Z-CAR CLUB
Z
OF WASHINGTON

Volume X Issue I | The Newzletter of the Z-Car Club of Washington | October, 1996

ZCCW Phone Line

The ZCCW now has a club phone line! Janene Mullen certainly wasted no time in making the arrangements. Our new club phone number is: 206-379-2002. The line and its messaging service will serve as a bulletin board about upcoming meetings and events, both for members and prospective members, so check there for any info on upcoming events, and feel free to pass it on to any Z owners. We will also include the number in any publicity material we print about our club. Thanks Janene!

Win95 Z Wallpaper!

IZCC'er Kyle Hagemann wrote to say he's put together a Z-Car desktop theme for your computer. You can download it at Kyle's web site:

http://www.sonic.net/~kyle/

(the file is in:
http://www.sonic.net/~kyle/ztheme.html)

Next Scheduled Meeting

Saturday, October 26
4:30 pm at Z-Sport

On the Agenda:

Officer Elections & Peterson Museum Video about last 300ZX induction

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Dream a little Z-time Dream

As much as I'd like to be able to report some breathtaking new Z info or adventure, not much has happened in my Z life (except for the Club's meeting minutes that you'll find below). In fact the 240 sat in the driveway for two weeks while I flew to Iowa to visit my son and family, drive Iowa cars and watch Iowa combines pick Iowa corn. Iowa's salty roads have been hard on Z's, and the only one I saw was a rather forlorn blue/gray '80 ZX with a punched out left headlight and rust as high as a hay bale, obviously winding down its life as a late night Iowa backroads rompmobile.

I didn't even think about Z's until my son drove up in his latest Detroit sled, an early 70's Malibu-ish thing that was rustier than the rompmobile, and which quivered and shook as the engine struggled to idle. "Howdy," I said. "Rump-rump-rump" said the Malibu. "You still looking for a 355?" said my son as he SLAMMED the door closed. "I got two now."

Hmmm I thought. Hmmm indeed, and the 240 leaped to mind. "That's a 350 bored .030" over" my son reminded, cautious that he not exceed the automotive scope of his pop. "TRW pistons. Corvette cam. Edelbrock manifold," he continued. I had to steady myself lest I swoon. "This one's even clean," he pointed out. "Sure is nice to have one that doesn't leak." I couldn't help but agree. I didn't even register that the header gasket was history.

All I can say is that it's a good thing that United Airlines has a weight limitation on passenger baggage or I surely would have injured myself between the curb and the check-in counter in Cedar Rapids.

We all like different things about our Z's: their comfort for the long of limb; the distinctive moan of the L6 engine; the cockpit design; an engine one can actually see, appreciate, and work on; the line of the fastback, or the bulge of the hood. The Z makers rolled all these good things and more into one fine auto.

And we all have individual dreams of what our Z's are: the simplest and most agile of all GT's; the speediest of the true sports cars; a piece of automotive history; a singularly beautiful design; some kind of ultimate cruiser; some kind of race car the authorities still let us drive on the open roads. And as I've learned, the dreams often evolve over time.

I've looked long and hard at the bare Z chassis in my garage and I have to say the early Z is a damned good design. There's precious little you can take off of it and not a whole lot you can add without chucking it out of it's rather dainty weight classification.

So maybe I'll have a 355 Z some day, with a cut-down 9" Ford rear end, custom suspension arms, and a bunch of other goodies. It'll still be a Z, but it will be a slightly different dream than the car sitting in the driveway right now.

A Message from the President:

In case you haven't noticed, it looks like summer is over and so are most of the club activities for this year. Looking back, I think we had quite a successful year as far as club events go:

National Z-Car Convention in Denver,

Vintage car Races,

Snohomish Car Show,

Port Townsend Meet,

Autocrosses...

and now is the time to start planning and organizing the activities for next year. Think about those activities that we did and that you would like to do again but, more important, think of some activities that we DIDN'T do but should have:

maybe a picnic??? poker run or gimmick rally??? swap meet??? tech sessions???

