

Z-Car Club of Washington  
Alderwood Mall Pkwy. Suite # 18505  
1-419  
Lynnwood, WA 98037-8013

TO:

# The NewZ letter

of the Z-Car Club of Washington

Vol. XXXIV, No. 1

July/August 1999

Next Meeting: Pacific Northwest Z-Car Gathering - 20-22 August • Port Townsend

## The second 5th Annual

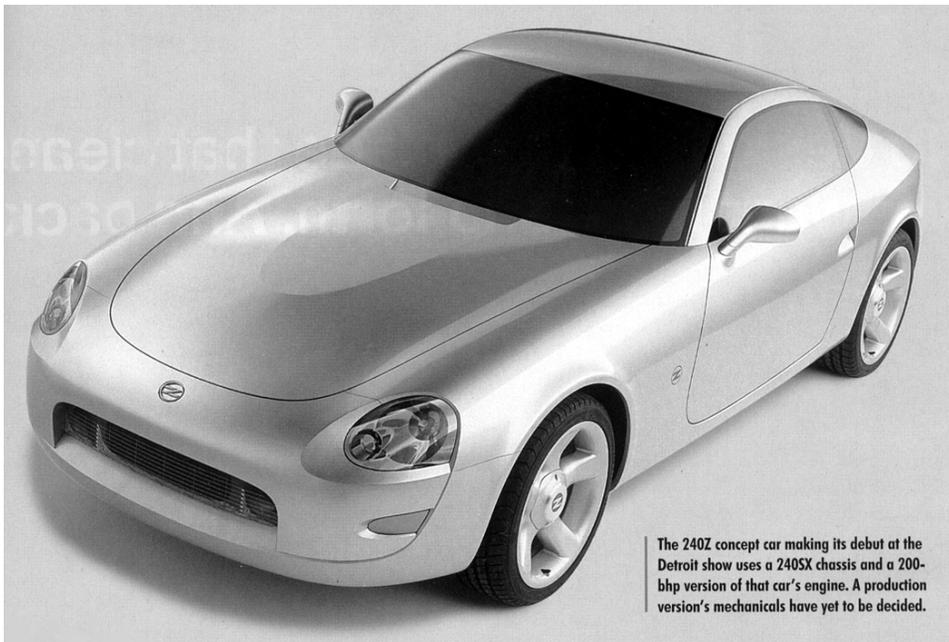
### Pacific Northwest Z-Car Gathering Meeting of the MindZ

Jefferson County Fairgrounds, Port Townsend, WA

August 20-22

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The 240Z concept car making its debut at the Detroit show uses a 240SX chassis and a 200-hhp version of that car's engine. A production version's mechanicals have yet to be decided.

**Prez Says**  
 Well, folks, our esteemed leader is away from town for part of the summer so I get to fill this column... I promise that I'll make it short and sweet.

Coming up in August, we have our (second) 5th Annual Pacific Northwest Z-Car Gathering – AKA Meeting of the MindZ. We will be meeting for a weekend of Z's in Port Townsend, Washington with our fellow Z-enthusiasts from the British Columbia.

I say the 'second' 5th Annual because, last year someone from The NewZletter staff – take into consideration it is a staff of one – made a miscalculation in how many times we have done this. Really, I can count to five – all on one hand, nonetheless. Jokingly, at last year's gathering, I said that next year's gathering will be the second 5th annual... Well, it sort of stuck.

Hopefully, we'll next year will be the 6th annual meeting. But then again, someone is propagating the

email lists that this year is the 6th annual meeting. Oh, what have I done... Talk about the power of print, eh?

Well, as you can see from the page facing this one, the PNZCG/MOMZ will be held the weekend of August 20-22. Some of us will be over there on Friday, others will be arriving on Saturday. Which day you come is up to you, just please do come and enjoy an International Z-Car Gathering!

Last year, as you may recall, the BCZR hosted the Saturday evening dinner, while the ZCCW hosted the Sunday morning breakfast. This year, we switch. We will be needing some of our honorable Club Members to help with the fixin's...

Let's hope that La Nina will give us a break for the weekend and provide us with a weekend of fun in the sun. Last year we had a great turnout. Let's make this year even better!

Z-Ya in Port Townsend...

Michael.

**The NewZletter**

A monthly (usually) publication of the Z-Car Club of Washington

Editor: .....Michael S. White  
 Graphic Artist: .....Michael S. White

Submissions:  
 USPS: .....ZCCW NewZletter  
 .....110 Heritage Place #86  
 .....Burlington, WA 98233  
 EMAIL: ..... michael@mswhite.com

**ZCCW Web Site**

http://zccw.org

Webmaster: .....Michael S. White  
 EMAIL: ..... webmaster@zccw.org

**ZCCW Contact Information**

Z-Car Club of Washington  
 18505 Alderwood Mall Pkwy. Suite # 1-419  
 Lynnwood, WA 98037-8013  
 Phone: 425.379.2002  
 Club EMAIL: info@zccw.org

**ZCCW Executive Board**

President: .....Mark Hostetler  
 Vice President: .....Michael Bates  
 Secretary: .....Michael S. White  
 Treasurer: .....Janene Mullen



**ZCCW Membership Application**

Annual dues: Individual = \$25; Family = \$30; Associate = \$15 \*

First year membership dues prorated if joined after first 1/2 of the year for new members. i.e.:

Individual:	[January – June \$25.00]	[July – December \$15.00]
Family:	[January – June \$30.00]	[July – December \$20.00]
Associate:	[January – June \$15.00]	[July – December \$10.00]

Note: The membership year runs the calendar year (January-December). All memberships received prior to December will expire on December 31st unless it is indicated on the membership application that the membership application is for the remainder of the present membership year and for the next complete membership year. For timeliness issues, all new membership applications received in December need to be for the following membership year.

