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

TO:

The NewZletter

of the Z-Car Club of Washington

Vol. XXX, No. I October, 1998

Next Meeting: Janene's Cabin • 24 October 1998

13 October, 1998:

Mr. K

Inducted into the Automotive Hall of Fame

AHF

YUTAKA KATAYAMA, THE FIRST PRESIDENT OF NISSAN MOTOR CORPORATION U.S.A, ALWAYS ENCOURAGED PEOPLE TO "LOVE CARS, LOVE PEOPLE, LOVE LIFE."

– What's Inside –

Prez Sayz

With the vision of first President of Nissan Motor Corporation U.S.A., a new car was born—the 240Z–that took the hearts of most who drove it. Twenty-nine years ago, the first Z's came ashore here in the United States. This visionary, Yutaka Katayama (Mr. K), is being inducted into the Automotive Hall of Fame. Mr. K, often referred to as the "Father of the Z," has been congratulated over the years for providing many of us–enthusiasts of the Z's, 510's, Roadsters, etc.–with the cars that "drive" our passions. Now, with his nomination into the AHF, the rest of the automotive community is congratulating him as well. Congratulations, Mr. K!

We have come to the time of the year where it is time for nominations for the elected positions of the Z-Car Club of Washington. At the October meeting, nominations will be set, elections in November, and, in December, the new Club Executive Board will be announced.

Over the years, our Club has seen a lot of growth. Were it not for the involvement that you, the Club Members, have put forth, we may not be where we are today. If you would like to to continue your efforts to move the Club forward, now is the time to step forward into one of the leadership roles of the Executive Board.

In case you're wondering what the duties of the position include, here's the breakdown per our Constitution and By-Laws:

President: Conduct regular monthly meetings; call and conduct any special meetings; represent the Club at various functions as required; appoint committees as required.

Vice President: Assume responsibilities of the President anytime the President is absent or assume those responsibilities as directed by the President.

Secretary: Recording the minutes of all Club meetings; maintaining a current roll of all members; giving notice of meetings as required; recording attendance at Club meetings and functions; keeping the historical Club records.

Treasurer: Maintaining the Club's financial records; keeping the Club's historical financial records; receiving funds for the Club; disbursing Club funds as authorized by the President; presenting a statement of the Club's finances at each monthly meeting; maintaining a checking account for the Club.

Over the years, some of these duties have been shared/redirected to other positions. So far, this has worked out well with the state of the Club. We can discuss any of these changes at the meeting.

—Z

The NewZletter

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

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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
☐ Individual
☐ Family
☐ Associate

Name(s): Birthdate(s):

Address: City:

State: ZIP: E-Mail:

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:

Classifiedz

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: 360.856.5185 or email: mswhite@sos.net

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>.

I am selling my 1983 280ZX. I have spent many dollars and hours fixing it up (and loved every minute of it). Here is a partial list of the upgrades done to the 280ZX since March 1997: Replaced Rear deck seal, Replaced various lights, taillight lens, Complete lube job/oil change/radiator flush, New spare tire and cartridge/rear wiper fixed, brand new struts and shocks (and 4-whl align), Body work (rust prevention, scratch removal, dings fixed), brand new paint job (very nice too!), New clutch, master and slave cylinders, Recovered various interior panels with new vinyl, Brand new carpet installed, Repaired Air Conditioning (IT blows very cold), Replaced alternator, starter, and fuel injectors, New spark plug wires, various screws, plastic pieces, and emblems to perfect the interior of the car. Make offer to Greg by e-mail <kelly@lightningweb.com> or phone (206) 213-0964.

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>.

EFI Tech

From the Dec/Jan 1998 issue of Z-Club Bulletin. By Kirk Kilpatrick

Starting in 1975, Datsun began replacing conventional carburetor's with Electronic Fuel Injection (EFI). Their main reason for this was the increase in emission control regulations. EFI gives precise fuel air mixture under all operating conditions. A secondary benefit is improved driveability (i.e., turn key and drive, regardless of weather conditions).

The EFI system uses various sensors to convert the engine operating conditions into electronic signals. These signals are sent to the control unit, where the optimum injector open time is computed, according to information stored in the memory for control of fuel injection quantity. There are three main systems consisting of:

(1) Fuel Flow System fuel is sucked from the fuel tank via the pump and discharged under pressure (65 to 75 psi), to the fuel damper (to control pulsation, and help the pump run quieter), to the fuel filter, then on to the injector fuel rail. Surplus fuel is returned to the tank via the fuel pressure regulator, which maintains fuel system pressure at a constant 33 to 37 psi. During starting when the engine water temperature is below the specification, normally 57 degrees F, fuel is injected into the intake via the cold start valve, acting the same as a choke on a carburetor.

(2) The Air Flow System; intake air from the air filter is metered at the air flow meter along with air temperature. Then it flows to the throttle chamber, into the intake manifold, and is distributed to the cylinders. Air flow during driving is controlled by the throttle valve in the throttle chamber. During idle, the throttle plates are in an almost closed position, and air is led through the by-pass port on the throttle chamber. During warm-up operation, air flow is bypassed through air regulators to increase engine rpm.

(3) The Electrical Flow System; since the suction of air flow varies with the movement of the air flow meter, the quantity of fuel to be injected must be controlled in respect to the amount of air flow present. Since the fuel pressure is held constant, and the injector nozzle hole is also constant, the injection quantity can only be controlled by injector valve open time. This injector pulse width is determined by the Electronic Control Unit (ECU, Black Box Brain and assorted other names). The ECU bases this pulse width on information it receives from various types of sensors in the engine compartment. They are as follows and in this order with the information they provide:

1-Air Flow Meter; quantity of intake air.

