

Wheelspin

April 1999

Official Newsletter of the **TWIN CITIES AUTOSPORTS CLUB Inc.**
PO Box 7697, Garbutt QLD 4814



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MAGAZINE SUBMISSIONS:

Anyone wishing to submit Articles, Information, For sales, etc. for the next magazine please call me or send the article. Closing deadline for magazine is the Tuesday following meetings.

Ph: (07) 4771 7928, Fax (07) 4771 7705, E-mail:- ron.white.29994344@army.defence.gov.au

I am open to suggestions for articles in the magazine eg. Tech Tips, News and Views, etc. so don't be shy. A club magazine is the lifeblood of a club, it informs members, sponsors (I hope you give the people that support you a copy) and keeps the interest up. So if you have something to say, say it in the magazine so ALL members get to know about it.

PRESIDENTS REPORT

The club has new Tee shirts in stock and they are for sale for \$25.00 so be quick if you want to look the part.

Contact;

Steve Cruttenden on 07 4779 0200 (w) 07 4725 2047 (h)
or Ken Long on 0418 180 329 (w), 07 4773 7404 (h)

SECRETARYS REPORT

TCAC GENERAL CLUB MEETING - 18th March, 1999 at R. L. Club Sth. Tvl

PRESENT: Steve Cruttenden, Greg Van Dinter, Grant Ross, Lindsay Stone, Ken Long, Geoff Nicol, Graeme Telford, Ron White, Bruce McCarthy, Kate Brehaut, Edwin Hetherington.

VISITORS: Tracy Poore, Caillen Peacock, Michael Harding, Tom Gibney
Visitors welcomed by Kate B.
Meeting opened 7.10 pm. Minutes of previous minutes read & accepted.

PRESIDENTS REPORT:

- Motion forwarded and approved to slash Nanna's @ \$45/hr via G. Nicol for 25th April KhanaCross
- Club Calendar, Promotions & Club brochure to be sent to QRC Supporters List and prospective officials.

SECRETARY'S REPORT:

Correspondence in: Aust Post Delivery Form
Herberton Rally Sprint Supp.
Regs- now on 10&11 April
Temporary Resignation from
Gary Hewson

Cams QSC News
The Shannons Report, F1

Update
Mail requested to be collected more regularly for Event
Regs. etc to be dispersed.

TREASURER'S REPORT:

See Monthly Report - Balance \$2052.
\$213 cheque for Event First Aid

equipment

CLUB CAPTAIN:

Kate presented the Event First Aid Kit from St. John's Ambulance for comments.

SOCIAL:

Mini golf to be looked at shortly by G.Nicol. -
TBA

Day Run planned for 17 April at 2pm
Another Movie Night to be arranged soon.

GENERAL BUSINESS:

Go Kart Officiating/Flagging - 3/4th April
(Easter), 8-10 people required
Comments were made ref: incompleteness of
Herberton R/Sprint Supp. Regs.

Treasurer to follow up the purchase of ten Cams Manuals at \$15 each.

Lindsay Stone to take on Publicity Officer position (ex Gary Hewson for the term of his temporary resignation).

Herberton Rally Sprint postponed to 10,11th April.

Greg VD acquired information on rally clocks from 'Rallytime'

- \$540 each for 25-30 off purchase ex tax.
- \$17 each for event hire.

Cardwell Rallysprint - tentatively 19th June - trial for officials etc. for QRC.

Next General Meeting - 15th April at 1900 hrs at same place.
MEETING CLOSED at 8.50pm.

EDITORS REPORT

Starting this month there will be some new articles in "Wheelspin", courtesy of my connection to the Internet at work. This month there are a few articles that were published in the latest 'CAMS Report', but for those of you that don't get one, I have reproduced them from the CAMS Web Page.

CLUB CAPTAINS REPORT

There will be a Day Run on the 17th April at 2.30 pm. The start will be from the carpark at Mitre 10 Willows and there will be some light snacks at the finish (around 4.00pm).

You will need to bring along; a pen, clip board, togs, towel and five litres of water and a packet of jelly. (*finally, some culture. ED*).

For more information ring Kate or Tonka (4773 3053).
Hope to see you there. Have fun.

Who can tell me the details of this months front cover?

EDITOR'S SAY

Last month I announced the support I arranged from P&O Firepro for supply of Fire Extinguishers for club events and also Club prices for extinguishers and servicing. My apologies for failing to supply a phone number. Contact Mr. Tony Lewis on (07) 4771 9211(w).

Now for those articles from the CAMS Web Page.

LOOSE OBJECTS

(and the one that got away...)

