believes the swap took place during his ownership; Ross Stewart recalls it happenned before he sold it, which was about mid-1962. How it got to Toowoomba after Ron Perry sold it no-one knows. Post Carsberg the car was much altered, and serious searching by John Holmes established the car has been lost.

Meantime, Ross Stewart had been building a second car, with coil and wishbone suspension and powered by a rotary-valve 500 c.c. two-stroke supercharged single. This used a B33 BSA-based crankcase with a stronger rod and the valve chain-driven at quarter engine speed. After solving ignition and plug trouble the new car was taken to the back strip at Fishermens Bend where, after a fierce burst of power, the engine self-destructed. Somehow a 1/4" Unbrako had found its way into the crankcase - perhaps via the exhaust port, which was exposed to the crankcase when the piston was at TDC.

This was probably during the second half of 1962, suggested by Ross' Geelong Sprints entry (scratched) for a car called the Rovart. As he recalls, "the desire to compete took over," and the car was given a conventional B33 BSA, supercharged and on low compression. In this form the car was hillclimbed throughout Victoria from late 1962 as the Stewart 500 and the Keros 500 until its terminal accident at Silverdale in 1964. It is possible, but not certain, that the remains of the chassis were bought by Ian Wells but nothing further is presently known.

Top: the second Stewart 500, with rotary valve head (left) and later with supercharged push-rod BSA, Ross Stewart driving, at Hepburn Springs. Below: the Olev 500 (left) with MSS Velocette engine at Echo Valley, Vince Carsberg driving, and (right) during construction.
Echo Valley pic courtesy John Holmes. Others courtesy Ross Stewart.

ALCOHOL AS A FRIEND PART 3.

HAVING discussed the Amal Type 27, TT, and GP carbs, we can move on now to the later model carbs made by Amal for motorcycle use.

The last paragraph in the CAMS manual under group Lb Engine states, 'Motorcycle engined vehicles originally fitted with Amal carburettors may use AMAL CONCENTRIC Mk1 carbs.'

Taken literally that means whatever m/cycle carb your car had originally, it can be replaced with an Amal Mk1Concentric. (Sadly NOT the Amal Mk2, which is a later and much more refined carb).

Now there's some good things about the Mk1s, and of course some bad things. Nothing in this world is perfect! The good news first.

Mk1s are thirty year old design, but we can still buy them brand new for about $300 a pop. The biggest size available at last enquiry was 32 mm choke size, which is an improvement on the old Type 27 at 28mm.

Secondly it's called 'Concentric' because the float bowl is concentric with and surrounds the jet. This solves the surge problems because the jet is always in the centre of the fuel.

Thirdly the carb can be ordered with a hard chrome slide. This is a big improvement on the light alloy standard slide which sometimes sticks on half open throttle due to suction in the manifold. The carb can also be ordered specifically for use with alcohol fuels, which means it comes with the right cutaway slide, needle, and approximately correct needle and main jets. The jets interchange with TT and GP carbs.

Now the bad news. The carb will flood hopelessly if subjected to any pressure above gravity feed. The bowl is minuscule and is filled almost entirely by the plastic float leaving little room for fuel. The float can only fall about 1/4 inch, and with its designed leverage ratio, only lifts the needle about 60 thou off its seat. This means the needle is always partially obstructing fuel flow. The end result is that the needle and seat will not pass enough methanol to run a main jet much bigger than an 800. This is marginal for a bike, and quite inadequate for the 1200 main jet we will probably need in a cast iron 500 c.c. car.

With these big jets the consumption is considerable, and the limited flow of fuel into this tiny bowl under gravity is unable to keep up with demand. That means the small capacity bowl very quickly runs dry, and the engine dies of thirst.

The writer struggled for a couple of years to get some Mk1s to work on a big twin as they came standard. Dodges tried unsuccessfully were grinding the tip off the float needle, drilling extra holes in the needle seat holder, increasing the capacity of the bowl by clamping a kidney bowl around it, increasing the capacity of the bowl by screwing another bowl on the bottom of the original bowl and extending the main jet down into that auxiliary bowl, grinding the inside of the bowl to allow the float to fall further, and thus lift the needle higher off its seat, and so on.

Even in total, these 'improvements' were not enough to keep the motor alive on any sort of a straight on full throttle. It's worth noting here that increasing the capacity of the bowl really isn't ever a proper fix. All the extra couple of tablespoons of fuel does is to get the car another fifty or so yards up the road before it runs lean and seizes. It's far better to keep the bowl full under all conditions.

However the Mk1 Amal is so good in other respects it's worth persevering with. And there IS a sure fix to this fuel flow problem. It's radical, but as the collection of holed and seized pistons on the workshop shelf grows, desperation sets in!

