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Full yearly Membership fees:

1 July 2014 to 30 June 2015

Social \$45

Motorsport/Competition \$65

Family \$90

(2 adults + kids under 18 -

Family rate allows up to two competition members.)

Note: Applicants who wish to join part-way through the year will be charged a pro-rata membership fee based on the number of months left in the membership year. See the application form for details.

Meetings

Southern members meet on the final Tuesday of each month, January through to November, at the Civic Club, 134

Davey Street, Hobart.

The committee meeting is held between 6.30-8.15 pm and the social gathering follows at 8.15 pm. Drop in any night.

In the North, Italian Car Enthusiasts (ICE) meet informally on the first Tuesday of each month at the Australian Italian Club, Prospect, starting at 7.00 pm. Con-

tact Sabina Toscan at

tasuniforms@bigpond.com.au

CMI's AGM is held at 7.00 pm on the first Tuesday of September at the Civic Club, Hobart.

All contributions to Veloce Nota are welcome and when published earn points towards the Clubman of the Year Award.

Please send all letters and contributions to The Editor: Cmi.editorial@gmail.com

Disclaimer

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SELENIA

A different magazine this month—largely contributed by Victorians.

You may have noticed that I wrote nearly everything in the mag last month, which is not good for you or for me. So when I had a chance to get a couple of stories ready-written, that I thought members would enjoy, I jumped at them. Bill Freame is likely to be seen in these pages again, as there is very little he doesn't know about engines, engineering and Italian cars.

The Driver Training Day is behind us, as is the Lufra Hillclimb. This fantastic event was well supported by the locals; in fact I suspect that if we hadn't had volunteers from the locals we couldn't have run it. We got about five runs each, the best three counting towards the results.

The day started damp, and then dried—which made it a real test of skill (and restraint) to match the early times.

A good many of us stayed down for all or part of the weekend, and the usual stalwarts set up the course, organized the event and cleared up afterwards.

Speaking of stalwarts, below is one of the people who make the event: Peter Derkley of the Lufra.



Lufra to Lookout Hillclimb awards:

King of the Climbers:	Nathan Meyers—Proton M21
First Italian Car:	Philip Blake—Fiat-Abarth OT 1600
First Classic Sports Car:	Chris Edwards—Lotus XI
Driver of the Day:	Rhys Filbee—BMW i3 Hybrid
Best novice:	Jules Vanthoff—Subaru Liberty



Born to race (Reprinted from Fiatmonth)



BORN TO RACE

— Fiat Abarth 750

by Vin Gregory and Jack Waldron



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In the pits at Sandown in 1962

This FIAT ABARTH 750 was imported into Australia in the 1950's to be used as a racing car. Eligibility to race as a touring car in this period required the vehicle to be 'factory built' for homologation.

The second owner, Richard Carlson (a Life Member of Fiat Car Club of Victoria) takes up the story of the car's early history.

FIAT ABARTH 750 DERIVATION

The life of HEW 837 began in about the mid 50's. Wal Gillespie, an authorized Fiat dealer, aircraft engineer and racing car driver ordered 3 Fiat Abarth 750 derivation kits.

He built 3 cars, one was sold to Tasmania, one unknown and one for himself.

This 750 was a class winner at all Victorian tracks and hillclimbs including holding some class records.

At the time, no other car could better the Abarth 750, this included the new mini 850 and later the Mini Cooper 1000. The Mini mob protested the eligibility of the 750 and won,

Wal Gillespie ordered from Abarth, a new complete car. The Fiat Abarth 750 derivation (HEW 837) and the 850S upgrade short motor and other bits. The 850S is not a Fiat 850 based engine but was 600 based. This motor was built for 24 hour events, very strong, run hard all day, eg conrods are from Fiat 8V plus lots more.

The 1000cc class was changed to 1300cc, HEW 837 still beat them until front wheel drive tyre development (for Mini Cooper S1275) made the car uncompetitive. HEW 837 was always driven to and from events, always used BP Course 30/40 oil, developed for the Maserati 250F, for cam wear problems.

Richard Carlson bought HEW 837 in 1965. It was seven years old, had done 8000 miles. It competed in club events and had lots of revenge against those 1275s. It was first outright in the Fiat of Italy Cup 4 times, first in 1966, and was 2nd once (RC directed that event).