2-Ignition Coil Negative Terminal engine rpm.

3-Throttle Valve Switch; opening of throttle valve, full and after idle enrichment, and fuel shut-off during coasting.

4-Cylinder Head Temperature Sensor (or Water Temperature Sensor); temperature of engine during warm-up, after start, after idle enrichment, and fuel shut-off during coasting.

5-ignition Switch Start Position; starting operation start, and after start enrichment.

6-Air Temperature Sensor; temperature of intake air at the air flow meter.

7-Exhaust Gas Sensor; amount of oxygen in exhaust gases.

Based on this information, the ECU computes the correct injector pulse width and energizes the injectors for the proper amount of open time per cycle of the engine. The engine has a repetitive four stroke cycle, suction, compression, combustion, and exhaust. The fuel injectors are electronically connected and parallel in the control unit and all injectors receive the signal to open at the same time regardless of the engine stroke. In "Z" cars injection is made once after receiving the ignition coil signal three times and injects only half the fuel required. So upon receiving this signal three times the required amount of the fuel has been injected for operation of one cycle of the engine.

This is a basic description of how your fuel injection system works. What if it doesn't work? Well, let's talk about this.

First, do not jump to conclusions and replace any parts because so-and-so had this or that wrong and says this is what cured his or hers. This is because these parts are expensive and are non-returnable. You should take note that all auto part stores and dealers have signs that say "All electrical parts are non-returnable".

Also, before you remove any fuel hoses, remember earlier I said fuel pressure is at a constant 33 to 37 psi. Constant means what it says. When the car is turned off, unless there is a problem with the fuel pump, this pressure is present. Removing a fuel line without bleeding this pressure off, either by unplugging the fuel pump connector in the cargo area or removing a fuel pump relay while the car is running, not only presents a fire hazard, but hurts like hell when it will spray in your eyes. Murphy's Law, you know.

Before you blame the fuel injection system for your problem, you must inspect all the vehicle's support systems, such as wiring, battery, ignition system, engine compression, fuel supply fuel pressure, and don 't forget quality. (More than one person has brought me their car with $300 - 400 worth of new parts on it only to find out they, "OOPSI", put diesel fuel in by mistake. It happens! Or they picked up a load of water from a station that pumps their tanks to the bottom. Take note here that diesel fuel is usually greenish-yellow in color. Gasoline and water in a jar will separate with the water going to the bottom.) Check all the electrical connections. They must be clean and secure.

You'll notice that electrical connections in the engine compartment keep coming up! This is a hint! Nothing works right if it has loose or dirty connections.

Other support systems you are concerned with are your relay panels and charging system.

Check the air filter. A plugged air filter will give low power surging. So will a defective alternator. And, there is a slight difference in price. You should be able to see light through your filter.

Last, but not least, check all vacuum and fuel hoses for leaks, proper connections, pinching, or closing off.

The aforementioned items must all be checked thoroughly before you can condemn your fuel injection system. Provided everything checks out ok, your next steps are going to take you into component testing, whereby every component related to specific problem must be checked and rechecked at every temperature of its operating range.

1-Engine cranks, but won't start cold or is very difficult to start; engine turns over but will not fire when cold after repeated cranking, test the following items: auxiliary air value, cold start valve, thermo time switch, temperature sensors, and air flow meter.

2-Engine will not start when hot; check the cylinder injectors for leakage and operation. Also, pay close attention to your fuel pressure with this symptom.

3-Difficult starting when hot; check same as #2 plus auxiliary air valve. Also, does fuel pressure maintain 25 to 35 psi at rest?

4-Poor idle when cold; test auxiliary air valve, cold start valve, cylinder injectors, and thermo time switch.

5-Poor idle when hot; test as #4 plus include throttle valve switch and air temperature sensor.

6-Poor engine performances; if engine operates poorly at all speeds, test cold start valve and throttle valve switch.

7-Excessive fuel consumption; test cold start valve, air flow meter, and temperature sensors. (Also, insure engine timing is correct.)

9-Engine backfires into manifold; if engine repeatedly backfires into intake manifold, test the air flow meter.

You will notice that of all these symptoms not one says to replace the ECU which gives you a good idea how often they are found defective. After you have performed all of the above tests, checked the entire EFI harness and relays for continuity and proper operation, and are willing to stake your name and $295 exchange on those results, and the car still won't start, try a new ECU. Better yet, convince someone with the same year "Z" to loan you their ECU, assuming their car runs right. To make sure the ECU is the problem, try yours in their car. If its works, it's not the ECU! You have over- looked something. Go back and start over.

—*Z*

Nissan ad in *AutoWeek*

From the October 12, 1998 issue of AutoWeek, Vol. 48, No. 42

The following text came from a full page ad that appeared in the aforementioned edition of AutoWeek commemorating Mr. K's induction into the Automotive Hall of Fame.