And now for the difficult part... think about how you could help to make these events happen. What I would like to see happen next year is for us to create a full calendar of events and to get members to sign up to organize those events well in advance of them happening. So, take a minute to think about "what do I want this club to do" and then sign up to do it. Remember, its your participation that makes this club a success.

Here is a tentative list of activities for next year. Take a look at it and see if there is one or more that you would be willing to help with. Feel free to add to this list by bringing your ideas to a general meeting, calling me (206 334 7256) or sending me e-mail (paulr@lsid.hp.com).

Z-Car Club of Washington Activities Calendar... 1997

Slot Cars and Pizza

Winter Z-Car Swap Meet

Tech Session

SCCA/NWR SOLO II School # - Kent

Spring Road Trip

Gimmick Ralley or Poker Run

10th ANNUAL Z CAR CLUB CONVENTION (York, Penn)

All Datsun Meet... Mount Shasta

Vintage Car Races, Seattle International Raceway, Kent

1/8 Mile Drags (Monroe, WA)

Autocross (NWDE and Miata club)

3rd annual Port Townsend Meeting of the MindZ

BCZCR Whistler Run

Car Show (Snohomish)

Fall Road Trip

Christmas Party

ZCCW Newzletter

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

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USPS: .....ZCCW Newzletter
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To get a subscription, join the ZCCW! Membership application found on mailing wrap and on our web site.

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Tell a fellow Z enthusiast about us!

Z-CAR CLUB ZC Z CW OF WASHINGTON

Minutes of the September ZCCW Meeting 09/28/96

Meeting called to order at 4:30pm by President Paul Richer.

Old Business

Les Snyder came in with samples from the t-shirt vendor who suggested some changes for our logo. Setup is $100 plus $25 for each color. We have four colors so we have $200 of overhead before we start making shirts. Blank shirts are $8.50 each and sweatshirts would be $11.00 with a 200 shirt minimum.

This is more money than we were willing to spend. The shirt that Paul has as an example would be about $7 for a one color shirt. We discussed a variety of potential schemes. If we made it a two color design and were able to do the separations we could save some money. The cost would be down around $10.25 each. The vendor is Countryman's in Everett.

Janene found out that we could get a voice mail box from GTE. This number can also receive faxes. The cost for a local Everett number is $10.95 for a number with no fax or e-mail. Adding fax capability is another $9.00. Paul made a motion to begin this service if there are no other charges. Janene will find out about getting a specific number and if there are any setup charges. Bills will be sent to Paul.

The newsletter came out and it was really nice. Excellent job guys! Paul would like to have the newsletter mailed to a variety of other people including other Z clubs, local vendors and others. It was suggested that anyone who has Internet access can get the newsletter off the home page.

Michael White brought in some prototype business cards. The color version would be $105 for 1000 and $86 for 50. A motion to buy 1000 black cards with a blue logo was seconded and passed.

Activities

We would like to do a fall road trip. We haven't had anyone step up to lead this activity yet. Last year we went up to the ice caves and a great time was had by all. We need to have someone take the lead on this and pick a date. Les said he would organize it but wouldn't go if it's raining. We discussed a trip to Leavenworth. Les also has a place in Canon Beach on the Oregon coast, about a 4 hour drive from Seattle. We are shooting for the 19-20th of October. Les will communicate more details to Jim Lux for inclusion in the newsletter.

New Business.

There are a number of free places to put notices about the club.

We talked about a consistent phone number and address for the club. Several members attended the How to Start/Grow a Z Club tech session at the National Convention. One of the key points was that the club have a consistent address and phone number. Mark and Janene have an extra phone line in their home and they will talk to the phone company about the cost to hook it up and put an answering machine on it.

Paul brought the cling vinyl ZCCW window stickers. They are available for $2 each.

We need to get nominations for the elected positions for next month. We need to get people on the ballot for voting next month. We had quite a few folks who were nominated but declined. We need to get people to step up and take on these tasks or the club will die. If you don't want to run, you must not want a club.

Barry Breen would volunteer to be Treasurer or Vice President. Michael White will volunteer for President. Jim Lux may also volunteer for President. We discussed dividing responsibilities for some of the jobs. Mark nominated Janene for Treasurer. Tim will make up a ballot for the next meeting.