It recorded 17.2 seconds for the quarter mile, about 85 mph terminal speed. The car was timed over 5 miles, by the passenger with a stop watch at 114.5 mph at 7200 rpm (we backed off, and it felt like it wanted to do 8000 rpm) The car required regular service, coil voltage and distributor shaft wear, tappets, etc. Wal Gillespie blue printed, balanced this engine to the nth degree. I changed the brakes to Fiat 850 front discs (not 850SC) as all the special drum brakes were badly heat crazed. I put Fiat Multipla rear alloy drums on the back (600F, one of two in Australia), 13" 850SC wheels as all the 12" Fegat wheels were badly cracked, just in time I think!. I stupidly sold the car in 1970. It is a very special car, always full of life and always willing to please and it deserves retirement with glory and respect, this is the Gillespie car.

Contributed by Richard Carlson.

RICHARD SOLD THE CAR in 1970 but after a few years there was a severe deterioration in its condition. The car is reasonably fragile and requires careful maintenance to achieve reliability. Jack Waldron saw the car a couple of years after Richard sold it and tried to buy it. It had been used in gravel rallies, the paintwork was sandblasted and the exhaust was smoking. The owner nominated an asking price, which was unrealistic, given the car's overall poor condition.

In 1975 the sixth owner left the Abarth on the nature strip in front of his house for an extended period, following a head gasket failure. The car was seized by the Box Hill City Council. Subsequently, it was sold by the

Council at a derelict vehicle auction for \$80!!

The unregistered and dismantled car passed through a succession of owners whose enthusiasm evaporated once they appreciated the scope of a

restoration. In 1988 the car appeared in the 'Age' newspaper classifieds. Jack recognised the Abarth immediately and spent hours checking the boxes of parts and then purchased the car. He did a complete body and mechanical ►

restoration. The engine, transaxle, suspension and brakes were rebuilt to an equivalent specification that existed at the cessation of Richard Carlson's period of ownership because that configuration had worked so well.

Restoration was complete by 1992 for the inaugural Targa Tasmania Tarmac Rally. Vin Gregory agreed to navigate. Vin and Jack have crewed the Abarth in 23 out of the 25 Targa Tasmania Rallies to date, 6 Classic Adelaide Rallies, 6 Rally Tasmanias, 5 Targa West Points, 6 Targa High Countries, 1 Rally d'Gipp, Rob Roy Hillclimb, the memorial 'Original Albert Park Circuit' layout event, and car club days. At the recent 25th anniversary Targa Tasmania event, the Abarth and its crew were the only team the same as in 1992.

From 1992–1998 Targa Tasmania was an international event held under the auspices of the 'FIA'. Therefore, it has participated in 8 international events!

The events listed above tally 176 days of intense 6 to 7 hours per day of motorsport, roughly 76000kms total distance, of which 26000kms is closed stage full throttle competition.

Results for 44 tarmac rallies include:

- 13 class 1st places
- 9 category 1st places, 1 category 2nd place, 3 category 3rd places
- 1 Outright winner of 'Early Classic' Targa Tasmania 2011
- 3 Outright 2nd places of 'Early Classic'
- 1 First Place Australian Tarmac Rally Championship in 'Early Classic' in 2010–2011 season for points scored in the 4 events: Targa Adelaide, Targa High Country, Targa West Point and Targa Tasmania.
- 1 Second Place Australian Tarmac Rally Championship in 'Early Classic' for the 2012–2013 season.

Jack recalls the 1st place outright in Early Classic Targa Tasmania 2011

as the sweetest outcome he has ever experienced in any sporting discipline. For the first 3.5 days of the event the weather was fine and the Abarth was just behind the leading group – all big horsepower cars – but then in the afternoon of day 4, the weather changed dramatically, with rain varying from moderate to torrential for the last 9 stages of days 4 and 5. This created a traction nightmare for the high power/weight ratio cars. The Abarth won the 'Early Classic' by 8 seconds!!

This enviable success strike rate was created in part, by a thorough development and preparation regime but also by the amazing and timely level of support the 'on event' service crews delivered. Over the years, service crews have included: John Crellin, Jono Crellin, Mark Crellin, Peter Kerr, Phil Buggee and Bill Freame.

