
FRONT DRIVE

AUSTRALIA'S NATIONAL MAGAZINE FOR CITROEN OWNERS AND ENTHUSIASTS

JUNE/JULY
VOL.24 No.2

Le Tour de France



& Le Citroen



1999/00 CCOCA COMMITTEE

FRONT

PRESIDENT — Ted Cross
173 Power Street, Hawthorn, 3122
Phone [03] 9819 2208
Email crossfam@ozemail.com.au

SECRETARY — Peter Simmenauer
6 Stewart Ave. Blackburn Sth. 3130
Phone (03) 9877 0141
Email pcsimm@melbpc.org.au

TREASURER — Graham Barton
"Lillimur" Lot 1 Tucks Rd. Shoreham
Phone (03) 5989 6027 ah
0418 100992 mobile
Email G.Barton@chisholm.vic.edu.au

SPARE PARTS OFFICER — Mel Carey
10 Omeo Highway, Lucknow,
PO Box 469, Bairnsdale, 3875.
Phone [03] 5152 1040
Mobile 0427 526 126
Fax [03] 5152 2615
E-mail: citroencarey@net-tech.com.au

EDITOR — Leon Sims
2 Tolls Ave. Mentone 3154
Phone (03) 9583 3972 ah
0412 348848 mobile
Fax (03) 9583 3972
Email simsfam@alphalink.com.au

MEMBERSHIPS — Robin Smith
9 St Aubins Avenue, North Caulfield,
3161.
Phone [03] 9527 5429

ACTIVITIES — Steve Bartlett
24 Bayview St. Williamstown 3016
Phone (03) 9397 8680
Email saintly005@aol.com

PUBLIC OFFICER — John Couche
31 Broadway, Belgrave, Victoria, 3160.
Phone (03) 9754 3583

CLUB SHOP — Leigh Miles
16 Harrow Street, Blackburn South, 3130.
Phone [03] 9888 7506 [AH]
E-mail: leigh.miles@cussos.com.au
Business_Direct@msn.com.au

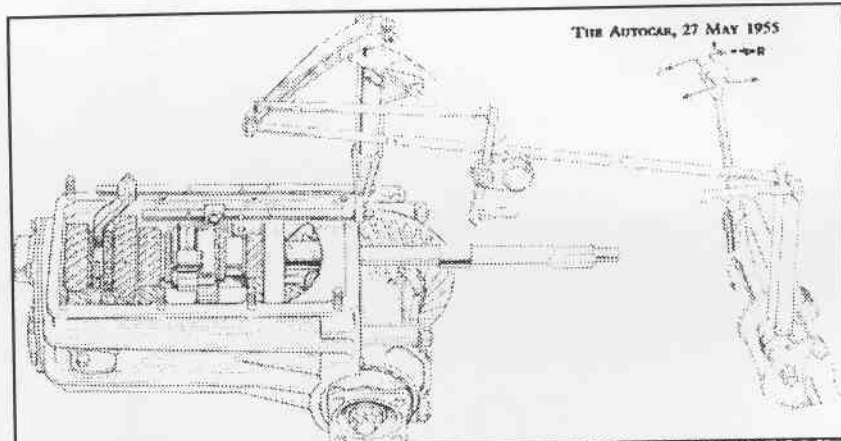
LIBRARIAN — Robin Smith
Phone (03) 9527 5429

ADVERTISING — Peter Fitzgerald
(03) 9696 0866 (BH & AH)

STATE ACTIVITY CO-ORDINATORS
VIC: PETER FITZGERALD
[03] 9696 0866 [BH & AH]
ACT: MIKE NEIL
[02] 6241 4556.
WA: STUART PEKIN
[08] 9386 9283.

CLUB PERMIT OFFICERS
Russell Wade (03) 9570 3486
Peter Boyle (03) 9470 8080
Mel Carey (03) 5152 1040

AOMC REPRESENTATIVES
Ted Cross (03) 9819 2208
Leigh Miles (03) 9888 7506
Russell Wade (03) 9570 3486



THE AUTOCAR, 27 MAY 1955

DISASTER to GRAND PRIX WINNER



FRANCIS LECOT'S long, long distance drive

POSTAL ADDRESS

CITROËN CLASSIC OWNERS CLUB OF AUSTRALIA INC.

The Club's and Front Drive's postal address is

P.O. Box 52, Deepdene Delivery Centre,
Victoria, 3103.

The Editor's e-mail address is
simsfam@alphalink.com.au

CCOCA Inc. is a member of the Association of
Motoring Clubs. G.P.O. Box 2374V,

Melbourne, Victoria, 3000.

The views expressed in this publication are
not necessarily those of CCOCA or its
Committee. Neither CCOCA, nor its
Committee can accept any responsibility for
any mechanical advice printed in, or
adopted from Front Drive.

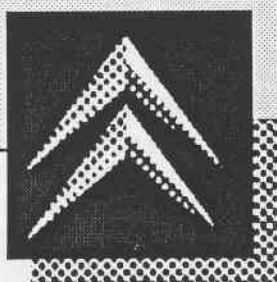


DRIVE

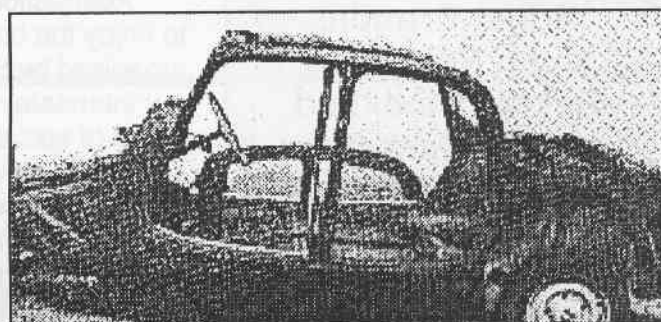
contents

Published by
The Citroën Classic Owners Club of Australia Inc.

PAGE 4	EDITORIAL VIEW
PAGE 5	PREZ SEZ
PAGE 6	A-TRACTIONS
PAGE 7	AUSTRACTION
PAGE 8	CCOCA/CCCV BASTILLE DAY
PAGE 9	THE DOUBLE CHEVRON
PAGE 10	DISASTER TO GP WINNER
PAGE 12	FRANCOIS LECOT
PAGE 14	CITROEN BX 16 VALVE
PAGE 16	CITROEN NEWS
PAGE 18	LANGUISHING LANGENTHAL
PAGE 20	SERVICING THE D-SERIES
PAGE 21	BOOK REVIEW
PAGE 22	TALKING TECHNICAL
PAGE 23	CCOCA CLASSIFIEDS



CITROEN BX 16 VALVE



LANGUISHING LANGENTHAL

CCOCA MEMBERSHIP

Annual Membership \$30
Overseas Postage Add \$9

CCOCA memberships are due on the 25th of March, each year and run until the following March.

CLUB MEETINGS

Every fourth Wednesday of the month, except December, at 8pm
Venue:- Canterbury Sports Ground Pavilion,
cnr Chatham and Guildford Roads, Canterbury, Victoria.
Melways Ref 46 F10.

LIFE MEMBERS

NANCE CLARK	1984
JACK WEAVER	1991



EDITORIAL VIEW



Thank you to our contributors for April/May

Ted Cross
Iain Mather
Steve Bartlett
Paul Ataud
Peter Simmenauer
Roger Brundle
John Reynolds
Robbie Stockfeld
Citroen Australia
Warren Seidel
Nigel Wild

New members

Bill Wellwood, Langwarrin -
1950 Light 15

Keith Mitchener, Bendigo -
Xsara

John Buckley, Donvale,
Vic. - 1949 11BL

Peter Dekker, St Kilda, Vic.
1974 DS23

Issue no. 2 for the club year 2000/2001 comes to you with input from several members and makes for a good mix. I would still like to see more event reporting for those interstaters that can't make it to local events. I guess that's part of being a national club and the only way we keep those outside Victoria informed is through Front Drive.

Mentioning this reminds me of a conversation I was having with a fellow committee member about the benefits we offer to those members that reside outside of the mother state. The magazine is the most obvious, but the most beneficial has to be the spare parts availability that CCOCA offers. I can remember the resistance to committee members of the then "Classic Register" back in the early 70s in stock-piling spare parts and forming a fund to assist in raising finance to purchase necessary and rare parts at the time. How unsophisticated we were then. But also how visionary were the committee. In hindsight where would our members be without the warehouse of spares for our precious Tractions, 2CVs and Ds. In fact at the time, it was thought that it was un-necessary to store spares for Tractions as parts were still available through commercial outlets. It was during this time I remember the closure of Triangle Motors.

Today it is the Ds, GS & CX owners that are beginning to search that little bit harder for their parts.

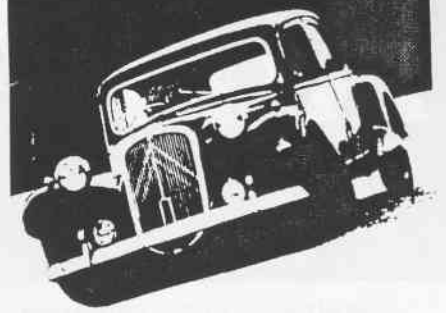
Austraction is another major opportunity for interstate members to enjoy the benefits of CCOCA. This year's event held at Swan Hill, organised by Steve Bartlett and Iain Mather was again supported by our interstate members and was enjoyed by all, particularly with the range of social activities offered.

By glancing at the opposite page, you will notice that Ted & Helen were away. They returned in time for the Bastille Day Dinner. I'll just whisper that both put in an amazing amount of time to keep the club rolling. I'll look forward to hearing about their travels in the next Front Drive.

Regards Leon



PREZ SEZ



The club year is roaring along and over the next few months there will be some important activities for you to support if you can. The special winter warmer is a good excuse/reason to get your toy out of its heated garage, and this year there will be a fathers day run, a balloon ride into the Yarra valley, and of course the important joint annual Concours with CCCV.

There are more events planned also and the committee's enthusiasm is generally linked to the support you give us as members. We can only feel successful if you are attending and enjoying the club activities.

Later this year the next Tracbar event will take place and 35 old tractions will cross central Australia on the way to Queensland. This level of enthusiasm and support can rarely be matched and we wish this troop of Citroenists a safe journey and trust that they enjoy Australia.

Our cars are still very capable of travelling big distances even today in relatively good comfort, so I encourage you to use your car as often as you can, for that should still be the main reason why we exist as a club.

I remember last year when some of us did the run over the alps to Hotham and back to Melbourne over the weekend. One thousand kilometres and legal road speeds and no breakdowns and luckily no speeding fines for some of us.

So get out your car and join us as often as you can and you will be rewarded with a great deal of satisfaction and value from being an active club member.

Ted Cross

News from the Committee May-June 2000 Meeting

All financial CCOCA members will receive plastic membership cards for the current club year, enabling recognition for claiming discounts from retailers offering this facility. These were posted in June.

An Assets Register is being established and will be managed by Robbie Stockfeld, who has volunteered for this task. This will not only enable tracking of club property used by club members, but also ensure a smooth handover of files and other information to new Committee members. All members are asked to let Robbie or a Committee member know of any CCOCA asset that they hold or that they know of so that the Register

will be complete.

A Website is being established and managed by Club member Jeff Pamplin for CCOCA. A Domain name is being registered, and the site is expected to contain information on Spares, Events, Library, Membership, Links to other sites of interest, and more. It will not replace CCOCA's existing written communication, but will enable quick access to CCOCA and other Citroen information for members and other Citroen enthusiasts world-wide.

Insurance - CCOCA's public liability insurance is to be increased to \$10m under AOMC's Group Public Liability Insurance Policy, which will provide greater protection at a considerable saving compared to current policies.

