

Zeitschrift



VW Beetle now on sale in Australia.

March 2013

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Club VeeDub Sydney.
www.clubvw.org.au

A member of the NSW Council of Motor Clubs. Now affiliated with CAMS.



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	vicepresident@clubvw.org.au	
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Amanda Stevens	Norm Robertson (JP)	
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Leigh Harris	Grace Rosch	
Mark Stevens	Quentin Robbins	
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Secretary:	Renee Richards	0438 113 126
Treasurer:	Bruce Walker	0400 119 220
Autofest/Events	Simon Mead	0411 270 260
Registrar:	Iven Laufer	(02) 6254 1142

Club VeeDub membership.

Membership of Club VeeDub Sydney is open to all Volkswagen owners. The cost is \$45 for 12 months.

Monthly meetings.

Monthly Club VeeDub meetings are held at the Greyhound Social Club Ltd., 140 Rookwood Rd, Yagoona, on the **third Thursday of each month**, from 7:30 pm. All our members, friends and visitors are most welcome.

Correspondence.

Club VeeDub Sydney PO Box 1135 Parramatta NSW 2124	or	Club VeeDub (Secretary) 14 Willoughby Cct Grassmere NSW 2570 (02) 9534 4825
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Our magazine.

Zeitschrift (German for 'magazine') is published monthly by Club VeeDub Sydney Inc. Members with email details receive Zeitschrift as a full-colour PDF from our website. Printed black and white copies are available in limited numbers at the meetings.

We welcome all letters and contributions of general VW interest. These may be edited for reasons of space, clarity, spelling or grammar. Deadline for all contributions is the first Thursday of each month; late submissions will be held over.

Opinions expressed in Zeitschrift are those of the writers, and do not necessarily represent those of Club VeeDub Sydney. Club VeeDub Sydney, and its members and contributors, cannot be held liable for any consequences arising from any information printed in the magazine.

Back issues are available as full-colour PDFs from the Editor at the monthly meeting - please bring your own USB stick. Old issues (2006-on) are also available at www.clubvw.org.au

Articles may be reproduced with an acknowledgment to *Zeitschrift, Club VeeDub Sydney*.

We thank our VW Nationals sponsors:

25 years.

Volkswagen Group Australia	H&M Ferman
Andrew Dodd Automotive	Klaack Motors
Blacktown Mechanical Repairs	Vintage VeeDub Supplies
C & S Automotive	Volksbahn Autos Pty Ltd

20 years and over.

Aust VW Performance Ctr	Shannons Car Insurance
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North Rocky & Import Parts	Wolfsburg Motors Sydney

15 years and over.

Indian Automotive	Reliable Automotive Services
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10 years and over.

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Antique Tyres	Les Barlin VW Automotive
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Black Needle Motor Trimming	Rod Penrose Racing
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Canberra VW Centre	Volkspower
Classic Vee-Dub	VW Classic Kirrawee
Custom Vee Dub	VW Magazine Australia
Euro Automotive	Westside Mufflers
Gold Coast Vee Dub	Wolfsburg Auto Melbourne

*Please have respect for the committee members and their families
by only phoning at reasonable hours.*

Old Car Social Club

9th Annual Show & Shine

Sunday 17th March 2013

At Flower Power, Moorebank

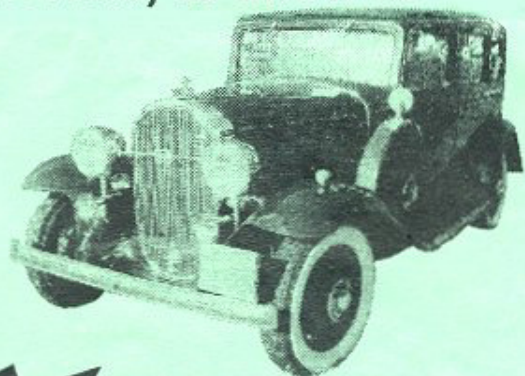
In conjunction with
The Lions Club of the City of Liverpool,
in aid of Diabetic awareness

Gates open 7.30am
Cars in position by 9.00am

Trophies will be presented at 2.00pm

We invite you to bring your classic beauty
(Car, Hot Rod and Commercial) to show at

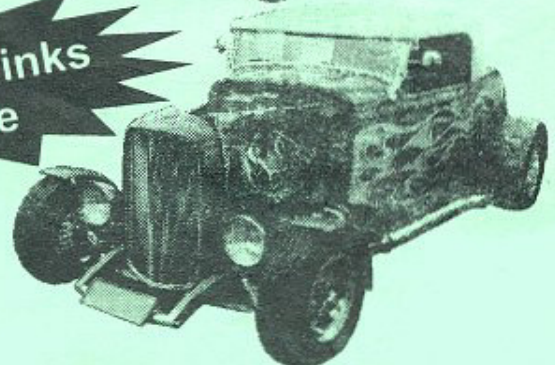
Flower Power
Newbridge Road,
Moorebank



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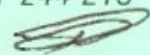


Entry Fee: Display Cars \$10.00 (includes Driver and passenger)
Spectators \$2.00, Family \$5.00

Entry form available at www.oldcarsocialclub.com.au

For further enquiries contact: Neil - 0405 385 235, Jim - 0417 244 213

www.adgraphix.com.au





Mercedes-Benz Club of NSW Presents:

SYDNEY GERMAN AUTOFEST 2013

Car Show & Family Picnic

SUN 24 MARCH 2013 Cars in place
9:30AM for 10:00AM

Gough Whitlam Park, Bayview Ave, Earlwood

Event Director: Nick Harris 0408 228 305

www.mbcnsw.org.au \$10 p/car entry fee

Robertson Classic Car Day

Sunday
14th April 2013

From 9:30am

The event will feature **people's choice** trophies for best European, American, and Australian classic cars 30 years and over; commercial/pickups, most original unrestored car, and ladies choice. Entry is free, but there will be a small entry fee for those wishing to enter the trophy competition. **Club Veedub will have a Volkswagen display - all members are invited to show off their VWs.**

Location: Robertson Railway Common. Take the motorway to Mittagong, Bowral and Moss Vale. Follow the Illawarra Highway to Robertson. Turn at Yarranga Street (Motel on corner) or Meryla Street (Pub on corner) and follow signs.

Venue: Robertson Railway Station is a National Trust-listed heritage structure. We regularly host visits by the famous steam trains from the Thirlmere Rail Transport Museum. The ride down from Sydney and up the escarpment is reckoned to be one of the prettiest in the country. The station complex consists of well preserved railway buildings, the 'Fettlers Shed' Art Gallery and the Railway Village Common picnic area and park. It is an attractive location with gardens, trees, picnic shelters and a renowned Flugelman sculpture celebrating the building of the railway. Vintage Machinery Display. There will be an interesting display of restored and functioning farm machinery and tractors.

Attractions: Known as the Green Heart of the Highlands, Robertson has rolling green hills, rainforests, magnificent waterfalls, stone fences and lush countryside. Stunning views of the ocean can be found two kilometres to the east. Beautiful Bowral, heart of Bradman country, is only 20 minutes away. Autumn colours are a feature of this region and Easter is a particularly lovely time to drive through the highlands. The Illawarra Fly Treetop Walk, with its stunning views over the ocean, is only 15 minutes away and can be enjoyed on your way to or from our fun day.

Village: Has a wonderful old pub, one of only two wooden pubs in NSW, with a sunny deck and bistro, bowling club, cafes, gift and antique shops, and a fantastic **Country Market open on the day**. All are within an easy walk of the Railway Common.

Gallery/ Station Museum & Kiosk: RHRSI will be running a kiosk selling famous hot pies, meals, cold drinks, coffee etc. The Gallery will be hosting a history display as part of National Trust Week's transport theme. Entry is free but a gold coin donation would be welcome. The station also has an interesting history display showing the history of the railway and the engineering feat of building this busy rail freight line.

Contact: Murray, 0407 903857

Club Veedub convoy:

Meet at Uncle Leo's fuel roadhouse at the Crossroads, Liverpool, at 7:45 am for coffee and an 8:00 am cruise departure to Robertson.



Shoalhaven Volkswagen Club presents:



SUNDAY 5th MAY 2013 – from 9.00am

A display of Classic Volkswagens, held at Berry Showgrounds (140 km south of Sydney)

VEHICLE ADMITTANCE - \$15.00

(All funds raised go to charity)

Gold coin donation for a look around

Wander around BERRY MARKETS

VW Supersprint

**SATURDAY 25th MAY
WAKEFIELD PARK, GOULBURN**

COMPETITORS AND OFFICIALS NEEDED !

**COME AND TRY A SUPERSPRINT AND TEST YOUR
DRIVING SKILL ON A REAL RACE TRACK !**

You will need a CAMS L2S licence (\$100). No tests required, just fill out and submit the paperwork. DON'T leave it to race day!

Supersprint entry fee is \$170 (if your entry is received before 17 May), or \$200 after that. Submit your papers NOW !

Your VW needs to meet the requirements of the CAMS regulations. You will need a fire extinguisher, battery triangle, competition numbers, extra bonnet restraint and headlight tape.

You will need a helmet, and non-flammable wrist to ankle clothing (jeans and long-sleeve cotton shirt, or overalls, are OK).

Go to www.clubvw.org.au/2013supersprint for all your paperwork.

Please fill it in and submit to me before Friday 26 April. You MUST have your Club Veedub membership card (or other CAMS club card), your CAMS licence and paperwork with you on the day.

**For more details please call me on (02) 4298 6320 (BH)
or email: clfraser@gmail.com**

Chris Fraser, Supersprint director



Australia's biggest Bug collection.



VW Nationals 1988-2013
Sydney, Australia.

Thanks to our sponsors
for their continued support
over the last 25 years.

VW Nationals 2013.
25th & 26th May.

VW Show Day,
Fairfield City showgrounds
Sunday 26th May 2013

Super Sprint,
Wakefield Park, Goulburn
Saturday 25th May 2013

Contact: David Birchall
(02) 9534-4825



The Legend Never Dies

www.clubvw.org.au

Von dem Herrn Präsident.

Hi all,

Well unfortunately the Sydney VW Drag Racing at WSID was a complete washout and has been postponed to Saturday 29th June. This is a great event that brings together lots VW enthusiasts, so if your car wasn't ready for February you now have few more months to get it finished and get your entry in.

Some great events are coming up. Sunday 17th March is the Old Car Annual Show and Shine at Flower Power, Moorebank and then on Sunday 24th March the 2nd Annual Sydney German Autofest is on at Gough Whitlam Park (off Bayview Ave) Earlwood. So keep an eye on the club calendar in the magazine or on the club website for more details about upcoming events.

The VW Nationals will be on again soon. Planning is well underway, and we will need some help setting up, packing up and during the day. If you can lend a hand at either the Supersprint or on show day it would be much appreciated.

Chris Fraser is again our Supersprint secretary – thanks Chris. He tells me that entries are now open – see the website (clubvw.org.au/2013supersprint). We will again have a raffle for one entrant to have their entry fee refunded. This only applies to early entries and there will be a dollar penalty for late entries and entries on the day.

Speaking of the Supersprint our club is very short on CAMS trained officials to help on the day. If you would like gain your CAMS qualifications please contact Rudi 0418 442 953 and he will tell you how to go about it.

Don't forget if you're coming to the Winter Break at Sawtell in August that you must make your booking very soon – more details next month.

Our club librarian Joe has recently done a stocktake of the library books. Would those members who have borrowed library books and not yet returned them, would you please do so at the next meeting. The library books are for the benefit of all our members.

See you soon,

Steve Carter



Kanberra Kapitel report.

Happy March to you all. The Canberrans ran a combination AGM and Slot Car afternoon in February, please see the report elsewhere in the magazine. Attendance was poor and as a result the AGM was postponed until late this month. We need your help in running the chapter!

On Sunday 17 March, the annual Wheels car show will be run at Thoroughbred Park, gates open 8am. All cars need a driptray (ALL cars), and I believe there will be an admission charge this year. We won't have a lot of space so come early for the show.

The chapter is hoping to have some cars in attendance at a VW show in Albury on Sunday 28 April. We're looking for someone to lead the contingent - any hands up for this one? It would be great to have some cars there so if you're interested please let us know.

May is VW Nationals month, 25/26 May. We want to get a good batch of cars on the road for this one, check the details in the magazine and we'll get some details out soon on our trip there.

If you could all please have a think about AGM attendance and certainly whether you can help us, it would be appreciated. If you want to discuss positions and such please contact anyone on the committee, certainly I am happy to chat about dub stuff. We need you!

We've had a few interested people in club shirts, contact Iven if you have questions, or see him at the next event. We'd love to see members in club shirts at the various events especially shows away from Canberra.

The weekend of 19-20 October sees the Centenary of Canberra Rally. Whilst this is later in the year, interested members need to submit an expression of interest to attend, and pay a deposit, by 31 March (cutoff has been extended). There are a lot of details on the National Trust website, www.nationaltrust.org.au/act/Rally, including a draft program, and details of the rally, leaving Jervis Bay, travelling through Tarago and arriving in Canberra. If you would like to be a part of this historical event, go to the website, download the registration form, and submit it as soon as you can to secure a spot.

Happy dubbing!

Bruce



Klub Kalender.

***** All information correct at time of printing but subject to change - events are sometimes altered or cancelled without notice. Check www.clubvw.org.au for the latest information and any changes.**

March.

Sunday 17th:- Old Car Annual Show and Shine at Flower Power, Moorebank. We invite you to bring your classic VW to display. Gates open at 8:00am. \$10 entry; \$2 spectators. Trophies will be presented at 1:30pm. Phone Noel on 0409 601827 for more info. **VWs meet first at McDonalds, Revesby**, cnr River and Milperra Rds, at 7:30am. Then we can arrive (and park) together.