During its lifetime, the Abarth has undergone continuous development. Richard Carlson's piece outlined some of the early development. In 1996, a 983cc engine was built for the car. An interesting feature of this engine was not only the larger oil pump, but that the oil was pumped directly outside of the block, through a full flow oil filter, oil cooler and then back into the main oil gallery. The ongoing power increments created cooling problems which were addressed by the addition of an additional water radiator under the front of the body and a large oil cooler in the 'tunnel' of cooling air above the LHR control arm. Subsequent power gains created further cooling issues, particularly during summer events when temperatures exceeded 40°C. This was addressed by fabricating more efficient water radiators from aluminium.

A close ratio gear set and an LSD were made and fitted to the transaxle, utilizing a genuine Abarth crown wheel and pinion. The crown wheel and pinion was originally imported by Wal Gillespie but he had only used it once



at Sandown. These gearing changes not only improved the car's ability to pull more quickly away from slow and medium speed corners, but having optimum gearing also allowed the car to carry higher medium and open corner speeds particularly in wet or slippery conditions. The increased torque and traction was causing problems with drive shafts and rear stub axles so these were re-manufactured from a special alloy steel.

A change to tarmac rally tyres, "Yokohama Advans", increased corner speeds. The lateral traction increased significantly but caused the steering and suspension mounting points to flex and move when loaded, creating a lack of feel and feedback through the steering wheel. This feedback was regained by reinforcing the steering box and chassis mounting areas. However, the car was still 'turning in' better on RH corners because the 'corner weights' were very uneven. In 2000 the car was completely dismantled



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to reduce weight and remove non-essential components. A fuel tank was fabricated in aluminium which was symmetrical from side to side across the front boot and the corner weights adjusted by the rearrangement of significant mass components. The navigator's seat was moved rearwards and lowered substantially but had to be slightly raised again because Vin felt nauseous when the car pitched repeatedly. The toe and camber change during bump/droop were plotted and analysed, pivot locations were altered, trial settings made and tested. This eventually yielded predictable characteristics in both wet and dry conditions.

The existing brakes were adequate with improved friction materials. Interestingly, an increase in the rear wheel cylinder size improved the car's ability to turn into a corner. After the initial 'turn in' and subsequent weight transfer onto the outer rear wheel, a light touch on the brake pedal causes the car to turn in more, via the toe

setting on the loaded outer rear wheel.

The original Abarth exhaust system became inadequate. Alternative exhaust systems were designed and developed in 1997, and again in 2013. The engine is very sensitive to breathing and timing changes. The car has probably spent more total time on the 'BOI Performance' dynamometer than any other individual car, including any of Phil Buggee's personal cars!

Virtually all repairs and ongoing maintenance and development, under current ownership, have been carried out 'in house' by Jack, Vin, Bill Freame and Phil Buggee. Throughout this on-going program, care has been taken not to make any changes to the Abarth that cannot be reversed to "original spec" because this car is an important piece of Australian motor racing history.

The Abarth is an exciting car to crew probably because it requires a very high level of commitment, concentration and teamwork to operate it on a closed tarmac rally stage. An attitude of smooth aggression combined with a fair degree of mechanical sympathy is required to finish and achieve a good result. Vin is fully occupied with navigation because during the 'closed competitive stages' he must read the 'pace notes' in a clear, accurate, and timely manner using the helmet intercom system. Pace notes are a complete script of all the corners, crests, lengths of straights, etc. on the closed stages. The crew check the pace notes by driving over every stage a couple of weeks prior to the actual event.

Tarmac rallying has held Jack and Vin's interest for 25 years because the stages are so demanding. The closed stages vary in length from approximately 5kms to 60kms. Every corner is different, especially what unfolds from behind every blind corner. There are sudden changes in the level of tyre adhesion as a result of the type and texture of the bitumen when dry, or if there is water, ice or

even snow on the road surface. The "Mount Arrowsmith Stage" of 59kms, potentially the fastest "closed road stage" in Australia, was once run after a fall of snow!

The challenge can be compared to walking out to the very end of a branch of a tree, and managing to return to the trunk of the tree without falling off!

