
Sports Car Talk

The Magazine of the Sports Car Club of New

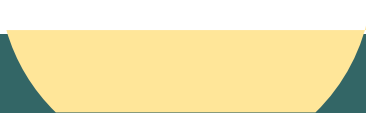
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De Silva in Full Send Mode

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Committee Members 2020/2021

<hr/> <p>The Committee meets once a month all members are welcome to come along</p> <hr/>	President	Warren Evans	09 416 7760	warrenevans@xtra.co.nz
	Secretary	Chris Hull	021-849-026	sccnzsecretary@outlook.com
	Treasurer	John Milsom		john@eagleray.co.nz
	Mag Editor	Phil Josephs	021 972 493	philj@agilenetworks.co.nz
	Competition Sec	Carl Pamplin	027 206 6190	carl.pamplin@virsae.com
	Member	Paul Davies		davies.nz@xtra.co.nz
	Member	Lishan De Silva		lishandesilva22@gmail.com
	Club Captain	Steve Domigan	021-983-512	stevedom@orcon.net.nz
	Web site	sccnz.co.nz	Facebook	www.facebook.com/SCCNZ

SPORTS CAR CLUB BADGE

The Club still has a number of these very attractive badges depicting the Club logo, for sale to members. The badges are cast in metal and are silver with a gloss black background. The badges are self-adhesive on any flat surface and are approximately 70mm in diameter. Cost to members is a very reasonable \$10 including postage. If you would like to purchase one of these very items, contact the Secretary at 021-849-026 or email at secretarysccnz@gmail.com



From The Editor

Can some one tell me where summer went? In November, I was looking forward to the new race season and sunny hot days at the track and in April I am looking at the end of the season and still waiting for the sunny hot weather. Despite these challenges and some unfortunate but necessary event cancellations the SCCNZ committee has still managed to provide an exciting program through the "summer". These events including track days, Motorkhanas, Grasskhanas and Autocross which have all been well attended and serve as a great recruiting source for new members. If you want to keep up with what's happening and ensure you don't miss out on the fun, please check our Facebook page for full details of upcoming events and results.

Coming from Karts, my own first competitive car event was a SCCNZ Motorkhana on the North Shore. Can't recall the date, but must have been 20 years ago and I was running my Lotus 7 turbo replica. That car was awesome for the Motorkhana with heaps of power (nearly 300HP), light and nimble. I remember the nerves as I lined up for my first run, Al Martin flagged me away and I have never looked back since. In many ways, I see that friendly, non-threatening entry into motorsport one of the key benefits of our club. I look back now and laugh at how nervous I was before a Motorkhana, I struggled to sleep the night before the event. This has helped me to understand how important it is to create the right environment to encourage club members to get involved behind the wheel. The Motorkhana is the perfect start for anyone who wants to test their skills and their car in a safe and friendly environment.

I can't write about club level events without recalling the Auckland Domain hill climb. That was an awesome event, now ruined by our anti-car Council. The crowds were massive, lined up 10 deep all the way up the tree lined road, peering over grassy banks to watch a huge variety of vehicles from single seaters to rally cars charge up lower domain drive, dodging lamp posts and kerbs as we weaved our way precariously up the hill. One year I came outright 4th place, tussling with Racing Ray Williams in his twin turbo Porsche 911 for 3rd, he just piped me on the last run.

I think its fair to say that I was lucky to have raced through some great times for NZ motorsport. Unfortunately, we have lost a lot of venues and great events over the last 20 years. Who remembers Wings and Wheels at Whenuapai Airport? We shouldn't forget Mt Wellington Kart Club track and the much lamented Pukekohe. With the closing of Pukekohe there is now just one race car test day per month available in the Auckland region at Hampton Downs. Of course there is always the Hampton Downs GT membership just \$15,000+gst and additional \$5,000 per annum (+gst obviously!). If you can afford this good luck to you, but for the rest of us, car racing is becoming increasingly unaffordable and unavailable.

I know I am sounding like a sad old git — guilty as charged! But, on the plus side we have our precious club is still delivering quality events at affordable prices. So come along and join the fun,



So you want to go racing? - How expensive is Car Racing—Really?

It started with Playscape racing, 1979 London, England back when indoor kart tracks were a new thing. Someone at work organized an event and I went along, my only previous kart experience was Malaga beach in the sunny Spanish resort of Costa packet. Luckily Karts were new to everyone in our group and although I didn't win the day I did get fastest lap and caught the bug. I swapped my motorbike for a kart and headed off to the local track Rye House (the same one that Lewis Hamilton raced at).

Time passed and I ended up in Wellington NZ and as soon as I could afford it, I bought a kart and joined Kaitoke Kart Club where I remained for about 8 years. Apart from tires and the occasional engine rebuild, Kart racing at Club level was pretty affordable. I even managed to avoid buying a trailer by putting the kart on a roof rack. Club membership at Kaitoke entitled you to unlimited testing as members were given a key to the track! My biggest single expense was purchasing a brand new kart and engine which was \$7,000 back in 2005. Before that I had a succession of second hand karts, the last one was good enough for me to win the club championship.