Meeting adjourned at 6:00pm.

—Tim Nevins, Secretary/Treasurer

The Technical Z

Deep Trivia

Every area of human interest has its dark corners guarding arcane information, useful to very few but implying vast knowledge when dredged up and injected into a dull conversation. Airplane design, for example, has the infamous Reynolds Number, just the thing to spring on an instructor during a flight review who thinks he/she's got you on the run.

In automobiles, the trivia winner simply has to be Ackerman steering. The mere mention of it in a room of would-be racers makes the conversational volume level plummet. To prepare you for such a day, here's a tantalizing set of online conversations that came through the Internet's 240 Z Car list. You don't have to understand it. Just memorize a few lines, toss them in at the next meeting and watch the fun.

(From Brian Kelley, answering a question by Doug Miller. The "< >" indicates a quote from another writer.)

< Question though: Does optimum theoretical Ackerman math curve depend on the MPH speed of the vehicle, or is optimum Ackerman only a function of turn radius and slip angle.>

Milliken covers it quite well:

"For LOW LATERAL ACCELERATION usage (street cars) it is common to use Ackermann geometry. ...This geometry ensures that all the wheels roll freely with no slip angles because the wheels are steered to track a common turn center. Note that at low speed all wheels are on a significantly different radius, the inside front wheel must steer more than the outer front wheel. A reasonable approximation to this geometry may be made...

"HIGH LATERAL ACCELERATIONS change the picture considerably. Now the tires all operate at significant slip angles and the loads on the inside track are much less than on the outside track. Looking back to the tire performance curves, it is seen that less slip angle is required at lighter loads to reach the peak of the cornering force curve. If the car has low speed geometry (Ackermann), the inside front tire

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Club Web Page Address Update

It would figure, just as soon as the Newzletter has been sent out, I have to go and make it inaccurate. :-(

From the subject line, you may have noticed that the ZCCW Home Page has moved. Well, actually, it hasn't moved, it just has a different, significantly shorter, URL. The new address is: http://www.sos.net/~mswhite

The old address has a page directing visitors to go to the new address, just in case anyone goes there. Please update your Bookmarks/Favorites lists to the new URL.

In the changing of the URL, I believe all the bugs are worked out. However, if you run across any (missing images, broken links, etc), please drop me a line.

Also, for anyone who has not checked the site lately, check it out. There have been some changes: Fixed the background so that text is far easier to read. Added "Last Updated" dates to the two main menus (Home Page menu & Mechanics Corner menu). As other sub-pages link to more information, "Last Updated" dates will be added to those menus as well. A Guestbook was added. This is semi-functional. It will send a guestbook message, but you have to watch your browser to make sure the message was sent. It will be updated in the not too distant future to correct this.

Further, if you have something to submit to the ZCCW Web Site, please let me know. I am always looking for information to post, especially Z-mechanical-related information.

—Michael White

The Technical Z

Continued

is forced to a higher slip angle than required for maximum side force. Dragging the inside tire along at high slip angles (above the peak lateral force) raises the tire temperature and slows the car down due to slip angle (induced) drag. For racing, it is common to use parallel steering or even reverse Ackermann...

"It is possible to calculate the correct amount of reverse Ackermann if the tire properties and loads are known. In most cases the resulting geometry is found to be too extreme because the car must also be driven (or pushed) at low speeds, for example in the pits.

"Another point to remember is that most turns in racing have a fairly large radius

See TECHNICAL page 5

Member Profiles

As announced in the last newsletter, we're introducing the first of our Member Profiles in this issue so you all can learn a bit more about fellow members, and so some of the juicier tidbits of Z lore might find their way into the public domain. Two unsuspecting ZCCW members were corralled behind a large pizza after the last meeting. Here are their stories.

Name: Michael White Age: 25

Z car owned: '73 240

How long have you owned it? 4 years, 7 months, and 6 days.

Miles you've driven it: 30,000.

How do you use your Z? To get from point a to point b.

How many miles do you drive a year? About 7,000.

Total miles you've driven in your lifetime: 100,000.

