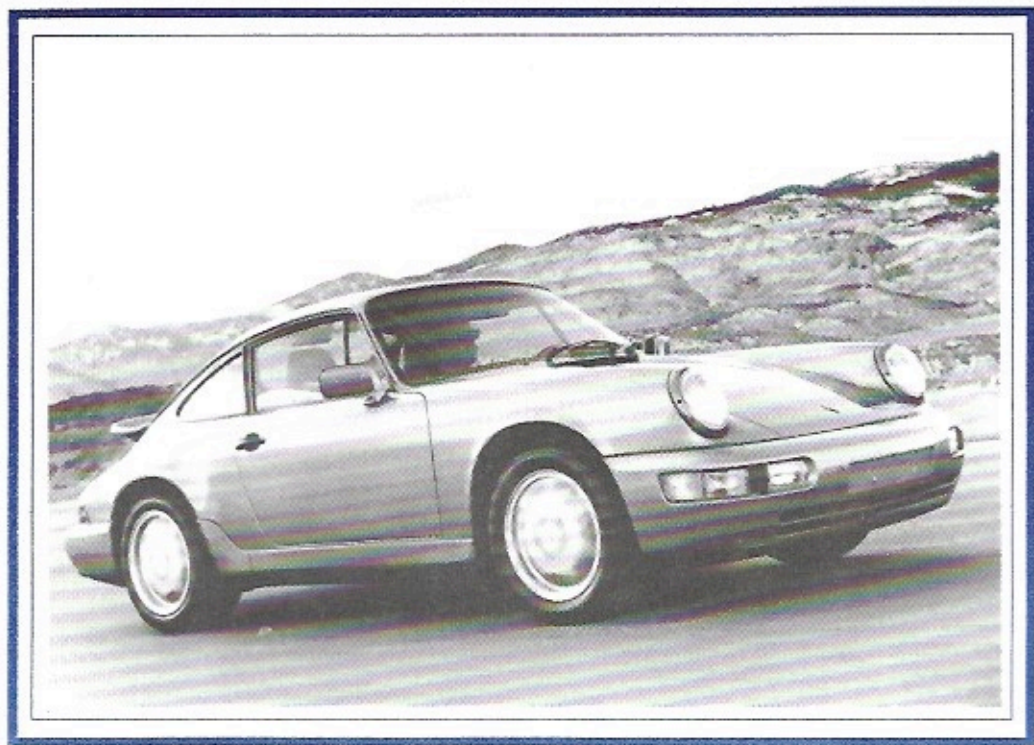




War Bonnet Region

WAR WHOOOP

May - June 1990



PORSCHE *Club* OF AMERICA

On the Cover

The 1990 Carrera 2 is the successor to the 911 Carrera, however it is almost a totally new car. It is different from the original in more ways than it is like it.

The Carrera 2 is 10 times more expensive than the first 911. If you adjust for inflation and compare performance and value I wonder if it is 10 times better. Any comments?

Editor : Glen Hoskins

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1990
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Why a Turbo?

A few years ago I planed to go to Colorado Springs for the Porsche Parade. Having been through the area in a normally aspirated car and the resulting lower performance at the higher altitudes I wondered what effect I could expect on my 944T. What follows is a compilation of the limited research I did and might provide some insight for some of you that may consider a turbo charged engine in the future.

To get everything in perspective I want to start with the normal 944 engine. When Porsche started the development of the four cylinder engine they were looking to fill a moderate space with a low weight, high torque engine that could provide legal emissions and low maintenance. The Porsche 5 liter V8 had considerable development behind it and components seemed logical to use.

But, four-cylinder engines manifest the "second order" vibration. This comes from the difference in acceleration of two pistons ascending and two pistons descending. The swing of the crank pins on the ascending pistons, operates to shorten the connecting rods as the crank shaft passes top dead center and quickens the pistons downward movement. The swing of the connecting rod big-ends delays the ascending pistons movement upward as the crankshaft passes through bottom dead center.