Thursday 21th:- CLUB VW MONTHLY MEETING at the Greyhound Social Club, 140 Rookwood Rd. Yagoona (right next to Potts Park). Get the latest VW news and views, plus VW socialising, drinks, raffles, trivia and plenty of prizes. Lots of fun, all welcome. 8:00pm start.

Sunday 24th:- Sydney German Autofest, organised by the Mercedes Benz Club of NSW. This year it will be at Gough



New Beetle



Whitlam Park, off Bayview Ave Earlwood, just near Unwin's Bridge. cars to be in place by 9:30am. \$10 entry fee. Contact Nick Harris (MBClub) on 0408 228 305 or events@mbcnsw.org.au for more info.

Monday 25th:- Canberra General Meeting at the Canberra Labor Club, 16 Petrie Plaza, Civic, at 7:30pm.

April.

Thursday 4th:- Magazine Cut-off Date for articles, letters and For-Sales.

Thursday 11th:- Committee Meeting at the Greyhound Social Club, 140 Rookwood Rd. Yagoona (next to Potts Park).

Sunday 14th:- Robertson Classic Car Show at Robertson Railway Station, in the Southern Highlands. Entry from 9:30am, free general admission and \$10 for show cars - trophy presentation at 3pm. Country market stalls, vintage machinery, antique stores, nice pubs. Heritage Train. Food and drink stalls. **Join the Club Convoy at Uncle Leo's, Liverpool Crossroads, at 7:45am for an 8am departure.**

Thursday 18th:- CLUB VW MONTHLY MEETING at the Greyhound Social Club, 140 Rookwood Rd. Yagoona (right next to Potts Park). Get the latest VW news and views, plus

VW socialising, drinks, raffles, trivia and plenty of prizes. Lots of fun, all welcome. 8:00pm start.

Monday 29th:- Canberra General Meeting at the Canberra Labor Club, 16 Petrie Plaza, Civic, at 7:30pm.

May.

Thursday 2nd:- Magazine Cut-off Date for articles, letters and For-Sales.

Sunday 5th:- Berry Blast From the Past show at Berry Showgrounds. gates open 9:00am. \$15 entry, includes an event plaque. Gold coin donation for non-showers to look around. All funds for Shoalhaven Cancer Council. Berry markets to explore. Hosted by Shoalhaven VW Club. **Join the Club VW convoy at Uncle Leo's, Liverpool Crossroads, at 7:00am for a 7:15am departure.**

Thursday 9th:- Committee Meeting at the Greyhound Social Club, 140 Rookwood Rd. Yagoona (next to Potts Park).

Thursday 16th:- CLUB VW MONTHLY MEETING at the Greyhound Social Club, 140 Rookwood Rd. Yagoona (right next to Potts Park). Get the latest VW news and views, plus VW socialising, drinks, raffles, trivia and plenty of prizes. Lots of fun, all welcome. 8:00pm start.

Saturday 25th:- VW NATIONALS Supersprint at Wakefield Park circuit, near Goulburn. VW racers wanted! CAMS licence required. Phone Rudi Frank on 0418 442 953 for more information.

Sunday 26th:- VW NATIONALS 2013 at Fairfield Showgrounds. Australia's biggest Volkswagen show - 45 show categories, trade stands, swap meet, new VW display, kids rides, entertainment, great food and drink, VW fun all day. Phone David Birchall on (02) 9534 4825 for more information.

Monday 27th:- Canberra General Meeting at the Canberra Labor Club, 16 Petrie Plaza, Civic, at 7:30pm.

June.

Thursday 6th:- Magazine Cut-off Date for articles, letters and For-Sales.

Thursday 13th:- Committee Meeting at the Greyhound Social Club, 140 Rookwood Rd. Yagoona (next to Potts Park).

Thursday 20th:- CLUB VW MONTHLY MEETING at the Greyhound Social Club, 140 Rookwood Rd. Yagoona (right next to Potts Park). Get the latest VW news and views, plus VW socialising, drinks, raffles, trivia and plenty of prizes. Lots of fun, all welcome. 8:00pm start.

Sunday 23rd:- Norm's Fish n Chips Run 2013. Relaxing family VW cruise to a nice place for lunch! Details to be advised.

Monday 24th:- Canberra General Meeting at the Canberra Labor Club, 16 Petrie Plaza, Civic, at 7:30pm.

July.

Thursday 4th:- Magazine Cut-off Date for articles, letters and For-Sales.

Thursday 11th:- Committee Meeting at the Greyhound Social Club, 140 Rookwood Rd. Yagoona (next to Potts Park).

Thursday 18th:- CLUB VW MONTHLY MEETING at the Greyhound Social Club, 140 Rookwood Rd. Yagoona (right next to Potts Park). Get the latest VW news and views, plus VW socialising, drinks, raffles, trivia and plenty of prizes. Lots of fun, all welcome. 8:00pm start.

Monday 29th:- Canberra General Meeting at the Canberra Labor Club, 16 Petrie Plaza, Civic, at 7:30pm.

Marktplatz.

All ads should be emailed to: editor@clubvw.org.au
Classifieds are free for Club Veedub Sydney members, and \$10.00 for non-members. All ads will be published here for two months.

All published ads will also appear on our club website, www.clubvw.org.au Photos can be included on the website but not in Zeitschrift. All ads will appear in Zeitschrift first so our members have first chance to see them. They will then be transferred to the club website on the third Thursday of the month.

Non-members please post us a cheque or money order for \$10.00, payable to: Club Veedub Sydney, c\ -
14 Willoughby Cct, Grassmere NSW 2570.

New Ads.

For Sale:- VW Genuine Parts from 1960-1974 model Beetles and Kombis. Engine overhaul parts, main bearings (std and oversize), conrod bearings, cylinder heads, clutch parts, gearbox mountings, tail pipe and damper kits, blinker switches, starter motors, generators, alternators, and many hard-to-get original NOS VW parts. Contact Lorenze on (02) 9630 1048 (Northmead).

For Sale:- VW Parts:

Gear-box 1971 - Beetle. Front beam - Type 3
Wheels: - 4 studs - set. 5 studs - set
Mag Wheels. Bull Bar - Kombi. Steering Wheel
etc. etc.
Call Salvador - Mobile 0423 409 718
+ Residence in Blacktown

For Sale:- 1969 VW Beetle, metallic purple. 3rd owner, restored - must sell! Regretfully my beloved buggy must go. Now I have 2 small children it is time for her to go to a new home. I have a 13 year work history log, mainly with 2



mechanics, 1 mechanic was family for 5 years of her life, so was looked after and serviced often. Semi restored 3 years ago, all rust removed and re-sprayed metallic purple (Violene) by the amazing Andy's Restorations at Kurnell. Family has owned 5 beetles spanning over 40 years. My baby's details are below:-

- Mainly 2 mechanics over whole duration of ownership (reputable VW specialist C and S Automotive Padstow)
- New paint in 2000.
- New doors in 2000.
- New side trims in 2000.
- New carpet interior and trim replacement as of Jan 2013.
- New Kenwood CD/MP3 January 2013.
- New glove box and bonnet lever as of January 2013.
- Serviced as of 2013.
- New muffler as of December 2012.
- Interior professionally cleaned and car detailed Jan 2013.
- New re-dipped bumper in 2012.
- New silver trims in 2012.
- Desirable Ronal mags
- Clean engine.
- Some rust in bonnet grill and guard at front, otherwise clean.
- Tinted windows.
- New window spray bag.
- Car cover.
- Service book for year.
- Working speedo, lights, wipers, window spray, odometre and petrol gauge.
- 13 year work history log with receipts in the thousands - detailing all works.

Always more work for an enthusiast, ready to go first car, or someone who always wanted to own a VW Bug. So much cash and love in this baby, selling for much under spent value. VW2311 personalised plates NOT included sorry, number plate BI55NF.

Garaged at Wolli Creek, could organise delivery South (Wollongong), City Sydney CBD, Inner West (Rozelle) or depending of sale price towed as far North NSW (Taree). Slightly negotiable on price to the right owner, expect me to cry on your shoulder if you're the lucky new owner! Can view more photos on gumtree.com.au and carsales.com.au. \$9k ONO. Contact Allison on 0405 137 910.

For Sale:- Various VW promotional items. Feb/Mar 1990 issue of 'Australian VW Power.' Sales brochures for 1990 T3 Kombi. SC Pickup, DC and Tristar Pickup, DC Syncro and Tristar Syncro, Caravelle brochures. Ateco T3 price list. All in mint condition. \$25 including postage for the lot (only one set available). Phone Bevan on (02) 6645 4502.

2nd Month Ads.

For Sale:- 1972 VW Superbug, completely restored inside and out. Full respray, new interior, new headlinings, trim, front boot lining, new heads, chrome tinware, dual carbs, bluetooth stereo, and much more. Priced well below cost. Asking Price \$14,900.00 Contact Garry Braams on (Mobile) 0425 360 002 or email gazdog1960@gmail.com

For Sale:- 2-litre Kombi engine, recently reconditioned. Honed, new rings (std), new std big-ends, new std mains, new

gaskets throughout. All parts from Vintage Veedub Supplies. POA. For more information contact Robert White on (Mobile) 0419 304 863.

For Sale:- 1978 2-litre Kombi Camper. A1 condition. Mid-section pop-top, sunroof, aluminium bull bar, driving lights. Kenwood radio-CD, roof rack, wide wheels. Engine recently overhauled by Wolfsburg Motors (Sydney). Same owner for 32 years. Logbook covering every service / repair. Engine manuals, VW literature. Rego until October 2013. \$16,500. Phone John on (02) 9999 2993. Car is at Bayview, Sydney.

For Sale:- 1970s Kombi tent to sell, in good condition. Attaches to side of van with centre pole. Comes with bags and pole asking \$350. Contact Bob Mark on (02) 4234 0930 or (mob) 0437 675 969. markfami@tpg.com.au

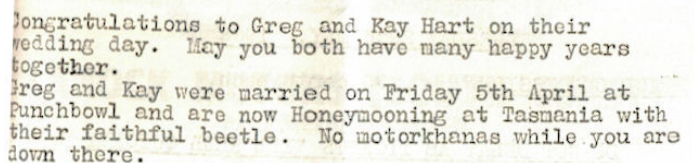
From the Editor.

One of the most popular segments in Zeitschrift is the old Volkswagen ad, with a different one on the second last page (the inside back cover) each month. We've been doing this for nearly four years now, and I hope you have enjoyed seeing some classic old ads you mightn't have seen before. Sure, the US VW ads are very common and easy to find; there are lots of books about them, and you can see dozens of them on websites like The Samba. But Aussie ones are much rarer, and more interesting.

We trade some club magazines with VW club friends in the USA, and I've noticed that some of them have also started to publish old VW ads in their club magazines – and on the second back page too! They print the usual US VW ads from the '60s. And our friends at the VW Club of Victoria have also started doing the same thing. We must be doing something right! Thanks guys - sincere flattery!

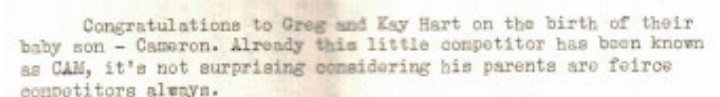
I have a lot more unique Australian VW ads from the '50s, '60s and '70s to come – at one a month I have enough for at least 10 more years! You may have noticed the last year or so has seen double-page ads; I have lots of VW UK ads in that format to print for you too.

You may not know that the State Library (and its Mitchell Library) has a number of VW Club magazines deep in their archives. I recently spent a couple of days reading issues of the Volkswagen Club of NSW's 'Club News', from 1960 up to 1972, and then their renamed magazine 'The Wageneer' up to 1978 (so far). I was able to scan the best articles (and VW ads) I came across, and will republish them in future issues. Hello to members Greg and Kay Hart – I saw your wedding announcement in April 1968, and the birth notice of Cameron in October 1972!



Congratulations to Greg and Kay Hart on their wedding day. May you both have many happy years together. Greg and Kay were married on Friday 5th April at Punchbowl and are now Honeymooning at Tasmania with their faithful beetle. No motorshans while you are down there.

vwvwvwvwvwvwvwvwvwvw



Congratulations to Greg and Kay Hart on the birth of their baby son - Cameron. Already this little competitor has been known as CAM, it's not surprising considering his parents are feirce competitors always.

Trades and services directory.




Building No:167
Unit 1, 143 - 155
Bonds Rd Riverwood
NSW 2210
m: 0437 042 386
w: 9534 1077



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I also found the entire collection of the VW Historical Society's 'True Blue' magazine, from 1991 to about 1998 when they folded. Their magazine was rather small but I did find a few interesting articles that I will reproduce in future issues.

As Zeitschrift is preserved as a PDF on our website, where people all over the world can read the older issues, this may be the only way these interesting old articles will ever find an appreciative audience – unless you are prepared to spend a day in the Mitchell Library.

One thing I noticed from these old magazines from other VW clubs is that their editors were always begging for something to publish. They were always short of material; the Wageneer often varied from 44 tyewritten A5 pages to as little as 16, depending on what was to hand. And yes it all had to be typed on stencils and printed with a Gestetner – just as our first issues were. But we don't have the content problem. I have enough articles up my sleeve right now for three magazines, and my biggest problem each month is what to leave out this time...

And yes, Zeitschrift is also preserved in the State Library. However I understand their collection of issues is

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not complete, so next time I'm there I'll get out the collection and see what's missing. If you have any old issues of Zeitschrift in boxes in your garage I'd be interested in hearing from you – your copies could get donated to the State Library for posterity! Watch this space.