The Classic Competition Categories are arranged so that every 5 years, a five year group of vehicles move back to the preceding Category. Consequently, 'Early Classic' now includes cars such as Datsun 240Z's. This has forced the crews of the older 'Early Classic' cars to significantly increase commitment levels, in order to remain competitive, with an accompanying reduction in reserve margins of safety. On Day 3 of Targa High Country 2015, the Abarth started at 2nd place outright in the 'Early Classic' to a 240Z, but fell 'off the branch' and hit a real tree! (See page 14).

Jack and Vin believe the Abarth has reached the edge of its performance development envelope, as permitted by Event Supplementary Regulations, and have decided to retire the car from a continuous program of Tarmac rallying. The car will be kept in 'ready to race' trim and may come out of retirement for some selected events. This car was "Born to Race" but both treasure the Abarth and don't wish to cause it irreparable damage.

—Vin Gregory and
Jack Waldron

We thank Vin, Jack and Richard for this comprehensive story of the Abarth 750 which has been a part of FCCV history since the club's earliest days. Wal Gillespie also competed in the Armstrong 500 at Phillip Island in 1960 (Wal's car was one of 2 Fiat 600s competing, proving his commitment to the Fiat marque) where he finished 29th out of 47 cars.

—Ed

FIAT month — July 2016



Back in the early 1970s when I was young and fearless I decided to modify my Fiat 600 to go a little bit quicker, both for competition and everyday motoring. As the head of a one-income family, with a mortgage, surplus funds were in very short supply – but I had almost unlimited enthusiasm. Back then I'd never heard of Abarth or Giannini and the wild little cars they built. So all the coming developments would be from my own cluttered mind. Everybody knows the easiest way to gain some extra urge is to just put in a larger engine, but this was long before the 127 was on sale here – a reasonably easy 'bolt-in', with about twice the power. 848cc and 903cc engines from the new Fiat 850 were available, at great expense, but they all spin in the wrong direction!

Rather than trying to install a larger engine, I would convince the existing engine that it had grown bigger. I would supercharge it. Nothing available was either affordable or suitable. I wanted to use a vane style supercharger, for simplicity and compactness. How hard could it be to make one?

After doing a little research, and discovering the Eldred Norman style of vane blower, I decided that perhaps I could indeed build a vane style myself, thus saving me considerable money, in exchange for the expenditure of considerable time. At that time, over 45 years ago, turbos were used mainly on truck engines, which used fuel injection – not at all suitable for suck-through carburettors.

The calculations for the size of a vane supercharger were made by an engineer workmate. We de-

Bill Freame started work at the Repco Engine Technical Centre in 1971, providing engineering support for the engine component testing program of the Repco Group and their customer car companies. Some products were also tested in taxi engines, where real world testing could take place very quickly.

Tested were pistons and rings, bearings, gaskets, valve seats and electrical points, condensers and caps. Products were proven by endurance testing on dynamometers and test rigs.

Some car companies required up to 500 hours of testing, with accurate measurement of components before and after running, as well as oil consumption over the test period.

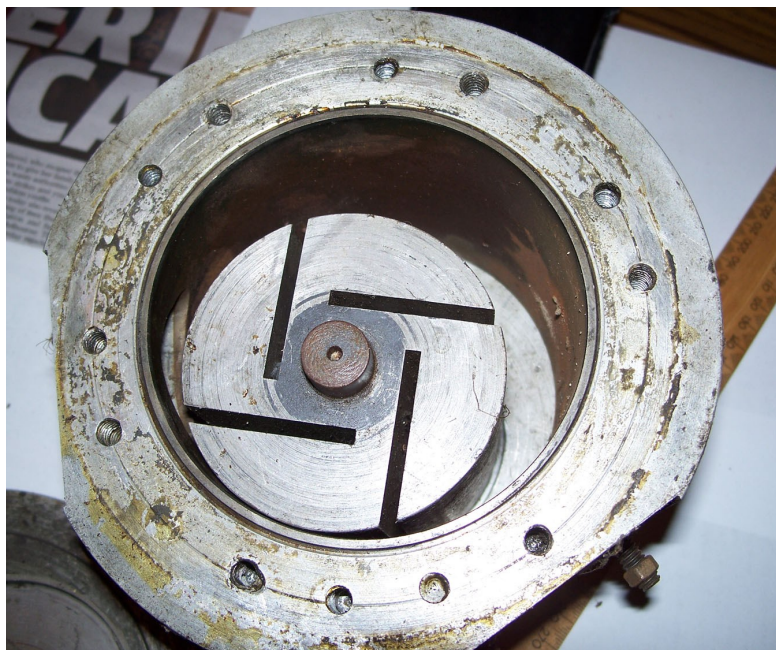
He then became responsible for machining new piston designs for testing and car company pre-production samples.