Yutaka Katayama came here to sell a few cars. Little did he know he would end up changing the way we drive forever. Consider where he stated. The year was 1960, and just about the only Japanese product an American would buy was a transistor radio. But Mr. K, as he quickly became known, aimed to change all that. He saw a need for a small pickup truck - one that was easy to maneuver and fun to drive, that could be used for play as well as work. Mr. K had just such a truck. He had one little problem, though. He had nobody to sell them. Most of the established dealers he approached about selling Nissans (they were called Datsun then) weren't interested. But a handful of small businessmen - independent, entrepreneur-types, were just crazy (or visionary) enough to give Mr. K and his little truck a chance. Then a funny thing happened. Just about everyone that drove one, bought one. Word spread. Pretty soon, we couldn't build 'em fast enough. More models followed - the 510 sedan, the 2000 Roadster, the Patrol SUV - but Mr. K's greatest triumph was yet to come. By the late 60's, there was no shortage of sports cars on the road. Just about every car company made one. A reliable sports car, however, was another story. Mr. K pushed, prodded and cajoled his designers to build such a car. And so, in 1970, Nissan unveiled the legendary Z. A car so magnificent, it inspired fan clubs all over the world. A car so magnificent, it won close to 50 championship races. A car so magnificent, if he had done nothing else in his entire life, Mr. K would still deserve the honor he's receiving today. But, as anyone who knows him will attest, Mr. K made much more than cars. He made friends. He was on a first-name basis with every single Nissan employee in America. His loyalty to his dealers was unwavering. And in return, they'd run through walls for him. After building Nissan into the number one import brand in America, he retired in 1977. But we like to think there's still a little bit of Mr. K in every Nissan we make. Mr. K has always lived by a simple philosophy: "Love people. Love cars. Love life." You might think that's kind of a touchy-feely way for a car guy to think. But just look what it did for him. He wound up in the Automotive Hall of Fame.

Nissan

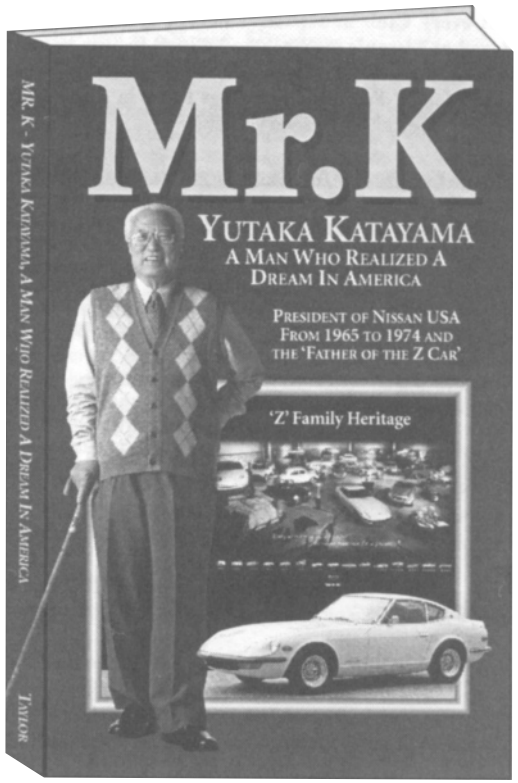
Enjoy the ride.

This is the enhanced English version of the book published last year in Japanese about Mr. K's life and times.

This 160 page, 5.5 x 8.5, hard-cover, Smythe bound book, with laminated dust jacket, contains over 160 pictures and graphics (including 12 pages in full color).

Some of these pictures have never been published before, such as Mr. K as a child with his family. Also included are rare pictures of the Z's ancestors and other automotive firsts (for example, the first Datson).

Each book includes an exact 3" x 5" color replica of the legendary Z Print.



Books may be purchased from:

ZCCA
3204 Century Circle
Irving, Texas 75062

Price: $25 per book for Z Club Members – includes free handling, padded mailing container and UPS shipping anywhere in the continental U.S. Please add another $10 US per book for all international orders.

For non-Z Club Members, $30 per book for all continental US orders – includes handling, padded mailing container and UPS shipping anywhere in the continental U.S. Please add another $10 US per book for all international orders.

Administratively:

[1] For all mail orders, please indicate Z Car Club affiliation to receive free handling/shipping.
[2] To ensure UPS delivery, please use a street address – not a PO Box.
[3] ZCCA will again be acting on Mr. K's behalf for this project, therefore, please make check or money order (sorry, no credit cards) payable to "ZCCA T/A" (Transfer Account).
[4] There's an additional discount for orders of 50 books or more, please contact "Mad" Mike during the day at 972-438-8344 for information.
[5] Orders filled on a first come – first served basis.

Winter-time Project, Anyone?

From the June/July 1998 edition of Z-Club Bulletin.

Project Jet - The Ultimate Power Trip

For the man who has everything; for the man who has experienced the ultimate in performance Z's; the man for whom a big block Chevy seems like a tame kitten and a Chrysler Hemi a seven cylinder damp squib: his man needs real power which piston alone can not provide. Such power is available, only requiring a little technical ingenuity, a Payless DIY MIG welder and a friend in the RAF.

The car: a tube framed, Kevlar bodied 240Z.

The engine: a Rolls-Royce Spey jet, carefully removed from a UK specification Phantom (this will leave the Phantom pilot with one engine to play with, so he will hardly notice the loss!).

Drag raceway promoters have always been very fond of thrust powered cars, and nothing quite the crowd reaction as a jet or rocket car (not to mention the fact that they have been know to blow the fans away—literally—along with most of the stands and control tower!). Most cars have been produced for serious road attempts, like the ill fated Barry Bowles' Blonde Bombshell. This is one of the earlier versions of a British World Land Speed Record contender, and was powered by a hydrogen peroxide and platinum catalyst jet. The car made many demonstration passes at drag strips, but crashed terminally during a record attempt at Pendine Sands in South Wales. More successful, of course, was Richard Noble in Thrust ll, who currently holds the World Land Speed Record. Richards car used a jet giving "only" 15,680 Ibs. thrust to achieve a sustained speed in excess of 750 mph.