With my daughter Lily starting high school this year and turning 12 recently, I'm finding it harder and harder to get to club events on weekends. I made the Watercooled Run, and Lily loved the Pizza night, but I missed the Thirlmere Steam Day, Sydney Swapmeet and Hawks Nest Motorfest – and we would have missed the Drag Day too if it wasn't rained out. So there are no reports on these events in this issue. I have to thank my writers Joe and Peter, who often send me event reports, but unfortunately no one sent me any this time. I need a roving reporter / photographer for events – is anyone interested?

Keep enjoying Zeitschrift!

Phil Matthews

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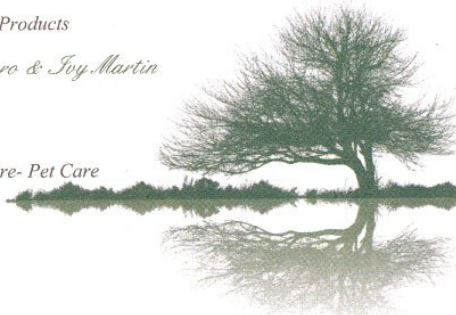
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Golf 7 almost here.

Volkswagen Group Australia has promised sharp pricing on its new seventh-generation Golf when it arrives in Australian showrooms at the end April.

The fast-growing German-owned company, which finished eighth on the Australian sales ladder (in front of Subaru and Honda) last year, says it will also be armed with good launch supplies of the mass-selling small car that accounts for up to 40 per cent of its local sales volume.

Volkswagen is celebrating its 60th anniversary in Australia this year, with advertisements already including a logo saying '60 years in Australia'. This is slightly premature. Regent Motors (Melbourne) did display the first two VWs in October 1953, but official Australian sales did not commence until March 1954 (Victoria) and April 1954 (NSW). In fact the official NSW Volkswagen launch was at the 1954 Sydney Royal Easter Show.

2013 is already being described as the year of the Golf.



Volkswagen Group Australia (VGA) managing director Anke Koeckler declined to say how the company would price the new Golf, which will be introduced in base-model form and then expanded with the hot GTI hatch late this year.

"You will be astonished," she said when asked about planned pricing.

The current Australian Golf range starts at \$21,990 for the five-door 1.2-litre 77TSI, and tops out at \$49,990 for the flagship Golf R.

This year, Volkswagen will have the added complication of the similar-sized Skoda Rapid's arrival from the VW Group stable, a car that will almost certainly be priced below the cheapest Golf.

Most pundits expect a sub-\$20,000 price for the Rapid, with the Golf starting in the low \$20k range, about the same as the current Golf base model.

An all-new Skoda Octavia mid-sizer is also due later in the year, further complicating matters.

The Golf 7 – built on the German company's all-new MQB platform that also underpins the new Audi A3 and upcoming Skoda Octavia – will be the highlight of VW's model launch program this year. Other cars on the launch pad include the new Mexican-made Beetle, and the much anticipated V8 diesel Tourareg flagship SUV in March.

In commercial vehicles, VW is set to tweak the Amarok ute and launch a new variant of its Caddy compact van – adding a removable rear bench seat and windows to the Caddy Maxi cargo van for flexible load carrying.

Ms Koeckler declined to predict Volkswagen's sales tally this year, saying it would be a year of consolidation for the company. She said that while some models such as the current Golf were in run-out, good supplies had been promised for the rest of 2013.

Last year, VW sold a record 54,835 vehicles – up 22.6 per cent on 2011 – despite a slight 6.0 per cent decline in Golf sales, which fell to 17,289 units. However, VW more than made up for that with big gains in sales of its Amarok ute and Polo light hatchback, up 154 per cent and 36 per cent respectively.

Despite predictions this time last year that Skoda might double its volume again in 2012 after achieving the feat in 2011, the Czech brand flatlined with zero growth last year, on 3502 sales.

Ms Koeckler said VGA had taken the decision not to compete on price with Skoda in an increasingly competitive market late last year, instead concentrating on building the VW brand.

She said the market had become increasingly aggressive in the second half of 2012, and VGA had taken the decision not to go toe to toe with Renault, Citroen and Peugeot.

However, with the new Rapid small liftback hatch and larger Octavia set for launch this year, Skoda sales are expected to lift in 2013.

Ms Koeckler said she was upbeat about VW's sales performance, saying: "Things could not be better. And we are looking forward to doing even better over the next couple of years."

VGA has confirmed that the Golf will get VW's BlueMotion fuel-saving technologies at launch, but the new Golf R – which will make its first appearance at this year's Geneva motor show – will not appear until 2014.

2013 Beetle released.

The all-new Volkswagen Beetle has finally been released in Australia, launching almost 60 years after the original 'people's car' first landed on our shores in late 1953 (and went on sale to the public in early 1954 – the Beetle's NSW launch was at the 1954 Royal Easter Show).

Dubbed the '21st century Beetle', the second-generation Mexican-built hatchback enters the market as a belated replacement for the Golf 4-based New Beetle that first launched here in 2000 and was discontinued in 2011.



The new larger Golf 6-based Volkswagen Beetle range is a simple one, with just one engine and two transmission options, and prices ranging from \$29,990 to \$32,490.

Under the bonnet sits a 118 kW/240 Nm twin-charged (turbocharged and supercharged) 1.4-litre four-cylinder petrol engine – familiar from the Volkswagen Golf and a number of other Volkswagen Group models. Paired with the standard six-speed manual transmission it consumes 6.8 L/100 km and 6.4 L/100 km with the optional seven-speed dual-clutch automatic (DSG). Accelerating from 0-100 km/h takes 8.3 seconds, regardless of the transmission.

At 4278 mm long, 1808 mm wide, 1477 mm tall and riding on a 2524 mm wheelbase, the new Volkswagen Beetle is 149mm longer, 87mm wider and 21mm lower than the previous-generation New Beetle, as well as 8 mm longer between the wheels. The new model uses the PQ35 platform with the outgoing Golf Mk6, while the coming Golf 7 will use the new MQB platform. With the windscreen shifted back and the roofline extended the designers have created more space inside the four-seat cabin, and also increased boot capacity from 209 to 310 litres.

Standard exterior kit includes 17-inch alloy wheels (with space saver spare), front fog-lights, front and rear parking sensors, tinted windows, black diffuser with twin chrome tailpipes, and a rear spoiler.



Sporting a striking body-coloured dashboard, the Beetle's cabin is equipped with cruise control, dual-zone climate control, auto wipers and an auto-dimming rear-view mirror, flat-bottomed leather steering wheel, cloth upholstery, 50:50 split fold rear seats, and an eight-speaker audio system with 6.5-inch touchscreen display, six-disc CD stacker, AUX/USB/SD card inputs, and Bluetooth phone connectivity with audio streaming.

The Beetle's five-star ANCAP-rated safety package includes four airbags (dual front and sides) and electronic stability control, along with a number of other active and passive systems.

The \$2700 Technology Package adds bi-xenon headlights, LED daytime running lights and LED rear number plate illumination, electric folding mirrors, push-button start, and a low tyre pressure indicator.

The \$1800 Sport Package features larger 18-inch 'Twister' alloys, dark-tinted windows, steering wheel paddle



shifters (DSG only), and boost pressure, oil temperature and stopwatch gauges on the dashboard.

Other major options include satellite navigation (\$2500), straight black or black and red leather upholstery (\$3500) and a panoramic sunroof (\$1700).

Volkswagen Group Australia has also secured 200 special Beetle 'Fender Edition' cars for our market. The limited edition models, which pay homage to the legendary American musical equipment company, will arrive in showrooms from late May with a \$34,490 price tag – \$2000 more than the DSG model on which all will be based.

Unique to the Beetle Fender's exterior are 18-inch 'Disc' alloy wheels, bi-xenon headlights with LED daytime running lights, chrome mirror covers, Beetle badging on the tailgate and Fender nameplates along the sides.

Its cabin scores a 'Sunburst' guitar-inspired dashboard, brown stitching, cloth/leatherette upholstery, three-colour ambience lighting and a Fender premium audio system with eight speakers and a subwoofer.

The Volkswagen Beetle Fender is available exclusively in Deep Black pearl-effect paint.

Volkswagen Australia has also announced a capped-price servicing program for the Beetle, following in the footsteps of the Volkswagen Up! city car. The maximum cost of the first six services (which covers 90,000km or six years) is \$2623, with the price of individual services ranging from \$375 to \$638.

2013 Volkswagen Beetle manufacturer's list prices:

Beetle six-speed manual – \$29,990

Beetle seven-speed DSG – \$32,490

Beetle Fender Edition seven-speed DSG – \$34,490

VW Beetle gets 5 ANCAP stars.

The Volkswagen Beetle (along with the Ford Kuga and Mitsubishi Mirage), have all been awarded a maximum five-star safety rating by the Australasian New Car Assessment Program (ANCAP) in the latest round of new crash tests.

In achieving its new five-star safety rating, the new Volkswagen Beetle has bettered the previous New Beetle's four-star mark. With dual front, side, and curtain airbags, anti-lock brakes, electronic brake-force distribution,



electronic stability control, and seatbelt reminders all standard, the new Beetle scored 35.28 out of 37.

ANCAP chairman Lauchlan McIntosh said it was encouraging to see that nearly 70 per cent of new cars sold in the first month of 2013 held a five-star ANCAP safety rating.

“ANCAP wants to see this positive trend continue as we raise the bar for all safety ratings year on year,” McIntosh said. “More five-star cars on the market means safer drivers, occupants and pedestrians.”

Almost all of VW’s Australian passenger vehicle range is now ANCAP 5-Star, the exception being the 4-Star Eos hard-top convertible (last tested back in 2007). The Caddy and the Transporter are also 4-Star, although the VWs were the first commercial vans ever to receive a 4-star rating (in 2008).

“It’s consistent with results from Euro NCAP, and we’re pleased with the welcome confirmation of the European results,” said VW spokesman Karl Gehling. “The Beetle is Volkswagen’s 11th 5-Star car, including the Amarok – the first dual-cab ute to ever receive a 5-Star rating.”

All ANCAP crash test results can be seen at www.ancap.com.au

Beetle R for Australia.

Volkswagen Group Australia boss Anke Koeckler says the Volkswagen Beetle R will be near the top of the company’s wish list if the high-performance concept is confirmed for production.

Koeckler said the local division would “certainly” consider offering the Beetle R if it were made available for our local market.



“If it is coming ... [it is] on our agenda,” Koeckler said. “We are always passionate about R models.”

The Volkswagen Beetle R concept debuted at the 2011 Frankfurt motor show boasting a sports body kit, 20-inch wheels, racing seats and an engine of undisclosed capacity and performance but rumoured to match the 199 kW of the 2.0-litre four-cylinder turbo in the Volkswagen Golf R.

So far Volkswagen only offers an ‘R-Line’ styling package overseas, but Koeckler says she is more interested in introducing a vehicle with the concept’s added performance.

“We haven’t looked into that [R-Line] yet. If there is an R Beetle then probably I would rather go for an R Beetle.”

Koeckler said Volkswagen’s decision to launch the Beetle in Australia with just one engine – the 118 kW/240 Nm twin-charged 1.4-litre four-cylinder – was intended to reduce complexity for customers and dealers. She said the team had a short discussion about offering a diesel alternative but quickly decided against the idea.

“I wouldn’t say this is for the whole product lifecycle. You can imagine over the product lifecycle maybe to add on one and maybe discontinue the 118TSI, but we haven’t decided yet. For the time being we are just staying with one engine.”

In the UK the Beetle is available with a range of engines, including the 1.2-litre 77TSI and 2.0-litre 147TSI petrol units, and the 1.6-litre 77TDI and 2.0-litre 103TDI diesels.



Koeckler said the decision to launch with a single-variant line-up meant it would look closely at special editions like the Beetle Fender Edition – due to arrive here in late May – to keep the range fresh.

“This is something we can look into in the future to keep the Beetle alive. It’s always with these certain niche models that once you bring this car in the market there is huge interest and then there’s also a very significant drop.

“In order to avoid it, you bring those specific models to the market in order to keep it for a long time during the product lifecycle.”

Depending on the sales drop-off rate, Koeckler said Volkswagen Australia would look to introduce a new special edition model every one to two years.

She confirmed one special edition that has caught the interest of Volkswagen Group Australia is the Beetle GSR that debuted at the Chicago auto show earlier this month. It is a modern interpretation of the 1973 ‘Yellow and Black Racer’ version of the German 1303S (Superbug L) that was fitted with satin black bonnets, wider wheels, leather steering



wheel, sports seats and special trim (but stock 1600cc mechanicals). It was not sold in Australia (our normal Superbugs were assembled in Melbourne).

The modern yellow and black GSR borrows its 155 kW/280 Nm turbocharged 2.0-litre engine from the Golf GTI and will be limited to just 3,500 units worldwide (exactly the same number as the 1973 Y&B Racer), with a small right-hand-drive allocation confirmed.

“[The Beetle GSR is] also probably a car we have to look into as it is a performance-oriented car and, you know, Australians love those,” Koeckler said.

One variant that won't make it to Australia is the Beetle Convertible, with Koeckler believing Volkswagen already has the local market covered with the soft-top Golf Cabriolet and the Eos hardtop.

“As the convertible market in Australia is not that big, I think you would agree that we don't need three convertibles in our model range.

“Honestly, we think that we are pretty well established with two and we don't need a third one so we are not going with launching the new Beetle Convertible.”

VW Polo wins Rally Sweden.

Sébastien Ogier has won Rally Sweden 2013, held 7-10 February, in his VW Polo R WRC. It was a big victory for the Frenchman, and especially for Volkswagen who got their first-ever win in the World Rally Championship.

After two rallies so far in 2013, Ogier leads the championship in his Volkswagen Polo R WRC.

