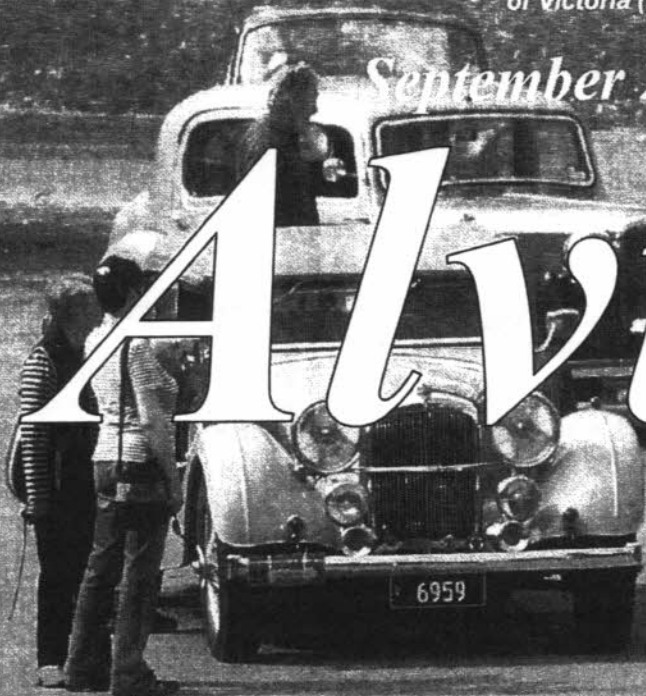


The Newsletter of the *Avis* Car Club
of Victoria (Inc)

September 2011

Avis





September 2011
VOL 50 ISSUE 8

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Alvis Car Club of Victoria (Inc)

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CLUB ROOMS: - rear of 'ALVISTA' 21 Edgar St, Glen Iris (MELWAYS 59 F8)
Meetings—third Friday of each month [except DEC/JAN] at 8.00pm. Newsletter Dead-
line - first Friday of the month.

POSTAL: ACCV P.O.Box 634, EMERALD, VIC 3782
www.alvis.org.au

Greetings

The first thing I have to report is the sad passing of Eric Cunningham. Eric was a NSW Alvis stalwart who dedicated a huge part of his life to the Alvis cause both locally and overseas. For 24 years he edited the N.S.W. magazine "Alvibatics" and was also the Club Registrar. He would often be seen on National Rallies with pencil in hand peering at dumb irons and dashboards recording chassis and model numbers of either newly completed restorations or just checking his existing notes. That was how I met Eric for the first time although I have in my files a number of letters written by Eric to my late father concerning Alvis cars and aviation matters of which Eric was also interested in.

For many years, it had been hoped that Eric would one day write a book on Alvis cars in Australia as he certainly had enough material to do it justice. As with many busy people this was put on the back burner until last year when it was decided that with the help of John Lang writing the book could indeed be a possibility. Both John and Eric started to correspond and information started to flow, John asking the questions and Eric supplying the answers along with photographs.

With Eric's passing, a fitting tribute to his achievements in Alvis circles would be for the book to be completed by John and dedicated to Eric. We will see what eventuates?

The AGM and Trophy presentation night is coming around quickly (October). We have a vacancy for a committee person so if anyone wants to step up to a challenge, then now is the time. Richard Tonkin has decided to stand down after many years serving on the committee in one form or another. Although we have lost him on the committee, we will still see his smiling face on club events!

A couple of weeks ago, John Lang and I travelled to Traralgon to look at venues etc for the National Rally. We spent four days travelling around and think we have nussed out what will be a pretty good event. There are some magnificent roads scattered throughout Gippsland and plenty of good eating establishments also. What more does one need?

I will not be chairing the September meeting as I have been invited to represent the ACCV at the

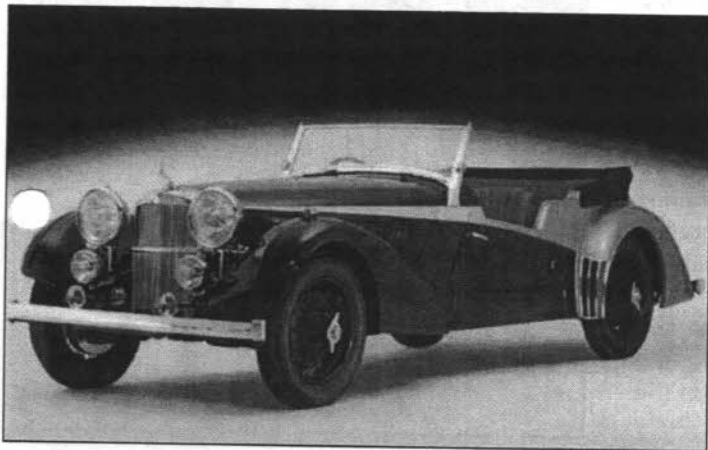
President's Dinner at the RACV Club. I have put off attending for the last five years and decided that I would go this year.

If I don't see you at Healesville then I will catch up at the AGM in October.

Chester

For those who would like to join us for a pub meal before meetings:

Malvernvale Hotel, 1321 Malvern Rd, Malvern - from 6.00pm



You can view an interesting interview about the new 4.3 litre car on:

http://www.newcarnet.tv/Alvis%204.3%0Litre_car_video.html?section=interactive&id=1526

"Tassie Explorer"

Alvis Car Club of Victoria (Inc)
22 April - 6 May 2012

YOUR Invitation to the Ultimate Apple Isle Experience

Supper - Richard Wallach

2011 EVENT CALENDAR

September	16 24, 25	General Meeting Healesville Steam Rally OPTIONAL OVERNIGHT PLANNED 24th
October	21 23	Annual General Meeting & Trophy Awards EARLY MORNING RUN See page 6
November	18	General Meeting
December	4	Christmas Party—Alan Willingham - details to follow

Front page: some of the assembly of Alvises at Wagga Lake during the "Alvis Escape"

Eric Cunningham

What can we do to properly acknowledge the immense debt this Club owes to Eric; how can we adequately celebrate his life?

More recent members knew Eric as their first contact with the Club, making them feel welcome whether Alvis owners or not. His fame spread during his 24 years as *Alvibatics* editor, and he was equally renowned as Alvis historian maintaining the Club register - forever, it seems. My first memories of Eric were of an entertaining and witty person who was prepared to parley with 'precocious young people', and when I came to events with my family I would seek him out.

But these are recent memories - to understand Eric we must go back much further.

Born in October 1925, Eric grew up in West Ryde and after leaving school worked for the Alvis distributors in Sydney, Charley & Lord. Tom Lord was his idol. From this time came his enthusiasm for Alvis cars and many of his sparkling anecdotes.

At 18 he enlisted in the RAAF, with the world still at war, and trained at Bradfield Park as a Flight Sergeant, Airman Pilot, a skill he recalled when co-piloting the Scottish Aviation Twin Pioneer at Cherrabah on the Qld Rally in 1993.

War over and a new wife meant it was time to start a steady job and Eric continued his working life in the Customs Department, a job which suited his attention to detail and his mischievous sense of fun (he enjoyed catching the crooks).

His beloved wife, Zell, was a co-conspirator when it came to Eric's passion for Alvis. Eric joined the Club in September 1951, the same month *Alvibatics* came into being. He and Zell were soon in charge of its production, with Zell receiving honorary membership in March 1956 for her hard work in producing and distributing the magazine, of which Eric was now editor.

Retirement gave Eric the opportunity to combine his two passions of Alvis cars and flying, with his love of books, by starting his company, Air-Speed Books, to sell motoring and aviation books, for which he had an unquenchable thirst.