Total number of cars owned in your lifetime: 5.

Is your Z stock? The stereo system, carbs and exhaust aren't stock.

What kind of carbs are they? Dual downdraft Webers.

Has your Z been repainted? Yes, unfortunately.

Have you ever autocrossed? No.

What kind of tires are on the car now? 195/70 R 14's(?).

Have you taken any long trips in it? Seattle to Eugene, Oregon.

Any scary situations? Yeah. I had a guy stop in front of me. But the Z has that tight steering and I was able to steer away.

How fast was that? About 35.

Any dating or wife stories: My SO (significant other) says I spend more time on the car than I do on her.

Accidents? A guy was driving backward down the street and he backed into me. Not much damage though.

Also in Laconner I came out of a store and saw this big old delivery truck attached to the Z's front bumper.

Weirdest situation: When me and my SO were going to Portland (taking separate cars), and I had a flat and I flashed my lights and tried to get her to stop. But she just kept going.

Fastest you've driven the Z: 120.

Been upside down? Not driving the car, but working on it.

What's your favorite car? My 240.

What's your least favorite car? A Chevy Chevette Scooter.

What is the best designed car in your experience? Actually it's the Z. I fit perfectly.

What's the maximum speed you've been out of control: Never been out of control. Been lucky (knock knock).

What is the total number of vehicles you've driven in your lifetime? 9.

Member Profiles Part II

Name: Jim and Linda Tomisser

Age: 42 and Young

Z owned now: 90 300ZX 2+2. Before that I had an 87.

How many miles have you driven your current Z? About 5,000 miles.

How many miles did you drive your 87? About 50,000 miles.

What other cars do you currently own? A '82 Mustang and a '96 Blazer.

How do you use the Z? Pleasure. Absolute pleasure.

How many miles per year do you drive? 20-25,000.

How many total miles have you driven in in your lifetime? Jim: Well I was a heavy truck driver for 18 years...probably around 750,000 miles there. (Total

Continued next page

Member Profiles Part II (continued)

unintelligible). Linda: A couple hundred thousand maybe.

Total number of cars you've owned in your lifetime? Jim: About 11. Linda: Five.

Have you autocrossed or rallyed before? Jim: No, never had any contact with that.

Any long trips in the Z? Jim: We took a trip to Whistler and back. I went to California and back in my 87.

Any current problems? Yes. Low speed idle (on the '90). Its kinda rough. Idle seems to fluctuate. Above an idle it's smooth as silk. That's why I need to pick everybody's brain about where to take it, so I don't have to drive to Alaska to get it repaired. Someplace closer like Kent, or Federal Way, or South Seattle. The '87 ran beautiful. It got totalled out before I got the recall modification done.

Any horror stories or scary situations? Only when the '87 got wrecked. Linda took it to the post office and a woman in a '94 white Honda parked on the edge of the road waited 'til she got about 30 feet in front of her and then pulled a U-turn right in front of her. The car was worth $8000 and it would have cost $7500 to fix it. She walked away from it though.

Any humorous stories? (Laughter) Jim: Boy I'd have to think about that for a while. (Linda laughs.) Linda: I'm thinking about the animal farm. It was a big animal with a big nose and a big mouth. Jim: I think it was a elk or a deer or something. I said "Don't worry about it honey. Roll down your window and give him something. *They* don't bite." So I rolled the window down from my side, and before she could get her hand to the window this thing had it's head all the way in the window and she about ended up in my lap.

That probably qualifies as the weirdest situation in a Z. Any other weird situations? Jim: No that was the weird one.

Top speed you've seen in the car. Jim: About 90.

Ever been upside down in this car or any other car? Jim: Never. Never been in an accident. Take that back, haven't had an accident since I was 19 that was my fault. We did get one last year though. Actually that was kind of a weird situation...a woman pulled out right in front of us on the way home from work, caused $2800 worth of damage to the front of the car. I plagued the guys at the repair shop for two months: match the paint, match the parts. I just hounded them. Anyway we get it out, drive it for two months, and the Linda has the woman pull out in front of her and totals the whole front end.