“Incredible!” the winner shouted out with joy as he reached the finish in Karlstad after four days of intensive competing on perfect roads with many enthusiastic spectators.

In the earlier Rally Monte Carlo Sébastien Ogier was just beaten by the reigning World Champion Sébastien Loeb in his Citroen DS3 WRC. In Rally Sweden the less known Sébastien hit back. Already on the second special stage he took the lead and then controlled the rally from the first position. He was superior to his competitors, won 10 of 22 special stages and finished 41.8 seconds ahead of Loeb in second place.

“It was a perfect weekend for us! I am proud, happy and surprised,” Ogier shouted out with joy as he kissed the Volkswagen Motorsport sign at the front of his car.

The reigning World Champion Loeb could only congratulate his superior. “He has done a very strong effort. We did a bad qualifying stage and got a bad starting position the first day,” Loeb said. The defending 9-time World Champion was the first Frenchman – and non-Scandinavian driver – to win Rally Sweden back in 2004, his only victory. Now Sébastien Ogier joins him in a unique club.



The first stage was a Super Special Stage held at the rally base in Karlstad. WRC fans had the chance to vote on the Rally Sweden Facebook page as to who they wanted to see starting the rally head-to-head. The majority of fans voted for French Sébastien Loeb vs Sébastien Ogier, bitter rivals from when Ogier was the number two driver at Citroën. Other ‘dream heats’ include Finns Mikko Hirvonen and Jari-Matti Latvala going head-to-head as well as two young Scandinavian drivers Mads Østberg vs Pontus Tidemand.

The first full day of the rally was made up of seven special stages to the north of the rally base, mostly taking place in the region of Hagfors. Stages four and seven took place near Torsby. The day ended with the second and final running of the Karlstad Super Special Stage.

Day two had eight stages across the region of Hagfors. Day three started with the longest stage of the rally, the 27.07 km stage of Mitandersfors near the region of Torsby and crossed the border into Norway. The next four stages took place near the Norwegian town of Kirkenær while the final stage went back to Sweden, taking place in Torsby which is also the Power Stage.

Overall, Sébastien Ogier's Volkswagen Polo R WRC finished 41.8 seconds ahead of Sébastien Loeb's Citroen DS3 WRC. In third place was the Ford Fiesta RS of Mads Østberg



and Jonas Andersson. The second VW Polo R of Jari-Matti Latvala and Miiikka Anttila was fourth.

This is the Volkswagen Group's first WRC win since the days of the glorious Group B Audi Quattros in the 1980s. Hannu Mikkola won the Swedish Rally in an Audi Quattro in 1981 and 1983, with Stig Blomqvist's Quattro winning in 1982 and 1984. The SEAT Cordoba WRC (1998-2000) had several podium finishes but no wins, while SEATs and Golfs have raced in the lower 2 and 3 categories. Today's top rally cars are just 1.6 litres, with half the power of the mighty 1980s Group B cars, so it is a different world today.

The next round of the 2013 WRC will be the Rally Mexico in Guanajuato, 8-10 March.

Golf R Cabriolet.

Details on the coming Volkswagen Golf R Cabriolet have been released, revealing that the German brand's first-ever open-top 'R' model and fastest-ever production convertible Golf will also be the marque's first Golf R variant not be underpinned by a four-wheel-drive system.

Powered by a 195 kW turbocharged 2.0-litre four-cylinder engine (down 4kW on the European specification Golf R), the front-wheel-drive Volkswagen Golf R Cabriolet comes standard with a six-speed dual-clutch automatic gearbox, LED daytime running lights, bi-xenon headlights with black housings, tinted LED tail-lights, gloss black mirror caps, black R-stamped brake callipers, and a gloss black rear diffuser flanked by chrome-tipped exhausts rather than the current Golf R hardtop's centrally located twin system.

The new soft-top Golf R will reach 100 km/h from standstill in 6.4 seconds (just shy of a second slower than the hardtop's DSG-enabled 5.5 second sprint time) and can hit an electronically limited top speed of 250 km/h.



A unique front bumper highlighted by a gloss black grille and 'R' logo, join 25 mm lower (than a standard Golf Cabriolet) 'R' suspension, and 18- or 19-inch 'Talladega' alloy wheels finished in either 'Sterling Silver' or 'High-gloss Black' in providing the necessary exterior look. Four individual leather 'R' sports seats, a leather-wrapped multifunction steering wheel, handbrake grip and gear lever, and brushed aluminium pedals complete the theme inside.

A DAB radio with multi-device interface (MDI) and Bluetooth connectivity are all standard specification on the new Golf R Cabriolet, as is the car's fully electric roof that can be lowered in 9.5 seconds and raised in 11.0 seconds, at speeds up to 30 km/h.

From the first model Volkswagen Golf R32 (based on the Golf 4) in 2002 to the current Golf R, the German hot-hatch has always been synonymous with all-wheel drive, making the new Cabriolet a significant mechanical and philosophical departure for the go-fast R nameplate.

As with the 155kW Golf GTI Cabriolet, the Golf R drop-top is not assured of an Australian arrival, with Volkswagen Australia previously saying the car is not part of its program planning.

The current five-door Volkswagen Golf R hatch starts at \$49,990.

Australia to get VW CrossBlue SUV.

Volkswagen Group Australia is committed to bringing the seven-seat Volkswagen CrossBlue to our market if its German parent approves the new SUV for right-hand-drive production.



Volkswagen Australia managing director Anke Koeckler said the local brand has put its hand up for a right-hand-drive version of the CrossBlue, which debuted in concept form at last month's Detroit auto show and is scheduled to reach left-hand-drive markets around 2015.

"[CrossBlue] is certainly a car we will be looking into ... if we get the opportunity to bring it to our market," Koeckler said.

"For the time being it's just being developed as a left-hand [drive], but we are asking for it, certainly, because we see potential for this car for the Australian market."

At 5.0m long, the Volkswagen CrossBlue concept is larger than Volkswagen's existing Tiguan (4.4m) and Touareg (4.8m) SUVs, but is set to be priced somewhere between the two – with a likely starting price of around \$40,000 – to make it more accessible to large families.

Koeckler was adamant there was room in the current line-up for a larger seven-seat SUV.

"There's space [between Tiguan and Touareg]. We can see it.

"We have some competitors who are selling a significant amount of seven-seaters," she said, highlighting the Ford Territory and Toyota Kluger as two key targets.

The Territory and Kluger were the fourth- and fifth-best-selling SUVs in Australia last year – achieving 14,646

and 13,239 sales respectively – and both are available with the option of seven seats.

Neither the Tiguan nor the Touareg is available as a seven-seater, leaving the task of people-moving in Volkswagen's local line-up to the Caddy, which starts at \$39,990 for the TDI250, and the Multivan and Caravelle vans, which are both priced from \$49,990.

The Volkswagen CrossBlue concept is underpinned by the VW Group's versatile new MQB platform – the same one that underpins the Golf Mk7 and the new Audi A3.

The concept, which appeared in Detroit as a six-seater, offers 335 litres of cargo space behind the rear seats, 812 litres with the third-row folded forward, and a van-like 2000 litres with both rear seating rows pushed forwards.

China and North America are tipped to be the first markets to receive the CrossBlue when it launches by mid-decade.

VW Cross Up!

The Volkswagen Cross Up! has been officially unveiled ahead of its international debut at this month's 2013 Geneva motor show.

The chunky Cross Up! is the first special derivative based on Volkswagen's playful city hatchback, and joins the Cross Polo, Cross Golf and Cross Touran in the German manufacturer's family of off-road-themed passenger models.

Appearing almost identical to the Volkswagen Cross Up! concept that debuted at the 2011 Frankfurt motor show, the production model features a number of unique styling enhancements to distinguish it from the standard hatch.



Customary black plastic protector strips around the wheel arches and lower panel edges create a semi-rugged appearance, while silver elements in the grille, mirror caps, roof rails, rear bumper, and front and rear scuff plates also beef up the pint-sized trekker.

A ride height raised by 15mm over the standard car gives the Cross Up! a hint of off-road credibility, while new 10-spoke alloy wheels complete the unique exterior treatment.

The cabin features chrome trim around the air vents and tacho and Cross Up! door tread plates, and a leather-wrapped steering wheel and gear knob. Customers can also personalise the colour of the Cross Up!'s seats (choice of red or black upholstery) and dash panel (red, black or silver). Standard features include front foglights, split-folding rear seats and a multi-function instrument cluster display.

The Cross Up! carries over the 55 kW/95 Nm 1.0-litre three-cylinder petrol engine from the standard hatch, and is available exclusively with a five-speed manual transmission.

The Volkswagen Cross Up! will make its Geneva debut on March 5.

Volkswagen Group Australia has no plans to add the Cross Up! to the local line-up at this stage. None of the other European 'Cross' model VWs are sold here either, although the similarly themed Passat Alltrack wagon was successfully introduced in November.

Volkswagen Group Australia managing director Anke Koeckler said last September that the company was not averse to widening its local Up! range beyond the three- and five-door petrol/manual-only line-up currently offered.

However, general manager of communications Karl Gehling said that the company "does not see a need for that model here", ruling out making a pitch to bring it Down Under – even when right-hand-drive UK versions become available.

Volkswagen sold 107 Ups in January, placing it well behind price-point and size rivals including the Nissan Micra (620), Mitsubishi Mirage (534) and Suzuki Alto (293).

The three-door Up is priced from \$13,990 plus on-road costs, with the five-door costing an extra \$1000.

New boss for VW Group Australia.

Volkswagen AG has announced that the head of its Canadian operations, John White, will transfer to Australia to replace current Volkswagen Group Australia managing director, Anke Koeckler, effective 1st April.

The company said in a statement that Ms Koeckler, 45, will take study leave to prepare for a new role in 2014, while Mr White, 57, comes to the position after presiding over similar growth for the Volkswagen brand in the Canadian market.

Through a network of almost 140 dealers, Volkswagen Canada achieved a record 59,132 sales in last year, more than double the growth of the country's industry

as a whole, which rose to 1.676 million vehicles last year – a total that was second only to the 1.703 million the Canadian car sector posted in 2002.

Under Ms Koeckler, who has been at the helm of VGA since August 2009, Volkswagen has become one of the fastest-growing mainstream vehicle brands in Australia, increasing its annual sales tally from 30,000 in 2009 to just shy of



55,000 units (up 22.6 per cent on 2011) in last year's record 1.112-million market.

During this time, Ms Koeckler has overseen considerable expansion of the Australian subsidiary's dealer network and company staff, which led to the opening of a \$40-million-plus purpose-built national head office at Chullora, in Sydney's south-west, at the end of 2011.

Ms Koeckler has also been proactive in tackling issues that have reflected poorly on the company, such as customer service.

As president and CEO of Volkswagen Group Canada, Mr White is responsible for Volkswagen and Audi. Like Volkswagen in Canada, Audi has also posted successive sales increases over the past five years, including an all-time record of more than 20,000 sales in 2012.

In Australia, the Skoda and Bentley brands come under the VAG umbrella but Audi is handled by an independent distributor.

Mr White's replacement in Canada will be Maria Stenstroem, who is currently head of Volkswagen passenger car sales for the Indian and Far East markets, based at VW headquarters in Wolfsburg, Germany.

"I am excited about my upcoming move to our growing Australian operation," Mr White said.

"Our continued success in Canada is the result of the strength of our brands, coupled with a very dedicated dealer body, and I'm confident that under Maria Stenstroem's leadership the brands will continue their solid growth."

Mr White joined Volkswagen 20 years ago and has led Volkswagen Group Canada since 2008. Prior to that he was executive vice-president of Volkswagen Canada from 2004 to 2007, and director of sales operations at Volkswagen of America from 2000-2003, based in Michigan.

In the late 1990s, he was the Canadian region manager for Volkswagen Credit Canada, having been promoted from his previous role as zone manager for Volkswagen Canada.

Prior to VW, Mr White worked for six years as regional manager (Eastern Canada) for global fleet leasing and management firm PHH Vehicle Management Services. He began his career with General Motors in Canada, holding various positions over 10 years within the GMC truck division.

Volkswagen is yet to divulge the 'new function' for Ms Koeckler, who has worked for Volkswagen since 1996.

Over her career, she has held various senior sales positions, including director of sales for Germany's Northern region and head of sales planning and promotion for the entire German market.

She also previously worked in market planning responsible for the Scandinavian region, and was also in charge of area management for Spain.



VW to ditch Mercedes.

Volkswagen is looking to end its commercial vehicles partnership with Daimler-Benz, with VW to instead seek closer ties with its 75%-owned truck subsidiary MAN.



Volkswagen first collaborated with German truck and bus maker MAN back in 1975, when the first VW LT ('Lasten Transporter', or cargo transporter) was introduced. Bigger than the existing Type 2 range, the LT had a 2.5 to 3.5-tonne GVM and a more conventional rear drive, front engine above the axle and a forward 'cab-over' design. A wide range of large vans and cab chassis was available, with petrol engines by VW/Audi and diesels by VW or Perkins. In 1979 an even larger version of the LT series called the 'G-series' truck appeared, co-designed and powered by MAN and badged as a MAN-VW. Its GVM was 6-10 tonnes. It was made by MAN until 1993, after which production was transferred to VW Brazil.

The second-generation LT appeared in 1996, but this time was not co-designed by MAN. VW entered into a joint venture with Mercedes-Benz's Commercial division to co-produce the new LT, sharing its body shell with the Mercedes-Benz Sprinter. Both versions were built by Mercedes in their Dusseldorf and Ludwigsfelde plants, but the LTs used Volkswagen engines and gearboxes.

