FRONT DRIVE

7th ICCCR, Germany, Sept. 4-6, 1987.
Raid Australia '88, March-April, 1988.

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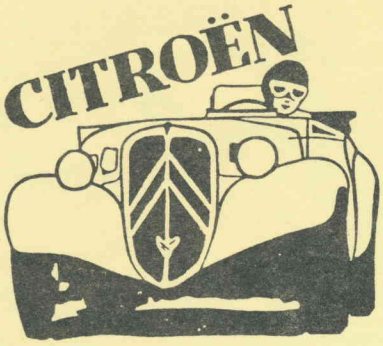
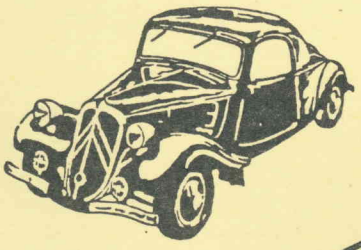
Windcheater & T shirt designs



ROADSTER

AVAILABLE ONLY TO
2 CYLINDER OWNERS
& ONLY GREEN ON
YELLOW COLOURS.

CLUB BADGE
3 SIZES:
SMALL (BREAST POCKET)
MEDIUM, LARGE

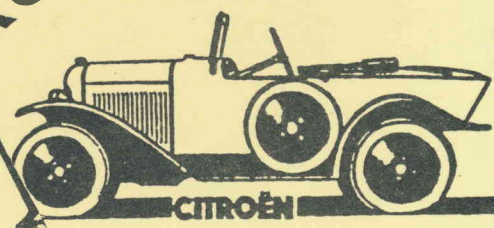


COUPE

URGENT!

Your chance to serve (to serve your club that is!). The club's Annual General Meeting (AGM) is on Thursday 19 March. This is your chance to come forward & nominate for one of the offices of the club for 1987. We all know you have the energy and the ideas to help keep the club going and to make it even better! Be there or be square!

Don't forget the Annual Photo Comp is on later in the year. Get cracking on your photos now so that we can all share your enthusiasm for l'Automobile Citroen!!



5CV
BREAST POCKET
SIZE ONLY

LIGHT 15

SCROLL
POCKET

IT FELL OFF, MATE!! Yes, some unfortunate member (or it could have been a club or whoever who gets a "freeby") had his last "Front Drive" returned to the club because the mailing address sticker came off the envelope. If you didn't receive your copy, let us know and we'll see what can be done. N.B. We only expect one response - otherwise, you'll have to form a queue at the Secretary's door, and maybe we'll descent en mass round at Australia Post's!

BIG 6

DS

CHEVRON BADGE

Dates of issue for magazine: Mid-January, March, May, July, September, November.

Closing dates for copy: Mid-February, April, June, August, October, December.

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EDITORIAL

You know that warm inner glow from after-dinner ports? Well, that is what the editorial group is experiencing as this club magazine approaches finalisation.

Once again, a bumper issue, with a lot of ideas and material flowing on to the next issue. And promises of contributions - they keep Front Drive alive. Most of the material presented came directly or indirectly from other than editorial sources - Doug Clark (Ballarat) introduces a new column with a fine piece on personal reflections, a member's car "with a difference" from Phil & Regina Ward (Adelaide), two new and young members keenly and effectively straightening their Traction's bodywork, technical tips from various sources, humour and technical wisdom from Jack Weaver, the evergreen Fred Annells reporting on the intense Citroen activity in UK & Europe, a call (urgent) from Olivier de Serres (France) for Aussie material for two new Citroen books, AOMC activities on your behalf, and on it goes. Keep working in your contributions; they're what make Front Drive interesting and of value to everyone.

An excellent activities program by Robin, Mark and the Two Sues - give them encouragement by rolling up in your thousands - they put in a tremendous effort, and much enjoyment is to be had by meeting with fellow members. And keep working on your photos for the comp.

RAID '88 - the adventure of a Citroen lifetime - give it a punt mate and join the foreign fanatics who are set to invade our peaceful Citroen shores. You never know, if you don't get a Kegresse, you may get a camel!
And for a BOOMER of a trip, what about the ICCCR in Germany, September 4-6, '87?
And roll up to the AGM in March - think about providing "new blood" to relieve the Committee and keep things vital.
See you there in '87!

Bill Graham, Peter Simmenauer, Peter Hore.

COMING RALLIES

January 22, Thursday:	General Meeting, Nunawading.
January 26, Monday:	Vehicle display, Werribee Park.
February 15, Sunday:	CHACA Swap Meet, Chirnside Park.
February 19, Thursday.	Open Night, Nunawading.
March 15, Sunday:	Annual Presentation BBQ, Simmenauers (lunch).
March 19, Thursday:	Open Night, Nunawading (N.B. - AGM).
March 29, Sunday:	AOMC European Car Show, Flemington.
April 16, Thursday.	Open Night, Nunawading.

CCOCA MEMBERSHIP:

Annual subscription: Full member $27.50, Associate member $15.00
Joint membership is available to spouse of full member, no cost.
Overseas postage rate: Additional $7.00
Meetings are held as follows: Thursday January 22, 1987, then the third Thursday of each month following. The meeting location is the Willis Room at the Nunawading Civic Centre, Maroondah Highway, east of Springvale Road, at 8 pm.

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MEMORY'S LANES

MY CITROEN RECOLLECTIONS

Mid-July in the flat desolate Wimmera, 11.30 at night and the frost crunched underfoot, and the condensation from my breath went unnoticed as I paced impatiently up and down the empty truck park. Half an hour past the rendezvous time and still no sign. I relit my pipe and sucked on it anxiously.

Each time I heard the far distant rumble of big diesel engines as the approaching semis worked down through their 12-speed Roadrangers and the Jacob brakes slowed the loads to crawling pace, I held my breath. Finally at a quarter to midnight, one semi approached more slowly, feeling its way tentatively along unfamiliar territory with driving lights blazing; to spot me, a lone rugged-up figure. Could this be the one? Then as the big transporter swung in awide arc, I saw 'her', silhouetted against the cold clear sky. Her shape was was instantly recognisable, so characteristic that her newer travelling companions in their gleaming paintwork, en-route to customers in Adelaide, went unnoticed. It was like seeing after many years absence an old lover in a crowded room. Yes, she was here at last, my very own Traction'. "Gemma", as she became affectionately known to the family, had come home to roost! Much later when the adrenalin had slowed and the initial exitement, but not the appreciation, had died, I began to reflect on "why"? What evolution of experiences and ideas had finally gelled in my now middle-aged brain to want such a car as this, a Citroen Traction Avant? With my very 'pucka' English background, why not a Rover, a Riley, an MG or an Austin Healy; what past affairs had I had with the Double Chevron to make it THE marque in my life?

Yes, perhaps it could be due to one's very first real love affair, the very first car I owned was a Slough-built Light 15, purchased in England for just that sum, £15, in 1962. It had been hand painted with a six-inch brush, a coarse sand colour with a similar texture, bald Michelins, rust in every door and cracked windows. Slow methodical restoration was far from my mind then, it was the car that gave me my first taste of freedom. Borrowing my parents' bullit-nosed Studebaker Champion wasn't quite the same! Although the Cit's battery was invariably flat from weeks of sitting in the damp car park outside barracks at Aldershot and other British Army establishments, it didn't take my fit but car-less mates from the Parachute Regiment too long a push before she fired up. It was then all pile in, sometimes up to eight, and away for a well earned weekend's leave in search of all those things that young men in their prime yearned for; beer and female company. To us then, this Cit was simply a set of wheels, but perhaps some latent seed of association was being sown in my brain?

A much later image, but as clear as if it was yesterday, was of a bright orange little "Deux Chevaux", put-putting across a barely distinguishable track 200 km south of Tamarrasset in the middle of the Sahara Desert. This terrain had nearly beaten us, even with four-wheel drive, sand tyres, two-way radios, winches, sand-mats and astral navigation systems! It transpired that it was piloted by a small dark thick-set Frenchman and his tall leggy blonde wife. They had been married six years earlier and had driven from Paris to Calcutta in this little car for their honeymoon. This first expidition had got into their blood and they had travelled the world's inhospitable wastes ever since. We befriended them and spent an enjoyable three days with them before our paths parted; they to the south-east and Lake Victoria, and us to our north-east objective to carry

out our orders. By an incredible coincidence four years later, I tripped while running down Oxford Street and crashed into a baby carriage; it was being pushed by my two friends from Central Africa! Although my memories of my earlier exploits are still clear, the incredible agility and above all compared to us, the simplicity of the little 2CV bounding across the sand in front of us has remained indelibly etched in my brain. I wonder if they will do the Raid 88?

Later still and now in Civvy Street, I found myself in East Africa, trapping monkeys for a living. After months at a time in the northern areas of Kenya, Uganda and Somalia, our small safari team had three things on our minds when we finally returned to the comparative civilization of Nairobi; gallons of cold beer at the Norfolk Hotel, then to procure some companionship for the third necessity--- a quick dash down the 350 km stretch of road to Malindi, a classical tropical beach 50 km north of Mombasa. The sand was, the sea breezes cooing, but above all, there was water and plenty of it. To achieve all this plus my seven companions and all our camping gear was no mean feat. The road was reasonably straight, undulating and very wide to enable circumnavigation of the frequent wallow holes and washouts, not to mention the elephant problems where the road for much of its length passes through Tsavo National Park. All this was usually achieved in four hours, and yes, you have guessed by now what vehicle was almost exclusively designed to handle this all so well. Yes, we had a DS Safari wagon. The ability of the big Cit to cruise effortlessly on such atrocious surfaces for hours on end added yet another notch in my brain for cars carrying the "Double Chevron".

The 1970s found me in New Zealand, and having completed a degree in Zoology, I was now back in the land of money earners (I survived my impoverished student days with a Renault 4CV; Deux Chevaux were unobtainable in NZ then, but of course, they are now!). My long interest in cars, combined with my sense of adventure and challenge led me naturally into car rallying. The 'backblocks' of New Zealand are serviced by rough mountainous and tortuous tracks, and it was on these that most of the rallying occurred. Over the years, my originally Lotus-powered Mk 1 Escort evolved into a fully blown 16 valve BDA works specification rally car. Putting together that combination of performance, unknown mountain tracks, and the spirit of competition gives you a guaranteed adrenalin-pumping sensation; one that can only be compared to exitting from an aircraft in full battle order into an uncertain hostile situation. Although exhilarating, the temperamentality of such thoroughbreds became frustrating, and I began to be fascinated not so much with the brute stength of such beasts, but the ability to last and continue on through to the end. My interest in long-distance rallying had emerged. I read avidly all the classics of recent day endurance events; the Marathons, the London-Mexico and the London-Sydney. I was particularly intrigued by Evan Green's "A Bootful of Right Arms" and his account of the trials and tribulations in the big Leyland P76, and there once again, the name of Citroen emerged triumphantly. The Welinski/Tubman/Reddiex DS 23 completed 15 000 km entirely without factory support in an event that saw factory-backed and -prepared machines literally falling to bits. A sound tribute to an amazing car!

About this stage, I took the plunge into matrimonal bliss, and the Escort was sold, being deemed unsuitable for the carriage of children and other such marital accoutrements. In exchange, a gleaming white ID 19 was purchased, and once again, I experienced that incredible long-legged effortless mile-eating ability of the big Cits. The car proved reliable and filled our family's needs, but was reluctantly sold when we moved to Australia in 1979.

Accepting a lecturing appointment at an agricultural college in Victoria's north-west, it seemed ideal Citroen country, but finances and the lack of a local dealer frightened me off. However, each visit to Melbourne (in either a Peugoet 504 or a Renault 12 SW - at least we stuck to French models!) was invariably punctuated by visits to Duttons or Paris Motors, and Saturday's Age was always avidly scanned, just in case circumstances changed!

My motoring involvement now became less dramatic and an interest in older vehicles emerged. A spur-of-the-moment decision was taken one day and restoration started on a 1928 Buick. Starting from scratch, it was a slow and painstaking task that would undoubtedly take at least five years before the fruits of my labour could be seen and enjoyed.