In 1978/79, the British efforts with jet drag demonstrators were made to look pretty silly by Slammin' Sammy Miller from the good 'ol' US of A. Sammy's Vanishing Point peroxide rocket car looks deceptively like a conventional Funny Car, but sits in eerie silence when staged at the timing lights. To a musical accompaniment and a crowd count-down, he releases the car to a sub-four second quarter mile terminal speeds in excess of 300 mph. At Santa Pod, this is usually a half or two-thirds power pass due to the relatively ungenerous run-off area! The car is said to produce a mere 5000 Ibs. of thrust. Interestingly, Mr. Miller is also the fastest man on ICE with another of his rocket creations, Oxygene, which runs on skis to about 250 mph!

As for the Phantom, Flt Lt. Ian Ferguson of RAF Wildenrath (who, incidentally provided the beautiful illustrations which inspired this article) quotes the thrust figures for EACH engine at 20,515 Ibs. which is enough to propel the 30,000 Ibs. jet to well over 750 mph in full reheat. Group Captain John Allison (also of RAF Wildenrath and probably promoted by now!) writes in a 1985 Pilot magazine article:

"Aeroplanes are like women, endlessly interesting and variable. I confess I have been rather promiscuous over the years and have had a number of affairs: one or two have been genuine love matches, there have been quite a few one-night stands and the odd bad experience. But all the time, lurking in the background and mostly taken for granted, I have had the aeronautical equivalent of a wife. She is not a very beautiful lady but she had been part of my life for fifteen years (less a couple of brief separations) so I have grown fond of her." He writes, of course, of his love for the Phantom - with some paraphrasing, many of us could say the same thing about our love for the Z, except we could never suggest anything less than radiant beauty!

O.K. - enough of this. What is going to be involved putting together a R-R Spey

engined Z? You will see that Ian Ferguson has provided a detailed plan for construction purposes, although exact dimensions of the initial chassis are missing (to follow, Ian?). Once we have the basic engine in our possession we should be able to rig up something to support it and the basic rolling suspension pretty quickly. In terms of length considerations the reheat section of the engine will fortunately have to be shortened to fit the dimensions of a two-seater Z. I'm hoping this will not affect performance too much, and also, that the pretty flame cones can still be formed when posing at traffic lights. The car will have to be about two feet wider than stock to accommodate the driver on one side and the fuel cells on the other (fuel consumption is estimated at about 130 gallons per minute, so these will be quite big to improve the touring range). Brakes could be a problem - the original 240Z front discs will have to go. Ian's triple disc set-up looks like an expensive option and would still need to be supplemented by a parachute at the strip, as the quarter! Most Pro-Fuellers and Funny Cars use Hurst-Airheart disc and calipers and these stop adequately from nearly 300 mph.

Aerodynamics will need careful consideration with a power to weight ratio of over 8:1. 0-60 in, at worst, 1.5 seconds and maximum speed capability of Mach 1 or more could induce stability and lift problems, and some suspectibility to cross winds on motorways. As the body needs to be completely refabricated, extensive thought will be given to overcoming these difficulties without sacrificing the original Z identity. You will see that the drawings include several original parts...

Interior refinements will, of necessity, be few, both for space and weight reasons. However I see some thing that looks suspiciously like a speaker grille on the driver's door on Ian's plans. Any suggestions where to put the multi-amped hi-fi under the seat? Will 1000 watts per channel be adequate or should I go for some thing outrageous? Will a CD player work in this harsh environment?

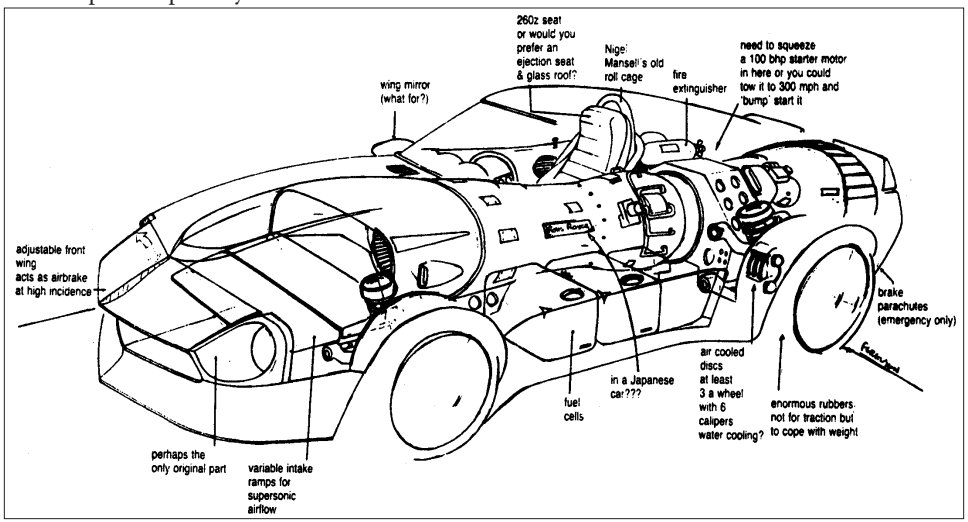
By the time you read this the winter lethargy should have passed and you might consider the first day of next month a suitable time to start construction. Chocks away, Biggles!