\*Associate membership is for those whom it would not be feasible to be able to attend any meetings or events. Associate members in the United States will receive the printed version of The NewZletter

To join, fill out application and send with payment to:  
 Z-Car Club of Washington

18505 Alderwood Mall Pkwy. Suite # 1-419  
 Lynnwood, WA 98037-8013

New Member?  
 Update/Renewal?

Membership Type
<input type="checkbox"/> Individual
<input type="checkbox"/> Family
<input type="checkbox"/> Associate

Name(s): \_\_\_\_\_ Birthdate(s): \_\_\_\_\_

Address: \_\_\_\_\_ City: \_\_\_\_\_

State: \_\_\_\_\_ ZIP: \_\_\_\_\_ Email: \_\_\_\_\_

Phone: \_\_\_\_\_

Z-Car 1: Color: \_\_\_\_\_ Year: \_\_\_\_\_ Model: \_\_\_\_\_

Z-Car 2: Color: \_\_\_\_\_ Year: \_\_\_\_\_ Model: \_\_\_\_\_

Z-Car 3: Color: \_\_\_\_\_ Year: \_\_\_\_\_ Model: \_\_\_\_\_

What area(s) of the club are you interested in?

Technical/Mechanical: \_\_\_\_\_ Showing my Z(s): \_\_\_\_\_ Rallying: \_\_\_\_\_

Cruises: \_\_\_\_\_ Autocross: \_\_\_\_\_ Other: \_\_\_\_\_

**?Do You Have Z Parts or Z's For Sale  
?Are You Looking For That Certain Part or Z**

!Advertize them here in The NewZletter

Call Michael at: 360.961.3615 or email: michael@mswhite.com

ClassifiedZ

Early '71 240Z Dashboard. Excellent condition. Gauges included. Has small 1/2-dime-size crack above the glove box. Contact John at 425.774.5028

'73 240Z for sale. Does need some work. Perfect for someone who is more mechanically minded than her present owner. I would say that this Z is in fair condition. Would rather she go to someone who can help to make her better than go to the boneyard. Will tell all I know about her and sell at a reasonable price. Contact Michael by phone at 360.961.3615 or email at <michael@mswhite.com>.

Parts for sale. 240Z: chrome plated steering gear housing, side rods and compression rods. \$25.00; 4-sp transmission (includes shift lever, clutch cylinder etc) \$25.00; pressure plates (2) \$5.00 ea.; clutch/brake pedal assembly. \$10.00; half shaft (1). \$5.00. 260Z: elect fuel pump assy. \$5.00; Jim Phelps, Arlington, WA, 360-435-6845 <JimTrish@worldnet.att.net> .

For Sale, set of 7.5 by 16" Centerline aluminum wheels with Yoko 225/50-16's. Wheels need cleaning but no dings or curb rash. \$600. Consider part trade for band saw or wire welder. Located Seattle area. Don't want to ship them. Can deliver as far south as Portland, OR. Jim 360-221-3170, <jameslux@whidbey.com>.

Wanted: I am looking for a 3-piece rear spoiler for my 280z, locally only please. Contact Shawn at <vman@seanet.com>.

Parting out 71 240Z. Dismantled, no body parts except rear hatch. Brad 425-745-5482

I have a 1977 Datsun 280Z, new deep red paint, stick shift, original motor, this car has not been driven since new paint in 1990! Needs to be buffed out. Fabric cover included. Multiple sclerosis has stopped any hope

of completion. Needs most everthing but paint. Have owned it since 1981. Will sell cheap. Good start on a project Z. My loss can be someone's gain. Located in North Seattle/Shoreline. (206) 363-2884

'71 240Z for sale. Recarro's - need seat covers. Racing steering wheel. \$7,000+ invested in front end rebuild, tranny, rear-end, radiator, brakes, etc. Have receipts for work done. Still needs some work. Comes with extra parts. Will let go for \$1,900. Runs good. Pete Rossi 425.831.5850

'73 240Z Project Car - not a parts car. Body good, paint mostly good. Engine runs, not driveable. \$750 obo. Adrian 425.453.9552

Ready for a transplant? '81 Maxima engine/tranny. New injectors. \$500obo. Adrian 425.453.9552

'77 280Z Runs Great. An attention getter - a real eye catcher. \$3,000 obo. Call 253.520.9034 evenings or weekends.

I have 30+ Z cars from 1970-1986 that I am parting out. Reasonable prices. Call Ron @ 253.843.2813 or <rmillik@nwrain.com>.



1971 240Z. Build date 9/70. 89,000 miles. New paint, chrome exhaust. Everything original except new items listed above. Mint condition. Second owner - have owned since 1974. Estimated value by Z-Sport is \$6,500. Contact Gary by phone after 4:00pm at 425.338.4194 or by email at <gwfrancois@aol.com>.