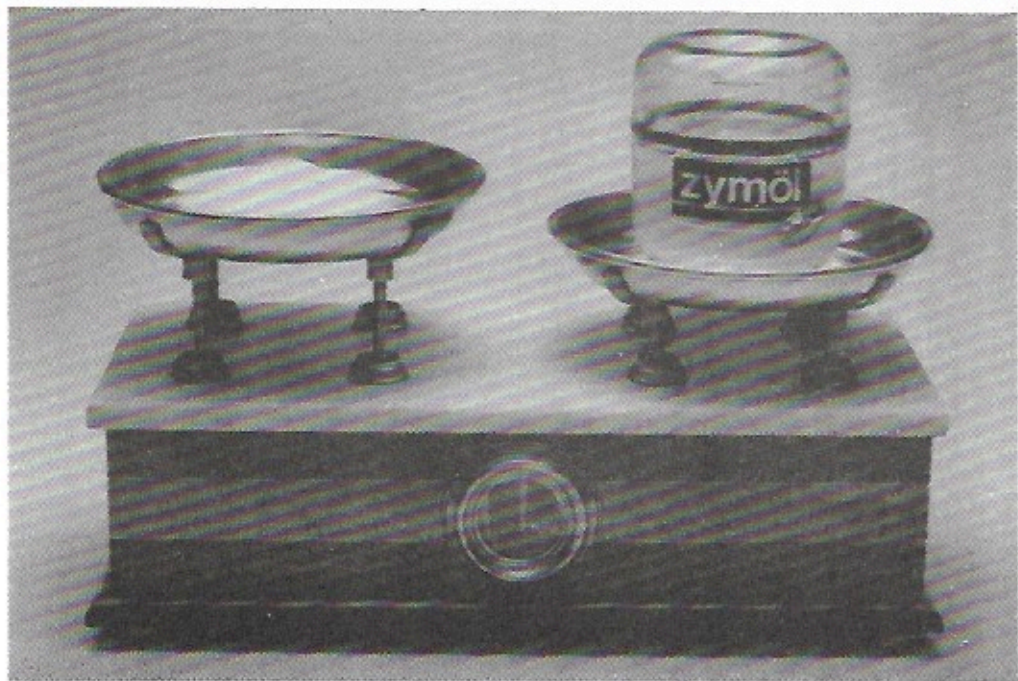
This variance displays free forces, which can amount to two tons in a BMW two liter engine. The vibrations are produced in a vertical direction at a frequency of 2X the crankshaft speed because the pistons change direction two times per revolution.

So, two tons in a 2.0 liter engine, and Porsche at this point in time is developing a 2.5 liter power plant! At that time it would be the largest four cylinder engine made. Enter Mitsubishi. A license is purchased allowing Porsche to include the two counter rotating balance shafts in the new engine. Running at 2X crankshaft speed and located to provide the best engine range they effectively eliminate vibration.

Porsche has produced the first of what will become a prized array of four cylinder engines for the 944. The next will be the turbo and the normally aspirated four valve. Development continued and the result was increased displacement for the four valve and the normal engine.

Porsche wasn't new to turbo charging production cars. The 911 turbo carrera entered the US production scene with the 1976 model year. A blazing car when driven to 9/10ths, and hazardous to life and limb also. The next turbocharging was with the 924. The Audi 100 engine won little love or praise from owners. The boost range was short and the turbine life not much better. The Porsche developed 4 was the chance to make it up to the enthusiast.

The easiest way to get a better job out of a small displacement engine is to use forced induction. The addition of more air and more fuel adds more power. This can be achieved from two directions. Turbocharging or supercharging. A brief view of the supercharger shows a total mechanical operation. The compressor is usually operated by a belt from one of the accessory points like the alternator.



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The supercharger does use some horsepower from the engine, as much as 10%, but with a return of up to 30% increase in torque.

The turbocharger is driven by exhaust gases on one side of the spool and compresses air on the other side. The turbo isn't a free ride though. The exhaust gas wants to exit the tail pipe, with the turbo in the line a back pressure builds on or off boost. To some degree this hurts efficiency. Also, with newer turbines, the inlet on the compressor side may block down when no demand for boost is made, allowing the turbo to spin free so to speak. With demand for boost the block opens and the inherent turbo lag shows as pressure begins to build. If engine rpm's are below effective boost range the whole procedure can seem to take forever.

By nature a turbo doesn't give enough boost at its beginning and too much at the end thus necessitating a wastegate to relieve excess pressure. The supercharger on the other hand usually provides a good mid range power band. At higher rpm's a supercharger tends to lose efficiency.

The turbo comes into its own when altitude is increased. As the density of air decreases with altitude, the turbo will spin faster and keep power up to a point. A bit more about that later.

With the turbo on boost another problem comes into play. This wonderful compact piece of equipment shares a close space on one side with the high temperature exhaust gases and on the other with the intake air charge. A great deal of heat transfers from the exhaust side to the intake side. To compound this we see that as air is compressed it gets hotter. At this point you stick on an intercooler. The intercooler is nothing more

than a radiator in an air flow with air inside to be cooled.