When the Richmond plant was closing and all the facilities were to transfer to Maidstone, he started a partnership manufacturing pistons for racing and for ex-Repco industrial customers.

He is now engineering manager for the GPI Group, and recently started working a four-day week. Bill spends a lot of time at Bits of Italy Performance with his friend Phil Buggee (who now runs a Fiat 131 in Targa Tasmania). BOI has a comprehensive machine shop tucked in one corner.

cided that the bore would be a truck engine sleeve of 100mm, with an aluminium outer sleeve cast onto it. The rotor would be 80mm diameter and the working area only needed to be 90mm long. The vane slots would be off square, so they rubbed on the bore obliquely, but a greater amount of the blade would be

unsupported at maximum offset. The outside diameter was 130mm, making it very compact. Basically I was making a large version of an air tool, like a die-grinder or rattle gun. The local Repco piston foundry only used piston grade aluminium, A143, to cast and then they also heat treated the pieces I needed,



free of charge, and with very little lead time. The foundry workers were as interested in my project as I was.

After a few short weeks of after-hours work I had a small 'Norman' style vane blower completed and ready to be installed on the car. It was placed where the generator normally resided, with the generator relocated to the exhaust side and having a separate drive belt. The crank pulley was driving the blower and then the blower was driving the water pump.

During my research I came to the conclusion that with this size blower it would be best to suck through an SU carburettor and so a used one was acquired for the project. With a simple throttle linkage made up and an air filter attached, eventually it was time to try it out.

With such a fragile crankshaft and very small head bolts in the 633cc engine, we had decided that 8lb of boost would be about all that it could handle. What a depressing feeling when after weeks of work the maximum I could squeeze out of it was only about 4lb on the boost gauge. Worse, at that boost, there was hardly any noticeable gain in acceleration. Very disheartening! Any extra power was being used up just to drive the blower. In consultation with the engineer on this project, we eventually discovered where the error was. He had worked on total swept volume instead of only the swept volume between the two ports. To get to the 8lb I was expecting, the length would need to be almost doubled. Certainly it would need to be at least 150mm long, but prefera-

bly 180mm! Meanwhile, with modification to this unit, I could increase the offset and speed up the rotation of the rotor to get it up to about 6lb while also starting again with making a longer vane supercharger to the new sizes.

The rotor diameter was reduced by 8mm and the offset was increased a further 4mm. Also the driven pulley was replaced with a smaller one. Now it would be spinning to almost 11,000rpm whereas previously it had been to about 8,500rpm, at 6,000rpm crank speed. One thing I discovered quite quickly. When a vane (blade) breaks while spinning quickly, it jams the rotor and causes the vee belt to scream loudly as the drive pulley slips on it. This slows your progress quite dramatically and attracts the attention of most other motorists! Limping the 600 into a side street, I could have all four blades replaced in about 10 minutes and then continue on my way. If I removed all the blades to drive it home, it just became a larger plenum chamber. Not exactly the level of reliability or performance I was hoping for.

Work began in earnest shortly after the first broken vane incident. More castings were sourced and machining began immediately. About half way through the manufacturing process of the new vane blower, a Fiat 848cc motor became available. It had scuffed all the pistons and bores, and was completely dismantled for inspection, but it was just about affordable. Convincing the household financial controller that an engine with quite obvious problems was a good purchase was easier



than I expected. She was beginning to find it tedious to come and tow me home at all hours whenever problems couldn't be fixed at the roadside. I convinced her that this better engine would solve all my reliability problems, and if I made the pistons it wouldn't cost much to get it all going and fit it into the 600.

