

der Gasser

Apr '81



Porsche Club of America: RIESENTÖTER



Next Meeting: Apr 29, New site!

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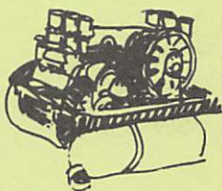
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NEXT MEETING 4/29, 8:30

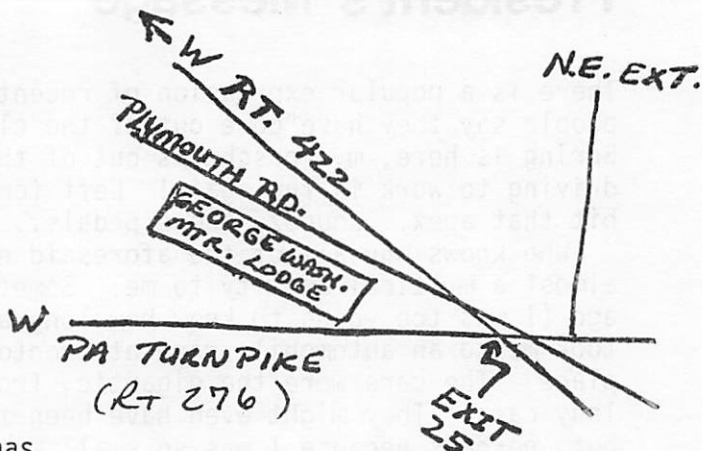
Due to economic forces, our room at BB Bricks is being converted into a shop and we have to relocate. Our next session will be at the George Washington Motor Lodge at Exit 25 (Norristown) on the PA Turnpike. Our room has a large window overlooking

the parking lot for those who want to watch their cars! Although the meeting starts at 8:30 we are encouraging you to arrive earlier to have dinner since GW is our host for this session.

We have a tentative committment from Bruce Jennings to speak with us on the 29th and as der Gasser goes to press, our VP is working to confirm those arrangements. Bruce is known as "Mr. Sebring" for his participation at that event. He is also described as someone with three 356's with different transmission set-ups for the various hill-climbs - seems he got tired of changing gear ratios! It has been alleged that Bruce has a dozen ratchets for his sockets for the same reason!!!

Our option play for that night is Bud Groner who is now teaching fuel injection at the PennCo Technical Institute, in Bristol, PA. Bud owned and managed the Langhorne Speed Shop for 32 years and is a specialist in race engine construction. He will talk on (1) Pulse/ram tuning, (2) fuel injection, and (3) speciality equipment such as trick cam shafts, etc.

See you the 29th!



President's Message

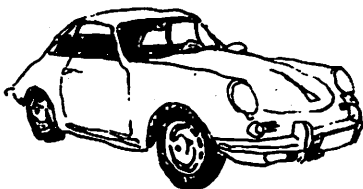
There is a popular expression of recent vintage where people say they have "come out of the closet." Well, Spring is here, my Porsche is out of the garage, and driving to work is fun again! Left foot braking... hit that apex...squeeze those pedals...slow those hands.

Who knows why all of the aforesaid expressions have almost a mystical quality to me. Sometime long long ago (I was too young to know how long ago) my father took me to an automobile race at Trenton or some such place. The cars were the gigantic, front engine, USAC Indy cars. They might even have been midget racers but, perhaps because I was so small, memory tells me this was not the case.

The ground shook, the noise was overwhelming, the colors vivid, and the air saturated with a strange sweet smell. All was new then and made such a lasting impression that I remember it as though it were minutes ago. Ever since, automobile racing has retained its special fascination with road racing right at the top of my list.

During my youth I adsorbed many books outlining the methods of auto racing. But as is true with many things, learning from a book is not the same as doing. Through PCA, diagrams and explanations of proper cornering technique have taken reality. Their proper application can be judged by the electronic timer at a sprint or a glance at the tack exiting a corner at Lime Rock, Summit Point, Pocono, or Watkins Glen. These are just a couple of the remarkable opportunities open to members of Riesentoter.

All of us have our own reasons for owning a Porsche and for being members of PCA. This diversity is focused on the Porsche automobile. Each of us has equal opportunity to use the Club to fulfill our particular interests or even our childhood fantasies. And it is up to each of us to take advantage of it.



Axel

Holberts

Euphoria is the best word I could find in Webster's to describe the ambience that prevailed in the first rites of spring, formally known as a Riesentoter Tech Session. Holberts' service bays were stacked with our favorite machinery as all types of Porsches arrived before 9:00 AM, their owners then crawling over to the coffee pot for a cup of eyeopener.