The heated air entering a combustion chamber can cause detonation or knock. Detonation is simply an uncontrolled burning of the air fuel mixture in the wrong part of the cylinder at the wrong time. So in cooling the air we start to control the detonation. The next step is to increase the octane of the fuel to further reduce knock. The standard fuel octane requirement for a 944 is 87. Increasing the octane to 93 in the turbo 944 reduces detonation to the potential of a ping. Porsche added additional safeguards with a knock sensor that allows for retarding the timing and lowering boost when the engine pings.

A limit to the amount of boost pressure comes into play with the limit of the highest octane of the fuel along with the compression ratio of the pistons.

The waste gate is a simple device that allows the exhaust gases to by pass the turbine when boost pressure gets too high, or when the engine is not on boost as in normal driving or at idle, and deceleration.

Porsche took this entire list of possibilities and brought out a superbly engineered engine. Using the Bosch Motronic system the power of the 944 turbo doesn't immediately fall with an increase in altitude. The limiting factor here is the turbo charger speed. To maintain an absolute manifold pressure the turbine must spin faster as altitude is gained. The practical limit would be in the range of 150,000 rpm, with the average at 100,000 rpm. If Porsche had engineered the turbine to have great reserves of speed at sea level to accommodate high altitude driving, then there would be a very sluggish throttle at sea level. The system will show sea level

10th Anniversary



CWR-
PNWR
**WHISTLER
WEEKEND**

WHISTLER WEEKEND '90

August 16-19, 1990

Whistler, British Columbia

Come Celebrate The 10th Annual Whistler Weekend with Canada West & Pacific Northwest Regions and the Resort Municipality of Whistler

THURSDAY: Rally from beautiful Vancouver along the rugged coastline of Howe Sound and the Coast Mountains to the alpine setting of Whistler. Register at the magnificent Canadian Pacific Chateau Whistler Hotel and meet old friends and new at the Beer & Brats Reception.

FRIDAY: If you arrived late, you can drive the Rally, as well as attend technical seminars at the Chateau Whistler. Concours preparation goes on all day and the traditional photo contest, which is now expanded to include Porsche arts & crafts, will be on display in the Chateau lobby. The evening is free for you to enjoy the restaurants and night life of Whistler.

SATURDAY: Concours your Porsche in the "Parade Caliber" or "Top Only" classes, or display your pride and joy in the Village and qualify for the People's Choice Award. After the Concours, attend the Rally and Concours Awards Banquet at the Chateau and then the night life of Whistler awaits you.

SUNDAY: Autocross high above the Village at the Blackcomb Mountain Day Lodge and then attend the Autocross Awards Dinner and Colby Cup presentation at the Chateau Whistler.

REGISTRATION: Call Judy Colby to register (604) 985-4557. Registration fee: \$CAD75.00 per car until June 30. \$CAD100.00 after June 30. Full refund if cancelled before August 1. (Pre-registration required for Rally instructions).

MEALS: Thursday Beer & Brat Reception: Free. Saturday Rally & Concours Awards Banquet (buffet style): \$CAD25.00 per person (children 12 years and under \$CAD15.00). Sunday Autocross Awards Dinner (Spanish "Tapas" Style): A La Carte

ACCOMODATION: Special rates have been arranged with the Chateau Whistler, Glacier Lodge and various condominium properties adjacent to the Chateau that are managed by Powder Property Management. Get the list when you pre-register.

power characteristics to an altitude of around 6500 feet, provided sufficient octane is available. It seems in most mountain states the greatest octane available is 87 to 89. This depends on the season. Now with the Porsche turbo system and the requirement for 92 octane, the system can utilize this to the previously mentioned altitude. Using the lower octane will bring on detonation and the resultant retard of timing and reduction of boost to diminish the knock. The chance of buying 92 octane in an area from west Texas, north to Canada and west to Montana and Utah and south into Nevada is slim.

With all of that work Porsche went a step further. They installed a water jacket on the turbo charger. It seems that a few of the early 930 drivers (probably ex drivers of the turbo Corvair Monza) would keep their boost needle pegged far right for extended periods and then get the car into the garage to cool off and listen to the exhaust pipes crackle. With exhaust temperatures that might approach 1500 degrees, this can be murder on the oil that lubricates the bearings of the turbo. With no further lubrication after engine shut off the oil went into shock and turned into a black tar and then into a hard black coating on the bearings. Indeed sometimes the turbo seals would cook and proceed to leak oil. With the water jacket Porsche added a pump to continue to circulate engine coolant to the bearing area after the engine was shut down. This added considerably to the life of the turbine as compared to replacement of a 924 turbine at times as early as 35,000 miles.

