

Orient Express

HAPPY
MERRY
CHRISTMAS
HAPPY
MERRY
CHRISTMAS
YEAR



FROM THE ZED CLUB COMMITTEE



September 2000 - January 2001 . Issue 80

Front Cover
Dunlop Targa 2000 entrant
Allen Stean and driver Ross Dunkerton

Rob: Mobile
025-859-232.

Club Patron:

We are honoured that our club patron is: Steve Millen

Executive Committee:

President:	Julie Pepper	(09) 483 7477
Vice President:	Bruce Fensom	???????????
Secretary:	Steve Chong	(09) 428 1117
Treasurer:	Rob Chubb	627-8830 627-8830
Club Captain:	Paul Hansen	(09) 298 5919
Social Co-ordinator:	Jonathan Cameron	021 734 860
300ZX Owners Club Representative:	Steve Chong	(09) 428 1117
Z-Challenge Co-ordinator:	Dee Collins	(09) 636 5443

Technical Advisors:

Auckland:	Greg Gillespie	(09) 410 9689
Wellington:	Don McLean	(04) 479 6133

For 90+ 300ZX advice, phone Rowan if you want to be pointed in the right direction.

Magazine Team:

Editor	FloodGate Flexo
Assistant Editor	Paul Hansen

And many thanks to this issues contributors

Please send all magazine articles - adverts etc to Paul Hansen

Please ensure data is sent as email, on disk, actual magazine pages or at the least, typed.

Web Site:

<http://www.zclub.org.nz>

eMail:

hansenhouse@xtra.co.nz

The views expressed in the "Orient Express" are those of the contributors, and do not necessarily reflect the views of the Datsun Z Club Inc., unless stated as a point of policy. The Datsun Z Club Inc. accepts no responsibility for the information or advice given in the "Orient Express" or by club officials or committee. Readers should exercise their own judgement when considering technical matters and modifications affecting their vehicles. It is recommended therefore that if in doubt on any technical matter, owners should consult the official workshop manual for their particular model



Events Calendar

Club

Sunday 17th December 2000
from 10.00am

Pre Xmas Brunch
133 Franklin Road,
opp. Victoria Park Market

BirdCage Tavern

Plenty of parking outside to show off those Zed's !!

Sunday 21st January 2001
12.00 noon

Club Concours
Venue TBA

Datsun 'Z' Challenge

Race

We have joined with three other clubs in co-sponsoring sprint events in the year 2001. The other 3 being the Capri, Sports Car and Escort Car Clubs.

13th January 2001	"Z" RACE DAY	Pukekohe	Datsun 'Z' Challenge
18th February 2001	Sprints & TestDay	Taupo	
24th February 2001	Sprints & TestDay	Pukekohe	
Late February 2001	Drags	Meremere	Datsun 'Z' Challenge
18th March 2001	Sprints & TestDay	Taupo	
16th April 2001	Sprints & TestDay	Pukekohe	
20th May 2001	Sprints & TestDay	Manfeild	
3rd June 2001	Sprints & TestDay	Taupo	
11th August 2001	Sprints & TestDay	Pukekohe	
15th September 2001	Sprints & TestDay	Taupo	
17th November 2001	Sprints & TestDay	Taupo	
22nd December 2001	Sprints & TestDay	Pukekohe	

You may have wondered? - why so many Sprints? What are TestDays?

We have decided to pool our resources with the following clubs -

**Capri Car Club
Sports Car Club NZ
Escort Car Club**

to co-run sprint meetings. TestDay is held prior to sprint practice and after the 5 lap sprints total time approx. 2 hours of testing - unlimited laps, ask anyone who's done it - "a REAL Hoot!!!!!"

Ron Buchanan - Special Projects Manager



3176 Airway Avenue • Costa Mesa, CA 92626
714.545.2742 • Fax 714.540.1826

Advertising

Do you want to advertise your services or products in the Orient Express?

Reach your Target market! 250, that's right, 250 magazines are printed every issue. That means atleast 250 Z owners reading your advertisement.....

Costs

Full Page	\$50 per Issue
Half Page	\$25 per Issue
Quarter Page	\$15 per Issue

Note: This is Negotiable for 3 or more Issues.

Contact Paul Hansen

Welcome New Member

Daniel McCallum

Auckland

260z, 2+2

Student



Official
Datsun Z Club
Clothing
FOR SALE

Style / Article	Sizes available	Colours	Price
Tee Shirts	M, L, XL, XXL	White, Blue, Red	\$18
Polo Shirts	M, L, XL, XXL	White, Blue, Red	\$25
Sweat Shirts	M, L, XL, XXL	White, Blue, Red	\$40
Jackets	M, L, XL, XXL	Black, Blue, Red	\$75
Badges		Traditional	\$10

These quality items have been embroidered with the clubs emblem and are great value. We've done a limited run so you'll have to be quick! Send a cheque (please add \$2.50 for postage), make cheque payable to Datsun Z Club Inc:

Datsun Z Club Inc, PO Box 24 176, Royal Oak, Auckland

OR buy these items at the next club event, ask for Julie Pepper

Z Challenge Series 2001

WHAT IS IT?

A series of approximately 6 events designed for everyday drivers who want to have some fun with their Z without going full-on into the 'race' scene. Points are awarded for each event and at the annual prize giving a trophy is given to the overall winner.

WHAT KIND OF EVENTS DOES IT ENTAIL?

- Concourse de Elegance (Cars are judged on condition, presentation, originality etc.)
- Gymkhana's (Obstacle course around cones, on Grass or Seal)
- Trial (Follow directions, solve clues, find your way to the finish within a set time frame)
- Economy Run (As per trial, but with fuel economy in mind) etc. (Also may include club duty)

WHO CAN ENTER?

Any Z Club member with a Z (of course) and a Standard Driving License. Partners, family, friends etc welcome to passenger in some events and of course watch/support you in others.

IF I WANT A MANZ LICENSE, HOW DO I GET ONE?

Easy - It's not needed for the Challenge series, but we encourage you to get one anyway. Fill out a License application form (available from Challenge coordinator) and send it to MANZ with the appropriate fee (approx \$35). In return you will receive, your license, a MANZ handbook and bi-monthly Motorsport Magazines.

CHALLENGE RULES

You must complete any required entry and indemnity forms at each event

The 'Z' you intend to drive in the series, must be nominated at the time of entry
(changes of car permitted in exceptional circumstances only)

- You must abide by the set rules of each event as outlined on the day of the said event (these are designed for your safety and the safety of others)
- Some events attract a small fee towards costs, when applicable this must be paid prior to competing in the event

POINTS SYSTEM

You will receive X number of points for the placing and in addition you will receive further points for completing the event.

(This is a rough guide only to the calculation of points):

If you place	1st you may receive	20 points
	2nd	15 points
	3rd	10 points
	4th	5 points
	5th	4 points
	6th	3 points
	7th	2 points
	8th	1 point

plus 3 points for having completed the event

i.e. If you come 7th you get $2 + 3 = 5$ points. If you don't place but complete the event, you will get 3 points

Entrants who assist in some way in the running of major club events (e.g. Z Race Day) may qualify for bonus points. There will be plenty of notification of this.

WHAT NOW?

Series will kick off in January, so watch out for details of coming events in this magazine and on future flyers. Enquires may be directed to:

Julie Pepper

President

(09) 483-7477 hm

(021) 854-406 mob

Annual General Meeting Minutes



17th Annual General Meeting

Date: 16 September 2000

Venue: Bronze Goat Restaurant, Ponsonby Road, Auckland

Present: Bruce Fensom, Jeremy Bardsley, Michael, Cadman, Brian Schou, Sheryl Schou, Anthony Baker, Greg Gillespie, Paul Hansen, Julie Pepper, Howard, Bath, Keith Smith, Mark McGuire, Steve Chong, Kathleen Bardsley, Alison Cadman, Mrs Chong, Lisa Wilkie, Briana Gillespie, Gillian Fensom

MEETING OPENED 6.25 PM

Item 1 Apologies

- * Rob Chub
- * Hugh Pepper
- * Mark Thompson

Item 2 Confirmation of previous minutes (16th AGM)

Taken as read and moved as accepted, There were no matters arising

Moved Jeremy Bardsley/Seconded Paul Hansen,

MOTION CARRIED WAS JEREMY PRESENT AT LAST AGM?

Item 3 Approval of the Annual Accounts

* As the treasurer, Rob Chub was not available, Julie Pepper presented the annual accounts. A Gross surplus for the year of \$1,737 was reported. Club assets stand at \$25,283

* Julie observed that the accounts showed a loss for Raceday, when it was thought there was a surplus.

* It was moved that the accounts be accepted, but that the executive investigate the apparent discrepancy with raceday accounts.

MOVED GREG GILLESPIE/SECONDED JULIE PEPPER, MOTION CARRIED

Item 4 Appointment of Auditor

* Julie moved that we keep TV Gerrard Beeson as club Auditors. Greg proposed that the appointment be subject to the executive being satisfied that the Raceday accounts are correct.

MOVED GREG GILLESPIE/SECONDED PAUL HANSEN, MOTION CARRIED

Item 5 Subscriptions

Membership fees remain at \$60.00 per annum and Secondary membership (as per the constitution) remain at \$10.00

MOVED KEITH SMITH/SECONDED HOWARD BATH, MOTION CARRIED

Item 6 Remits

Nil

Item 4 Annual Report

The President tabled her annual report.

* Noted that the years events were not well supported.

* Anthony Baker observed that semi social events were what members wanted.

* Is this correct, I interrupted Anthony's comments to be that social events weren't what was wanted, but rather he was pointing out that racing was!

* Greg Gillespie believed the desire to race was an important factor motivating club membership

* Noted that Driver training was popular, that the challenge for the incoming committee was to look at the focus of the club and to organise the appropriate events. Profit was not considered to be the motive for the clubs existence, although all events should be break even.

Item 7 Election of Officers

No nominations had been received, by the secretary, therefore nominations were taken from the floor

EXECUTIVE

*** President**

Julie Pepper, unopposed

Proposed Anthony Baker, seconded Greg Gillespie

*** Secretary**

Steve Chong, unopposed

Proposed Paul Hansen, seconded Bruce Fensom

*** Treasurer**

Rob Chubb, unopposed

Proposed Paul Hansen, seconded Greg Gillespie

*** Vice President**

Bruce Fensom, unopposed

Proposed Greg Gillespie, seconded Paul Hansen

*** Club Captain**

Paul Hansen unopposed (*I nominated Hugh, but Greg commented he wasn't here*)

Proposed Anthony Baker, seconded Greg Gillespie

COMMITTEE (CO-OPTED)

Probably better to list those nominated or volunteers, but don't associate with positions and should state that they are to be co-opted on as appropriate by Executive. We can't assume that everyone will accept because they weren't there + can't appoint people without their agreement.

We can mention that Kathleen has offered to be "understudy" to Treasurer (but if she's not a member needs to be officially co-opted on after becoming financial). Also Hugh and Jeremy Bardsley were to be approached for Committee as well.

Item 8 General Business

* Paul Hansen explained that it was only a small extra cost to outsource magazine publishing, approximately \$200. Total cost for last magazine production & distribution was \$768. Was agreed to continue with outsourcing, but to look at the style the mag is presented in

* The incoming committee should investigate the options of amalgamating with another club. The Capri club was suggested as one possibility. The primary reason for this suggestion was to ensure the future preservation of the club in some format, reduction of overheads, easier spread of work load with possibly more committee resource, increased membership numbers.

Meeting Closed 7.20 pm

MOTOWN SPLASH == NISSAN Z

Automotive News, August 7, 2000

Nissan plans a big splash at the Detroit auto show in January for the unveiling of the Z sports car and a new full-sized pickup. The new sports car is expected to go on sale in spring or summer of 2002, followed in fall by the V-8-powered pickup.

Nissan spokesman Kurt von Zumwalt said the automaker **"has moved away from the retro styling that was unveiled on the Z concept two years ago."**

He said the Z car that will be shown in Detroit will not be a concept: "It will be closer to production than that."

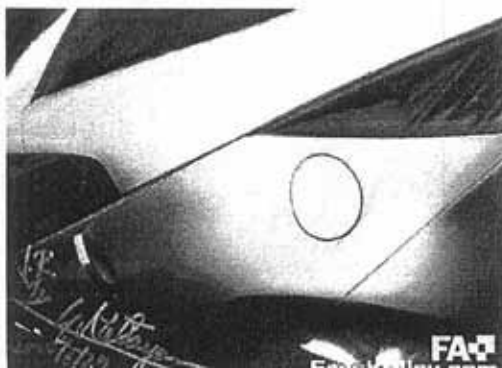
Sounds like a "death knell" if the pictures are anything to go by!!!



Lots of opinion on the web re the NEW "Z" - it would appear the US has ruined the intent of the original concept and once again - "righted the nail before driving it into the Coffin"

God, The more I look at it the more repulsive it is. The rear end looks like a cows anus. Why can't Nissan get the 3rd quarter window right? It should curve up not down at a ugly angle. And the front lights are two close together. Nissan should make a deal with pontiac and they could sell the new Z and the Aztec together as the two newest and ugliest cars on the market.

Without a whole lot of national attention, Nissan unveiled a left rear quarter view sketch of the new 2003 Z car at the International Z car convention in Las Vegas. FreshAlloys' editors have seen sketches of the new Z before- not in great detail. The released sketch is consistent with our previous encounters. Very sharp angles, almost Teutonic (reminiscent of Porsche), and dare we say it...Ford's "new edge" design philosophy.