A peculiar heading for which the reasons will become, hopefully, self-explanatory. Early on in my previous life as a teacher of Physics to our often misguided youth, I was the victim of a practical joke by some of my HSC students on their last day at school.

On a hot November afternoon, as I walked down the front stairs of the school on my way home, congratulating myself for having missed being drenched by perfume in squirt guns, or having my head shaved, I was suddenly drenched by a bucket full of water mixed with green vegetable dye. In the sudden shock, I was also aware of being brushed by something heavy. I, along with the boys on the roof above me, was horrified to see a 3kg "shot put" bounce off the stairs near my feet and out onto the roadway. Where it had hit the concrete stairs, a large piece had been chipped off with a resounding crack. I never did get to the bottom of who dropped the shot into the bucket, but underneath the dye, I reckon I had gone a fair shade of pale!

I tell that story as an introduction to a little preach about loose objects in the cockpit. By the time the shot had reached the stairs from the rooftop, it was travelling at some 25km/h, and I hated to think what it would have done to my feet, or my head! It therefore surprises me to think that people in race cars are prepared to risk being hit by a similarly heavy object, travelling at even higher speed, by having a loose object in the cockpit to fly round in a crash.

Our dedicated scrutineers still find fire extinguishers held in place with flimsy plastic brackets, orientated longitudinally along the car to allow maximum chance of escape in a front ender and, more recently, a spate of video cameras held in by nothing more than an alloy bolt in the camera case.

The general rule will be that all potential escapees in the prison cockpit must be secured to withstand an acceleration of 25g. This means your 2kg video camera or fire extinguisher must be able to take a "force" of 50kg without tearing loose. CAMS will be progressively bringing in the use of some high tech equipment, (probably a set of fishing scales and a rope sling!!) and when a scrutineer thinks your camera is a potential "Houdini", he or she will ask you, the competitor, to do the test by pulling with the appropriate force on your expensive toy. If you don't think it is going to pass, it will be up to you to stop pulling, and then remove the camera! If you keep pulling and it breaks a piece out of your camera, you will have no-one to blame but yourself. If you achieve the desired force and nothing breaks, all's well. Same for the extinguishers. There are some really good brackets designed for the purpose for sale, and some of the metal brackets on some fire extinguishers are also fine. The best bet with the video camera is to put the whole thing into a housing to hold in the camera in an accident, and then solidly mount the housing.

And yes, I did get sick of the "Martian" jokes about little green men!

Peter Lawrence, Manager - Technical Services, CAMS

REGULATIONS UPDATE

from Peter Lawrence, Manager - Technical Services, CAMS

FIA REGULATION CHANGES

There is a steady stream of minor changes which emanate from the FIA, and it is often hard to foresee their impact on Australian motor sport. Here are a couple that will affect Groups A and N Rally cars, Super Tourers and Targa competitors, when competing in International events. CAMS highlights these changes to ensure you are kept up-to-date

•**Fire Extinguishers:** all groups A, N and ST competing in International events will be required to have plumbed fire extinguishers, of a type homologated by the FIA, as from January, 2000. Interestingly, the FIA have not given this new standard a number and CAMS is seeking clarification of this. Currently, there is only one homologated system and this is why the standard, which was to be in place for new cars THIS year, has been put back to 2000.

•**Fuel Tank Non-Return Valves:** all FT3 tanks which are filled through a neck (as distinct from directly into the tank as in most Formula Cars) will have to be fitted with FIA-homologated non-return valves in the filler necks as of 1 January, 2000. The purpose is to stop fuel being disgorged from the tank in an accident where the fuel filler neck may be ruptured. It is a good idea, but it has suffered in the same way as fire extinguishers in that only one non-return valve had been homologated at the end of 1998 and that manufacturer could not supply enough for all those affected race cars. It too will come into force in 2000.

•**Safety Harnesses:** as if you have not read enough on these already!! There are new FIA seat belt standards, called 8853/98 (5- and 6-strap) and 8854/98 (4-strap). Supplies of these are coming on to the market now, including some new Australian belts (see next CAMS Report). The FIA have decreed that, after 1 January, 2001, all safety harnesses used in International competition (which will include the V8 SUPERCAR race at Bathurst and Targa Tasie) will have to comply with these new standards. At this stage, CAMS will continue to allow the older 8853 and 8854 standards (pre-'98) to be used in National events along with the SFI, Australian and European as per the current CAMS Manual.

NEW FIA CLOTHING REQUIREMENTS

Since the announcement of the new clothing requirements for races in 1999 and beyond, CAMS National and State offices have received a steady stream of enquiries about their application.