THE WEIR SYSTEM

The simple solution is to remove the needle and seat and float altogether. Then drill a 21/64 hole in the front of the bowl at the correct fuel level, tap it 1/8 gas and screw in a 3/8 hose stem. Then pipe this overflow back to the main tank. This obviously requires the main tank to be below the carb. If it isn't, we may have to scratch our heads or introduce another pump. Or both! It's called a 'weir system' for obvious reasons, and was employed on occasion on the Manx Norton and Porcupine twin AJS in the fifties and sixties.

With this set up, provided there is a steady continuous supply, (as distinct from violent pulses), fuel can be pumped or gravitated into the carb as fast as desired, to the point where the overflow can't cope.

By trial and error this point can be established on the conservative side by introducing a suitable restriction into the fuel supply to limit flow to equal or slightly less than the overflow will pass with the engine NOT running.

Now assuming the fuel supply is continous and adequate, we will always have the correct fuel level, even on full throttle.The carb should never flood, and there will be no surge problems. This mod makes the Mk1 Amal a proposition, whereas in its standard form it's poor flow characteristics make it very iffy on a big single that's really going.

So just to re-state the obvious. The majority of engine problems associated with air cooled cars come from the failure of so many of them to supply their high compression scantily finned engines with enough fuel to keep them cool and mechanically reliable. To do this we MUST use alcohol based fuel, AND LOTS OF IT!

Mk1 Amal carbs and spares are readily available in Aust. A good source is ex speedway man John Titman in Queensland on 07 32074445. In the UK, Chris Williams 01384 253030. Fax 01384 240401.

SOME SUGGESTIONS

If possible transport your car with the carby bowls full of fuel to avoid damage to any fragile floats rattling around inside a dry bowl.

In the case of the SU bowl a good lurk is to fit an 'O' ring around the central through-bolt to give the brass float something soft to rest on when the bowl is empty.

Whatever carb is in use always make sure the needle jet, if one is fitted, is as large or larger than the main jet. It is no good screwing in bigger and bigger main jets if the needle jet is too small. As a general guide a 120 Amal needle jet is about the same size as a 1300 main jet, which means there's no point in going bigger on the main.

If the car is left between meetings you may find the carb slides stick in the bodies due to the residual methanol fuel gumming them up. To minimise this tendency spray with petrol or CRC after use.

Methanol and castor based oil combine to effectively oxidize and gum everything they come in contact with. For this reason it is a wise move to squirt some petrol in the plug hole and wind the engine over a few times after use, and again each month to avoid rings getting stuck in grooves, and corrosion taking place on highly polished surfaces.

An NGK 11 or equivalent is considered to be a good plug for a speedway JAP, although the old 14mm Lodge R49 Racing plugs are totally reliable as long as the mixture is right. The presence of burnt oil influences the colour of the plug and in a motor like the JAP with no oil control ring the plug should come out looking a nice shiny satin black. Look for little shiny balls stuck to the electrode. Shiny balls mean lean mixture, detonation and imminent disaster.

The most helpful literature around on the subject of old motor cycle engines is 'TUNING FOR SPEED' by Phil Irving. In it he deals with every aspect of tuning and maintenance in simple layman's language. The latest (6th) edition is published by Paul Armstrong and is a must in the workshop library.

Demon Tweaks

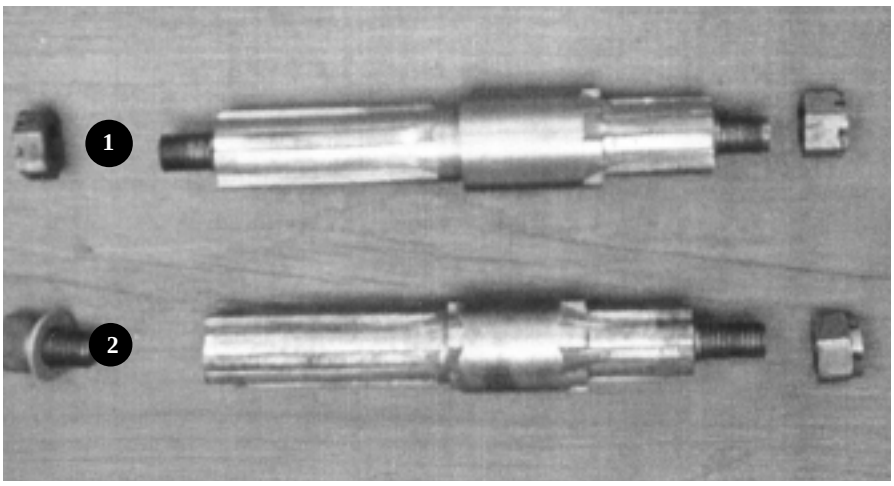
TASMANIAN AIR-COOLEDS

from Rob Saward (author of "A-Z of Australian Made Motorcycles 1983-1942")

DELVING into Tasmanian racing to research my upcoming Longford book I have found the following Tasmanian aircooled cars. The Walkem is with Jeff Hodges in NSW, the Powell MkV Cooper is with Brian Reed, and the Stephenson/Archer/Mahoney MkV is with Rob Phillips. But where are the others?