Words mostly by Mike Feeney

Pictures and inspiration by Ian Ferguson

Sponsorship to be announced

—Z



Congratulations for Tim Nevins

Paul Richer brings us the following

I got this off the NW Autocross list. For those who don't know Tim, he is one of the charter members of the ZCCW. He got bit by the autocross bug just a few years ago and has (obviously) done well. He drives a 280Z

After driving the best that I have ever seen him drive, in yesterdays TS WWSCC event, it appears that Tim Nevins has taken the championship in Improved B. After leading the entire season, the last two events were disastrous for me, (mechanical failure, and brain failure) and that left the door open for Tim to take the points lead.

After the season that we have had, with the mechanical failures, and the time spent on the car (s) nobody is more deserving of the championship then he is. IB is probably the most competitive class in Improved, and the championship could have gone to any one of four or five drivers, but with two great events at the end of the season, he has proved that not only is he a great person, but a also great driver.

Final Standings according to my limited math skills:

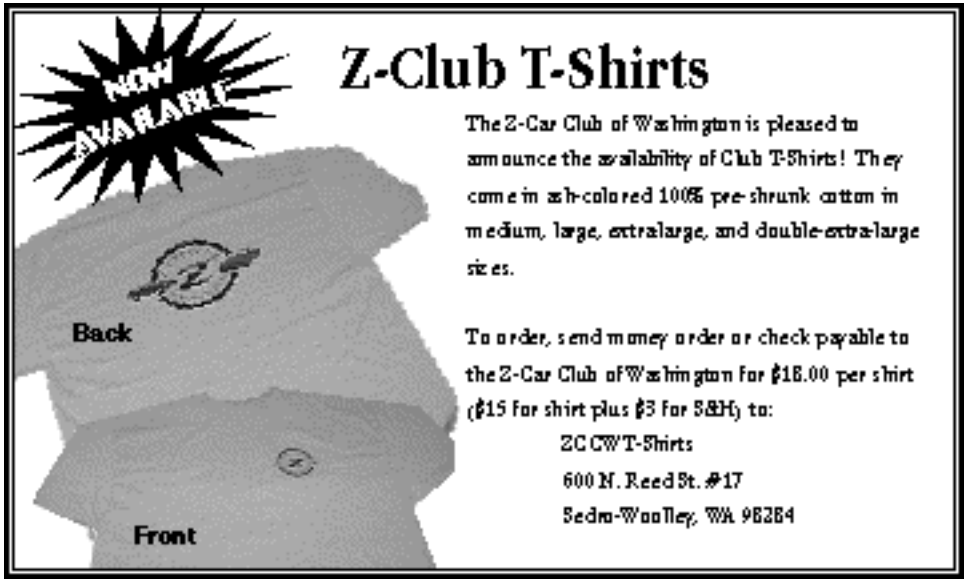
Tim: 497.562

Randy: 497.461

Congratulations on the championship, and thanks for the opportunity to share this season with you.

Z Car Club Association ™

Member



Quick Bits

ZCCW Leavenworth Road Trip & October Meeting

From Mark and Janene Mullen, <MarkandJanene@msn.com>

Don't forget to mark your calendars for our Leavenworth road trip on Saturday, October 24th. We'll be meeting in Monroe in the old Petosa's parking lot (I understand that it's not Petosa's any longer) at 10:00 am. For those of you interested in making it a two day event Janene has once again offered up accommodations at her cabin on the Wenatchee River just outside of Leavenworth. Lots of room (aprox. 3000 sft, including full basement with Pool Table and Sauna, and a loft) please bring your sleeping bags! It promises to be a fun weekend with window shopping in Leavenworth, gorgeous scenery, good company and spirited driving. If anyone is interested we can plan for a group dinner and breakfast at the Cabin as well. Just let us know!

Z-Specialties Web Site

Ollie (Z-Man) and Company announce the opening of their new web site at <http://www.blarg.net/~jmarch/zcar>.

New information

From Dave Lum

If you haven't been to www.datsuns.com on the last month, you need to take a look! I have a lot of new model guide information, and a new way to navigate the site - you can see what's available without having to go to each page first! As always, it's not complete, but the site now has almost 200 pages of information - both Datsun/Nissan specific, and general automotive (like WHY does lightening a flywheel help?).

Take a look, and feel free to fill out the feedback, or e-mail me <davelum@datsuns.com> to receive even more personal harassment.

280Z Mailing List

From Dave Alexander

I've created a 280Z mailing list, much like the IZCC list, but intended to limit discussion to the 280Z. It is not intended to replace the IZCC list, but rather supplement it much as the 240Z mailing list does. Judging by the success of the 240Z list, I would guess that a fair number of 280Z owners will be interested in this list.

If you are interested in joining this list, check out <http://www.amarok.org/lists.html>.

Dyno Day

From: Gregg Kerber, <gkerber@gte.net>

Fellow ZCCW members. I solicited interest in a dyno day at last Saturday's ZCCW meeting. For those who don't know what a dyno day is, I will attempt to explain:

A dyno day is a one-day gathering of car enthusiasts with their cars at an establishment with a chassis dynamometer. A dynamometer is a device that measures horsepower and torque versus engine RPM. There are two types of dynos - a chassis dyno and an engine dyno. The chassis dyno measures hp and torque at the rear wheels and an engine dyno measure these parameters at the flywheel (with the engine out of the car). The chassis dyno is basically 2 large roller in the floor connected to a computer. You roll the rear wheels of you car onto these rollers, the car is secured by large straps to prevent it from moving, and you then runs through the gears much like running a quarter mile drag race (except you don't have to abuse the drive train with hard shifts), and the computer records hp and torque.