To remove doubt, CAMS reiterates that the revised clothing requirements pertain to circuit racing in automobiles only, beginning with all National Championship races in 1999, and to all circuit races in 2000.

The standards of apparel worn by competitors involved in rallies, off road, speed events and circuit races for Superkarts, and all non-National Championship circuit races in 1999 will continue as per the 1998 regulations.

CAMS has no plans at this time to extend the requirement of FIA-homologated clothing to other categories.

However, we stress that such homologated clothing has been tested for resistance to ignition and heat transfer, unlike present clothing which does not need to comply with these high standards. As such, if you intend to purchase new overalls, boots, gloves etc, you will be doing yourself a favour by looking for clothing complying with the new standards.

There are a number of Australian-manufactured items of apparel for sale, recognised by the letters of CAMS in the FIA label sewn on to the rear of the collar. Some early suits complying to FIA Standard 1986 had the label sewn on to the front of the garment. If there is no FIA Norme 1986 badge on the suit, it is not a proper FIA suit.

Underwear, balaclavas, socks, gloves and boots must be made from materials tested to the ISO 6940 standard, and must have a label attached to say this.

The current "underwear requirements" are a little vague, though the FIA says it is addressing this. We will advise more in a future CAMS Report.

Have a happy new year's racing.

REVISED ROLL OVER PROTECTION STRUCTURE REGULATIONS FOR 2000

Changes to the CAMS Roll Over Protection Structure (ROPS) regulations come into force on 1 January, 2000.

The revised Schedule J appears, in close to what will be its final format, in the 1999 CAMS Manual of Motor Sport to allow people time to digest the changes.

The principal changes are to materials, both size and specification of tubing, rear braces, and to some types of connection.

1. Tube Materials: The revised Schedule J no longer allows AS 1450 tubing or aluminium alloys. Material specification reflects a higher tubing specification with mild steel tubing now required to be cold drawn to size during manufacture. Unfortunately, this type of process is no longer used in Australia so all new tubing must be imported. The basic specification is CDW (Cold Drawn - Welded) tube, produced in Japan, India and the USA, or CDS (Cold drawn - Seamless) made in Europe and the USA. Both types appear similar as no seam is evident in the CDW tube in spite of the manufacturing process. CDS is more expensive than CDW and the only CDS tube used will generally be 4130 Cr-Mo tube. By comparison, Australian pipe (AS 1163) still generally exhibits a seam on the inside of the tube and lacks the smooth, drawn appearance of the new tubes.

The strength of the tube is now given as an Ultimate Tensile Strength (UTS) of 350 MPa, in place of the Yield Strength of 250 MPa. The specifications are similar as UTS is where the tube breaks and Yield is where it starts to deform. The FIA are looking at revising these requirements but current tubing will more than likely still comply. The FIA are concerned about the need for an "elongation", usually given as a percent on material specification sheets. This is a measure of the ductility of the metal; how far it can be stretched before it breaks. This

is very important in main and longitudinal hoops where the tube must be bent. Too low an elongation factor and it is likely to fracture if bent too far. This was one of the chief problems with the old Reynolds 531 tube; tough stuff but had to be bent very carefully indeed.

Finally, aluminium alloy will not be accepted in vehicles for which a new log book is issued after 1 January, 2000. There will be no exemptions granted as the lead time of 12 months is adequate for the completion of all new alloy cages.

2. Tube Specifications: Main hoop specifications of 45mm x 2.5mm will remain as per the current regulations, though the imperial equivalents of 1 7/8" x 0.096" are also acceptable. Additionally, a 50mm x 2.0mm main hoop is also now accepted (2.0" x 0.083"). Other braces must be 38mm x 2.5mm or 40mm x 2.0mm for all vehicles. The old 30mm x 1.5mm standard for cars less than 1150kg will be gone, as has 40mm x 1.5mm. A similar situation applies to new 1st Category cars which now must use a 38mm x 2.5mm or 40mm x 2.0mm roll bar

3. Design: The rear braces may no longer be bent to run across the roof and down on to the parcel shelf but must be straight, basically parallel to the vehicle's centerline and make an angle of not less than 30° to the vertical when viewed from the side. This will no doubt cause some angst to those who want to use their cars with back seat passengers!! However, the rear braces may be made removable (for road use) and with the proliferation of dedicated racecars is less of a problem than it would have been 10 years ago. Speaking of which, the "tee" clamp, so beloved by many of the kit cage manufacturers, is no longer acceptable under the new regulations, and removable joints must comply with those shown in the new Schedule J. The other main changes are that the "Full Width Roll Bar" (current type 2) and Full Width Braced Roll Bar (type 3) are to disappear. The Solo Roll Bar remains for 1st Category vehicles, and Open Cars for other than races and speed events. All other cars must have at least a type 4 "Half Cage". There are also some differences in mounting plate dimensions.