A new job in Auckland was a fresh start and I joined Mt Wellington Kart Club but never enjoyed the small tight track. By that time I had purchased a small enclosed trailer, but as fate would have it, somebody needed it more than me and the trailer, complete with kart spares and tools was stolen from my front garden. Luckily the insurance paid out and I ended with about \$8,000. As I didn't have a secure parking arrangement, I decided against just replacing everything but took the cash and decided to use it to buy a sports car. At that time I wasn't thinking about competition just a fun car for the weekends. Now \$8K doesn't get you a lot but I was in no rush. Probably a year later, I was thumbing through a NZ car magazine and spotted a Lotus 7 replica for sale in Christchurch for \$12,000. With a bit of arm twisting (begging) my wife agreed I could buy it, so a deal was done, sight unseen. I flew down to Christchurch to pick it up and drive it home to Auckland. I had never sat in a 7 before, and I didn't quite realize what I was taking on with that drive home. I am also 6ft 2 with size 11 feet, none of which occurred to me as being a possible problem. So, when I finally arrived at the owners address in Christchurch, it was a bit like the ugly sister trying to fit the golden slipper. With a bit of wriggling, lashings of Vaseline and no shoes, I was able to squeeze into the narrow cockpit and head home. Fortune smiled on me as the weather remained dry the entire journey. I can't say it was enjoyable, but I made it, and the car ran perfectly the whole way home. Toyota 4AGE reliability is legendary.



Months passed and I enjoyed the car, but I still had that itch for some competition. I heard about track days at Pukekohe and drove down with wife and young family in tow for my first time on a race track. I went out did 10 laps or so and announced that it was impossible for anyone to drive faster than my 1:32 second— my best lap. I was convinced there was nothing left in the car. 3 years later, the same car was achieving 1:14 and then after that, with the help of a turbo 1:08secs. Whilst this was going on, I joined SCCNZ because I had heard about the Clubman's series, a race series for kit cars and home built projects. To take part, I needed a MSNZ license and to get that I needed to be a member of an affiliated car club. Plus most of the Clubman's series participants were SCCNZ members so it all made sense. From there, my car racing hobby began in earnest. In those days we had three NI tracks, HD was just a field in the Waikato. A great time was had by all for many years until cars like the Radical and the Juno appeared. These cars are essentially full wings and slicks race cars and they quickly cleaned, up relegating the humble Lotus 7 replicas, Frasers and Redlines to the back of the field. Understandably people began to leave the Series. Its just not fun when there is a 10 second per lap speed differential and eventually the Clubman's series died. That left me with a road/race car and no events. Too slow to race with single seaters, and too fast to race with saloons, to dangerous to race in an open class. The 7 had to go. I sold the 7 to a buyer in Nelson for \$12,000, exactly what I had originally paid for it. However, it was now powered by a 300HP turbo 4AGE running on a Link ECU, LSD, race seat and harnesses and a whole lot of other bits adding up to around an additional \$12,000 which was basically written off. Investing in race cars is for fools, but at least I had my \$12K to spend on something else. That something was a BMW E30. I had heard about the BMW E30 race series.



Targeted at low cost racing - yeah right!). At that time there were heaps of E30 cars and parts around, plus BMW were offering all parts at dealer buy prices. We had to go to BMW Mt Wellington depot to pick them up.

I also had an itch to do the Targa Rally, I knew about Targa NZ even when I was in England and it was on the bucket list. The E30 was a much safer and more comfortable option than my 7.

After a bit of searching I found an E30, 320i saloon. The owner said it wouldn't start. When I viewed the car, I found a suspicious 3 litre half empty water bottle in the boot. Head Gasket anyone? The deal was done for a very reasonable \$800. The seller was local so I popped around and apart from possible HG failure the body was mint. I paid my \$800 towed it home, gave the starter motor a whack with a hammer and she started up and ran. The auto box was jerky but that wasn't really an issue as it was being thrown out anyway. A strip down to bare shell, cage install, a refreshed motor and the series mandated suspension and tyres quickly followed and I was ready to race. One thing I learnt very quickly is that one make Series with limited allowed modifications does not make for cheap racing. Just as 2K cup cars are selling for \$10K or more a quick E30 requires a bit more than a "run what you brung" attitude. Although I am realistic about my limited driving talent, its pretty disappointing when I was been over taken on the Puke straight and left 20Meters behind by a car of supposedly of the same specification. Welcome to the world of rule bending and blue printing. What made it worse was the amount of panel damage, there were drivers who seriously wanted to win and "rubbing is racing" applied. Fine if you happen to be sponsored by a panel beater, which incidentally many were, but a nightmare for me. I later found out that the fast cars were using high compression pistons from a different engine model. My E30 racing career was short lived as I could quickly see that to be competitive was unaffordable. However, I did manage to complete 3 Targa events in the E30 which was a great experience but I had a hankering for more power. A brief experiment with a bolt on Supercharger from an Toyota Estima van made the car more interesting, but it became ineligible to enter into any of the Marque series. The E30 was sold for \$8,500, without the supercharger and I was on the hunt again for my next car.



It was a few months later that I spotted an advert for a Rover 220 Turbo, often referred to in the UK as the Tomcat. This was Rover's answer to the BMW performance coupe. A genuine 150Mph car with 0-60 in less than 6 seconds and it was cheap \$3,500 including a homologated cage and belts plus Koni adjustables all around. A deal was done and I joined the European Racing Classics Series (ERC). The car was genuinely quick in a straight line but was the worst handling, evil car I have ever driven and that includes my wife's 1955 Austin A30. The understeer was frightening and that was coupled with tiny brakes that even with Pagid full endurance race pads would fade after 5 laps. I can't deny that despite all the issues, I did enjoy my Rover. I tried to improve the handling but nothing really worked. Pukekohe on the old circuit was OK as it was quick down the long straights, but Hampton Downs was a disaster. HD is a track that demands good turn-in and good brakes of which I had neither. Also, along the way you might be surprised to hear that it became increasingly unreliable - you have to love British cars!



Rover 220 Tomcat as purchased



Rover 220 Tomcat after Pukekohe

Another racer from the ERC series, Gary (Buzz) Baildon, took pity on me and suggested I think about dumping the Rover and getting in to some reliable German engineering, namely the BMW E36. Watching Gary put hundreds of laps in with just a routine oil change had me convinced, plus he regularly drove around me on the corners - that Rover had go!