National Newsletter - discussion

deferred to allow for more feedback from members.

GST - two Committee members attended a recent AOMC seminar and will recommend a course of action to the next Committee meeting.

Membership renewals. Crunch time. Un-financial members (3 months+ late) will not receive this magazine, but a surprise instead.

Austraction 2001. A venue is being investigated following feedback from happy participants at Swan Hill over the Queens Birthday weekend.

Report by Peter Simmenauer



A-TRACTIONS 2000



CCOCA 2000 EVENTS

JULY

WEDNESDAY 26th — MONTHLY MEETING

AUGUST

SUNDAY 13th — Winter Warmer Run

WEDNESDAY 23rd — MONTHLY MEETING

SEPTEMBER

SUNDAY 10th — Father's Day Run at Arthurs Seat Historic Hillclimb

WEDNESDAY 27th — MONTHLY MEETING

OCTOBER

SUNDAY 8th — Ballooning day in the Yarra Valley

SUNDAY 22nd — Citroen Concours

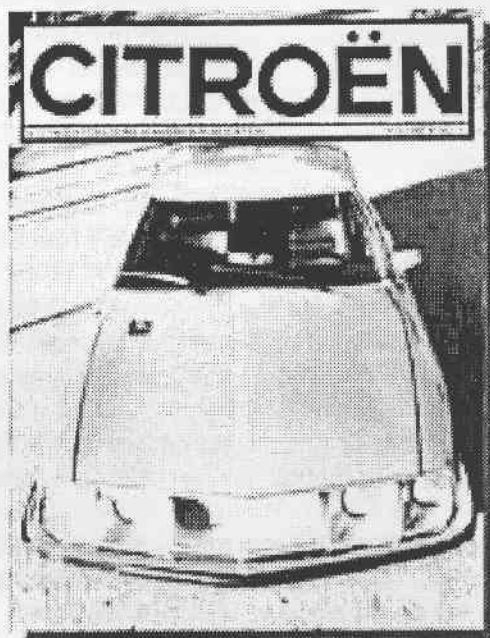
WEDNESDAY 25th — MONTHLY MEETING

NOVEMBER

TUESDAY 7th — Cup Day at ROB ROY

WEDNESDAY 22nd — MONTHLY MEETING

Christmas Party and club auction



email EMAIL email EMAIL

Could all members who have access to email please email Ted and Helen Cross with their email address, either work or home or both, so that we can set up a central register.

Members will then be informed of upcoming events and all the news and hot gossip!.

crossfam@ozemail.com.au

Austraction 2000 SWAN HILL



Well we certainly had a great weekend in Swan Hill.

The weather was great. The company was great. And the events organised by Steve & Iain proved to be some of the most inspired Helen and I have experienced (and we have done most of them)

Friday supper became a little larger than usual thanks to Helen's involvement. A warm fire and an open bar was a good start. Lots of helpers, particularly Susanne Smith.

Saturday morning saw blinding sunshine and a cool start. The line up was facing the wrong way but looked very impressive none the less. The dreaded observation run was undertaken and the finish point found us camping alongside the river and ferry crossing. Once again there were plenty of helpers and we soon had a roaring fire and BBQ going.

Saturday night was party night at the Pioneer Village - the sound and light tour followed by the big dance/ball. Every body was dressed to kill and Steve had cunningly ordered a freezing night and a hall with no heating...

so dancing was assured. The three little maids gave us a floor show (HC SS CC) and the Mikado will never be the same again. We drank the bar dry of wine after three minutes so a special refill was required. A very unique and enjoyable evening indeed.

Sunday was a late start for the survivors, and a tour of the local tourist locations in the morning was on the agenda. Lunch was on the good ship venus (also known as SS Kookaburra). A lovely lunch, more wine for the more hardy drinkers (I was on soft drink by then) and a tour of the local historic homestead nearby.

I had a thirty second rest on the bed and then back to town for the main event at Carriages restaurant - presentations and yes more food and wine.

Only the strongest managed to go back to Peter Fitzgerald's rooms for cleansing ales and the left over wine. The sensible ones retired soon after but Peter and his band of merry men and JC stayed up very late and looked tired and emotional on Monday morning.

Monday morning was another fine day but our luck ran out and the breakfast we thought was ordered did not materialise. This was not more than a phone call to fix and we all adjourned to Daisy's cafe and yes more food was crammed into our little mouths. (The Mr Creosote comedy piece was in my mind).

We all said our farewells and left for home later in the morning.

Helen and I arrived home just on dark after a couple of detours and both thoroughly enjoyed ourselves and the great company.

Regards Ted Cross



BACK to the FUTURE

An article written about our invasion of Swan Hill for Austraction 2000.

Submitted by Iain Mather (Austraction co-organiser with Steve Bartlett)

From the SWAN HILL Guardian June 7

SWAN HILL will be invaded by the French this Queen's Birthday weekend, by up to 20 stunning French beauties. All of them classic and immaculately turned out.

For the third time the Citroen Classic Owners Club of Australia has chosen to have its national get together in Swan Hill. Citroenists from all over Australia will be "invading" to enjoy the offering that Swan Hill and the region have to offer.

They will of course be arriving in their lovingly cared for and restored Citroens ranging from the classically elegant Traction Avants, the first massed produced front wheel drive car in the world, through to the famous "Goddess" with its unique hydraulic heart.

Of course there will also be the quirky 2CV, designed to carry a basket of eggs across a ploughed field without any breakages to the eggs.

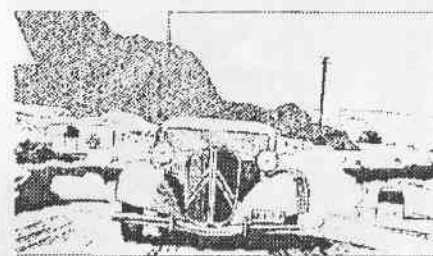
Naturally the beautiful current models Xantia and Xsara (European rally champion) which continue the great name of Citroen will be present also.

Citroen, long renown for its unique design philosophy in fact the oldest, continuously imported automobile in Australia with 75 years of sales in this country. So unique are these cars that Citroen can be proud that it was the only car manufacturer to have three models in the top 100 cars of the century.

The famous and unique DS (Goddess) was in fact voted the "Design of the Century" beating such influential designs as the microchip and the ball point pen.

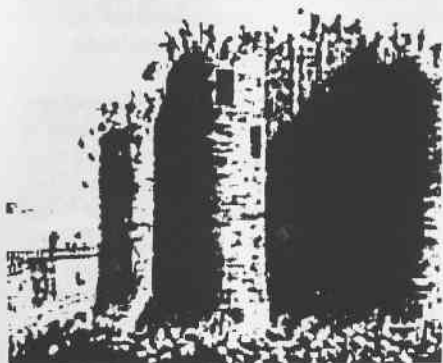
Look out for these unique cars over the long weekend around Swan Hill and don't be afraid to speak with the drivers, like all things French, they love a good chat, wine and food.

Maybe that is why they are coming back again to Swan Hill.



BASTILLE DAY

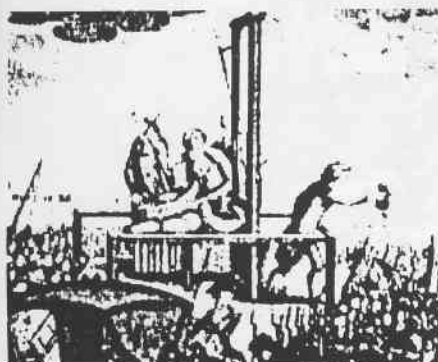
Bastille Day, on the Fourteenth of July, is the French symbol of the end of the Monarchy and the beginning of the First Republic. The national holiday is a time when all citizens can feel themselves to be members of a republican nation. It is because this national holiday is rooted in the history of the birth of the Republic that it has great significance.



On 5 May 1789, the King convened the Estates General to hear their complaints: but the assembly of the Third Estate, representing the citizens of the town, soon broke away and formed the Constituent National Assembly. On 20 June, 1789, the deputies of the Third Estate took the oath of the Jeu de Paume "to not separate until the Constitution had been established."

The Deputies opposition was echoed by public opinion. The people of Paris rose up and decided to march on the Bastille, a state prison that symbolized the absolutism and arbitrariness of the Ancient Regime.

On July 14, 1789, the storming of the Bastille immediately became a symbol of historical dimension; it was proof that power no longer resided in the King as God's representative, but in the people, in accordance with the theories developed by their philosophers of the eighteenth century. On July 16th, the Revolution had succeeded. The storming of the Bastille symbolizes, for all citizens of France, liberty, democracy and the struggle against all forms of oppression.



BASTILLE DAY 2000 a CCOCA & CCCV event

This year our Bastille Day celebrations took place on Saturday the fifteenth at the home of Leigh Miles who once again committed his home and time and effort to help our club.

Many thanks Leigh.

We were pleased to combine this event with our friends from CCCV and 54 eager Citroenists raided Leigh's home and enjoyed a fully catered spit roast dinner, supper, and BYO drinks.



The flavour of the night was obviously French and there were some impressive outfits. Peter Sandow came with his face painted red white and blue and was a stand out once he added his space

age head gear. Don Scutt rode up to Leigh's on his solex cycle bike and French clothing. President Kirk was resplendent in his tuxedo and their respective ladies for the night were also impressively attired to match.

As usual at Leigh's, the night was a great success, with plenty of food, drink, and a good time was had by all as far as I



could tell. I became tired and emotional towards the end of the night and neglected to publicly thank Leigh and all of his band of merry helpers. I blame it on the jet lag from my return from the USA the morning before but it could



have been the red wine.

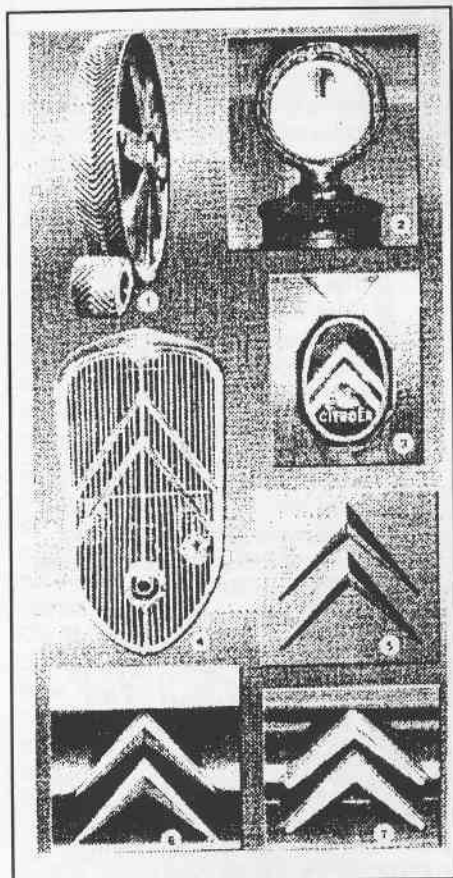
Many thanks to all of the members of both clubs who attended and made the night such a success.

I suggest you look forward to coming along next year, but you will need to book early for this popular annual event.

Ted Cross

the Double Chevron

by Paul Ataud, President of Club SM, France



In 1913, Andre Citroen bought in Poland the patent rights for chevron pattern gears (1). He started a gear business at the Quai de Grenelle in Paris. The 'Double Chevron' became the emblem for Citroen production and has remained so for 80 years. How and why was it developed? The first emblem (2) comprises two chevrons surrounded by a vertical ellipse. This emblem was used on the A, B, C3, 2CV 1949 models, and also as a trademark for various items such as screws and accessories. The emblem is found on the rubber of the SM's clutch pedal [and on others - tr.].