# 5th Annual Pacific Northwest Meeting of the Mindz

Co-Hosted by the Z-Car Club of Washington and the British Columbia Z Registry

## A Z-Car Gathering August 20-22

### Port Townsend, WA Jefferson County Fairgrounds

Join us for a weekend of Z's on the beautiful Olympic Peninsula. Bring your tent and camp-out or stay at one of the many facilities in town. Camping at the Fairgrounds is \$15.00/car/night and shower facilities are available on-site.

For more information, contact Michael S. White by email at <michael@mswhite.com> or by phone at 360.961.3615.



## New Power Plant

By Jim Lucius  
c/o Z-Car List

I recently installed a new remanufactured engine in my 77, and thought I would share my experience with the group.

Engine cost 1150 bucks, 75 dollar core charge for old block, which I kept. Gasket set and new oil pump included. Inspection of the valve train showed what appeared to be all new springs, rockers, pads and cam. Underside inspection showed new pistons. The rest I wasn't too sure about, but everything appeared to be in perfect order.

The block was coated in an oily/waxy type substance to inhibit rust, but it was easily removed with a trusty can of Carb cleaner. Head was painted (yuck) a flat silver/grey. Paint scraped off in chunks easily during installation of the various components. Left what was left on there, and will let nature take care of the rest.

Did all the work in my driveway, which slopes. Whee. My wife helped throughout the entire ordeal. She's not shy about picking up a wrench and getting dirty, and boy did she. Of course she has ruined her nails, and says I owe her big time. And here I thought I'd been storing up all those honeydods for just such an occasion.

I had a three day weekend to get it done, so started early Friday morning. In two hours, the old engine and tranny were ready to come out. Which they did, quite nicely.

Engine paint that I ordered did not arrive on Saturday, so I had to improvise. Used Pontiac blue engine paint. At least it matches the air box color.

Hoisted my new engine onto the stand I bought, and began removing all the components from the old engine, cleaning them, painting them as needed, and reinstalling them onto the new engine. Carb cleaner got off most of the grime, and engine cleaner got the rest. This part was almost fun. It was fairly hot out, so frequent breaks were needed.

Ran into problems with old bolts not being up to muster. Several trips to the hardware store cleared that up. If one in a set was bad, they all got the axe. No sense taking any chances.

Removing the dipstick tube was a lot of fun. I should have just bought a new one, but NO, I had to save 5-10 dollars. Installed mangled dipstick tube in new block. Still functions, but no longer pretty. I'll get a new one later, I guess. Just when I thought it was over, ran into the dipstick tubes big brother on the other side of the block. This thin metal tube is part of the EGR system, and is pressure fit into the opening. My wife said that the tool of choice should be a hammer, instead of the vice grips I used earlier. Looking at my previous work, I took her suggestion and tapped on opposing sides of the tube until it couldn't stand it anymore, and jumped out. Reinstalled much less mangled tube into new block while wife grinned. Took a long break.

Glancing occasionally at the service manual, I installed the oil pump, dist drive, and distributor. Made sure that no 1 was at TDC, installed drive shaft and pump so that the slot went to 11:30 or so, and the smallest half moon faced forwards. Installed distributor. What do you know, the rotor pointed right at no 1! It doesn't get any better.

## Over the Horizon

By Sam Mitani  
August 1999 Road and Track

Exciting things are brewing  
in the land of the rising sun.

...Nissan Z

Now that Nissan has publically announced it will indeed build a Z sports car, I traveled to Nissan Design International (NDI) in Southern California to see how things were shaping up. Although the future sports car is still very early in the planning stages, NDI President Jerry Hirshberg did inform me that the Z, which is scheduled to hit showroom floors sometime in 2002, will feature an exterior and interior design theme that's altogether different from the Z Concept that was shown at various auto shows earlier this year.

"We will not be going retro with the new Z. The Z Concept took us where we wanted to go, but the styling of the new car will definitely be fresh, exciting and aggressive," he said.

Nissan's designers both here and in Japan are currently working on the styling of the future sports car.

In Tokyo, I was able to talk to the people responsible for how the Z will perform on the road. Although the project engineers couldn't (or wouldn't) tell me much, they did reveal that the Z will be built on a new platform and feature an all-new powerplant (probably a V-6) that will produce "a lot of power." They also said that they would like

to keep the cost somewhere between \$25,000 and \$30,000.

During our casual conversation, they recommended that I test-drive the new 240SX (called the Silvia in Japan), a car no longer sold in the U.S., to get a taste of Nissan's sports-car-building capabilities.

The new Silvia is a virtual road rocket, with a 250-bhp turbocharged inline-4 powerplant that takes you from zero to 60 mph in about 6 seconds. The chassis is tight and the car corners like a purebred sports car, with oversteer easily induced by stomping the throttle in mid-turn, a testament to its rear-wheel-drive layout. And the biggest surprise of all? Its price. The Silvia sells for approximately \$20,000 in Japan, making it one of the best bang-for-the-buck deals in the world today. (Don't you wish the 240SX was sold here?)

"If we're capable of developing a car like this with this price tag now, think of what we can build tomorrow," a Nissan engineer said with a grin.

It tickles the imagination.

There's no doubt in my mind that the next Z will be fast, exciting and good-looking. It'll also provide Nissan with a much-needed image boost. The downside? We will have three years to wait.