Only a short while later, Gary spotted an immaculate E36 Msport 318i Coupe for sale. The price was an affordable \$1,100 and I quickly snapped it up. The engine had a blown HG, but it was warranted and registered, so good buying as I was planning an engine swap anyway. The Rover was duly advertised and sold for \$4,000 which wasn't a bad result. I believe the current owner is doing the occasional club level event as I have seen it in pictures on-line.

So all of this has lead up to, how much does it cost to build a competitive E36 race car? Fortunately, my darling wife hates cars, so I am safe in the knowledge that there is no way she will read this article.

With an initial investment of \$1,100 I was off to a good start. Also of note was that in 2019, E36 parts were still plentiful and relatively affordable. Some of the parts on my car if they need replacing have increased hugely in cost.



For example, the ZF manual gearbox conversion was \$1,400 today, you would pay nearer to \$5K for the same thing. At the time, I was debating whether to get everything at once or build it up slowly. In the end, I just got everything I needed on day one. Judging by the price increases it was a good decision, I don't think I could have afforded to do it today.

All up in 2019 it was \$22K for a competitive race car that proved to be reliable safe and relatively fast. Apart from wheel alignments and the cage build, I basically did everything else myself, I would hate to think what a BMW race car specialist like P&S Autos would charge for a similar build. As you can see, I did not shy away from Ebay, Wish or any other on-line part source for non-safety related items. I must have gone through litres of brake cleaner and degreaser plus purchased a few specialist tools for BMW's, but the following list on the next page is more or less complete.

With this set up I managed to get into the low 1:20s at Hampton Downs, which was a little disappointing. A better driver could have got into the 1:19's I am sure. Gary Baildon with basically the same car spec had achieved low 1:19's in what he described as "the lap of the gods!" The car still needed development and I love to tinker!

Since the initial build I have been further improving the car, although I have definitely made some mistakes on the way. I am now on my third junk yard engine. The original engine died when the oil pump failed because I didn't safety wire the oil pump sprocket. The second one had a huge overheat and now I am on number three which is working well (so far). The original engine and the second engine

Supplier	BMW parts	NZ\$	US\$
Me	Base Car E36 318iS Msport	1100.00	
Nick	Engine M52 2.8	850.00	
Nick	ZF Gearbox Conv	1400.00	
Nick	M50 Manifold	350.00	
Nick	240HP ECU	Included	
Nick	Rear subframe Assembly	500.00	
Nick	Spare wheels x 8	500.00	
Nick	Instrument Cluster	0.00	
Nick	M3 front Sway Bar	200.00	
Nick	X Brace	200.00	
Nick	Hubs	50.00	
Nick	LSD Diff	750.00	
Nick	Transmission X member support	Included	
Ali Express	Short Shifter		18.42
Ali Express	Silicon Water Hose set		96.61
Ebay	Metal Thermostat Housing & Thermostat	84.00	
Ali Express	2 x Tow Hook		19.1
Ali Express	Rear Camber Control Arms - Hardrace	300.00	
Ebay	Clutch Slave cylinder	29.00	
Ebay	Front Offset Lollipop Bushes	27.00	
E bay	Rear Trailing Arm Front Bushes	145.00	
Wish	Gear Knob	20.00	
Ali Express	Hood Struts		18.42
Ebay	Grip Paddle Clutch Kit and flywheel	838.00	
Ebay	Waterpump	58.00	
Fennix	Radiator	300.00	
Repco	16" Electric Radiator Fan	127.00	
Nick	Overflow bottle	20.00	
Repco	200Kpa Rad Cap	35.00	
Oddessy	Battery	189.00	
Wish	Oil Breather Bottle (est)	43.20	
Trademe	Oil Breather Filter	11.45	
NZKW	FIA Race seats	675.00	
eBay	Throttle Cable (LHD) *Not Used	53.38	
Jerry Clayton BMW	Throttle Cable (RHD)	92.00	
Jerry Clayton BMW	Clutch pivot pin and spring	18.00	
Marine Shop	Air Blower	50.00	
Mount Shop	Engine/Gearbox mounts	379.50	

Palmside	Race Belts x1	241.50	
BDMotorsport	Cage	3622.00	
MSNZ	Log Book	30.00	
MSNZ	Cage Homologation	250.00	
Scott Tristram	Compliance	1000.00	
NZKW	Steering Boss	60.00	
Speedfactor	Coil Overs/Springs XYZ	1790.00	
Blairs	Race Tyres Kuhmo V70A x 4	823.00	
Woolf	Rear Muffler and Exhaust pipe	300.00	
P&S	Baffled Sump	292.00	
Race Brakes	Brake pads Pagid RSL29	460.00	
Autostop	300mm Front Disks DBA966/TRW DF4055S	160.00	
Autostop	276mm Rear Vented Disks DBA 980	129.00	
Race Brakes	Rear Brake Pads	80.00	
Repco	Rear Brake Shoes (handbrake)	65.00	
Pick-a-part	E46 Caliper Brackets	60.00	
Part Master	2 x Upper Rear hub control arm bush's	120.00	
Repco	Fuel Filter	38.00	
Repco	Air Pod Filter	40.00	
Trademe	SAAS Pod Filter cold air box	129.00	
BM Workshop	Brake Light Switch	48.00	
Super Cheap	Paint (approx)	120.00	
P&S Autos	Alignment/Tyre Fitting (est)	368.00	
Super Cheap	SAS Gague Water Temp	78.00	
Super Cheap	SAS Gauge Oil Pressure	78.00	
Doozi	Car Numbers	85.00	
Jaycar	Auxiliary Switches x 4	30.00	
Redline	10mm Wheel spacers	180.00	
P&S	E46 Lower Control Arms	400.00	
Ebay	Bonnet Pins	20.00	
Boat shop	Battery Isolator	40.00	
Ebay	Volt Meter	10.00	
Boat Shop	Bilge Blower	35.00	
Facebook	NZKW Race Passenger Seat (FIA)	250.00	
Turner Motorsport	Underdrive Pully set		227
Schmiedmann	Sports Exhaust Manifold	356.00	
Facebook	Purple label steering rack	230.00	
	Totals	\$ 21,412	\$ 380

both \$850 but number three was \$2,000. I did pay top price for number three, but it was low milage 120,000Kms and engine prices have gone up. Recently I did score a dismantled but complete engine for \$60, so if you look around you can get lucky.