Then one day, in the classifieds at the rear of the Citroen Cra Club magazine, I saw the advert; $2000 for a 1954 Light 15 Slough-built Citroen. We veered slightly off course and inspected the Cit. It was dark when we arrived, the garage light was all of 20 watts and the battery was flat; but I had seen enough. We talked about it on the way home; this would have to be a family decision. To my delight, my wife was keen - afterall she did come from a family which at that time had about five vintage cars, one of which was a Traction which she had driven and loved. Contact was made first thing next morning after a sleepless night with the current owner. It had originally been his mother's, and he was responsible for the dissolution of her estate. It was a one-owner as she had had it from new. To my dismay, a young motor apprentice at the son's engineering works had beaten me to it and I was force to make higher offers, but to no avail. However, luck was with me as the son had heard later in the week that the young apprentice wanted "to cut it down, drop in a Chev V8 and turn it into a fabulous hot rod"! The son was aghast, made the apprentice's offer null-and-void, and offered it to me at the original price! As a final bonus, as he wanted it to go to a good home, he offered to have it transported to Horsham at noe extra cost for me.

So here I was, standing in the cold clear darkness, spellbound at the silhouette on the car transporter one mid-july in 1981.

Doug Clark.

MEMBERS' CARS

1971 HY VAN - Phil and Regina Ward (SA).

This van is a HY 1600, extended about 600 mm (2 ft) at the rear, and set up as a factory-built camper by a special conversion company in France.

The HY is a direct descendant of the TUB van and it is still called that by the club in Holland. The HY 1600 has a 1911 cc (ID-type) motor, but with modified camshaft etc to permit rotation in the reverse direction. The gearbox is a special three-speeder, unique to the H vans, and is placed behind the motor, not in front of it as in the Tractions and Ds. Drive is still to the front wheels.

Front suspension is a fully independant torsion bar system of the Big 6 type (but with the torsion bars projecting forwards, encased in adjustable tubes). Rear suspension is also by a fully independant torsion bar system, with the bars encased in a tube running across the chassis. The rear wheels are hung on trailing arms, but without the inter-connecting beam axle as in the Traction. The specially built ambulance versions featured a neat hydropneumatic set-up in the rear. The 1911 cc motor is called H78. There is a smaller 1000 kg model of the van called the HZ. This has a 1628 cc motor, the H72.

There are also diesel series in both van sizes - the HY serie IN and the HZ serie IN. The IN stands for Indenor Diesel, this motor being of 1816 cc and after October 1968, 1946 cc. The earlier vans were rated as 850 kg (HZ) and 1500 kg (HY).

There are about 20 body variations to the H vans. Production of H vans started in 1947 and stopped in 1981.

The Ward van was driven to Australia (not all the way obviously!) by a couple who sold it to Melbourne Citroen specialist, the late Dan Jones. Dan did the right-hand drive conversion, and used the van for camping for about eight years from 1972/3. Phil purchased the van from Dan in 1979 or 1980, by which time the extended roof area was showing rust to a fair degree.

Phil stripped and rebuilt the van in Adelaide, refitting to the original layout, but with a new refrigerator, a proper oven and hotplate, electronics, air-conditioning etc. It has since had the motor and gearbox rebuilt and new wheel bearings fitted.

The van has taken them to Queensland (twice), Ballarat, Echuca, Loxton (twice) and Barmera. It has been Phil's everyday work vehicle (with the 2CV), but now is used for camping only.

At cruising speed and loaded, the van gives about 27 mpg. Maximum cruising (red line) is at 105 kph, but it would be happy to do more if it had another gear.

As well as being a member of the Citroen Club of South Ausrralia, Phil is a member of the H van camping club of Holland, and has camped in the snow in Germany with the club when visiting European meetings of H vans. The Dutch H van club is the only such one in the

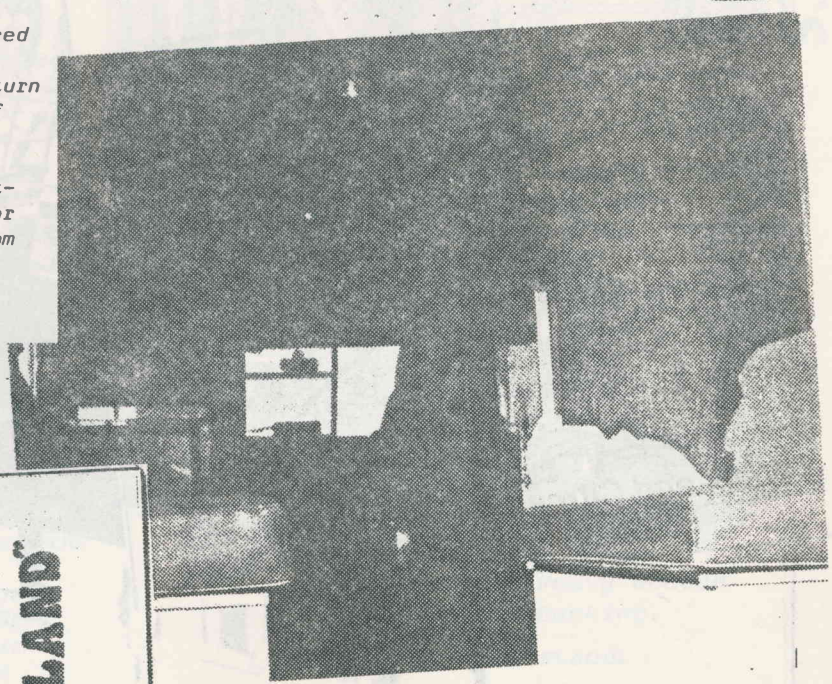
world, is very enthusiastic, and could have 30-40 vans at a meeting. [Somehow, the image of a gathering of Galapagos Tortoises comes to mind].

Phil appreciates that the van must present a funny sight in motorkhanas - especially in the reverse slalom when the rear doors must be open to permit a rear navigator to shout out directions. Often, all the poles are wiped out! During this event at Toowoomba, the refrigerator door flew open and three bottles of Coopers Sparkling Ale (a lovely drop!) hit the floor. Two broke and Chris Bennet who was rear navigator and who appreciates these things, was nearly crying, while Regina tried to clean up the mess. Phil, meanwhile, was still trying to finish the course!

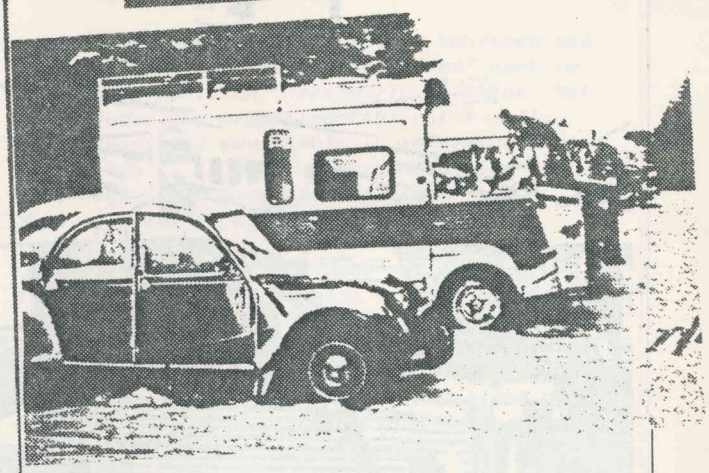
As well as the H van, Phil has a striking red and black 2CV Charleston (Duck 83) and a couple of 65/66 IDs, one of which he will turn into a Chapron "Le Caddy"-type cabriolet if he doesn't run out of patience first!

He also has a large collection of model Citroens (500-600 total), including about 30 or so H vans. One is a tinplate police van from France, about 15 inches long.

W.G.



Above and opposite:
The van as LLK 006 (Dan Jones) and as CIT 001 (Phil Ward).



Left, above and over:
Parts of the H van scene in Europe.

UITNODIGING

Peelrit

ALLEEN VOOR HY's

Voor liefhebbers van een mooie rit; 'n wedstrijd met quiz-vragen en een beetje avontuur organiseren we een week-end treffen achter Hemelvaartsdag aan.

De startplaats is het - wellicht - bekende stekkie "De Meyberg" te Nederweert waar we vorig jaar ons "Pionier-treffan" plaats vond.

U wordt daar verwacht op Hemelvaartsdag (31 mei 1984) nâ 12.00 uur. De start van de Peelrit vindt plaats op vrijdagmorgen (1 juni 1984) tussen 08.30 uur en plm. 10.15 uur.

De eindplaats is een verrassing voor de deelnemers aan de Peelrit 1984.

We willen evenwel de niet-deelnemers die ook hun week-end op het einddoel willen doorbrengen niet teleurstellen. Zij kunnen telefonisch over deze 'stek' worden geïnformeerd zodra de laatste deelnemer aan de rit van start is gegaan. (Dus nâ 10.15 uur !!!)

Het betreffende nummer is 030 - 614150.

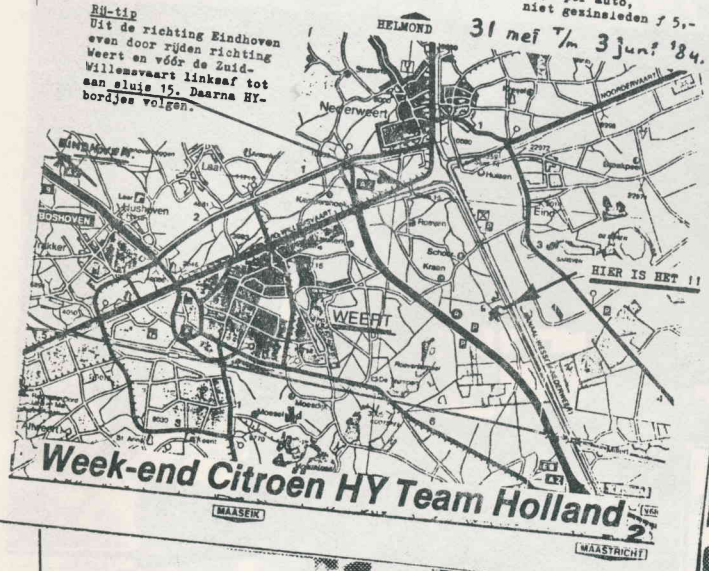
Het dringende verzoek is echter niet meer na 18.00 uur op die dag te bellen. Voorkom teleurstelling en bel dus tijdig. Ook indien U op zaterdag wil komen verzoeken we U op vrijdag vóór 18.00 uur te bellen.

Een lang week-end vol verrassingen dus !!!!!!!!

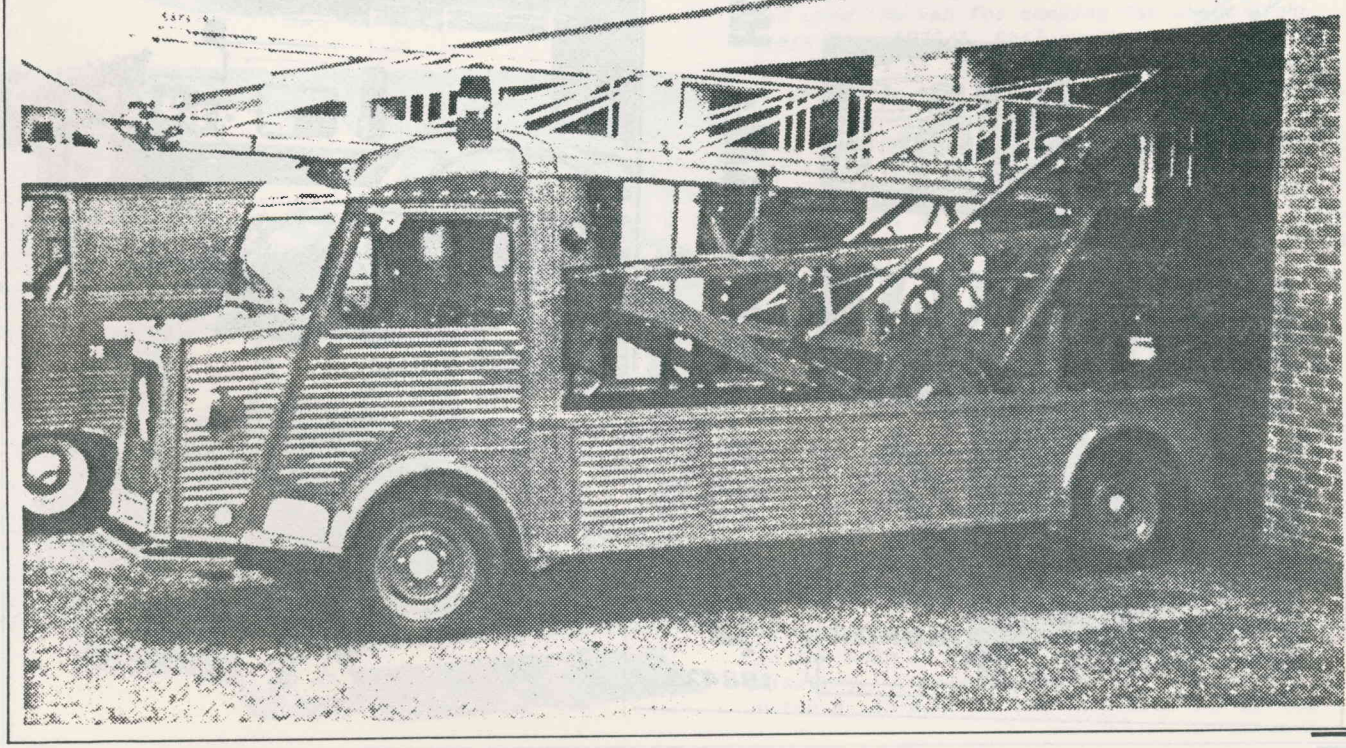
ƒ 25,- per auto,
niet gezinsleden ƒ 5,-

31 mei t/m 3 juni '84.