[Editor note: This article also included sections on the Acura NSX, Mitsubishi Lancer Evolution VI, and the Subaru Impreza RS (WRX)]

—Z



## Check That Battery Cable

By Tim Nevins  
c/o Z-Car List

I had an interesting and unfortunate occurrence this weekend that I thought I'd share with the group. My co-driver was driving my '78 280Z on an autocross run when the car stalled on course. He hopped out and opened the hood and noted that the negative battery cable was no longer attached to its regular spot on the battery.

He stuck it back on and when he tried to start the car again, it wouldn't fire. It turned over, we had plenty of spark, fuel pressure (you could feel it in the hose from the fuel filter), but no signal at the injector harness connector and no audible noise from the injectors to indicate that the injectors were firing. Not much gas smell at the tailpipe after cranking either.

Hmmmm....we thought.

We pulled out the handy shop manual and ran through FI troubleshooting information and check list. All checked out OK. We tested the FI relay (we could hear it operating, but we tested it anyway) We had a spare

computer and dropping resistor so we popped the computer in and sure enough, it started right up!

As we were perusing the manual we noticed the part in bold print where it said **DO NOT REMOVE THE NEGATIVE BATTERY CABLE WHILE THE IGNITION KEY IS IN THE ON POSITION, IT WILL DAMAGE YOUR FUEL INJECTION CONTROLLER!** I guess they were right! It really did damage the computer!

Soooo.. everyone with fuel injected L6's run out there and tighten your negative battery cable, either that or lay in a supply of FI computers!

An interesting side note is that once I got the dead computer out I opened it up. It's pretty amusing, full of old fashioned resistors and actual TRANSISTORS! Reminded me of electronics class in the '70s. It is also as big as the motherboard on a modern desktop computer (folded in two to fit in the box) and does much less! Jeez, you can't even send rude mail to strangers on the Internet with it!

—Z

While torquing down the intake and exhaust, I managed to strip out a stud from the head. Crud! Here I was, taking my time, being careful, and this goes and happens. Examination of the stud showed that the end that screws into the head didn't have many threads in it. Hmm. Only about a quarter inch long. Having just replaced the studs on my old head, I pulled one for comparison. Longer by at least an 1/8 inch. Screwed in my old stud, and drove it all the way in. Very tight. Continued torquing everything down. Seems to be fine. Dodged a bullet.

Finally, everything is on from the old engine. Parts that were reused were: Distributor, Dist Drive Shaft, Intake, Exhaust, Water pump, water inlet and outlets, Starter, Pulleys, Flywheel, Valve cover, Oil Pan, Oil pickup tube, dipstick tube, dipstick, and the EGR tube. Whew! Did I mention it was hot?

On Sunday I set my new engine down to begin installing the transmission. Remember how much fun I had when I saved a few dollars reusing my old dipstick tube? Well, I saved a few dollars by not buying a clutch alignment tool. Several alignments later, I had the tranny installed.

You may be wondering what took all that time? Cleaning. In some places the gunk was an inch thick on the tranny. Most items weren't nearly that bad, but everything got a bath at least once. The wife even tried polishing my valve cover. We tried Mothers metal polish, but it didn't do what we wanted it to. Guess I'll try something else later.

It's 6 PM, and the engine is ready to go in. Only took two hours to get it out, so no big deal. WRONG. Remember that slope on my driveway? That made this job so much more interesting. Wife is guiding the engine/tranny into the well while I'm trying

to keep the whole mess from creaming her and the car. Worked it out, and managed to get the motor mostly in position. Wife installed Xmission Xmember while I lined up the motor mounts. Wife installed drive shaft while I lined up the motor mounts. Wife installed shift lever, and center console while I lined up the motor mounts. Wife went inside and ordered Chinese takeout while I swatted mosquitoes and continued to struggle with the motor mounts. For some reason, I just couldn't get them both to go. Eventually, I had every bolt loose that was remotely connected with the mounts. Managed to get them in and tightend down. In retrospect, I know now that my air conditioner compressor was in my way, and had I removed it completely, like the manual said, I would have been done. BUT NO! I had to save a few more dollars by keeping my system closed, so I wouldn't have to recharge it later. Mistake.

Made all the connections electrically and fluidly. It's getting late. 1:00 AM Monday morning. Filled engine with oil. Filled Xmission with oil. Dinner is in the fridge. Who cares! I've got an engine to start here!

Flipped over the key, grind grind grind (but a better sounding grind than I used to have). I can picture it in my mind, oil is building pressure, the fuel is filling the line, any second now and... VROOOOMMM. WhoooHooooo!

Houston, we have ignition! Pausing only long enough to adjust idle, check for



## Unfriendly Emissions: CO, HC and NOX

By Larry Carley

From 1998 Year End Issue of Z Club of America's Bulletin.

To understand automotive emission controls, you have to understand something about pollution itself. Automotive-generated pollutants come from three sources—the tailpipe, crankcase blowby vapors inside the engine and fuel vapors that evaporate from fuel tank and carburetor.

Crankcase blowby vapors have long since been eliminated as a source of pollution by recirculating the vapors back into the engine for reburning through the Positive Crankcase Ventilation (PCV) system.

Similarly, evaporative emissions have been eliminated by sealing the fuel system and storing the vapors in the charcoal canister. All that remains are the exhaust pollutants and even those have been reduced by more than 90 percent from what they once were.

The "terrible trio" of exhaust pollutants are carbon monoxide (CO), unburned hydrocarbons (HC) and oxides of nitrogen (NOX).