Probably one of the biggest improvements I made came from learning how to use Rom Raider to tune my BMW ECU. It's a bit clunky, but using Rom Raider you can upload the tune parameters from the BMW stock ECU make changes to Fueling and Ignition maps and load them back in again. I also fitted an intake Camshaft from the later model E46 which supposedly is worth a few HP. We are not talking about big gains here, the stock M52B28 is about 190HP and a really good tuned one should get around 240HP. I have never dyno'd mine, but I like to think I am closer to 240 than 190.

With the further set up changes and improving my driving I have now got down into the 1:16's at HD this is all on an internally stock motor. The next development is to fit a aftermarket inlet manifold and big bore 80mm throttle body. The stock throttle is about 56mm. I purchased both of these items from Ebay at around \$700 for both. I found that that the manifold fitted but it fouled the bonnet, so I had to cut and weld it to make it fit (the manifold not the bonnet). I couldn't get it to run properly with the 80mm throttle as it flowed so much air that although I got it to idle, it stalled every time I stepped on the gas. Despite much fettling with various tunes on the ECU but I just could not get it to run. The problem is that the standard ECU does not allow you to make changes with the engine running. You have to make the changes and then download them to the ECU. Test them and then try again. It's just too difficult to tune when making a big change like a new a Throttle size.



I have left the new manifold installed and made an adapter plate and fitted the original BMW throttle body which seems to work. Perhaps "work" would be an over statement. Last race meeting, the throttle kept getting stuck at about quarter open. Initially, I thought I had a brake issue as I couldn't slow down. It was only at race end and entering the pits with the revs stuck at 3,000 that I realized I had a problem.

To make it more difficult, the issue was heat related. As soon as the car cooled down the throttle closed perfectly, so I sprayed some WD40 on the mechanism and assumed it was fixed. After lap 3 in the next race same issue. Same again for the next race but this time the car wouldn't rev either, so I couldn't go fast and I couldn't slow down. I gave up and went home early. The diagnosis was a burnt fuel pump fuse holder, stopping the second fuel pump from running and a partially seized bearing on the Throttle body shaft which I could only find by using my heat gun on it.

So, as I write this, next race is in May, and everything seems to be working again. I really do want to use the big 80mm throttle, but to do that, I need a more flexible aftermarket ECU. I had some success with LINK in the past and learnt the basics of tuning, but a LINK is \$2,000 plus. Recently I have been reading about Speeduino an open source engine management system, all the details; hardware and software are free for download from the Internet. I have taken a chance and bought myself a Speeduino which is plug and play for the BMW M52 engine. Its about \$800 and comes inside an original BMW ECU case. The manufactures claim I can just unplug the original ECU and plug this one in. It comes with a base tune to get the engine started. Its on its way from the UK by courier and I can't wait for it to arrive. With the Speeduino I should be able to run the 80mm throttle and perhaps bigger injectors. How hard can it be?

Speeduino allows me to tune in real time with my PC and save it when I am happy with the results. With the LINK I was able to get it pretty close and then took it for final tweaks on the dyno. As dyno time is so expensive, if you can avoid it, you want your car running and driving before the dyno tune. I think its around \$1,000 for a dyno tune and often more if you want to squeeze the max out of the motor. I have had a few dyno disasters such as slipping clutch, misfire and weak fuel pump. All of these ended up costing me money for dyno time and with no result for the expenditure.

Rom Raider Fuel and Ignition maps

	50	75	125	175	250	325	375	425	475	525	625	700
640	0.94	1.35	2.28	3.23	4.62	5.98	7.16	8.10	8.56	9.48	11.28	12.46
920	0.90	1.36	2.40	3.19	4.53	5.86	6.74	7.79	8.60	8.96	10.70	11.86
1120	0.87	1.43	2.36	3.19	4.53	5.87						
1660	0.90	1.39	2.31	3.20	4.56	5.92						
1920	0.88	1.40	2.30	3.20	4.54	5.92						
2220	0.87	1.38	2.28	3.16	4.52	5.86						
2800	0.86	1.36	2.28	3.16	4.54	6.01						
3100	0.84	1.32	2.26	3.16	4.49	5.98						
3600	0.88	1.33	2.24	3.16	4.53	5.99						
4100	0.82	1.32	2.29	3.22	4.60	5.96						
4600	0.78	1.38	2.27	3.23	4.58	5.99						
5000	0.77	1.35	2.28	3.24	4.57	5.98						
5250	0.77	1.32	2.27	3.25	4.63	6.00						
5500	0.78	1.34	2.34	3.28	4.63	6.06						
5900	0.85	1.31	2.32	3.24	4.56	6.04						
6500	0.66	1.27	2.25	3.25	4.51	6.03						