On Zell's death in January 1996 the Club became Eric's *raison d'être* and he dedicated his energies to making it as good as he possibly could, attending every event; taking photos of every car; writing up every activity for the magazine he was now editing; contacting every potential new member; and offering information on the history of Alvis cars at every opportunity. For this dedication he was given honorary Club membership this year - too late you say? Perhaps but it was quite difficult to get him to accept.

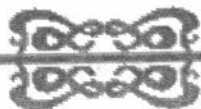
Eric was a frustrated author, always wanting to publish his own book, but pragmatism got in the way as he attended to detail and left the dreaming to others. Instead he wrote many of the articles he published in *Alvibatics* often under the pseudonyms of Gongoozler and Pelides. In these the reader found his great sense of humour and wit as well as his entertaining - and proper - writing style. After handing over the reins of *Alvibatics* to your current Editor, he stayed on as a contributor and proof-reader, always eager to find more errors than the others. In this edition he contributes an article on the early days of *Alvibatics* to celebrate its 60th anniversary.

Founding President Norm Adams wrote of Eric:

"May it always be to his credit that he did such sterling work for the Club for so many years, for it is doubtful if anyone has done more in a practical way, and the fact that he liked doing it in no way lessens the value of his contribution."

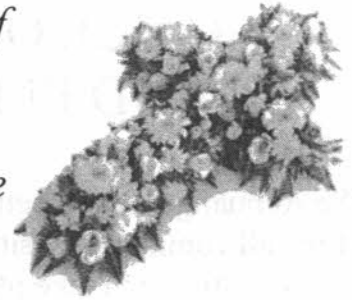
Eric died on 27th August 2011 after a very short illness and leaves behind his son Bruce, daughter-in-law Michele and grandsons Scott and Jarrod, to whom we offer our deepest sympathies. ▼

Heather Goldsmith



*It is with great regret that we advise of the death of
Ron Wilson's son Ian.*

*We know how greatly it will impact on Ron and we
wish him every strength in overcoming his loss.*



LETTERS TO THE EDITOR

Dear John

It is with great regret that I hear of Eric's death. I understood from Derek Dixon that he was a mine of information regarding Alvis Cars in Australia & I am sure he will be missed by all. Please pass on my condolences to his family. Having lost John so very recently it is so sad that other families have to feel this pain.

I am driving our Alvis & was delighted when I was able to take the Alvis "up the Mountain" on a recent EKKKA holiday. Part of the road was washed away in the floods & was down to one lane where they are trying to stabilise the mountain side – this plus the blind bends were quite a challenge. However the Alvis rose to the occasion & I have not sat alongside John Brown for over 50 years & not learned something about being in the correct gear, at the correct revs & at the correct time.

When I wrote to AOC UK advising them of John's death & asking for his membership to be transferred into my name, I received a lovely letter from Chris Storrar. I had told the Registrar how supportive the Alvis Club members had been since John's death & he passed my email onto to Chris. This was what made his job as Chairman of AOC worth while, he told me!

He also asked that I contact the editor of the Bulletin re publishing the articles John wrote about our Alvis renovations. I have yet to do this as I realise that my computer skills are not as good as John's. I can easily send the written text – it is the photos which are difficult. You made such a lovely job of matching the two I wonder if you have the series of articles on file. This would be an ideal way of sending them should this be available & not too much to ask?!

Kind regards

Ronnie Brown

Very sad to hear of the passing of Eric, as I never had the privilege to meet him in person I felt as though I had known him forever. when I first bought the TB14 I was given Eric's number and with great excitement rang him rather late one night thinking maybe I might get a poor reception, but to the contrary Eric seemed as excited for me as I was and proceeded to tell me everything he knew about the little white car. following up with pages of really good info. So without Eric's welcoming friendship and never ending knowledge I feel we have lost an integral part of our big Alvis family..
condolences to all who knew him... Alan & Colleen Bratt

NOTICE OF ANNUAL GENERAL MEETING AND ELECTION OF OFFICE BEARERS

The Annual general Meeting of The Alvis Car Club, Victoria will be held on 21/10/2011 at which time all committee positions will be declared vacant and the Election of Office Bearers for the year 2011/2012 will take place.

Nominations for positions on the committee must be received in writing no later than 14/10/2011, using the form below. Nominations may be called for on the night for those positions which remain vacant. Positions which receive more than one nomination will be decided by a formal vote at the AGM. Proxy votes may be forwarded to the Secretary (Note, only Full Members are eligible to vote or hold committee positions).

I nominate for the position of :
(please tick appropriate box below,)

- President
- Vice President
- Secretary
- Treasurer
- Editor
- Committee Member (up to 7 positions)

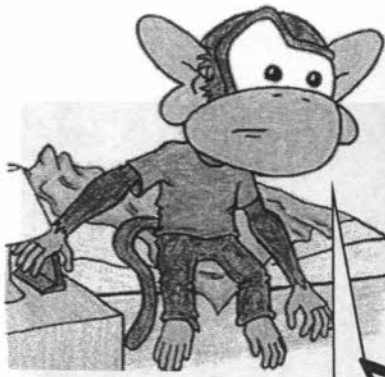
on this the Day of..... 2011

Proposed By Signature.....

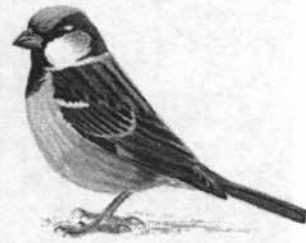
Seconded By.....Signature.....

Nominee's Signature.....

Note only one nomination per form, (form may be copied).



SUNDAY 23 OCTOBER



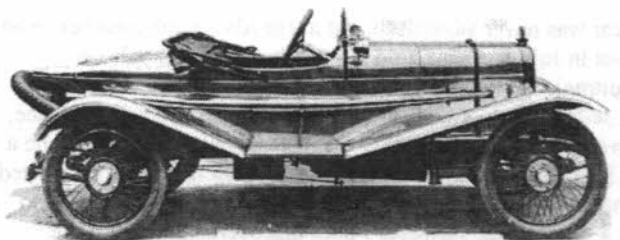
EARLY MORNING RUN or for some up at sparrows!

*Always
waking up
feeling depressed?
Come on the EMR!*

8:30 am for 9 o'clock start at the Spotlight Fabric car park, Canterbury Rd, 500M east of the intersection with Bayswater Road, Bayswater.

Join us for a tour of the Dandenong Ranges finishing at a picturesque forest park for late morning tea. BYO tea/coffee etc, BBQ's are available if required.