Rij-tip
Uit de richting Eindhoven even door rijden richting Weert en vóór de Zuid-Willemsvaart linksaf tot aan sluis 15. Daarna HY-bordjes volgen.



Week-end Citroën HY Team Holland



HOW STRAIGHT IS YOUR TRACTION ?

STRAIGHTENING A REAR-END SHUNT

Following on from Jack Weaver's note on making up and using a home-made hydraulic body jack (FD 10 (3) Sept/Oct 1986), two of our members, Hayden Chapman and Ron Lawrence, faced up to the shunt which their Light 15 seemed to have suffered at some time in its history. Checking with previous owner, John Brookes, revealed that someone "had gone up the back of him." We noted earlier that such impacts are not uncommon with Tractions.

The main immediate evidence of the impact was that both rear doors didn't close properly, the rear edges of the doors overlapping the body openings by up to 5 mm in places. There was also some inward denting of the sill panel beneath the left-hand door opening, and a "bit of bog" in a scar in the left-hand rear quarter panel at about window sill level. The floor beneath the rear seat and the boot floor were also buckled, and there was "rippling" of the inner wheel arches.

Hayden and Ron had a talk with Jack to get specific advice on their problem, and then proceeded as below.

They jacked up the rear of the car and set it up securely on axle stands. The petrol tank, wheels, and exhaust were removed. A piece of hardwood, about 5" x5" (125x125 mm) was fitted across the pressing which forms the rear of the recess which takes the petrol tank. A heavy bottle jack was to hand, together with a length of three inch (75 mm) heavy water pipe.

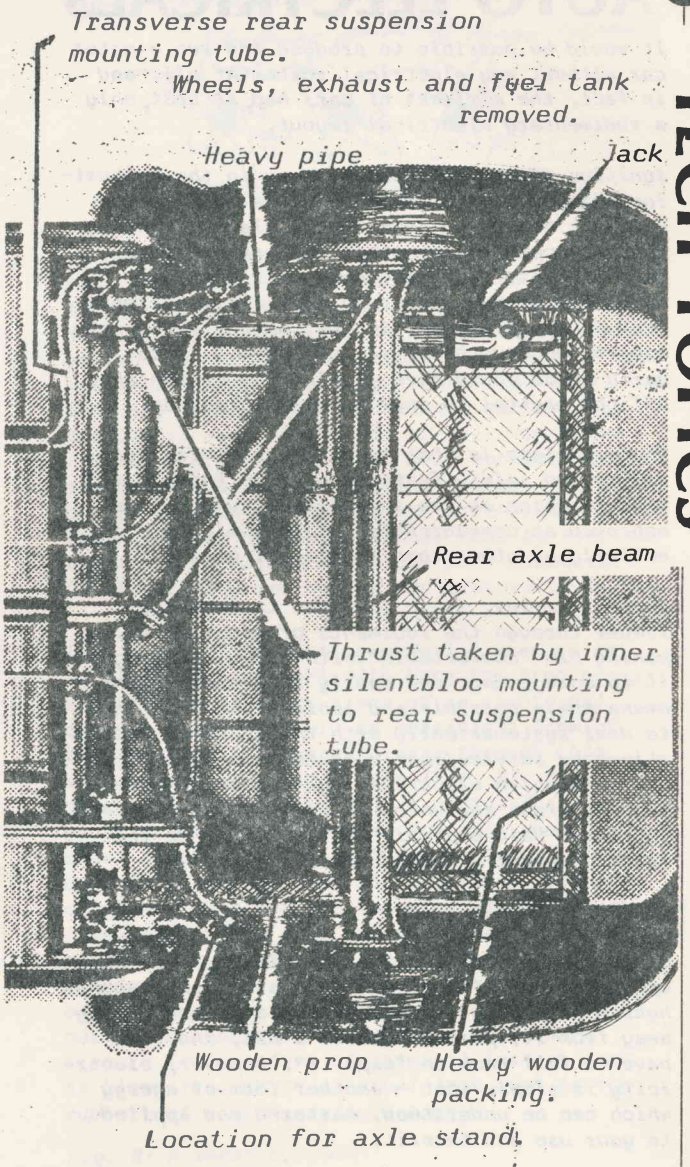
The pipe was cut so that it would fit between the heavy fittings which take the outer ends of the rear torsion bars, and the base of the jack. The "front" end of the piece of pipe was shaped to fit securely onto the bracket through which the fore-and-aft thrust of the jack would be transferred to the transverse rear suspension mounting tube (see previous note). The extending column of the jack was set to bear on the wooden packing piece.

When pushing on one side, there is the risk that the rear of the car will "see-saw" about its centre line. To avoid this happening, a wooden prop was placed between the torsion bar mounting and the wooden packing on the side opposite the jack. In practice, this spacer did not seem necessary in this case, probably because of the way the metal had deformed.

Because of the large diameter of the piece of pipe, it was not found essential to bolt it to the base of the jack, although the jack would spring out if it was not aligned properly.

Jacking then proceeded, first one side, then the other, until the panelling and body openings were restored to correct shape. Some comparative measurements from a straight body or part thereof would help to establish when to stop pushing. In this case, the fit of the doors was a reference.

Pushing was performed without lying under the car. Initially, it was found that pushes of up to 15 mm would just spring back, but as confidence rose, bigger movements were achieved and the panelling was finally "reformed" back to its proper position. Personally, I think that some judicious hammering (against a dolly where feasible) would help in reforming the metal when it is under tension from the jack. This would also minimize tearing of welds. Some re-welding may be necessary.



One side of the car has come out perfectly. The other side is fine also except for the dent below the door. Attempts to raise this by repeated use of a screw-in impact puller failed because the screw end wouldn't hold in the panel. It will probably be raised by brazing a temporary bracket into the centre of the depression and hauling on this.*

The assessment of the job by our now-experienced body-shapers? Very successful and "not very hard to do", says Hayden.

Perhaps this will encourage other members to attack their body straightening problems with some confidence. Please let us know of your experiences.

(To be continued)

Bill Graham.

*Technically, "bronze welding".

AUTO ELECTRICALS

It would be possible to produce and run a motor car without any electrical system at all, and in fact, the earliest of cars had, at best, only a rudimentary electrical layout.

Ignition of the fuel/air mixture in the combustion chamber can be achieved via a rod or tube which is heated by an external flame, lighting can use acetylene or other combustible fuel on the lamps, and starting - well what are sloping streets and strong and willing friends for? As for air-conditioning, open a side-curtain if you have one (!), and radio - those early roads would have jiggled the catswhisker off the crystal in your crystal-set anyway !

What is clear is that many of the comfort-generating and safety features of even the classic cars in which we are interested could not be achieved as conveniently, efficiently or effectively by other than electrical means.

In this series, it is intended to take the reader through the rudiments of electricity, making him "comfortable" with it by relating it to more common and easily understood phenomena where possible and appropriate, and then to deal systematically with the features, operation and service/repair of the components of the automotive electrical systems which club members might encounter in classic and earlier Citroëns. Main emphasis will be given to the Traction Avant models however.

CONCEPTS AND ANALOGIES:

Because electricity is not a "visible" or "perceptible" form of energy like heat, light, sound, hydraulic energy etc, many people seemed to shy away from it, perhaps dabble a bit, and then have to fall back on "experts". However, electricity is simply that - another form of energy which can be understood, mastered and applied to your use and benefit.

Thanks to Lord Rumford who concluded that friction converts mechanical energy into heat energy (he observed that a cannon becomes hot when the barrel is being bored out), we now know that all energy forms, including electricity, can be transformed from one form to another e.g. chemical energy (petrol and air) into heat and motion in an engine, light into electricity in a photo-voltaic cell, electricity into light in a light bulb etc, etc.

Electricity in cars, as distinct from that in power mains, is "safe", at worst giving you a harmless "jolt" if you handle the "high-tension" ignition circuit carelessly. We've come a long way since Benjamin Franklin flirted with death by flying a kite into the middle of thunder clouds and watching sparks jump to his hand from the cord !

Electrical circuitry can be much more readily understood by relating it to hydraulic circuitry with which there are close parallels.

Hydraulic circuits and electrical circuits in their fundamental forms consist of "currents" or "flows" of matter of some kind moving under the influence of a "pressure" along or through a "conductor" or "conduit". The movement is from

Fig. 1: Simple hydraulic circuit.

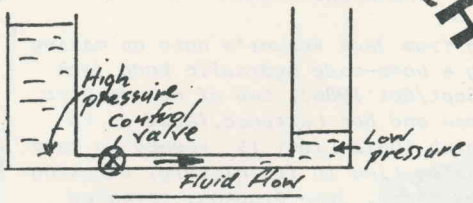


Fig. 2: Simple electrical circuit

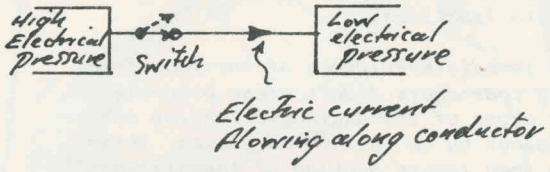
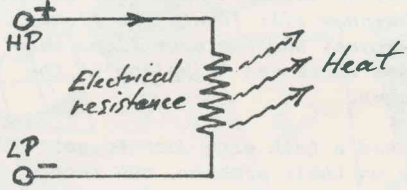


Fig. 3: Energy turned into heat by friction.

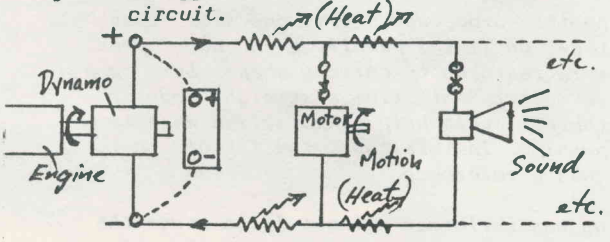


a point of high pressure to one of low pressure. Frequently, the electrical conductor is in the form of a wire, while the hydraulic conduit is usually in the form of a pipe (Figs. 1, 2).

Since the current/flow is going from an area of high pressure to an area of low pressure, pressure must be being dissipated along the way. This pressure loss is due to the energy contained in the flow/current being converted to another form. If the energy loss is due to "friction" in the pipe or wire, the energy "lost" will appear as heat which will then be radiated away to the air or elsewhere. (Fig. 3). In an electrical circuit, this friction is called "electrical resistence" or simply "resistence".

The energy "lost" from the flow need not all appear as "useless heat" however. Sometimes of course, we want the flow energy to appear as heat e.g. in an electric radiator, but generally, we make the conductor sufficiently large that friction losses are negligible, and we then choose to pick the energy of the flow off in some more useful form such as light, sound, motion etc. We do this by passing the flow through devices such as lamps, horns, motors etc (Fig. 4). In a hydraulic circuit, the flow can be turned into motion by passing it through a hydraulic motor, into sound by passing the flow (in the case where the fluid is a gas) through an air-horn, and so on.