In the first modification, (3) the vertical ellipse is surrounded by an octagon in

pure art deco style, the background becoming blue. The identity of the marque was indicated by this version until the Traction.

In 1934, (4) the Traction Avant and TUB vans appeared with plain double chevrons formed by four aluminium strips which were placed high up on the radiator grille. Their angle was then 75 degrees. It took until 1955 and the arrival of the DS to see a third (5) modification of the chevron. It is in relief and in anodised gold. On the DS it is centered on the rear boot lid.

It appeared on the radiator grille with the Ami and the GS. With the CX, it changed and became silver. With the BX, it is fixed on the left side of the bonnet, like a signature. AX repeated that position. From the ZX to the Xantia, the emblem stayed on the bonnet, but in the centre to confirm their relationship to the Citroen family.

In 1994, to give a greater impression of confidence and durability, (6) the emblem underwent an alteration to the angle of opening of the chevron. It went from 88 degrees to 90.

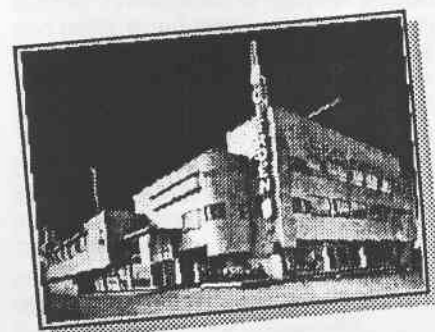
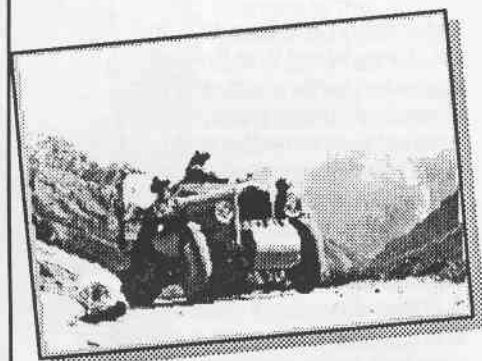
In the last modification, in 1998, (7) the chevron took on a rounded profile, the opening angle becoming 95 degrees. The points were also rounded off. The emblem slid from the bonnet to return to the centre of the radiator grille.

Xsara initiated this new personality. To mark their pride in belonging to the marque, the enlarged emblem is framed by two chrome strips.

Berlingo and Evasion since 1999 both sport a second chevron, exaggeratedly angled, on the rear loading door.

From Traction Avant, no. 45, May 2000, p. 20. trans. by Peter Simmenauer.

Thanks to Paul Artaud and La Traction Universelle.



from DISASTER to GRAND PRIX WINNER

Part 2

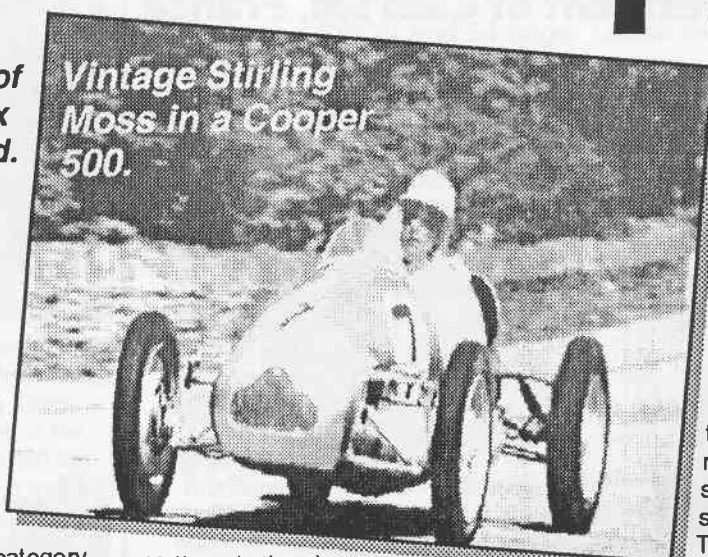
Article researched & written by Roger Brundle

In the December/January issue Part 1 of Disaster to Grand Prix Winner was published. Part 2 illuminates another small part Citroen played in motor racing circles.

Motor racing enthusiasts in the UK during World War II were starved of motor sport, and not surprisingly many plans were hatched to resume the sport once hostilities ceased. In 1941 "Motor Sport" magazine proposed a new cheap racing category for single seater racing cars with engines up to 500cc.

A 500cc class was introduced in 1945, and by 1946 there were a number of cars built to the new formula. Most were rear engined and fitted with single or twin cylinder motor cycle engines driving through motor cycle gearboxes by chain to the final drive. It is now history that John Cooper torched two Fiat Topolino (500) write-offs and joined the two front independent suspension assemblies together with a simple ladder frame to create the Cooper Mark 1. A Speedway JAP single cylinder engine was fitted together with a Triumph Speed Twin 4-speed gearbox, and the car first saw the light of competition at the Prescott hillclimb on 28 July 1946. Cooper went on to dominate 500cc racing and had a great boost when Stirling Moss moved to Cooper in 1948 and showed great form.

The formula was recognised as Formula 3 by the FIA in 1950 and the formula ran through the fifties with International status until it was replaced by Formula Junior in 1959. Cooper produced their last 500cc car (the Mark XIII) for the final season. By 1953 the English specialist race car manufacturers (Cooper, Lotus and



Vintage Stirling Moss in a Cooper 500.

Keift and others) were becoming interested in 1100 cc sports car racing and were casting around for a suitable engine. Their need was met by Coventry Climax who had secured a large UK Government contract to supply a light weight firepump engine. The Climax FW (for 'Feather Weight') engine was tuned for automotive use and put into small scale production as the FWA giving a reliable 75 bhp at 6500 rpm.

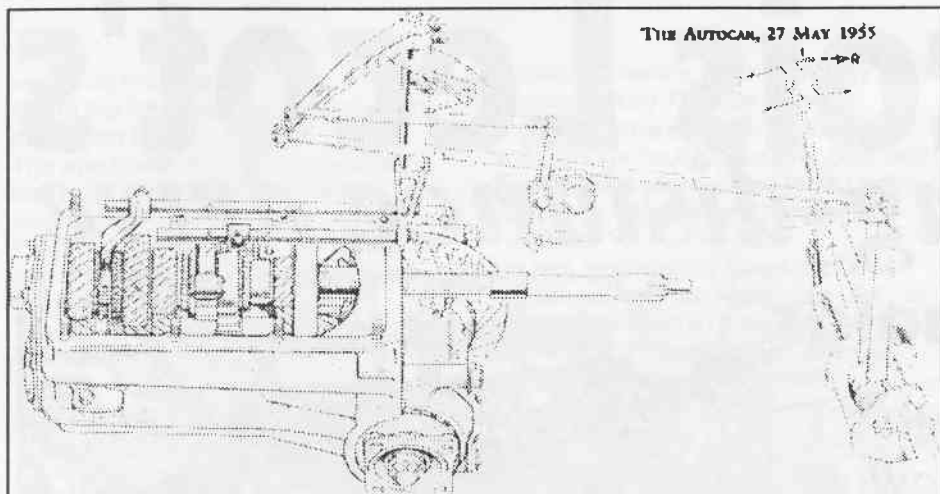
Cooper had started design of their 1100 cc sports car and the basic design considerations were summarised in *The Autocar* of May 1955: 'When there is only 75 bhp available and the aim is to produce a car with a speed around 125 mph, saving of weight and frontal area are of paramount importance. In conceiving the new 1100 Cooper fitted with the Coventry Climax FWA engine, John Cooper decided that the rear engine lay-out offered the greatest possibilities.'

A real problem facing the Cooper designers was finding a suitable gearbox/final drive. There was no contemporary British-built car from which a suitable unit could be liberated, and design and construction of a unit from scratch was beyond their limited resources.

The solution is described in Doug Nye's *Cooper Cars* '..... the problem of arranging transmission with a rear-mounted power unit had been solved, at Francis Beart's suggestion, by using a Citroen Traction Avant (front drive) unit turned about face and enclosing

special close-ratio gear clusters and shafts made by ERSA of Paris, whose four-speed conversions for the standard production three-speed transmission were very popular at that time. Beart drove a Citroen Light 15 and was a great enthusiast for the marque. The four-speed gearbox used helical-cut constant-mesh gears. It's first motion shaft, driven by the clutch, passed rearwards above the diff and past the crown-wheel to carry the free-running gears and selector dogs. The second motion shaft gears were all fixed, and the forward end of this shaft was forged to form the bevel pinion. This light-alloy cased transaxle was attached to the rear of the engine via a separate bell-housing, part of which was cut out to clear the starter pinion. All ERSA's gears were crash-type, unlike Citroen's, which had synchromesh standard on the upper pair. Standard overall ratios with a 4-1 final drive were 4-1 for top, 5.17 for third, 7.56-1 for second and 10.9-1 for first. Cooper also offered a 4.5-1 final-drive and a 'Le Mans' 3.7-1. Since this transaxle was turned about-face it's shafts rotated in the opposite direction to standard, and the oil return scroll had to be replaced with a





Converted gearbox using ERSA components, Citroen gear change tower and Cooper linkages.

synthetic rubber oil seal to prevent the gearbox pumping it's oil forward into the clutch housing. Initial testing also revealed an irritating problem with top gear jumping out of engagement, but dog modifications cured it.

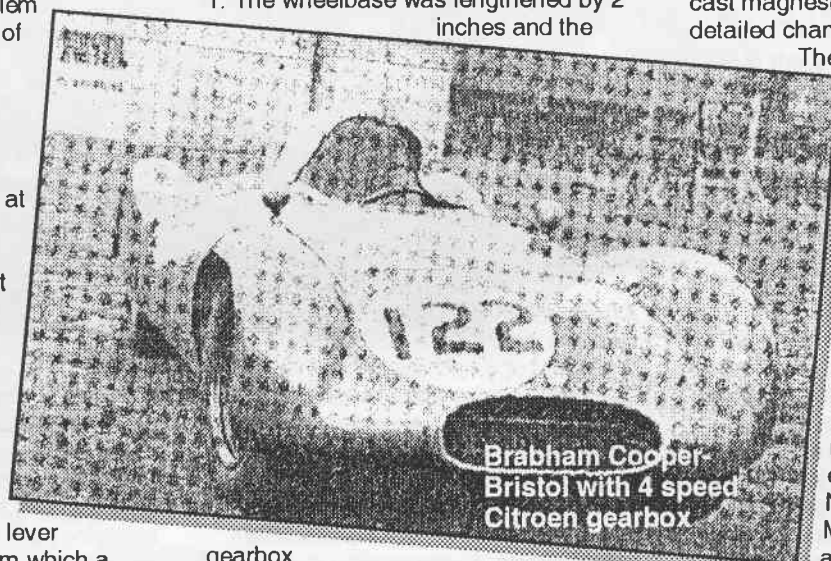
Engine mounts were four Silentbloc bushes, bolted through a lateral plate on the front timing cover and at the rear through another plate sandwiched by the clutch housing attachment bolts. Two further mounts on the gearbox merely controlled sideways movement of the transaxle.

On the right side of the cockpit a light diagonal tube welded to the outer hoop bay carried the gear lever mechanism and pivots from which a system of rods and levers push-pulled back to the gear selectors. It was as direct and rigid a system as could be devised and worked well enough despite the distances involved. Reverse was engaged by clearing a spring-loaded lock-out button, which enabled the lever to move forward beyond first gear position.'

The initial Citroen gearbox was acquired from HWM Motors (a main Citroen dealer) and the ERSA conversion carried out by Jack Knight, who was to have a long association with Cooper transmissions. The engine and transmission unit weighed 315 lb, of which the engine accounted for 209 lb.