I'm glad Nissan is sticking the VQ engine in the new Z. That is Nissan's best engine family, in terms of the overall package. The RB inline 6 is a finicky engine, and is not as reliable as everyone thinks it is (just watch any options video of highly tuned skylines shooting sharpnel from the engine bay towards the competitions tires LOL). For some reason Nissan has done a poor job of cooling their iron block engines, anyone who has taken the VG or RB engines and driven them on the autobahn has complained about exsessive heat. Rhy's Millen run up pikes peak, the RB engine was overheating. Hopefully the aluminum's block will take car of this issue.

No doubt Japan will get a turbo version. Will it be the turbo version of this motor or the existing 3.0L version? I could have sworn someone mentioned that the Z in Japan and America would be equipped with different engines?...

I glad they put fender flares on the Z. That was one the things I did not like on the Z32.... Just too flat and subtle on the sides. With wide rear tire does that mean Nissan has softened up at anti-squat rear suspension to please the Drag racers? Though I prefer long twisty curves and hair pin turns.

Looking at that picture, I have a feeling the profile of the car will be similar to that of a porsche.



New Mag for the Zedophiles (maybe the CLUB should subscribe???)

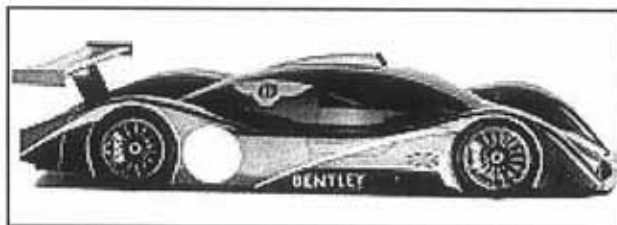


Resurrection!

The new Z will be unveiled January 8... but is it the car you want?

Sport Z Magazine walks around, kicks the tires, and looks under the hood of Nissan's all new Z car... at least figuratively. No one knows for sure what the new car will offer except for a handful of tight-lipped Nissan insiders and engineers. (When Bill Garlan, Nissan's corporate manager of new models, design and technology, was asked if he could spill just one teeny tiny bean, his only comment was "nope.") No matter. Automotive writer Terry Parkhurst tells you why the Z has to have a V6, why it will cost about \$25,000, and why its performance might leave enthusiasts less than enthused. PAGE 14





The British marque Bentley dominated the 24-hour Le Mans race early last century, winning in 1924, 1927, 1928, 1929 and claiming the first four places in 1930. It withdrew

from motorsport soon after, mostly because it ran out of money.

Now, 70 years on and bankrolled by owner Volkswagen, Bentley is heading back to the French circuit next year with a closed-cabin racer called the EXP Speed 8.

The car has been under development for more than a year and is being tested by British driver James Weaver, a 12-race veteran at Le Mans.

The project's manager is Bentley's No 2 engineer, Brian Gush, who has borrowed components from the parts bin of the VW-owned performance company Audi Sport.

The carbon-fibre EXP Speed 8 will be powered by the 440kW 3.6-litre twin-turbo V8 engine used in the open-cabin Audi R8s that finished first, second and third at this year's Le Mans.

The engine will have new turbochargers and different cooling and exhaust systems to boost power and torque. It is also being reworked to provide better fuel economy to cut the number of fuel stops around Le Mans.

Bentley will build its own engine for the EXP Speed 8, a turbocharged V8 believed to be bigger in capacity than the 3.6-litre Audi powerplant.

The return to racing is part of a \$2 billion investment in Bentley by VW over the next five years.

Much of the money will go towards a mid-sized Bentley saloon expected in Britain in October 2003 to compete with the best from Audi, BMW, Jaguar and Mercedes-Benz.

INTERESTING EMAIL CONVERSATIONS ON TACHO'S

Herbert Pang wrote:

Group Message from "Herbert Pang" <herbertpang@hotmail.com --

Here is a repost from the zhome.com web page. Original message was by Lawrence Cooper.

I've been reading several threads recently on problems with stock tachometers and on problems with the Jacob's system. First let me say that on my ITS prepared 72 240Z, both work flawlessly.

Now a little background.

Many years ago I found out that there are at least two types of tachs for the 240Z and 260Z. One type is a four wire positive trigger tach and another is a three wire negative trip tach.

The 4 wire type has one wire that sends positive voltage to the tach, one wire is for ground and the other two leads are the trigger loop, one coming and the other going. I can't say off hand exactly where these two feed to/from but they are shown in both my 72 and 73 factory manual wiring diagrams. They are also poorly pictured in these manuals. From past experience I have found that this type of tachometer is very unreliable. I have found this true in Mazdas and Datsuns.

I have found the 3 wire type of tachometer to be much more reliable and more adaptive to aftermarket modifications to the ignition system. The 3 wire type has a positive lead, a ground and a negative trip lead that runs directly from the negative terminal on the coil. Strangely, however, I have not found a Datsun wiring diagram or picture depicting this three wire tach. Has anyone out there seen one?

OK, here is what I have done with my 72 240Z. I removed my old 4 wire tach and replaced it with the three wire. I ran all new wires to the tach to assure proper circuitry. One wire from a trustworthy + supply, another to a nice ground, and the third directly to the negative lead on the coil. Here is where a problem crops up. Remember those two wires, on the 4 wire tach, that formed the positive trip circuitry? Well that loop is needed to keep your car running. Apparently the primary ignition circuitry runs through this loop (weird). I had to just complete this loop and the car started right up.

I now always use a 3 wire tach. You can easily hook up a shift light to it as well as the Jacobs electronic ignition.

OK, here is where I'll get some arguments. I don't use points. I use an Allison XR-700 (now called Crane?) optical trigger inside my stock distributor housing(per ITS regulations). I have used this on several 240s and 510s. It works great and I have amazingly not changed the timing for years. I will never go back to points as they were unpredictable, poorly manufactured and needed constant fiddling. NEVER again!!!

Soon after rebuild, my current ITS engine developed a slight misfire whose exact cause could not be isolated. I tried my backups: carb/manifold assembly, distributor, Allison trigger, coil, wires, etc. Nothing worked as the engine would stumble when accelerating through about 3000 rpm and would finally hit what felt like a crisp spot only when reaching above about 5500 rpm. I don't have a dyno so my seat of the pants is about as accurate as it gets. I decided to try the Jacobs computer, coil and wires, \$500 - ouch! I suppose I could have tried the MSD that some of my competitors use but for some reason I didn't.

The car started right up and since I was still using my old trigger, it didn't need re-timing. It idled smoothly. The tach(3 wire) worked perfectly. I took it out on the road and in 4th gear at 1500 rpm it pulled aggressively and smoothly up to 6500 rpm. Gone were all hints of hesitation. The engine sounded crisper and felt much more powerful. I then ran this test as well as full throttle tests starting in lower gears and was amazed at the performance. Since this time my car has run flawlessly and has won many races. I can honestly say that the \$500 I spent is the best money I ever spent on this car. Look at it this way. A new set of Hoosiers will cost you just over \$500 and how many sets will you run over time?

And no, I don't get any kickback from Jacobs.

Coop

Group Message from Walter Meares <walter@averstar.com --

IIRC, that tach is in series with the points and is designed to sense the electrical pulsing in that mechanically switched circuit. The electronic units don't create the same electrical dynamics and

the tach's got nothing to sense. A past moderator of the big list (John D'Armond) claimed it possible to modify a 240 tach by removing a resistor so that it will work like a voltage-pulse sensing tach... any old timers remember this?

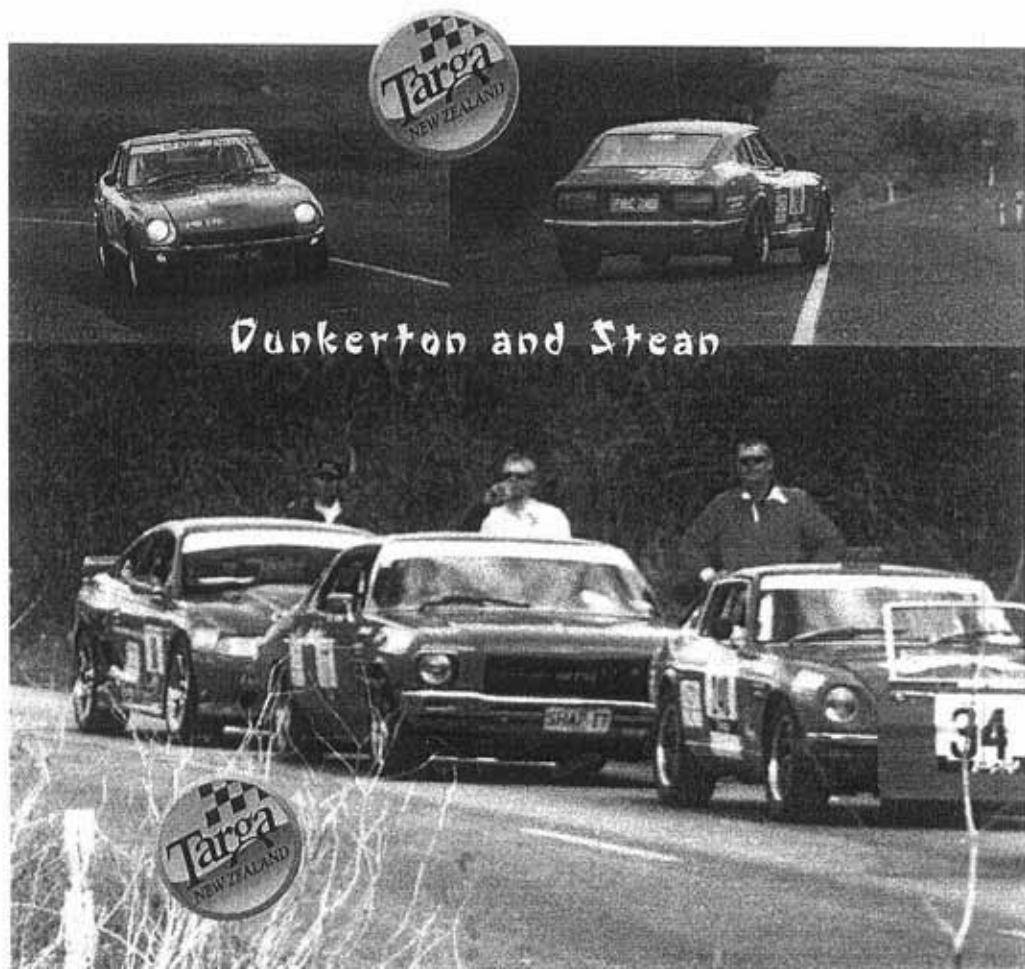
Walter
74 260-Z

lmSpud@aol.com wrote:

In a message dated 2/23/00 8:42:51 AM Pacific Standard Time, Cary.White@reliantgeneral.com writes:

Any long time Hi-6 owners out there care to enlighten us? According to Crane Tech Support, there is no way to make a 240 tach work. At least we have the rev limiter, though.

Mike Golding
72 w/ HI-6



(All tech articles and their content are the responsibility of the author, and Group Z assumes no liability from action taken as a result of information contained herein.)

Octane Rating

by: Mike Warren

Octane rating is the number given for the resistance of the gasoline to ignite. The higher the rating, the harder it is for the gasoline to burn. Older cars use carburetors to regulate the air and gas mixture for the engine. In order for these engines to run efficiently the carburetor needed to be adjusted. If the adjustments were not made the engine would knock.



In order to reduce knocking without manual adjustment of the carburetor higher-octane gasoline would be used. After the mid-80's engine designs began using computer assisted fuel injection to accurately control the air/fuel mixture. Because of this change, then you might think that Octane rating is not needed. We will discuss even more reasons why there are multiple grades of gasoline.

In newer cars, octane rating is still very important in reducing engine damage.

Some cars do not recommend using any gas below a specific rating, while other cars do not recommend going above a specific rating. It is easy to understand not going below a specific rating, but you may wonder why not go above an octane rating. The answer is really the same. Cars today are often precisely engineered for performance driving and the engine compression ratio is tuned accordingly.

With an engine designed to such standards then you have a smaller range of acceptable octane rating you car will perform efficiently with and not cause any engine damage. So the owners manual may actually tell you to not go over a specific octane rating.

Please check your owner's manual for details on your cars fuel system.

Lots of people like to work on their cars and increase the performance.

Many believe that if you increase the octane level you will get better performance. This is not all that true. If your engine is knocking then increasing the octane may reduce or eliminate the knocking and give you a small amount of increased performance. Another common method of increasing performance is to increase the timing.

Increasing the timing will provide a small amount of power boost, but it also means that you will need to start using a higher-octane gasoline. There are natural variables that may cause you to want to adjust your gasoline. Altitude, humidity, and air temperature can cause slight changes in engine performance. These changes may require a 1 or 2 number octane rating change. It is possible to run on a lower octane rating in winter.

If you have changed your gas to a higher octane, or if you are using the recommended rating, and knocking still exists then there may be some other problems. You may want to have the knock sensors checked to see if they are working correctly. If you have been driving your car for at least 50,000 miles then deposits can cause engine knock to continue.

You may want to look at ways to clean the engine. Get a tune-up, replace your catalytic converter, or just some time driving on the highway with occasionally pushing the engine to clean out the engine.

N O M E X

THANKS TO ITS EXTRAORDINARY FIRE RESISTANT PROPERTIES, NOMEX IS REPUTED TO HAVE SAVED UP TO 5000 PEOPLE FROM DEATH OR CRITICAL INJURY. KEITH HOWARD REPORTS ON A SYNTHETIC SUPERHERO

To the post-war generation, duped into believing that drip-dry bri-nylon shirts were a neat idea, the phrase 'man-made fibre' has an inglorious ring to it. But if you look beyond that unhappy example (sweaty oxters and static to shame a Van der Graff generator) it's undeniable that synthetic textiles represent one of the most significant technological developments of the second half of the 20th century.