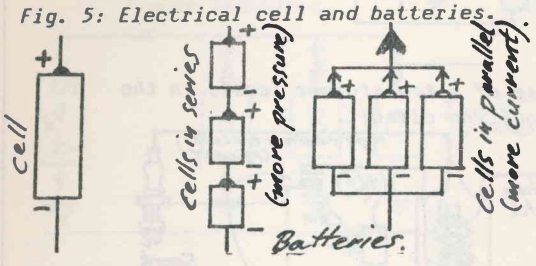
Fig. 4: Energy transformations in electrical circuit.



Of course, if the flow in the circuit is to be kept going for any appreciable period of time, there must be some device in the circuit to maintain the pressure difference between the high pressure and low pressure sides. In a hydraulic circuit, pressure would typically be maintained by a hydraulic pump, driven by a motor operating off some other energy form such as oil, coal etc. The electrical equivalent of this hydraulic pump in the circuit is the electrical generator or dynamo, which in a motor car is driven via the fan-belt by the vehicle's internal combustion engine.

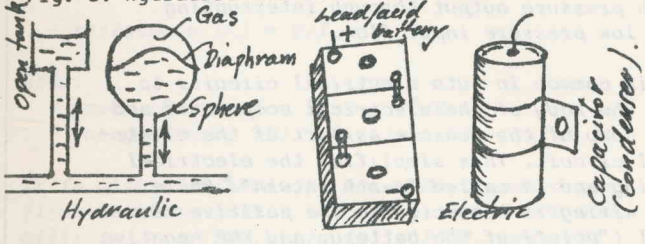
Electrical pressure and flow can also be maintained by chemical reactions occuring in appropriate devices e.g. when metallic zinc dissolves inside a carbon/zinc torch cell. Such cells can be joined up to form a battery, in series to produce a greater total electrical pressure, or in parallel to achieve greater capacity to provide current (Fig. 5).

Fig. 5: Electrical cell and batteries.



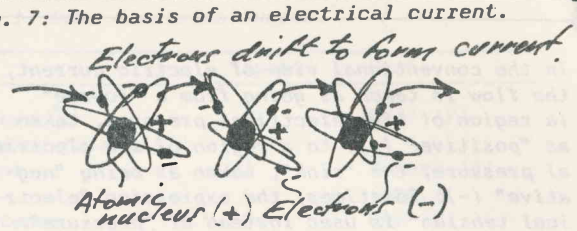
As well, hydraulic and electrical flows can be maintained by drawing on pressure energy previously stored in a "reservoir" or "accumulator". The common storage device for electrical energy is the lead/acid accumulator used in the motor car and elsewhere. Much use is also made of non-chemical storages of electricity in "condensers or capacitors" e.g. to prevent destructive arcing of current across the contact breaker points in the low-pressure ("low tension") part of the ignition circuit, or to provide the rapid release of electrical energy to fire a photographic flash-gun. Storage devices in hydraulic circuits include pressure spheres (as in the suspension of D-series Citroëns), and elevated water tanks and open storages in water supply networks (Fig. 6). The fundamental use of accumulators is to "smooth out" the operation of the system, enabling it to cope with great differences between instantaneous supplies and demands.

Fig. 6: Hydraulic and electrical accumulators.



The "flowing medium" in the case of hydraulics is a liquid such as water, oil etc, or a gas such as air or nitrogen (in the latter cases, the systems are usually called "pneumatic"). With electricity, the flowing medium is electrons (usually). Electrons are minute negatively-charged particles which orbit the positively-charged "nucleus" of each atom of matter. (Fig. 7).

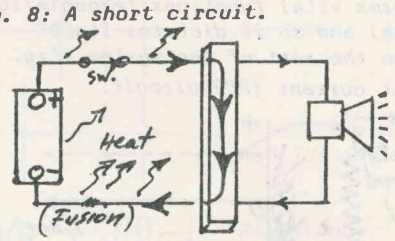
Fig. 7: The basis of an electrical current.



In certain materials, the electrons readily pass from atom to adjacent atom with very little energy loss due to "internal friction" or electrical resistance. These materials are called "electrical conductors" and include most metals (copper, aluminium, iron, lead etc). Some non-metals, notably carbon, can be good conductors also. Solutions of salts in water ("electrolytes") are often good conductors of electricity as well. In electrolytes, the current is carried by the passage of charged "ions" (positive and negative) rather than by electron movement. Materials which are poor conductors of electricity are called "insulators".

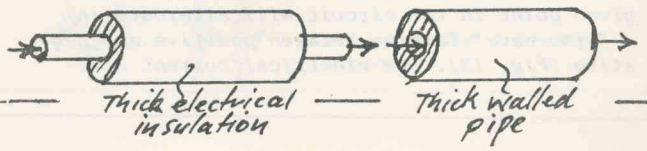
If a piece of conducting material were to be in electrical contact with both the high pressure and low pressure sides of an electrical circuit, then it would be possible for a flow of electricity or "leakage" to pass through this alternative electrical path (Fig. 8). This condition is called a "short circuit" and is usually very undesireable. Not only does the short circuit "rob" the "useful" parts of the circuit of energy, but the excessive current which may pass may overload the energy source (dynamo, battery etc) and the excessive heat produced may cause heat damage, even fusion, within the circuit. At this stage, the circuit or its components are said to have been "burnt out". The hydraulic equivalent of a short circuit is some form of internal leakage such as blown seal or an external leak such as the rupture of a high-pressure pipe.

Fig. 8: A short circuit.



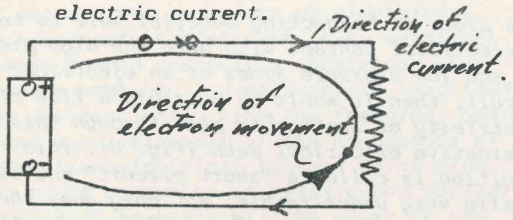
To prevent short circuits in electrical systems, any parts which might be contacted by other conductors are usually coated with a layer or sleeve of insulating material (rubber, plastic, ceramic etc). The use of effective insulation is particularly important where there are very high electrical pressures (the high tension ignition circuit, electric mains) or where there is a risk of fatal electric shock (mains operated electric appliances etc). One might compare the heavy insulation of high-tension ignition wires with the thick walls of high pressure hydraulic lines (Fig. 9). Both are adopted for the same basic reason.

Fig. 9: Preventing leakage from "high pressure" conductors.



In the conventional view of electric current, the flow is taken as going from a "source" (a region of high electrical pressure, taken as "positive" (+)) to a region of low electrical pressure, the "sink", taken as being "negative" (-). Sometimes, the expression "electrical tension" is used instead of "pressure". Electrons, are conventionally considered to be negatively charged as we have seen, and hence since "unlike charges attract", the electrons will tend to move away from the negative (low tension) side of the circuit towards the positive (high tension) side of the circuit. Thus, we have the paradox that conventional electric current flows from positive to negative, but the electrons which normally constituate that current move from negative to positive in the circuit i.e. "the electrons move against the current". This is a historically derived situation which you will have to live with and shouldn't cause you much bother (see Fig. 10).

Fig. 10: Directions of electron movement and electric current.



For most of the circuits we will be considering, one side of the circuit is always positive and the other side is always negative. The electrical pressure and the circuit are then said to be "direct current" (DC), since the current flows in one direction only. This is most convenient in vehicle systems since the on-board electrical storage unit (the lead/acid accumulator) accepts and delivers DC only. The accumulator performs vital functions (especially engine starting) and so it dictates its DC requirements on the rest of the system (Fig. 11).

Fig. 11: Direct current (DC) circuit.

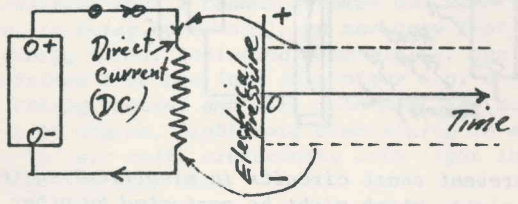
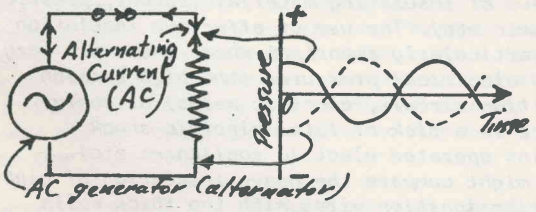


Fig. 12: Alternating current (AC) circuit.



However, parts of the vehicle electrical system do not run on DC. The generator or alternator (dynamo) produces electric pressures which "alternate" in a smooth fashion over time i.e. a given point in the circuit will alternate in a "sine-wave" fashion between positive and negative (Fig. 12). The electrical current will then alternate its direction in response to these cyclic pressures. Before this "alternating current" (AC) can be fed into the rest of the system, especially the accumulator, it must be turned into DC ("rectified"). This rectification is done by a bank of "diodes" (really one-way electrical "valves") in the case of an alternator, or by a rotating contact set ("commutator") in the case of a generator (Fig. 13).

Fig. 13: Rectifying AC into DC.

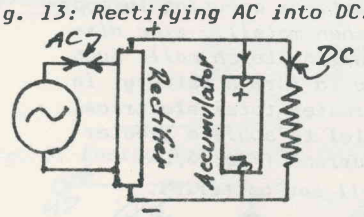
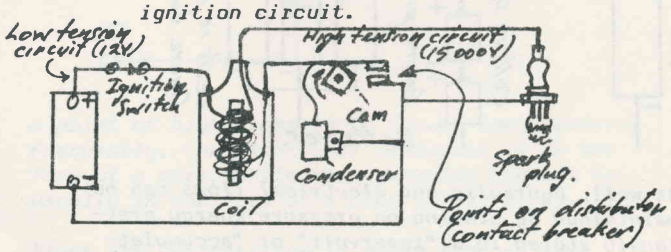


Fig. 14: Use of a transformer (coil) in the ignition circuit.

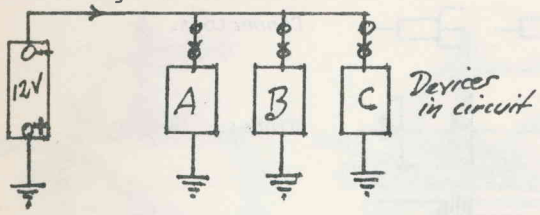


One of the useful characteristics of AC is that its pressure can be readily altered, up or down, by feeding it into an "electrical transformer". The common example of an electrical transformer in a motor car is the ignition coil (Fig. 14). A kind of AC (actually DC interrupted by the contact points (contact breaker (CB)) in the distributor in sympathy with the engine rotation) is fed into the input ("primary winding") of the ignition coil and stepped up in pressure over 1000-fold at the output ("secondary") so that it can jump as a spark across the highly insulating "air gap" at the spark plug points in the combustion chamber, and so ignite the fuel/air mixture. Pursuing the hydraulic parallel, it is interesting to see how the simple "hydraulic ram" mimics the ignition coil in producing a high pressure output through interrupting the low pressure input flow.

It is common in auto electrical circuits to use the body of the electrical components and the body of the vehicle as part of the electrical circuit. This simplifies the electrical wiring and is called "earth return".* Where the wiring is connected to the positive terminal ("pole") of the battery, and the negative pole of the battery is connected direct to the body ("earth"), this system is called "negative earth". *[See also "The good earth" - FD Jan/Feb 1986].

However, English cars in particular, from the mid-1930s on, adopted a "positive earth" system for certain technical reasons, and thus all

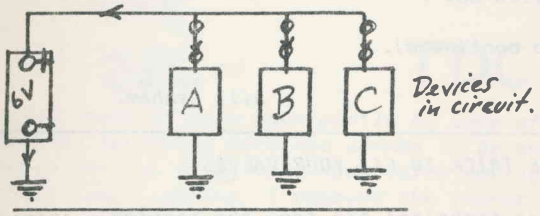
Fig. 15: Positive earth system (12V) as in English Tractions.



Slough (UK)-built Tractions have a positive earth system, running at a pressure of 12 volts (12V) - the British were early in recognising the advantages of going from 6V up to 12V systems). (Fig. 15). French-built Tractions are 6V negative earth. To my knowledge, the Americans did not adopt the positive earth system, but they did eventually swing to 12V. The 12V negative earth is now virtually universal.