	50	75	125	175	250	325	375	425	475	525	625	700
640	17.27	17.27	17.65	15.40	13.90	10.52	8.27	6.02	5.65	4.90	4.90	4.90
920	17.27	17.65	19.15	17.27	16.15	11.27	9.77	10.15	8.27	7.15	5.27	4.15
1120	19.15	21.40	25.15	21.77	18.77	15.02	12.77	12.02	11.65	12.02	10.90	9.77
1660	23.65	25.90	28.90	29.65	24.40	21.40	20.27	20.27	18.40	17.27	16.52	16.15
1920	24.77	27.40	30.02	30.77	25.52	23.65	21.77	20.65	18.40	17.65	17.27	16.90
2220	26.65	28.90	31.52	31.90	28.15	26.27	24.40	22.52	20.65	19.52	18.77	18.02
2800	30.77	33.02	36.40	34.15	31.90	29.27	28.15	26.27	24.77	24.77	21.40	19.90
3100	32.27	34.15	37.52	35.27	33.02	29.65	28.15	27.02	25.15	24.40	22.90	22.52
3600	33.77	36.02	38.65	36.02	33.40	30.77	28.15	28.15	26.65	27.02	25.90	14.65
4100	34.15	36.40	38.65	37.15	35.65	32.65	31.52	30.77	28.15	27.40	25.52	18.40
4600	34.15	36.40	38.65	37.90	36.02	34.15	32.27	31.52	29.65	28.90	26.27	22.90
5000	34.15	36.40	38.65	38.27	36.40	34.90	33.77	32.27	29.65	28.52	25.90	24.02
5250	34.15	36.40	38.65	38.65	36.02	34.52	33.02	32.27	29.65	28.15	25.90	24.40
5500	34.15	36.40	38.65	38.65	36.40	34.52	32.27	32.27	29.65	28.15	25.90	24.77
5900	34.15	36.40	38.65	39.02	37.52	34.15	32.65	33.02	29.27	28.15	25.90	25.52
6500	34.15	36.40	38.65	39.40	38.65	34.90	33.40	32.27	28.52	28.90	27.02	25.90

So, I have a working car and have to consider the peripheral items and costs which are essential to participate in a car race, but not directly related to the car preparation. It's important to note that I am referring to Racing which as a minimum requires a Motorsport National Race license to participate. The Sports Car Club runs many fantastic club level events which don't require any kind of race license. These include Motorkhanas, Autocross and track days. You can have a heap of fun without taking the route I have chosen. I just love the excitement of wheel to wheel racing on a purpose built race circuits and by doing most things myself I can just about afford to do it.

So what do the non-car related things cost?

Firstly you will need safety equipment. Seat belts, seats and roll cage are included in the car build, but you still need a race suit, race boots, socks, gloves, underwear balaclava helmet and an approved head restraint (eg Hans Device).

You can go FIA or SFI standards for these items. SFI tends to be cheaper but personally I invest in the FIA kit because I believe it offers better protection. Here are typical prices for entry/mid level kit

Item	Typical Cost	Notes
Race Suit—DMP2 layer FIA	\$600	
Race Boots - Sparco FIA	\$250	
Gloves— Sparco FIA	\$120	
Underwear— Chicane FIA	\$185	I prefer short sleeve tops and short which are permitted for National Race but obviously less protective
Balaclava Chicane FIA	\$70	
Socks- Chicane FIA	\$50	
Helmet FIA	\$400	Many options here you could spend \$3,000+
FHR Hans Device—FIA	\$500	Also consider other options from Simpson, NecksGen but all more expensive.
Total	\$2,175	

Owch! It didn't realize it was that much until I just added it all up. But we are not finished yet.

You will also need a 6Kg fire extinguisher for your pit \$150. One per car—so no sharing allowed. A class that I race (Production Race Series) also demands that every car must have an in car video system (Go-pro etc). Also you can bore your mates with the footage. Nearly as bad as forcing people to watch the wedding video.

So, you have thought of everything right? - wrong. If your car is not road legal, or even if it is you will probably want to tow the car to the track rather than drive it and risk getting stuck after a mechanical failure (or worse).

The cheapest option is an A-frame which despite many people believing otherwise, is legal to use to tow a race car. There is some debate if said car can be unregistered and unwarranted but I have never been stopped or had an issue. I made my own A-Frame but you can buy them for less than \$500. Of course they are not much use if your car has suffered any damage to the rolling body.

My personal weapon of choice is a trailer dolly. This just lifts one axle off the ground (usually the front) and the rears are on the road. Mine has hydraulic brakes which I certainly appreciate when the traffic unexpectedly slows on the highway. Again it was a home build, but I have seen them for sale for around \$2,000.

Most people prefer a full size car trailer and if I had the space, I would like one as well. I did build one a few years ago, but it just got in the way, so the dolly made a good compromise. Car trailers seem to have gone up in price and entry level is about \$4,000.

Finally you are ready to race. To do that, you need to have a MSNZ National Race License \$220 pa and of course you need to be a member of a Motor Sport NZ affiliated club like SCCNZ at very reasonable \$50pa. And lastly most Race Series have a series entry fee. I pay \$60 for ERC series. Having emptied your wallet, your bank account and your wife's life savings you can now enter your first race which is typically \$400 for a one day event. That will give you a fifteen minute practice and three 8 lap races. If the organizers are running late they, at their sole discretion, reduce your race laps to fit the time available. This is not a rare occurrence, and there is no refund. If you break down at any time during the event and can't fix the car there is no refund. From personal experience where I have not even finished the first practice that really hurts.

I began this article by asking the question, "so you want to go racing"? Depending upon your financial circumstances I have either encouraged you or frightened you. For me its a struggle to justify the cost, but I can't help myself— I love it. I would rather sacrifice overseas holidays and expensive entertainment to pay for it. Unless you are very financially fortunate its all about compromise. I have made my decision a long time ago and will continue to race for as long as I can still pass the medical - oh, did I mention the medical costs?

Phil Josephs

BMW E36 #431



Speeduino Anyone?

The Germans have an interesting word for which there is just no equivalent in the English language. The word I am referring to is *schadenfreude*. It is defined as the pleasure derived by someone from another person's misfortune. It occurs to me that people enjoy my articles like the Idiots guides not to celebrate my few successes but the enjoyment they get from my many failures. Now, please don't take offence, I have no issue with that, I enjoy having a go at projects that with my limited skill set have no business getting involved with. I also enjoy sharing my experiences with our readers, hoping perhaps, that I might save someone time and money on your own journeys.