Before long, cars were up on the lifts and clanking wrenches, clicking rachets, and grunting Saturday mechanics marked the start of the day's games. This could hardly be called work with everyone wearing broad smiles and laughter carrying frequently through the playground - er - shop. Wheels were pulled, brakes, oil, and tires replaced, engines tuned, chassis aligned, valves adjusted, a front bumper bolted on, and a lot of mechanical gossip traded. Tina T. forgot where her coil wires went and Brody banged his shin with a lug wrench while Melody Lyle was taking his picture.

Bob Koerbel gave an interesting demo of a W 10 service on Larry Bruce's 911 while answering many questions, pointing out things to look for, and demonstrating a valve adjustment. Only 11 more sessions and Larry's valves will be done!

Walt Carter of Holberts' Service Department was there for advice which was most appreciated. His suggestions for beating high engine temperature in the summer when running the air conditioner are valuable. Something else, my owners manual calls for 30W oil but Porsche issued a service bulletin in '78 recommending 10W50 for all air-conditioned cars. Interesting.

Our VP, Tina Tucillo, gets the Greasy-Hand-Arm-Elbow Award for the grime she accumulated while performing while performing what may have been a complete W-10 on her 914. Late in the afternoon, Vern Lyle and others pushed soap, water, and brooms to clean the area.

The best part of the day was talking Porsche with some really fine people while tinkering on our motors. A Riesentoter Tech Session has to be the most fun you can have without getting arrested...again, Thanks Holberts!

Ted Tomb

Ed. Note: Larry Bruce sent Holberts a formal thank you for letting us in their doors; Ted Tomb's essay, however, is really the best thanks.

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The museum is open from noon-4 P.M. and has mini-tours of the 196-room estate. There are tours of a 2 hour duration available on a reserved basis. They cost \$4 per person and children under 12 are not permitted on this tour. Call 302-656-8591 to make reservations for the 2 hour tour.

Those interested in seeing the grounds can walk quiet pathways or take a 45 minute guided tram tour.

We will meet at the Gateway Shopping Center in front of BB Bricks and travel parade style. If you want to meet us at Winterthur, call 789-0820 after 6 PM for directions. We will be at the Winterthur Information Center about Noon.

We thought it would be enjoyable to end the day by having dinner at a nearby Inn. If you can join us, please let us know by May 12th by calling 789-0820, again after 6 PM. In the event of rain, a Fall trip will be scheduled.

Carol & Bob Koerbel

LEASE YOUR NEXT

PORSCHE



NORMAN ROBINSON, PRES.
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Calendar

- | | | |
|------------------|--|-----------------------------------|
| Apr 17 | Conn Valley Drivers Ed | Lime Rock |
| Apr 18 | Potomac Drivers Ed | Summit Point |
| Apr 25 | Central PA Swap Meet | Mechanicsburg, PA |
| Apr 26 | Valley Forge SCC/DVSA Sprint | Montco Comm College |
| Apr 29 | Riesentoter Gen. Mtg | Geo Wash. Motor Lodge, Norristown |
| May 3 | Riesentoter/DVSA Sprint | Bazaar, Warrington |
| May 14 | Conn Valley Drivers Ed (½ day) | Lime Rock |
| May 15 | Schattenbaum Drivers Ed | Lime Rock |
| May 16 | Conn Valley Drivers Ed Time Trials | Lime Rock |
| May 17 | Winterthur Trip | |
| May 17 | Old York Rd. SCC/DVSA Sprint | |
| May 27 | Riesentoter Gen. Meeting (Winetasting) | |
| May 31 | Valley Forge SCC/DVSA Sprint | Monto Comm College |
| Jun 5-7 | NNJ Drivers Ed | Pocono |
| Jun 14 | Riesentoter/DVSA Sprint | |
| Jun 20 | Potomac Drivers Ed | Summit Point |
| Jul 26-
Aug 1 | Porsche Parade | Asheville, North Carolina |
| Aug 15-16 | NNJ Drivers Ed | Watkins Glen |
| Aug 21-22 | Chesapeak Challenge | |

Hillclimbing



Season On Hold

This is the time of year when nothing much happens. Licenses are renewed and rumors exist as to what is happening in event scheduling. It's also too early to work on cars in unheated garages and it's IRS time.