*See Fig. 16.

Fig. 16: Negative earth system (6V) as in French Tractions.



UNITS AND SYMBOLS

Certain special units and symbols are used to describe electrical systems, and it is worth knowing a few. The common units are listed in Table 1.

Certain relationships exist between these quantities, and these are also worth remembering.

Most relationships are based on Ohm's Law, from which we have fairly "obvious" outcomes:

- current (I) is proportional to the pressure drop (V) which is driving it, and is inversely proportional to the resistence (R) of the component which is "resisting" the current (Fig. 17). i.e.

$$I = V/R \qquad \text{and hence;}$$

- voltage drop (V) = IxR

- resistence (R) = V/I

Also:
- power (P) = VxI = I^2xR = V^2/R
- energy (work) (E) = Px time (t) = VxIxt etc.

It is also advisable to know the standard prefixes to these units: micro (μ) = 1/1 000 000, milli (m) = 1/1000, kilo (k) = 1000, mega (M) = 1 000 000 etc.

Fig. 17: Ohm's Law in a DC circuit.

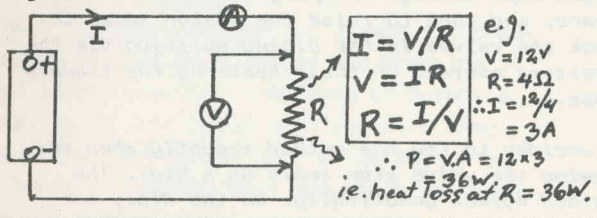


Table 1: Some electrical units.

Name	Symbol	Unit
Pressure * (tension, potential)	V	Volt (V)
Current	I	Ampere (A) (amp.)
Resistence	R	Ohm (Ω)
Power	P	Watt (W) (1 J/s)
Energy or work	E	Kilowatt,hour (kW.h)
Capacitance	(C)	Farad (F)

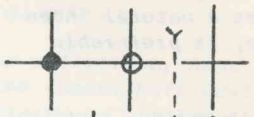
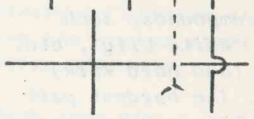
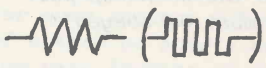
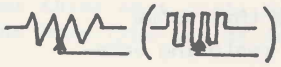
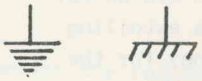
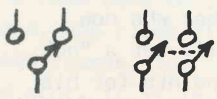
*Also commonly called "voltage" cf. "mileage".

Sometimes, one encounters old units e.g. 1 horsepower = 746 watts ≃ 3/4 kW.

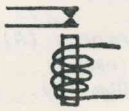
Lighting devices (lamps, bulbs etc) are now rated in watts, according to the power they consume. However, you may encounter old components and references where lights are rated according to their light output, usually expressed in candlepower, a now-obsolete unit. Fortunately, for incandescent bulbs, ≃1 candlepower (CP) is produced for each watt consumed (1 CP ≃ 1 W). However, this relation does not hold for more efficient lamps e.g. fluorescents (≃ 3CP/W) and probably not for quartz-iodine (QI or halogen) lamps either.

Certain symbols are used in the diagrams which describe how the wiring connections are made up.

Table 2: Some symbols used in wiring diagrams.

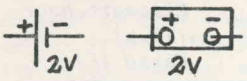
Symbol	Meaning
	Conductor, wire (usually insulated).
	Conductors joining.
	Conductors crossing but not joining.
	Resistence.
	Variable or tapped resistence.
	Earth (body) connection.
	Fuse.
	Switch.
	Multi-purpose switches (various).

Contacts.

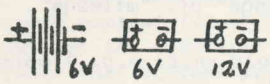


Relay.

Light bulbs.

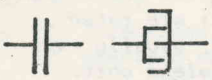


Electric cell (e.g. lead/acid, 2V).

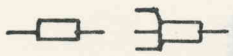


Batteries.

Simple coil (e.g. electric choke with iron core).

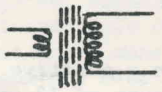


Capacitors (condensers).

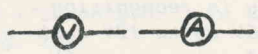


Connectors.

Diodes.



Transformer (iron cored).



Meters (volt, amp.).

These symbols are a kind of convenient shorthand (Table 2). Often though, there is no "standard" symbol for a component, and it is then simply put in the circuit diagram as a "labelled box".

(To be continued).

Bill Graham.

TECH TIPS

BRASSO FOR BAKELITE, PLASTICS AND PAINT

The comments on the miraculous effects of "Handy Andy" on bakelite products prompts me to reveal another closely-guarded secret in the restoration of bakelite and hard plastics.

"Brasso" (Reckitt's Household Products, Sydney) is a marvelous restorer/polish for all those bakelite bits, plus plastic tail-lights, headlamp covers, sunglasses, even acrylic and nitrocellulose lacquers! It restores a natural sheen to bakelite, which, to my eyes, is preferable to a sprayed-on gloss.

I have tried other polishing compounds, such as lacquer rubbing compounds, "White Lily", etc. and all are quite ineffective (and hard work) compared with good old Brasso. The hardest part is sneaking the bottle out to the workshop past the watchful eye of "she who must be obeyed"!

Kym Harding.

[Good one, Kym, old son! Now that we've gone back to the subject of restoring bakelite, I've since come across an old UK reference in which a gentleman was extolling the virtues of turps (turpentine) for the purpose. His method was simple. Wipe on the turps and polish it off with a soft cloth. Nothing more!

I haven't checked it out myself yet, but I wonder if it was among the many things that Kym tested? Anyway, it seems that with all this info about, any member who now confronts a concours judge will get a "not amused" look and lose a few points for his lack of effort if he hasn't got real shiny bakelite!—Is this what getting "on the turps" really means? Ed.].

A ROPE TRICK TO FIX YOUR VALVES

Another technical tip from the seemingly inexhaustable Jack Weaver - how to use some rope to stop your valves dropping (which all sounds potentially very painful!).

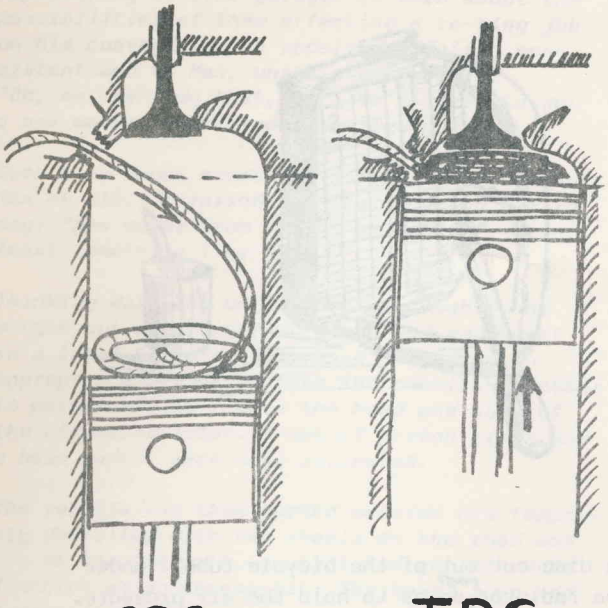
From time-to-time, you may want to work on the overhead valves of your car without going to the trouble of removing the cylinder head - as well as the extra effort involved in removing the head, you may also be up for a new head gasket ($$$) or may allow the liners to move and cause unwanted leaks. For example, you may simply want to replace the valve stem seals, examine the valve springs or guides etc.

If the valves are not held up during these operations, there is a strong possibility that the valves will fall through into the cylinder space once the valve springs are released - and then you'll have to remove the head to recover them (not funny).

The "standard" method for holding the valves up is to use an adapter screwed into the spark plug hole so that compressed air can be introduced to push against the valve heads. However such a method is far from foolproof and again you can end up with valves falling into the cylinder - and of course you need the extra gear.

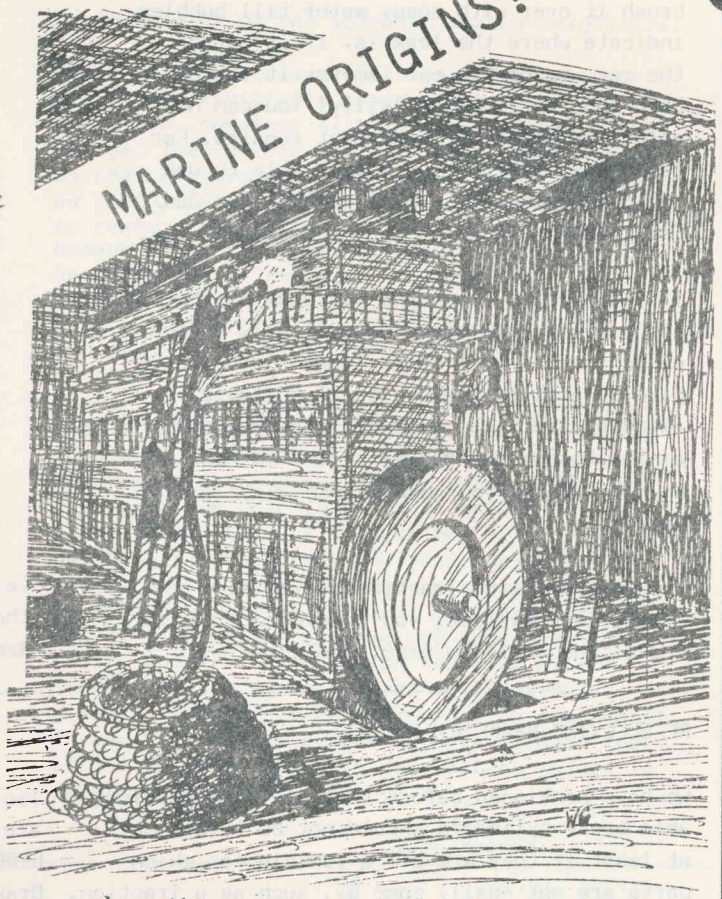
Jack's method is to remove the spark-plug(s), drop the piston in question to BDC (bottom dead centre) at the start of the compression stroke (both valves closing), pass in some light rope through the plug hole to fill the space, and then to raise the piston so as to lock the valves in the closed position via the pressure exerted on their heads by the trapped rope.

I decided to try the method recently when renewing the valve stem seals on a Mini. The method worked beautifully. On the Mini, the



rocker shaft is held down partly by some of the head retaining nuts and seemed to be getting in the way of my home-made valve spring compressor. Therefore, I removed the rocker shaft and pushrods (keeping them in their original numbered order), turned the rocker shaft end-for-end, and re-installed it over the head studs. The head nuts were then re-tightened to prevent the head lifting. The piston was dropped to BDC (feeling through the plug hole with a screwdriver) by raising one of the driven wheels and carefully rotating it (assistant?) with top gear engaged. Six mm polypropylene rope was fed in to fill the cylinder - rope diameter is not critical; six mm is about the thickest which can be easily handled. Note: If the pushrods have been removed as above, or the camshaft drive disconnected (e.g. in OHC motor), it becomes irrelevant to consider whether the piston is starting a compression or exhaust stroke. The piston was then raised as far as possible to trap the valves in the closed position via the compressed rope, and the works locked in this position by lowering the raised wheel to the floor.

The valve springs were then compressed, the collets, washers and springs were removed, and the seals replaced. The operation was reversed, and the rope was removed after the springs etc were replaced. Repeat on the other cylinders,



replace the rocker gear and push rods, tighten the head nuts/bolts in correct order to appropriate tension, and check and reset tappet clearances.

It took about three metres of six mm rope to "fill" each Mini cylinder (about 320 cc). Hence it would take about 4.5 m to fill a Traction cylinder.

On a Traction, head studs are not used to hold the rockershaft posts, but it may still be necessary to slacken their bolts and lift or remove the rocker shaft to get access over the valve stem ends.

Jack says the rope trick has a marine origin. For some reason, I have this persistent image of a team of ship's engine-room greasers stuffing vast lengths of massive hauser into a 15 foot high Sulzer. Pretty understandable when you think what might be involved in removing the head from one of those brutes.

Bill Graham.