So, this brings me to the Speeduino, for some, this might be confused with a fast food pasta recipe, but in fact it is the name of what is probably the cheapest stand alone ECU currently on the market. For a while now, I have been wanting to go with a stand-alone ECU but prices have just been too rich for my limited budget, but, Speeduino is about to change that. Now, cheap in ECU terminology usually means useless pile of shit, well I am about to find out, and you can enjoy some "schadenfreude" on the way.

First some background, for those of you running carbs and points, I suppose this will be of little interest, so feel free to move on. Now I have the attention of those of you who have joined the 21st Century. All modern cars use an ECU to control fuel, spark and a host of other engine parameters. Generally these ECU's are set by the manufacturer to achieve a smooth, reliable and unstressed engine tune. The engine manufacturer is designing an engine that will give years of trouble free (warranty claim free) motoring, so they are not trying to squeeze out the maximum performance. They assume you might be using rubbish low octane fuel, towing a trailer heavier than the specified limit, laboring the engine in high gears or maybe miss the occasional service. All of this leads to a conservative fuel and ignition map with a huge safety margin. Of course, this is the opposite to what your average SCCNZ member would do. We (sadly) are a group who are anal about on time oil changes, we pore over oil specifications before choosing our preferred brew. We hate the sound of an engine being driven badly and deal with the smallest engine issue with prompt attention. Fortunately for SCCNZ members (and other sad people like us), there are companies who have managed to decode the original manufacturers engine tune and provide a new tune with more aggressive settings which often results in a significant improvement in performance—just before the expensive Dual Clutch gearbox self destructs. These tunes can come in the form of a software download or sometimes a swap of a chip inside the ECU. To clarify, the original ECU is like your wife's dinner, safe tasty but take it or leave it. The chip tune is like a spicy Indian takeaway, you can chose the dish, but you might regret it in the morning. And lastly, we have the Stand-alone ECU equivalent to making your own dinner, can be excellent if you know what you are doing, but high risk of your hand glazed filet Mignon turning to charcoal.

The BMW E36 comes with a Siemens ECU that can be hacked and allow a motivated user (like myself) to change the parameter— a sort of poor mans standalone ECU. In case you want to try you will need to down load a free application called RomRaider and another application called MPPS which allows you to up and download maps to the ECU. I have been using these two apps for a couple of years now and they have allowed me to add some timing and change the fuel map. I have also turned off the fuel cut on over-run added more fuel on acceleration, raised the rev limit and played around with a few other parameters. All of these worked quite well and have to my knowledge not caused any engine damage but have improved the power output of the engine. How much I have no idea. I can only guess by the 15Kph increase in speed at the end of the straight at HD and the 4 second per lap faster I am going now compared to when I started. So, with all this good news, why have I purchased a Speeduino? The answer is the additional flexibility that a Standalone ECU provides. With the current setup, I have to modify the parameters and download them to the car, try them out then make more adjustments, download them to the car— and so on, It basically takes ages as you can't tune "on the fly" whilst the engine is running. This works OK, but if you want to make some big changes or get a dyno tune it gets very expensive because it takes so long between runs. This is exactly where I now find myself.

A few months ago I purchased one of those fancy inlet manifolds that has huge individual runners to each port and a massive

hole for a 80mm throttle body which also came with the Manifold. The standard throttle is about 56mm so its a huge upgrade. using a bit of school boy math's 56mm to 80mm is basically double the area. When I bolted this combination on to my car not entirely unexpectedly it didn't run well. In fact, it wouldn't start. I tried increasing the fueling and after about 2 hours and multiple map uploads I finally could get it to idle but the smallest touch of throttle just put the fire out. I persevered for most of the day but it was hopeless, its just not possible to guesstimate your way to a map change of that magnitude. The current solution is an adapter plate made out of a 20mm thick piece of aluminum which has allowed me to bolt the original throttle to the new manifold via the adapter. That started up immediately but ran a bit lean. I was happy with that, because it meant the new manifold was flowing a bit more air which was the whole point. Because there wasn't a massive difference between the new manifold with original throttle and the OEM setup I could just tweak the fuel map a bit and it ran just fine. If you are tempted to do any of this yourself you will need a Wideband Oxygen sensor and gauge which I purchased several years ago from AEM.



Actually you might be surprised to know that the affect of Air fuel ratio (AFR) is over rated. By that I mean provided you are in the "ball park" there is not much difference in power output from running a bit rich or lean. What you really want to do is run an AFR that is "safe". That is typically for an normally aspirated engine around 13:1 but if you go to 11:1 you will use more fuel but with no significant power loss. What you don't wants to do is run lean. A lean running engine runs hot and you risk burning valves or melting pistons, especially in a turbo application. However there is no way I am going to be able to use my fancy 80mm throttle without a more flexible way to adjust the AFR hence the Speeduino.

Whilst I looked at purchasing the board and the components and building up a home made ECU, the additional cost of getting one pre built was still reasonable and I even found one that is installed into an OEM E36 ECU case. So its real plug and play. Plus, I can just revert back to the original ECU if I have any issues. Speeduino is due to land in mid-May so I really don't know how its going to work out. Supposedly I plug it into the harness and drive away - I somehow I don't think it will be that easy.

I will provider an update detailing the additional pain and aggravation I have inflicted upon myself in the next edition.

Phil Josephs

Autocross Mount Smart Stadium

Sunday May 6th began as cloudy, but thankfully mainly dry day. As usual the overly pessimistic weather forecast got it wrong again. Apart from a light sprinkle of rain in the afternoon track conditions remained dry for most of the day.