Of all the cars you've had, what's your favorite car? Jim: Absolute favorites have been my Z cars. Absolutely the best cars I've ever owned. But...a close runner-up was my '41 Chev Coupe. Two door. Awesome car. I was a teenager. Canary yellow. Linda: My Chevy Blazer. I can see everything, you know.

What have been your least favorite cars? Linda: My first one: a little tiny two door compact, hatchback. Jim: I had a '65 Nova that would have been cool if the frame hadn't been broken. It was my first car and my friend said "I know this guy who's got this really good car, you can't go wrong, and it's only $250." I spent $250 on tires for the front end in about three months.

What's the best designed car you've ever owned. Linda and Jim: The 300ZX.

What's the maximum speed you've been out of control? (Behind the wheel.) Jim: Oh probably about 15 mph on glare ice. I was on solid sheet ice. Ever had the experience of losing all control and looking out the front windows and see the front tires not turning? At 15 mph you've got all the time in the world to look. It was on a hill in an El Camino and I stuck my head out the window and the wheels were not turning. Linda: I'm always in control.

How many different cars, trucks, vehicles of any kind have you driven in your lifetime? Jim: 30, 40. I say 40. Linda: Probably about 15.

The Technical Z
Continued

and the Ackermann effect is very small. In fact, unless the steering system and suspension are very stiff, compliance (deflection) under cornering loads may steer the wheels more than any Ackermann (or reverse Ackermann) built into the geometry."

Recommendation:

With the conflicting requirements mentioned above, the authors feel that parallel steer or bit of reverse Ackermann is a reasonable compromise. With parallel steer, the car will be somewhat difficult to push through the pits because the front wheels will be fighting each other. At racing speeds, on large radius turns, the front wheels are steered very little, thus any Ackermann effects will not have a large effect on the individual wheel slip angles, relative to a reference steer angle, measured at the centerline of the car.

(From Doug Miller. The "< >" sign indicates a quote from another writer.)

<"For LOW LATERAL ACCELERATION usage (street cars) it is common to use Ackermann geometry. ...This geometry ensures that all the wheels roll freely with no slip angles because the wheels are steered to track a common turn center. Note that at low speed all wheels are on a significantly different radius, the inside front wheel must steer more than the outer front wheel...>

<"Another point to remember is that most turns in racing have a fairly large radius and the Ackermann effect is very small. In fact, unless">

In autocross, the corners are very very sharp, but the LATERAL ACCELERATIONS are HIGH. Maybe to paraphrase Milliken, he meant high speed and low speed, not high and low LATERAL ACCELERATION? For instance, it is possible to have a 1.2 G corner at 20 mph, and if the wheel base were long, the turning radius differences would be greater than the slip angle compensation, and you might still end up wanting a lot of positive Ackerman? So

See TECHNICAL page 7

Re-Keying Old Z Locks

Prezident Paul forwarded the following piece by IZCC'er John Burgess on re-keying door and ignition locks. The early Z's are now 25+ years old, and after that long a time, some things just fail.

This technique will work for any L6 car, but I haven't looked at any Z-cars later than '83 so I can't say for sure that you can get parts from a 300ZX for an L6 type car. I know: you can go to a locksmith, you can go to the dealer, you can go to Pep-Boys and try to buy aftermarket locks, you can sell your car to an unsuspecting boob or you can get someone else to do it for you, but this is for those who don't want to do any of those things. Judging by the response I got from my post a week ago, there are many of us who would just rather suffer and do it ourselves and recycle the junk at hand.

Scenario 1. You have access to a parts car with one key that works all the locks and you want to make them work on your driver. Problem is the cars are different years, and the locks do not interchange.

This makes no difference, as all you want from the parts car are the little brass sliders from the lock cylinders.