The VW-Mercedes arrangement continued for the third generation LT, which appeared in 2006. It was still a rebadged Mercedes Sprinter with Volkswagen engines and gearboxes, but this time the 'LT' name was retired. The new Volkswagen versions were now badged as the 'VW Crafter'. Similar versions of the Mercedes Sprinter are also assembled CKD in the USA and sold there as the Freightliner Sprinter and Dodge Sprinter.

The Daimler-Benz contract to build the Volkswagen Crafter is due to expire in 2016, but VW has started to develop a follow-up model by itself, the source said.

"VW's commercial vehicles unit has been clearly mandated to develop a Crafter successor model," the person told Reuters.

Daimler said in September it would reach out to Volkswagen to see whether the partnership could be extended and offered to include Renault-Nissan.

But VW's powerful Chairman Ferdinand Piech has previously said he would instead favour truckmaker MAN, in which VW holds more than three quarters of the shares, over Daimler as van alliance partner.

The Toy Department.

In case any members are not aware, this month we feature the 1:64 scale NRMA Volkswagen Kombi Patrol Van, which is now selling on line for \$6.96 for NRMA Gold Members and \$9.95 for non members.



The model is a diecast model made by Green Light and being in 1/64 scale is your typical Matchbox scale.

The history behind the release is to also recognise the patrol service of R.H Taylor Pty Ltd, once a large family-owned truck sales outlet in the Hunter region from the early 1950s. In 1961 they became a Volkswagen dealer, setting up an agency at 503 High St in West Maitland, and in 1963 a second agency at 484 King St Newcastle. R.H. Taylor also took over the VW agency at Stroud (Cowper St) for a couple of years but this closed in 1965.

VW's Australian sales boomed in the early 1960s. In 1965 R.H. Taylor's Newcastle branch moved to larger premises at 474 King St, and likewise the West Maitland VW agency moved to 555-557 High St in 1969. R.H. Taylor became synonymous with Volkswagen in the Hunter during the boom years of the 1960s. As you can see, the Green Light model is of a pre-'68 T1 Kombi, while the photo shows a later T2 'low light' that was sold in Australia from mid-1968.

If you blow up the photos and look very carefully, you can see that both the T1 model and the real T2, have exactly the same NSW number plates, AKC-255. The NSW AAA-000 number plate series began in 1951, and had moved on to B by the late '50s, so the Kombi's original plate must have



carried over from the earlier vehicle.

R.H. Taylor closed their Volkswagen agency in West Maitland in 1978, and in Newcastle in 1987 although by that time they were selling Subarus, Fiats and Lancias. R.H. Taylor Trucks still exist today in Maitland (Beresfield), as a truck sales and service outlet.

To purchase one of these you need to do this on line at <http://www.mynrma.com.au/shop/p-2667-nrma-164-scale-nrma-volkswagen-kombi-patrol-van.aspx> and remember they are a limited edition release of 1000.

- 1:64 scale die cast vehicle
- Limited edition collector model
- Clam shell packaging
- Exclusive to NRMA Online Shop
- Only 1,000 available
- Manufactured by Greenlight Collectibles
- Dimensions 70 x 30 x 30 mm (LxWxH)

NRMA 1:64 Scale NRMA Volkswagen Kombi Patrol Van Members: \$7.95 Gold Members: \$6.95 Non-Members: \$9.95

And what a coincidence that the NRMA van was originally from R.H. Taylor at Maitland? Which is where I now happen to live.

Finally here is another sample NRMA service model I made some time ago.



Tony Bezzina
kbezzina@bigpond.com

Canberra Chapter AGM and Slot Car afternoon.

Another year has rolled around and the Canberra Chapter held its AGM on 23 Feb, in conjunction with a Slot Car afternoon at the Way2Fast racetrack in Fyshwick. Well, I should say we planned to hold the AGM, however due to a lack of attendance the AGM was postponed. Those that did attend had some great races around the various tracks, finding it hard to keep the cars on the track at times, and scoring some fast lap times (eventually!). Thanks to those that did attend - Iven, Simon, Shari and Rhiannon - we had fun anyway!

The AGM has been put off until the club meeting this month, Monday 25 March, in Civic. We're after people to



help us run the chapter, watch your emails for lists of the positions available. If you have an interest and can spare some time, we'd love to have you on board!

Go-kart Herbie.

Herbie is out of action at the moment, and is having a full respray done.

In the meantime, I recently purchased another genuine screen Herbie. It was used in the second film, Herbie Rides Again.

It is one of the actual 'mini' Herbies that chased Alonzo Hawk in his dream sequence. Its pretty cool. The old owner actually worked on the last three Herbie films.



It still wears its original paint, but has unfortunately lost the original 'towel rail' bumpers and front '53' gumball. But I will fix that soon.



The man I got the go kart from worked on the last three Herbie films in the special effects team, basically making Herbie come to life. He also owns one of the little Herbie flies with wings, that were buzzing around Alonzo Hawks' head. Sadly the wings have broken off, but it is still a cool piece. Its a 1/18 scale model. He also owns some of the original (plastic or rubber) bananas that were on the banana covered car in Herbie Goes Bananas.



Go to YouTube and do a search of 'first start mini Herbie' to see my first start-up and ride. I just fit in it!

Alex Micakovski





Heads up - Nationals Supersprint, Wakefield Park

On behalf of Club VW Sydney I would like to extend to you and your members an invitation to attend our 4th Annual SuperSprint at Wakefield Park, Goulburn, on Saturday 25th May 2013.

The event organising committee is made up of both experienced as well as enthusiastic motorsport personnel who are making every effort to run a smooth and exciting event.

The event will be held under a CAMS event permit and follow the CAMS NSW guidelines for Supersprints. The entry fee will be \$170 for pre entries received on or before May 17th 2013. Entries received after this date will incur \$30 late fee and be accepted subject to organisers discretion. Please accept our invitation to attend this event and could you kindly pass on the Supplementary Regs and Entry Forms to those members who may wish to attend at your next meeting.

Could I also request that if any of your members who may wish to help out on the day and are CAMS qualified in the roles of flag marshals or scrutineer we would greatly appreciate any help that may be offered.

Paperwork has been submitted to CAMS today, so hopefully they will turn it around a lot quicker than the hillclimb paperwork I just ran.

In any case you will have at least 2 months to get your entry in. If you aren't entered a week before the event you will pay a \$30 late fee, as was the case last year. The first

couple of years you called my bluff because I am a sweetheart. Last year you paid and the shock was evident on some faces and tones of voices.

It makes it easier for me if entries are in early. If you are struggling to get your car ready in time, enter anyway. If you withdraw before the day you will get your money back. When it is easy for me, it is better for you, the racing will start earlier and be better organised. Pre entrants also go into the draw to win their entry fee back (as per last year).

A couple of things that will be different this year based on feedback from last year. There are two major issues getting cars on track on time – one your fault, one my fault.

Firstly, in accordance with the above, there will be 3 queues at check-in. If you are pre-entered,

paid up, have your CURRENT licence and CURRENT club member card you will go into the Priority One Gold Class express line and you get ticked off in 30 seconds. Go grab a coffee. If you are pre-entered, paid up but are doing your licence or membership on the day you will go into business class queue. It will take you a little longer. If you don't have everything in order when you get to the front of either of those queues then you will be sent to cattle class. You will get served once all the people who have done the right thing have been served. You may or may not get out on track on time. It's the fairest system I can think of. Let me know if you have other ideas.

Secondly, the colour grouping for your car will be attached to your entry form. The scrutineers won't be making it up as they go. It will be based on your previous year's times or a best estimate based on similar cars. There will be running order sheets at the tower and at scrutineering. That way everyone will know when they are due to go out. Hopefully I won't cop gobs of abuse first thing that ruin my day.





You will also need current membership of a CAMS affiliated car club, such as Club Veedub Sydney. Membership of Club Veedub is available to non-members, on condition the applicant owning/driving a Volkswagen Group vehicle – a VW, Audi, SEAT, etc. Non-VW owners are encouraged to join the Wollongong Sporting Car Club <http://www.wsc.org.au/> Alternatively you can use the club finder on the CAMS website to find a club near you.

The event will be based on the NSW Supersprint Panel's guidelines for NSW supersprint.

The vehicle categories will be in accordance with the NSW supersprint vehicle type regulations.

Minimum requirements for road

So yeah, keep an eye out for paperwork on the club website. I think we should have all bugs ironed out and it will be the best ever. I may not have any nuts left because that is the week of my wife's 40th, but we'll see how we go. Nothing gets in the way of VWs and car racing.

This year's CAMS vehicle regs are here: <http://www.supersprints.com.au/rules-and-regulations/2013/2013%20Vehicle%20Regs.pdf>

I don't know if there have been any changes.

Entries are open now. Entry forms and supp regs are now available to download. Please read through all of the supp regs.

<http://www.clubvw.org.au/2013supersprint>

You can get your licence on the day but bring your already completed form and photo with you.

Please make sure you read the entire supplementary regulations carefully. When sending in your forms make sure that you fill in all relevant details. If you haven't competed before and aren't sure which class or group you should go in, you can leave those sections blank, but send in a list of vehicle mods so that we can have a guess at where you might fit in. Please fill in the top section of the scrutineering form and send that in as well. One last thing, an entry is NOT an entry until the entry fee is paid. Your entry is not accepted until it is paid for. If paying by cheque, the cheque must clear before entry is accepted.

All money paid on the day must be cash. There is no eftpos available. If you don't leave something of substantial value as security then I can't accept cheques either.

Minimum licence requirements is a CAMS Level 2 Speed (L2S) which allows you to compete in motorkhanas, supersprints, and hillclimbs. There are no licence tests involved, just fill in the application form. The licence fee of \$100 includes Personal Accident Insurance.

registered car are:

- a 900g fire extinguisher
- a battery triangle to mark battery position (use blue electrical tape)
- competition number on both sides of car (contrasting tape, boot polish)
- tape headlights (any kind of tape, contact)
- secondary bonnet restraint (rope, belt, pins)
- ankle to wrist to neck non flammable clothing, jeans and a long sleeve cotton shirt is OK, or overalls.
- non flammable shoes, no nylon.
- helmet. Any with the Australian standards sticker.
- need to be a member of a CAMS affiliated car club.
- need a CAMS L2S licence. (form available on the website)

Please email all queries to Chris Fraser: clfraser@gmail.com or call (02) 4298 6320 during business hours.

So come on, get your VW ready, do your paperwork and pay your fees, and we'll see you at Wakefield Park!

Chris Fraser



New VW Beetle – a first drive.

The Beetle is back – and it's been squashed. Kind of. In an attempt to lose some of its cutesy looks and give it a more masculine appeal the new Beetle is longer, wider and lower than before.

The roof is a little flatter, too, inspired by the lines of the New Beetle Ragster concept from 2005, and losing the perfect curve of the first two models. VW is trying to tell us that this is the third-generation Beetle in 74 years, since the first 'people's car' rolled off the German production line in 1938. But really it's not, it's just the second generation of the Golf-based New Beetle that first appeared in 1998.

And in any case, 1938 was the laying of the Wolfsburg factory foundation stone, not the start of production. Only a few hundred hand-built cars were built before the war changed production to the military Kubelwagen, and no sedans reached the general public at all. Proper production of the original Beetle only began in 1945, when the bombed-out factory was restarted by the British Army. Australian sales began in early 1954.

The naming convention is confusing. This latest generation is called the 'Beetle', while the older version was called the 'New Beetle'. The original air-cooled version was sold as the 'Volkswagen 1200', 'Volkswagen 1300' or 'Volkswagen 1500'. The strut bugs were 'Superbugs' in Australia, 'Super Beetles' in the USA and 'VW 1302/1303' in Germany. Only the last run-out model in 1976 was officially sold as the 'Beetle' in Australia. Even the last Mexican air-coolers in 2003 weren't Beetles, they were 'VW Sedans.'

The New Beetle was designed to resurrect VW's sales in the USA, since Americans are unique in not liking the Golf (the Jetta is the top-selling model there). It was a great success, with more than a million built in the Mexican factory. But in the rest of the world the New Beetle was just a low-selling niche model. To Europeans it brought back



unpleasant memories of the years of impoverishment, struggle and repair in the years after the war. Today Europeans enjoy their ultra-modern VWs, symbols of today's affluence and success.

Australians also saw the New Beetle as just a niche model, but for different reasons. No VW passenger cars at all were sold here from 1981 to 1990, so when they finally reappeared they were enthusiastically received. By 2000 the modern range was well established, and thanks to our warm dry climate there were still plenty of old VWs left for enthusiasts. The New Beetle was a useful bridge between the two VW eras, but was never a mainstream model. Just 8,805 were sold here in 12 years (including Cabriolets); VW sells more than twice that many Golfs in ONE year.

In modern-car terms the Golf 4-based New Beetle was ancient by the time it was wound down in after a 12-year run. Most cars are updated after five or six years these days; the Golf had seen two redesigns in that time. When the New Beetle ended in 2011, the 'retro' fad was fading and we wondered if there would be another. But now the new "New Beetle" is back in Australia after an 18-month hiatus.

And it happens to be the most powerful Beetle ever sold in Australia, using the turbocharged and supercharged 1.4-litre four-cylinder engine also used to power the Polo GTI. The output of 118 kW and 240 Nm represents a massive 57 per cent increase in power and 62 per cent more torque compared with the previous model.

Value

The new "New Beetle" has a cheaper starting price than it launched with 13 years ago. In January 2000 it cost from \$36,790 but subsequent models limboed to as low as \$27,990 (2004 to 2008) before climbing to \$29,200 (2009 to 2011).

So at \$29,990 the new one is actually slightly dearer than where it left off – but it gets more equipment and a much more powerful and efficient engine. In addition to the standard fare of six airbags, remote



entry, and power windows and mirrors, Volkswagen has added cruise control, dual zone air-conditioning, alloy wheels and front and rear parking sensors.