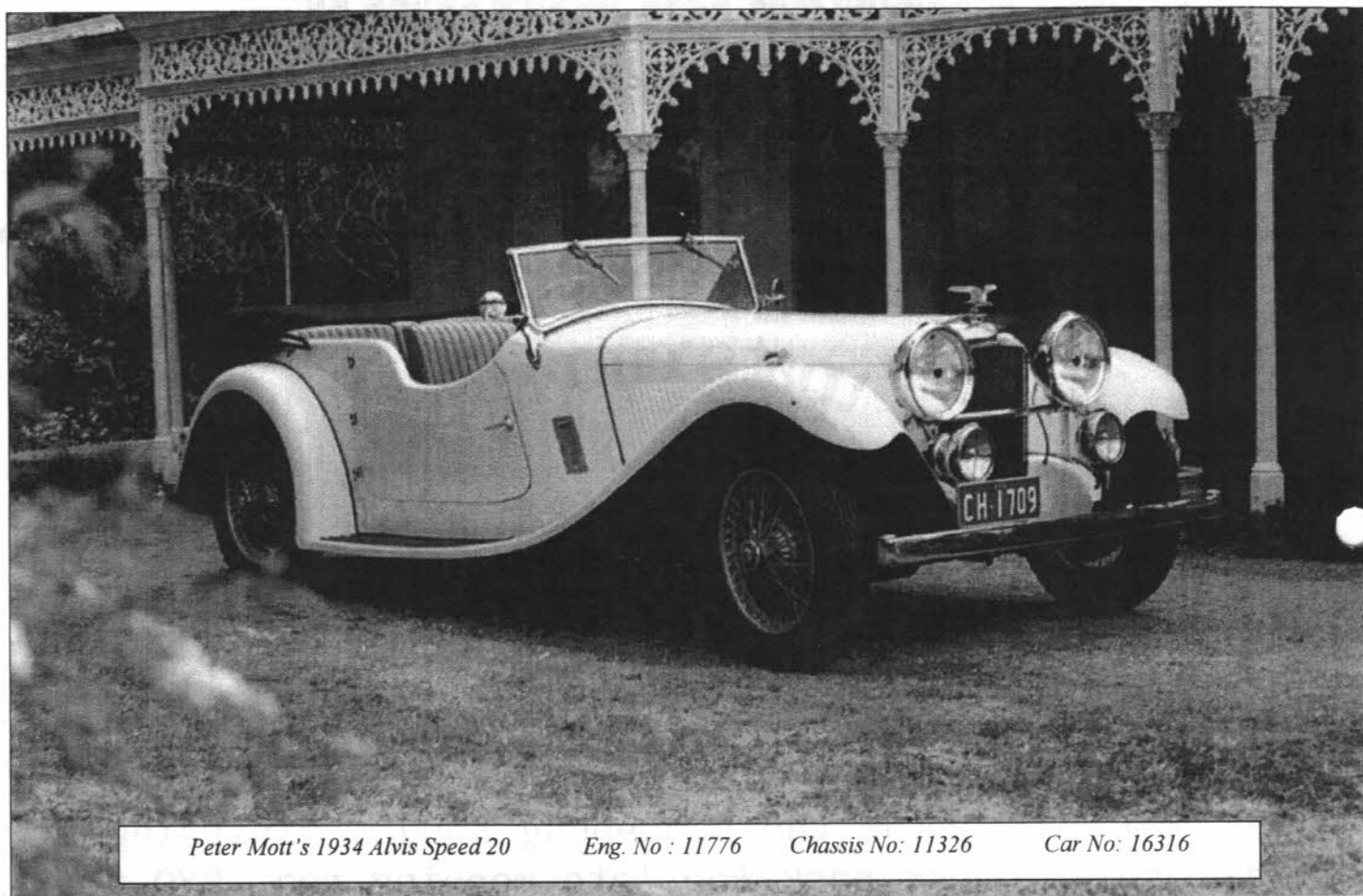
Contact Dale for further details
(dparsell@ozemail.com.au)



Results: Rob Roy Hill Climb 21/8/11
Only 3 Alvises competed Mark Burns
and Andrew Green in their 12/50s in
Class 6. Ian Barber in Silver Eagle.
Class 13.

A NEW TOY

Another Alvis in South Australia



In the February VSCC Bulletin our Glorious Leader mentioned a new addition to the Mott Shed, and that no doubt more would be heard of this in due course. Now is as good a time as any for "due course" so a few details will now be released.

It is a 1934 Alvis Speed 20 tourer, model SB, which has a 2.5 litre 6 cylinder engine and boasts synchromesh on all 4 speeds and independent front suspension with half elliptic transverse spring. I believe Alvis claimed to be first with 4 speed synchro! It still has the original Australian made body by Terdich Bros. of Melbourne, furniture makers who made a small number of car bodies including some for Bugatti. In fact Arthur Terdich won the second Australian Grand Prix at Philip Island in a Bugatti Type 35 in 1929. Of 375 Alvis SB models produced, 127 survive worldwide.

This car was never advertised, but a Vic Alvis Club member, who I had met in July last year, told me that it may be for sale (in Melbourne). So I contacted the owner, who said he was unsure about selling, but did not use the car much and had a dodgy knee, which impaired ingress and egress. He promised to contact me a week later, but didn't. He eventually decided to sell, as he wanted to concentrate on his antique gun collection. It was presented to me as a 1936 model however I later discovered that it left the factory in April 1934.

We met the owner, Bernie Mack, early in January at one of his workshops with the car on a hoist ready for inspection, and I could readily see that it had been well restored and appeared to have had

very little use since restoration, as it was spotless underneath. The rest of it wasn't very clean, with plenty of dust under the bonnet. Upon starting, the engine ran like a sick dog, spitting back through one or more of its 3 SU carbys and with noisy tappets, until it ran out of petrol. On the test drive it misfired badly, although I could tell that it had potential. I told the vendor that if he could get it running properly I would consider buying. A week later I phoned the restoration workshop owned by the aforementioned Alvis owner to be told that all was well so I closed the deal and a week or so later we collected it from the transport depot at Wingfield and headed for home. The Alvis performed like a thoroughbred until it had covered about 25 miles, when the bloody thing began misfiring and farting again, just like in Melbourne, so plans for a pleasant afternoon run in the country were put on hold!

I then spent a few frustrating days checking through the fuel system, tappets, and various electrical bits and following up helpful suggestions made by others, all to no avail.

I had noted that new spark plugs had been fitted and up until then had foolishly ignored them, but my eventual inspection showed them to be badly fouled. So I leaned off the mixture, fitted new plugs, and all appeared to be well again, so Anne and I courageously took off on a run south to Normanville for lunch.

Performance on hills was a bit average, but the car ran well until we neared Myponga on the return drive, when the dreaded disease returned and we embarrassingly hiccupped our way home. New

plugs fouled up!

I conferred with fellow VSCC member, Lee Paltridge, who discovered from his ancient parchments that the carburettor needles were incorrect for this model – too rich! Obviously someone with just enough knowledge to be dangerous had been interfering. I consulted Alvis owner and SCC member, Stuart MacDonald, who suggested I take the problem to John Hurley at Kent Town Auto Tune, which I did, and left it with him for a week while I was away. He found that in addition to the wrong needles, one was bent, with consequently a worn jet, plus two pushrods were bent, possibly caused by sticking valves due to lack of use, which also caused the carburettor seals to dry out and harden.

All necessary repairs were made and the Alvis is now performing brilliantly in the engine department. In fact I felt so confident that with David Read as passenger, we ventured forth to the Paltridge abode for a “London to Brighton Run” meeting. We triumphantly arrived on time and in daylight, but on the return journey upon entering the Southern Expressway, we were suddenly in complete darkness. I pondered upon how long the headlights might have been extinguished (all four of them), however we carried bravely but slowly on, with David leaning out over the door desperately trying to see the white line. You cannot believe how dark that road was – not a light in sight! I dared to speed up only when car lights behind briefly showed us the road ahead. After stopping to check that the taillight was on, we crept on for what seemed an age to the Reynella exit with its welcoming lights, only to be plunged into complete darkness again on the Reynella bypass. I never realised there were no lights there! As we reached street lights once more, of course the headlights came on, and apart from a couple of hiccups, stayed that way until I arrived safely and thankfully home. Next morning I discovered a connection on a relay, which when

wiggled, caused an on/off illumination effect – so problem solved with a screwdriver.