1. Remove locks from parts car.
2. Remove locks from your ignition and door(s). (The door locks are retained by a little metal spring clip you get at from inside the door by removing the door trim panel. They just slide out of a groove in the lock mechanism)
3. On driver and passenger doors, there may be a metal (stainless steel) plate on the face of the lock. This is what holds the lock together. It is bent over the outer cylinder of the lock at the edges. Carefully bend back the edges just enough so you can pry this stainless steel cover off the lock. I used a small electronics needle nose pliers for this. Be gentle, you can damage the soft metal cylinder doing this. You can also dent or otherwise deform the stainless cover. Remove the inner cylinder from the outer cylinder on both locks.
4. Note the little brass sliders in the inner cylinder. Remove the little brass sliders from the inner cylinder of the lock that will be going on the driver. Now remove the sliders from the parts cylinder and put them in the slots on the driver. Note that they must go in in the same order/location in order for the key from the parts car to work on the driver. Also note the little springs in the cylinder (under the sliders, on the edge). Make sure you don't lose these and they they are in position before you insert the sliders.
5. Reassemble the lock. Lubricate the lock (for those in cold weather climates, use graphite type lock lube), test the operation of the lock.
6. Put stainless steel facing plate back on the lock. It helps if you have a small panavise (jewelers type vise with brass jaw option) to hold it together while you stake the outer lip of the face plate back around the outer lock cylinder. I used a small pin punch for a staking tool and little piece of 1" dia. aluminum scrap with a longitudinal hole on the backside of the lock so it wouldn't "walk" out of the vise. If you have messed up the edge of the outer lock cylinder when you took the faceplate off, you may have difficulty putting it back on. In that case use a jewelers file or Dremel tool to smooth and reduce the thickness of the outer lock cylinder edge. Finally test the lock again for operation and reinstall it on the driver.
7. The ignition lock is a little harder. On my cars, there are security screws holding the lock to the steering column. I removed the steering column so I could have some room to work, and drilled the heads of the security screws off so the lock could be removed from the column. You may not have to remove the steering column or the lock from the column to do this part, though. In fact, you may want to just move the whole ignition from one car to the other if you can and avoid the following disassembly procedure. If the locks won't swap out intact, read on:

Again, you will need to remove the face plate from the lock. The faceplate is that part that has the acc/lock/run/start around the keyhole. I simply used some curved jaw vice grips to rotate and pull off the face plate. With some finesse, this can be done without deforming or damaging the face plate. Depending on the year, you may or may not have some little gizmos just under the face plate which provide the key-in-ignition buzzer. Carefully remove these little plastic parts without breaking them. What you are going to do is slide out the inner workings of the lock from the outer housing. The inner workings are retained by a small spring loaded pin which can be seen from the side of the outer housing. You will see a very small hole with a pin in it. To release the inner working use a small pin punch to push this pin in, while trying to pull the inner workings out with some needle nose pliers on one of the ears protruding from the inner housing. Be gentle as these are again very soft and fragile. Do this to both the driver and parts car. The idea is the same here, you want to replace the brass sliders on the lock your keeping with the sliders from the donor lock which you have a key for. Make sure they go in the same order as they are in the donor lock cylinder. As they say in the Haynes manuals, reassemble in reverse order!

Scenario 2. What if you don't have a key that works in the parts car? What you can do is this. You will need to file down the inside edges of the sliders that are being pushed to far by the key. For the sliders that are not being pushed far enough by the key, put a slider in that hasn't been filed down as much as the slider in that position. Use the donor car for spare sliders. You also may be able to rearrange the order of the sliders you have on hand in order to get the proper size for the particular part of the key. This is trial and error, file - fit - file -fit, but no big deal really.

Anyway, it is a good idea to have some extra sliders because, well, you might mess a few up!

ZGrinZ

(While not a Z story, you might find the following tale automotively humorous. It's true! I saw the story! JWL)

Years ago when I was traveling in England, I chanced upon the following story in a local paper. Though the subject of the story was a Volvo, which bears little resemblance to a Datsun Z, I think you'll appreciate the story, and might find a bit or two of useful information in it.

A certain Mrs. _____, somewhat advanced in years, decided it was time to buy a new car. Having owned only Volvo's, she called her local Volvo dealer, traded in her old Volvo for a new one over the phone, and arranged to have the old car picked up and the new one delivered. True to his word the dealer picked up the trade-in, parked the brand new Volvo in the woman's driveway, and showed her the features of her new car.