In January 1955 the T39 Cooper-Climax 1100cc sports car was ready for testing and it's chopped-off tail earned it the nick-name 'Bob-tail'. Although done for aerodynamic reasons, John Cooper told everybody the tail was cut off to fit the car in the transporter.

A modified Bob-tail was built by Jack Brabham at the Cooper works to take a 2-litre Bristol engine to run in Formula 1. The wheelbase was lengthened by 2 inches and the



gearbox modified by removing first gear due to the extra torque of the Bristol engine. Brabham took the car down-under in the southern Spring and in October 1955 won the Australian Grand Prix at Port Wakefield in South Australia. He entered the car in the New Zealand GP at Ardmore on 7 January 1956 but retired with a cracked gearbox housing - a strong portent of things to come?

The Brabham Cooper-Bristol Bob-tail ended up in Tasmania and the author vividly remembers, as a kid standing at the top of the hill at the 1958 opening of the Baskerville circuit, the squeal of the brakes and the whine of the gears as this wonderful machine crested the rise, braked, turned in and accelerated down the other side.

Bob-tails in Europe racked up numerous successes in 1955 while Cooper were planning their 1956 activities.

Coventry Climax were to make engines

available enlarged to 1460 cc (FWB) with an output of 100 bhp and these were adopted for 1956 along with new cast magnesium wheels and many detailed changes.

There are few documented changes to the gearbox for 1956 other than a comment from Doug Nye that reverse was disabled. This was illegal in International racing, but seemed to have been overlooked. It was easy to do, just remove the reverse idler train and shaft.

The 1956 Mark II Bob-tail was a very successful race car, but didn't win everybody over. Doug Nye reports that the ex-Moss Bob-tail was sold to a Jimmy Blumer in the UK who recalled that "It was a

fantastic fun car and gave me a lot of groundwork in race driving during 1957. Its worst feature was that dreadful ERSA gearbox - awful thing." Despite Jimmy's bleating, it appears that something like 40 to 50 Bob-tails were built by Cooper, although no production records are reported to exist.

Forty to fifty gearbox conversions (plus spares) over 2 years is quite an effort and raises the question of who did the work. It is possible that ERSA provided the components, including the cases (?) and Jack Knight did the assembly. The author contacted Jack Knight Engineering in the UK in the late '70s and was told that they could supply all the bits for the ERSA boxes.

The use of the modified Citroen gearbox was a key success factor for Cooper and was continued forward in their drive to World Champion status.

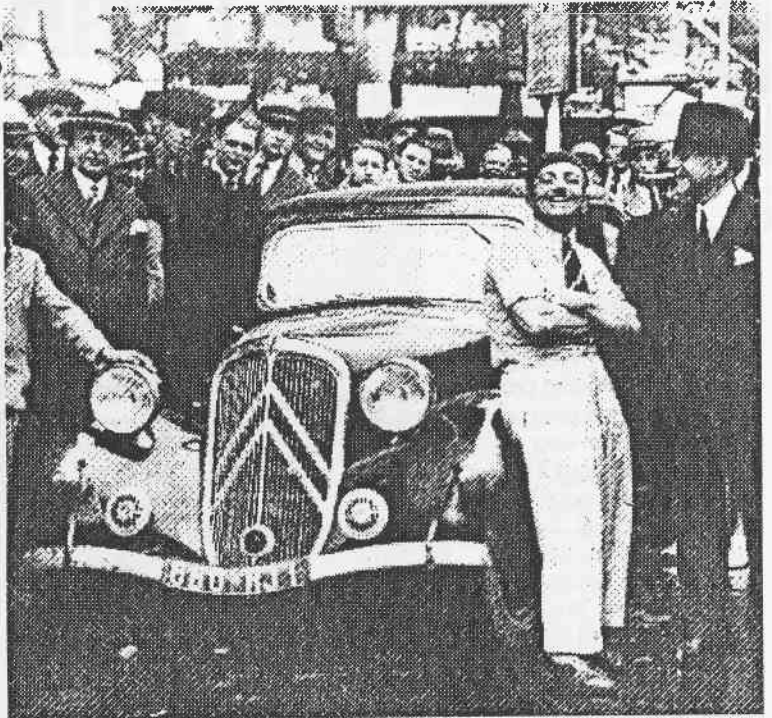


Francois Lecot's *long, long-distance drive*

by John Reynolds

Sixty-six years ago, this 65 year old Citroen owner drove 700 miles every day for a year to set a motoring marathon record that's never been beaten.

Article reproduced from Popular Classics magazine, October 1992



Late one afternoon in October 1935, a black Citroen Traction Avant saloon drove past the Auberge du Morvan. This wayside inn is situated on the Route Nationale Six, halfway between Avallon and Saulieu in central France. Watching it disappear into the distance from a window overlooking the road, la patronne observed to herself that the time was exactly four o'clock and that her children would soon be home from school.

She had not looked at her watch. She had no need to. Every day for the past three months the same Citroen had gone by dead on the dot. Not one second earlier, not one second later she could tell the time by the sound of its passing just as accurately as though from the pips on the wireless or the chime of the clock.

Hunched at the wheel of the Citroen, by now well out of sight and travelling southwards at a steady 40 mph, sat a small, determined-looking man, wearing a black beret and a close-cropped black moustache. His dark eyes twinkled despite the heavy shadow of fatigue on his lower lids. He had driven 400 miles that day, yet there was still another 300 to go.

The following day there would be a further 700 miles to cover and the next and the next... for a whole nine months, no less, until an entire 365 consecutive days of almost non-stop round-the-clock driving had been endured. The long-distance driver crossing the bleak Morvan plateau that sombre autumn afternoon was no ordinary French commercial traveller traversing his territory, but Francois Lecot; a 56-year-old hotel-keeper and amateur rally driver from Rochetaillee-sur-Saone near Lyon. He was in the process of accomplishing a feat of motoring prowess never attempted before or since!

Starting out on July 22 that year, Lecot had begun what remains to this day as the world's longest-ever marathon drive - more than 250,000 miles (equivalent to ten circuits of the globe) covered within the space of a year - an ordeal undertaken not for fame or huge financial gain, but for a friendly bet involving a mere few hundred francs. Since then, no other record-breaking attempt involving a single car driven continually by the same driver has ever come near to rivalling Lecot's achievement. Needless to say, the idea for this extraordinary venture had been

hatched 18 months earlier by that master publicist Andre Citroen. He had been searching for a spectacular way to demonstrate the reliability and endurance of his 'new concept in motoring', the revolutionary front-wheel-drive Traction Avant, which he announced in April 1934.

Though just five foot tall and stockily built, the tireless, tenacious Lecot seemed to Citroen to have all the qualities required for such an exploit. During the summer of 1934, the former cross-country racing cyclist turned rally driver had competed successfully in an automobile



version of the Tour de France, driving one of the first Tractionns to come off the production line.

The event was over 5000 kms which had to be done in 77 hours without stopping.

Following this he drove 5400 kilometres from Paris to Moscow and back, again without stopping, in another 7CV Traction Avant - no mean feat given the roads of the time.

But before Andre Citroen's marathon plans could be carried out (burdened by the massive expense of developing this all-new clean-sheet car) the double-chevron firm experienced the financial collapse that was to bring about Andre Citroen's own demise and lead to the takeover of the marque by the Michelin family. The new management had other things to worry about than paying for publicity stunts and promptly withdrew the offer of sponsorship. No matter - the challenge was irresistible, with or without official Citroen backing.

Refusing to take no for an answer, the single-minded Lecot decided without much hesitation to carry on by himself, at his own expense, raising the 2,500,000 old francs necessary to fund the epic run by mortgaging his hotel business. The start was given at 3.30am, July 22, 1935 in front of Lecot's Rochtaillee hotel, and by noon sharp he was on the Place de la Concorde in Paris, drawing up outside the headquarters of the Automobile Club de France. Half an hour later, after downing a beer and a sandwich, he was on his way home again.

For the next 365 days, Lecot's life followed the same punishing routine, leaving his home at 3.30am and returning regularly by 9.00pm.

No matter what the weather, the indefatigable Frenchman was to spend exactly 18 hours at the wheel of his 11CV Traction every day, following a gruelling schedule that allowed him just half an hour's rest at meal-breaks by day and four hours' sleep at nights, while his car was serviced and repaired.

Following what must surely rank as the most severe test of man and machine

in motoring history, Lecot's itinerary involved a daily 715-mile round trip, heading alternately either north to Paris and back via Saulieu, Auxerre. Sens and Fontainebleau or south to Monte Carlo via Vienne, Montelimar, Orange and Avignon.

He was monitored by relays of official scrutineers from the Automobile Club de France who ensured that an absolute speed limit of 56mph and an average speed of 40mph was observed.

The marathon was



completed without mechanical problems of any kind, although the car was damaged slightly several times en-route as a result of minor collisions and traffic accidents. Lecot's Traction was a standard model—with the only modification being the fitting of a special anti-mist windscreen and the addition of a second left-foot

accelerator pedal, to reduce



leg fatigue. During the entire run the robust 1911c engine required only three major services, although its cylinder head was

decoked ten times due to the inferior quality of pre-war petrol and lubricants, rather than any defect in the car. Its tyres were changed every 15,000 miles. Lecot's trip involved a couple of changes from routine to break the monotony. In January 1936 he took a few days off to compete in the Monte-Carlo Rally, driving to the starting point at Lourenco in Portugal and back before returning home to resume his

normal activities. Then in June he began a series of visits to the great European capitals, driving in turn from Paris to Berlin, Amsterdam, Rome, Barcelona, Vienna and Copenhagen, to clock up another 10,000 miles. But by July he was back to his old habits, driving as usual with such unerring punctuality that people living or driving along his route could set their watches exactly right by the time of his passing.

Lecot's epic marathon ended at Monte-Carlo on the evening of 24 July 1936, with exactly 400,000km or 248,601 miles on the clock. The rugged reliability of his Citroen,

combined with his own steely constitution and iron will, made him a hero throughout France. Sadly, Andre Citroen was no longer alive to see this triumphal demonstration of the technical merits of his Traction Avant—he had died of cancer in a Paris clinic just 20 days earlier, a broken man in every sense.

Francois Lecot survived his ordeal and lived on in retirement for another 23 years, before dying at Albigny near Lyons in 1959, aged 82. Speaking about his epic run, Lecot once told a

reporter: 'The smallest part, the most insignificant component, was daily submitted to the hardest of service, for I never avoided difficulties... I used the brakes, clutch and steering just as hard as any other motorist would have done - but the mileage an average Citroen owner would have travelled in a year, I covered in a month! The road really is the only true test-bench of a car's qualities.' Although Lecot was far too modest a man to say so, there can be no doubt that then, as now, the same remark is true of drivers also.



Citroen BX 16 Valve



When Citroen builds a car, it has always had a policy of doing it differently to other manufacturers.

Historically, the French company has had a reputation for being more than slightly odd-ball: to Australian buyers Citroens are completely outrageous. And that's why they've been viewed with some suspicion in this country. At a time when the idea of Australian automotive nirvana was a three-on-the-tree Holden EH Special, the ugly duckling Citroen DS with its hydro-pneumatic suspension, funny brakes and quirky looks was definitely non-conformist. No matter how well the car drove or how futuristic its specifications, it attracted patronage only from the fringe element, and that perception of eccentricity surrounding the marque has remained to this day.

That situation was redressed somewhat when the mid-sized BX came on to the market about four years ago.

The company had been bought-out by the Peugeot group and as such, many feared that Citroen had lost its individuality as a manufacturer.