Now that I could reach 50 mph another vexing problem emerged: Front wheel tramp, i.e., alternate wheels bumping up and down. The first port of call was my tyre expert, who on balancing the front wheels on the car, found one wheel could not be successfully balanced due to the tyre being well out of round and suggested that this could be the problem. It was, so the offending wheel is now the spare and we have no more “bouncy bouncy.”

First owner of the Alvis was William Sear, chairman of Lever and Kitchen from Gisborne, north of Melbourne, who drove the car into the city daily. The ownership is blank from then until about 1960, from when David Bamford, who I have been able to contact, used it for daily transport and who had the misfortune to have a VW Combi attempt a u-turn in front of him without signalling. The Combi was speared amidst ships with considerable damage to both vehicles, but the Alvis was successfully repaired, just in time for his honeymoon! This owner loved the car but had to sell it about 1975, wishing he could have afforded the restoration it badly needed.

I have been successful in tracing all owners since then, the most significant of these being the late Austin Tope, a Melbourne engineer who owned it for at least 20 years and was forced to sell about 5 years ago due to ill health. Austin, with a reputation among the Alvis fraternity as being a meticulous engineer, restored the car during his ownership and the bodywork was done by one Richard Stanley, also highly regarded for his workmanship. I have been told that the two subsequent owners before me made very little use of the car, and I can certainly believe it!

There is still a problem with the generator charge dropping out after driving over 45mph for a while, and a whine from the rear axle that needs sorting, so at present I am on a learning curve. Also, a noisy tappet persists: with all tappets carefully adjusted, with No.1 inlet valve fully open, the clearance on No.1 exhaust measures .022”, leading me to suspect a problem with the shape of the side of the cam. In all my years of mechanical messing around I have never struck this problem and although performance is not affected, the noise annoys me, so the “bullet has to be bitten” sometime. Meanwhile I am enjoying “Alvising” and fiddling with old cars, and intend to keep doing so until (or if) I fall apart!

Peter Mott, South Australia. February, 2008.

Many thanks to Peter Mott for responding to my request for contributions. Peter has owned the car since 2008 and interestingly, it was a car that I would like to have bought when Austin Tope was selling it. Seems like Peter has had some interesting problems to sort out during those years.

In my quest for car history, Ron Allen, former ACCV President and long term club member, told me that Stan Bertram owned car having purchased from a Policeman who worked at the Russell St Police Headquarters.

The car broke a crankshaft during his ownership and a Ford V8 was fitted while the crankshaft was repaired.

It was then sold to a business owner in Service St Essendon and then, thought to be in the mid 60s, to 2 men who owned Epsom Engineering and who subsequently joined the ACCV.

.....ed

November, 1935

Motor Spirit

If only
THE BEST
is good enough
for you
CHOOSE
AN
ALVIS

1936
ALVIS
cars are in tune
with modern life.

1936 presents the opportunity to own this most modern of motor cars for which there is no satisfactory substitute. There is no other car which combines its own distinctive qualities with the spirit of the age so successfully as the ALVIS.

Not only in style, speed and silence of operation does the ALVIS excel, but also in road-holding and cornering qualities due to the perfected system of independent front wheel springing and steering.

ALVIS CAR & ENGINEERING CO. LTD., COVENTRY.
London Service Station, 100, West Road, Finsbury.
Distributors: Sir James & James, Glasgow.
Ghana Field, Ltd., 11, Berkeley St., W.1.

Ramblings of an Alvis TA21 Owner.

David Vaughan

Photography by David Vaughan

Our TA21 is starting to see some use after many years of being laid up while being restored. I am beginning to get used to driving and trusting the old car to take us on classic car rallies.

Whistle Stop

Our first run was a local Macedon Ranges rally organised by John Lang. Both Lyne and I were very nervous about how it would go and even stop, especially on the steep hills. I had driven it home from Dandenong a few weeks before, but carrying a passenger and making an appearance among other Alvis owners you just know something will happen to embarrass you!



Bob & Lesley Northey at the Whistle Stop Hotel

The drive to the back of Tullamarine Airport was fine, though we were both very anxious to see that our initial day out would be without incident. The small group of Alvis owners took notice of our car and welcomed our participation. Then it happened, without huge grating noises I could not get the car into gear! Once rolling no worries, was it a temporary hitch? Not so, at every full stop the problem continued. The drive through Wildwood, Riddells Creek and Gisborne South to the Lang's property was nerve racking, as I felt ill at ease driving this antiquated car, not having driven an old model for over six years. A pleasant morning tea was provided and needless to say being the new kids on the block we felt a bit awkward. The next stage was to Woodend via the back roads. We decided to drive straight there via the freeway and follow the convoy back to the Whistle Stop. Interesting how John regretted the route going via a dirt road. A similar instance occurred when I helped a VSCC guy out, trying out a course he had mapped out for a day trail. We hit a dirt road and my gleaming 12/50 was plastered with thick sticky mud. 'But it was a dry track when I came through a few weeks before' he guilty exclaimed. I bet there is still some orange mud in some hidden crevices under Edwina!

Lunch at Whistle Stop was very pleasant with a log fire roaring away and we started to get to know the Alvis owners. The gear crunching was later remedied by adjusting the clutch pedal.

Eynesbury

We were still a little uncertain about the car and left with plenty of time to reach Newport Lakes, rather than the start of the run at Williamstown. As it was we waited and waited for the participants on the run, just when we thought it must have been the wrong day (which has happened before!) a half dozen Alvises appeared for the morning tea break.

The run through the suburbs was a bit of mayhem, as like others we tend to follow the leader like sheep and they are not always right! Our navigating skills are at the best minimal! Eventually we ended up on the Ballarat Road and hastily made our way out to Exford. Upon reaching Eynesbury we were the first there! At least at the front gate, apparently John and Marg had entered the tradesman entrance and ended up behind the homestead.

Thinking we had entered the wrong gate we turned around and to our astonishment dozens of recent classic cars were flooding into the gateway blocking our exit! So I had to turn around again and guess what the dam clutch decided it would play up again! How embarrassing crutching gears in front of a large audience! With radiator steaming we parked to the right of the driveway where all the Alvises settled. The tight reconditioned engine was not quite ready for 55mph.

The grounds were over run with not just a group of Alvises but also members of the Werribee and Geelong car clubs that were on their joint club annual rally. Amazingly the homestead restaurant absorbed all the hundreds of people and managed to serve hot meals to everyone at a very reasonable price. Lots of chatting was followed by the cross-country drive home.

The gear crunching was later remedied a second time by adjusting the clutch pedal.



Lesley Northey, Rob Sands with Mark & Sue Burns

Rob Roy

As I have this recurring dream that I am lost or I have lost my car, so I studied the maps the night before the outing. (Could some academic who studied Carl Jung please interpret my dream?) Despite my best efforts we spent probably an hour exploring the Eltham hills getting very frustrated! Eventually we located narrow Clintons Road and Rob Roy Hill Climb.

Back in the late 1960's when I was single I went to Rob Roy every year for the annual Vintage Drivers Club hill climb in my 1928 Austin 12/4 tourer. In 1967 just for fun I donned a crash hat and took the Austin up the steep climb achieving an astonishing 1minute 24 secs! Compare that to the fastest time of 29.55 secs set by Gavin Sala in a racy Darracq, I might have done better by going up backwards! I entered many speed events in the Austin and one day I succeeded in winning a trophy! For the Slow Race at Kalorama, when making the

slowest time actually counted!

Historic Rob Roy Hill Climb has had many improvements since our last visit and when we arrived, just before lunch, we were impressed on how well the event was supported.