Delighted, the woman decided to take her new Volvo for a test drive. The new car was different than her old one, but she succeeded in starting the engine and putting the transmission in reverse to back out of the driveway. The Volvo proceeded to rocket backwards down the driveway, across the road, through a ditch, through a fence, and down a steep embankment to come to rest upon some railroad tracks. Shaken, the woman managed to exit the car just before it was T-boned and demolished by a passing train.

"The car was an automatic," the woman said in retrospect, "and I've always had manual transmissions. I was surprised by how much power it had."

Remember this the next time you loan your Z to a friend.

Early Z parts Catalogs Available!

A year or so ago, Rex Jennett of the Internet Z Car Club printed up a parts catalog for early Z's and sold most of them. If you would like the ultimate parts guide to early Z's, you can't beat this deal. Rex's latest message about his reprint follows:

"A couple weeks ago, I posted a message that I still had five parts catalogs left. Unfortunately, there was a lot more interest in those than I expected, and they sold quickly. However, since there WAS so much continued interest, I've decided to make another run of them.

"If you're interested, send me your first and last name, and the number of copies you want so I make enough for everyone. Then I'll let you know where to send your check or money order for $36 U.S. for each catalog (Canadians, please send international money order for $40 U.S.)

"Here's a description for those who missed it the first time:

"The catalog is ~640 8-1/2 x 11 pages, with all the exploded diagrams, part numbers and descriptions of all the parts in the 1970-1974 North American (sorry oz and uk) 240 and early, small bumper 260Z's. This makes it easy to look up the parts you need, then order them from your dealer by part number!

"These quality reproductions are spiral bound so they'll lay flat, and they have VINYL covers front and back for good durability. The price is $36, including UPS ground shipment to anywhere in the U.S. Payment is acceptable by check or money order.

"So send me an e-mail if your interested. You can also reach me at 415-961-1618 if for some reason you can't reach me by e-mail (jennett@svpal.org)."

And just in case you're wondering how good these catalogs really are, here is an unsolicited endorsement from Wayne Burstein:

"For those of you that need an extra push, this is an excellent opportunity — Rex did a fine job with the catalogs."

"Even if you don't care about having the part numbers, the exploded diagrams are invaluable when trying to put together something you did not pay enough attention to when you took it apart. They have much more detail than even the factory manuals."

—Wayne Burstein

The Technical Z
Continued

the amount of Ackerman desired is a function of turn radius and slip angles, which can also be considered a function of G-force and MPH. Which leads me to believe that desired Ackerman IS a function of MPH, which is exactly what Brian said.

(And now Brandon Thomas, a Formula SAE'er jumps in:)

Neil brings up an interesting point on cornering....which I believe displays the benefits of Ackerman versus running toe out and dropping the whole situation, Ackerman gives the toe correction in cornering when it is desired but not the scrub in a straight line. But the amount of Ackerman is still eluding me in the a mod project I work on. We tried several setups last year and proved ourselves wrong, we think.... we packed in a lot (150%) and didn't like the effects, some of this was undoubtedly due to compliance in the steering system, the steering arm connection was not the best and when driving you could actually feel the fronts fighting each other! We lowered the % and liked it... what I am wondering is if the steering construction had been better, would insane Ackerman have worked on these extremely tight turns, I would love to get my hands on some turntables and measure (accurately) some of this stuff once a car is built! We ended up running a lot of Ackerman with toe out and it seemed to work well, we chewed up tires pretty bad but that's what parking lots are for isn't it? Milliken assumes everyone is designing a car that can achieve 4 g's of cornering force, the whole steering argument is centered around a car with 20,000 ft/deg torsional and big aero. Traveling around 50 ft. radius turns with the inside front off of the ground! Maybe next year, but for now I have to go against the "book"..... any other autocrossers see similar trends? How about active steering with variable gain pots, feedback from data ac, lat and long g's, wheel speed, rate of wheel turn, hhmmmmmmm.....

See TECHNICAL page 8

The Technical Z
Continued

(And finally Neil Roberts jumps in to):clean things up

I found Milliken's hand waving about large turn radii a bit silly. The minimum speed, even for Indy cars, on most road courses is around 40 mph. So, tight corners are clearly a fact of life on road courses and the whole show for autocrossers.