The ROP Structure on Sports Sedans and other "space frame vehicles" have been defined as those parts above the first predominantly horizontal portion of the car, with that below being considered as the vehicle. Off Road Buggies will continue to use the currently prescribed chassis design, but with the new material specification as per the revised Schedule J. Other Off Road classes will need to comply with the new requirements in terms of design and materials.

In summary, any currently log booked car with a ROPS which complies with the current (pre-2000) regulations, whether AS 1450 steel or alloy, will not be affected by the new regulations as they shall not be made retrospective. Anyone wishing to complete a cage utilising the current materials and designs must have done so, and had a log book issued, prior to 31 December this year. Check the 1999 Manual for full details.

REVISED SAFETY HARNESS MOUNTINGS FOR 1999

The 1999 CAMS Manual of Motor Sport contains a revision to the current Safety Harness mounting provisions contained in Schedule I. Up to this year, the only prescription has been that shoulder belts must be no lower than 40° below horizontal. Whilst this is not being changed, the CAMS Technical Committee have been increasingly concerned by the apparent lack of knowledge relating to some aspects of harness mounting, and in many instances, the correct wearing of them.

Recent investigations at race meetings and speed events by Mr Don Dunoon, a consultant to the automotive industry and an expert in the field of vehicle safety, have turned up instances where the seat belt installations themselves could have contributed to serious injury rather than minimised the effects of an accident.

The revised diagrams in the CAMS Manual have been taken from the prescriptions of the FIA, and represent a significant improvement in our advice to competitors. Having said that, the diagrams themselves are somewhat deficient in that they refer the mounting angles to the seats, rather than to a person. The diagram on this page (*refer to CAMS Report-ED*) is a better illustration of how the seat belts should sit in relation to an occupant, and should be seen as a more definitive guide to the mounting positions.

Ideally, any holes in the seat should allow the passage of belts without significant deviation, from the occupant to the mounting points of the harness. The more deflection caused by belts being forced to turn corners as they pass through belt holes, the greater the slack that has to be taken up in an accident before the harness can do its job in restraining the occupant.

The need to restrict movement of the occupant also applies to the length of the belts. As a general rule, they should be kept as short as possible. This particularly applies to the shoulder belts, which are sometimes led back to the rear of the vehicle in most closed vehicles. It is very desirable that they be no longer than 300mm, best achieved by mounting them onto an additional member of the roll cage welded between the two backstays. Ideally, these shoulder belts should be mounted horizontal from the top of the occupants torso, to 10° below horizontal, though it is acceptable for them to be up to 40° below horizontal.

It is in the area of lap belts where most of the worrying scenarios have been noted. It is very important that the belts bear upon the bony structure of the body, that they are worn low across the front of the pelvis and are then attached to the floor at an angle of about 80° to the horizontal. This "steeper" angle is absolutely vital in any safety harness using shoulder belts and particularly in those without some form of crotch strap. With the shoulder harnesses worn tightly, lap belts led back to the rear of the car at a shallow angle can be pulled up into the lower abdomen area, which could then apply crushing forces to the liver, kidneys and spleen in the event of an accident. And of course in a frontal accident the shoulder straps will be loaded and further draw the lap straps upwards. The

belt must always stay low across the hips, and a good way to ensure this is to mount the belts down towards the floor.

The function of the crotch straps in five- and six-point harnesses is to prevent "submarining", but the way they achieve this is often misunderstood. Submarining is where the occupant slides out below the lap belts, and this occurrence is affected by two things: firstly, the angle of rake of the seated occupant, and secondly the incorrect fitting of the lap belts.

In a typical formula car, the occupant is lying largely on his/her back and this increases the tendency to submarine. A properly-designed crotch strap set-up is therefore normal in such vehicles, though the main stopping force is still applied by the properly tightened lap belt. The crotch strap's main function is to hold the lap belt down over the hip bones, acting against the upward pull of the shoulder straps as they become loaded. Only when the lap belt is loose will the crotch strap(s) take on the role of stopping the passenger, and this can cause significant injury as, firstly, they are generally narrower belts, and secondly, they pass edge-on around (or across in a five-point harness) some soft areas of the anatomy on the inside of the thighs or groin. They cannot bear on any bony part of the body until they squash the soft stuff out of the way. Six-point harnesses which have the crotch straps passing either side of the groin are definitely preferable, whether they connect to a wide "moustache clip" under the central buckle or via loops on the lap belts to the upper harness.