While the purists cried that Citroen had dropped its bundle and joined the ranks of more sedate, conventional car makers, the BX definitely opened new markets for Citroen. The car's styling, rather than being at least ten years ahead of its time, followed current trends while still remaining comfortably different. But underneath it retained Citroen's renowned hydropneumatic system operating the suspension, brakes and power steering and its looks, while relatively conventional had enough French chic to attract buyers. And like all Citroens it was not aimed at the boy-racer set. While the whole of Europe and Japan was going mad, stuffing bigger or turbo-charged engines into their hatchbacks, Citroen stayed with more sedate SOHC fours and a diesel. In Australia, we have had two models of the BX, the top-of-the-line TRi and the estate, or station

wagon versions.

Now Citroen has released its proper hot-hatch, the BX 16-valve. The engine is based on the PSA (Peugeot) group's fuel-injected 1.9-litre four, as used in previous BXs and Peugeot models such as the 205 GTi and 405.

But the SOHC has been replaced with a twin-cam, 16-valve head giving the engine a useful power increase, up from the SOHC motor's 75 kW to a healthy 108 kW at 6400 rpm, and 174 Nm of torque at 5000 rpm. If those figures sound familiar, they should because this is the same engine Peugeot uses in the 405 Mi16 which Car Australia was so impressed with when it released here about six months ago.

In much the same way that the 16-valve engine transformed the 405 into an outright performance car, the BX goes from being an honest performer to a rorty, revvy sporting sedan. As that peak power output indicates, this is an engine which loves to rev. Unlike the SOHC engine on which it is based, which was renowned for its reserves of low down torque and flexibility, the twin-cam is more at home in the upper ranges of the tachometer. So while the 16-valve doesn't feel uncomfortable pulling from low engine speeds, it's not really until the tach reaches about the 4000 rpm mark, where it is approaching its peak torque, that things start happening. The 4000 rpm mark is a good change-up point for beating traffic off the lights, but keep the right pedal nailed to the floor and the 7000 rpm redline is reached smoothly with an extra surge of power. There's no roughness, just a smooth - if noisy - progression. So it's a car which has to be stirred along with constant gear changing, but it's such a sweet motor, driving this way is more a pleasure than a chore. The gear change itself is firm and crisp, even if the rather long gear stick with its tacky plastic knob gives a fairly long throw from the first-second and third-fourth gear planes. To keep the engine spinning over nicely, Citroen has opted for low gearing and a similarly low final drive ratio which sees almost 4000 rpm in fifth gear at 120 km/h. So smooth is the engine though, that it feels relaxed at whatever revs it is puffing for high-speed manoeuvres. The only trade-off is a somewhat raucous, but not unpleasant engine note



a road test from CAR AUSTRALIA magazine

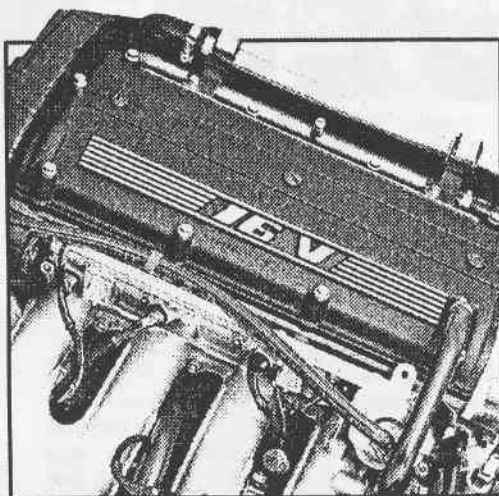
and rather high levels of wind-noise. In outright performance terms, the figures indicate the BX 16-valve is a comfortably rapid car, rather than an outright performer.

The 17.2 second time for the 400 metre dash was a trifle disappointing, but the time was achieved two-up, which is not normal Car Australia practice.

In terms of ride and handling, Citroen's hydropneumatic operated suspension must stand up and take a bow. It really is that good, and almost leaves the 16-valve feeling underpowered. The suspension's hydro-pneumatic spheres, the action of which replaces the more normal spring-damper setup, have been re-valved for a stiffer action and less of the characteristic Citroen body-roll. All the same, despite the system's built-in self-levelling effect there is still some dipping and diving during braking and hard acceleration.

Levels of grip are high, and are aided by sticky Michelin MXV rubber. Handling is remarkably good, although if pushed really hard there is a tendency to understeer. The BX is not phased at all by mid-corner bumps, which are soaked up effectively without deviating the car one iota from its intended line of progression.

The steering is the one weak link which lets the equation down somewhat, for while it is not lacking in directness or pin-sharp accuracy, it's a fairly lifeless set-up which does little to impart any feel back to the driver.



It's not that the power assistance is too light, just the opposite: there's an amount of driver effort involved. It just feels plain dead and lifeless.

The same cannot be said for the brakes, which are perhaps a little oversensitive for one not used to a Citroen brake pedal.

There's very little travel, it just depends how hard the pedal is stood on for the amount of retardation. That said, the brakes themselves work extremely well with little evidence of fade. ABS is a standard fitting on the 16-valvers, and the system Citroen uses pulls the car up smartly in the wet, albeit with the familiar juddering through the brake pedal as the four discs grip, let go, and grip again. The one major area where the 16-valve drew comment was its

looks.

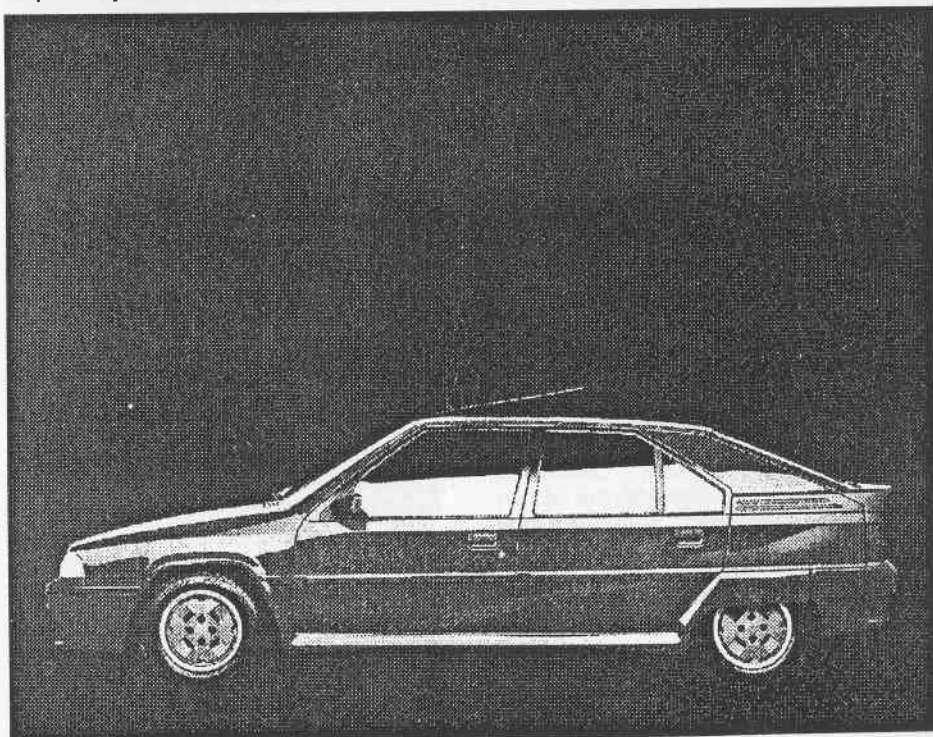
Basically, some loved it, some hated it. There were few who took the middle ground. The BX has always had an angular almost space-age look to it, but the addition of moulded side-skirts which sweep up into boxy rear wheel-arch extensions, and a big-ish rear wing make it positively Buck Rogers territory. Take it or leave it, but either way it's not going to be unnoticed.

Interior space is one of the BX's strong points, and of course the 16-valve version is no different. Rear leg room is particularly generous, although passengers in the back may find the large, sloping hatch starts its downward progression too early, interfering with the amount of head room.

Front seat passengers are well looked after with comfortable, well bolstered seats trimmed in a bright, diagonally striped velour. Head room again is not a strong point but there's an enormous sunroof up there if one wants to ride with the cranium in the breeze. Finding a comfortable driving position is not easy: the pedals seem too close and the steering wheel, which has a pronounced forward tilt, seems a bit of a stretch once the right hips-to-pedal distance is achieved. Although the major dials are smallish, they're clearly readable through the thick-rimmed steering wheel, as are the fuel, voltage, oil pressure and temperature ancillary gauges. The driver's view out the rear of the car is another matter: those thick C-pillars combined with a high spoiler and obstructive high-mounted can make lane-changing a bit of a hit-or-miss affair, literally.

Levels of equipment are high, particularly considering the BX 16-valve is something of a bargain at \$42,900. For your money you get quality interior trim and carpet, a removable stereo unit (which also has a flap to hide it from prying eyes), electric windows and mirrors, air conditioning, central locking and alloy wheels. About the only thing missing is height adjustability for the steering column. There is a lever under the steering column, but be warned: yank that one on the move and it releases the bonnet catch.

As we said before, the price makes it a bargain, and on a dollar-for-chic basis the Citroen BX 16-valve is going to take some beating. Throw in good performance and an excellent chassis and you've got a winner.



CITROËN NEWS

Citroën makes a good start to the year

7 June 2000

Half way to annual target in four months
Citroën Berlingo sales up 84 per cent
100,000 Picasso orders taken in 4 months.

Despite selling more than a million vehicles in 12 months last year, Citroën is not resting on its laurels in 2000 with plans to sell an extra 100,000 vehicles this year and the first quarter results show the French marque is well on target.

Citroën is almost half way to its target after just four months of the year.

Strong growth in the first four months
Citroën's sales figures for the first four months of 2000 rose sharply. Citroën delivered 395,000 vehicles, including 138,400 Xsaras, 104,500 Saxos and 53,000 Berlingos. This was an increase of 43,700 units over the preceding year. The geographical breakdown of this figure shows 33,200 more deliveries in Western Europe and 10,500 more elsewhere in the world. The increases by model were 31,000 for the Xsara, 12,000 for the Berlingo and 3,200 for the Saxo.

Market trends during this period varied from one region to another, with moderate growth in Western Europe and Latin America and stability in China and Central Europe.

Western Europe

Initial estimates give Citroën car and Commercial vehicle penetration of 5.6 per cent, compared with 5.2 per cent in 1999. Registrations were up 11 per cent for cars, well above the market's 2 per cent, and 9 per cent for commercial vehicles, compared with 7 per cent for the market.

Citroën explains the growth by saying it offers car buyers appealing vehicles, particularly in the segments where growth is strongest:

Compact people-carriers, where the successful launch of the Xsara Picasso is boosting sales. Diesel cars, with an increasing number of vehicles equipped with the HDi diesel engine (The proportion of diesel cars on the European market rose from 26 per cent to 31 per cent during the first quarter. Citroën is benefiting from this trend

thanks to a new generation of high-performance, clean-running engines.)

Multi-purpose vehicles, with the Berlingo (+84 per cent) Light commercial vehicles, with an extensive, up-to-date offering.

Last, market response to the restyled Saxo, which came out in late 1999, has been very positive.

On major European markets in France, Citroën's strong early-year performance continued in April. Registrations were up by nearly 17,500 vehicles for the first four months, and market share was 13.5 per cent, compared with 12.3 per cent in 1999.

In Spain, Citroën was the second-ranking marque in the market and number one on the commercial vehicle market in the first quarter, with leadership



positions for the Xsara on the car market and for the Berlingo on the commercial market.

In Germany, the Marque increased deliveries by 11 per cent, despite the continuing steep downtrend (-10 per cent) of the market.