The one real bright spot, which if it happens, will really rejuvenate PHA, is that the independent sports car clubs (those not affiliated with SCCA) may have event insurance available at rates they can afford. These clubs sponsoring hillclimbs were the strength of PHA in the old days when we used to have 8-10 climbs per season with more than a majority of those run by the independents. In those days we had such events as Pagoda, Fleetwood, Rose Valley, Springtown, Pine Grove, Topton, Jefferson, Tuscorara, Red Rock, Schaefferstown and on and on plus the SCCA standbys of Weatherly, Giants, and Duryea. Let's all hope that development comes about.

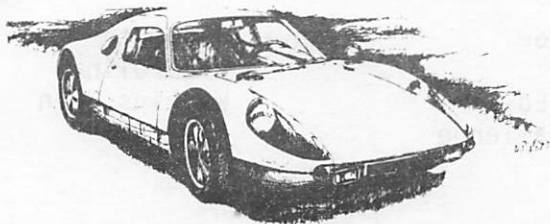
On the scheduling, here's what's happening. All are tentative.

Watkins Glen Solo I/Drivers School	May 15-17.
Pocono Solo I	May 30-31.
Farm Show Solo II, Harrisburg	July 25
Duryea Hillclimb	Sept 18-20
Weatherly Hillclimb	October

Other events are being discussed but are so preliminary as to not even be tentative.

Keep it between the trees...

Jess Holshouser



For Sale

- 4 original 14 " 911 mags with or without XWX Michelins.
Best offer. 215-824-0508.
- For '73 911 T...Front bumper with trim \$100; bumperettes,
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ing lites & bumperettes, \$25. Larry Bruce 667-6115,
(days) & 353-5807 (eves).
- BLACK BEAUTY ... '71 T Targa. Completely redone,
2.0 liter S engine, new 225 mm clutch, S instr.,
S susp., airport gears, new drive train, synchros,
8" forged alloy wheels with XWX Michelins, CR 2000
D FM/AM auto reverse cassette, Scheel seats.
\$12,000. Call Barry @ 609-448-3000.
- '74 914 brown interior...complete & perfect; misc 914
stuff; 356 gears, 356 cab lid, 901 gears, 2.0 914
alternator. Call Steve Limbert 337-2479.

Wanted

- Stock sway bars for '74 914 2.0. Also stock muffler
and Nomex bra for same car. Call Tina Tucillo,
609-394-8410.
- Escort Radar Detector. Call Hanno Schill 302-335-3911
x 257 (days); 302-378-4391 (eves); 215-637-1275(wknds)

Pocono

Porsches at Pocono International Raceway: June 5,
6, & 7, 1981.

PCA members from all zones are invited to re-
gister for NNJR's Pocono Drivers Ed & Autocross.
Two full days of drivers ed on the road course,
a beer blast, plus time on the famous tri-oval.
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No metered mail accepted. Please list names of
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mail to Bob Moir, 3 Dells Drive, Denville, NJ
07834. Call 201-627-3106

Technicalities: Oil

The failure of a crankshaft is probably one of the most feared engine problems. Since we are all concerned about engine failure, lubrication has always received a lot of print. Everyone has opinions based on experience, theoretical knowledge, or someone's input. I have not seen much technical data about lubrication so one could judge for himself what is best for his auto. I would like to present such data from technical publications, books, and approved engineering sources.

Let us touch upon the classification of bearings most often used to support the crankshaft - the journal bearing. Keep in mind that there are other types - thrust bearing, sleeve bearing, roller bearing, etc, which are not covered here.

The journal bearing is made up of two parts, the journal which is the inside cylindrical part and usually rotates and the bearing, or surrounding shell which is usually stationary.

How does the journal work? Imagine the journal (inside) is at rest in its bearing housing. Assuming we have some clearance between the two parts, this area will be filled with oil. Yet at rest, the journal rests on the bearing in metal-to-metal contact at the lowest point. As the fly wheel is turned over, the journal with its load (its own weight, frictional drag along the cylinder walls, compression of the air/fuel mixture) begins to rotate clockwise and there is a rubbing of metal-on-metal. This will cause the journal to climb upwards towards the right of the journal (counter clockwise). The journal rotation and movement to the right, starts into the oil film which separates the rest of the journal. As it moves into the oil film, the journal soon slides to the left and assumes the operating position one would expect of a clockwise rotating piece. See Figure 208. The faster the journal rotates, the more oil is carried into the converging sections of the bearing/journal and the thicker the oil film. Such action is considered thick film lubrication. Most wear on the thick film lubrication often happens at engine starting, not while running. For this reason always start the journal bearing under the least amount of load.