In a touring car, the occupant usually sits more upright and is less likely to submarine, but it can still happen, and for the same reasons as in the formula car. A loose lap belt or one fitting over the soft areas of the stomach means that, in a frontal impact, the car stops, and the occupant keeps going. The shoulder and lap belts merely deflect the occupant down and out under the belt. In addition to properly fitted belts, a properly designed seat with a firm high bolster in front of the hips can also help minimise this risk.

Crotch strap mountings will vary depending on the type of car. In a typical touring car with a more or less upright seat, the belt should mount below and to the rear of the crotch area, with some tolerance. In the typical formula car, these belts may be taken further to the rear, and, in some instances, may be attached to the same locations as the lap belts, or nearby.

One of the main reasons for the poor positioning of lap belts using production car shells is the desire of the car constructor to use the existing safety harness mounting points. There is merit in this in that they have been designed for the purpose, and can be used, provided that they are in the correct place. However, remember these anchorage points were designed for a three point lap/sash systems where the shoulder strap is connected to the side mounted buckle and therefore does not exert any upward forces in the case of a frontal impact. Also, when the standard seat is replaced by one which sits lower, particularly on earlier cars or those with two doors, the mounting points may no longer be geometrically acceptable, and new points should be added. Such new points must be reinforced under the bodysell floor panels.

by a plate of at least 75mm x 50mm, a minimum of 3mm thick if steel or 5mm if aluminium alloy.

A couple of further points are appropriate to mention here. Safety harness belts put a tremendous strain on the body in an accident. In a survivable accident of, say, a 25g deceleration on the occupant (about 60km/h into a concrete wall) the seat belts apply a force of two tonnes on to an 80kg person's body. Imagine supporting the entire weight of your race car and your pit crew on belts across your body! The wider the belts, the less pressure is applied to your body. Whilst 75mm (3-inch) belts are not compulsory, if you are buying a new set, it is worth spending the extra money over the 50mm (2-inch) belts, especially if you have a weight of over 80kg.

Speaking of new belts, how old are yours? Seat belts are made of synthetic materials, and the enemy of synthetics is sunlight, and in particular, UV radiation. In Europe, where UV levels rarely exceed 60 percent of that received in Australia, the FIA life belts at five years!!! A belt affected by sunlight is not only weaker, but is also less likely to give in the manner it was designed to do. If it is starting to fade, or is more than five years old, replace it!

We all know, if you have had a prang, the safety harness is suspect. It may not be broken, but it will likely have stretched while performing its function of slowing you down. Once it has stretched, it won't do it again. If your car is involved in a big hit, the chief scrutineer will condemn the belt. Don't argue with him! Even if you haven't had the belt condemned officially, if it has caused bruising on your body (have a look on Monday morning), it's probably done the same to the belt. Take the initiative and replace it. It is only money and, speaking of which, never buy a second hand harness unless you personally know its history. If you have just bought a race car from someone, put in some new belts as a matter of habit.

As a summary, the best advice is to "keep it tight". A loose belt will allow you to move forward a substantial distance, as much as 200mm. This increases the risk of collision with the cockpit furniture (not very comfortable stuff either), but it also means that you then collide with the belt, losing the benefit of the progressive crushing of the car and the stretching of the belt. Those of you who have ever fired a large-calibre gun will know that it hurts less when pressed tightly against your shoulder. Imagine holding it a couple of inches from your shoulder and letting it ram into you. Now that hurts!

Here's wishing you never need a safety harness.

~ Peter Lawrence, Manager - Technical Services, CAMS

QUEENSLAND STATE COUNCIL NEWS

Meeting dated 18th February (Excerpts of minutes)

- 2495 Ref.MAP99.002 "Handicap Factors"
Resolved that the recommendation of MAP99.002 be so confirmed.

- 2496 Ref.MAP99.003 "National Motorkhana Code"
Resolved that the contents of MAP99.003 be communicated to the CEO.

- 2511 "1999 Queensland Rally Championship"
Resolved that, due to adverse weather and flooding, QRC-99 Round 1 and GP Cars-99 Round 1 be postponed to a date to be advised.

- 2514 Ref.ScAP99.014
Resolved that the contents of ScAP be communicated to all QSC Advisory Panels seeking their comment.