Carbon monoxide is formed whenever there isn't enough oxygen to completely burn the fuel—in other words, wherever the air/fuel mixture is too rich. The richer the

mixture, the greater the quantity of CO produced.

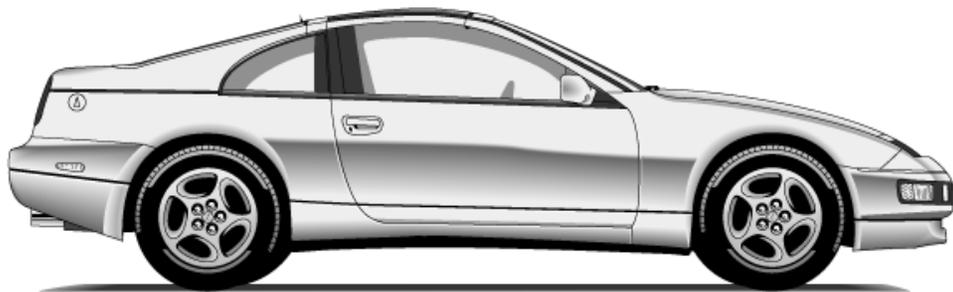
Carbon monoxide is the worst pollutant of the three because it's deadly. You can't see it or smell it, yet it only takes about five percent concentration to knock a person out.

CO emissions are reduced by keeping the air/fuel ratio lean and converting the remaining CO into harmless carbon dioxide in the Catalytic converter.

Hydrocarbon (HC) emissions are unburned gasoline. HC is not directly harmful, but it contributes to smog formation. A fouled spark plug, a leaky exhaust valve or a fuel mixture so lean it won't ignite (lean misfire) may all allow unburned fuel to enter the exhaust.

HC emissions can also come from an engine that burns oil. HC is reduced by maintaining a balanced air/fuel mixture that is neither excessively lean or rich, by making sure compression and ignition function properly and by reburning any HC that's left in the catalytic converter.

The third pollutant is NOX, which stands for "oxide of nitrogen." NOX is formed in the combustion chamber when temperatures rise above 2500°F and nitrogen begins to react with oxygen, creating various compounds. Lean air/fuel mixtures can



1994 Nissan 300 ZX\* 2+2

the owners name somewhere in his files at home... This caused great excitement between Les, Marc and I to say the least... (maybe we could find it!)

Thus the search was on again for what must be the only other Z that BRE prepared and raced, which was still in existence today .....

About two weeks ago, Michael Pretzer contacted Les and told him he had the BRE Baja Z. He had purchased it last Sept from Dr. Logan in Dinuba California with the intention of restoring it. However he found that with his return to school and daily work load, he would not be able to give the car the attention that it needed and deserved - thus he was planing on selling it to someone that could devote the resources necessary to preserve this historic Z Car.

Les admits that he tried to find a way to rationalize buying the car himself and doing the restoration work - but after several days of looking at his shop, now filled with 20+ Classic Datsun's - all waiting on restoration work at some level - he had to face reality... (bummer for him - good news for me;-) ... and he had to admit that he most likely wouldn't get to the car for years..... So he called me to see if I had finished my planned 12 car garage yet;-). Of course I lied and said "yes of course" - why do you ask?.....

"I've located the BRE Baja Z and it can be purchased", Les replied.... then he went on to tell me about the car and its current condition... Almost all original BRE parts are still either on the car or can be picked up - it has just under 13K miles on it. The current owner admits to having trouble getting it to run correctly, thinks its a carb. problem but nothing major...

"Negotiate the lowest cash price with the current owner, let me know how much and I'll Fed-X a

cashiers check", I replied. "What do you mean when you say that the parts that aren't with the car can be picked up" I ask.

"Well Dr. Logan still has the original racing hood (to fit the rally lights to the car) and the skid plates that go under the front end and differential", Les replied. "I can stop by his house when I pick the car up and pick them up too for a very small price", Les continued.... "Great! get them too of course!"....

"I can pick the car up on Sunday, bring it back to the shop here in Vista and by Monday or Tuesday we should have it ready to drive home", Les said... Then he said, "Maybe you could drive it to the National Convention in Tulsa and then on back to Florida". "Great idea", I agreed!.... thus the trip was planned.... (in spite of my wifes advice to just have the car shipped back here to Florida)

The trip is another long story in and of itself - so I'll stop for now. You already know I didn't make it to Tulsa - but no matter - I now own a Dream - A BRE Z - did I tell you I'm tickled pink?.... what a neat Z Car...

I've put some pictures on the IZCC's Web Site - <http://ZHome.com> - just look in the "History Section" - then under the "Racing History" subsection.. hit the link that says "BRE Baja Z #300"....

—Z



## And the Winner is...

Congratulations to Club Members Craig and Ann Channer! At this year's National Convention in Tulsa, they took 2nd place in the 300ZX Daily Driver category! Way to go!

## All Datsun/Nissan Autocross & Show 'N' Shine

BCZR announces one of their biggest events is coming up. September 11-12 in Vancouver BC, they will be hosting their Autocross and Show 'N' Shine. Last year's event was a tremendous hit. This year promises to be even better. Visit <http://207.212.212.139/~corrigan/bczt/events/sep11.htm> for more information.

## Website Changes

After four years of having our website hosted through one of the area ISP's, we have decided to move to something better.