Viscosity. The most important property of lubrication in the case of thick film lubrication is viscosity. This

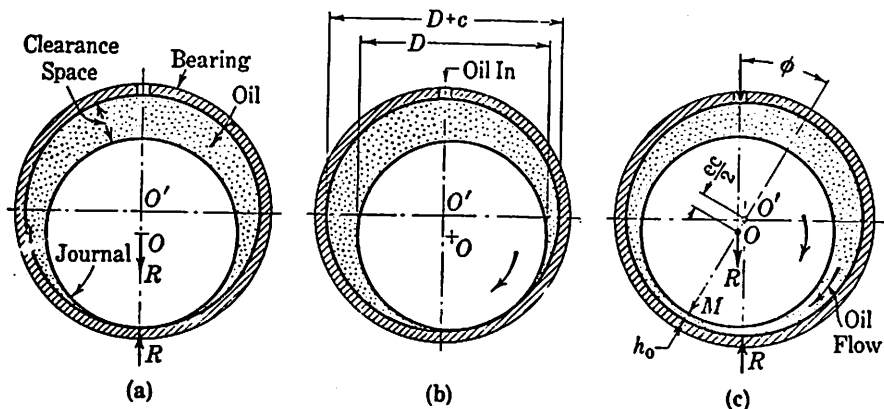


Fig. 208. Mechanism of Lubrication. The angle of eccentricity ϕ locates h_o .

is true because the force the oil film can take and keep its thickness is directly related to viscosity. The minimum safe film thickness depends to some extent on the roughness of the surfaces and the deflection of the journal or bearing. The journal can run safely on a very thin film if the surfaces are smooth. Since we are talking about a film thickness of less than .001 inch in most cases, a particle the size of .002 will grind against the bearing and journal. Properly selected bearing metals will deform with the particle and a good oil filter will eventually stop it in its travel around the lube system.

Unfortunately, viscosity changes with temperature by a factor of 2000 from a temperature of minus 30 to plus 250 degrees F. Quite a difference! See Figure 16-10, 6.

Lubricants. Animal and vegetable oils are lubricants. Modern petroleum oils due to their greater stability are favored but even these have additives to reduce the rate of oxidation, detergents to clean engine surfaces, anti-corrosive chemicals to prevent corrosion, dispersants to keep decomposition products in a colloidal state, extreme pressure agents to halt rust, pour point depressants to lower the pour point, viscosity index improvers to lower the rate of change of viscosity with temperature, and foam inhibitors.

Synthetic lubricants have high viscosity indices (over 150) and resist oxidation at over 400 degrees F. Today's engines that run at high temperatures may be equipped with oil coolers or should use oils that are stable at high temperatures or both. Bearing surfaces hold up well to 350-400 degrees F but natural petroleum oils oxidize at 250 degrees F, limiting their usefulness.

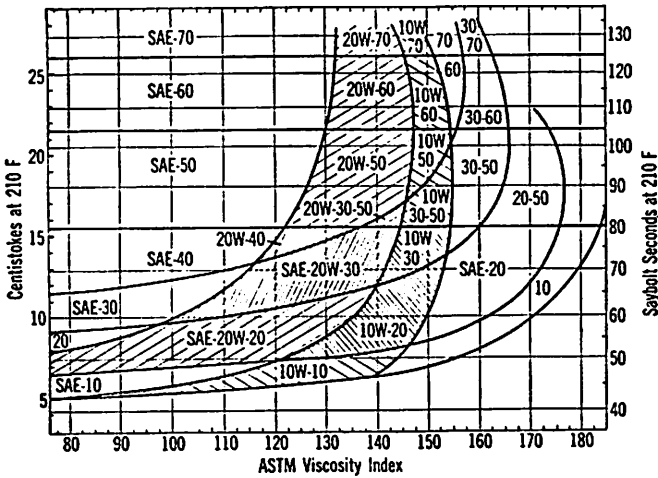


Fig. 16-10. Viscosity index and viscosity of various grades of motor oil. (From Van Horne.)