Kevlar is the best known of the synthetic fibres to have had an impact on motorsport, although in many applications it has been forced to give best to carbon (graphite) fibre – weight for weight, an even stronger, stiffer alternative. Nomex, an aramid synthetic related to Kevlar, enjoys an altogether lower public profile but can justifiably claim that this is in inverse proportion to its true significance. Just ask the 5000-odd people in motor racing it is estimated to have saved from death or serious injury.

Like its cousin, Kevlar, Nomex is a product of the mighty Du Pont corporation. First synthesised at the company's Richmond, Virginia plant in 1965, it entered small-scale production shortly thereafter. Although its mechanical properties are pretty good, Nomex's most significant feature is its stubborn resistance to burning. As well as being self-extinguishing, it merely chars when heated to 350deg C or beyond – it does not melt. Moreover, it can easily be woven into a flexible cloth, thereby making it the ideal material from which to fabricate practicable fire-resistant clothing.

Nomex's rapid introduction to the American race scene – it was first worn at the 1967 Indianapolis 500, by every Goodyear driver – came about because of a personal friendship between astronaut Pete Conrad and Bill Simpson, who in 1958 started a motorsport supply business, at first making braking 'chutes for dragsters. Conrad (who was killed in a motorcycling accident last year) raced a Formula Vee at the time and in 1966 suggested to Simpson that he check out a new material being used for the canopies of Gemini programme re-entry parachutes. Simpson himself had been experimenting with a fire-resistant race suit made from aluminised twill cotton and it was, in his own words, "just awful".

Nomex, the new material being used by NASA, had been selected because of its fire resistance and Conrad reckoned it might be ideal for racewear. A few years later it would also be used in the space suits which Apollo astronauts wore to the moon.

Conrad persuaded NASA to let Simpson have a small amount of the Nomex cloth – at the time Du Pont was manufacturing a mere 10,000lb of the fibre a year, with a plan to increase this to 25,000lb, so it was like gold dust – which he duly made up into a race suit. Simpson showed it to Dan Gurney who liked what he saw of the new material, particularly when it was doused in fuel and set alight as a demonstration. Very soon Du Pont found it had a market for Nomex it had never envisaged.



Nomex clothing has saved many lives in racing

Today the company makes around a thousand times the amount it originally intended, for use in numerous applications many of which count fire resistance as a primary requirement.

In the motor racing context Nomex also serves as the reinforcing fibre used in the honeycomb cores of sandwich composite panels, where in addition to its exceptional fire resistance it has the benefit of high electrical resistivity, the latter obviating the galvanic corrosion that can occur between carbon-fibre skins and an aluminium core. (As an aside, this also explains the widespread use of titanium fittings with carbon-fibre composites. Even more corrosion resistant than stainless steel, titanium is uniquely immune from the oxidation from which other metals suffer when used in contact with the electrically conductive carbon fibre.)



Fire resistant clothing, however, remains Nomex's principal claim to fame. Asked to recall the most telling example of the life-saving difference it has made in motorsport, Bill Simpson – whose company has since grown into one of the premier racewear suppliers in the US – recalls the pit fire which occurred during an Indycar race a Michigan Speedway in 1979. It was an incident that makes the infamous Benetton Formula One pit fire of 1994 seem minor by comparison. Over 250 gallons of alcohol fuel gushed down the pit lane, engulfing around 30 people in the ensuing blaze. Happily every last one of them was wearing Nomex and none was seriously injured.

The single flaw with Nomex as it was originally manufactured was that it lost strength when exposed to intense heat, with the result that it could sometimes tear. In 1975 Du Pont addressed this problem by blending Nomex with a small amount (5 per cent) of Kevlar to produce Nomex III – one of a series of variants to have been developed down the years. As well as Nomex III the list now includes pure Nomex Delta FF, whose fine fibre particularly suits it to use in underwear and balaclavas, and Nomex DeltaA, DeltaC and DeltaI, all of which are mixed with different proportions of other fibres to adapt them to specific uses.

To test its ongoing Nomex developments, Du Pont has even built a rather gruesome device it calls 'Thermo-Man' – a full-sized human dummy which can be dressed in protective clothing before being exposed to a carefully controlled propane flash fire. Over 120 sensors distributed over the dummy's surface measure local temperature inside the clothing and allow the researchers to estimate the severity of burning that would have occurred had a real person been involved.

Less than 40 years ago F1 drivers were still going to work in impregnated cotton race suits which Bill Simpson politely describes as 'marginally flame retardant'. Today's F1 pilots, and those in many lower formulae too, are clothed from head to toe in Nomex and as a result are very much less likely to suffer burns in the increasingly unlikely event of a fuel fire. The late Pete Conrad will be remembered by the world at large for being commander of Apollo 12 and the third person to walk on the moon – but many in motor racing have equal cause to salute him for that timely conversation he had in 1966. ■

wear and tear. Dismantle the hospitals, discharge the doctors and nurses, retrain the anaesthetists to become iwi consultants. Makes sense, doesn't it. So if you happen to see the knighted one washed up on a beach somewhere choking on his own words, leave him there to die. It's only natural. *PETER DORNAUF* Hamilton

Why stop at whales? (Excerpt from Waikato Times)

If you happen to see a pod of whales stranded on a beach gasping their last, leave them to die; it's only natural 'says Sir Tipene O'Regan. Sounds like something the Duke of Edinburgh might have said.

But why stop at whales. What about ill cats and dogs, lions, llamas, leopards, lemurs and lorikeets?

Call off the vets. If ill they're in trouble let them die, it's nature's way.

But why stop here? What about men, women and children and all the ailments known to creation? Why not let people suffer and die, it's just natural

Getting Ready for Concours

by Lisa Wilkie

Come late January, it will be time again to give your undivided attention, focus your every waking moment, eat, sleep and breath with your car. That's right, it's our club's annual concours, our once a year opportunity to display the best our club has to offer.

Dating back to the late 1800's, the Concours D'Elegance is an event in which owners of restored and, highly maintained vehicles compete to see which entry is the cleanest and most original.

This year, to ensure these coveted trophies are within everyone's reach I've done some research, gathered advice from Zed owners, and even got some hot tips from a professional valet. So no more excuses - let's get to work!

On our club day you will have the choice of entering one (or more) of the following categories:

1) FULL CONCOURS:

This is the big one, for those of you who really treasure your car. The cars will be examined in great detail in search of the perfect Zed. They will be judged on everything, Panel and paint, interior, engine bay, underbody and of course authenticity (originality). The age of your car will also gain you additional points.

2) SHOW AND SHINE:

Similar to the full concours, this is a great test of 'elbow grease'. Your car may not look original but it should dazzle the judges with its cleanliness. The bonnets and toolboxes are closed for this category so the attention is focused on panel, paint, glass, exterior trim, wheels and interior.

3) RACE CAR CATEGORY

This is a very popular category for many members who race on a regular basis and who like to keep their cars looking sharp. To be eligible you need to have competed in your car twice in the last 12 months. Things to have in ship-shape condition are: interior, engine bay, underbody, glass, panel and paint. Only in this category, are graphics and/or logos (sponsorship etc) taken into account for the overall impression of a racing zed.

There is a trophy available for **Members Choice**, which encompasses all three categories together - you will have the opportunity to vote on the day for the car you like the look of the best.

Of special note is the prize "**Waldren Trophy for Best New Member**", which will be given to the winner of the best car entered by a first-time concours competitor.

Where do I start? What do I clean first?

OK, so you've chosen a category and now it's time to get to work on your Zed. I've managed to gather some useful information to save you time and effort in getting your car ready for our annual day out.

A practical place to start is the engine bay and underbody. Having access to a waterblaster can be very useful at this stage. An easier option can be taking a try to your local "Washworld". Go prepared - take a jack, stands and a wheel brace as the best results are obtained by taking the wheels off to really clean wheel arches and suspension thoroughly. Don't forget to give some attention to the transmission, drive train and tunnel - great dirt collection areas.

What cleaners and chemicals are effective and safe to use?

The foaming engine degreaser available at 'Washworld' does a good job in the engine bay if things aren't too dirty. Many people have suggested various alternatives: Kerosene, Mobilsol, Simple Green and other non-abrasive detergents. All these products if "worked in" with a paint brush, (trim the bristles an inch to give you a firmer brush) will successfully remove most built-up or ingrained dirt from those difficult areas in your engine bay and underbody. More than one application can often give better results. Remember to rinse thoroughly. Don't forget to protect the paint on your guards while cleaning the engine bay with old bath towels.

How do I get my wheels looking really sharp?

Let's face it, there are many mag wheel cleaning products on the market, most containing acids and bleaches, which, if used incorrectly, could permanently damage the finish of your wheels. One of the most recommended and effective all-purpose products that you can use safely is "Simple Green".

Past experience has shown that a bucket of suds, a selection of brushes (including a toothbrush) and a hose is the only way to get wheels really clean. Tedious, but true! Don't forget to clean the inside of your mags and give the tyre rubber a good scrub. Some people use a nylon pot-scrub on their aluminium mags to assist in the removal of dirt. All wheels are different so test a small area before getting too carried away.

TIP:

Scrubbing your mags with used dish-brush will prevent you from knocking all the skin off your knuckles (ouch!).

"Autosol" is a good product for polishing the wheels once they are cleaned. A carefully applied coating of wax on wheels can give added protection from brake-dust deposits. Use a "dressing" on the tyre-rubber such as Armor All and work into the grooves with a soft brush or cloth. Avoid spraying on - it can make a big mess!

Any pointers on cleaning the Interior?

Start off with a really thorough vacuum. Pay attention to those hard to reach (but not hard to see) places like down the sides of your seats.

Most of the vinyl (and plastic) in your interior should be cleaned with a solution of mild detergent and water. If it's really grubby try using "Multi" (general purpose foam cleanser) - Note: keep this stuff off your paintwork. After cleaning, apply a vinyl conditioner. There are many products available, most people use Armor All. There is some controversy surrounding the use of this product on interior surfaces as it has a white spirit base which is absorbed into the vinyl and can make it brittle.

An upholsterer I talked to suggested the use of Silicon (XL brand, NZ product) applied with a cloth for dash, upholstery and plastic surfaces. Excessive shine can be a problem and can be

minimised with buffing.

Velour upholstery, if it's looking a bit grubby, can be cleaned successfully by spraying with Multi and massaging the product in with a fine nail brush if necessary. Use a damp chamois to wipe off/sponge out the dirt and residue detergent.

What Wax or Polish should I use on the bodywork?

There are two ways of dealing with paintwork, you can either "seal" it by using a glaze or "nourish it" and let it breathe with a wax. If you use wax you will need to reapply every three months depending on conditions. Like most things in life, you get what you pay for - good quality waxes can be expensive, but are worth it for the protection it can provide. Cannuba wax (smells like coconut oil) is supposed to be the best there is, so if you use any product containing this, you're on the right track.

TIP:

A small soft paint brush is a handy tool to assist in removing dust from crevices while you vacuum.

"3M Hand Glaze" is a useful product for reducing swirl marks and scratches in your paint. Remember to apply these products in the shade, or when the body panels are cold, or you may stain the paint work. It may be of interest that in your regular cleaning schedule, wash your car in the shade or again, when the panels are cool (spray water on them for a few minutes if you must wash in the sun). Use a natural sponge, available from the Body Shop, not a carwash brush as they all scratch your paint. Turtle Wax "Wash and Wax" is a good product for regular use. Chamois the car dry, using a back-and-forth motion (i.e. not circular!).

So what's left?

Glass: The secret to clean, streak-free glass is to use two (lint free) cloths. The first one cleans and the second is used to polish the glass.

Chrome: "Autosol" metal polish or "Silvo" works well (this can be followed by a coating of wax to protect if you wish). Make sure badges don't have a build up of wax on them - clean with a soft toothbrush

Brightwork: Aluminium kick strips on 240/260Z can be cleaned successfully using ijifi and a stiff scrubbing brush. The result will be semi matt, but very bright.

There is a lot to be gained by giving your car this once-a-year going over. Besides making your car look awesome it's an ideal time to check for any fluid leaks and (dare I say it) underbody rust.

Happy cleaning!

For Sale

1989 300ZX

T/Top, Leather, Auto, CD etc etc

\$10500

Phone 021 854-406

Z RACEDAY 2001

SATURDAY January 13th

Pukekohe Park Raceway

Datsun Z Club Race Day - It's Back!! and we haven't got your entry yet!!



LAST REMINDER!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!

Lots of Races with lots of cars doing **YOUR** lap times.

How can that be? I hear you ask. Very simple, we ignore all conventions and simply put all the cars at the meeting into grids based on the lap times they do.

We can run through the entire field in four or five races, this then means that we can give everyone, one more races.

Because of the Holiday Season, we need entries in by December 31st, so don't wait, mail it off today!

Cost	Z Club Members	- \$100	(Late entry is entirely at the discretion of
	Non Members	- \$120	the race committee, a fee of \$150.00 will
			apply if entry is accepted)

Documentation 8.00am to 9.00am

Drivers Briefing 9.15am - all drivers must attend

Racing 10.00am

Requirements National Racing Licence

Entry Forms If you require an entry form, these are available from Paul Hansen or Hugh Pepper if you have not already received one.

Entries close 31st December 2000.

Inquiries can be made to any member of the Race Committee and correspondence mailed to:

Datsun Z Club, PO Box 24-176, Royal Oak, Auckland.

Help! Help! Help! Help! Help! Help! Help! Help!