At the May meeting, it was decided to proceed with getting our own domain name. You can now find the ZCCW website at: <http://zccw.org>

We have over 300 pages on our website. If you haven't checked it out in a while, take a look around. The design has changed - different coloring, buttons, etc. and there is more content that has to be added. With changing hosting providers, we are able to take advantage of some scripting capabilities that weren't available with our previous site. For example, the Guestbook and Membership Application pages actually work and pass through the data as it was intended to do. Also, pages are in the process of being created that will make the classifieds section of the website more dynamic. Look for more changes coming...

Please take a look around and sign the guestbook to let me know what you think about the changes to the site whether you like it or not.

## Club Shirts & Hats

We have our new ZCCW Shirts & Hats available for sale. Hats come in two styles and are \$15 and the shirts are white with black embroidery for \$25. They will be available in Port Townsend over the weekend.

## :Notice

# !Changes to the ZCCW Mailing List

Due to the recent changes to the ISP that has graciously been hosting the ZCCW website and the ZCCW mailing list, we have lost the <zccw@sos.net> email list. Recently this list was replaced with <zccw@mswhite.com>. The addresses that had been subscribed to the old list have been transferred to the new list. If you have not been receiving any list mail recently or if you would like to be added to the list, please email me at <michael@mswhite.com> and I will get you subscribed. To send messages to the Club list, send them to <zccw@mswhite.com>.

If you have any questions, please feel free to contact me at <mswhite@mswhite.com>.

Z-Ya,

Michael S. White.

increases NOX formation because of the higher combustion temperatures.

Though not as poisonous as carbon monoxide, NOX irritates the eyes, nose and lungs, and combines with atmospheric oxygen to form ozone and acid rain.

To reduce the formation of NOX, "Exhaust Gas Recirculation" (EGR) is used. On most 1981 and later model cars, a special "three-way" catalytic converter is also employed to reduce NOX.

A vehicle's emission control devices can be subdivided into six basic systems: positive crankcase ventilation (PCV); evaporate emission controls; heated air intake (includes early fuel evaporation); air injection; catalytic converter; and exhaust gas recirculation (EGR).

The PCV system prevents crankcase blowby emissions from entering the atmosphere by siphoning the vapors back into the intake manifold through the PCV valve.

The PCV valve is a spring-load valve designed to restrict the amount of air passing from the crankcase to the intake manifold. In essence, the valve is a calibrated vacuum leak, because it allows air to be drawn into the engine below the throttle plates. To prevent the air/fuel ratio from being upset, the spring inside the PCV valve closes the valve partially at idle to reduce airflow.

Under cruise conditions, the valve opens to allow maximum airflow. During wide-open throttle acceleration when the engine is off the valve is closed.

The PCV valve can have an important effect on engine performance. Vacuum leaks in the valve or hose can lean out the air fuel ratio resulting in lean misfire, hesitation, hard starting and stalling. An accumulation of deposits in either valve or hose can restrict or block the flow of air resulting in rich air/fuel mixture.

Or more seriously, oil leaks may develop from a build-up of pressure in the crankcase.

Rapid oil contamination may also occur because of moisture accumulation in the crankcase.

The PCV valve should be replaced every two to three years as a preventive maintenance item. One item that is often overlooked when replacing the PCV valve is the PCV filter located inside the air cleaner. It should always be changing when replacing the PCV valve.

Evaporative emissions are controlled by sealing the fuel tank and carburetor bowl. The gas tank is sealed with a cap that contains a spring-loaded pressure relief valve. The tank itself is also vented to the "charcoal canister" that trap and stores fuel vapor until the engine is started and the vapors can be siphoned into the engine and reburned.

The charcoal canister is filled with activated charcoal that soaks up water. When the engine starts, a "purge valve" on the canister opens. Manifold vacuum draws air through the canister which pulls the fuel vapors out of the charcoal and flushes them into the engine.

The carburetor bowl is also vented to the charcoal canister, so when the engine is shut off no fuel vapors can escape into the atmosphere.

To aid the process of fuel vaporization when a cold engine is started, one of several devices may be used. Most engines have a heated air intake system that draws warm air from a "stove" around the exhaust manifold into the air cleaner.

A thermostat inside the air cleaner controls vacuum to a control valve in the air cleaner inlet. When the engine is cold, the



thermostat passes vacuum to the control valve, which closes a flap to outside air, allowing heated air to be drawn into the air cleaner.

This aids fuel vaporization and makes it easier for the carburetor to maintain a more consistent air/fuel mixture.

As the engine warms up, the thermostat begins to bleed air, allowing the control door to open to the outside air.

Problems in the heated air intake system can produce various symptoms. If the heat riser duct between the exhaust manifold stove and air cleaner is missing or damaged, warm air will not reach the air cleaner during engine warm up. A defective thermostat, vacuum leak or bad diaphragm in the air flap control valve will also prevent warm air from reaching the cleaner. The result can be hesitation and stumbling during acceleration while engine is cold.

If the air control door is stuck in the closed position so only heated air enters the air cleaner, the overheated air can cause detonation during warm-weather driving.

The air door should normally be in the open position and closed when vacuum is applied to the control valve. If the valve doesn't close when a cold engine is first started, check for a vacuum leak, a defective control valve or a leaky thermostat. If the door fails to open once the engine reaches normal operating temperature, the thermostat may be bad.

Another early fuel evaporation aid is the heat-riser valve found on many older V-6 and V-8 engines. A thermostatically controlled valve on one exhaust manifold blocks the flow of exhaust when the engine is cold, forcing the hot exhaust gases to flow back through a special crossover passage in the intake manifold directly under the carburetor.