In Italy, registrations rose by 23 per cent on a market that grew by 7 per cent. The success of the Xsara Picasso boosted registrations for the Xsara range by 50 per cent, a performance matched by the Berlingo. In the UK, the proportion of diesel vehicles remained steady, at 13 per cent. Citroën is expecting sales to grow with the launch of the Xsara Picasso in May. Citroën is posting good results in the commercial market.

On markets outside Western Europe deliveries rose by 29 per cent, to 46,700 units.

In Central Europe, deliveries were up 19 per cent. Results were especially good in Poland, Hungary and Croatia.

In Turkey, deliveries jumped from 500 to 2,700.

Gains were recorded in Latin America, too, with Citroën improving its positions in Brazil and Argentina.

In China, total registrations for the four-month period increased from 7 per cent to 9.2 per cent of the market.

These excellent results add up to sustained activity for the Group's plants. They are demonstrating their ability to adjust to the demand and are achieving record production levels, even though delivery times are getting longer.

Early trends in the Picasso launch

The confidence displayed by dealers (100,000 orders) is matched by the response from car buyers in the countries where the vehicle has been launched. Customer orders have climbed to a total of 58,800. Orders are being placed at a slightly faster pace than initially forecast.

Surveys of the first customers in France show that their reasons for purchasing the car are very similar to those mentioned by the buyers of other people-carriers in the M1 segment. The Picasso's powerful and alluring lines win it the highest marks for styling in its class. The driving station and boot capacity are singled out as strong points, and qualities such as modularity, comfort and accessibility also make the vehicle stand out.

Picasso buyers have a sharply different profile from the buyers of traditional saloons, which explains why the other Xsara models have not lost many customers to the new vehicle.

The Picasso attracts customers who are more family-oriented and demanding with respect to the vehicle's interior design. They are also younger: 80 per cent of Picasso buyers are under 55, compared with 45 per cent for the other types of Xsara. It is not surprising, therefore, that a substantial 64 per cent of them are first-time customers.

Lastly, the success of the launch strategy is confirmed by a number of surveys on vehicle recognition.

One month after the launch, more than two people in three already knew the model. The Xsara Picasso even scored a spectacular 71 per cent in aided recall (for comparison, the Xsara saloon scored 48 per cent one month into its launch campaign, the Xantia 58 per cent and the Saxo 63 per cent).

In terms of recognition, therefore, the Xsara Picasso scores as high as models that have already been on the market for a number of years.



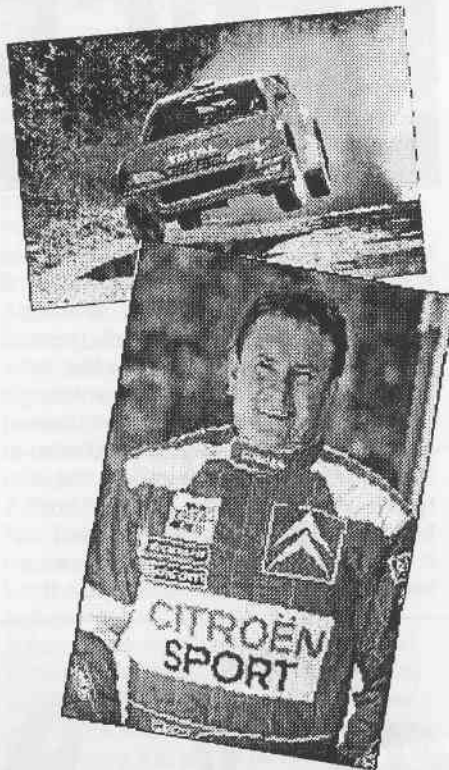
CITROËN PREPARES FOR THE WORLD RALLY CHAMPIONSHIP

Citroën's World Rally Championship plans have moved a step forward with the successful completion of the first loose surface tests on the stunning Citroën Xsara T4 with one of the world's leading gravel experts, Swede Thomas Radstrom, behind the wheel.

While Citroën Sport has yet to confirm the driver line-up for the Xsara T4, the French car maker will not rule out Radstrom as a member of the team.

Other possibilities include French Champion, Philippe Bugalski, Spanish Champion Jesus Puras and Patrick Magaud.

The tests took place near Ales in southern France and Radstrom, a former works driver for Toyota and Ford, believes that the Citroën Xsara T4 prototype is well on the way to being a competitive proposition after covering a World Championship stage distance under mock world



rally conditions in the Citroën over three days near Ales in the South of France.

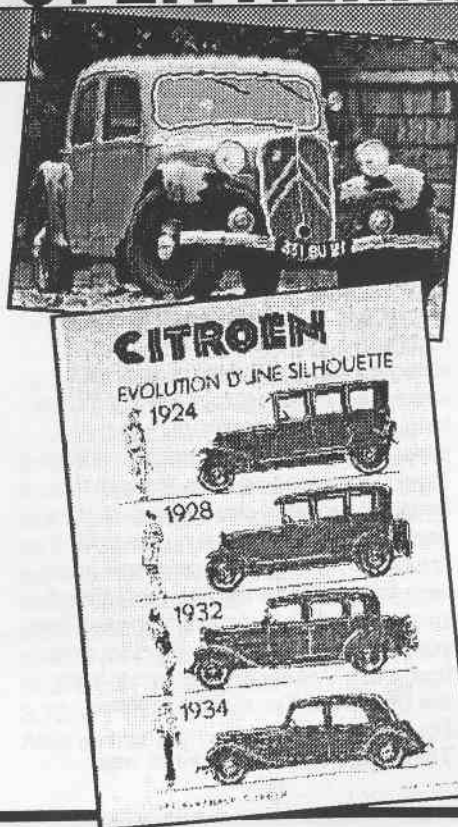
"I must say for a very, very young rally car it feels very good. It's very nice to drive," he said after the test. "We were working quite a lot on the suspension. The test stage was quite rough; it was on the same place Citroën normally test for rally-raids, no big stones like Greece, but big holes. You never know before you compete against other cars, but the first impression feels very good. I think the car is a bit smaller than the Focus, which means the handling and that stuff is a bit easier."

In France the Citroën Xsara, meanwhile, remains unbeaten, with Bugalski sweeping to his fourth successive French Championship win this year on the Limousin Rally, in which he vanquished Simon Jean-Joseph's Subaru Impreza WRX by 57.8 seconds.

CITROËN TO OPEN HERITAGE CENTRE

One of the world's most influential car makers, Citroën, is to open a heritage centre later this year with space to display more than 250 cars, as well as offering a car restoration centre and workshop, a model sales area and a library to contain the archives of the company.

During its long history, Citroën has not only produced cars that have had a profound affect on the whole car industry, such as the Citroën DS, the 2CV and the Citroën Traction Avant, the company has also been at the forefront of developing new technology. This ranges from the helical gears now used by every car



maker in the world and which form the basis of the Citroën double chevron logo, through front wheel drive, aerodynamics and its famed advances in suspension design.

The new Citroën Heritage Centre, which is under construction at the Aulnay Citroën factory near Paris, will bring together Citroën's own collection of classic cars and displays which have, until now, been spread through the company or left in long term storage. The Centre will provide a unique resource for students of the car industry as well as fans and car enthusiasts of the Citroën marque.



Languishing LANGENTHAL

Leon,

It is a while since we have submitted an article for the magazine.

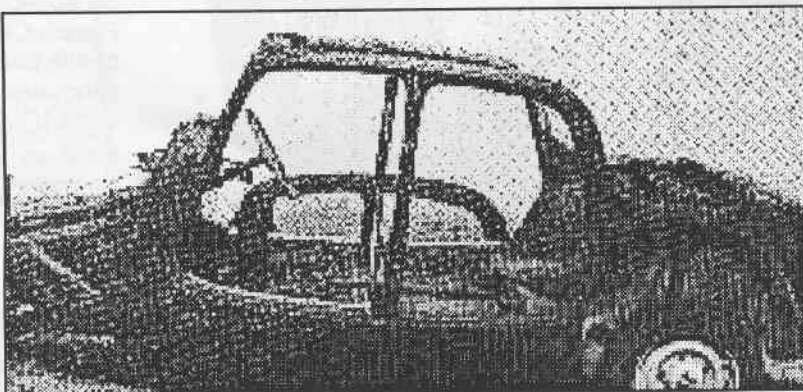
This should make up for that general slackness on my part. An update on CCK 336, our Light 15 with a Datsun 200B engine. Nothing to report really. It has now done over 130,000 miles (210,000 kms) during our ownership since 1986. It has never let us down, never missed a beat.

The term "Swiss watch" comes to mind. The only unscheduled maintenance was a blown head gasket at 100,000 miles, which I think was mentioned in the last letter to you. It is still averaging 30.5 mpg. (9.25 L/100)

But I have to admit that about a week ago it nearly ruined its perfect reputation. Pam and I were cruising into Bairnsdale, just inside the town limits when there was an unusual smell in the car. A quick look at the amp-meter showed the needle flickering and then it slammed to maximum discharge and stayed there, then large clouds of smoke billowed out from behind the dashboard. Well! Bail-out option! A sudden stop on the side of the road, all out! Quickly flick up the bonnet, with no tools on board - I never carry tools, don't need them. Anyway, grab the battery cable in my hand and lift it off the battery post. I always knew my odd habit of never tightening one battery cable would pay off. I do have an extinguisher in the boot but I closely watched proceedings under the dash, which has carpet under-felt on the firewall. A bit of a worry. The smoke cleared and things settled down. The extinguisher stayed in the boot. The fried wire was tracked back to the voltage regulator and cut away. Battery cable gingerly reconnected - no drama. Test system, all go except windscreen wipers. Oh well, work them by hand. Continued our trip, ran our errands and cruised home. For a few days afterwards the car smelt like a just

fired shotgun shell.

Now for another bit of news from our corner of East Gippsland, the centre of Traction restorations in Australia. I certainly will not give Mel a run for his money in this regard, but I have managed to restore one over the last three and a half years. A fairly unusual one - a Big 15 Decapotable, a Langenthal type four-door cabriolet, acquired from Mel about two years before I started on it. The history is unknown but it came from the hilly bits further east of us. It



was pretty much just a bare shell [see pic] with the front floor and sills rusted out and head-on accident damage, with the front horn assembly pushed back more than one inch, making it a write-off according to factory specs. Let me tell you if it wasn't so unusual it would have remained a write-off - it was a massive job. In that regard I was lucky. A neighbor about five kms down our road has a Porta-Power (a car body straightening kit, hydraulic powered) which he loaned out to me. With that, a long chain and a couple of hydraulic jacks I pulled the shell back into shape. Then a long pipe was run through the length of the shell and supported at each end. I could then turn the shell upside down like a barbecue spit or rotisserie to work on the floor and sills. A very civilized way of doing things. A few years ago I acquired two Big 15s, one from Mark Vickery and the other from the Brunswick Tip, thanks to Peter Boyle for saving it.

These supplied most of what was

needed. Mark's was severely rusted out but had usable boot-lid, front suspension complete, front guards and bonnet, and on and on it went. One of the special problems with this job was that all the unique cabrio fittings were missing so I had to modify hood bows from a different car which took about six attempts to get the shape and folding action correct. The over-centre locks and header, the trim strips and numerous fittings were all fabricated from scratch without samples to work from.