OLD MOTORKHANA ADVISORY PANEL

Meeting dated 10th February (Excerpts of minutes)

- 99002 Wheeley/Doyle
Moved that the handicap Factors for Front and Rear Wheel Drive Classes in the 1999 QLD Motorkhana Series be;

Class F	1.00
Class G	0.92
Class A (FWD)	0.83
Class A (RWD)	0.82
Class B (FWD)	0.82
Class B (RWD)	0.81
Class C (FWD)	0.81
Class C (RWD)	0.80
Class D (FWD)	0.73
Class D (RWD)	0.71
Class E (4WD)	0.81

- 99.03 Wheeley/Doyle
Moved that in the National Motorkhana Code Regulation 17.4 (ii), (iii) and (iv) be reworded as follows;

- (ii) plus TEN seconds each infringement.
- (iii) plus TEN seconds per boundary crossed
- (iv) plus TEN seconds per boundary crossed

Reasons: At the moment, it is often that a penalty for doing a test incorrectly as the booklet, but just touching two poles, is more of a penalty than a competitor who does not even attempt to do the test correctly.

OLD RALLY ADVISORY PANEL

Meeting dated 8th February (Excerpts of minutes)

- 99.039 1999 CAMS Manual of Motorsport
QRAP requests QuMan to convey to the CEO this panels profound disgust that, at the date of this meeting, 8/2/99, the 1999 CAMS Manual of Motor Sport is not generally available. This delay impacts severely on competitors and organisers who are not able to confirm the rules that apply to their discipline in 1999.

- 99.040 CAMS Licensing - 1999
QRAP requests QuMan to convey to the CEO this panels profound disgust at the delays being experienced in issuing 1999 Competition Licences.

OLD SCRUTINEERING ADVISORY PANEL

Meeting dated 1st February (Excerpts of minutes)

- 99.013 Officials Training Program (Ref. Doc 98.065)
Alan Staib presented a budget covering two (2) Officials Training Programs at Townsville and Gladstone and this budget will be presented to QuMan for approval.
- 99.014 Video Cameras
Where video cameras are fitted to any competing vehicle the competitor must first have obtained written permission from the promoter with Stewards written approval, and that Scrutineers should be responsible for checking the location and mounting from a safety point of view. The Panel suggests that a video camera sticker, similar to the current NAFF be printed and this show the signature of Chief Steward and Chief Scrutineer.
- 99.016 Panel engaged in lengthy discussion regarding previous criticism of levels of scrutineering at rallies, Ref Qld Rally Advisory Panel Minute RAP98.199. Alan Staib presented a case to suggest through 1998 at Rally events he had officiated that the standards of scrutineering were of a very high order and that no criticism could be leveled at these events.

To make it easier for you to know who's who in the club, below is a list of nicknames.

Graham Telford	Tonka
Chris Harrison	Joomby
Grant Ross	Boxhead/Grunt/Kiwi
Bruce McCarthy	Bruiser
Geoff Nicol	Heckler
Ken Long	Stumpy
Greg Van-Dinter	Goof
Shane Ogilvie	Speedy
Angela Kelly	Flange
Robyn White	Plucka/Roadie/Frog
Ken Donovan	Kenovan
Tracie Donovan	Tracovan
Kate Brehaut	Daisy
Phil Russell	Muddy
Lee Williams	But-But
Colin Ugarte	McRae
Steven Nind	Tony (Tony's Transport)
Jo (Kelly) McCarthy	Joke
Edwin Hetherington	Edwina/Ed the talking horse

Dear Reader

***You are invited to attend a
Multicultural Gathering
Aimed at promoting
party celebrations.***

***Appropriate country representation
includes:***

- traditional national costume***
- national dish or drink to share***
- BYO party drinks, chair and
swag (if you'd like to stay)***

***At 178 MacMillan Street, Ayr
7.30pm (after dinner)***

Friday 16th April

Party with you then

Tracie and Ken ph (07) 4783 5751

TOWNSVILLE GO-CART CLUB

REQUIRE HELPERS

FLAG MARSHALS

3rd and 4th April (Easter)

8 people needed

4.00pm till 10.00pm Saturday

8.00am till 2.00pm Sunday

ALSO 24th April

4.00pm till 10.00pm Saturday

No experience needed. Training will be provided on how to drive a flag.

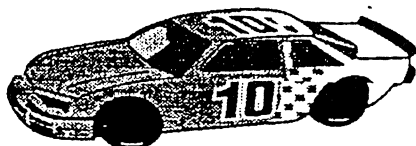
Please help out if you can as we are going to need these people to help us for the QRC Rally.

For more information contact Boxhead at NQ Autosports Centre Ph. 4774 6900

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1800 engine, log book

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6 x 6in mags, 2 x 7in mags

tons of spares.