CHECKING FOR LEAKS IN COOLING SYSTEM

Many of the best ideas are simple ones. Here's another, again from an English source.

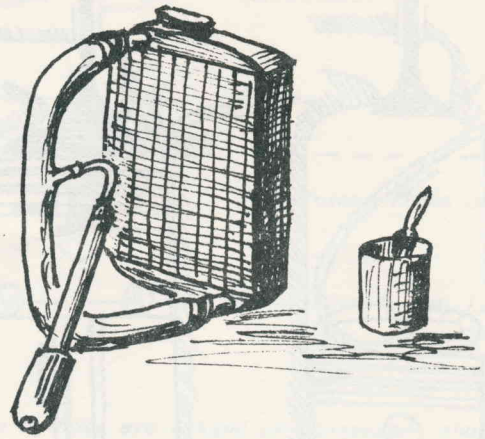
There are smart commercial gizmos for pumping up your cooling system and checking it for leaks. However, according to Murphy's Law, leaks only occur when you're a long way from town (where your gizmo is) or on a Sunday afternoon when you can't lay hands on one anyway. Here's the answer.

Disconnect the radiator hoses from the radiator (assuming as is most likely) that the leak is there somewhere. Take an old bicyle tube from your junk-pile (sorry -"in-house resource centre"), cut it opposite the valve, and fit the ends over the hose spigots from the top and bottom tanks of the radiator. Roll the hose back on itself to provide more thickness, and clamp it on, using the original hose clamps. You can now "pump up" the radiator. If it is still in the car,

brush it over with soapy water till bubbles indicate where the leak is. If it out of the car, maybe you can immerse it in the bath (no, not the car, silly! You can now effect temporary or permanent repairs. For temporary repairs, you may be able to use the ground pepper trick (see FD 9 (5) Jan/ Feb. 1986). Soldering is the permanent way.

If you want to check the car side of the system, the tube could be similarly attached to the hoses if short lengths of plastic pipe or similar rigid pipe of suitable diameter are first slipped into the ends of the hoses. The beauty of the method is that it leaves your hands free while you work.

For vehicles like Tractions which have unpressurised systems, you'd have to plug the end of the overflow pipe, and put a seal



(a disc cut out of the bicycle tube?) under the radiator so as to hold the air pressure. Remove these seals before you drive off!!

W.G.

RE-SLEEVING BRAKE CYLINDERS

We have mentioned before that old or unserviceable brake cylinders should not be thrown out - at least if they are off a vehicle for which parts are not easily come by, such as a Traction.

Instead, it is possible to have the cylinders honed out and re-sleeved at a cost significantly less than that of a new cylinder which you might not be able to get anyway.

The sleeving is in stainless steel and indicative costs suggested to me are about $15 each - allow a bit more in your calculations, just in case! Of course, clutch cylinders could be done just as easily.

Two places in Melbourne which will do this work are:

CEBCO
Brake and clutch specialists
39 Railway Ave
Huntingdale.
Ph. (03) 568 0422.

Hydraulic and General Sleeving P/L
5 Beith St
Brunswich.
Ph. (03) 380 4997.

W.G.

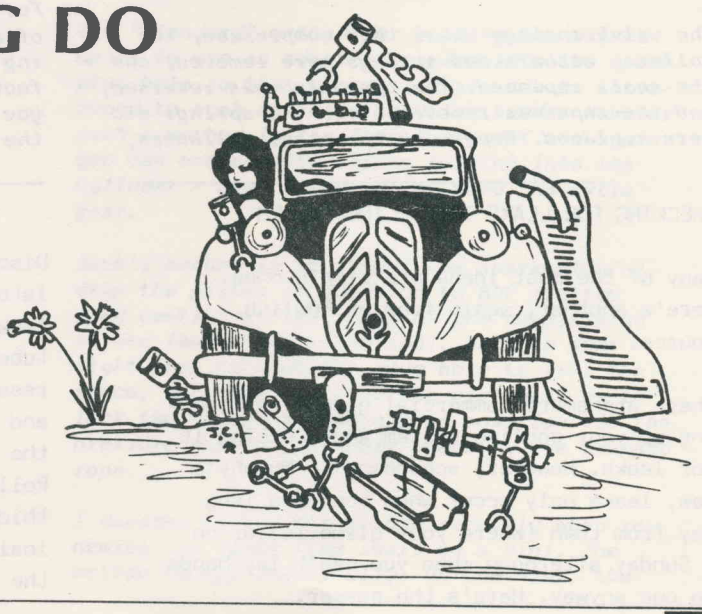
TALES OF DARING DO

ROADSIDE REPAIRS

There are many stories about Max Mackay (Metric Max). This one concerns one of his roadside repairs.

Max, who died a couple of years ago, came from Manaia, south of New Plymouth in New Zealand. He was perhaps the ultimate Citroen enthusiast, with a Citroen repair business and a collection of Cits recently said to number about 120 Ds and 15s. These are currently being sold off by trustees of his estate.

On the occasion in question, sometime in the '50s, Max was in the UK, possibly on his honeymoon. He was living in London and had bought a Light 15 for his travels in the Old Country. He soon discovered that his purchase was a bad oil burner.



Approaching several garages in turn about the possibilities of them effecting a re-ring job on his conveyance, he received a fairly consistent and to Max, unsatisfying reply. "Oh, we can't do that, Sir. We'll need to get a new motor from Citroen at Slough".

Such a no doubt expensive solution did not suit Max at all. It raised his ire, causing him to say: "New motor from Slough be blowed", or at least something like that.

Thinking dark and unflattering thoughts, he sought out a purveyor of tools and equipment in a local hardware shop, and purchased an appropriate set of sockets and suchlike clobber to permit him to remove the head and sump of the offending motor. A set of piston rings and a head gasket were also purchased.

The vehicle was then parked outside his temporary domicile, with two wheels on the road and two on the footpath, so that the gutter could function as an access pit. The head, sump and four pistons were then removed, the new rings fitted, and the lot put back together again.

Oil and water were added to the appropriate cavities, and our hero (and heroine) was able to motor off into the English twilight, much to the relief of the somewhat amazed neighbours.

On an earlier occasion, another Kiwi, conveniently but truthfully named Smith, was also in London, complete with auto of unknown parentage. The vehicle was, it seems, down a bit in the concours department. Our friend decided that a re-spray was what was needed, so as to restore the splendour of his tour of GB. Undaunted at the implications of his decision, he proceeded to re-spray the whole car in the roadway outside his flat, no doubt adding a little "colour" to the neighbourhood in the process.

One of my own experiences of this kind came when I was pedalling (almost literally) around Sydney in a Goggomobil Dart. Mechanical repairs were urgently required in the motor/transmission area. The only thing to be done was to crawl under the little beast and set to. The only way to disconnect the power unit from the wheels was to knock out the universal crosses in the drive shafts in situ, not easy considerhow little clearance there was under the tiny beast. And all of course on the side of the street, to the accompaniment of quizzical glances from perplexed passersby. In retrospect, it would have been easier to have flipped the little fella on its back, and attack things in relative comfort!

Jack Weaver.

LETTERS

URGENT!

CAN YOU HELP OLIVIER WITH HIS EFFORTS- THEY BENEFIT ALL CITROENISTS, INCLUDING YOU!

Bellcour,
Poce-sur-Cisse,
Amboise 4700,
France.
7 November 1986.

Dear Bill,

Thank you for your letter and card which arrived this summer. I am a little bit late in replying to you. I hope you will excuse me. The reason is that I've been too busy as usual!

As you know, I am working on my new book which will be rather big, around 500 pages, and will cover the whole Citroen productions from 1919 to now, including trucks. So you may imagine that I need your help.

I would be most interested if you could list for me all the models imported into Australia (and New Zealand if possible) over the years; and if you could tell me their specifications (possibly in conformity to the Slough factory). All models will concern me, even half-tracks. If you can tell me details of the DS in Australia, this will be super.

My interest in the Ds is more important as I have the project to write within two years, "A Big Book of the DS", like the one on the Tractions.

"Le Grand Livre de la Traction" has sold well, and the editor has ordered a new edition for the beginning of 1987 - the future one about the Citroen production is due for the beginning of 1988 (in about one year).

Of course, for such books, the information is important, but good pictures and rare documents are most welcome!

Thank you so much if you can help me this way as you did so kindly two years ago.

Now, what is the news in your club. Maybe some members have restored or discovered some rarity? I wish you the best of luck for those enthusiastic activities.

Now with the hope to hear of you as soon as possible, I send you and your family my very best regards,

Olivier de Serres.

[Well, what a tremendous couple of tasks are ahead of Olivier. Many of our readers will have seen his earlier book (Le Grand Livre) on the Traction and will know what a fine job he does. With quite a bit of help from here, he was able to include several photos of Aussie Tractions and local information. Please let me know if you have any info or photos about Ds or other Citroens in Australia, so that we can do our bit to record the peculiarities of Citroens here].

110 Pleasant Street South,
Ballarat, 3350, Victoria.

23 October 1986.

Dear Bill,

Your continual pleadings finally got to me and I have put pen to paper or more truthfully have prodded the old Iron Maiden [What do you mean, Doug. Is this one of those macabre pursuits out at Kryal Kastle? Just because we had to whip you a couple of times - well, I mean to say--].

I still intend to write for you the details of the restoration of my Light 15, but what has intrigued me for some time is why or how enthusiasts become fixated to certain marques. Take for instance, our dedicated band of Citroën enthusiasts, which the rest of the motoring fraternity (sorority?) views with uncertainty and suspicion (a car salesman recentlytold me anyone contemplating buying a Citroën should be certified). HOW have they arrived at a state of loving this idiosyncratic automobile?

At first, I thought it must be like greatness, in that some are born with it, some achieve it, and some have it thrust upon them! So without being too scientific and objective about it, I sat down and jotted out the milestones in my personal car-owning history.

It became obvious that although I had owned a whole range of automobiles, some of which were very memorable, like a Super Seven Lotus and a BDA Escort, the most commonly recurring theme was that with the "Double Chevron". The pencil sketch history then became padded out with strong associations of places and incidents in my life, and before I knew it, I had the attached manuscript. What are we going to do with it? Is it too long for the CCOCA magazine at approximately 1800 words? [No way, Doug, old son - see Editorial lament below].

If you do decide to publish it, then please plead with other members to put pen to paper and explain how they have arrived at being "Citroën Freaks"! I believe it would be a very interesting exercise.

Keep up the good work and happy Citroëning,

Best wishes,

Doug Clark.

[Sounds like Doug is coming down with a good case of literary diarrhoea - that should ensure that his output continues! I wonder if we could manage to infect the many members who seem so irretrievably afflicted with literary constipation? Why don't you take up Doug's challenge and put some of your Citroën recollections on paper. No matter how rough, your fellow members will be interested. And like diarrhoea, you'll feel good after].

36 Main St,
Dyke, nr. Bourne,
South Lincs. PE 10 0A
ENGLAND.
31/10/86.

Dear Bill, Barbara and family,

A fairly short letter to say many thanks for your card dated 5/10/86. Probably sent while on holidays?

All is well at this end. By now, we've pretty well settled in and trying to get some jobs done outside before the winter sets in. The Traction side of things has taken a low profile just while this is on, but once it is out of the way, it will be very much on the move again.

The first part of my account of the Raid Lecot has been printed, so soon you'll be reading it. 1986 has been a very busy year as you will see, with Club members dashing about around Europe and Britain. It looks as 1987 might be even busier with more events, the 7th International in Germany being just one in September.

Picked up a book called "Great Cars" and low and behold, yet another photo of the coupe I hadn't seen before. I'll try to see if it is possible to get a copy to send on. Thanks for the offer of the calendar.

The Lecot omission is -- no rear view mirror! It's shown in the Lecot photos of the time. Must admit I'd find it difficult to drive without a mirror at all!!! How about you? Still, I mustn't knock, the replica was fantastic, and the effort to copy the car exactly was a tribute to the Museum. If you ever do get the chance to visit the museum to see the cups and trophies of Lecot's, it's well worth the journey. At one time, all the cars were in rooms. I never got the chance to ask if they were assembled in the rooms or the rooms were built around the cars! It certainly has a great collection including one of the original 1936 2CV prototypes, ME 35, Big 6 Roadster, not original I'm unhappy to say. The curator and owner I met in 1975 has now retired and lives in Lyon, but the museum is in good hands and is very much visited. Meant to have asked you if you received the bits and pieces from Jonathon Faine? I gave him some Citroen bits for your collection when he came to see me early in the year [Yes, thank you Fred, Jon did pass them on].