Remembering the near lynching I got for fitting a Datsun engine in our Light 15, I thought I'd better stay Citroen with this one so it has an I.D. and four speed in it. Rounding up enough usable parts to assemble an engine, and even finding a reasonable gearbox was.....fun. The success of this project was due in large part to the invaluable

help received from Mel Carey, including supply of hard to find engine and gearbox hardware, and it was also very handy having technical expertise a ten minute car trip away. It was just about quicker to drive over and discuss things than use the phone so a big thank you to Mel and also to his ever friendly and sometimes helpful off-sider Glenn. Also Club Spares came up trumps with every weather seal, grommet, fuel cap, etc. and the Spare Parts Officer was very helpful too! It made this job much simpler than it would have been ten or twenty years ago, when a lot of these parts were not available. To give an idea of the difficulties with the engine, at the moment new crankshaft main bearings are made from "Unobtainium" as are piston rings. To replace mains, old main bearings are re-metalled, fitted to the block and line-bored - about \$1200! I was lucky, the block I used has perfect mains and I bought the last set of new rings in the country from Mel about 18 months ago. They were a Repco De-



or Seidel's Saga

luxe set made in about 1950. When I tried fitting them it turned out that the compression rings had an end gap of 20 thou. (half mm.) The gap should be about 9 thou. The oil rings made up for it with about minus 20 thou. gap - that is too big! More practice with a file. Another for-instance?

Oh, if I must. These wet liner engines are precision machined. Fit one paper gasket under the barrel and liner protrusion is correct.

So.....assemble the engine ready for the head to go on, mention in passing to Mel that liner protrusion was about ten thou. Not good enough! Must be two to four thou. What I have got can't happen! So.....pull the engine to bits

(whimper) - careful of the new rings! - and use my trusty lathe to machine about seven thou. off the top of each barrel. Citroen engines---Humpf! There is a very good Datsun 200B engine sitting spare on the shed floor and I very nearly weakened and fitted it to this car. All the panel beating and painting was done at home. Just as well we live in a rural idyll. Months of rust removal and hammering and banging, with its share of frustration - much relieved by hammering and banging. The upholstery was all done at home too, in front of a nice warm fire on winter evenings, on a Singer table-top sewing machine powered by a windscreen wiper motor. A special foot was made to do carpet edging and another to do seat piping.

Speaking of seats, I thought I might try something different so they are built up with block foam from the back seats of oh I remember! Austin 1800! Luxurious feel and very comfortable. Incidentally we are not connected to mains electricity so all of this was undertaken on battery power. 32 Volt wind generator and photovoltaic solar panels with the 1800 Watt inverter driving angle grinders and drills, and the MIG welder on a 24 Volt battery pack. A V-Twin air compressor was driven by a 1925 Dodge Northeast Dynamotor hooked up to 32 Volts! That made it hum! They must be very well made as it showed no signs of distress. Then came final assembly. Endless hours of fitting panels, upholstery, every grommet, weather-seal, bailey channel, wiring the thing from scratch (with ten fuses instead of the original two - how's that for foresight?), and a fully-wired earth return system to beat poor-earthing problems, all the brake plumbing and hardware- all new.

The initial budget completely overtaken. Final cost about twice the first guess. Finally the great day came, hand it over to Mel for final checking and roadworthiness and registration on the fourth of April Sailed straight through with no problems and now on full registration as we intend to use it a fair bit. After a bit of debugging we tried it on a trip to Melbourne, with some trepidation. 600 kms round trip. Needn't have worried. Absolutely faultless journey. 100 kph cruising, smooth and quiet except for wind noise around the front doors, against a head wind to Melbourne. Re-fuelled at Narre Warren and, adding 6% to odometer reading to correct for error, calculated an average of 36 mpg, about 7.8L/100.

No. That can't be right. Must have made a mistake. Tootled around Melbourne a bit then cruised home at 100 kph with the top down very pleasant. Re-fuelled near home and that worked out to 34.2 mpg, about 8.25L/100. Well there you go. It wasn't a mistake. Now to find out why it is so good. I would have to say it is a little bit of what I would call gutless. No great ball of fire and it dies on hills, in stark, stark contrast to CCK 336 which sails up hills with enthusiasm.

So.....jack up one front wheel, put it in top gear, fit crank-handle, turn and count. At two full turns of the road-wheel, crank-handle turned 3.293 revs, and that turns out to be the standard ID 4-speed diff ratio. That means the engine is doing 2500 rpm at 60mph. This is V8 territory!! 2L fours should do about 3000 rpm at 60 mph, so the ID box actually has an over-drive top gear. So all you budding engineers thinking of fitting an ID and 4-speed, don't use the ID box if you want even a modicum of performance. The DS 20 and DS 21 both have final drive ratios of about 3.7 to 3.8-to-1, which is very close to 3000 rpm at 60 mph. And don't think because the crown wheel and pinion ratio is 8/31 (3.875-to-1), that is what you finish up with. The ID box is like the VW box in that drive is transferred from the clutch shaft to the pinion shaft by gears, so it is a simple thing to change the final ratio by adjusting the ratio of the fourth-speed gear-set. In the ID box this is 32 teeth in, 27 teeth out - an over-drive. The DS CWP-set ratio is 8/35. (4.375-to-1) by 0.85-to-1 top gear gives 3.72-to-1 overall.

After all that I am quite happy with the

outcome, however inadvertent it was. This car is a perfect boulevard cruiser so out-right performance is not an issue, and I rather like the good fuel economy.

What also helps is the carby, an Austin 1800 (again) 1 3/4 inch S.U., which on the first tank of fuel, around home, gave about 18 mpg. Terrible! Right, I'll fix this! Out with the fuel metering needle, bung it in the lathe and re-profile it with some 800 sandpaper and a micrometer. The camshaft has also been re-profiled to a "sports grind" for better breathing. This car has Austin 1800. C. V. joints, the same as CCK 336 and a Holden water pump and an eight-blade fan from a Torana.

The Holden bits were used because ID water pumps are scarce and expensive - the Holden pump is \$40 in stock at any Repco.

Now for the most important question of all, what colour is it? Well, what colour could it be but light green metallic, (in acrylic lacquer). A pigeon pair!, and the soft-top is light tan with the wheels painted to match. (with 185-15 tyres) During painting, the metallic finish complicated things. It needs a clear-coat which is an extra process, and faults in the base coat can't be sanded out as with solid colours. About the middle of painting I wished it was solid colour, but now it is finished this paint is quite striking and literally glows in the sun, so it was worth all the effort. This was a huge project and I stopped counting, near the end, at 3,500 hours. It became rather more than a hobby for a good while so thank you to Pamela for years of support and encouragement, especially during the painting.

There must be something in the country air around Bairnsdale. Two Big 6's, our light 15 and now a Big 15 "Langenthal"

Cabrio all registered and being used, in one country town. Long may it continue.

Yours Warren Seidel



Servicing the D-Series

The routine checks which should form an essential part of any service may well indicate the need for more detailed attention in a particular area. However, the service information is intended to be complete in itself, and I shall approach this in terms of service intervals.

Servicing on D series is arranged in 3,000 mile increments, and is cumulative, so that additional tasks are carried out every 6,000 miles, also every 12,000 and finally every 18,000 miles, the latter being the most extensive scheduled service. The 3,000 mile interval is not an indication of Imperial inclinations within Citroen, incidentally; it equates approximately to 5,000 kilometres, but as you are not all fully metricated.

In the case of a recently acquired car without a consistent - and recent service history, it makes sense to work through a complete major service schedule as rapidly as time and money allows: however, other things being equal, the most frequently serviced items should obviously receive attention first. In any case, it's an ideal way to familiarize yourself with the peculiarities of D series engineering!

EVERY 3,000 MILES:

Drain the engine oil and refill - the capacity is 8 pints (plus 1 pint when the filter is changed at 6,000 miles. The engine should be fully warmed up before draining, to ensure that all the contaminants are held in suspension, and to promote more complete draining. The oil originally specified was a 20 W 50 multigrade, and whilst it is tempting to assume that a modern general purpose multigrade will do the job, this is not necessarily the case. Assuming a reputable brand of oil, the problem lies not with the quality, but with the viscosity. Many modern oils are rated as 15 W 40, 10W 40 or even 5 W 50, particularly in the case of semi- or fully synthetic lubricants. These are ideal for modern turbocharged multivalve overhead camshaft engines, but in crude terms are simply too thin for older designs such as the D unit. (No tractor comparisons thank you - this engine was modern in 1965, and served until 1989 in the CXI!)

The use of these oils in a D - particularly as most have now covered moderately high mileages and a degree of normal engine wear has resulted in increased clearances - will tend to increase oil consumption and visible smoke: the engine may well seem ap-

preciably 'noisier'. The solution is obvious - use only 20 W 50 viscosity oil! Fortunately, there are reputable alternatives to the cheap supermarket/accessory shop type oils which, whilst nominally rated 20 W 50, may well degrade rapidly in use, and frequently have a wholesale cost of less than £1 per gallon - which is less than the reputable oil companies pay for their base stock!

Lubrication technology has moved on from the days of necessarily separate oils for petrol and diesel engines, and there are now 'mixed-fleet' oils available, primarily aimed at the commercial user. These exist in the correct viscosity for the D; an alternative is the 'classic car' oil specifically intended for the enthusiast. If your local supplier cannot assist, both Total (011977 636200) and Millers Oils (011484 713201) produce suitable oils and are willing to advise.

Oil is best changed on a time and mileage basis, and as many Ds now cover only a small annual mileage. I recommend the original 3,000 mile intervals. Remove any metallic particles from the drain plug before refitting, ideally renew the copper washer and do not over-tighten the plug in the aluminium sump! (32-36 lbs/ft).

One indication of the D's age (!) is the absence of sealed-for life steering and suspension joints, which leaves you with six, sometimes seven greasing points on each side of the car. These all use a multi-purpose lithium-base grease such as Castrol LM or Moly, and each requires about three strokes of the grease gun. Multi-purpose greases are compatible with each other so long as they are lithium based, as most are; avoid calcium/lime-based waterproof greases as they interact with the former, resulting in liquefaction.

There are two grease nipples behind rubber plugs in the front wheelarch (accessible with the car on 'high' and full lock; remember to provide support in case the suspension settles!) the top one is for the upper suspension arm bearings, the lower one for the anti-roll bar. The upper and lower steering swivel joints have a grease nipple each—grease only sufficiently to swell the rubber gaiters slightly; if over-enthusiastic greasing has previously displaced the boots, the excess grease must be removed and the lip of the boot refitted into the machined groove. There is a grease point on the drive-shaft, and - the one which is frequently

missed - one upwards behind a plug in the triangular cover plate on the underside, inboard of the wheelarch, serving the lower suspension arm bearings.

The seventh - if fitted - is on the steering track rod.

Replace all the rubber plugs after greasing to ensure that the grease points are not covered in abrasive road dirt 3,000 miles later on!

There are no greasing points at the rear of the car, but you should lubricate the suspension pushrod ball seatings - at the forward end of the pushrods - by inserting an oil can into the rubber dust covers. The cup seating for the ball-end of the pushrod is retained in the cast suspension knuckle by means of a spring steel wire clip: this tends to seize in place, so remove and thoroughly grease it if possible.

Save only for checking the battery electrolyte level (distilled water only) which of course you check for more frequently anyway, that concludes the 3000 mile service!

It is worthwhile checking the security of the battery mountings, because the steel cage-frame has been known to short out the battery terminals if incorrectly fitted, with predictable results. The thick LHM tube from the top of the reservoir must also be correctly located - and protected by a grommet - where it crosses the battery cage. Ensure that the cage mounting bolts do not protrude, or you will dent the bonnet from underneath! For some strange reason, a coolant check is not specified, but the radiator level should be checked when cold and topped up if necessary with an ethylene-glycol based antifreeze such as Bluecol, in a 25% solution. Keep antifreeze in the system permanently, as its anti-corrosive properties are always needed, and avoid the cheap methanol-based liquids - the antifreeze evaporates off, and creates a fire risk in doing so. Lastly, tyre pressures should be 20 psi front in all cases, 26 psi rear (saloons) and 32 psi rear (Safaris). Strictly speaking, this applies only to the original equipment Michelins, but is a valid guide for other makes unless specifically noted otherwise. Next installment - the 6,000 mile service.