The rows of vintage and classic spectator cars were separated from the modern and created a great backdrop for the historic sports and racing car entrants. It has been sometime since I have been on a VSCC event and many new cars have appeared on the scene, that I later discovered from the program were driven by many familiar names. Such as the 1914 25hp Talbot, 1933 FIAT 508, 1934 Fraser Nash and a chic Ballot. The whole vintage experience was very enjoyable, from the rugged venue, the set up of buildings and tents and the fluid organisation by the VSCC, as well as the chatty and informative commentary from the PA system.

We caught up with many old associates, yes like me, old can refer to age as well as people we knew some time ago when we were in the VSCC. Several Alvises were seen, including Edwina, Ian Barber in the Silver Eagle and 12/50s of Mark Burns and Andrew Green.

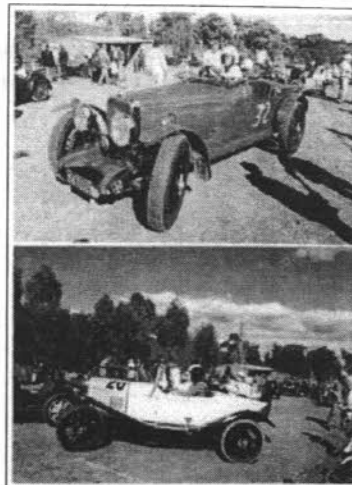
To create more interest in the climb they used several novel ideas such as a billy cart race, allowing spectators to tour up the hill and entrants taking passengers for a demonstration ride.

It makes me wish I had a sporty chassis with a minimal body to join in the fun!

The only issue we experienced with the Alvis on this run was our windscreen being sprayed with coolant. When the radiator was fitted no overflow pipe was attached, consequently when the car got hot it came out the overflow and sprayed between the gap the side of the bonnet. It cost six dollars thirty five cents for a jubilee clip and one metre of rubber hose to fix.



Lyn Vaughan tries Peter Fleming's caravan



Above Ian Barber in the Silver Eagle special & below Mark Burns in the 12/50

Marong

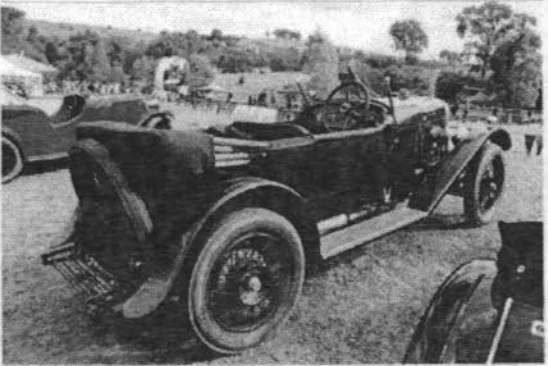
When events are held on our side of town I like to support them, this includes the Federation of Vintage Car Club's Marong picnic day.

I need to cover lots more miles to free up the engine and a trip almost to Bendigo was a perfect opportunity. Like the freeway to Ballarat it is a climb all the way. However the Alvis maintained an easy 50mph on whatever the slope, I can't wait for it to cruise on 60mph. It was quite a long monotonous drive, occasionally an old car; invariably American would pass us by.

We arrived before 12pm and the paddock was packed fence to fence with classic cars of every description, the best display I have ever seen there. Unlike Hanging Rock there were not so many very recent cars of interest as the clubs represented were veteran, vintage and classic.

The atmosphere was relaxed and everyone was so friendly. We talked to many people we knew and when others joined the talk groups we were introduced to them. We found it hard leave as were having such good ol' chat. The only other Alvis I saw was driven by local Rob Allen in his TF. He knew our car and gave me more information about its past.

The club really needs to go on this event as so many people admired our car and asked what it was! I heard one guy spell it out to his group – it's an A – L – V – I – S. We need to educate them!



The run home was quicker as it is mostly down hill and 55mph seemed to be the most comfortable speed.

That's about all my ramblings for the moment.



*Left: Geoff Hewitt's 12/50, at one time owned by David Vaughan
Above: the Vaughan TA21*

Thanks to Steve Denner for providing this interesting technical document for those like me who don't fully understand the workings of the generator. It will be published in episodes. Acknowledgement is made to Joseph Lucas Ltd *106.*.....ed

G.C., S.D.M.T. Members.
R.N.Z.E.M.E., BIRMINGHAM M.C.

LUCAS

TECHNICAL SERVICE

**OVERSEAS
TECHNICAL CORRESPONDENCE
COURSE**

**Section 5
GENERATOR OUTPUT CONTROL**



JOSEPH LUCAS (SALES & SERVICE) LTD · BIRMINGHAM 18



INTRODUCTION

Generator Output Control would seem to be a specialised subject of interest and value only to the Technician.

This is not altogether a fact: some knowledge of what is involved will be of great assistance to the administrator and stores operator, particularly in relation to parts ordering and stock control.

If you have followed through the generator section of this course, you will realise the important part which the control unit plays. Its combined function is to control the output over the generator speed range, regulate the current input required by the battery and when necessary provide additional current to cover the full load demand of the vehicle when lights and accessories are in use. Since this control is automatic, it is evident that the control unit is of considerable importance in the scheme of things.

An iron frame or yoke secures the voltage regulator unit and the cut-out. Although combined structurally, the regulator and cut-out are electrically separate, the regulator unit being of the electro-magnetic vibrating type. When placed in the generator circuit this unit acts as the brain of the charging system and regulates the supply of current to suit the various loads which are imposed upon it.

In order to make this unit suitable for the complete range of generators and vehicles manufactured, the load windings on the regulator are varied to suit a particular vehicle's electrical specification, i.e., type of generator, lamp and accessory load, etc. For this reason the control units are NOT interchangeable as a whole. This is an important point for administrative as well as technical personnel to keep in mind. A number of the control boxes are closely akin, and our Inter-changeability List should always be referred to by the technician and the stores manager in deciding on a suitable replacement from existing stocks, as well as helping to decide what stock should be held.

The adverse effects of fitting an incorrect replacement may not be immediately apparent. A control box with too few load turns may cause the generator to persistently overheat with consequent damage to the commutator brushes and bearings, and in extreme cases a complete burn out. The fitting of a control unit with too many load turns may cause the generator output to be insufficient to cover the load and will result in permanently run down or low charged batteries, causing premature failure of the battery through hardening of the plates.

This should be borne in mind when ordering spares, such as the regulator unit assembly where the identification number on the bracket must be reconciled to the complete unit and the vehicle concerned, otherwise the results in service can be most unsatisfactory.

Efficient performance over years of service is largely dependent upon the quality of the material used in the spring blades and bi-metal strips. Great care is taken with the specification of these materials and in the quality control of supplies coming in to the works. Also a prolonged period of running is provided on all assemblies, to normalize the springs before final adjustment of the settings. This is just another reason for buying only the original maker's genuine spares.

In view of the ever increasing demand for electric current on the modern vehicle, recent developments on generator output control have led to the introduction of the Current Voltage Control System. This is a fully proved system of control which has been applied to heavy commercial vehicles over several years and is now coming into use on the larger cars with prospects for its extension to the smaller range.

Briefly, it is a Constant Voltage Regulator with the addition of a separate Current Regulator which enables the maximum output from the generator to be available for a much longer period than if the voltage regulator only is used. By this means a discharged battery is returned to a half charged state very quickly, after which the voltage regulator takes over and proceeds with a "Tapering Charge" to completion.

Both the Compensated Voltage and Current Voltage regulating systems are fully covered in the accompanying pages of this Section.

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The cutout.