Porsche took their 4 cylinder engine into the telephone booth and it emerged performing like a V8. The balance of the engine is such that the only vibration that is apparent is at idle. They left just

enough sound deadener off to allow you to hear the whisper of the turbine as it comes onto boost. As that boost increases the distinct exhaust note of the turbo charged engine emerges. I friend of mine put his foot on it when he went through Arkansas one fall driving his turbo 944 at the limit. He said "It's the most fun he ever had with all of his clothes on."

A NOTE IN HISTORY

In 1949, Ferry Porsche ransomed his father Ferdinand from a French military prison with money obtained through a deal he made with Italian industrialist Piero Dusio. Dusio owned the Cisitalia Motorcar Company, and he had retained the Porsche organization to design and build the most outrageous F1 car the world had ever seen, the Cisitalia-Porsche 360. A 1440cc twin supercharged flat 12 mounted amidships and capable of making 550 horsepower at 10,500 rpm. It could be switched from 2 to 4 wheel drive at the driver's discretion. six tube-framed all-aluminum 360s were to be readied for the 1949 season, but the incredible development costs ultimately broke Dusio. He was forced to move to Argentina, where Juan Peron offered him financial solvency in exchange for Dusio's efforts to establish an automotive industry in that country. With funding severely curtailed, the Cisitalia F1 fantasy fell on hard times. The competition program was scrapped after only one car and a second chassis were completed. The lone 360 practiced for the 1953 Grand Prix of Argentina, but it never raced. Today, it is part of the Porsche Collection.

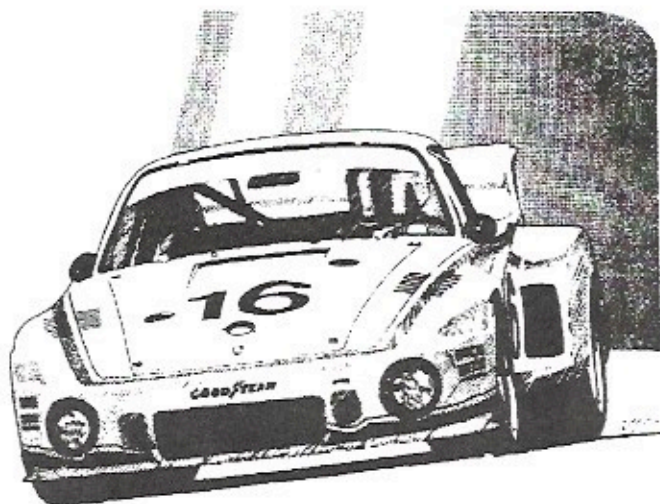
Al Lang

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ORIGIN of the PORSCHE CREST

THE CREST: In 1951 Porsche was finalizing plans for its move from the war time sanctuary of Gmund back to Stuttgart. Importers and agents selling his product made it clear that customers wanted some sort of trademark or badge to identify their vehicles, which until then only carried the word "Porsche" on the bodywork. In 1952, Professor Porsche had devised the basic design of the crest. Folklore has it that he sketched it on a serviette (table napkin) during a luncheon. Whether true or not, it was Messrs, Lepper and Riemspiess of the publicity and design studios who carefully finalized the design. There are three components: the family name of course is positioned at the top, while the other two components reflect Porsche's gratitude for the rebirth of the company in the Stuttgart area. The red and black bars with the antlers are from the arms of the State of Wurttemberg, the horse is from the arms of Stuttgart, capital of Wurttemberg. The origins of Stuttgart developed from royal patronage given in historical times to the area. A fine horse stud developed here. So (Stud Garden) Stutt Gartam and Stuttgart. The crest first appeared on a Porsche in 1953, but was limited to the interior of the car - the horn button. It was not until 1957 that the crest joined the word Porsche on the front hood of a 356 Coupe. **THE COLOR:** Maroon or claret has appeared on driver's handbooks, service Manuals and official letterheads since 1951. The choice of color was due to necessity rather than any romantic design consideration. After the second World War colored inks were in very short supply and colored papers were only just being