Thus the second vane blower was never completed. My simple solution to have the engine spin in the direction needed for driving a 600 gearbox was to use a reground 600 camshaft and 600D crank seals, plus a 600 clutch and flywheel to convert the 850 to spin the other way. With 11:1 pistons it often required 24 volts to start it on cold mornings, and 24 volts makes the dash lights very bright!

It would be another 10 years before I dabbled with forced induction again, but that was on a Fiat twin-cam in Sports Sedan racing. That project was sucking through a Weber, on a Garrett turbo. But there had been lots more experimenting with the little pushrod Fiats in the intervening years, and that's another story.

COMING EVENTS and Miscellany

Economy Run

4 September

(Contact Graham Mitchell on 62391080)

Baskerville Historics

29 September—2 October

Domain Hillclimb – 16 October

CMI Car Show on Parliament House lawns

Saturday 26th November, 2016

Contact Mike Clark to show your car – 0409181667

Alfa Romeo 1750 GTV for sale

Ex-club member Steve Pottinger has his 1971 1750 GTV up for sale. He has owned the car since 2001. It is currently running but not registered. These don't come up for sale all that often so it is worth a look if you have always wanted one of these classics. The car is located in the Channel area south of Hobart.

If you are interested please contact Steve on 0409 976 434.

Fiat 850 Sedan for sale—\$1800 ONO

Stripped, ready for restoration, all fixed glass removed. Motor starts easily, runs well and sounds good. New brake linings. New brake cylinders. New brake master cylinder. Six brand new tyres, five on rims. Interior seats, mats and linings in excellent condition (very small tear in top of driver's seat). Body in very good condition, minimal rust, some signs of damage repairs. Chassis and floor pan in excellent condition. All glass and rubbers in good condition. Two workshop manuals. One service instruction book. For sale due to ill health. Contact Mike Maddock – cherylandmike@bigpond.com



“2016/17 memberships are now overdue.

If you have not yet renewed please go to www.cmitas.org and follow the instructions on the membership link. If you have renewed online but have not received your card can you please send/resend a notifica-

tion email to clubmotoriitalia@gmail.com Your membership renewal will not be processed until this email is received. For other membership renewal inquiries please contact the membership officer (details on page 1).

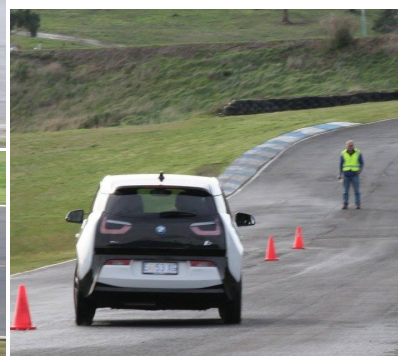
Driver Training / Come and Try Day—Baskerville

The club's Driver Training/ Come and Try day at Baskerville (sponsored by CAMS, Motorsports Tasmania and Ambulance Private) was a notable success, with very few incidents and a high level of satisfaction among the participants.

Instructors for the day were Dave Watson, Omar Hasan, Rob Van der Niet, Darryl Bennett and Philip Blake, aided by Graham Mitchell, Monty Reading, Dave Dungey and John Blake. There were exercises in the morning, aimed at finding the limits of car and driver at lower speeds, followed by a few laps of the track with an instructor aboard, and then an untimed hillclimb.

The hillclimb was added to give people a foretaste of the

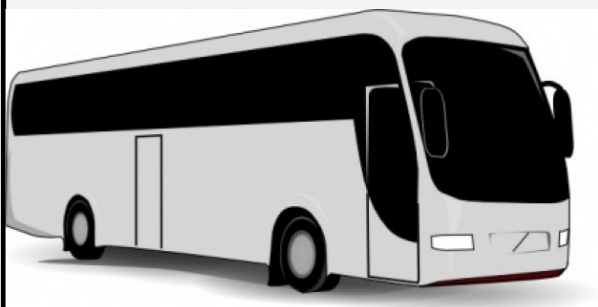
Lufra to Lookout, and was very popular—some people taking the opportunity to have an instructor along for this as well, or to pick the brains of instructors after their run.



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