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Construction details of the RB.310, 320, 300 Control Boxes.

Charging troubles — Checking and adjusting current voltage regulators.

QUESTION AND ANSWER PAPERS

STUDENT'S QUERY PAPER

AIRMAIL REPLY ENVELOPE

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JOSEPH LUCAS (SALES & SERVICE) LTD., BIRMINGHAM 18, ENGLAND.

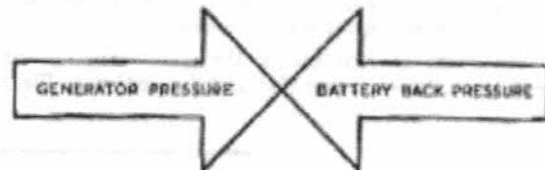
Working Principles

GENERATOR OUTPUT CONTROL

The generators we have to deal with, you will remember, are plain, shunt-wound machines. The main characteristic of these generators is that their output rises with increasing speed. Remembering that on modern vehicles the speed at which the generator is driven may be anything between 600-6,000 r.p.m. the output could quite easily rise above the safe limits of the machine. Some control of the output is therefore necessary when our generator is applied to a vehicle as the source of the battery charging current, if it is to function efficiently at all road speeds.

APPROXIMATE BATTERY VOLTAGE: DISCHARGED 12 V.
 : FULLY CHARGED 16 V.

GENERATOR VOLTAGE CONTROLLED AT 16 V.



VOLTAGE CONTROL

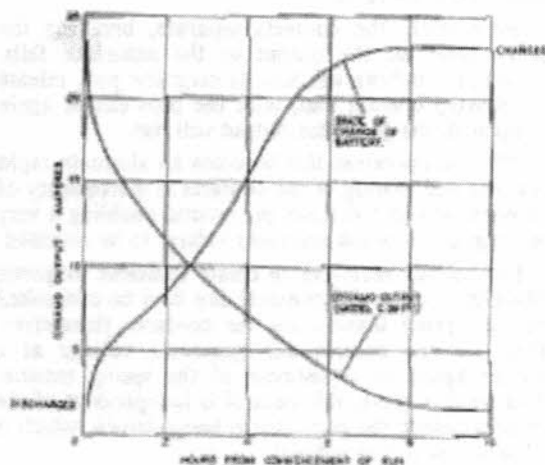
Now on the modern vehicle how do we achieve this control of our generator output, so that at all times the battery is being correctly charged and the generator kept within its rated output? One fact really provides the key to the problem: the fact that the battery voltage varies with the state of charge. If now we could control the generator output voltage at a pre-set figure over a wide speed range, we should have a variable voltage at one end of our charging system and a constant voltage at the other. The current flowing in this charging circuit would therefore vary with the varying terminal voltage of the battery, i.e. with its

state of charge. The difference between the battery terminal voltage and the generator terminal voltage would be appreciable when the battery was in a low state of charge, getting progressively less as the battery reached its fully-charged state. If the pre-determined voltage at the generator terminals has been correctly set, in theory we shall arrive at a state where the battery terminal voltage in its fully charged condition will exactly equal the generator terminal voltage. At this point, no current will flow through the charging circuit, as the back voltage of the battery will equal the pressure or voltage of the generator.

CHARGING CHARACTERISTICS

You can see from this graph how the charging rate falls as the battery reaches its fully-charged state, becoming a trickle charge, in this case of 1 or 2 amps., after 10 hours.

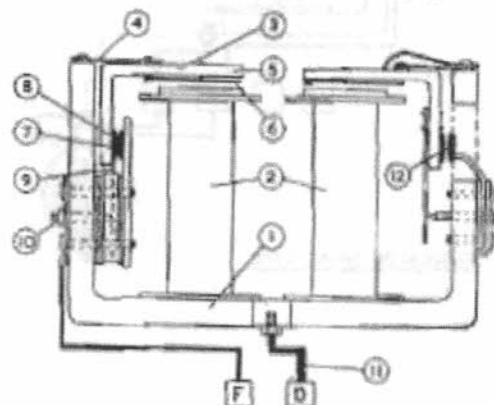
It is also clear that with this system of regulation, the "Voltage Control System" as it is called, the battery receives a high charge from the generator when it most needs it.



THE CONSTRUCTION OF THE CONTROL UNIT

As shown diagrammatically in this picture the Voltage Control unit comprises an Iron Frame or "Yoke" (1) on which is mounted two Iron Bobbin Cores (2) one (left) for the Voltage Regulator and the other (right) for the Cut-out Switch.

Let us consider the Voltage Regulator units; a pivoted bracket (known as an Armature) (3) is mounted by means of a Spring Blade (4) on the top of the main bracket. The horizontal member (5) lies immediately over the bobbin core and when this core is magnetised the flat member will be drawn down to it. In order to prevent it clinging to the core by residual magnetism a brass plate (6) or a copper button prevents iron to iron contact. (continued on next page.)



THE CONSTRUCTION OF THE CONTROL UNIT *(continued)*

On the vertical member of this "Armature" a contact point (7) is fixed to line up with a stationary contact (8) insulated from the main bracket. Also on the vertical member of the armature is a spring blade (9) and this blade lines up with an adjusting screw (10). By means of this adjusting screw the pressure between the two contact points may be varied.

The main D terminal of the generator connects to the bracket as shown (11) and the generator Field

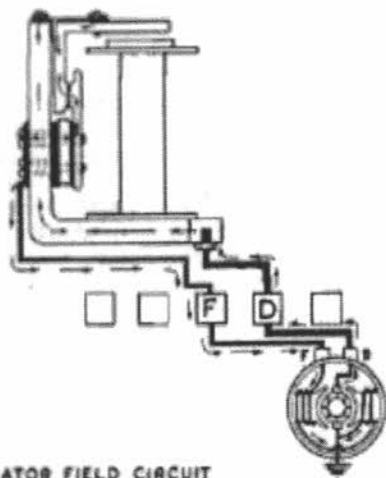
terminal F connects to the insulated contact point (8). When at rest the two contact points will be closed, thus completing the circuit between the generator armature and field.

The contact point assembly of the automatic cut-out switch (12) is of a generally similar construction but a single opening and closing operation disconnects and connects the generator from the battery. In the normal at rest position the cut-out points are open whereas the Field Regulator points are closed.

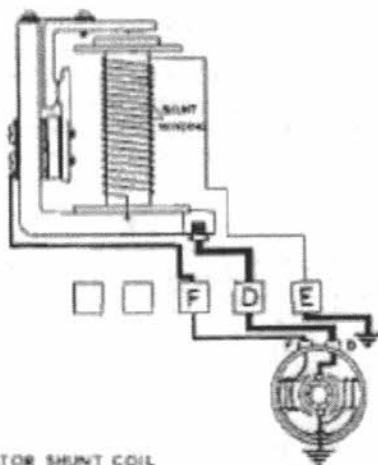
THE GENERATOR FIELD CIRCUIT

How then, in practice, do we achieve this controlled terminal voltage at the generator. Well, you know that the output of the shunt-wound generator is only obtained when the field circuit is joined in parallel with the armature circuit, i.e. when terminals D and F are connected. If we then break this D/F connection, that is, break the field circuit, the output will immediately fall off.

Here you see the regulator frame and its connection to the generator. If you follow the circuit from the generator "D" terminal, through the right-angle frame and moving contact to the fixed contact, and back to F at the generator, you can see that D is effectively joined to F through a pair of contacts. Spring tension holds the contacts together, thus keeping the D/F circuit closed.