reintroduced. It was in this environment that the first handbooks were produced. To maintain an attractive design within the shortages of the period, black ink and colored stock was chosen. The small printer Glauner happened to have some colored paper- maroon. It was a case of no alternatives. No one could imagine the precedent that this would set. Today all official stationary, drivers wallets and even the exterior color schemes of the new factory buildings in Stuttgart utilize bold stripes of these colors. **THE SCRIPT:** The Porsche script has undergone a number of evolutionary phases since it appeared on Porsche No. 1 at Gmund in June 1948. From the outset, the square shape of the letters was apparent. Initially letters were placed individually in a curved pattern on the front of the cars. In 1950, a horizontal underlining bar joined all the letters into a single unit. In 1952, the letters became even more squat (extended). This design remained unchanged for the remaining life of the 356 series. In 1963-64 the 911 came on the scene. The word Porsche reverted to a series of individual letters of a thinner and more open shape. In 1974, the metal letters were no longer used. Instead they were depicted on the reflective panel separating the tail lights of the 911. To end, I quote Tony Lapine head of the styling studio: "More than any emblem or logo, Professor Porsche himself represents the bond between tradition and progressive technology that makes Porsche such a unique company."

Terry Lovett

reprinted from Porsche Zeitung, Inter-mountain Region, via the PCA BBS.

Greeting's War Bonnet Region PCA members

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*Annual Fall Foliage Tour
Eureka Springs, Arkansas
October 26 - 28*



It will be a Halloween weekend in the Ozarks if you join this hardy band for the spirited drive to Arkansas. For those that are interested, there will be a caravan to Altus and lunch at the Weideker Winery on either Friday or Saturday. After lunch drive up highway 23, which has been called one of the 10 best in the U.S. by Car and Driver Magazine. If you haven't driven this road you should. Your Porsche will love it! If you want to caravan you need to call Lisa and let her know. We will need to make reservations at the Winery for lunch or have a long wait.



Saturday evening dinner will be at a small restaurant near the Motel with activities at the convention center later.

Sunday Brunch will be at Peaches on Holiday Island at 9:00 AM.

We have booked rooms at Inn of the Ozarks with a rate of \$60.00 per night. For reservations call 501-253-9768 **before** September 26.

For further information call Lisa or Al Lang 405-755-0208.



THE ROCKIES ARE GOING TO ROAR
TEXACO/HAVOLINE GRAND PRIX OF DENVER

AUGUST 24 - 26, 1990

The Rocky Mountain Region of the Porsche Club of America invites you to treat yourself to the most exciting international gala of the year - the Texaco/Havoline Grand Prix of Denver. See living legends of auto racing, like Fittipaldi, Unser, Sullivan, Mario and Michael Andretti and of course Teo Fabi and John Andretti for Porsche Quaker State flying through the streets of Denver in the fastest street rockets on earth. It's also an admission ticket to a world class event that includes concerts, mouth-watering food and non-stop action.

PCA members will be treated to a special Saturday night affair at the Landmark Hotel. A delicious buffet, door prizes and hopefully your favorite Porsche Indy Driver and other Porsche Factory and Porsche Cars North America dignitaries will stop by.

Your reservation will include reserved seating in a premium grandstand area (near the start-finish line) for all three days, admission to the races: SCCA Trans-Am Championship race and hopefully a Celebrity Grand Prix Challenge race, paddock pass for the entire event, a special commemorative gift, shuttle transportation to and from the Landmark Hotel, and a PCA Bash Saturday night with all the fixings. All this for only \$110 per person.

Special rates have been secured at the Landmark Hotel for a reduced rate of \$34 for two (additional dollars for more people per room). Further information regarding hotel reservations will be sent to you after acceptance.

As a current or past member of your region's Board of Directors, I know you and other active members of your region won't want to miss one of the most exciting events of the year.

Registration is limited, so send the enclosed form by March 15, 1990.

For more information, contact me at (303) 530-3151 (between 6 and 9 P.M. M.S.T.) or Norm Martin at (303) 237-2428.

The Texaco/Havoline Grand Prix of Denver. Be there when the Rockies start to roar.

JoAnn Barnum, Registrar



WHAT'S ALL THIS ABOUT WAR BONNET TECH?

By John Harvey - Chesapeake Region

Did you ever sit back at work in the midst of paper swamps, swamp turkeys, their PMS'd secretaries in and out of memos and directives on benefit cuts, shorter lunch breaks, and a mandatory donation to the boss's hysterectomy flower fund (at least she'll be in a better mood, or so everyone hopes)?