I am setting up a dyno day at either Pat Austin's or Turbo Technologies in Tacoma. This dyno day is tentatively being set up in conjunction with a local Camaro club. We will have full access to the dyno for an entire day. You will be able to make multiple runs on the dyno during the day which will provide you a chance to "tweak" your car and see the power results. The cost for this will be approximately $550 (including tax). There is a 20 car maximum, so if we get 20, the cost will be about $28 per person. You will get paper print outs from each dyno run of hp and torque versus rpm.

So far I have five ZCCW members on a list and need 5 more (10 from ZCCW and 10 from the Camaro club). Please reply to this e-mail and I will put you on the list. We are tentatively planning on this dyno day between mid-Nov and Jan.

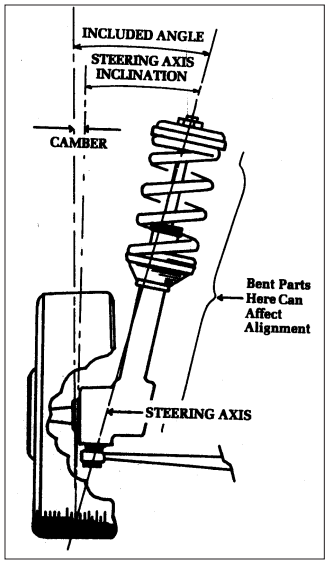
MacPherson Strut Diagnosis

From the Dec/Jan 1988 edition of Z-Club Bulletin.

Discussing diagnosis can be a little like discussing religion. No two people agree on every issue, but they're all sure they have access to absolute truth in the matter.

And while the road to steering salvation may be straight and narrow, there are some off-ramps. Some really questionable theories have been thrown around as gospel in the past. I know that for sure after reading a number of strut articles that actually contradict one another.

As usual, the burden of solving knotty strut problems will fall squarely on your shoulders. Your experience and common sense will usually go a lot farther than you think. Good observation and attention to detail will usually do more good than fancy engineering concepts.



Killer B's

Now that MacPherson strut front ends are more the rule than the exception, you're going to be diagnosing specific problems different from those you saw on the old two-control arm cars.

Most problems will be caused by what I call the Killer B's, namely bent, broken, binding, or just plain beat components.

If we can at least agree that OEM design is adequate for passenger car applications, we have a starting point. If we also agree that restoring a vehicle to original specs is essential to good suspension and alignment repair, we're on our way.

As we go on, keep the Killer B's in mind, because if you have a real problem with a strut front end, then something is basically busted.

Drive, Look and Listen

The two best tools you have for diagnosis strut problems are your eyes and ears.

• Take the time to drive the problem car before you start tearing things apart. Most good technicians test drive after a repair. Too few start that way. If you observe a handling problem before making a repair and it still exists after the repair, at least you know you didn't create a problem.

As you drive, listen for any abnormal noises and note when they occur. When turning? When stopping? Does the car pull when braking? When accelerating? Does the car wander? Does it bottom, shake, or bang over bumps?

• Take a moment to talk with the customer. I know it's time consuming, but there's always time to talk about problems after it's too late.

Let's face it, the customer lives with the car. He's driven the car under a wider variety of road conditions than you're likely to encounter on one test drive. If he's been paying attention at all, he may be some help. Listen to the car and its owner.

• Before your raise the car on a lift, take a moment to look it over. Check to see that it sits level. Bounce the front end to see if the suspension rebounds, and rebounds evenly. Are the tires the right size for the car, the same size all around, and properly inflated?

If the car refuses to stop bouncing, rebounds unevenly or not at all, or makes noise during suspension compression and rebound, you're getting closer to the Killer B's

• Lift the hood and inspect the inner fender area where the strut bushing mounts to the strut tower. If the outer fender is freshly painted, you want to pay special attention to the inner support metal. Improper collision repair—or even worse—damaged but unrepaired support metal will throw everything out of whack.

Unit body cars are easier to damage at critical points than full-framed vehicle. They can also be a lot less forgiving.

• While an assistant turns the steering wheel back and forth, look under the hood to see that the strut shaft rotates in the strut bearing. The shaft should not move from side to side or fore and aft. This is a pivot point. Along with the ball joint, the pivot determines steering axis inclination or SAI. If it's moving side to side, the upper mount is bad. As a result, it's constantly changing the car's alignment.

Up On The Lift

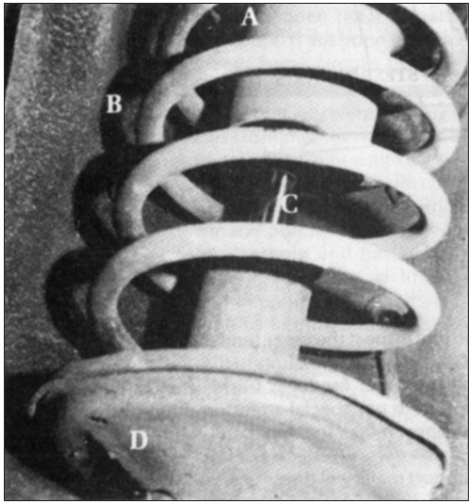
Even if a car is in for something as simple as a tire rotation, it pays to look at the points we've marked in the following photos.

•Point A—Check to see that the protective boots are properly attached and not torn.

•Point B—Check to see the spring is not broken or otherwise damaged.