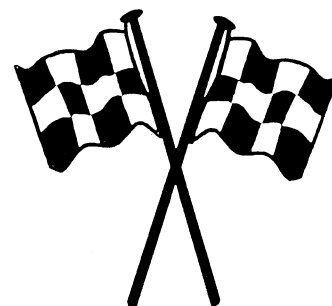
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PHOTOS

PHOTOS



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CONTACT RON WHITE (Ph (07) 4771 7928 [w])

E-mail; ron.white.29994344@army.defence.gov.au

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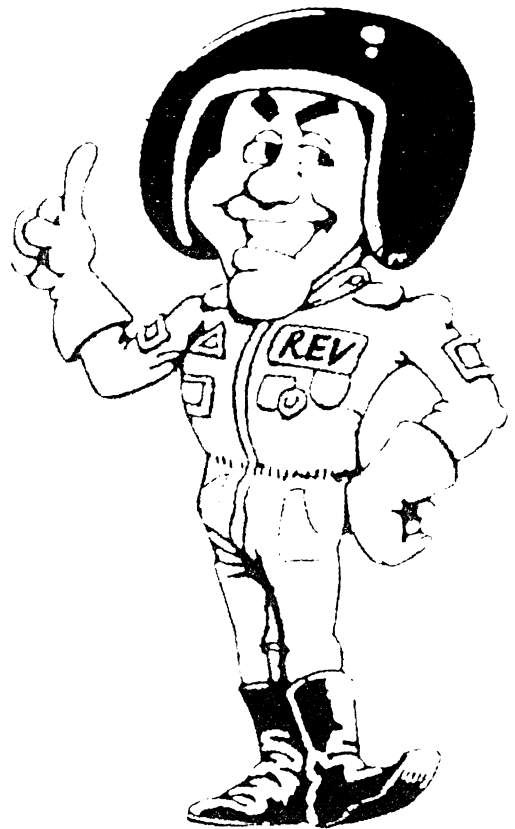
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CLUB CALENDAR

28 th MARCH	Khanacross	Nannas	Greg Van-dinter (07) 4775 2344
10 th /11 th APRIL	Rallysprint Rnd2	Herberton	Sean Hampson (07) 4055 3294(h)
17 th APRIL	Day Run	Townsville	Kate Brehaut (07) 4773 3053
24 th /25 th APRIL	Rallysprint Rnd3	Crystal Creek	TBA
9 th MAY	Motorkhana	Nannas	TBA
15 th /16 th MAY	Autocross	Charters Towers	TBA
29 th /30 th MAY	Rally	Rockhampton	
5 th /6 th JUNE	ARC	Brisbane	
19 th JUNE	Short Rally	Cardwell	Geoff Nicol 0417 614 663
24 th /25 th JULY	QRC2	Cardwell	Ed Hetherington (07) 4774 6900

Club Meetings are held third Thursday night (7.00 pm) of every month at the South Townsville Football Club corner of Bell St and Morey St. All welcome and why not bring along a friend or sponsor.

The third attempt at the first Khanacross for the year will be on 28th March starting at 10.00am at Nannas (Club Grounds) and hopefully the rain will stay away this time. For those who haven't competed in a Khanacross, it's like a very big fast Motorkhana. The object of the competition is for each driver to complete all the courses in the program in the prescribed manner, in the shortest possible time, without incurring penalties.

The Club Grounds (Nannas) can be found by travelling from Townsville to Woodstock and then turning south towards Guru, follow the road until you get to the turn off at Majors Creek Road. Follow that road past the school and keep left at the Y junction and a further 200 meters and your there.

For more information contact Greg Van-Dinter (07) 4775 2344

The second round of the North Queensland Rallysprint Series will be conducted by the Cairns Club on the 10th and 11th April at Herberton Speedway west of Cairns starting at 2.00pm, scrutineering from 10.00am. The event will consist of 4 stages Saturday and Saturday night (8.00pm) and 4 stages Sunday finishing at 2.00pm, followed by a trophy presentation.

Rallysprints are like a small rally comprising of very short stages, run one car at a time and one course at a time, with total times for all courses determining the winner. Check to see if your car is eligible to compete.

For more information contact Sean Hampson (07) 4055 3294 (h) or 0417 625 163 (m)

A Day Run will be held on Saturday 17th of April starting from the Mitre 10 Carpark at the Willows, check what you need to bring else were in the magazine. Day runs (/night runs) are fun social activities the whole family can enjoy. They consist of following instructions driving around town to find answers to clues and sometimes searching for treasures on your way.