HELPERS NEEDED!! please please please Z CHALLENGE EVENT #1

Can you help ?

Computer whiz (to operate Timing System, set up grids and produce results), Starters Assistants, Dummy Grid Marshallis, Announcer and General Hands

Why: Z Race day

When: Saturday 13th January 2001

Any offer of assistance will be great fully received - Cheers!

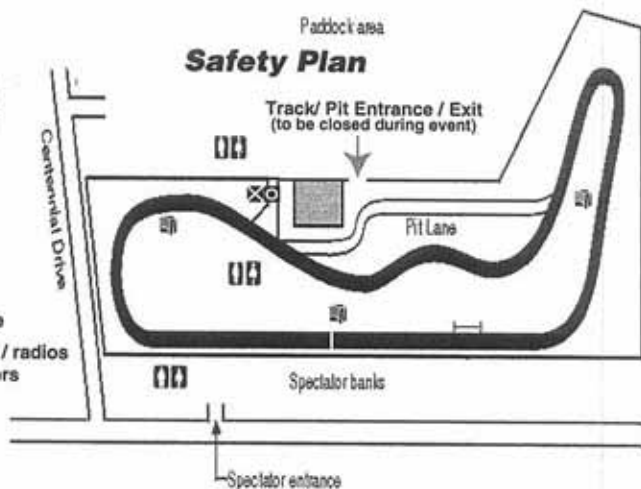
Contact:

Paul Hansen (09) 298-5919 - ah

Hugh Pepper (09) 274-6557 - wk or (09) 483-7477 - ah



- ⊗ 1st Aid
- ⊙ Tow Vehicle
- ⊠ Flag Points / radios
- ⊡ Extinguishers



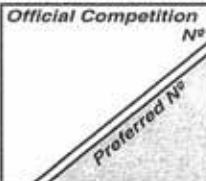
CIRCUIT SPRINT SUPPLEMENTARY REGULATIONS

Date of Meeting 18 / 02 / 2001

1. This meeting will be known as the TAUPŌ Sprint Champs, and is promoted by the National Committee's under the regulations of MotorSport NZ's National Sporting Code and its Appendices and Schedules particularly Appendix 5 Schedule C Standing Regs for all ClubSport Events and these Supplementary Regulations.
2. Organizing Committee : National Committee's
 Clerk of the Course: to be advised MSNZ Steward: to be advised Secretary of the Meeting: to be advised
 Time Keepers: to be advised Results Marshal: to be advised Flag Marshals: to be advised
 Scrutineering Marshals: to be advised Competitor/First Aid/Security Marshal: to be advised
3. **MotorSport NZ Permit No. TBA** and is for a ClubSport category one event - Dual Car Bent Sprint (Circuit Sprint competition).
4. Racing / Practice Rules are those which are known as the "OFFICIAL RACING RULES", otherwise, the rules follow MotorSport NZ Regs.
5. Documentation at 8.30am to 9.45am, Scrutineering will commence at 8.30am. No cars will be scrutineered after 9.45am. Drivers briefing at 11.30am.
6. Sprint practice runs from 11.50am to 1.00pm followed by lunch - 30 minutes. Sprint Racing proper will start at 1.40pm and continue to 3.40pm. Race day will finish at 3.40pm.
7. Drivers must produce a current Club Membership Card. **ALL COMPETITORS MUST HAVE AS A MINIMUM A CLUBSPORT LICENCE** The car must have a current Warrant of Fitness or comply with MotorSport NZ Regs.
8. Immediately a car has passed over the start line after the starting flag has fallen, it will be counted as a run.
9. Flag signaling will be used as approved by MotorSport NZ Year book No.28. The signaling will be under the supervision of the "Clerk of the Course" and the people at the observation posts at various points on the circuit.
10. Registration plates and License label must be attached to road registered vehicles.
11. **PASSENGERS:** At the discretion of the Clerk of the Course (providing they hold as a minimum a ClubSport competition licence if under 15 years), passengers may be carried provided the car is fitted with suitable seat, belts and roll bars. Passengers may be changed between runs.
12. The Promoter reserves the right to decline to accept any particular Entry without stating a reason, and to debar a competitor from starting or continuing should the car be declared by the scrutineer to be unacceptable. In the event of an entry being declined, the entry will be forfeited. The decision to re-scrutineer will be made by the Clerk of the Course ONLY.
13. Any Driver consuming or has recently consumed or in possession of intoxicants or has recently administered/smoked or in possession of mind degenerative drugs will be debarred from further participation, ordered from the precincts of the meeting and be reported to their club.
14. A competitor who has caused damage to property will have a Claim laid against him/her for the cost of repairs to the damaged property, or for the costs of replacement that is deemed necessary. No litter is to be left at the venue.
15. Purpose built race cars must be registered with MotorSport NZ. (Log book to be available). **See entry form for further details required.**
16. Prizegiving will be held at the track at 5.00pm.
17. **ENTRIES** prepaid per entry form and published notices of the event.



Entry & Driver Declaration Form



Event
 Venue
 Date / / 2001

Held under the National Sporting Code of MotorSport New Zealand Inc. and the Supplementary Regulations applicable to the event.

Driver / Entrant of Car: Age:
Note: If Driver and Entrant are different, name, address and contact details are required for both.
 Address: Phone No:
 Fax No:
 Mobile No:

NOTE: If any of the below signatories are under the age of 18 years then they must have the following completed by an authorised person

I, of, Date
 Name Address
 being the parent / guardian of the under 18 signatory do hereby consent to his / her participation in the above event. signed: / 2000

tick as appropriate

Is this your 1st event? yes no

male -18 18-25 26-35 36-60 +61
 female

TestDay - \$35 **OR** Sprint and TestDay - \$65
 \$35 prepaid **OR** \$35 prepaid then → \$30 on the day
Make cheques payable to Capri Car Club of NZ

Indemnity

I / We have read the Supplementary Regulations issued for this meeting and agree to be bound by them and by the National Sporting Code of MotorSport NZ Inc.

In consideration of acceptance of this entry and of my being permitted to take part in the above event, I agree to save harmless and keep indemnified the Capri Car Club of NZ Inc and MotorSport NZ Inc. and their respective officials, fellow competitors, servants, representatives and agents from and against all losses, actions, claims, costs, expenses and demands in respect of death, injury, loss of, or damage to the person or property of myself, my drivers, passengers or mechanics or of any person whatsoever, howsoever caused arising out of or in connection with these entries of my taking part in this meeting not withstanding that such death, injury, loss, or damage may have been contributed to or caused by negligence of the above named club or the Association or any of its representatives / officials.

Declaration by Driver

I declare that should I at any time of this event be suffering from any disability of any kind whether permanent or temporary which is likely to detrimentally affect my control of my automobile or my fitness to drive in this event; I will not participate in the event.

I further declare that the vehicle detailed on this entry form shall be presented at all times in every respect complying with the Safety and Eligibility requirements detailed in the various National Sporting code Appendices and Schedules.

Consent

I consent to the collection of the details on this entry form by the Capri Car Club of NZ Inc. for the event registration and promotion purposes and for it to retain and disclose these to MotorSport NZ Inc.

I acknowledge my right to access and correct this information.

This consent is given in accordance with the Privacy Act 1993.

Entrant / Driver Vehicle Compliance Declaration

I hereby state that:

- I have inspected the vehicle against the items ticked in the Inspection Items section of this form and confirm that the vehicle complies with the requirements of Schedule A of MotorSport Manual Edition 29 and its amendments.
- The vehicle will be made available for scrutineering audits as requested by the scrutineer.
- I am aware that where any breach of the Safety Schedules is found during a scrutineering audit I will be subject to the penalties under the National Sporting Code.

Vehicle Compliance with Schedule

Signature of Entrant Date

Signature of Driver Date

Note: If Driver and Entrant are the same, only one signature is required.

A

Date of Birth (if under 18):
 Financial Member of (Car Club):
 Competition Licence Grade:
 Competition Licence Number expiry
 Make/Model of Car:
 Colour of Car: manuf'd
 Std / Mod / Supermod (circle one) Capacity (cc):

What's your best lap time on this track?

Log Book Number:
 No of meetings since last audit:
 Date of last audit:

tick as appropriate this car must be audited (by order of the secretary)

Vehicle Compliance Inspection Items Checklist Section

Category 1 - Critical Safety:

- | | | |
|--|--|---------------------------------------|
| <input type="checkbox"/> Helmet & Overalls | <input type="checkbox"/> Safety Harness | <input type="checkbox"/> Roll Cage |
| <input type="checkbox"/> Seat(s) & Mountings | <input type="checkbox"/> Fire Extinguisher | <input type="checkbox"/> Brake System |
| <input type="checkbox"/> Steering System | <input type="checkbox"/> Wheels & Tyres | |

Category 2 - Non Critical Safety:

- | | | |
|---|--|--|
| <input type="checkbox"/> Engine & Trans | <input type="checkbox"/> Reverse Gear | <input type="checkbox"/> Starter Motor |
| <input type="checkbox"/> Power Unit Mounts | <input type="checkbox"/> Oil Catch Tank | <input type="checkbox"/> Throttle Return |
| <input type="checkbox"/> Lubrication Systems | <input type="checkbox"/> Cooling Systems | <input type="checkbox"/> Fuel tank |
| <input type="checkbox"/> Wipers & Demisters | <input type="checkbox"/> Rain / Tail Lamps | <input type="checkbox"/> Front Doors |
| <input type="checkbox"/> Ignition Switch / Circuit breakers | | <input type="checkbox"/> Bulk Head |

- | | | |
|--|--|----------------------------------|
| <input type="checkbox"/> Infr Cockpit Fittings | <input type="checkbox"/> Rear Vision Mirrors | <input type="checkbox"/> Battery |
| <input type="checkbox"/> Body Condition & Suspension (not affecting Critical Safety Items) | | |

Category 3 - Non Safety:

- | | | |
|---|---|---|
| <input type="checkbox"/> Competition Number | <input type="checkbox"/> Sponsorship Decals | <input type="checkbox"/> Exhaust System |
| <input type="checkbox"/> Body Appearance & Aerodynamic Aids | | |

ENTRIES MUST BE MAILED AND PREPAID!!!!!! NO FAXED ENTRIES!!!!!!
 You may have an entry transferred if you cannot attend - ring Ron by Friday

Post entry to: Ron Frew Capri Car Club of NZ Inc PO Box 172 Ngaruawahia 2171 (Ph 07 824 7143)

DATSUN Z CLUB INC.

P.O. BOX 24-176, ROYAL OAK, AUCKLAND 1030, N.Z.



Pukekohe Park Raceway

Saturday

13th January 2001

Held under the National Sporting Code of MotorSport New Zealand (Inc.) and the Supplementary Regulations applicable to the meeting.

DECLARATION BY DRIVER:

I declare that should I at the time of this event be suffering from a disability of any kind whether permanent or temporary which is likely to detrimentally affect my control of the automobile or my fitness to drive in this event, I will not participate in the event.

I further declare that the vehicle detailed on this entry form shall be presented at all times in every respect complying with the Safety and Eligibility requirements detailed in the various National Sporting Code Appendices and Schedules.

CONSENT:

I consent to the collection of the details on this entry form by The Datsun Z Club inc. for event registration and promotion purposes and for it to retain, use, and disclose these to Motorsport New Zealand. I acknowledge my right to access and correction of this information.

This consent is given in accordance with the Privacy Act 1993.

UNDERTAKING

I, the driver, agree that I shall be responsible at all times for the actions of my accompanying crew and shall ensure that they at all times obey the instructions of any authorised official of the meeting. I shall be responsible for ensuring that the conduct of myself and all accompanying crew, during both the event and any related social function, shall not bring into disrepute the MotorSport New Zealand (Inc.), the Datsun Z Club (Inc.) or their associated organisations, their officials, servants, members, representatives, or agents.

INDEMNITY:

In consideration of the acceptance of this entry and of my being permitted to take part in the above event, I agree to save harmless and keep indemnified MotorSport New Zealand (Incorporated) and Datsun Z Club (Incorporated) all the owners and tenants of private property traversed by this event; the respective officials, fellow competitors, servants, representatives and agents together with other competitors and their respective servants, representatives and agents, from and against all losses, actions, claims, costs, expenses and demands in respect of death of or injury to or damage to the property of myself, my driver(s), passenger(s), mechanic(s) or any other persons arising out of or in connection with this entry or my taking part in this event.

I/we the undersigned have received and read the Supplementary Regulations issued for this meeting and agree to be bound by them and the National Sporting Code of the Motorsport New Zealand Incorporated. I/we sign fully understanding and accepting that this entry may be declined without explanation (Art. 25, National Sporting Code).

Signature of Driver _____ Date _____

Signature of Owner _____ Date _____

Signature of Entrant _____ Date _____

NOTE: If Driver/Owner/Entrant are the same person, only one signature is required.

Your Early Entry Will Assist Organisers

NOTE: If any of the above signatories are under the age of 18 years then they must produce a competition licence endorsed "Authorised Minor" or have the following completed by an authorised person:

I, _____ (full name) of _____ (address)

Being the parent/guardian of _____ (full name of underage competitor) do hereby consent to his/her participation in the event

Signed: _____ Date: _____

FOR OFFICIAL USE ONLY

Group	Class	Paid

NATIONAL

Race Entry Form

Driver First Name(s)			
Last Name			
Address - Street			
Town / City			
Contact Phone #			
Competition Licence No			
Licence Expiry - Month/Year	/		
Licence Grade			
Age Group (circle applicable age group)	Under 18	18-25	
	26-35	36-60	61 plus
Male / Female	DOB (if under 18)	/	/
Financial member of (name of car club)			
Entrant Full Name			
Address - Street			
Town / City			
Owners Full Name			
Address - Street			
Town / City			
Make of Car:			
Model of Car:			
Colour of Car:			
Capacity in cm3 (cc):			
Log Book Number:			
Drivers best lap time Pukekohe	Date		
Preferred Competition Number			

Date Received / /

Enclosed Herewith \$ _____ being entry fees



DATSUN Z CLUB INC.