Options include leather trim (\$3300), navigation (\$2500), bi-xenon headlights with LED daytime running lamps (\$2700), and a panorama glass sunroof (\$1700). The seven-speed automatic (the first time VW's dual-clutch gearbox has been fitted to the Beetle) adds \$2500, bringing the starting price to \$32,490.

You can also officially give the car a name. Previous New Beetles were one of the few Volkswagens sold un-namebadged. The latest model gives owners the option to personalise their cars with a "Beetle" badge, or "Bug" or simply "Volkswagen", sold through Volkswagen Accessories.

A top-line, limited edition Fender model (named after the guitar and amplifier maker) with a cranking 400w sound system (with a sub-woofer in the boot and bigger and better speakers in the cabin) is \$34,490 with automatic transmission.

Volkswagen has also added the Beetle to its list of cars that come with fixed price servicing, following the Up! city car late last year. Applied in 15,000km intervals, routine maintenance costs \$375 each year for the first two years, \$430 in the third year and a whopping \$638 in the fourth year (although still not as expensive as some dealers have been charging for similar services on other VW models), before returning to \$375 and \$430 in the following 12-month intervals.

Design

Instagram comes to life inside the new "New Beetle". There's no need to add any sepia filters after you do any "selfies" because the painted dashboard and the cool glovebox (which opens up, just like the original) takes you back in time any way.

The new "New Beetle" is based on the underpinnings of the just superseded Golf 6, which enabled Volkswagen to make it longer, wider and lower. It also means back seat occupants no longer sit under so much glass, more of their head is protected from the elements by a roof. But all up there is still only room for four occupants (two in the back, not three).

The new "New Beetle" was designed in Germany but comes to us from Volkswagen's factory in Mexico (as with the previous model). It's also where the classic air-cooled Beetle was made until 2003.

Driving

The new Beetle drives, well, just like a Golf. That shouldn't be surprising given that it shares the underpinnings of the outgoing Golf.

What impresses most, though, is how smooth and refined the Beetle has become. It's a big step forward from the previous model; owners of classic Beetles will think they've become hard of hearing if they ever get into one of these.

All cabin controls are well positioned and logical to use. It's the type of German efficiency that made the original so loved around the world. Visibility all around is pretty good thanks to large windows and large convex side mirrors,

although it's disappointing that Volkswagen hasn't made a rear camera available even as an option.

The turbocharged and supercharged engine has plenty of zip and the DSG transmission works smoothly (unlike some earlier examples). The hill-hold function takes some of the gearbox's hesitation away when moving off from rest. The steering is not too heavy, not too light.

Safety

Six airbags, a five-star safety rating and a very strong body. Volkswagen had a figure with a lot of zeros in its description of how stiff the new body structure is. We presume this to mean the core of the car won't bend much but the front and rear are designed to crumble to absorb the bulk of any impacts. Front and rear parking sensors are standard but a rear view camera is not available.

Verdict

The new Beetle brings a level of refinement and comfort that the hippie generation would probably appreciate at this point in their lives. Younger buyers will have never had it so good.

Joshua Dowling



Volkswagen Beetle

Price: \$29,990 plus on-road costs (plus \$2500 for auto)
Engine: Supercharged and turbocharged 1.4-litre four-cylinder petrol, 118kW/240Nm
Transmission: Six-speed manual, seven-speed DSG auto
Thirst: 6.4L/100km and 148g/km (auto), 6.8L/100km and 158g/km (manual)
Service intervals: 15,000km/12 months
Safety rating: Five stars
Dimensions: 4278mm (+149 mm)(L), 1808mm (+87 mm)(w), 1477mm (-21 mm)(h), 2524mm (+9 mm)(wb)
Boot capacity: 310 litres (up from 209 litres)
Warranty: Three years/100,000km

Beetles compared.

Neil Dowling road tests and reviews the new 2012 Volkswagen Beetle - and ones from 1958 and 2003.

NEWS flash: Beetles aren't accomplished skaters on the polished stone surface of a Berlin street. Putting a 1958 model against the next model showed that.

Built in the days when traction control merely meant being alert enough to avoid ice patches on the footpath, the 1958 Volkswagen Beetle perfectly reflects its origins in a simpler era.

Few cars embrace simplicity like Volkswagen's Beetle and even fewer dive into the comparative starkness of a 1950s model.

It only takes one drive through a traffic-clogged Berlin CBD during a rainstorm to recognise how quickly cars have advanced - in safety, performance, comfort and pretty much everything else except weight - and how lucky I am that I don't have a car from the 1950s as a daily drive.

Which is ironic because my first car was a 1959 Beetle, with semaphore indicators, a wooden stick with graduated marks for a "dip and read" fuel gauge, a cabin heater operated by a screw valve on the floor and a 6-volt electrical system that decided when it felt like operating. The original valve radio took about five minutes to warm up, timed to coincide with me closing the choke lever.

So it makes me laugh at claims that the 1950s Beetle and the 2012 Beetle share a bloodline. Even the Volkswagen badge and the curved body panels wouldn't convince a sharp lawyer arguing a case against awarding inheritance.

1958 Volkswagen Beetle

The 1958 arrives in the allotted carbay in pristine condition, in regulatory cream paint over a cabin with red leatherette upholstery. The steering wheel is on the wrong side but it's the same deal as my car, right down to the dull clunk of the gearshifter in its socket, the half-hearted action of the wire-thin wipers on the flat glass, the coolness of the white, thin-rimmed plastic steering wheel and the odd feel of the bottom-hinged clutch pedal.

The noise from the 1.2-litre 36-bhp engine is the same, the steering is as firm and direct and the forward motion is an



odd collaboration of an eager engine note and ridiculously low first gear ratio. And it feels so fragile.

It could have been quite an enjoyable ride. But thrust into traffic, alone and without the reassurance of a GPS or a map - the instructions were to "go around the block" which turned out to be more than a simple series of right turns - or an indicator that anyone could see. Or, as the first corner taught me, brakes.

These brakes had two actions - off or on - controlled by a pedal that had a 5mm movement and felt like stomping on concrete. You can easily lock the brakes on the cobblestone sections of the street, especially if a bus pulls out in front - as one did.

2003 Volkswagen Beetle

The silhouette is practically the same and the detail - removable mudguards, foot runners and clamshell boot and bonnet lids - is similar but the 2003 Beetle steps up in comfort and roadholding.



Ending a run of more than 21.5 million, this is the last aircooled Beetle ever made and its importance means the Mexican is now part of Volkswagen's collection in Germany.

With water-cooled, front-wheel drive platforms firmly cemented in Volkswagen's manifest by 2003, the last Beetle represents the end of the longest-running car of a single design platform.

Which is a good thing. I admire Beetles and could have one tomorrow, but their limitations in handling, safety, cabin

space, ergonomics and a trail of other things, demands they be driven at their designed pace. Which is slower than modern traffic.

The light-blue 2003 sits firmly on the road and the fuel-injected 37 kW 1.6-litre engine is responsive and willing. Bulky black plastic padding unseemly covers the original metal fascia and there are seatbelts - the 1958 had none - and form-fitting, high-backed seats.

There are still four forward gears and the pattern is the same - including the push-down across and back movement for reverse - but this time the steering and the brakes are lighter and have more feel.

But cabin room is only marginally better than the older model, regulating the rear seat to children. It feels as new as when it was made eight years prior but while the packaging is fresh the contents still clearly show their origins.

2012 Volkswagen Beetle

It's easy to follow the thread from 1958 - indeed, from the first Volkswagen of 1938 - through to the Brazilian-built finale of 2003. Then it's a generational step into 2012.

This isn't a real Beetle. It's a Golf shaped like a Beetle and though it's roomier and quicker, has more power and far better roadholding than the New Beetle that preceded it, it's not much more than a design exercise.

But it is a rewarding drive, especially the 147kW version that uses a detuned Golf GTI engine and a seven-speed DSG.



It is more about driving and practicality. Compared with the outgoing New Beetle, the boot is almost three times the size and the driving position has returned to "normal" - gone is the huge distance between the steering wheel and the windscreen.

Volkswagen debuted the Beetle in Berlin last July, saying it will be about 10 per cent cheaper than the Golf - so start-up will be about \$25,000 - but it has only just made it to most export markets such as Australia.

After a production period of 77 years, the Beetle may be again worth the wait.





All about magnesium.

Magnesium has a special place in the hearts of VW enthusiasts. We all know (or SHOULD know) that the engine case of the Type 1, 2 and 3 air-cooled motors are made of an alloy of it, as is the gearbox casing. We might also know that it burns. If we're good at trivia, we could say that Volkswagen once used 38,000 tonnes per annum, nearly one sixth of the entire world's output.

In actual fact, one Beetle contains about 22 kg of magnesium castings, because the air-cooled engine design was ideally suited for ultra-light alloy. The trend to front-mounted water-cooled engines has now reduced VW's magnesium consumption considerably, although it still finds uses mainly in gearboxes and other transmission components. The pressure die-casting plants operated by Volkswagen remain prime examples of highly developed technology.

Magnesium is known as the lightweight champion of the metals. It is the lightest of all metals used in general engineering, with a relative density only 1.7 times that of water. Aluminium is more than half as heavy again, iron and steel are four times heavier, and copper and nickel are five times heavier. Perhaps not unexpectedly though, magnesium is also relatively weak in the pure state, with a tensile strength of only 110 Newtons per square millimetre. However, when



alloyed with various other metals it can be strengthened two or even three times over, yet still remain very light.

Aluminium, zinc and thorium are common alloying metals.

Public knowledge of magnesium is sparse, perhaps because we don't have much to do with it. Yet did you know it is the fourth most abundant metal, found in the sea as well as on land? Magnesium was first isolated earlier than aluminium, and efforts were made to produce it commercially throughout the nineteenth century. However, development was slow partly due to technical and partly economic problems.

Magnesium is expensive to produce because it's difficult to extract it from its mineral salts and ores. Electrolysis must be used, in a process similar to that used for extracting aluminium. Metallurgists also found that magnesium has a great affinity for oxygen, meaning that it burns with an intensely hot flame. In fact, magnesium was used as the main constituent of incendiary bombs during WW2, and is still used today for the production of intense light, such as fireworks, flashbulbs and flares. It may be difficult to believe that so flammable a metal can be used for any structural purpose, let alone things like cooking pots and frying pans! Of course, the explanation here is that it must first be melted, shredded or powdered, and be in contact with ample supplies of heat and air, before it will ignite.



And once magnesium does ignite, burning at around 2,200°C and giving out intense white and ultraviolet light (like a welding arc), it is very difficult to put out. Water does not work; in fact the burning magnesium reacts violently with water to create hydrogen gas, which accelerates the fire. CO2 extinguishers also will not work, as magnesium keeps burning in carbon dioxide, producing magnesium oxide and carbon. A Class D dry powder extinguisher should be used, or the magnesium fire smothered with sand.

There are many urban myths about Volkswagens catching fire. The VW magnesium alloy engine is not at fault. Fires only occur on poorly maintained vehicles, when leaking fuel hoses drip fuel onto hot exhausts, causing a conventional fire. If it gets out of control, the engine case may ignite, but due to magnesium's high combustion temperature, the vehicle will already be a total loss by this point.

The health benefits of Epsom salts (magnesium sulphate) were first recognised in the 1600s, but magnesium was not isolated until 1808, when famous English chemist Sir Humphry Davy produced the metal from magnesia and mercury oxide. He proposed the name 'Magnium' but this did



not catch on. German chemists of the 1800s were the first to work the metal, and pioneered the special methods needed for smelting and refining magnesium, casting the alloys, and later fabricating it into various finished forms. They also discovered some of the effects of alloying with the metals I've already mentioned. The British and the Americans also did much work, particularly during WW2. In fact, world magnesium production increased ELEVEN-FOLD between 1937 and 1943, thanks to the wartime needs of the aircraft industries. The Germans coined the name 'Elektron' for magnesium alloys, which is still used today.

It was discovered that small amounts of manganese added to magnesium would improve corrosion-resistance. Zirconium acts as a grain refiner. 'Rare earth' metals such as thorium and zirconium give a further increase in strength, particularly at high temperatures. This became very useful when development of the jet engine began in both Britain and Germany.

Magnesium alloys can be subjected to all the usual metallurgical treatments, including casting, die-casting, rolling, forging, extruding, and pressing. In spite of its flammability in the molten state, magnesium can be cast with ease and safety if precautions are taken against the metal overheating.

No metal can be cut, filed, drilled or shaped as easily or as quickly as magnesium. This also reduces the cost of the finished product. Magnesium also lends itself easily to welding and riveting. The strength of cast and wrought magnesium alloys in relation to their weight can be very high indeed, cast alloys showing strengths of 300 Newtons per mm² and wrought alloys up to 380 Newtons. The strength to weight ratio of such material resembles that of high tensile steel.

Naturally, magnesium alloys find great application where lightness and strength is required. During the war retractable undercarriage parts were cast in magnesium,

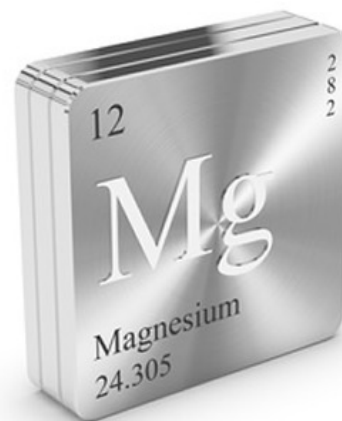
pilots' seats were made of welded magnesium tubes, petrol tanks of magnesium sheet, while engine parts such as supercharger blower and reduction gear casings were made of magnesium alloys. Today, apart from automotive uses already mentioned, you'll find magnesium alloys in everything from wheels on racing cars (hence the term 'mag wheels') to textile machinery parts, portable tools, cameras, office equipment and many pieces of military hardware.



