



# CROSS FLOW

BENDIGO CAR CLUB  
(BCC)

2017, Issue 5

June 2017

## Presidents Report

Hi club members our recent day night kxanacross was a great event, it was a bit cool at night and the wind stayed with us. We had nine runs and we managed to finish up early. A BIG THANK YOU to Jim Coombs who spent all day on the tractor blading, smudging and rolling the track. Peter Valentine, John Hardiman did a great job along with Peter Panozzo, with Mick Elvey setting up the tracks. We had Chris Hume and Glenyce Coombs doing the paper work, Matt Bolton and his family taking care of the timing, Doug and Nathan Adams on the start line. Barry Farnell also did timing and helped Rod Holt and others to pack up.

The canteen did a great job and the soup was a big hit on a cool night. Thank you also to Bill from Midland Earthmoving for grading the track also to Peter V, Chris H and Mick E for mini working bees on the day also to the 9-10 brave souls at the major working bees, apologies if i have missed mentioning anyone but a big thank you to everyone that attended and helped out.

Our next event is our round of the V.K.C on the 4th June and we will need helpers so please make yourself known on the day.

Everything is going along nicely in the club so pat yourselves on the back.

On an important note our AGM is coming up in just two months ... August so have a think about if you would like to be on the committee to help shape the club in the future. The four current committee members up for re-election are Mick Elvey, Peter Valentine, Craig Button and Jim Coomb. See you all at the club meeting this Thursday evening at 8.00pm

Mick Elvey  
President



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### Upcoming Events:

#### 1st June

General Meeting  
Maiden Gully Clubrooms

#### 4th June

Vic Kxanacross /  
Motorkhana  
Championship

#### 24th June

Trivia Night  
BCC Maiden Gully  
Clubrooms

#### 2nd July

BCC Long Course  
Autocross—Bagshot

#### 15th July

VMC Motorkhana  
Huntly—Jnr Round

### **Membership fees for the Bendigo Car Club are as follows:**

Full Membership Adult \$90.00

Junior Membership \$40.00

Family Membership is One Full Membership plus \$30 for  
each extra Family Member

***BCC General  
Meetings are  
held on the 1st  
Thursday of  
each month  
from 8pm at our  
Maiden Gully  
Club Rooms***



## Behind the Screen

Hi everyone and welcome to June, which means we are at the halfway point for the year. Sunday June the 4th will see the running of the Victorian Khanacross Championship and a Motorkhana which will be the 5th round of the Bendigo Car Club Championship. With a mostly clear week of weather forecast we should be in for a fine and cold day on Sunday.

The Annual General Meeting (AGM) of the Bendigo Car Club is rapidly approaching, as is the case each year we have a number of the committee up for re-election. This is your chance if you would like to make change with the car club and offer your help and thoughts. Unfortunately, too few do too much in the club and it would be great to spread the workload evenly across the club. This would save these few doing the work from burning out and enable them to actually enjoy themselves. The club is not run by only one person or a handful but rather an entire committee. If you would like to be part of this then give some thought to putting your name in the hat. We encourage some young people to become involved and offer their ideas.



Unfortunately i did not make it to the last working bee at Bagshot, so i cannot report on it. However i will be organising a working bee at the Maiden Gully Clubrooms with the next few weeks, date to be advised. It will be on a Sunday morning from 9am till about 12noon. Works planned will consist of piling up branches and sticks around the property for a bonfire, whipper snipping, cleaning out the spouts, picking up rubbish and clearing the open drain along the highway. Keep an eye on the BCC Face book page for dates.

As a member I've noticed a habit forming at meetings which is becoming increasingly annoying. Please people, as a show of respect and common courtesy either silence your mobile phone or turn it off before the meeting. It causes unnecessary interruptions and is rude to those that are speaking, feel free to duck outside and take the call if its needed.

Last thing, if you have anything for the Crossflow you would like to share, even your experience at a recent event, please send it through to [tcj.castle@bigpond.com](mailto:tcj.castle@bigpond.com). Thanks again to Robert Andre for his contributions, always a good read.