2001 Race Meeting

Pukekohe Park Raceway
Saturday 13th January 2001

Organised by a Sub-Committee of the Datsun Z Club Inc.

ALL CORRESPONDENCE TO P.O. BOX 24-176, ROYAL OAK, AUCKLAND 1030

SUPPLEMENTARY REGULATIONS PART I:

1. ANNOUNCEMENT & JURISDICTION: This is an invitation race meeting and is promoted by the Datsun Z Club Inc. It will be held under the Motorsport New Zealand Inc., National Sporting Code its Appendices and Schedules. Appendix 4 Schedule Z is the Standing Regulation for all Races. The race grids will be based on times achieved in the practice session and subsequent races.

2. ELIGIBILITY: Vehicles must either:

Comply with Schedule A of the current Motorsport New Zealand Manual

or

Produce a Motorsport New Zealand Certificate of Description in accordance with the National Sporting Code Appendix 6 Section III, in which case they may opt to comply with Schedule AA of the current Motorsport New Zealand Manual.

3. ACCEPTANCE of any entry shall be at the absolute discretion of the organising committee, as per Article 25 of the National Sporting Code.

4. OFFICIALS: The organising committee is Paul Hansen (09 298-5919) and Hugh Pepper (09 483-7477). The clerk of the course, competitor relations officer and chief scrutineer are all TBA.

5. PERMIT: The Motorsport New Zealand Permit No is TBA.

6. VENUE, DATE & TIME: The meeting will be held on Saturday 13th January 2001 at Pukekohe Park Raceway. Times as per programme.

ENTRIES: These open with the publication of these regulations and close at 5:00pm on 31st December 2000. Late entries will be accepted up to 9:00am on Saturday 13th January 2001 and will attract an additional fee of \$30. Entries must be made on the correct form and must be completed in all respects and accompanied by the correct fees. In signing the entry form competitors (both Entrant and Driver) are deemed to fully understand the Motorsport New Zealand National Sporting Code and its relevant Appendices and Schedules. Post entry forms to: Datsun Z Club Inc, P.O Box 24-176, Royal Oak, Auckland.

SCRUTINEERING & DOCUMENTATION: Documentation will take place on Saturday 13th January from 8.00am at Pukekohe Park Raceway. In accordance with established practice, scrutineering will take place at Pukekohe Park Raceway during the course of the event. Those cars required to be scrutineered will have their log books retained during documentation. Scrutineering will be to Schedule A & Schedule AA as appropriate.

RACE LICENCES: Drivers must hold as a minimum a National Race Licence.

ENTRY FEES: \$120.00 per entrant. (Includes passes for car, driver and two pit-crew plus three sets of competition numbers).

RACE DAY FORMAT:

DRIVERS BRIEFING will be on Saturday 13th January 2001, prior to racing, outside the Jennian Homes Building at the circuit and **ALL DRIVERS MUST ATTEND.** A roll call may be made.

PRACTICE will commence at 10:00. You may practice in any order. All practice sessions will consist of 10-minute periods. A minimum of three laps is mandatory. A timetable will be available at the paddock office notice board.

RACING will commence after the completion of practice.

COMPETITION NUMBERS will be available at documentation. Where possible permanent numbers will be retained. Competitor's attention is drawn to the requirements of Appendix 2, Art. 6.2 (page 145) regarding size, style and location of competition numbers.

STARTING POSITIONS: Unless otherwise stated, the starting positions for all races will be determined by times recorded in Official Practice, and/or previous race, or for any handicap races, by the Handicapper, in accordance with the National Sporting Code.

STARTING PROCEDURE: The order to start will be given by lights. All races will be standing starts. The Clerk of the Course will be the judge of fact in relation to infringement of starting procedures.

ALCOHOL: No alcohol is to be consumed in the pit area until the event is over.

THE EVENT will be held **WET** or **FINE**.

DOGS: Any competitors or spectators bringing dogs to the circuit will be turned away. There will be **NO EXCEPTIONS.**

NOISE LEVELS may be monitored in accordance with Appendix 2, Article 3.8.

THE OFFICIAL NOTICE BOARD will be located at the Jennian Homes building.

PITS will be inside the track.

Disk Brake Conversion

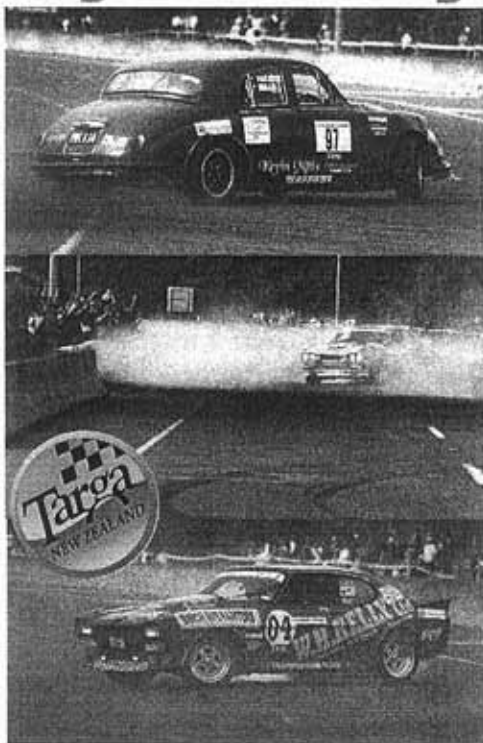
Georgia Z Club

Using the 1984 300ZX rotor and Toyota V6 4X4 Caliper

One problem High horsepower Z's really lack is braking ability. Stock Z cars suffer, but modified Z's really suffer from inadequate braking. One major problem is boiling fluid caused by the heat generated by the caliper and rotor. One major problem is the fact that the rotor on the 240-280Z is not very thick. Swapping to the Toyota 4X4 Caliper solves some of the clamping force issues, but the caliper never really was the problem when set up with the right pads. However, rotors did and still do suffer. One way to get away from this problem is to buy a Wilwood racing brake upgrade, which will cost you about \$800. A more cost effective way would be to purchase a set of 1984 300ZX vented rotors and a set of Toyota calipers. You will need to have a 1/2inch aluminum or steel spacer machined to fit between the Hub and Rotor. Usually you can find companies that make wheel spacers from T6061 aluminum for about \$50 and those can be machined to fit for another \$35-50. Companies can be found on the web or in the back of Grass roots Motorsports. Once you have all the parts you need only a few different thickness washers to use as shims to align the rotor within the gap of the caliper and you are set. A few other tips that I use are the braided brake lines, a Wilwood Proportioning valve, 4 inch brake ducts running from the spoiler, a good Hi Temp rated fluid (Does not have to be Dot5), and good Performance friction or Ferodo pads. Once you have installed everything and bled the brakes (Russel Speed Bleeds are another good addition) you should give the pads time to bed in. 300 to 500 miles of non aggressive driving should do it. Now you can go *hammer*.



Targa hits Tauranga



The Art of the Special - BRAKES

Thanks to Trevor Lister - Sports Car Club NZ

Ettore Bugatti was about the last GP entrant to fit front wheel brakes. He was said to have said "Brakes slow a car down, I make a car to go fast".

He might have had a point in those old days of generally poor braking anyway. And then as now, a car on a track probably only spent about 5% of its time under brakes. But consider!

If we build a beast that can hurl itself from 0 - 100 Km/h. in six seconds, and can brake back to zero again in less than three, then the brakes are at least twice as powerful as the engine. Keep considering. Only about 1/3rd of the energy that goes into the engine comes out as useful horsepower. The rest is rejected as heat. So for that 5% of time when they are in use the brakes have to absorb just about as much heat flow as our entire radiator, oil cooler, and exhaust system. Fortunately the remaining 95% of the time is available to reject the heat.

Getting control of brakes is about getting control of heat.

A Potted History of Brakes

The horse cart had a big block of wood, and a lever to shove it onto an iron tyre. This doesn't work too well with rubber tyres and higher speeds. Hence the drum brake. Initially with an external contracting band, and later with internal expanding shoes.

- But keep pushing the speed and weight up, and see what happens to our heat inputs. Put them on a track where the brakes are used hard and often and see what needs to happen to our heat rejection needs. Eventually drums were pushed out of the kitchen because they could not stand the heat. Differential expansion between the drum and the shoe meant that eventually full contact could not be made. The high spots in contact got even more overheated and the brake started to fade. No good for racing at all.

- The drum took some rearguard action. Twin leading shoes replaced leading/trailing set ups, especially on the harder worked front axle, radial shoe movement came and went and drums grew deep and wide cooling fins. But to no avail. The disc took over. Its performance advantage being that it absorbs and rejects heat at a faster rate. (See the section on fade later on).

- But keep shoving up the performance needs and even the disc has to change. All in the interests of better cooling we now have cross-drilled discs, ventilated discs, slotted discs and four pot calipers. If we run our grip and braking performance up to F1 levels then even this is not enough and we need to change to more heat resistant materials. Hence the carbon/carbon brake.

What Are We Going to Do?

The tyre characteristics turn up in the steering equations. We should not be surprised that they also turn up in the braking ones.

- Essentially the amount of braking force we can generate, and hence the heat input into our brake system, depends on the amount of grip available between the tyre and the road. In braking our bits of rubber do their best, not when they are in rolling contact with the road, but when they have a small amount of slippage. A big fat sticky racing tyre, with lots of weight on it, grips better than a skinny road tyre. The car will be able to stop quicker and our heat input will be both more intense and over a shorter period:

- So a low powered car, even on skinny racing rubber, will probably be OK on solid discs, but as weight, power, and tyre grip go up then we will need to go to ventilated discs.

•Consider that the F1 cars of today don't necessarily travel any faster in a straight line than the monsters of the 30's, but they certainly stop faster. This can be ascribed to downforce just as much as to tyre improvements. If downforce trebles the apparent load on the tyres, but the cars inertial mass has not changed then potentially three times as much braking force is available to stop the same weight. No wonder they need fancy materials.

What is Fade?

•Brake fade happens when things get too hot, and it comes in three varieties. New pads can fade before they are bedded in to match the contour of the disc or drum. A local high spot in the friction material takes an undue share of the braking load, overheats and fades out. Secondly if the choice of disc/pad combination is not adequate then the whole pad can overheat and fade.

•If either or both of these occur then the pedal will still remain firm under our foot.

•Thirdly even if the pads and disc can tolerate the heat it is still possible to overheat and vaporise the brake fluid, in which case we are compressing gas instead of pumping fluid and the pedal goes to the floor.

•At least with pad fade you still have some braking left, but with the pedal on the floor you don't have any. Heat is also hard on brake system seals. If these start leaking then the pedal can hit the floor, so keep a lookout for this as well.

•The pedal can hit the floor if the pads are unduly worn, because it may take more piston movement to get them back into contact with the disc. Also as the pad runs hotter at its trailing edge it wears more there, and then taking up the resulting wedge shape can also use up pedal movement. In both cases feel should be restored by another pump on the pedal.

•So if you ever do suffer unexpected brake fade, and you live to tell the tale, first of all take solace from the fact that you are obviously not yet driving on the limit (otherwise how did you get around the corner?). Then remember and analyse what actually happened to the pedal feel. This will point you to where the problem may lie.

Front to Rear Balance:

•If the amount of braking we get depends upon weight transfer and grip, and lower grip gives us less transfer, then to optimise braking under all conditions we actually want more braking effort on the front in the dry than we do in the wet.

•Our basic dry track balance can be dialed in by the use of separate master cylinders for the front and rear brakes, linked by an adjustable balance bar. The balance bar changes the amount of force on each master cylinder, and hence the line pressure in each circuit, and thence the braking force available at the wheels. The balance bar mechanically diverts more braking effort to the higher pressure line, and does so in the same proportion under all braking conditions.

•The same sort of effect can be gained by use of a pressure limiting valve in one or other of the circuits. This does just what its job description says. On modest braking both circuits get the same low line pressure, but on heavy braking one line builds up to a higher pressure while the other is held at the lower level.

•Rally cars have a driver adjustable pressure limiter that lets them change brake balance depending on the surface they are running on.

•The 4K rules require us to have drum brakes at the back. Because drum brakes generally reach effectiveness at a lower line pressure than disc brakes, then we can expect to need pressure biasing toward the front axle. K9 was built with a single dual master cylinder and an adjustable pressure limiting valve in the rear circuit. But we removed the limiter when we discovered that its best setting was fully open.

My best guess for this is that a single leading shoe drum needs a relatively high line pressure anyway, and that the static and weight transfer characteristics place a premium on rear brake performance in comparison with a saloon car drum/disc combination.

The Last of the Demon Late Brakers?

If you want to be one of these then go back and have a look at the weight transfer calculation. Going in late and jamming the brakes on hard is not the way to do it. That will just lock up the front wheels, because the front brakes will not reach their full effectiveness before the weight transfer has arrived. So initially squeeze the brakes on and give it time to build up. Then go the whole hog.

Some Pics from the CCC and SCCNZ Puke Sprints

Oh Dear!!!!



Bye now!!!!



Some handicap!!!!



C'mon Keith!!!!



Hmm, an advantage already!!!!



Checked out this site lately??