Well, Bill, I'll make it all for now. Regards to the lads (yours and the Club's).

With best wishes to yourself and Barbara,

Edna and Fred.

P.S. What have you been feeding your rugger players on? Gianto?

AOMC DOINGS

The Annual General Meeting of the Association of Motoring Clubs was held on 27 November 1986. I attended as a delegate on behalf of CCOCA.

My previous experience of attending meetings such as this made me a little sceptical as to their value. I am pleased to report that from my observations, the AOMC comes across as a well informed and highly active body, dedicated to the cause of hobby motoring.

As most Victorian members would know, recent proposals by the State Government to control motoring events would have resulted in the demise of clubs such as ours.

The AOMC was to the forefront of all activities that resulted in an about-face by the government in this matter.

The Association is financed to some extent by affiliation fees, but the large proportion of funds are raised by events such as the European Motor Show, which is listed as an official CCOCA Club Event (29 March '87).

As noted earlier, the meeting was the AGM, and congratulations are due to Robyn Couche who was elected as Secretary. Another Triumph?

In all, the AOMC are to be congratulated on their efforts and have the support and respect of our club.

Bryan Grant.

CCOCA IS A MEMBER OF:
ASSOCIATION OF MOTORING CLUBS
G.P.O. BOX 2374V, MELBOURNE, VIC., 3001

NEW MEMBERS

Welcome to:

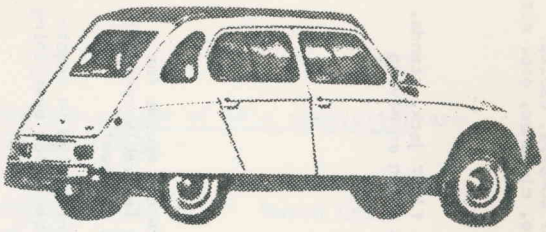
Tony Tesuriero
5 McGregor Crt
Dingley 3172
(03) 551 3193.

Simon Taylor
4 Cowderoy St
West St. Kilda 3182
(03) 534 2354.
'50 L15.

Pip Stevenson
c/- P.O. Crabbe's Creek
NSW 2480.

FOR SALE: Traction workshop manual, not used, unbound photocopy. Price: $25.
Traction gearbox & bellhousing, crownwheel & pinion unserviceable. Price: $100 ONO.
Contact Russell Wade, (03) 570 3486.

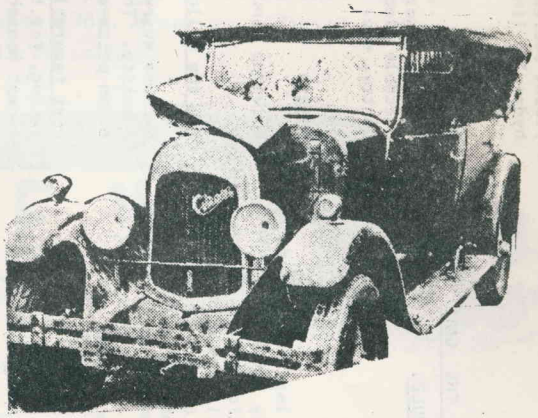
CLASSIFIEDS



FOR SALE: 1976 Dyane "Weekend", 12 months reg., new tyres, carpets, reconditioned gearbox, "DYANE 6" numberplate (blue), laminated windscreen, good condition overall, AM/FM stereo cassette, 2x100 W driving lights.
Price: $5250 ONO.

Contact John Couche,
(03) 508 2439 BH
(03) 729 7470 AH.

FOR SALE: 1926 Citroen B 12 Torpedo. 100% complete. Body removed and partly dismantled. Chassis and running gear intact and operational- the car is driveable.
Comes complete with hood, side curtains, 2 spare engines, heads, blocks, several radiators, wheels, gears, boxes of assorted bits and pieces, generators, starter motors, prop shaft, front end, rear end, brand new main bearing, s set, crankshafts, clutches, and heaps more.
Price: $2500 ONO for the lot.
Contact John Couche as above.



FOR SALE L15 grille, missing beading; 11BL rear stop and tail light assy., complete; 11BL instrument cluster, v.g.c. 4 cylinder workshop manual, g.c.
Contact Peter Simmenauer (03) 882 6539

FOR SALE D engine and gearbox, complete, runs. Suit conversion. $75.
Contact David Gries (03) 890 3266

WANTED for '49 L15:
- original Lucas stop and tail light assy. Complete, or glass or body considered
- Oval retaining flange and glass for rear interior light (early model over rear window; could be same as 11BL central fitting)
- Original headlight rims, dipping reflector and lens or parts thereof.

Anything considered. Contact David Giddings (03) 836 6038

WANTED for '54 Big 15:
Four hub caps, speedo cable, first and second gears (separate or in gearbox), new or used.
Contact Richard Fraley,
Cr. Sturt & Stanley Sts,
Townsville, Qld., 4810.
(077) 722 799.

LIQUIDATION SALE OF CITROËN COLLECTION

THE ENTIRE COLLECTION OF CITROEN CARS AND PARTS OF THE LATE DAN JONES OF THORNBURY (MELBOURNE) IS TO BE SOLD.

Background:

Dan Jones, whose hobby as a specialist Citroen wrecker for the last forty years has made him well known in Australian Citroen circles, died recently after a long illness. It is the wish of his family that his Citroen collection should be acquired by people who will ensure that it is used in the interests of Citroen enthusiasts. Dan's death therefore offers an opportunity for a club, or one or more individual enthusiasts to purchase at far below true value, the entire stock, or portions of it as suggested below. Alternatively, it is an opportunity for someone to take over a well known and profitable hobby-business as a going concern. Everything must go, and will be disposed of one way or another, probably at bargain prices.

Location and Premises:

Located in the Melbourne suburb of Thornbury, the property comprises a double residential block surrounded by a high fence. There is an old weatherboard house of six rooms, maintained in excellent condition. There is a large old shed built in several sections, and a couple of small near-new garden sheds. Concrete driveways and a well kept, tidy yard complete the picture.

Cars and Parts:

The sheds are chock-full of parts for most models from 1935 to 1975 (no CX or GS). Over the years, Dan dismantled many low mileage insurance write-offs, building up a large stock of good parts. Through manufacturing and trade contacts, he also acquired many rare and keenly sought after components. From time to time he would junk all unusable residue. What remains is therefore nearly all good usable components, some new or reconditioned.

Light Fifteen:

There are four Light Fifteen cars. One is complete and in excellent condition, has been kept under cover, and needs little work to restore. Two are complete, but in poorer condition with some rust. The fourth is old, and is missing front end and engine. There are large quantities of L15 parts, including highly sought after mechanical parts and body components.

D Series:

There are ten cars from ID19 to late DS23, in various stages of dismantling, some with body damage. Three appear to be complete. There are extensive stocks of spares in both mechanical and body components, including:-

Electrical wiring and instruments, all hydraulic system components, suspension and engine spares, rubber sealing, fenders, head and tail light assemblies and lenses, doors, windows and windscreens, brake pads (new), good quantity of oils and hydraulic fluid, radiators (including a couple for HY van!), front and rear bumpers, cables, hydraulic lines and fittings, engine blocks and heads, gear boxes, clutches, etc. etc.

Tools:

A large assortment of metric tools and specialist Citroen tools, floor jack, stands, portable electric air compressor, spray gun, bench vice, endless chain on moving gantry, etc.

Books:

Workshop manuals and spare parts catalogues for all models.

How the collection will be sold:

Because everything must be sold (or junked if necessary), buyers are sought for quantity. The more you take, the more likely you are to receive favorable consideration price-wise. Offers are invited, and will be considered as follows:

Most favorable consideration will be given to offers, or those interested in negotiating, for the freehold of the property on a walk in, walk out basis for everything except household furniture and effects.

Very favorable consideration will be given to offers for the whole of the Citroen collection: cars, all stock, tools etc. as listed above. The complete collection to be moved out.

Favorable consideration will be given to offers for whole sections or categories, e.g.-

- All the cars, as they stand
- The four Light Fifteens, as they stand
- The Light Fifteen cars and all Light Fifteen parts
- All the D Series cars, as they stand
- All D Series cars and parts
- The entire stock of parts, excluding the cars
- All the tools, materials, and equipment
- Any other grouping.

Less favorable consideration for one or more specified cars only.

Least favorable consideration will be given to offers for a few specified parts. No parts will be sold on this basis until all other avenues have been exhausted.

Interested buyers are encouraged to make a number of alternative offers under one or more of the above headings. As you can see, the primary consideration is that everything be moved out with as few hassles as possible.

The sale is not dictated by urgency, and it is possible that it may be some months before any offer is accepted. We wish to give all those interested adequate opportunity to inspect the collection and prepare offers.

Inspection:

Inspection is strictly by appointment only, and offers in writing should be forwarded to the undersigned. For further details, write or phone -

BOB COOK,

RAID AUSTRALIA '88

The good news is thst RAID 88 seems to be moving, according to CCOCA representative, David Gries.

Interest in the raid is mounting overseas. A strong New Zealand contingent is getting itself into good shape, and we hear tantalising rumours of an ex-Yellow Raid Kegresse half-track (rescued from Afghanistan,would you believe,and restored in France) coming to Australia and entering Raid Australia(!). Naturally, we can't vouch for the eventual fulfillment of this story, but it is true we have heard it. You don't know what you will see if you join the raid.

The organising committee for the raid, based in Perth, have recently (December 1986) put out a comprehensive newsletter on the raid. This describes the route from Perth to Sydney (still being fine tuned), estimates of costs, local regulations, lists of spares and tools to be carried, permissible weights, organised support being provided (probably one large vehicle), registration forms, disclaimer, orders for cloth badge and T-shirts, etc.

Separate copies of this newsletter are available from :

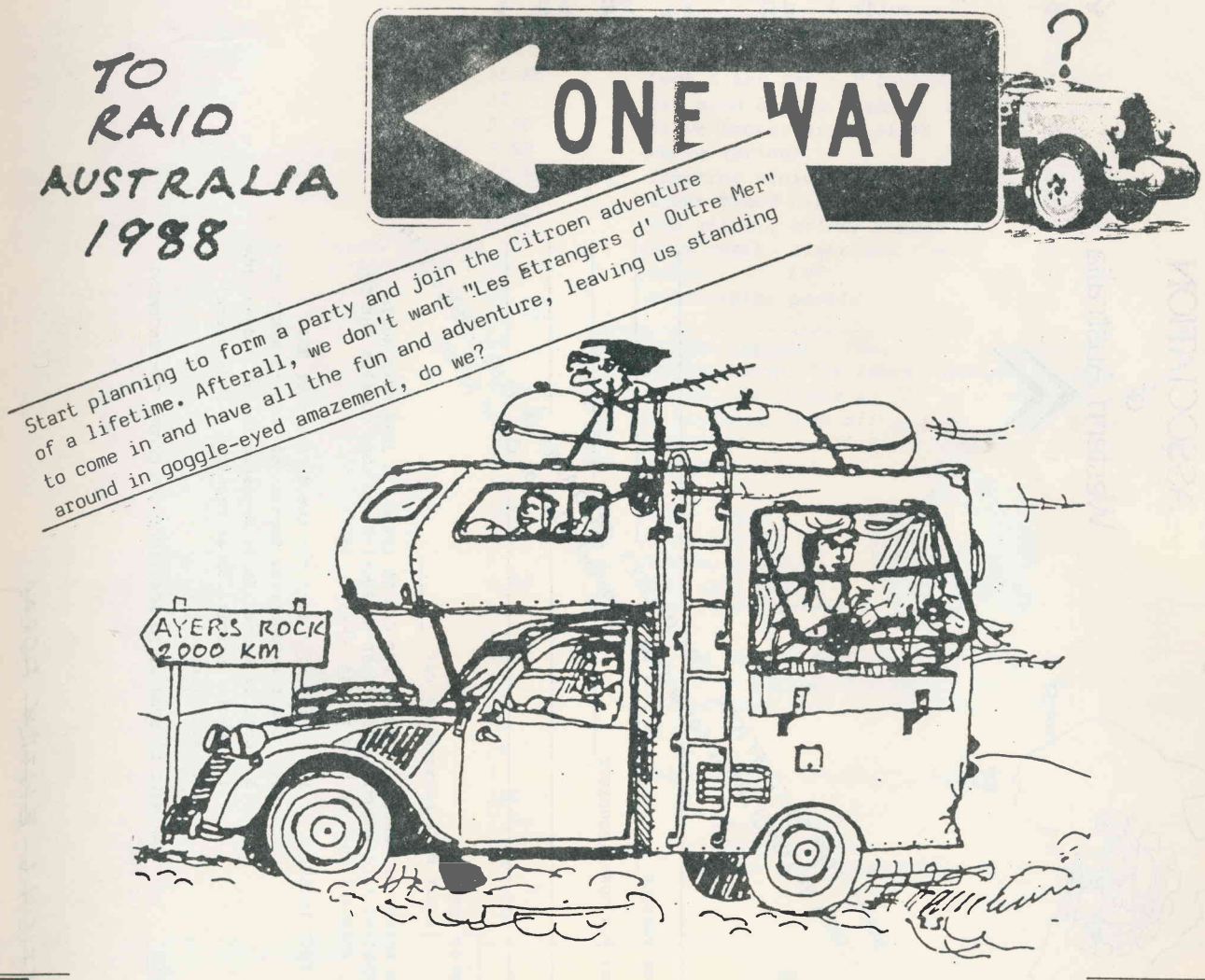
Raid Australia
P.O. Box 604
Gosnells 6110
Western Australia.