For more information contact Kate Brehaut (07) 4773 3053

TWIN CITIES AUTOSPORTS CLUB Inc.

MEMBERSHIP APPLICATION FORM

PRESIDENT: Steve Cruttenden Ph; (07) 4779 0200 (W) (07) 4725 2047 (H)
 VICE PRESIDENT: Greg Van Dinter Ph; 0418 782827
 SECRETARY: Lindsay Stone Ph; (07) 4727 6440 (W) (07) 4774 5530 (H)
 TREASURER: Ken Long Ph; 0418 180 329 (W) (07) 4773 7404 (H)

I, the undersigned hereby apply to become a member of the above mentioned association. In the event of my admission as a member, I agree to be bound by the rules of the association for the time being in force.

Name:.....
 Address:.....
 Telephone: ().....(Work) ().....(Home)
 Occupation:.....Make of competitive car:.....
 Any qualifications held (eg. First Aid etc):

Signature of applicant:.....Date / /1999

I, the undersigned, a member of the association, nominate the applicant, who is personally known to me for membership of the association.

Name:.....Signature of Nominator:.....Date / /1999

I, the undersigned, a member of the association, second the nomination of the applicant, who is personally known to me for membership of the association.

Name:.....Signature of Secunder:.....Date / /1999

FEES (1999):-

Social membership	\$10.00 / single
	\$20.00 / family

Competitive	\$30.00 / single
	\$35.00 / family
plus CAMS fees applicable	\$10.00 CAMS membership, + \$34 (Level 2 Licence)

NB: 'CAMS Manual of Motorsport' available from CAMS for \$35 + \$5 postage

CAMS Ph; (07) 3368 2911
 PO Box 1859 Fax; (07) 3368 2378
 Milton BC QLD 4064

TWIN CITIES AUTOSPORTS CLUB Inc.**P.O. Box 7697 Garbutt 4814****EVENT ENTRY FORM**

EVENT:..... PERMIT NUMBER:.....
 ORGANISER: **TWIN CITIES AUTOSPORTS CLUB Inc** DATE:.....

ENTRANT DETAILS (as applicable)

DRIVER (please include given name)		NAVIGATOR (please include given name)	
Name:.....		Name:.....	
Address:.....		Address:.....	
.....Postcode:.....	Postcode:.....	
Phone:.....	Licence No:.....	Phone:.....	Licence No:.....
Day:.....CAMS:.....		Day:.....CAMS:.....	
Night:.....Civil:.....		Night:.....Civil:.....	

DESCRIPTION OF CAR (as applicable)

<u>Make:</u>	<u>Model:</u>	<u>Capacity:</u>	<u>Class:</u>	<u>Colour:</u>
<u>Year:</u>	<u>Body Type:</u>	<u>Reg No.:</u>	<u>PRC:</u>	<u>Gp. N:</u>

ENTRANT'S UNDERSTANDING

I/We being the entrant/s of the vehicle described on this Entry Form wish to enter that vehicle for the above meeting.
 I/We certify that the particulars on this form are true and correct in every particular, to the best of my/our knowledge and belief.
 I/We declare that I/We have read the Supplementary Regulations issued for this meeting and agree to be bound by them and by the National Competition Rules of CAMS Limited.

I/We also acknowledge and agree as a condition of entry that neither CAMS Limited nor the Promoters, nor the sponsor organisations, nor the land owners or lessees, nor the organisers of the race meeting/event, nor their respective servants, officials, representatives or agents (all of whom shall collectively be called "the Organisers"), shall be under any liability for my death, or any bodily injury, loss or damage which may be sustained or incurred by me, as a result of participation in or being present at the event, except in regard to any rights I may have arising under the *Trade Practices Act 1974*.

I/We acknowledge that motor racing is dangerous and that accidents causing death, bodily injury, disability and property damage, can, and do happen. (See Rule 77).

SIGNATURE:

ENTRANT:.....PRINTED:.....DATE:.....

DRIVER:.....PRINTED:.....DATE:.....

NAVIGATOR:.....PRINTED:.....DATE:.....

CONSENT (for persons under the age of 18 years)

I,..... being the parent / guardian of the above named....., have read the whole of this document and consent to him / her participating. In doing so, I acknowledge that Motorsport is dangerous, and agree that neither CAMS Limited nor the "Organisers" shall be under any liability whatsoever for any death or bodily injury, loss or damage which may be sustained by..... or by me, howsoever such death or bodily injury, loss or damage is caused by negligence or otherwise.

Signed:.....Parent / Guardian * Date:.....

* Delete whichever does not apply