One bit of information that nobody has bothered to put in print (until now) is that the geometry involved in cornering produces front toe in and rear toe out. This is due to the fact that the inside tires are closer to the turn center than the outside tires. When you sketch this for yourself, make sure you draw the slip angles of the front tires correctly; the line perpendicular to the tire must pass aft of the turn center due to the slip angle.

Consider, for example, a live rear axle. The tires are parallel to each other at all times, but the inside slip angle is larger than the outside because the inside tire is closer to the turn center. So, relative to the paths of the tires, the axle effectively has toe out! A tighter turn exaggerates this effect. The same phenomenon produces front toe in.

I suspect the reason that good setups include front toe out and rear toe in is that this compensates for the effect described above. The optimum toe settings depend on the turn radius that you want to optimize the car for. When converting my FF road course setup to autocross, I use approximately twice as much front toe out and rear toe in.

Ackerman steering geometry provides the possibility to optimize the front toe setting for the full range of turn radii.

OTOH, Teo Fabi couldn't tell much difference when we changed Ackerman at Long Beach (28mph hairpin). He said that was the first time in his driving career that anyone had ever changed Ackerman for him!

There! Don't you feel more automotively intelligent?

ZGrinZ II

This ZGrinZ is forwarded by Prezident Paul from Portlander Zane Stabley of the IZCC.

You might be a racer if....

• You know how to properly pronounce "Ligier."
• You walk proper lines through the grocery store.
• You've paid $4.00 a gallon for gas without complaining.
• You buy new parts because you don't know where you put the spares.
• You find that you need a new house because the neighbors are threatening violence if you park one more vehicle on the street or in the front yard.
• The requirements you give your real estate agent are (in order of importance):

1) 8 car climate controlled garage with an attached shop.

2) Outside parking for 6 cars, a motorhome, a crew cab dually, a 28' enclosed trailer and a 34' 5th wheel.

3) 3 phase 220V outlets in the garage for your welder.

4) A grease pit.

5) Convenient to a hazardous waste disposal site.

6) Deaf neighbors.

7) Across the street from a paint and body shop.

8) Some sort of house with a working toilet on the property somewhere

• You measure all family acquisitions in terms of the number of race tires that could have been purchased.
• You hear "overcooked it" and think "off the track" instead of "Luby's."
• You sit in your race car in a dark garage and make car noises and shift and practice your heal and toe.
• You look at the purchase of tools as a long term investment.
• When asked about top speed, you answer in lap times rather than mph.
• You have an immaculate car which you drive one day a week, and the vehicle that gets you around the other 6 days is rusted, covered with duct tape, and has a pair of Vise Grips holding the clutch cable together.
• You have enough spare parts to build another car.
• More than one racer supply house recognizes your voice and greets you by name when you call.
• You have car parts in your cubicle at work.
• The guys at the local tire store laugh when you come in.
• You're registered for wedding gifts at Racer Wholesale.
• Your Christmas list begins with a Webster gearbox and Carrillo rods (and your 'significant other' knows what these are).
• You've ever repaired your lawn mower with AN hardware.
• Your lawn mower has a fuel cell.
• Your bathroom magazine pile consists of parts catalogs, books written by Shelby and Lauda, and 400 car magazines, none of which have centerfolds.
• People know you by your class letter, car number, and car color.
• You plan your wedding around the race schedule.
• You astound the clerk at Sears by bringing in a snapped breaker bar every other week or so.
• Your family brings the couch into the garage so they can spend some time with you.
• You refer to the corner down the street from your house as "Turn One."
• You look at the fire hydrant at that corner and see an apex marker.
• You enjoy driving in the rain.
• You buy real cheap tires for your street car, so you can save $$$ for the real (race) tires.
• You can't stand understeer.
• You think that traction control and ABS are for those who can't drive.
• You've ever tried to convince your wife you needed that flow bench to fix the air filter on her station wagon.
• You save broken car parts as "momentos."
• You've found your lawnmower runs pretty good on 108 octane.

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