•Point C—Inspect this area for signs of an oil leak. Also check the strut shaft for rust, pitting, or galling. A rough surface can cause binding and will eventually ruin the shaft seal.

•Point D—Check here for any signs of tire rub. A bent strut tube could allow the spring perch to contact the inner edge of the tire. In areas where salt and corrosion are problems, you should also look for signs of rust perforation. Even though most spring perches have drain holes, they can get clogged. This causes the cup to fill with salt and corrode. Inspect the marked areas signs of damage.



•Point A—Look for a kink or bend in this area. Any severe bend here will usually be accompanied by some kind of sticking or binding.

•Point B—Check for a bent control arm. These arms have gotten a lot lighter on the new front drive compacts. They also ride down low, right near the road hazards. Also check the inner control arm mount bushings for damage or wear. Has the body been damaged in the area where the bushings mount?

Memory Steer

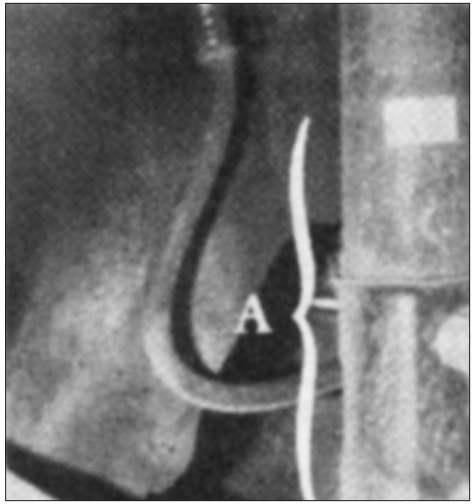
Memory steer is a fancy word for steering that sticks or binds in a turn. It wants to stay in a turn instead of centering itself again.

To isolate the cause of memory steer, you may want to disconnect the tie rods. This will allow you to turn each strut individually. A hard-to-turn strut may be caused by a dry or sticking ball joint or a binding upper strut bearing. Occasionally that rubber snubber on the strut shaft will stick to the strut shaft and bi nd on the strut bearing.

If neither strut is binding, but memory steer remains, you'll have to check the steering shaft and rack assembly for binding.

Help From the Alignment Rack

The measurement of SAI or Steering Axis Inclination collected dust in the attic of alignment theory for years. Now it's been



If you haven't already done an alignment and are only checking for SAI, be sure to compensate for runout. Small imperfections in the wheel, or uneven mounting of

the heads can result in faulty readings if you don't.

You'll have to lock the brakes to keep the front wheels from turning. Position a rod between the seat and the brake pedal to apply

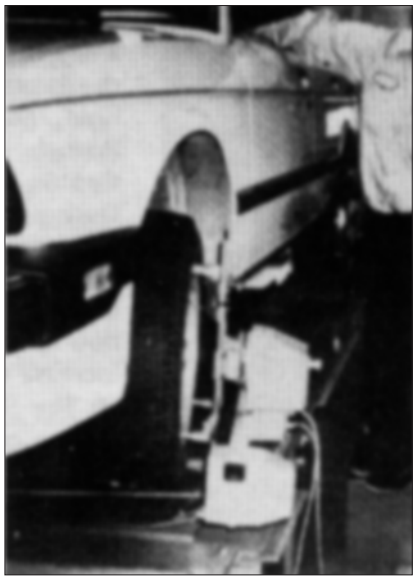
the brakes firmly enough that you can't spin the wheels.

Now level and lock the heads with the wheels set in the straight ahead position. This equipment will tell you the position of the wheels so the traditional turntable scales are not needed. Again, be sure to follow directions for your particular equipment.

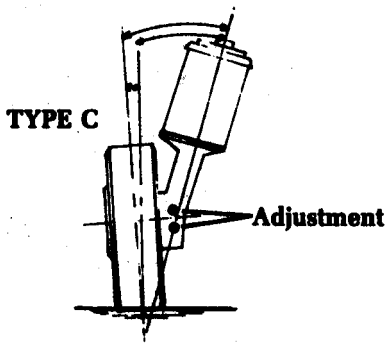
Now turn the wheels to the left and right using the steering wheel. The machine tells us how far to go in each direction, computes SAI, and gives us a printout. You'll

usually find more SAI specs available for imports than for domestics.

—Z



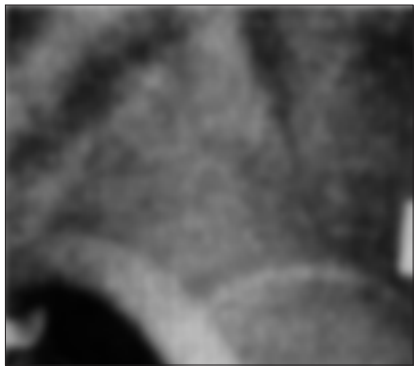
this on a Hunter alignment machine using their suggested method.



Of course, your equipment may require a slightly different approach. Be sure to use the recommendations and procedures listed by the manufacturer of your particular equipment.

If you haven't been doing SAI checks as a part of strut diagnosis, you may be relieved to see that it isn't extremely complicated or difficult. It's certainly worth the effort if it pinpoints problems for you and helps you look smart to the customer.