NIGEL WILD

From "D-Info Special, "The Citroenian", May 2000



BOOK REVIEW

Citroen, 80 years of future

Citroen: 80 Years of Future
by Roger Guyot and Christophe Bonnaud.
Paris, Editions Roger Regis, 1999.

This is a prestige hard-cover folio of 162 pages, profusely illustrated with black and white and colour photographs and diagrams, produced for Citroen's 80th anniversary.

True to its title, it covers all passenger models (yes, even including a brief description of the embarrassing LN/LNA) from the A type of 1919 to the Xsara Picasso of 1999, and concept cars Pluriel, C3 and the oddly shaped C6 Lignage (I've seen sexier rear ends in McDonald's).

Many of the photos, drawn from private collections and from the Ecole Polytechnique, as well as the Citroen Photo Library, have not, to my knowledge, been published before, and the same goes for many illustrations of commercial vehicles, engines, design concepts and models, advertisements and competitions.

Inevitably, given the scope of the book, the coverage of some categories is negligible, for instance, commercial vehicles are confined to a two page spread, with some small additional segments in the chronological section. So one will look in vain for details of the attractive and versatile C35 series or the quaintly named "Jumpy" (who says the Japanese have a monopoly of absurd automotive model names?). 2CV enthusiasts will also feel miffed by only two pages devoted to these innovative and trusty beasts, although there are further sections on Amis, 2CV Cross etc. However, DS owners will drool over the might-have-been 2100 cc 90 degree V6 engine of 140 hp developed for the DS, described in the book as "handicapped by a motorisation which is all but prestigious".

Which brings me to the only serious criticism I have of this publication, the truly appalling quality of much of the English translation. If you think that I am just being pedantic, try some of these examples for size (and meaning): "Greatness irradiates and blinds those who stuff themselves with it, and can lead to the deadliest mistakes of all" (p.15 - about Andre Citroen); "The wings are rounds and the hood doesn't include more than eight cracks" (p. 35 - about the B14); "For the first times a car made in big set adopts the front wheel but the differential is especially placed in the center which improves in a spectacular manner the masses distribution, the road holding benefits as well as the capacity" p. 44 - Traction Avant); The DS: "It is a real bomb which explodes at its presentation to the Paris show of October month 1955" (p. 52), and finally, "The seats of the 6-H offer with a suspension hydropneumatic an unequalled comfort which invites the passenger to bear away weakly in this interior of velvet where we feel like at home" (p. 47). Enough already!

Instead of employing the FOUR translators credited at the end of the volume, perhaps it would have been better and cheaper to use 'Systran' (machine translation service). Perhaps in 2019? In the meantime we can continue to read the pictures, which are numerous and excellent.

While copies are not available for sale (see last issue of FD), don't forget that this lush production can be borrowed from the Club Library.
Mettez votre reservation immediatement!

Peter Simmenauer



talking technical

SPARE PARTS OFFICER — MEL CAREY

FOR SALE

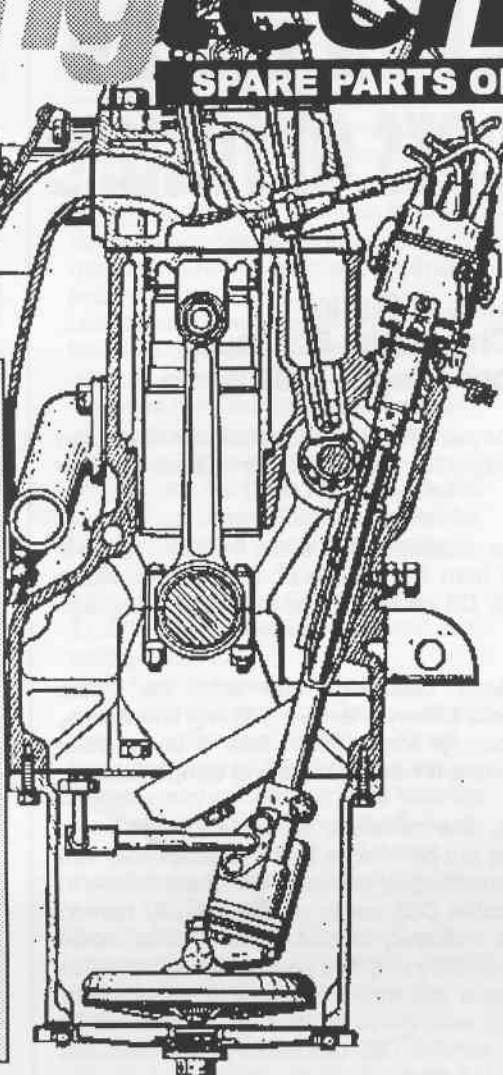
New Twin Carb manifolds for Traction Avant

Cast from an original after-market manifold which utilises two standard carb's. This manifold has been tried and proven to give excellent results.

Enables your engine to perform better, make use of the extra power or the extra fuel economy depending on your driving style.

\$450.00. fitting extra. Phone for a free quote.

Carey Mtrs. 03 5152 1040



TRACTION RESTORATIONS AUSTRALASIA

4 cyl & 6 cyl Traction reconditioned engines and gearboxes
Short or Long engines, standard or modified.

Reconditioned ID engines & gearbox', Short or Long.

Reconditioned 4 & 6 cyl Traction Front Ends, complete.

Reconditioned 4 & 6 cyl Traction front Ends, Silentblocs only.

Reconditioned 4 & 6 cyl Traction & ID Water Pumps

Reconditioned brake master/wheel cyl's

Relined brake shoes

Part engine rebuilds, to customer requirements [Top or Bottom end]

Reconditioned Driveshafts, 4 & 6 cyl Traction with modern CV joints

All the above are offered on a changeover basis.

Carey Motors P/L

Phone Mel on [03] 5152 1040, Mob: 0427 526 126 or Fax [03] 5152 2615 [A/S]

SPARE PARTS MEMBERS

226	Alain Antonius
	Graham Barton
540	Andrew Begelhole
512	Chris Bennet
086	Paul Bishop
320	Peter Boyle
270	Ron Brookes
320	Roger Brundle
335	Walter Burkhardt
380	Mel Carey
250	Gerry Carson
335	John Couche
380	Jeff Cox
320	Sam Crisi
470	Doug Crossman
368	Mark Douglas
320	Jon Faine
380	John Fleming
335	Bryan Grant
374	John Grieve
350	John Hawke
374	David Hayward
350	Paul Hibberd
487	Ray Hobbs
210	Geoff Hooler
340	Jean-Pierre Jardel
335	Fred Kidd
Rob	Koffijberg
374	Robert Little
220	David Livingstone
310	Iain Mather
330	Leigh Miles
330	Derek Moore
250	Mike Neil
368	Richard Oates
330	Gerry Propsting
210	Alec Protos
717	Keith Radford
345	Phillip Rodgers
374	Barry Rodgers
374	Alexander Scales
380	Warren Seidel
330	Peter Simmenauer
350	John Smart
335	Robin Smith
410	Brian Wade
	Bill Wellwood
380	Hughie Wilson



CCOCA *classifieds*

Please note: By law advertisement cannot be accepted without one of the following: registration number, engine number or vehicle identification number.

FOR SALE

The opportunity to be quite different amongst those have already decided to be different. Thus here is the opportunity to be decidedly different Fit 4 wire spoke wheels and a spare to your L15 or earlier model Citroen.

The effect is noticeably different. Hence you can become decidedly and noticeably different.

Five steel wire spoke wheels, tyres Olympic Air-ride 6.00-16, hubcaps, hubspacers and a black, French 16" diameter, spare wheel cover.

Price \$1,000-00

Contact Peter Sandow

phone 039822 4473, 0419 515302.

FOR SALE

Citroen BX

This is the only Citroen my wife has ever liked. That is not to say it's a ladies car.

Rather it has been is a car that has been extremely reliable and cost mere pennies to run.

The only reason for selling is the retro-grade forces of time have influenced my decision making to the point that I have had to buy another CX -- which my wife of course doesn't understand. I thought quite an understandably simple vice.

The BX 19 GT 1987, registered June 2001, good tyres, good condition.

My wife is however keen for me to sell. Price \$4,750-00

Contact Peter Sandow,

phone 039822 4473, 0419 515302.

FOR SALE

1954 Light 15

Excellent condition, regularly used until posted overseas and now in storage in Perth WA. Front drive shafts, hubs and brakes rebuilt. Green colour. MY 2892, DS19 engine with 4 speed gearbox & reverse.

\$11,000

contact: Terry on 08 9364 9711

email teryan@singnet.com.sg or (65) 9833 8443 (Singapore)

FOR SALE

October 1999 Citroen Xsara 1.8 litre manual 5 door hatch. Rouge D'enfer (metallic burgundy) with full black

leather interior trim. Features include air conditioning, alloy wheels, factory sunroof, CD player, electric windows, air bag and immobiliser. 6,500 kms travelled. The vehicle is in "as new" condition and would suit an astute new car shopper.

Registration PVX365.

Price: \$30,500

Contact: Susan Lunn on 0419 513 466 or 9690 0992 (home)

FOR SALE

Michelin tyres

three half worn 165x400 \$150 each

Phone John 03 5683 2308

FOR SALE

One copy each of Fabien Sabates' Citropolis Collection 1997, and 1998, both in French. Hard bound, 6 magazine issues in each Collection. New condition, 1998 still has plastic wrapping. Cost A\$36 each ex-France; make me an offer.

Roger Brundle

(03) 93809321

rbrundle@ozemail.com.au

WANTED

Pair of French headlights for Traction 4, must be complete. Can swap excellent pair of early Lucas units (pre-war style).

For my 1958 ID19. Auxiliary driving lights for front wing mounting; chromed surrounds for front indicator lenses; Slough DS style full hub-caps.

Roger Brundle

Melbourne (03) 9380 9321;

rbrundle@ozemail.com.au

FOR SALE

CX2400 C-Matic Pallas 1981. Blue/beige, manual sunroof, electric windows, Reg 3/2001. Deceased estate sale price: \$2500. Contact David (02)9948 8842 (AH) or (02) 9248 3614 (BH)

FOR SALE

1974 D Special, 20th Century Icon 3 owners, current since 1985, 165,000 miles, fully maintained by Guilio Tombalato since 1992. Reg CAL 303 Contact Nigel Lewis on 9853 0436 or mobile 0418 303 296

FOR SALE

1973 DS23 Shooting Break, purchased Paris 18/8/73. Original French No. plate. Going order, reasonable order and always garaged in shed at Dubbo. Make an offer to Peder Poulton on Fax 6882 7447

FOR SALE

1979 Citroen Dyane, cream, mechanically excellent, some rust, 12 months reg. Michelin tyres, new black Mercedes fabric hood.

Contact Susie Bennetts

03 9684 4500 wk

03 9826 5591 hm

FOR SALE

Citroen Big Six, 1950 Slough built, full ground up restoration, bare metal re-spray in 2-pak Rouge Delage. Upholstery redone with Austrian automotive leather. New hood lining and refurbished woodwork. Engine fully rebuilt with D sleeves & rods. Suspension rebuild with urethane silent blocks. Drive shafts converted to Magna CV joints. All chrome re-chromed.

Receipts for \$24,000 plus initial purchase price.

This car is in excellent condition and is available for sale at \$18,000

REG TA B6

Contact Steve 08 9414 7127