Z Breeze



November 2000

Volume 29 Issue X

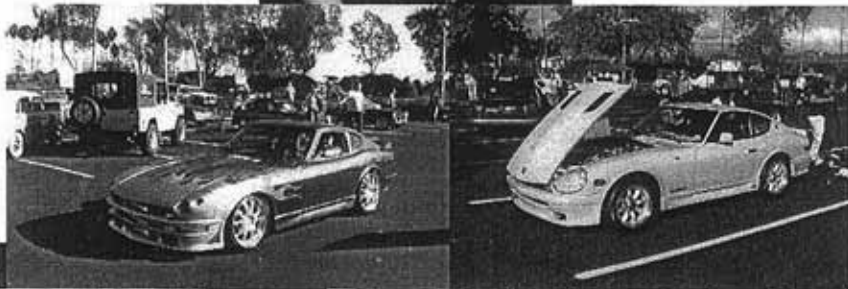
Group Z Members Score Big Again at the 2000 Surfside Classic Datsun Car Show!!

About 120 Datsun/Nissan Roadsters, 510's, Z's, ZX's, & trucks showed up at Doheny State Beach for the 8th Annual Surfside Classic Datsun Car Show. Group Z was represented by a host of Z's and ZX's.



Group Z Winners were:

- Troy Thacker - Best of Show
Best 260Z-280Z
- Newell "Al" Allen - Best Interior
Best Paint
Best Detail
Wildest-Custom-Modified
- Ken Hansen - Best 240Z
- Fred Jordan - Best 280Z X



our world



Thanks to John Prangnell for this expose on bro' Bob Prangnell

Mates can be real bastards...

My friend Bob Prangnell, who is pictured in you magazine driving a silver Skyline on P34 of the November issue went "off-roading" in his newly acquired \$20,000+ Subaru Legacy twin turbo following Track Day 2000, despite his vast racing experience. Bob was driving in front of us and gave it some boost before turning in to a corner; he went too far to the left as he entered the road (you can just see there is quite a dip and funny camber there) that caused the rear end to step out to the left - he over corrected and put the rear out to the right. This made the car spin anti-clockwise and leave the road backwards/left sideways into the shallow gully and fax bushes which caused the half roll, coming to rest

propped up against some small trees. Recovering it was relatively easy with Marcus's four wheel drive and the engine on the Subaru started reasonably easily. There really is surprisingly little damage to the car. The bonnet is the worst damage (it stopped the roll when it hit the road - apart from that) but I'll let me for sending this to you but if it is published, it will be well worth the pain!

Regards
Gary Boxall

Yes Gary, Bob will probably kill you, but thanks for the photos! And Bob - bad luck, buddy!
Ed



Weight Transfer (PART 2 OF 2 - Performance Handling)

Weight Transfer Determinants

So what does the center of gravity have to do with weight transfer? Everything! The height of the center of gravity is one of four factors that determine the total amount of weight transfer during acceleration, braking and cornering. The lateral location of the center of gravity is one of the factors determining where weight is transferred during cornering. The longitudinal center of gravity location is one of the factors determining where weight is transferred during braking and acceleration.

Factors that determine how much weight is transferred include the following:

- Total vehicle weight. A lighter-weight vehicle will transfer less weight, all else being equal. A force acting at the center of gravity. This can be cornering force, braking force or acceleration force. The greater the force acting at the center of gravity, the greater the weight transfer will be, all else being equal.

- Height of the center of gravity above ground. The higher the center of gravity above ground, the more the weight transfer will occur, all else being equal.

- Track width and wheelbase. A wider track width will reduce weight transfer while cornering; a longer wheelbase will reduce weight transfer during braking and acceleration.

Myth of Body Roll, Dive and Squat

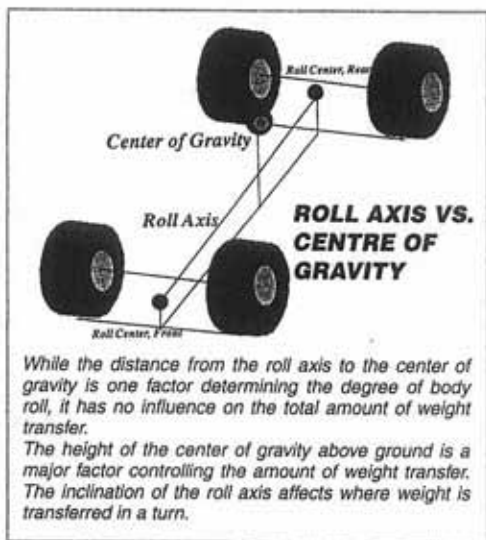
Many people are under the impression that body roll during cornering, dive during braking and squat during acceleration cause weight transfer. None of these factors cause weight transfer.

A vehicle with no suspension will transfer weight when a force is applied at the center of gravity. Consider a go-cart. A shopping cart will undergo lateral weight transfer when you turn up an aisle in the supermarket. Have you ever had precariously placed vegetables topple to the other side of the cart while turning? Or how about the Kleenex box that slides across the dashboard of your car in a turn? That's weight transfer.

Weight transfer occurs regardless of the amount of body roll, dive or squat present. In fact, body roll, dive and squat contribute such a small amount to the total weight transfer that it is not worth taking the time to make the calculations to determine how much weight transfer occurs due to these factors. Besides, we limit body roll, dive and squat for other reasons, which we will explore later. Limiting body roll, dive and squat does not affect the amount of weight transfer by any significant amount.

Lateral Weight Transfer

We have seen that a vehicle will always transfer weight while cornering. In a vehicle without suspension, all of the weight transfer acts through the center of gravity of the vehicle. With suspension, a system of forces causes weight to be transferred in three different ways: unsprung



MORSELS

This from the unofficial Australian guide to conversation with New Zealanders, or Kiwese.

BETTING: "Betting gloves" are worn by batsmen in cricket.

BRIST: Part of the human anatomy between the "nick" and the "billy."

BUGGER: As in "mine is bugger than yours."

CHULLY BUN: Chilly bin, also known as an esky.

COLOUR: Assassin, murderer.

COME YOUSE: Former Australian cricket captain Kim Hughes.

CUSS: Kiss.

DIMMER KRETZ: Those who believe in democracy.

DUCK HID: Term of abuse mostly directed at males.

ERROR BUCK: Language spoken in Arab countries like "Surria", "E-Jupp" and Libernon."

EKKA DYMOCKS: University staff.

ERROR ROUTE: As in "Arnott's error route baskets."

FITTER CHENEY: A type of long flat pasta.

GUESS: Flammable vapour used in stoves.

IGGS: As in steak and eggs, the national dish.

JENDLES: Thongs.

PHAR LAP: New Zealand's most famous horse, actually christened "Phillip."

RIGBY LEG: As in Anzac rugby league test.

SENDLES: Open shoes.

STUCK: What Kiwese eat with eggs

weight transfer; sprung weight transferred through the roll centers; and sprung weight transferred through the springs and antiroll bars (roll couple distribution). Some of these terms will become clearer in the suspension chapter. For now, let's look at how these three ways to transfer weight work.

Unsprung Weight Transfer

Unsprung weight transfer occurs at the center of gravity for each corner of the vehicle that is not supported by the springs. This includes the wheel, tire, brakes, hubs and other components. The amount of weight transfer at each corner depends upon the center of gravity location (usually near the wheel centerline), the unsprung weight and the cornering force. The total amount is small.

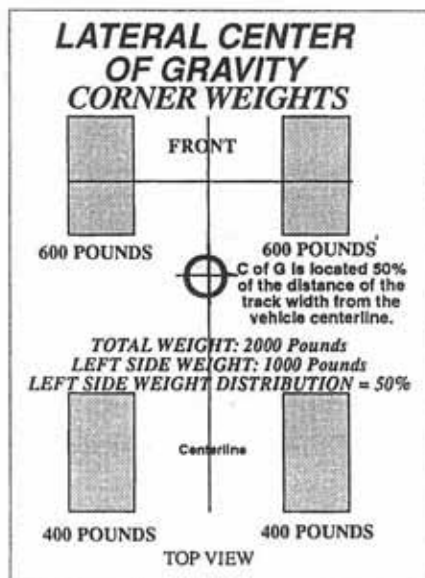
Sprung Weight Transferred Through Roll Centers

The roll center of a suspension system is a geometric point about which each end of a vehicle rolls while cornering. The front and rear roll centers determine the roll axis location (see the suspension chapter (next mag) for a detailed explanation). It is the sprung mass that rotates about the roll center. If the roll center locations are high enough to pass the center of gravity location for one end of the vehicle, then no body roll will occur. This is a very high roll center. In this case, all of the sprung weight at the end of the car is transferred through the roll center, with no body roll or no deflection of the springs occurring.

The other end of the spectrum is a roll center at ground level. The center of gravity for that end of the car is well above the roll center, and no part of the sprung weight is transferred through the roll center. The entire sprung weight is transferred through the springs. When the roll center is above ground, part of the sprung weight transfers through the roll center, part through the springs.

Sprung Weight Transferred Through Spring and Antiroll Bars

As we can see from the previous explanation, some part of the sprung weight of a vehicle is transferred through the springs and bars. If the roll centers are at ground level, all of the sprung



weight is transferred this way. The total amount of sprung weight transfer is always the same; part may be transferred via the roll centers, most will usually be transferred via the springs and bars. The relative roll stiffness of the front springs and bars compared to the total roll stiffness of the vehicle is the roll couple distribution and determines where the sprung weight transferred through the springs and bars will go. The total amount of unsprung weight transfer at all four corners is added to the sprung weight transfer through the springs and bars and via the roll centers to arrive at the total amount of lateral weight transfer. The amount of weight transfer while cornering is exactly equal for a suspensionless vehicle and one with suspension, as long as the track width, center of gravity location and total weight are the same.

Why Limit Weight Transfer?

All of these details about weight transfer are interesting, but what's the big deal? The big deal is traction! The greater the weight transfer, the less traction the tires can generate, all else being equal. If we can limit the amount of weight transfer, we can improve total traction.

We need to step back for a moment. We learned how vertical load affects tire traction. If we increase vertical load, we increase traction; if we decrease vertical load, we decrease traction. Remember, though, that the relationship is not linear. The traction increase occurs more slowly than the vertical load increase. Conversely, the traction reduction occurs more quickly than the vertical load reduction.

So what happens when weight is transferred? Let's explore what happens in a corner first. When the steering wheel is turned by the driver, the tires generate a slip angle, and cornering force is created. Remember physics class in high school? For every action there is an equal and opposite reaction. That applies here. The tires create the action. The reaction occurs at the center of gravity. Also remember that forces must be in equilibrium. For every force, there is an equal and opposite force. These forces are called centripetal and centrifugal. In our example, the tires create centripetal force that steers the vehicle. The centripetal force acts at the tire contact



MORSELS

A report from Britain says that a man who received a 40 pound (\$135) speed camera fine and a photo of his car sent back a photo of 40 pounds. Police sent him a photo of handcuffs. He paid the fine.

Perth resident Rupert Hindle drove to a police station in the West Australian capital to check if he was okay to drive after a night out drinking. He was tested and then arrested for being over the limit.

A Sydney Morning Herald correspondent reports that the Sunshine Coast drug squad arrested a woman heroin dealer, seizing in the process a car bought with the proceeds of her crime. Nope, it wasn't a BMW, Benz, Jaguar, or even an HSV. Heroin profits must certainly have dried lately. Why on earth would she be driving around in a Daewoo?

Another cabbie, this time in Nice, France, stalled at traffic lights and blocked the progress of a digger. So the driver of the digger scooped up the taxi and moved it out of the way. This taxi driver called the cops, too.

A Hongkong judge who listened to a 53 year old man blame a car crash for his ailing love life awarded the motorist a 10 year supply of Viagra.

Police in Perth pulled over a VW Beetle chock full of telephone books. The driver had removed the cars seats to cram 3500 books for delivery and was sitting on some of them.

patches. The equal and opposite centrifugal force acts at the center of gravity and tries to keep the vehicle going in a straight line.

Picture a weighted object attached to a string. Swing the weighted object around in a circle overhead. The weight is turning a corner. The cornering force is proportional to the weight (mass) of the object and the cornering velocity (speed) of rotation. Swing the object faster (or use a shorter string) and the force is higher. As long as the speed of the object is not increased too much, the object will follow the radius of the turn determined by the length of the string. But what happens if the speed becomes too great? The string will break and the object will take off in a straight line. Equilibrium was lost, momentarily. In our vehicle example, the tires are the string, holding the object in the turn. The weighted object is the car, trying to go straight on. When the limit of the tire's traction is reached the vehicle will try to go straight on, or at least the circle will grow larger, in an effort to reestablish equilibrium.

When we compare the vehicle example to the string and object example, we find one major flaw. If you extend the line formed by the string through the object, the line will pass through the object's center of gravity. On the vehicle, the string is the tire contact patches which are at ground level. If the center of gravity of our vehicle is also at ground level, then everything is fine, but it is not, unless we have a very thin driver and very low tire profiles. The center of gravity must be at some point above the ground. Here we have a centripetal force acting at the tire contact patches at ground level and centrifugal force acting at the vehicle's center of gravity at some point above ground. This is not a state of equilibrium, unless something else occurs. That something else is weight transfer.