Until Next Month,

Behind the Screen, Craig Hardiman



## Brace Yourself to Strut your Stuff

Once upon a time a client chastised me for “effecting the structural integrity of my ‘*strut brace*’ by fixing a bracket to it to hold the power steering reservoir”. The great irony to this story is two part: the car featured wishbone front suspension and torsion bars (Alfa GTV) and the client was an eye specialist... and perhaps the third great irony was that the ‘*strut bar*’ was pre-distorted by being constructed with multiple bends to clear the engine, just the trick to ruin effective and efficient load paths. We will ignore the forth great irony of ‘working on an Alfa’ as that is beyond the scope of this article.

In defence of said client my choice of fixating a bracket by the means of inserted threaded fasteners was rather on the agricultural side of the engineering scale; and perhaps I should disclose that the car may have featured helper springs on the front shock absorbers. BUT the moral of the story is that braces are really only of use between load paths on a chassis ie: between spring seats that have to resist dynamic load and not between shock absorber points that are there to attach a spring damper.

So unless there is a fundamental chassis design error introducing severe body deflection between any of the suspension mounts, not much is going to be gained by bracing ‘shock mounts’ as opposed to bracing ‘spring mounts’. We also have to consider where these forces are applied to within a chassis.

I once had a similar discussion with a friend about putting a brace between the ‘shock points’ on the rear of his SAAB 9000 (springs loads go to a different point), as the keyboard warriors on the SAAB forum were spruiking the benefits gained by the computations of their mental masturbation. I explained to my friend the difference between a spring mount and a shock mount, plus the basic theory of creating a hypothetical pyramid structure only between load points (ie: spring top mounts) - he in turn kindly passed on the information to his fellow keyboard warriors – oddly to the lull of silence.

So perhaps the greatest chassis stiffening that can be done on a car such an early Subaru Impreza is to build a pyramid structure with a triangulated base over the four strut tops that are featured at each corner of the cars suspension. As a front or rear strut hits a bump the load is fed back into a fully triangulated structure. For reasons of practicality an upright pyramid may not be suitable, but depending on driver location, an inverted pyramid may work equally well, but this time the pointed structure is loaded in tension rather than compression. The same basic principles are at work in well-designed roll cages that triangulate the load points.

For the reasons listed above, the utilisation of sub frame connectors or ladder bar chassis contributes very little to assisting torsional rigidity (twisting stiffness), whilst only significantly improving beaming rigidity (bending along the length of the chassis).

As a final note, when looking at purchasing some form of strut or chassis brace, consider what you are actually bracing and remember that any strut brace that has adjustment points such as rod ends also has built in pivot points - not really helpful if you are trying to make things more rigid! So always try to buy a completely rigid structural brace and manipulate to fit the car. A rigid chassis will mean better response from chassis adjustments and driver input. Please note that chassis flex can also be a tuning instrument but is outside the scope of this article.

**By Robert Andre**



## Club Member of the Month

**Name:** Robert Andre

**Occupation:** Motorsport Engineer/Architectural Draftsman

**Years In Bcc:** Currently 3 years and 4 years prior around 2000

**Favourite Venue Raced At:** Bagshot (worked at far more tracks than have driven on)

**Vehicles Of Interest You Own:** 2001 V8 Calais, 120Y sedan, Micro Sprint (F500) based special with GSXR1000 engine, supercharged Singer 9 (to be a 'special').

**Best Motorsport Memory:** First asphalt event was at the Saleyards in 2001 and I won my class - in my beloved Datsun 1600 – beating Spanner at his own game. Fabricated, assembled and worked on some pretty nice machines including fabricating the diff housing for the Maybach (II) grand prix car re-creation, a project headed by former HDT Manager John Sheppard. The original was raced by Stan Jones. Getting to know constructors like Robert Britton, Dave Mawer and Brian Wilson has also been fantastic.

**Favourite Racing Driver:** Josh Hunt – he raced Formula Atlantic and is currently a kart team manager in Asia. Not as naturally gifted as some other drivers but probably one of the best setup guys in Australia and a very hard worker.



Dave Reynolds was a funny guy to work with but can be scattered. Tim Blanchard is another friendly driver I like. Unfortunately I discovered most big name drivers have morals that belong in the toilet.

**Before You Finish Racing You'd Like To:** Finish my projects and use them. I have a few space frame concepts I'd like to build and test. After years of working on race cars I have become a real fan of ultra-simple engineering and design principles, and I have to confess I have upset a few mega dollar spending car owners by stating that a \$10k Superkart will hose their vehicle at the track.