If the area by the arrow is rubbed shiny by the inside of the tire, something is drastically out of whack. (We're assuming that no one has changed the rim width or tire size.) Possible causes include: a bent strut, bent spindle, bent rim, completely wasted wheel



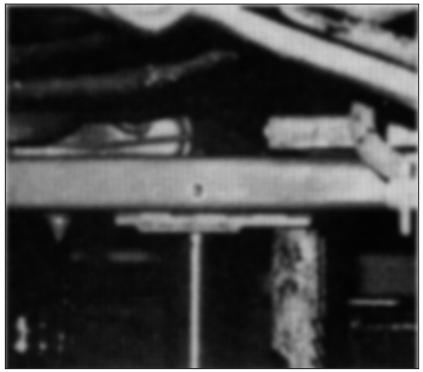
bearing, severe body damage, or a combination of these problems.

The ball joint (A) provides the lower pivot for the strut and connects the lower strut to the chassis by the control arm (B). Wear in the ball joint or a bent arm affects SAI (Steering Axis Inclination) and camber.

The arrows point to the engine cradle, which in this case also functions as the inner mount for the control arm. Look closely in this area for any signs of damage. Make sure

the cradle mount bolts are tight. Also check the bushings in the arm for excessive play.

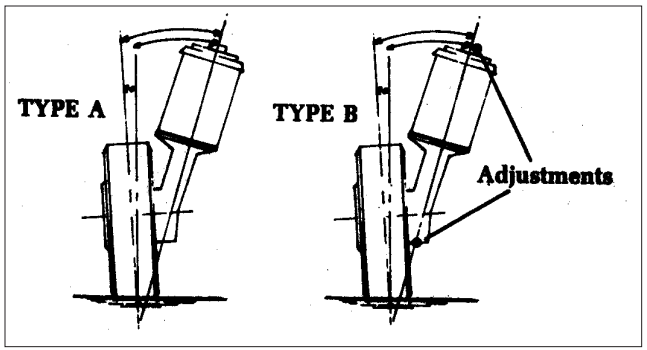
Checking SAI will look similar to checking caster. This should be done after an alignment or if a problem is encountered. Hunter suggests you raise the vehicle and let the wheels hang free.



pulled out of storage as a method for checking strut front ends for bent parts.

One of the major differences between the old SLA (short/long arm) front suspension and the strut is the distance between the pivot points determining SAI. On cars with upper and lower control arms, the ball joints, or pivot points, were fairly close together. On struts, the upper pivot bearing and ball joint are much farther apart. Now any change in pivot point position spreads alignment change over a longer distance.

This was great for the manufacturer. It allowed him to start making some cars with no provision for alignment correction except for toe. This was not necessarily good for the owner or technician. Fine tuning the steering for minor changes of alignment caused by non-critical wear was not possible. (Sure—anything's possible, but it certainly wasn't practical on many of these cars.)



Now when a car showed up with drastic alignment problems the technician had to assume that something, somewhere was bent. But how to find it? Checking SAI can help.

A Helpful Little Chart

In the following, we've listed three basic types of strut, depending on whether or not the manufacturer allows for camber and/or or caster adjustments.

Whenever we refer to a "spindle," we also refer to those front drive cars that have drive hubs carried by bearings in the knuckle. These bearings can be damaged

Type A

- This type has no adjustment except for toe.
- The upper strut bearing is not movable.
- The lower ball joint is not movable.
- The spindle is not adjustable for camber.
- If caster, camber, or SAI are out of specs, something is bent or broken.
- If both camber and SAI are out, suspect bent body parts where the control arm mounts in board, or look for a damaged strut tower.
- If camber is out but SAI is correct, check for a bent part in the area of the spindle. Other possibilities are bad wheel bearings, a bent wheel or drive hub, or a bent spindle. Remember the Killer B's

Type B

- This type allows for some adjustment of camber and/or caster. There are limits to the amount of adjustment.
- The adjustment requires movement of a strut pivot point. Either the strut tower is slotted to allow for movement of the upper strut bearing, or the ball joint is mounted in a slide in the control arm.
- Since you're moving the whole strut, any change in camber changes the SAI.
- If you can correct the camber within the limits of the factory adjustment, look for more bent parts or out-of-location mounting points.

Type C

- This type allows for adjustment of camber without a change in SAI.
- Since the spindle can be corrected for camber without changing the pivot points, camber can be altered without a change in SAI.
- If you adjust camber and a driveability problem persists, check SAI.

Checking SAI

We're going to include a specific example of checking for SAI. We happened to do

ZCCW Automotive Activities

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
25	26	27	28	29	30	

November

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					

December

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		

October 24-25

ZCCW General Meeting/Road Trip - Janene's Cabin in Leavenworth. We'll be meeting in Monroe in the old Petosa's parking lot (I understand that it's not Petosa's any longer) at 10:00 am. For those of you interested in making it a two day event Janene has once again offered up accommodations at her cabin on the Wenatchee River just outside of Leavenworth. Lots of room (aprox. 3000 sft, including full basement with Pool Table and Sauna, and a loft) please bring your sleeping bags! It promises to be a fun weekend with window shopping in Leavenworth, gorgeous scenery, good company and spirited driving. If anyone is interested we can plan for a group dinner and breakfast at the Cabin as well. Just let us know!

November 21

ZCCW General Meeting - 3:30 - Flying Pig Pub & Brewhouse - Everett

December

ZCCW Christmas Party - Date/Location TBD
and/or
2nd Annual Christmas Charity Drive and Holiday Potluck. To benefit the children at Children's Hospital.
Details to come.

What's Coming Up...

Haven't yet received much regarding events for the beginning of 1999. Will get them listed as they arrive.

The ZCCW draws its calendar information from many sources. If you would like to be one of those sources and have automotive events that you would like to have included, email Michael at mswhite@sos.net.