When opposing forces act in different planes, as with our vehicle example, a rotational motion is created. In physics this is called a moment. In the case of centripetal force at the tire contact patch and centrifugal force at the vehicle center of gravity, the moment is called the overturning moment. This is an appropriate name, because the centrifugal force is trying to overturn the vehicle. The result is weight transfer, and in the extreme case of 100 percent weight transfer, the inside tires lift off of the ground. If enough extra force is generated by the tires, the resulting centrifugal force at the center of gravity exceeds 100 percent weight transfer. If the center of gravity moves outside the track width of the vehicle the vehicle will roll over. In this case, all four tire contact patches have lost all vertical load and provide zero traction. This in itself is a pretty good reason to limit weight transfer. But don't be overly concerned. Few vehicles create enough cornering force to cause the vehicle to overturn in a corner, without hitting something that will trip the vehicle. Some vehicles are, however, marginal in this respect. But all vehicles will transfer weight, and that reduces traction. In reality, some of the work capacity of the

tires is used to transfer weight, not to help the vehicle turn a corner. So how can we limit weight transfer? We could slow down in the turns. But that defeats our purpose, especially in competition. We want to increase cornering force and, therefore, cornering speed. We could reduce total vehicle weight. That helps all areas of performance.

We could also widen the track width. The wider track will resist weight transfer, and reduce it so that the tires have more traction available for cornering. Have you ever read a competition rulebook for virtually any racing class? All of them limit minimum vehicle weight and track width. If the rules didn't place limits on these parameters, we would have flyweight, wide cars. Most cars would probably be about as wide as the racetrack. Winning pole position would become quite important if that were the case.

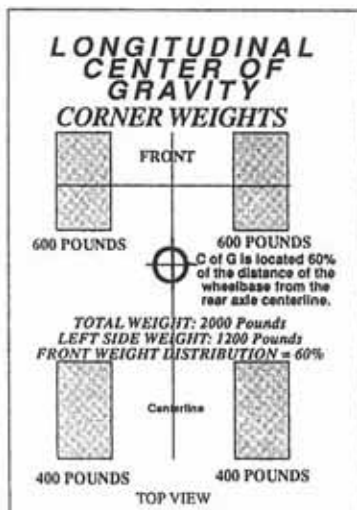
Finally, we can lower the center of gravity height. While not easy, small changes here can make a big difference in performance. Lowering the ride height of your car will lower the center of gravity, reducing weight transfer and increasing traction with no other changes at all being needed. These are among the most important changes you can make to a vehicle to improve handling.

Longitudinal Weight Transfer

Longitudinal weight transfer has the same effect as lateral weight transfer. In this case, one end of the car gains weight while the other loses weight.

During acceleration, weight is transferred from the front to the rear tire contact patches. The front tires lose traction, the rears gain traction. If we have a rear-wheel-drive vehicle, this increases traction at the drive wheels. However, with a front-wheel-drive vehicle, traction is diminished at the drive wheels.

As engine horsepower increases, longitudinal weight transfer becomes more of a problem, and for two reasons. First, more horsepower means more acceleration, which causes increased weight transfer which reduces traction at the drive wheels. Second, more horsepower means more work for the front tires, which will overload them more quickly. This is especially true at the exit of a slowturn when peak torque is applied and wheel spin is easier to induce. Since front-wheel-drive cars usually are much heavier at the front, the problem becomes even worse.



Police in the inner Sydney suburb of Surry Hills have been warning motorists about the dangers of leaving their cars unlocked. The police left written notes on vulnerable vehicles pointing out the risks. One caller told a radio station: "All car thieves have to do now is follow the paper trail."

An American company is selling what it claims is a "sunscreen" against police radar. The wax goes over the car's body and is said to absorb radar waves and reduce the effective range by between 11 and 13 per cent. But it won't work on laser guns or speed cameras.

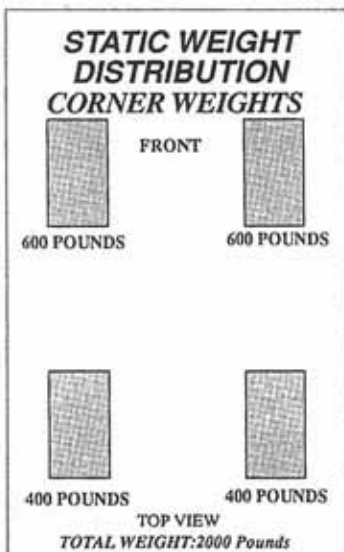
New York cabbie John Burt said, "Sure, buddy, why not?" when a passenger asked to be driven through the night 1250km to Michigan. But when they got there the punter couldn't pay the \$4900 fare. So Burt drove the 1250km back to New York and called the cops.

When a British woman reported her car stolen, police dialled the cellphone she had left on the passenger's seat and told the thief they had found the number in a classified ad and wanted to buy the car. They arranged a meeting and the thief was arrested.

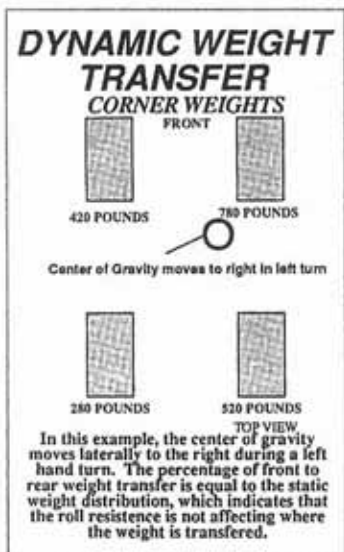
Another Australian, Paul Groves, of Brisbane, has failed his driving test for the 103rd time. Groves, aged 41, has been trying to get a licence for 16 years.

Front-wheel-drive vehicles are at their worst with high engine horsepower output and low-speed

turns where wheel spin is likely (or in a drag race situation). Frontwheel drive has many disadvantages. During braking, weight is transferred to the front from the rear. The rear tires have less traction, the front more. The more weight being transferred, the more work the front tires have to do during braking. This makes brake pressure balance between the front and rear brake systems important. If either the front or rear brakes lock too soon, braking performance is lost. We will cover brake balance more in a later chapter.



Static weight distribution is the weight resting on each tire contact patch at rest. The static weight distribution affects where weight is transferred. Changing of the static weight distribution will change where weight is transferred during cornering.



Dynamic weight distribution is the actual weight distribution on each tire contact patch during cornering, braking or acceleration. The total weight on all four tire contact patches during cornering is always equal to the total weight at rest. The total vertical load on the tire contact patches in the dynamic (moving) state can be more or less than the static weight due to aerodynamic downforce or lift. Downforce increases load and traction while lift reduces both.

Where Weight is Transferred

Longitudinal weight transfer is a simple matter; braking transfers weight from rear to front and acceleration from front to rear. Lateral weight transfer during cornering is another matter. Some of the weight is transferred to the outside front tire, some to the outside rear tire. Since the front-to-rear ratio of lateral weight transfer alters the available traction at the front versus the rear, it is crucial parameter affecting handling balance.

If we had a vehicle with a perfectly rigid chassis and no suspension, on a perfectly smooth road, the ratio of front-to-rear weight transfer would be exactly the same as the ratio of front-to-rear static weight distribution. In order to achieve handling balance (neutral handling), the ratio of front-to-rear tire contact patch area would need to match the front-to-rear static weight distribution ratio. Then, as long as the front and rear tires operated at the same slip angles while cornering, a perfect balance would be achieved.

Since we do not have perfectly rigid chassis on perfectly smooth roads, suspension is needed, and that will affect where the weight is transferred while cornering. There are four mechanical factors that affect where weight is transferred while cornering: static weight distribution; roll couple distribution; inclination of the roll axis from the horizontal; and height of the roll center above ground.

Static Weight Distribution

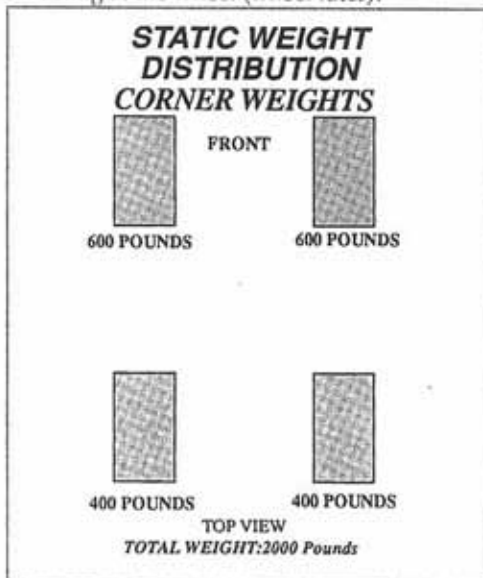
One of the easiest ways, in theory, to alter where weight is transferred is to alter where the weight is located in the beginning. This can be accomplished by physically moving components in the car, or by changing ride heights at each corner of the car. We will explore how this is done in later chapters.

Roll Couple Distribution

Roll couple distribution is the relative amount of roll resistance at the front of a vehicle compared to the amount of roll resistance at the rear of a vehicle. Roll resistance is provided by the combined rates of the springs and the antiroll bar acting at the wheel (wheel rates).

When the body of a vehicle rolls while cornering, the springs and antiroll bars resist the body roll. Stiffer springs and bars reduce body roll, but not the total amount of weight transfer. If we increase the roll resistance at one end of a vehicle only, more weight will be transferred at that end of the vehicle and it will lose traction compared to the other end of the vehicle. Here's what

happens if we raise the ride height of only one corner of a vehicle, that corner, plus the diagonally opposite corner, will increase in corner weights (see section on corner weights in the tuning chapter) while the other corners will lose corner weight. The laws of physics dictate that weight will transfer to the outside during cornering. If we stiffen roll resistance at, say, only the front of the car, proportionally more weight will now transfer at the front, less at the rear, because the effect has been to raise the outside front ride height compared to the rear (less spring and bar compression at the front). We know that weight transfer while cornering reduces traction because of the way tire traction responds to vertical load. So now, if more weight is transferred at the front and less at the rear, the front tires will have slightly less traction and the rears slightly more traction. If we started with a neutral handling balance, the car will now understeer. The opposite applies if we stiffen the rear roll resistance only.



MORSELS

Chicago real estate agent Don Baker painted his white Jaguar red after dreaming of dying in a white car in a crash.

Claims that nearly eight out of 10 male parking wardens in Mexico City took backhanders have prompted authorities to gradually replace the men with women.

Ford has dusted off its archives and confirmed that its famous two-seater Mustang was named not after a wild horse, but the P-51 Mustang fighter plane of the Second World War. The pony image came later, when it was decided a pony was better suited to the concept of the car.

Bank robber Frank Stahl gave police cars the slip after a 180 km/h chase through the streets of Munich, Germany. But when he drove on to a high-speed toll road and queued to pay his way, they caught up and penned him in.

Up the road, in a fishing village in Denmark, a couple did too much kissing. The 20-year-old driver parked his car but forgot to put the handbrake on. When he and his girlfriend began to, um, move about a bit, so did the car. It rolled into the harbour.

A driver in London has been fined for drinking mineral water while she was stationary at a red light.

This follows a fellow being fined for eating a chocolate bar while driving on the motorway around London.

MORSELS

Staff at Yosemite A Czech man won a Skoda Octavia after spending 202 days in the vehicle. He was allowed out for only an hour each day.

In Japan, the Sports car Kurt Kislser, 19, broke into a van in Hamburg, Germany. But he didn't get far. It was a police stakeout van - full of policemen.

German learner-driver Hans Grober was upset when he failed his licence test. So he locked the examiner in the test car and took him for a 220 km/h blast on a motorway. Grober faces several driving charges.

The 1940 Lincoln Continental Convertible given to baseball legend Babe Ruth by Yankees club president Joe McCarthy will go up for auction in Arizona on January 19. Complete with presentation plaque on the dashboard, it is expected to fetch about \$200,000.

Police in the Netherlands have found a Morris Traveller van stolen from outside owner Piet Mass' home 26 years ago. Trouble is, it has been at the bottom of a canal all that time.

A fellow in Oslo protested at speed bumps being put in his street. He wasn't happy when one ended up by his gate. He became even grumpier at the noise it caused. So he dug it up. He was charged with theft.

It does not matter if the increase in roll resistance comes from springs or antiroll bars. The effect is the same, although the manner in which weight transfers is different.

Springs transfer weight laterally, that is, if we stiffen the front springs only, more of the total weight transfer will be directly to the outside front. Antiroll bars work differently. Since an antiroll bar links the left- and right-side suspension together, the bar will try to lift the inside tire in a turn while it pushes the outside tire down. Pushing the outside tire down increases vertical load to that tire. Lifting the inside tire will transfer weight to the diagonally opposite tire, increasing traction there. The method is different, the result is the same.

Increasing roll resistance at only one end of a vehicle will increase the amount of weight transferred at that end and reduce the amount of weight transferred at the opposite end of the vehicle. The end with more roll resistance will have a net reduction in traction while the opposite end of the vehicle will have a net gain in traction. This will alter the handling balance of the vehicle. The traction of the tires is altered only slightly, as long as the roll couple distribution is not too far out of the ballpark.

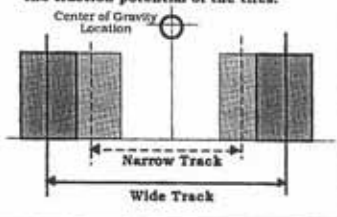
Roll Axis Inclination

When a vehicle's body rolls in a turn, it pivots around an axis known as the roll axis. (The roll axis will be explained fully in the suspension chapter.)

If the roll axis is approximately parallel to the mass centroid axis (defined by the locations of the individual centers of gravity for sections of the vehicle in side view), then the inclination of the roll axis will not affect where weight is transferred. If the roll axis is not parallel to the mass centroid axis, then weight is forced to transfer more to the end of

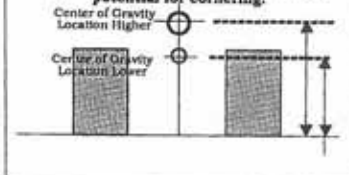
EFFECT OF TRACK WIDTH ON WEIGHT TRANSFER

A wider track width will resist weight transfer during cornering, increasing the traction potential of the tires.