**Best Motorsport Achievement:** Would be my Saleyard class win in 2001. A major achievement as #1 mechanic/engineer was winning a semi-enduro round of the Sports Racer Series at Wakefield Park and holding the lap record at the newly lengthened Sydney Motorsport Park for a brief period.



## Feature Vehicle of the Month

**Type of Vehicle:** 2001 Holden Calais

**How Long Have You Had It:** 4 years

**Any Modifications:** Had heaps by the previous owners – MAFless tune, over the radiator intake, Pacemaker headers and exhaust, 3.46:1 LSD diff, Pedders springs and shocks. Approximately 300rwhp.

Modifications I have done – Velo race seat mounted to factory power rails, HSV fixed strut bar, alignment changes and standard issue racing gear.

**What Events Is It Used For:** Club championship rounds. My wife is still learning to drive and I convinced her that because it's an auto it would make a good second family car... (other family car was a manual at the time)

**Best Result:** 2<sup>nd</sup> in the Club Championship for Class C. Not sure if I have a 1<sup>st</sup> in Class yet???

**Future Plans:** If I win the lotto it's getting gutted, AWD Holden Adventura running gear and a worked LS2... Realistically I may one day fit some Bilstein's, put some bushes in it, convert it to manual and fit a bolt in cage... Or perhaps use it to tow the 120Y or Micro Sprint special to the track...

**If You Didn't Have This You'd Have:** Probably a 206 GTi, Integra, Mitsubishi Mirage or an atmo Subaru as a road registered club car. I've seen some guys do really well rallying in '80's Commodores so that would another short listed car, particularly as parts and go fast bits are still easy to come by. Considering I used to build Lotus 7 replicas, my ideal car would be to build something like a 'Phantom Clubman' (similar to a Mallock Clubman) combined with AWD, big HP and lots of aero.... And race it on dirt just for something different!



Robert Andre's  
2001 Holden  
Calais





## BCC Club Membership Renewals

Any future club membership renewals will only be able to be done at the monthly General Meetings, renewals will no longer be accepted at pre-event check-in at BCC events.

Membership renewals will only be accepted if a Membership Renewal Form is accompanied by the relevant fees, forms have been emailed out already and they can also be found on the club website and a limited number of forms will be at General Meetings.

Other arrangements can be made with prior approval of the membership secretary.



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Junior Membership \$40.00

Family Membership is One Full Membership plus \$30 for each extra Family Member



CONFEDERATION OF AUSTRALIAN MOTOR SPORT



## BCC Life Members

1991	Max Jackman *	2002	Harrie Larter
	Bill Atkinson *	2005	John Orr
	Frank Panozzo *	2012	Craig Button
	Frank Coad	2013	Michael Elvey
1996	Rosalie Panozzo	2014	Ken Holt
1998	Lois Jackman		Cheryl Holt
	Phillip Gallagher	2015	Peter Valentine
2000	Norm Brown	2016	Roger Hall
2001	Barry Farnell		

If you have any old motorsport DVD's for entertainment for after club meetings, we would appreciate your donation



## *Bendigo Car Club Trivia Night*

***Saturday 24th June 2017***  
***Maiden Gully Club Rooms***  
 More details to follow, keep and eye on your emails and Facebook



PO Box 361  
Bendigo Vic 3552

[www.bendigocarclub.com.au](http://www.bendigocarclub.com.au)



## BCC Contact List

The Bendigo Car Club is a multi-disciplined motorsport club that gives its members the opportunity to compete in a wide range of activities. Below is a list of members who can be contacted in regard to specific disciplines of motorsport.

Event Type	Contact
Motorkhana	Brian Shanahan
Khanacross / Autocross	Mick Elvey
Rally	Murray MacKenzie / Tony Moore
Off Road	Craig Button / Jim Coombs / Ken Holt
Bitumen Sprints / Circuit	David Dixon / Roger Hall
Officiating	Peter Valentine / Lesley Smart
Vic Roads Club Permit Scheme	Craig Button / Mick Elvey / John Orr



Bendigo Car Club

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**FUN FACT**

The average car has  
30,000 parts