GENERATOR FIELD CIRCUIT



REGULATOR SHUNT COIL

REGULATOR SHUNT COIL

The breaking of the contacts is controlled by an electro-magnetic relay whose winding is connected across the generator, between terminal D and earth, that is, in parallel with the generator armature. Thus, as the generator voltage rises, this shunt winding will be energised, magnetising the core, and a point will be reached when the magnetic pull of the core is strong enough to overcome the spring tension and separate the contacts.

Immediately the contacts separate, breaking the field circuit, so the output of the generator falls. In turn, the bobbin will lose its magnetic pull, release the moving contact and, with the field circuit again completed, the generator output will rise.

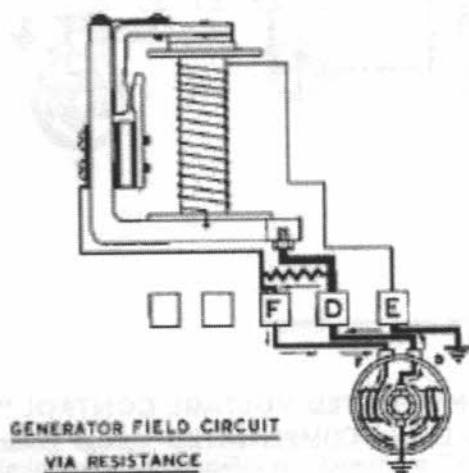
When in operation this becomes an alternate rapid opening and closing of the contacts at a frequency of between 60 and 100 times per second enabling a very fine regulation of the generator voltage to be obtained.

The voltage necessary to create sufficient magnetic effect to separate the contacts can now be controlled by the spring tension on the contacts themselves. Thus we can control our generator voltage at a pre-set figure by adjustment of the spring tension. And what is more, this control is independent of the speed at which the generator is being driven, which is what we set out to achieve.

THE REGULATOR POINTS RESISTANCE

Unfortunately, however, we cannot just break a field circuit when current is passing without causing considerable sparking across the contacts. Furthermore the generator field would be slow to collapse. A resistance must therefore be placed in parallel with the contacts to protect the points against inductive surges which would occur when the contacts open at the instant when a comparatively heavy current is flowing.

When the regulator contacts are closed, then the resistance is short circuited; it provides however an alternative path between D and F when the contacts are open, thus quickly limiting the induced field current.

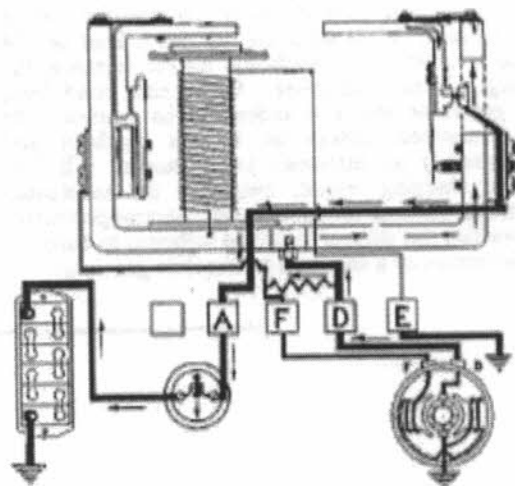


THE CHARGING CIRCUIT IN THEORY

Let us now build-up a charging circuit from what we have discussed so far. All we need is an ammeter in series with our battery, and some sort of switch to disconnect the battery from the generator when charging stops. Otherwise the battery would discharge itself through the generator windings.

We have represented this switch here by a pair of contacts on the right of the picture.

You can follow the circuit from the generator D terminal, along the extended regulator frame, through the switch and then through the ammeter to the battery. The circuit is completed via the battery and generator earths.



THE CUT-OUT

In practice of course all this switching is done automatically by another electro-magnetic relay called a "cut-out". The winding for this cut-out is wound on a separate bobbin on the frame and connected across the generator between terminal D and earth. It is, then, a shunt winding as was the regulator shunt winding — but we stress that the regulator and cut-out are two separate units.

You will notice that the entire regulator frame is at dynamo potential; in more practical terms, the connection from D of the generator is actually attached to the frame.

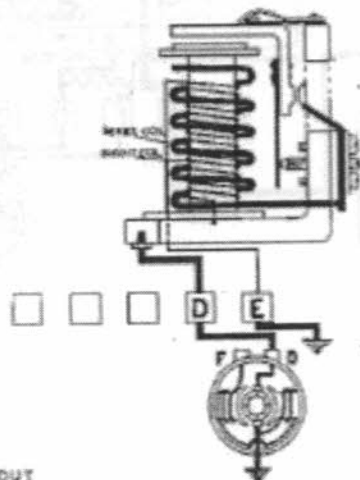
When the generator voltage rises sufficiently, the cut-out contacts are closed against spring tension by the magnetic pull from the cut-out bobbin and the circuit between the generator and the battery is thus closed.

When the generator speed is low or the engine stationary, the contacts will break, thus preventing current flowing back from the battery through the generator armature windings.

There is one important point to notice: all the charging current from the generator passes through the cut-out contacts and through a heavy "series" winding on the cut-out bobbin. This current assists

the magnetic pull of the bobbin, preventing the cut-out contacts from chattering once they have closed.

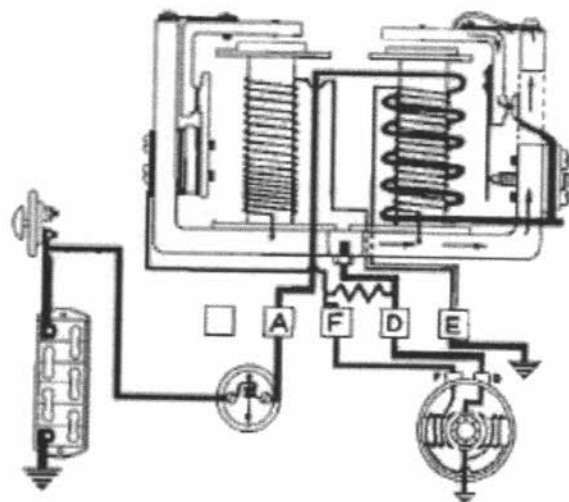
Also, when the generator stops charging, the momentary reverse current from the battery flows through this series winding, creating a magnetic flux which opposes and cancels the existing flux, and thus quickens the opening of the contacts.



CHARGING CIRCUIT: "CONSTANT VOLTAGE CONTROL"

Our regulator and cut-out assembly, that is, our control box, would now look like this. If we follow the circuit through, starting at the D terminal of the generator, we first pass to the D terminal of the box and then to the regulator frame, through the cut-out when the contacts close, through the heavy series winding on the cut-out and across to terminal A. This terminal is connected via the ammeter to the battery. The circuit is completed by the battery and generator earths.

Unfortunately, the simple "constant voltage control" system we have built up has one snag: it presupposes the use of a generator of very great generating capacity. If we consider the case of a battery in a low state of charge, its terminal voltage will be low. If, in addition, we put a load on the battery, switch the headlamps on for instance, the voltage will fall still lower. Under such conditions, the generator will still endeavour to maintain the pre-determined voltage set by the regulator and consequently an extremely heavy current will flow in the charging circuit, owing to the substantial difference between the battery and generator potentials. In practice this current would be sufficient to burn out the armature of a standard automobile generator.