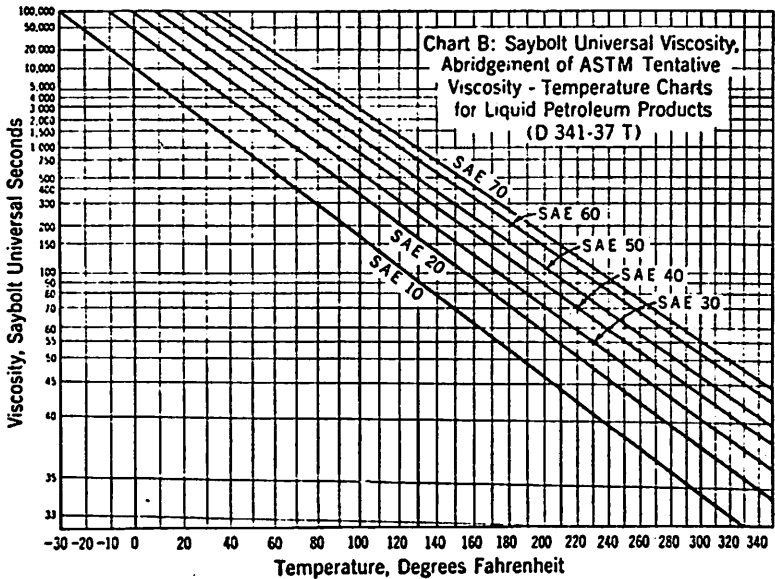


Fig. 16-6. The viscosity-temperature relationships of lubricating oils.

It is well known that certain petroleum products from various areas exhibit different viscosity changes with temperature changes. Less change in viscosity means more reliable lubrication. See Table 16-2.

TABLE 16-2
 VISCOSITY INDEXES OF TYPICAL OILS
 (Sinclair Oil Company)

SOURCE	VISCOSITY INDEX	
	Conventional Refining	Solvent Processed
Gulf coast.....	0- 30	40- 70
California.....	0- 35	40- 65
Mid-continent.....	65- 75	80-100
Pennsylvania.....	95-102	100-110

Other Factors. Full pressure, splash, modified splash are the most practical methods to lubricate an auto engine. Most use the full pressure system since cooling of the bearing is facilitated. From the standpoint of lubrication it does not matter how the oil enters the bearing as long as there is a sufficient quantity because the oil pressure generated within the bearing has no immediate relation to oil pump pressure.

Oil temperatures may be a better indication of a healthy bearing than oil pressure. Anyhow, conventional petroleum oils will fail to lubricate long before the bearing temperatures meet their design limits.

- Summary.
1. The viscosity of oil is its most important characteristic.
 2. Higher RPM's at constant load increase the oil film thickness in the bearing.
 3. 250 degrees F is the useful operating temperature limit of natural petroleum oil.
 4. Synthetic oils having proper SAE codes (CC, SE, etc.) have higher temperature limits than natural petroleum oil.
 5. Oils with the least change in viscosity with temperature have the highest viscosity indices.

References.

- a. Design of Machine Elements. Virgil Faires, Macmillan Co., NY, 1957.
- b. Internal Combustion Engines. Edward F. Obert, International Textbook Co., Scranton, PA 1955-
- c. VW & Porsche, July/Aug 1980

A W-10 (Holberts) List

- Change oil & filter
- Standard trans - change oil
- Auto trans - check fluid, adjust/replace vac. mod.
- Check all other fluids
- Lube all door hinges, stays, window channels, hood & trunk hinges, latches, linkages, & seat tracks.
- Install dry gas
- Check wipers, service washers
- Check tire pressure.
- Check all lights, replace bulbs
- Adjust headlights
- Check rear window defogger, heater, cooling system, exhaust system, air conditioning, A/C bushings & mountings
- Adjust wheel bearings
- Tighten drive axles
- Check shift linkage
- Check brake system completely
- Adjust clutch, brakes, handbrake
- Service disc brakes
- Tighten seat backs, door & window handles, seat backs, door latches
- Check battery water, tighten cables
- Engine tune up
 - Check compression (hot)
 - Adjust valves; check/adjust belts
 - Replace plugs & points if needed
 - Adjust timing & dwell
 - Replace gas filter, air filter if needed
 - Adjust carbs, check motor mounts
- If fuel injected
 - Check/adjust sensor plate C15
 - Adjust CO, fuel throttle
 - Check timing of injection pump
 - Clean filter screen in pump 69-73, reset EGR counter
- Road test
 - Check operation of entire car, radio, & cruise control.
- Auto trans service every 30,000 miles
 - Change fluid, filter, & pan gasket

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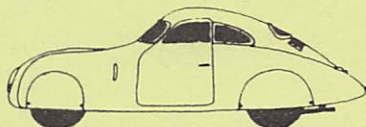
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