A full grid of 30 cars queued up at the repurposed for the day Mt Smart kart track with a further 5 cars unable to secure a spot on our waiting list. Recently, our events have been fully subscribed so you need to get your applications in early if you want to participate.

Those who were lucky enough to attend were promised a minimum of 6 lots of flying laps over two different courses and those who stayed to the end of the day received some bonus untimed laps on a third course. With a minimum of 180 laps to be completed over the day SCCNZ officials were kept busy. We benefited from using timing transponders provided by the circuit operator which gave us both accurate and prompt results, which due to the magic of the internet, were made available to all via Google docs.

An interesting selection of cars greeted us on Saturday morning from classics to modern machinery and a handful of home built projects making up the numbers. Shout out to Paul Clarke in his just completed Kestrel, resplendent in primer grey. The potent 1800cc Nissan Turbo good enough to put him into 8th place for the day. Also deserving a mention is the awesome Formula Junior replica build by the exceptionally talented Russel Keach. This car is an absolute joy to behold. I am in awe of the fabrication talents of our SCCNZ members.

We also welcomed SCCNZ member Mark Holroyd in his very smart Rally spec Toyota Yaris GR amazing performance from a hardworking turbo 3- cylinder.

We witnessed a great battle between the father and son De Silva duo with dad taking the line honors, possibly assisted by the extra horsepower from his worked 1380cc A-Series engine. Lishan also worked double duty as our Clerk of Course, a very busy day for this capable young man.

In the end, the day was taken out by SCCNZ committee member and BBQ expert Paul Davies who managed to navigate his very quick Porsche 944 around our track in record time. Paul shared his car with his son Tom who was caught out in his final runs by rain showers that robbed him of a putting in a quick lap. Dad obviously had a work with the man upstairs!

Overall another well organised and most importantly accident free day (spins don't count).



MOUNT SMART AUTOCROSS MAY 6th 2023

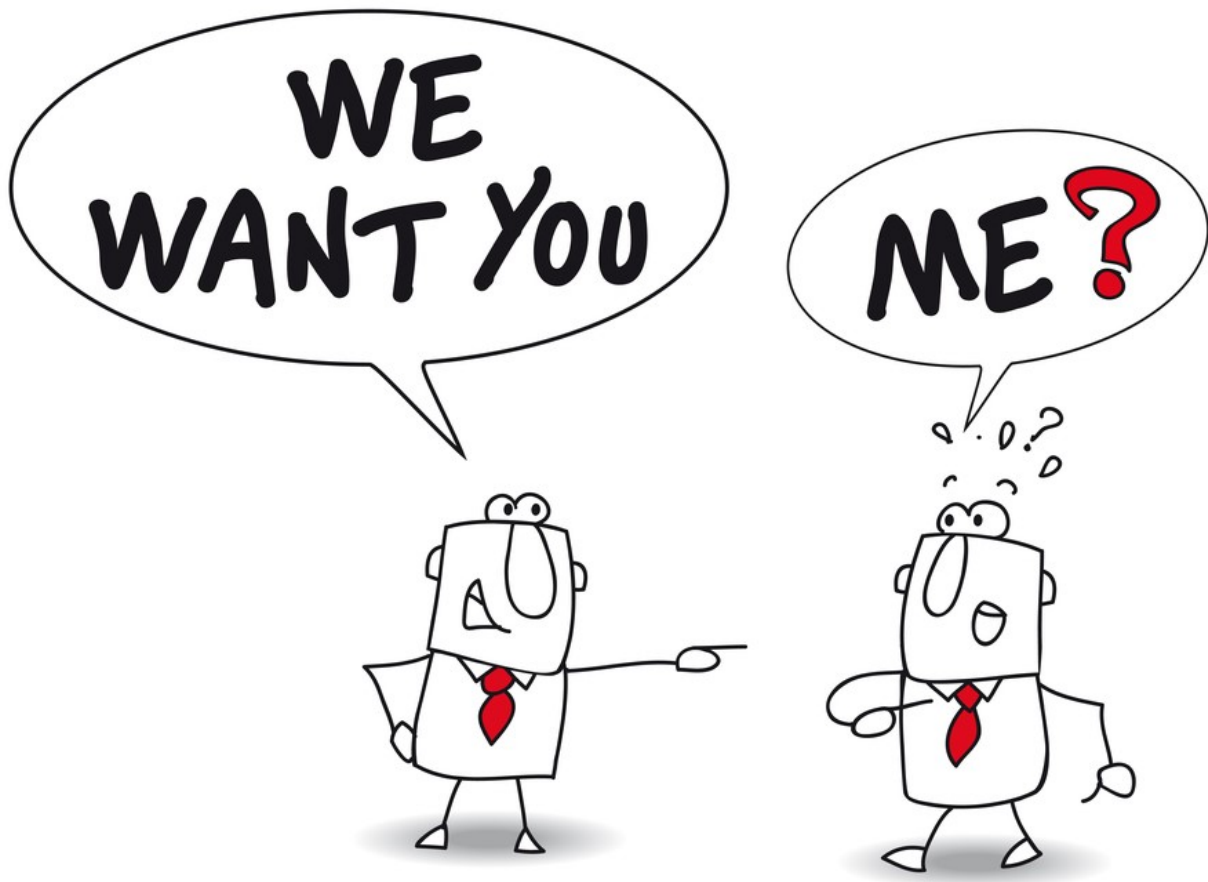
NO	NAME	CLUB	CAR	COURSE		TOTAL	SCCNZ POINTS
				1	2		
44	DAVIES P.	SCCNZ	PORSCHE 944	28.17	26.93	55.10	100.0
42	ROBSON A.		MITSUBISHI EVO	28.11	27.66	55.77	
12	THOMAS B.	ACC	MITSUBISHI STARLET	28.31	27.71	56.02	
36	BARNES T.	SCCNZ	MAZDA MX5	29.06	27.36	56.42	97.7
15	BONE R.	SS2000	DATSUN 1200	28.70	27.79	56.49	
99	HOLROYD M.	SCCNZ	TOYOTA YARIS GR	29.02	27.69	56.71	97.2
66	DE SILVA L. SNR	SCCNZ	BMC MINI	28.96	28.28	57.24	96.3
1	CLARK P.	SCCNZ	KESTREL	29.14	28.13	57.27	96.2
14	PRICE S.		FORD FOCUS	29.11	28.23	57.34	
86	HULL T.	SCCNZ	TOYOTA AE86	29.26	28.21	57.47	95.9
22	DE SILVA L. JNR	SCCNZ	BMC MINI	29.21	28.74	57.95	95.1
28	ANDREWARTHA C.	SCCNZ	MAZDA MX5	29.64	28.90	58.54	94.1
4	DAVIES T.	SCCNZ	PORSCHE 944	27.56	31.07	58.63	94.0
34	LYONS D.	SCCNZ	AUDI S4	29.90	28.79	58.69	93.9
95	CRISPE C.	PCC	BMC MINI	30.37	29.45	59.82	
94	ELDER M.	SCCNZ	VW GOLF	30.79	29.51	60.30	91.4
21	ANDRESEN M.	SCCNZ	TOYOTA MR2	30.76	29.78	60.54	91.0
55	STOKES D.	HCMC	DATSUN 1200	31.02	30.16	61.18	
3	BURNET C.	SCCNZ	FORD MUSTANG	31.30	30.38	61.68	89.3
5	KEACH R.	SCCNZ	FJ REPLICA	31.76	31.14	62.90	87.6
41	CARNE M.	SCCNZ	SUBARU LEGACY	32.47	31.46	63.93	86.2
71	AUSTIN M.	SCCNZ	PORSCHE 911	31.87	32.52	64.39	85.6
558	VENTRESS M.	SCCNZ	PORSCHE 924	32.49	31.93	64.42	85.5
441	AUSTIN T.	SCCNZ	BMW 320i	32.52	32.16	64.68	85.2
51	YEUNG W.	SCCNZ	TOYOTA 86	32.56	32.56	65.12	84.6
171	JONES B.	SCCNZ	BMW Z4	32.75	33.09	65.84	83.7
196	VON KEISENBERG T.	SCCNZ	TOYOTA MR2	34.47	33.15	67.62	81.5
17	LOMAS O.	ACC	PEUGEOT 306	35.25	33.03	68.28	
40	MEAD T.	SCCNZ	TVR GRIFFITH	30.73	37.72	68.45	80.5
11	LEE E.	SCCNZ	MAZDA MX5	30.07	DNS	69.79	79.0