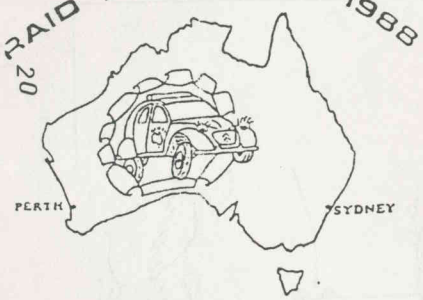
David Gries
274 Elgar Rd
Box Hill 3128
Victoria.
(03) 890 3266.

You are well advised to obtain a copy to assist your planning.

It is estimated that the costs of fuel, camp sites, food, personal purchases and contingencies will add up to about $2000 for two persons in a 2CV. To this must be added a deposit cost of $250 per car payable before July 1987, and of course costs associated with the car itself - freight/travel to Perth, spares etc.

A survey party will cover the route over Easter 1987. After, an official route plan will be issued.





CITROËN OWNERS ASSOCIATION of Western Australia

SAMPLE FORM ONLY. OFFICIAL FORM INCLUDES DISCLAIMER OF CLUB LIABILITY TO BE SIGNED BY COMPETITORS. Forms from Raid Australia or David Gries.

NAME_____

TYPE OF VEHICLE_____

ADDRESS FOR CORRESPONDENCE_____

_____

_____

NUMBER OF PERSONS
NOTE: Limit of 2 persons per car _____

PLEASE ACCEPT MY DEPOSIT OF A$250 PER CAR TO ENTER THE 1988 RAID AUSTR.
I UNDERSTAND THIS AMOUNT IS TO SECURE MY BOOKING AND GOES TOWARDS THE TOT.
COST. (Deposit must be paid by 1st JULY 1987)

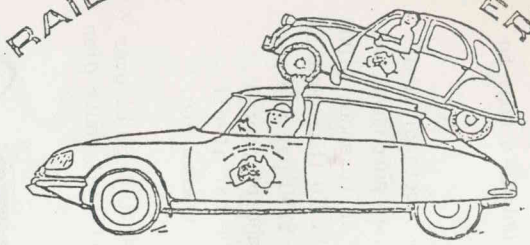
TOTAL COST INCLUDES
1. Supply of a tent for the duration of RAID
2. Food for Gunbarrel Section of RAID to AYERS ROCK
3. Cost of Easter Rally Registration in Sydney, NSW
4. Special permission as required for Gunbarrel
5. Administration.

REMEMBER: YOUR CAR WILL BE SUBJECT TO SCRUTINEERING BEFORE COMMENCEMENT OF RAID.

~~OFFICIAL ENTRY FORM~~.
PLEASE FILL IN DETAILS ON THE BACK OF THIS PAGE ALSO. POST TO C.O.A.W.A.

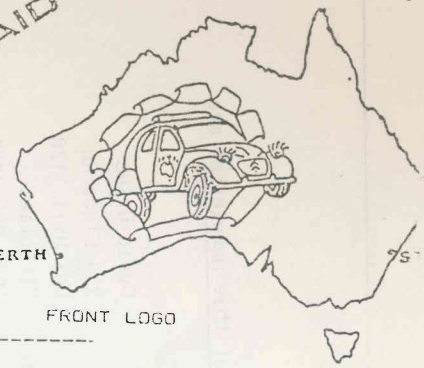
ORDER YOUR T SHIRTS NOW!

RAID 88 SUPPORTER



BACK LOGO

CITROËN 2CV'S RAID AUSTRALIA



FRONT LOGO

RAID AUSTRALIA 1988 T-SHIRT ORDERS

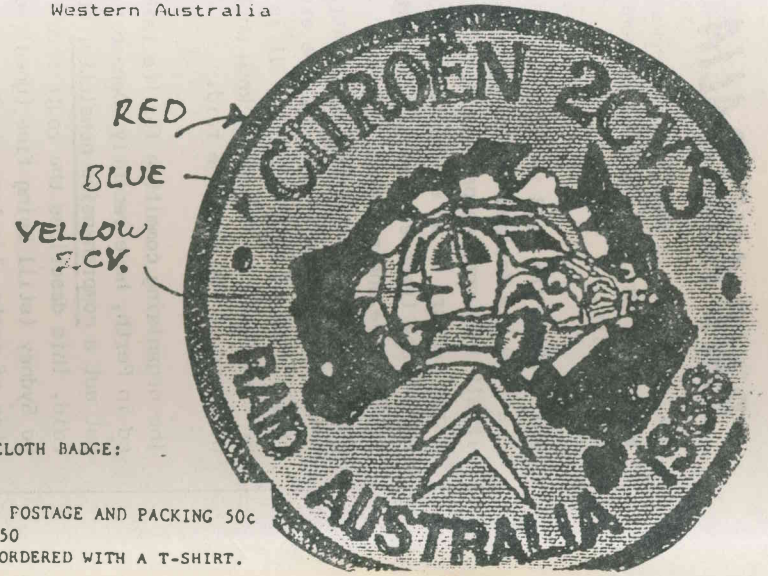
NAME.....
ADDRESS.....
.....
.....

T-SHIRTS cost $10.00 each + $1.00 postage within Australia, A$2.00 overseas. Bulk orders will be posted at cost price.

Numbers with FRONT LOGO only:
SIZES: Small( ) Medium( ) Large( ) Extra Large( )

Numbers with FRONT and BACK LOGO:
SIZES: Small( ) Medium( ) Large ( ) Extra Large( )

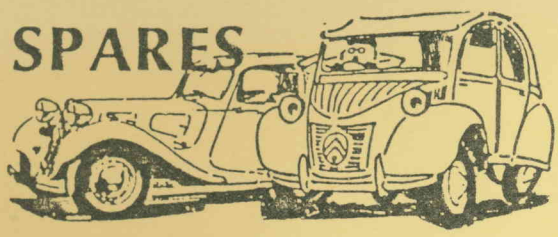
Return orders to : RAID AUSTRALIA
P.O. Box 604
Gosnells, 6110
Western Australia



EMBROIDERED CLOTH BADGE:

$6 EACH PLUS POSTAGE AND PACKING 50c
OVERSEAS $1-50
P&P FREE IF ORDERED WITH A T-SHIRT.

SPARES



SPARE PARTS OFFICER:

Peter Boyle
35 Newman St
Thornbury 3071.
Phone: (03) 480 3560.

HOURS:

10am - 5.30pm
Monday - Saturday

PLEASE NOTE THE NEW HOURS FOLKS. Please, oh, please try to restrict your calls to these hours. Remember, the name's not Arkwright and we're not open all hours.

NOTE: ORDER FORMS TAKE PRECEDENCE OVER PHONE CALLS.

PARTS LIST (TRACTIONS) as at 1/9/86.

Big boot top rubber	$12.80
Big boot bottom rubber	11
Rubber door seal	25.60
Scuttle vent rubber	25
Pedal rubber	5.50
Rubber grommet petrol filler (2 sizes)	7.50
Rear bumper grommet	12.50
Rubber V-blocks for doors (8)	34.50
Bonnet rubbers	0.30
Big boot paint protectors (under handles & lights)	25
As above (small boot)	25
Windscreen rubber - alum frame	15.50
Steering rack boots (pair)	26
Gearbox gasket set	8
Complete gasket set motor L15/11BL	76.44
Sump set "/"	10.20
VRS set "/"	50
Complete gasket set motor Big 6	70
Exhaust muffler incl. tail pipe L15	95
" B15	105
" B6	140
Rubber exhaust hanger	2
Gearbox output shaft seal	8.50
Front hub outer seal	6
" inner "	6
Rear hub seal	6
Door lock set French big boot	22
" Small "	22
Radiator hose upper/lower	13
Fan belt	12.25
Door lock springs	3
Piston & liner set	360
Liner seal	7.50
Exhaust valve	15
Inlet valve	15
Outer cross (driveshaft)	43.80
Water pump shaft & bush	18
Water distributor tube (head)	20
Tie rod ball joint kit	65
Upper/lower ball joint boot (leather)	12
Wheel cylinder rear 4-cyl (1" diam)	40.70
Brake hose front/rear Slough	28
" rear French	22
Brake master cyl kit	9.50
Shocker mount rubber	1
Throttle shaft 32 PBIC 0.5 mm O/S	20
Hub & bearing puller	105
Lower ball joint puller	65
Bonnet strip clamp (internal)	1.50

DYANE

Brake hose	22
Seat rubber	1
Wiper blades pair	10

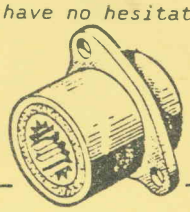
Early 2CV parts, all new unless indicated, LIMITED SYOCKS, NEVER TO BE REPEATED OFFER!!

Clutch linings	$15
Exhaust valves	$9
Rear engine mount	$9
Tie rod covers (metal)	$3
Suspension arm seals	$8.50
Engine push rods	$2.50
Suspension bumper rubbers	$4
Starter motor (reco)	$40
Crown wheel & pinion	$200
Front brake drum	$15
Rear brake drum	$15
Starter Bendix unit	$10
Windscreen wiper speedo worm & drive	$8
Front over-riders	$5
Head gaskets 375 cc	$2
Lock & key set - 2 barrels, 2 keys	$15
Oil pump bodies, bronze, no gears	$10
Valve rocker arm & shaft	$15
Valve springs	$1
Steering pinion & bearings	$15
Brake bleed nipples & caps	$1.50
Dip stick & holder rubber	$1.50
Door catch, righthand front	$6
Ditto LHF	$6
Accelerator pedals	$1

STOP PRESS

Wanted, wanted: Your old silentblocs for reconditioning. The Spares Department needs any amount, be it one or 10, we will be pleased to purchase them off you, or if you'd like to donate them, we'll have no hesitation in accepting your offer!

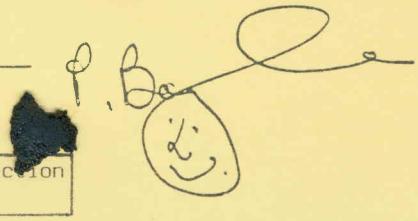
Peter Boyle
35 Newman St
Thornbury 3071
(03) 480 3560.



By the way, I just can't justify the time to chase up second-hand parts, so if you need them, please advertise in the classifieds in the magazine.

Don't forget the firm's motto:

Never fear!
Luigi's here,
When your motor needs new gear!



Special, never-to-be-repeated offer: One set only, Light 15 driveshafts, fully reconditioned in France. At cost, last chance: $820. Contact Peter Boyle.

Super special: New fabricated replacement ends for rear of Traction front mudguards. L11/B15/B6. LHS & RHS. $55 each.