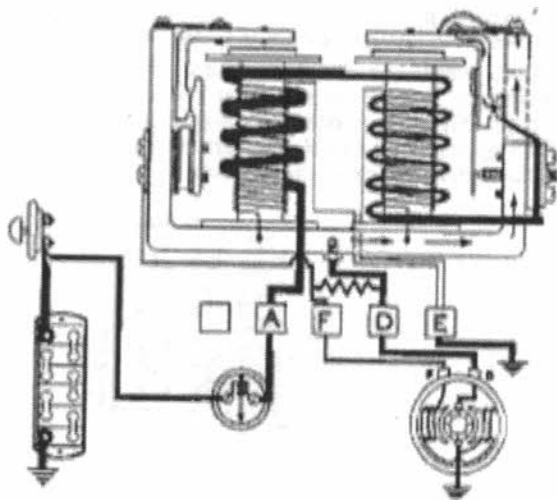
"COMPENSATED VOLTAGE CONTROL"

The Lucas "COMPENSATED Voltage Control System" overcomes this difficulty by automatically varying the OPERATIONAL voltage setting of the regulator, so that the difference between the generator and battery terminal voltages is never great enough to cause such a heavy current to flow that the generator would be damaged.

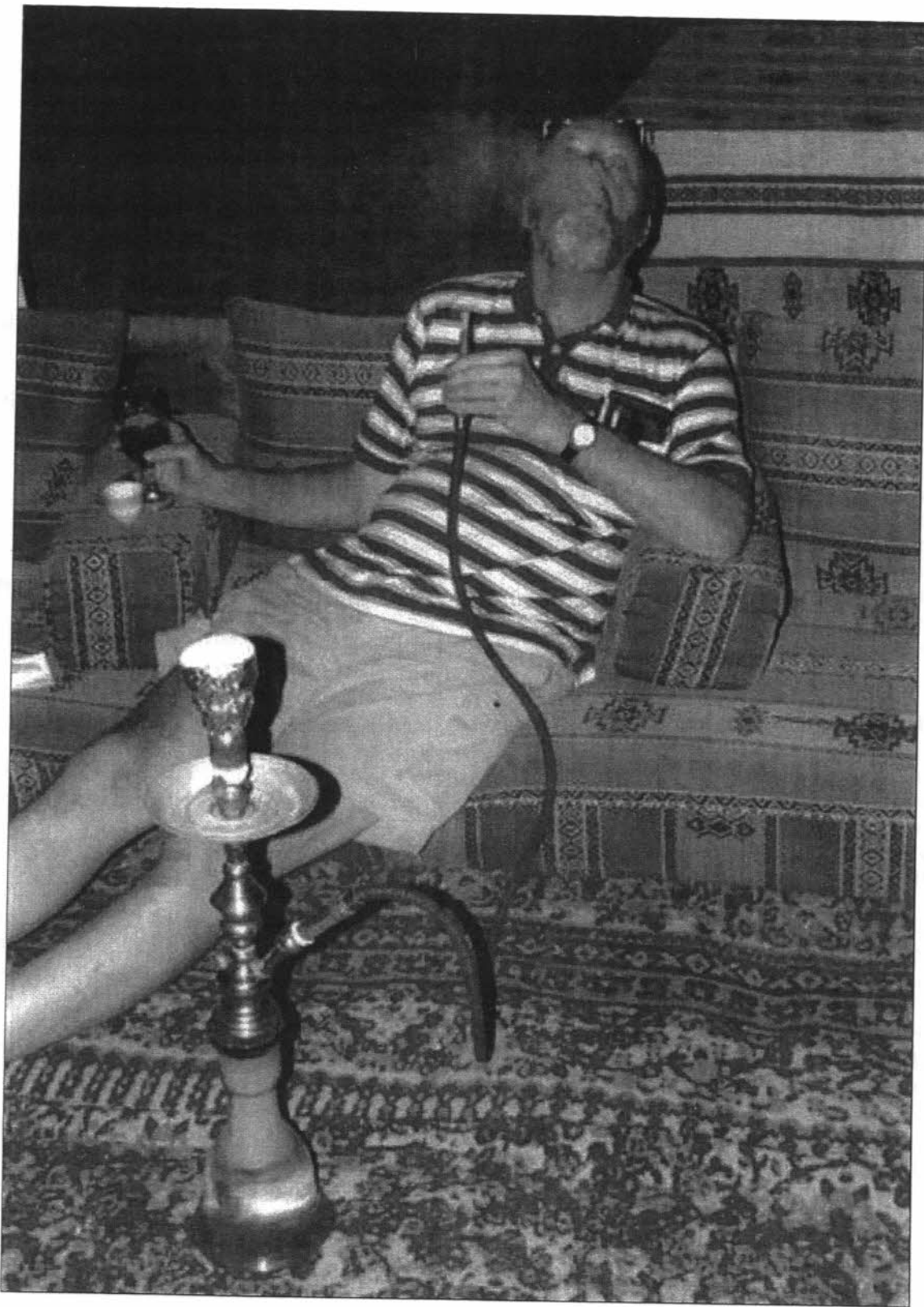
THE REGULATOR SERIES WINDING

In practice, this variation in the operating voltage of the regulator is brought about by adding another winding to the regulator bobbin. In other words, the charging circuit now continues from the cut-out series winding, not direct to terminal A, but through an additional "Series" winding on the regulator bobbin. This winding thus carries all charging current flowing from the generator to the battery and is wound so that it assists the voltage or shunt coil of the regulator in pulling apart the regulator contacts. The heavier the current flowing, the greater will be the magnetic pull of the bobbin, and the sooner the contacts will open. Thus in effect we have lowered the voltage at which regulation occurs: our generator will then be working at an operational voltage which is varied according to the current flowing into the battery.

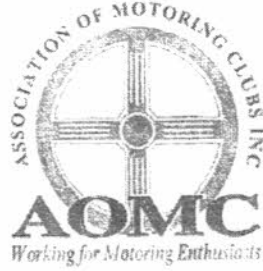
As the battery becomes discharged and its voltage falls the charging Circuit Voltage or "LINE VOLTAGE" will also fall. The action of the COMPENSATING or SERIES winding on the regulator is thus to limit the charging current to the maximum safe output of the generator.



ALVIS PEOPLE BEHAVING BADLY



One expects a certain degree of decorum from Australians when visiting other countries. Andrew McDougall is seen here relaxing in a Bedouin camp in the desert in Dubai, showing significantly less decorum than one might expect from an Alvis person!



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Secretary Position Available

The Association is looking for a suitable person to fill the role of Honorary Secretary.

The role would suit a person with a little spare time and the following qualifications.

- The ability to prepare correspondence on behalf of the organisation.
- The ability to represent the organisation to government agencies, both in writing and in person
- Prepare submissions for the organisation to other community organisations, government agencies and possible sponsors
- Maintain the agendas for quarterly meetings of delegates, for the executive committee, and any sub committees as required.
- Act as public officer for the organisation in line with current legislation.
- Establish links with relevant government organisations and maintain dialogue with similar representative organisations.
- Computer literate with knowledge of Word and Excel programmes

The ideal candidate would have the ability to attend all meetings held by the organisation, normally evening meetings predominately held in Moorabbin. There are four quarterly delegates meetings annually and twelve executive committee meetings. The Association will cover all out of pocket costs incurred

There is a fully equipped office available at Moorabbin for the use of the secretary, including all computer equipment required.

The Secretary would be expected to work in conjunction with the Office manager. The role of the Office manager includes maintenance of membership details, receive telephone enquiries, e mail distribution and mail preparation and management.

Generally this role would suit an enthusiast with good writing skills, The ability to become the "face" of the organisation and have a belief in the need for our movement to flourish.

If you would like to discuss the possibility of becoming involved in this important organisation or you require further information please
Contact Iain Ross on tel 9890 0467 or on imgross@bigpond.com

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