All times are best of all the runs for each course, penalties included.

DNS/DNF Time based on slowest time recorded on that course + **2 seconds**.







This page intentionally left blank for **YOUR** articles.

Send to... philj@agilenetworks.co.nz

Visit our web site [ww.sccnz.co.nz](http://www.sccnz.co.nz)

For up to date information on what's happening at SCCNZ please visit our website which is regularly updated with all the latest info.

Note AGM 30th May at the Fantail & Turtle pub, Smales Farm, North Shore AUCKLAND 7:30pm.



SPORTS CAR CLUB OF N.Z.

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Mt Smart Autocross
RSS

Check out the photos of the Mt Smart Autocross on our Facebook page.

Awesome!!!!

Monday 8 May 2023



Club Magazine

A copy of the Club's magazine "Sports Car Talk" is available [here](#)

This is the latest edition but one - to get the latest copy, join the Club.....

Monday 8 May 2023

Planned Events

The Club is planning a number of events for the next Championship Year. Some are run by other clubs and some by SCCNZ.

Check the "Upcoming Events" tab for more details.

Tuesday 2 May 2023

YouTube - Motorkhana at Eventfinda Stadium

If you are looking for some great video of our last Motorkhana at Eventfinda Stadium on 13th February, check this out <https://www.youtube.com/watch?v=d6N-8Enhqhl>

Thanks to Tovey Yu for this clip.

Monday 22 February 2021

Hampton Downs Sprint Video

Here is a short video, courtesy of Lishan De Silva, of our March 2018 Sprint on the Club Circuit at Hampton Downs.

Great weather, great little track and great fun..... Thanks Lishan.

<https://youtu.be/gzKqpXILj1U>

Monday 18 June 2018

[Archived News...](#)

Upcoming Events

- SCCNZ AGM - 30 May 2023
- HCC Ruapuke Road Bent Sprint - 18 June 2023
Host: Hamilton Car Club
- NCC Springfield Road Hillclimb - 9 July 2023
Host: Northland Car Club
- SCCNZ Single Car Sprint - Hampton Downs - 4 November 2023
- HCC Ngutunui Tarmac Hillclimb - 12 November 2023
Host: Hamilton Car Club
- More Events

Recent Results

- Autocross - Mt Smart - 6 May 2023
- Motorkhana - Eventfinda Stadium - 16 April 2023
- Motorkhana - Eventfinda Stadium - 19 March 2023
- Club Championship Totals - 2022 - 2023 - 12 March 2023
- Single Car Sprint - Hampton Downs - 11 March 2023

Club Videos

Watch the SCCNZ DVD online:

Part 1: Grasskhana
Part 2: Easter Sprints

Photo Galleries

- Meremere Autocross - 20 November 2022
- Hampton Downs Sprint - March 2022 - 13 March 2022
- Garage/Shed Raid - October 2020 - 11 October 2020
- Ellerslie Concours 2020 - 9 February 2020
- Eventfinda Stadium Motorkhana - 8 December 2019
- More Galleries


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