- ☛ Lionel Hart, Hart BMW 500, 1951-54
- ☛ Lionel Hart, Hart Norton, 1958-59
- ☛ Brian Mahoney, JAP 1955
- ☛ Brian Mahoney, Vincent, (? replacing JAP), 1955-57
- ☛ Bill Stephenson, Cooper MkV JAP 1100, 1953-54
- ☛ Lyn Archer, Cooper MkV JAP1100, 1955
- ☛ Brian Mahoney, Cooper MkV Vincent s/c, 1958-60 (probably the Stephenson - Archer car)
- ☛ Lex Sternberg, Whiteford Irving, 1096 s/c 1958-59
- ☛ Dave Powell, Cooper MkV, 1959-64 (snr and junior). This car used Norton and BSA 500 and JAP 1100
- ☛ Jock Walkem, Walkem Norton/Vincent, 1955-58 (sold to John Contenein c.1960)
- ☛ Ross Oliver, Kenley Vincent s/c, 1958 (also driven by Geoff Smedley)
- ☛ Geoff Crawford, Crawford Indian, 1951-53
- ☛ Alan Hale, Indian 1955 (this may be the Crawford car)
- ☛ Graeme White, White HRD, 1955-58
- ☛ Johnny Watt, Saanen spl 498, 1958
- ☛ Jock Walkem, Cooper Vincent, 1958
- ☛ R.B. Douglas, EA BSA spl 249, 1959
- ☛ A.N. Harvey, Five Day spl 200, 1959
- ☛ P. Abbey, Abbey BSA 350, 1959
- ☛ R. Show, CZ spl 150, 1961 (this may be a JMW)

Comments on the above welcomed by Rob Saward, Box 381, Woodend 3442 or rsaward@netcon.net.au.



COOPER REAR AXLES

from Max Fisher in Auckland

A word of caution to all owners of Coopers with fabricated rear uprights (ie up to Mk V). Check that 1) the hubs are a good fit to the splined quill shafts, 2) there is a positive locking system - lock-wire or lock tabs - for the centre bolts, because this is essential to ensure the hub does not come loose.

Early Coopers evolved through three types of shafts (see photo):

Type 1 - BSF male thread at each end with castellated nut and split pin. This had two faults - a square shoulder at the base of the thread, and a tendency to stress-cracks (resulting from heat-treatment), particularly after side impact like hitting a kerb. If your car uses this sort of shaft, keep a close watch and get the shafts crack-tested.

Type 2 - has an internal thread at the outer end, using a bolt or cap screw. Ensure this is locked to the hub. The inner end generally does not give trouble, but again crack testing is advised.

Type 3 - cap screws at both ends, the best version and the one to use if making replacements. Use good steel, eg Atlas AT28, and get the new shafts toughened to at least 75 tons shear strength in twist.

Inner flanges were Ford 100E pinion flanges modified; Triumph Herald diff flanges need little machining to fit. Good quality or thick washers are also a good idea, as they do not distort.

Remember, for reliability on all air-cooled cars: even if you KNOW it can't move, LOCK IT

KERRY'S KWIZ (KONTINUED)

More questions from aircooled historian Kerry Smith.

- ☛ Did Jack Brabham own or drive a Mk V Cooper?
- ☛ What has been the most consistently raced/hillclimbed Cooper in Australia?
- ☛ Which early Cooper had the least number of owners?
- ☛ Which Cooper had the greatest number of bodywork colour changes?
- ☛ Which Cooper had the greatest number of different engines?
- ☛ Apart from the obvious JAP/Norton/Vincent, what other engines have been fitted in Australian Coopers? (dates and places, please)
- ☛ Who first fitted an oil cooler to a Cooper? Whose car was it?
- ☛ Jack Gates from Newcastle drove a green/yellow Cooper Vincent at Warwick Farm in mid-1961. Which car was this? If it wasn't a Cooper, what was it?

FOR SALE/FOR SALE/FOR SALE

***Cooper Mk V 500 JA (below)**, ex Hawkes, Patterson, one of Australia's most significant and highly credentialled Historic cars. Raced Europe, won '54 Aust. Hillclimb Championship, ran '53 AGP, etc etc, Grp L log book, history with both 500 and 8/80 JAP. $40,000, Brian Reed, phone/fax 03 5439 5296*

***Cooper Mk IV 1100 JAP**, the most original Mk IV in the world. $50,000. More from Mike Gosbell, 02 6651 8141 a.h.*

***Ewing Norton ES2:** late '50s, built by Ron Ewing. Log booked, spare ES2 plus remains of 1300cc Harley/Norton. Realistic price. Malcolm Thorn, 03 9807 1244 a.h.*

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