The hot exhaust heats the manifold to speed fuel evaporation and engine warm up.

Once the engine starts to warm up, the heat-riser valve opens.

If the heat-riser valve sticks open, no heating of the intake manifold will result, causing slow warm-up and hesitation and stumbling when the engine is cold. If it sticks shut, it causes a restriction and excessive heating of the manifold. The result can be detonation and a loss of high-speed power.

Air injection works in conjunction with the catalytic converter, although some vehicles have air pumps but no converter. The air pump forces air into the exhaust manifold so oxygen will combine with the hot exhaust gases to reduce HC and CO. The converter adds the extra "Kick" needed to reburn the pollutants. The result is significantly lower HC and CO emission.

The air pump is belt-driven and feeds air to the exhaust manifold through a diverter valve. The diverter valve dumps excess air back into atmosphere when it isn't needed (during deceleration, for example). The check valve prevents backfiring through the air pump plumbing.

On some engines, an aspirator is used in place of an air pump. An aspirator is a one-way valve that allows air to be siphoned into the exhaust system between exhaust pulse.



## Found and bought an original BRE Z

By Carl Beck  
c/o Z-Car List

OK - The Short Story:

I went to California last week to pick up the only remaining 240Z that BRE prepared and raced - other than the BRE #3 car, now owned and beautifully restored by Jerry Mason.

It is the BRE Baja Z - race car #300 - a 1973 240Z prepared for the Baja 1000 Off Road Race in Mexico. The car was driven by Pete Brock himself with co-driver Lee Midgley. (a really neat Z Car I must say ;-)...

I had hoped to drive it from San Diego to Tulsa - to the National Z Car Convention - but that trip ended in Phoenix on Thursday (after a few stops for minor repairs). I decided to put the car on a truck and ship it back home to Florida, rather than risk any damage to the engine.

To say that I'm very happy to own this car would be a gross understatement - heck, I was happy to collect BRE Decals and Original BRE Performance Parts... let alone ever dream of owning one of the original BRE 240Z's!

The Longer Story:

About four or five years ago, I met Les Cannaday for the first time (well we actually talked on the phone at that time). He and I hit it off at once because, I believe, we both

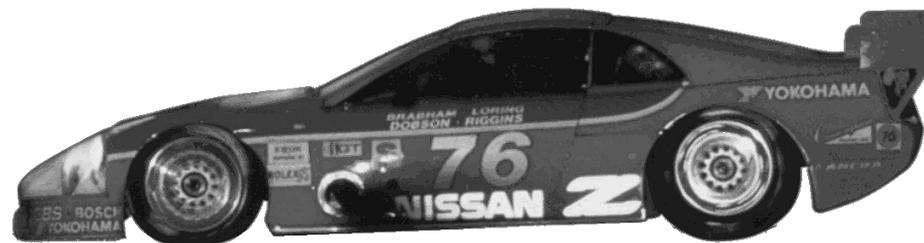
realized we couldn't tell which of us was the bigger Z Car Nut. ;-)

Les was one of the first people that I meet on the net that not only knew every trivial fact that I could bring up, but added greatly to my own knowledge base of 240Z trivia or memorabilia !

At any rate - Les, Marc Sayer and Marshal Atherton (former Nissan USA employee and friend of Mr. K's) were all standing in the hallway at the hotel in Dearborn last Oct. ( for Mr. K's induction into the Automobile Hall Of Fame) talking about the early days of Nissan USA (aka DATSUN) and the 240Z. During that conversation the subject of Brock Racing Ent. (BRE) came up.

Someone remarked that Jerry Mason had done a wonderful job of restoring the BRE #3 race car and that lead to a discussion of other BRE prepared cars that might still exist somewhere. We all agreed that the SCCA C Production Championship winning BRE #46 Z Car, driven by John Morton, had sadly been totaled in a race in Phoenix many years earlier.

Les then said that the 240Z prepared by BRE and driven by Pete Brock in the Baja 1000 was believed to be still in existence and owned by someone in California. Marshal said that he had indeed helped Pete arrange the sale of the car to a private owner back in 1975 on a consignment basis, through one of the Datsun Dealers in Northern California. He thought maybe he still had



When ported vacuum is applied to the diaphragm, it lifts the valve off its seat. Intake vacuum then siphons exhaust into the engine. Like a PCV valve, the EGR valve is a kind of calibrated-vacuum leak.

On many late model vehicles, a "positive backpressure" or "negative back pressure" EGR valve is often used. This type of valve requires a certain level of backpressure in the exhaust before it will open when vacuum is applied.

The EGR valve uses ported vacuum as its primary vacuum source. Ported vacuum is used because EGR is not needed at idle when NOX levels are low.

If the EGR valve sticks open at idle or if the vacuum line is mistakenly connected to a source of manifold vacuum, it will cause a rough idle.

The vacuum-control plumbing to the EGR valve usually includes a temperature vacuum switch (TVS) or solenoid to block or bleed vacuum until the engine warms up. On some late model vehicles with computerized-engine controls, the EGR valve.

EGR valves fail for a number of reasons. A ruptured vacuum diaphragm or carbon deposits on the valve stem and tip can render

the valve inoperative. If the valve fails to open because it can't hold a vacuum—because vacuum isn't reaching the valve (a vacuum leak, bad TVS, etc.)—or because it's stuck, no exhaust gas recirculation will occur.