Much of the present output comes from seawater, of which each cubic kilometre contains a million tonnes of magnesium in the form of magnesium chloride. Recent developments have centred on the use of natural brine, as they allow for magnesium production and the additional sale of desalinated water, salt and chlorine gas produced as by-products. The process is quite simple. Calcium carbonate is added to brine, which creates an insoluble magnesium carbonate precipitate, which is filtered out. This is then combined with hydrochloric acid, which creates magnesium chloride, carbon dioxide and water. From magnesium chloride, an electrolysis process produces magnesium metal and chlorine gas.

New plants using this process are already operating in the USA, and the USA has traditionally been the world's largest producer of magnesium. However new plants are being built in China, although using ore extraction rather than seawater processes. China overtook the USA in magnesium production in 2005 and produces 60% of the world's output.

You might not realise that by far the most widespread use of magnesium, requiring nearly half the world's tonnage, is in the alloying with aluminium. This includes the VW components we know - and also the 4½ per cent of the world's magnesium used for the easy-open tops of drink cans!



Phil Matthews

CCing in more detail.

Last month I told you about how to get a quick and dirty 'cc' of your heads using the most basic equipment in your workshop. Now let's talk some more about about CCing tools and equipment. Why am I doing this?

Truth is, some of you aren't. Although this article was written to explain how to improve your engine's efficiency by adjusting it's volumetric balance, many builders are interested only in determining their compression ratio. If that's all you're here for, see last month's article.

By applying modern-day standards of balancing, of both mass and volume, you can pick up as many as ten free horsepower from a bone stock VW engine. And I mean 'free' in the sense that it will use the same amount of petrol. That seeming impossibility reflects the fact the engine must first overcome any internal imbalance before it can deliver any usable power. That means an imbalance generating a loss of five horsepower costs an additional five horsepower to balance the books, resulting in a net loss of ten horsepower. This is a key factor in the importance of balancing and one most people overlook. That is, for each imbalance you eliminate you will gain approximately twice that amount of improvement.

Of even more importance to builders of tuned Volkswagens is the fact that a properly balanced engine is more durable and the reduction in wear is even more pronounced than the improvement in fuel efficiency. That's because most of the internal imbalances appeared in the form of friction and heat, which could only be overcome by generating more friction and heat. The bottom line is that a 3-hp imbalance could cost you up to four times that in additional wear. Eliminate the imbalances and the engine's wear-factor takes a dramatic drop.

The benefits of mass-balancing became self-evident as the normal operating speed of internal combustion engines was increased but the role of volumetric balance was not fully appreciated until computers came along. Once they had a super-computer to play with, automotive engineers discovered that a lot of what we thought we knew about the process of combustion was not entirely correct; that there were transient phenomenon due to volumetric imbalances that we'd attributed to other causes. This is one of those non-intuitive kinds of things, not easily explained without a bit of background but the basic reason has to do with the process of combustion and the fact those seemingly insignificant differences in volume appear on both sides of the compression ratio equation. Turns out, relatively small variations in volumetric balance can produce some relatively large losses of power. Since that time they've taken exquisite pains to reduce those imbalances. How this is accomplished in a mass-production environment is quite interesting (at least, to me :-)) but the bottom line is that we can take advantage of what they've learned by simply paying more attention to the volumetric balance of the engines we build.

Thanks to computerized equipment a modern balance shop can do mass-balancing to a fraction of a gram at a very reasonable price. But matching the volume of a pair of heads (i.e., four chambers) to a tenth of a cubic centimetre remains more art than science. In the racing world it isn't uncommon to pay a thousand dollars for a pair of full-trick heads, their volumes accurate to 0.1cc across all four chambers. The cost

isn't in the tooling; it doesn't take a lot of tools for head-work. The money goes to buy the head man's time. That fact is in our favour because time is about the only resource of which lo-buck homebuilders have a surplus. By acquiring a few tools and devoting a bit of time to your heads, you can bootstrap yourself into a better engine than you can afford to buy.

At this point a majority of non-mechanic home builders are sitting there with a large black question-mark floating in the air over their heads. If adjusting chamber volume is more art than science, how can they hope to tackle the job themselves?

The answer is so simple it will make you smile. Anything you do to reduce the magnitude of the existing imbalance will improve the efficiency and durability of your engine. The fact the pros regularly balance to a tenth of a cubic centimetre is like running the four minute mile. But we're just a bunch of week-end joggers so let's not even think about that degree of precision. At least, for now. Instead, let's look at the basic problem.



You have four chambers. You measure them (the procedure is outlined below) and come up with four values, probably accurate to within half a cc or so. Using real numbers now... two heads measured 56.5, 58.2, 58.8, and 60.0 cc. Rather than trying to turn you into a head-flow guru capable of achieving 0.1 cc accuracy on a repeatable basis the question becomes: "Can we reduce that 3.5 cc spread to something smaller?"

The answer is a decided Yes! And it really isn't all that difficult because you only have to work on three of the chambers. That is, you can't make a chamber any smaller so the largest chamber becomes your target-size. So relax. You can do it. And you'll end up with a better engine because of it.

Then comes the question, how much metal are we actually talking about? Just what the hell is a 'cubic centimetre'? The answer to both: Not much.

You know how big a centimetre is, right? Every ruler and tape measure has cm measurements on it. Well imagine a cube with each side 1 cm long. It's about the size of a sugar cube. Or a dice in your Monopoly set. Project - draw a 1 cm square on a piece of paper and glue it to a piece of Styrofoam, then use a razor blade to make a 1 cm cube the size of the printed square. No foam? Then make the cube out of wood. Or plastic. Or tool steel (if you can). The goal is to give you a tangible reference to the volume of a cubic centimetre.

Hold a cubic centimetre in your hand and three things are immediately apparent: Firstly, it isn't very large. Secondly, you can appreciate the heroics it takes to achieve repeatable tenth-cc accuracy. And finally, you can see why a lot of people consider such imbalances to be insignificant. To the uninitiated, something that small has to be unimportant; something they can ignore.

Got a 3 mm plywood offcut lying around? If you cut a square 18mm along the side, that's also 1 cc. Or what about a bit of 1mm-thick plastic sheet? That's a square 31.6 mm along the side. 1 cc is 1,000 cubic millimetres; it's not hard to work out your own examples. Now go back and look at what we're trying to do. To balance the 56.5 cc chamber we need to remove three and a half cc of material. Just unshrouding the valves is usually good for that volume.

So how do we do all that? I'll get into that in a minute but it all begins by measuring the volume of your combustion chambers.

If you've never cc'd your chambers, relax; it isn't difficult nor do you need a lot of equipment.

My first exposure to cc'ing heads was in the mid-1950s. I bolted a piece of plex to the freshly milled head of a Ford V-8, levelled the thing up with wedges and used a turkey baster to fill each chamber with kerosene. After doing both heads I plugged the smallest volume into the compression-ratio equation and came up with a CR of about 11:1, assuming I used a sixty-thou gasket. Life was good, assuming I could swipe enough avgas for a couple of runs through the lights :-)

Determining the volume of the combustion chambers is a chore common to all engines and the basic procedure is the same for all. The procedure requires:

1. Some means of holding the head level.
2. Some means of sealing the space to be measured.
3. A method of accurately measuring the amount of fluid needed to fill the chamber.

Working with nothing more than a 1/4" drill motor and a couple of carbon steel rotary files, cleaning up the marks with a strip of sandpaper spiraled around the split end of a quarter-inch dowel, you can expect to produce a cc-job accurate to about 0.5cc across all four heads. Indeed, the usual problem when a novice does his first set of heads is going too far, opening up the smaller jugs to a volume larger than the target-jug. Which means they have to take a bit out of the big chamber, which usually leads them chasing the volume back & forth until they get sick of it.

SAME PRINCIPLE, DIFFERENT PROCEDURE

The secret to hitting your chamber volume dead-on is exactly the same as for hand-cutting a piece of aluminium to a precise dimension in that you don't shoot for the exact dimension. You always give yourself a clean-up allowance. Cutting aluminium by hand you snip or saw the thing a millimetre or two over-size, then dress the edge with a file. You do much the same when cc'ing your chambers in that you use the rotary files to get close to the finished size then begin smoothing things up with abrasives, checking the volume periodically.

I mention this now because the next subject has to do with the precision of your cc'ing job and the fact balancing your chambers to a fraction of a cc might take you a couple of weeks (!) if you've never done it before, whereas balancing

them to 1cc (across all four) should take only a few hours. If you don't want to spend the time then there's no need to spend the money for an accurate liquid dispenser, such as a burette graduated to 0.1cc (tenth of a mL). Turkey baster or the big syringe, you can work down to 1.0cc (1 mL) with fair accuracy. And there's a big difference in price between a surplus syringe and a certified-accurate, lab-grade burette.

All engines get their chambers cc'd, not just Volkswagens. The cc'ing of combustion chambers is illustrated and talked about in the various manuals on engine building. The three key elements mentioned above reflect the basic core knowledge for any cc'ing job. Then comes a host of details; the How-To stuff, most of which is engine-specific but some of the common factors address the accuracy of the finished job, the degree of precision, how long it takes and various convenience factors. As with most other aspects of proper engine fabrication, cc'ing your heads calls for a keen attention to detail. Most of the time.

The point is that you really don't need much to do a quick check.

Lots of after-market retailers will sell you a 'cc kit.' It usually consists of a plastic syringe like the one shown in the pictures plus a plastic disk with a hole in the middle.

What's it cost? Hard to believe but some outfits want as much as thirty bucks for a cc kit.



See the syringe in the photo? It comes from a veterinary supply house. New, quantity one, you're looking at three or four dollars. But syringes have a certain shelf life and once they're past it, the supply house often flogs the stuff off as surplus, out-dated or whatever. Buy them a dozen at a time, the syringe shown cost about half a dollar.

The plastic sealing disk is any sort of flat plastic, 3 mm thick or more. Doesn't have to be clear. The sealing disks I use for 77mm jugs are made from a hunk of red Plexiglas I dug out of the scrap box at a plastics retailer. In a pinch I've even cast my own using polyester resin on a sheet of waxed glass. It only has to be flat on one side and just clear enough so you can chase the bubbles. Chasing the bubbles is one of those little details no one mentions :-). The bitter truth is that some bubbles don't like to be chased and you can spend the best years of your life trying to coax the thing over to the hole.

The sealing disk in the typical kit has just a single hole in the middle. Cheap, easy to make and so forth. But harder to use than one with more holes. More holes, you don't have to chase the bubbles so far but more importantly, with more holes there's a better chance you'll be working with a truly

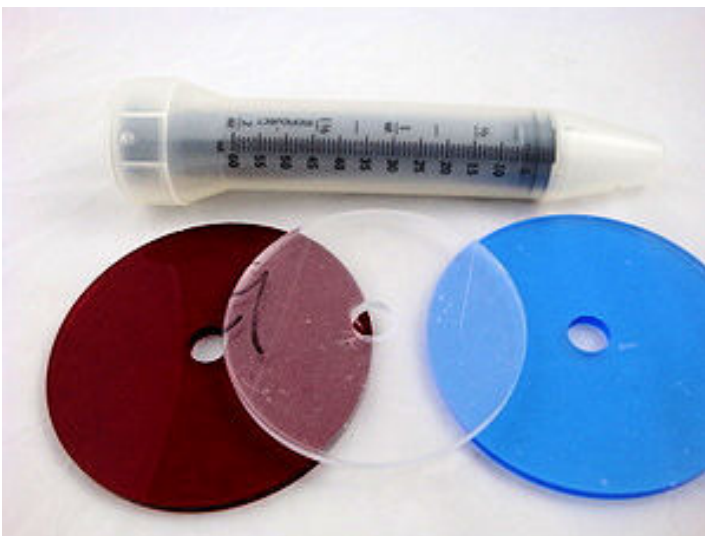
level head. And that's worth mentioning because a lot of after-market heads, especially rebuilds, the sealing surface is not parallel to the valve gallery gasket rail, which is what you use to sit the head on.

So you sit the head on the gasket rail (after taken the studs & valve stems into account) and use your machinist's level or framing level or whatever on the chamber-side of the head to use wedges and so forth to get everything perfectly level, end-to-end and fore & aft.

That's no guarantee the sealing surface of the chamber is level. But if your sealing disk has a pattern of holes as the VW factory workshop manual recommends, as the chamber fills the level of the fluid in the various holes tells you if the chamber is level.

You subtract the volume of the holes, by the way. Figure out their volume ahead of time, scribe it right onto the sealing disk. You use the same cylinder volume equation, $\pi r^2 h$. Half the hole diameter squared, times the thickness of the plastic, times 3.1416. If you're measuring in mm your answer will be in cubic mm. Divide by 1,000 to convert to cc. Then multiply that by however many holes you have and be sure to always fill the hole to precisely the same level.

If you buy a cc kit, it usually comes with only one disk for each size of cylinder. Indeed, some outfits only sell you one disk, period, screwing you to the cash register if you want two disks or a set of a different size. Which is another example of how VW after-market retailers screw the kiddies, because to do the job properly you really should do both chambers at the same time... and that means two disks of each size.



Making disks is pretty simple, assuming you understand plastic. Drills for use with plastic looks like a needle :-). We usta call them 'canopy bits' or 'Plex bits.' Included angle of something like 30 degrees. If you don't have a set of bits for plastic and don't know how to sharpen a drill bit, you'll have to use a hand-drill. Even then, you're liable to crack it when the bit breaks through the other side. That's when it grabs the flutes. Plastic bit, you needle a pilot hole then flip it over, finish it from the other side. Slow speed, always. Kerosene makes a good lubricant for thicker stock.