VERTICAL CENTER OF GRAVITY LOCATION

Lowering the Center of Gravity will reduce weight transfer and increase the traction potential for cornering.



the car where the roll axis lies closer to the mass centroid axis. A front-heavy car with a low front roll axis will force more weight transfer to the rear, reducing traction at the rear. This will increase oversteer, or reduce understeer.

Height of Roll Center Above Ground

We have had a glimpse of how the roll axis inclination can force weight transfer to occur more or

less at one end of the vehicle. We have also seen how the height of the roll center from ground level affects the amount of sprung weight transfer at each end of the vehicle. The more weight transferred through the roll centers (higher roll centers), the less weight transferred through the springs and bar and less roll couple at that end of the vehicle. This affects the roll couple distribution and, therefore, where weight is transferred. We will get back to this in the suspension chapter.

Weight Transfer and Responsiveness

So far, we have seen that the physical attributes of the car, that is, the weight distribution and center of gravity location, affect the amount of weight transfer and therefore tire traction. The handling balance is also affected by where weight is transferred. The third parameter affecting weight transfer is how quickly the weight is transferred.

The speed of weight transfer affects the responsiveness of the vehicle, or how quickly the vehicle reacts to driver and road surface inputs. The quicker weight transfer occurs, the less response time is required. Like roll couple distribution, this parameter is easily controlled by changes to suspension components, in this case the shock absorber rates. It is the shock absorber that controls the rate of weight transfer, and therefore the transient handling response; that is, the portion of handling when forces are changing in either magnitude or direction. This occurs when a vehicle is going from acceleration to braking, from a straight line to a turn or from a turn in one direction to a turn in the opposite direction and so on. The rate of the shock absorber controls many important functions, which we will also look at later.

Let's go back to the example of the perfectly rigid chassis with no suspension. This vehicle would transfer weight instantaneously as slip angles were developed at the tire contact patch. If we were to place solid shock absorbers on a vehicle, the same thing would occur. As long as the instant weight transfer occurred at both ends of the car, the balance would not be affected. But it occurred at one end of the vehicle only, that end would experience instantaneous weight transfer, with a resulting sudden loss in traction at that end of the vehicle. Not a fun situation, but common when suspensions bottom, shocks bind or a chassis bottoms on the ground. Consider the other extreme: no shocks at all. With no shocks, the body roll would occur instantaneously, but weight transfer would be very slow. Without the damping from the shocks, the body would try to roll back before the cornering forces diminished, and weight transfer would be bouncing back and forth from rear to front and back. What a mess. If you have ever attempted hard cornering with dead shocks, you have a good idea that this situation is to be avoided. The middle ground is reality for the highperformance vehicle. The shocks designed for a given car or application will not be too stiff or too soft (the range between too stiff and too soft is actually

MORSELS

A New Yorker called Barry Prior accepted a \$200 bet to run naked across Brooklyn Bridge singing Beautiful Morning. Prior was knocked down and killed.

An auction of classic Ferraris in Switzerland this month includes a rare sports-racer - a 1963 Ferrari 250 GTO Berlinetta Competizione. It is expected to fetch a world record \$24 million, says the auctioneer Bonhams and Brooks. The car won a number of races, including the GT category in the 1963 Le Mans 24-hour race, where it finished second overall. The record auction price, set in 1987, is \$19.5 million for Bugatti Royale.

A Reliant Robin three-wheeler was spotted in London sporting the bumper sticker: "Get any closer and you'll need a condom."

A fellow in Oslo protested at speed bumps being put in his street. He wasn't happy when one ended up by his gate. He became even grumpier at the noise it caused. So he dug it up. He was charged with theft.

The Shaguar E-Type used in the Austin Powers film The Spy Who Shagged Me has been sold at auction in America for \$120,000.

A driver in Germany ran off the road and crashed his car after he was overcome by fumes from a smelly cheese he was carrying.

wide). Within this wide range of acceptable shock rates, considerable tuning can be undertaken. In general, relative to weight transfer, if we increase the stiffness of the shocks, we decrease the time it takes for weight transfer to occur. If we soften the shocks, we increase the time it takes for weight transfer to occur. If we change both ends of the car equally (say fifteen percent stiffer at each end), then we change the overall responsiveness of the vehicle. If we change the shock rates at only one end of the vehicle, then we change the response time at only one end, and the transient handling balance will be altered. This can be used as a tuning tool with great success.

Weight Transfer and the Driver

The driver has a major influence on weight transfer. Steering inputs can affect both where weight is transferred and the rate of weight transfer. Cornering speed, acceleration rates and braking rates affect the total amount of weight transfer. Brake and throttle inputs affect where weight is transferred. All of these can alter handling characteristics substantially. Each factor will be fully explored in the driving chapter.

Review

Weight transfer affects handling in three ways: total amount of weight transferred; where the weight is transferred; and how quickly weight is transferred.

Weight transfers from the rear to the front during braking, from the front to the rear during acceleration and from the inside to the outside during cornering. When weight transfer occurs during cornering, there is a net loss of traction.

The factors affecting how much weight transfer occurs are: total vehicle weight; force acting at the center of gravity; height of the center of gravity above ground; and track width and wheelbase.

The handling balance (understeer and oversteer) is affected by where weight is transferred. The following parameters determine where weight is transferred: static weight distribution; roll couple distribution; inclination of the roll axis; and height of the roll center above ground.

Vehicle responsiveness is affected by how quickly weight is transferred. The shock absorber is the key element affecting the rate of weight transfer. Faster weight transfer makes the vehicle more responsive.

The driver plays a key role in vehicle handling, balance and response by the way brake, throttle and steering inputs are made.

Suspension and Steering Systems (next issue)



AERO Queen



横山洋子

横山洋子さんは、1977年10月号の「AERO Queen」で登場しました。彼女は、黒いスポーツカーに座り、自信あふれる笑顔を見せています。この号では、彼女の愛車と、その魅力を詳しく紹介しています。

GAL'S CAR LIFE

10月号のテーマ

10月号のテーマ

小玉那奈

小玉那奈さんは、10月号の「GAL'S CAR LIFE」で登場しました。彼女は、白いスポーツカーに立ち寄り、優雅な佇まいを演出しています。この号では、彼女の愛車と、その魅力を詳しく紹介しています。



10月号のテーマ

まい

まいさんは、10月号の「GAL'S CAR LIFE」で登場しました。彼女は、黒いスポーツカーに立ち寄り、自信あふれる笑顔を見せています。この号では、彼女の愛車と、その魅力を詳しく紹介しています。



10月号のテーマ

GAL'S CAR LIFE 掲載要約

本号では、10月号の「GAL'S CAR LIFE」で登場した4人のガールズとその愛車を詳しく紹介しています。それぞれの個性と、その愛車の魅力を堪能してください。

水上和美

水上和美さんは、10月号の「GAL'S CAR LIFE」で登場しました。彼女は、黒いスポーツカーに立ち寄り、自信あふれる笑顔を見せています。この号では、彼女の愛車と、その魅力を詳しく紹介しています。

10月号のテーマ



2000年12月号の特別増刊号として
平成12年12月10日発行(毎月16日・25日発行)
定価300円

並行輸入外車
そのあやしい魅力を検証する

2000

定価300円
三推社/講談

ベストカー

MasCCo

インフレサ
STI登場記念

勢揃いSTIとWRCのニューウェポン特集

12/10

世界大賞 超リアルismスクープ



NEW フェアレディZ 疾る!!

スコア タイプR最速!! インテグラ スクープ

スクープ歴このクルマをマークせよ!!
これから
登場する
もの凄いクルマ26台



BC 特集 2000年の新車どれがNo.1なのか!?

R32GT-R復刻版
32台限定モデル試乗



アルテッツァTTE¹⁶
はスーパーチャージャー



復活! 谷田部テスト!!

ニューカー衝撃限界テスト



NEW マークII

NEWS
TEST
新車
インテグラ
フェアレディZ
スカパー



Pukekohe Results

17.09.00
- Capri and
Sports Car Clubs

NAME	ECR	Flying Lap	5 Lap	OVAL	Club	Address
record		1.0809	6.1060			
JOHN FRANGNELL	A	1.0710	5.8130	1	SCCNZ	FRAZER
DAVID BRUTON	A	1.0789	5.8358	2	SCCNZ	COSWORTH
TONY WYPYCH	A	1.0810	5.8440	3	CCC	SMOD2
BOB FRANGNELL	A	1.0877	5.8706	4	SCCNZ	SKYLINE
BRUCE MANON	A	1.0969	5.9237		ESC	RS2000
LUKE OGIER	A	1.0987	5.9805		ACC	FRASER
STEVE BROWN	A	1.1453	6.0125		ESC	ESC
KEITH SMITH	A	1.0975	6.0490		DATZ	NISSAN
MARK McGUIRE	A	1.1102	6.0526		DATZ	240Z
NEIL FRASER	A	1.1459	6.1416		SCCNZ	FRASER
GEOFF HOUGHTON	A	1.1062	6.1543		SCCNZ	FRAZER
JOHN SAMPSON	A	1.1201	6.1818		CCC	SMOD3
ROBERT ADLAM	A	1.1435	6.3255		TCC	LEGACY RS
ALISTAIR MARTIN	A	1.1426	6.3594		SCCNZ	FRAZER
HOWARD BATH	B	1.1585	6.1911	1	DATZ	DATZ
SCOTT SAMPSON	B	1.1595	6.3155	2	ACC	SMOD3
BRAD NOLAN	B	1.1503	6.3841	3	TCC	LEVIN
TONY ALLEN	B	1.1525	6.4308	4	SCCNZ	LYNX
MIKE DRAGICEVICH	B	1.1541	6.4574		DATZ	260Z
JEREMY BARDSLEY	B	1.1701	6.5380		DATZ	240Z
GUS SMITH	B	1.1909	6.5616		SCCNZ	LYNX
DEREK WHITE	B	1.1772	6.6615		ACC	COROLLA
ANDREW LEACH	B	1.1925	6.7366		ACC	260Z
PETER NIXON	B	1.2107	6.9223		SCCNZ	FRAZER
BRUCE FENSOM	B	0.0000	0.0000		DATZ	240Z
PAUL DE BLOIS	C	1.2304	7.1421	1	ESC	ESC
GLENICE MARTIN	C	1.2448	7.2127	2	SCCNZ	FRAZER
ADELLE TAYLOR	C	1.2700	7.5040	3	ACC	COROLLA
GARY BERRY	C	1.2743	7.5175	4	NSCC	LASER

The Fine Print Page

Membership Discounts

Members of this club are to avail themselves of discounts on quite a number of products and services. The list is ever-changing and at times complex, making it difficult to publish here. The best way is to ask someone of the Committee before you buy.

Holders of MSNZ licenses (see below) qualify for a very extensive list of discount items.

Competition Licenses

You do not require a competition license for Motorkhana's, Trials, Hill-Climbs or Sprints, providing these aren't interclub competitions.

Members interested in more serious competition will need to go through a few formalities in order to participate. Following is a brief explanation of what it all means.

ClubSport or Restricted ClubSport License

This is required for participation in club events such as dual drags and sprints. There is no formal testing to obtain this class of license. Simply get a form from the Secretary and send along with the required payment to MSNZ.

National Race

Those who wish to participate in RACING will need to obtain a National Race license. You must first pass a colour blindness test. Study up the rules, then sit the test. This involves calling an examiner listed in the front of the MSNZ book, passing a test on your knowledge of the racing flags and other rules, whereupon you will get your license, then you will be able to enter race events.

Pocket Patches

The Z-Club has embroidered patches available to members at \$10.00 (inc post and GST). Send payment to our postbox.

Flag Marshal's Club

Many of our members who are sports car enthusiasts, though not keen on racing their own cars, find much pleasure and enjoyment in getting involved in the sport as Flag Marshal's.

Very few people would be aware of the fact that every motor race employs as many helpers as there are drivers out there enjoying themselves. You could well be one of those helpers, and you may find it great fun. A stint on the flags is also highly recommended for those of you intending to take out Competition Licenses.

Talk to a Committee Member for more info.

International

Planning a trip overseas? This club keeps contact with dozens of Z Clubs throughout the world, therefore we are able to supply any member tripping off to anywhere (apart from Outer Mongolia!!) [ED..... does that mean there's one in Inner Mongolia??] with a list of contact names and addresses. Visiting these clubs often proves to be the very best way of seeing another country, as well as letting you see first hand how it's done (Z-wise) elsewhere.

Events

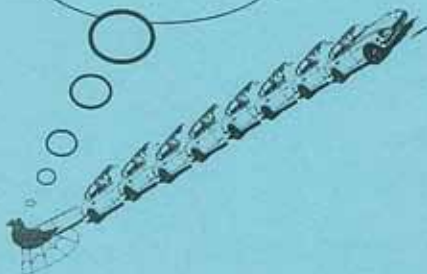
The Committee are charged with organising most of the events promoted by the club. This does not mean that you are precluded from setting something up for the rest to enjoy. If planning an event your way looks like a fun thing to do, start setting it up and talk to the events co-ordinator about it's feasibility and scheduling.

Address Change

Keeping up with the Gipsy characteristics of a couple-of-hundred Club-Members can be quite a battle. If you're planning to move caravan, why not let us know? it surely makes things a lot easier. Please check that we have your current address, post code and phone number.



And a big yohoyohoyo
to all



The official newsletter of the
Datsun Z Club Inc.
P O Box 24 176
Royal Oak
Auckland 1030
NZ