Consequently, combustion temperatures will soar along with NOX emissions. Detonation may also occur under load. If the valve hangs up and fails to close, or if it is mistakenly connected to manifold rather than ported vacuum, the engine will idle roughly and possibly stall when cold.

A carbon-encrusted EGR valve can sometimes be cleaned but on backpressure type EGR valves, carbon is nearly impossible to remove from hollow valve stem. Replacement is the only option here.

—Z



## “Awesome Performance Links”

For all of you webified performance junkies, here are some “awesome performance link” that were posted to the 240Z-Club list.

<http://www.wherfastisfun.com/>

<http://home.earthlink.net/~gimpyone/PerformanceSite2.html>

<http://www.summitracing.com/midway/>

<http://www.sonic.net/~kyle/ztech.html>

<http://books.dreambook.com/ryancsmith/links.htm>

<http://catalog.com/susq/>

When computerized-engine controls and three-way catalytic converters were added, the air pump gained yet another control valve.

When the engine is cold, air is routed to the exhaust manifold to help reduce the initial HC and CO emissions. NOX is not a problem when the engine is cold. But as the engine warms up and NOX starts to rise, the flow of air is diverted from the exhaust manifold directly to the converters where it enters a chamber between the two catalysts. This is necessary because too much oxygen upstream of the converter interferes with the reduction of NOX.

The catalytic converter contains a ceramic honeycomb or ceramic pellets coated with a thin layer of catalyst. In an "oxidizing" converter (one that reburns HC and CO), the catalyst are platinum and palladium metal. In a three-way converter, a "reducing" catalyst containing rhodium is added to NOX down into oxygen and nitrogen.

The catalyst inside the converter is not used up in the chemical reactions but serves as a kind chemical spark that helps trigger the reactions in the first place. For the converter to function efficiently, the engine needs to maintain a balance air/fuel mixture. The converter also needs extra oxygen provided by the air pump.

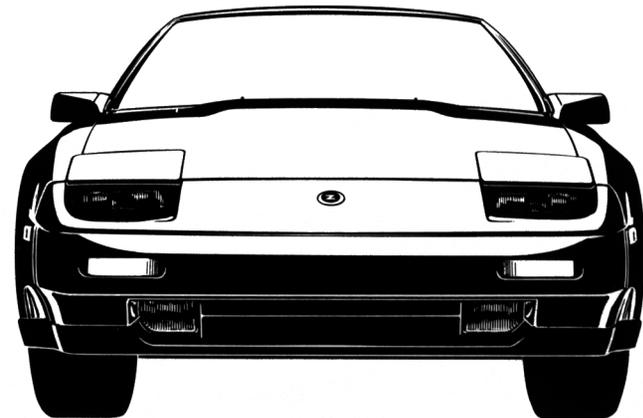
The converter is normally a trouble-free emission control device, but two things can damage it. One is leaded gasoline. Lead coats the catalyst and renders it useless. The other is overheating.

If the raw fuel enter the exhaust because of a fouled spark plug or leaky exhaust valve, the temperature of the converter will soar. This can melt the ceramic honeycomb or pellets inside, causing a severe or complete exhaust blockage.

Under no circumstances should the converter be removed and replaced with a straight piece of pipe (a "test pipe"). Do-it-yourselfers can still get away with it [?-MSW] (until the vehicle undergoes an emission test, then they'll have to put a converter back on), but professional mechanics can't.

EGR reduces NOX by diluting the air filter mixture and lowering combustion temperatures. Recirculating a small amount of exhaust back into the intake manifold keeps combustion temperatures below the 2500°F, NOX-formation threshold.

The heart of the system is the EGR valve, which opens to allow the engine vacuum to siphon exhaust into the intake manifold. The EGR valve consists of a poppet valve and a vacuum-actuated diaphragm.



Nissan 300 ZX 2-Seater

# ZCCW Automotive Activities

August						
S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

## August 20-22

5th Annual Pacific Northwest Meeting of the MindZ. Jefferson County Fairgrounds, Port Townsend. Co-hosted by the ZCCW and the British Columbia Z Registry. Join us for a weekend of Z's on the beautiful Olympic Peninsula. Bring your tent and camp-out with us at the fairgrounds or stay at one of the many facilities in town.†

## August 28-29

IRDC Road Race

For details: <http://www.irdc-racing.com>

September						
S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

## September 11-12

BC All Nissan Autocross and Show & Shine - Vancouver, BC

## September 18

Z-Car Care Day - 10:00am. Graciously hosted by Duane Bender at his shop Motorworks Ltd.  
12700 Bel-Red Road, Bellevue.  
Telephone: 425.453.7082

## September 24-25

International Race Driver's Club (IRDC) Driving School. For details: <http://www.irdc-racing.com>

## September 25

ZCCW General Meeting - 3:30pm  
Lake Washington Grillhouse & Tap Room at the North end of Lake Washington.

October						
S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24/31	25	26	27	28	29	30

## October 16-17

ZCCW Wenatchee Cabin Getaway - Janene's Cabin in Wenatchee.

## October 30

ZCCW General Meeting - 3:30pm  
Traxx in Mukilteo

## — ... What's Coming Up —

### November 20

ZCCW General Meeting - 3:30pm  
The Flying Pig Brewing Co., 2929 Colby Ave., Everett.

### December

To be determined.