Although ideally you should cut a disk that's perfectly circular, it's not that critical. You can cut one out with a jig saw and it'll work just fine. That's because the sealing lip inside the combustion chamber is at least three or four mm



wide. So long as the disk is close to a true circle and makes good contact with that lip, it will work okay. (Too big? Then sand the edge.)

Once you understand the purpose of the sealing disk you'll see them all around you, just waiting to be cut out. See that translucent plastic over the waterproof light in the bathroom? That'll work. You can still see the bubble. One of the best cheapie ones is a used CD you don't listen to any more, and it already has a hole in the middle. You'll need to cut it a bit smaller, and really they're a little on the thin side, but they'll work. Sealing disks work better if they're thicker and heavier; 5-10 mm thick is best.

To make your chamber watertight you smear a little Vaseline on the valve seats and a light wipe around the outermost edge of the plastic disk. Then you fill the syringe to a precise level and use it to fill the chamber. Subtract what's left in the syringe from whatever you started with, then subtract the volume of the hole(s) in the plate and that's the volume of your combustion chamber, accurate to however accurate you are and as precise as the divisions on your syringe.

There's lots of lab equipment scaled to 0.1 mL increments but most of it lacks the volume to fill a chamber. VW combustion chamber volume may be as small as 40cc or as large as 80cc, depending the size of your valves and the displacement of the engine. A burette large enough to hold one chamber's-worth of juice and accurately marked to 0.1 mL precision, you're talking about an expensive piece of goods. The high price of the Good Stuff comes as a shock to guys building just a single engine, often causing them to settle for half a loaf, using a vet's syringe or whatever.

So use a marble or two. And a smaller but more precisely marked burette.

Got a marble? There's a free one in every can of rattle-can paint. (That's the rattle :-). Or you can buy a bag of them at the dime store. Or use steel ball bearings (but remember they rust). I like ball bearings because of their uniformity. Marbles vary by quite a bit.

So what's the volume of your marble? Half fill your burette, bring the meniscus to the line, make a note, then drop your marble into the burette. Make another note then do the maths. You may shout 'Eureka!' if you wish :-)

Once you know precisely the volume of the ball bearing(s), you can put them in the combustion chamber under the sealing disk. The volume of liquid you then have to add is reduced by the volume of the marble(s), so you can use

less liquid – and thus a smaller burette. Remember to add the liquid and marble volumes together to get the chamber volume. Just be sure to keep the numbers straight. Keep good notes!

When trying to achieve the smallest possible difference across all four jugs, statistics are your friend. Make all of your measurements a number of times and then average them. This helps to reduce the human error, a factor that can be deadly for the first-timer. Without experience you can't appreciate the significance of seemingly minor differences. Do everything several times, throw out the high and the low then averaging the remainder tends to reduce any errors of observation.

Work with good light. Don't be shy about using a magnifying glass to inspect the meniscus in the sealing plate holes and your burette. When taking a series of measures on the same chamber(s) always be sure to start with it perfectly dry. That means you'll need an air blast to blow out the spark plug (which should be torqued to spec on a new washer). Before filling the chambers I swab them with lacquer thinner or MEK to remove any oily residue that might prevent the fluid from fully wetting the surface. When applying the Vaseline, don't get sloppy - a little dab will do ya.

Once the sealing disk is in place, it don't wanna leave :-). Use a dental tool or bend a tiny hook on the end of a piece of wire to lift it out using one of the holes. Pour the water out of the chambers, wipe them down with a clean towel, give it a slosh of alcohol and blow the plug dry.

Traditionally, the liquid used for cc'ing heads was kerosene. (I dunno... it just was. Maybe they liked the blue colour.) Working with VWs I've heard guys advocate the use of everything from anti-freeze to ATF and big dummy that I am, I tried them all. Hell of a mess.

Light oil of any kind is a contaminant in the shop and can be a fire hazard. And glycol is poison. In the mid-70's I started using 'wetter' water for cc'ing and found it gave more consistent results and a lot less mess. How do you make water wetter?

Originally, I added a couple drops of 'Photo Flow,' darkroom stuff that prevents water spots on your negatives. But for cc'ing heads, a couple of drops of liquid detergent per litre of water has about the same effect. A drop or two of food colouring will make it easier to see in the burette. Try to work in a room-temperature environment. The temperature of your measuring fluid and the heads should always be the same. (Keep the liquid in the shop with the heads. You'll need to do rough spot-checks as the works progresses. I'll have more to say about that in a minute.)

I normally use a burette similar to the one in the photo. Mine's attached to a standard that bolts to the base, which is a plywood box filled with concrete. To attach the burette to the standard (a fancy name for a scrap of plywood), I twisted some welding rod around a bolt a little smaller in diameter than the burette so the resulting hair-pin-looking piece would grip the burette. To fasten it to the

standard I drilled a pair of holes, poked the legs of the hair pins through the holes, bent them over and covered the bent ends with a slather of Bondo.

The base is heavy to prevent it from tipping over and breaking the burette. It is levelled with shims or screws then the burette is over-filled using a pitcher and funnel. To dispense the liquid I use a length of surgical rubber tubing (drug stores carry it) fitted with the glass tip from an eye-dropper (American Science & Surplus (www.sciplus.com) sells all this stuff, including a pretty good Chinese burette). Flow is controlled by a clamp on the rubber hose. Once the burette is over-filled I bring the fluid down to the line by releasing the clamp and returning the fluid to the pitcher or bucket.

To fill the chamber I hold the eye-dropper/nozzle over one of the holes then play with the flow-control clamp until I bring the fluid level to the base of the sealing disk then chase out any bubbles by tapping on the disk with my fingernail or the handle of a dental tool. Once all the bubbles are accounted for I fill the central hole a drop at a time until all of the holes are at precisely the same. Then I read the burette, hunkering up or down to eliminate any parallax.

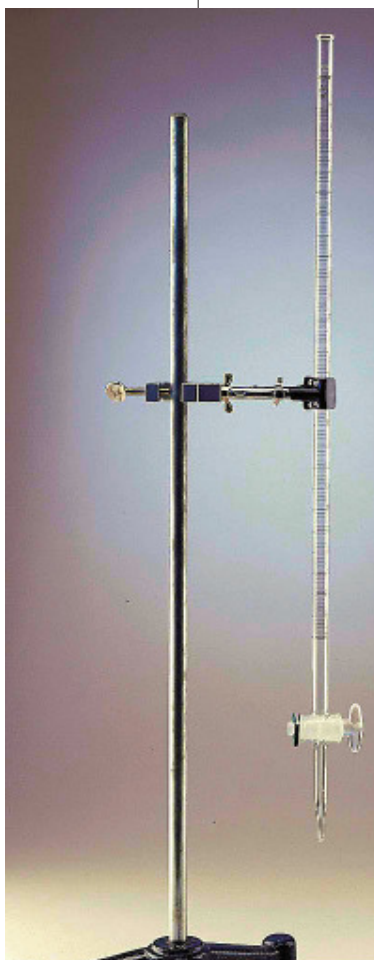
Measuring a chamber takes me less time than it took you to read the paragraph above. Using two disks allows me to do both chambers with one set-up.

Then I clean everything up and do it all over again.

To determine the finished volume, as when I'm down to the point of making fractional cc adjustments, I measure each chamber as many times as I think I have to. Sometimes I'll get three identical measurements in a row on both chambers. And sometimes I'll do it half a dozen times and get a different measurement each time, usually when I'm tired or whatever. (People wonder why I don't answer the phone or throw rocks at them when they arrive unannounced. Now you know :-)

That's how I do it when I'm balancing the volume of the heads, trying to achieve 1cc or better across all four. When I'm in the shop working on the heads, I generally use a syringe. It's only accurate to 2cc but it's a lot faster and when you are first opening up the heads, 2cc accuracy is more than enough.

When building a big-bore engine, cc'ing your heads begins long before you get around to calculating your compression ratio. In fact, it starts when you first acquire the heads. If they're new, with valves already installed, just install a spark plug, grease them up and do a rough measure of volume. With bare heads or heads that have just been overhauled (ie, welded-up with new seats, etc.), rough in the valves then install a plug. Level them up, select the appropriate sealing disk (if you haven't opened them up they'll be some other size) and use a syringe to get some idea of their as-cast volume. It's handy to write that volume directly onto the head using a crayon or wax pencil. The heads should already have been documented and assigned a work number and a documentation package (sounds complicated; actually, each head is just a page in a notebook.) A lot of folks think that's



overkill for just one engine but during the course of the work you must have some means of identifying the chambers and even one engine has four of those suckers in two identical heads. If you're building a really good engine, you'll make up a set of spare heads, identical to the first set. Having a spare set of heads on-hand allows you to swap heads when necessary and do the valve work at your convenience.

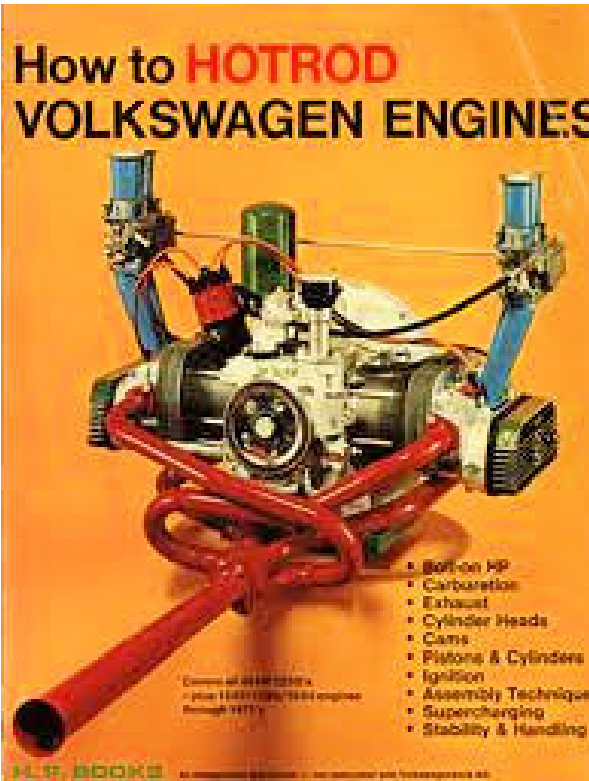
When you open up your heads for bigger jugs you are trying to compress the swept volume of the larger jug into the original compression space. There's no doubt the compression ratio will go up. The big question, is how much?

If the only thing that changed was the swept volume and the deck clearance was kept the same, going from 1600cc to 1835 is going to raise your CR by about one point. But that's the myth that leads to blown engines because nothing remains unchanged. When you open up the heads even the slightest skim cut will reduce the chamber volume. Another part of the myth is that most guys don't know what their original compression ratio was to begin with. Later model engines ran 7.5 or 7.7 (the Export crate engine from the Puebla plant is 7.7) depending on the heads but if it's been overhauled a few times you could be using heads that have been flycut. Bottom line: It isn't uncommon to see 1835s with a CR of 9:1 or more.

Opening up your heads for bigger jugs offers the opportunity to unshroud the valves. Unshrouding the valves results in a profound increase in flow-rate for the same amount of lift. The procedure is covered in Bill Fisher's "How to Hot-rod Volkswagen Engines" but I'll try to show you what I'm talking about.

To unshroud your valves you have to remove metal from the chamber. Any time you remove metal from the chamber you need to cc the chambers to make sure they all end up the same size. This is normally done several times as the work progresses.

Okay, so you're using a syringe and a sealing plate with



one hole and you've never done it before and you think my talk about attention to detail is all bullshit so you squirt them just once and come up four measurements ranging from 55cc to 60cc. Now what do you do? What you do is go back and do it again :-)

When you're satisfied that your measurements are as accurate as they're going to get, the next step is to decide on a strategy for increasing the volume of the small chambers to bring them closer to the volume of the largest chamber. By this time you should have some idea as to the physical size of one cubic centimetre and your measurements have told you how much each of the three smallest chambers must be opened up to match the volume of the largest. The tricky bit is where to remove the metal from.

Basic starting point is unshrouding the valves using rotary files. Then do a quick syringe-check. You want to STOP with the filing when you get to within 1 cc of your goal.

If unshrouding the valves does not give you enough volume then you begin 'laying-down' the edge of the combustion chamber. Here again, start with your rotary files. Try to visualize the amount of metal you want to remove. Remove nearly that amount then check the volume. When you get to within 1cc, stop using rotary files and shift to using abrasive rolls.

The principle behind smoothing things with abrasives is to simply remove the tool marks from previous steps. That means using a tool (or abrasive) that will leave smaller marks. So you start with coarse sandpaper and when you've removed all of the marks of the rotary files you'll be left with the marks made by the sandpaper. So you shift to a finer grade of sandpaper and do it all over again. I generally use 80, 120 & 220. After 220 I shift to felt hobs and polishing compound.

A key point here is that I never try to hit the target volume dead-on, I only try to get close to it and always on the high side. A second point is the need to periodically check the chamber volume as the work progresses... and to check it with an increasing degree of accuracy.

The only practical way to achieve 0.1cc accuracy across eight chambers (ie, two pair of heads) is to get close to the target figure, say within 0.5cc, and to then drop one of the valves. That is, to lower one of the valves by grinding its seat. The area of the valve is fixed; you can measure it. You then determine how many hundredths of a millimetre it needs to be lowered to arrive at your target volume.

Since most of you don't have the stones, tools and fixtures for re-grinding valve seats, I don't expect you to be using this procedure but I think the how-to is worth mentioning.

Bob Hoover






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