You need to get away, right? Have I got a deal for you! Right smack dab in the middle of Oklahoma City (the largest city in the U.S. in square miles) in early March, housed in a friendly Marriott, is that premier "Granddaddy" tech mecca of PCA, War Bonnet Tech Session.

For me, the first event on Friday evening was a social one, that being a Welcoming Party hosted by Zim's Autotechnik, although there had been three afternoon question and answer sessions for the earlier arrivals. Following the party most of us moved over to the vendor area for further socializing and my first personal introduction to Anne and Frank Barrett of Toad Hall Motorbooks. Anne, you'll recall, writes the "From The Regions" column in Pano. There were also representatives of many Porsche products and services. As I recall, there was on display, just about everything from 356 replacement sheet metal to a variety of artistic auto posters

depicting some most unusual hood ornaments.

Early Saturday morning, 7:45 to be exact, began the first of six sessions for the day and I chose "Restoration Revisited" with Bill and Bob Jones. The Jones Boys operate Jones Autowerks in San Antonio, from which they brought along an early 356 roadster fixtured on its side and mounted to a trailer for easy viewing. This showed some real detail in the pan, longitudinals, and inner fender areas. The repairs were skillfully done, the welding fixture innovative in its design and construction, and the slide presentation and talk made for easy listening and watching for so early in the day.

For the next two sessions many of us gathered around Roger Chaney's area for a refresher in 356/912 engine tear-down and assembly. Roger, whose middle name has to be "hands-on", needed three separate sessions for his course using a 912 case and innards furnished by Stoddard, and though I was only able to make two, I still learned and memory-refreshed some of Roger's good "ole" four cylinder tricks.

Following our lasagna lunch accompanied by plenty of interesting Porsche conversation with new friends from mostly mid-America, I continued with an

"audit" of Hal Crossland's final transmission assembly session, I say "audit" since I was unable to be at his two earlier sessions: "Hands on - Assembling the Transmission Shaft", and "Hands on - Ring Gear and Pinion Adjustment", a cycle, hopefully, I can pursue in the future. Hal's middle name could be "Vo-Tech" since his instructional technique had the learner in mind with a perfectly organized presentation area for his transmission stand and specialized tools.

Saturday's sessions were culminated with, "What it takes to be a Trained Porsche Technician", followed by Weissach's Heinz Stehle who gave us a lecture with pictures and diagrams on the Porsche Tiptronic transmission. Herr Stehle made us mindful of why we love Porsches so much to begin with, and this particular transmission packaging job is a work of perfect functional art. Were I to give Heinz a middle name, it would have to be "High-Tech", and those of us who have been fortunate enough to visit Weissach, know exactly why.

Later Saturday evening we treated ourselves to a "no host" cocktail party with many PCA notables in attendance with names such as Dennis, Burt and Betty Jo, and this was followed by a banquet complete with awards, speeches, door prizes, even the "roasting" of a special gentleman, Bill Jones, whose automotive technical credentials range from being an Indy 500 mechanic, to a high ranking position with Cadillac Division of GM, to Jones Autowerks, and on to what he

calls retirement although his close friends say, "What? Bill retire? Never!"

Bill and I have one other common interest, I was to learn later. Aside from Porsches, we both belong to Williams Grove Old Timers for open wheel race cars, about which Bill has much expertise, and I bring this up because for a gentleman with such a store of knowledge and experience, who could never possibly have enough hours in the day to pursue these many interests, Bill still finds the time to share and help with his kind words of wisdom on Porsches or Offys. Bill's love of automobiles transcends borderlines - mindful of the Duesenbergs, the Bugattis, and the Porsches of the world, Mr. Bill Jones carries with him such a tradition.

Sunday morning began early as usual with John Paterek's travel case full of interior samples and slides to show with illustrations and interior tips, adding a touch of vaudeville now and then to keep it entertaining as well as infomative. John's skills and expertise are well known to Porsche restorers and The 356 Registry, it's quite easy to see why.

Session 2 brought to the podium the very lovely Linda Smith who, with the able assistance of a slide projector operator named Harvey (someone I had shared Dinkel Ackers with on the '79 Treffen), gave us a splendid session on the newest techniques in painting by comparing a couple of HVLP (High Volume Low Pressure) painting systems that are about three times more efficient than conventional sprayers. This system

gives large savings in paint to both the painter and the environment, as demonstrated by Mr. Smith's illustrative slide depicting the paint being applied out-of-doors with almost total absence of over-spray. There were further slides, as well, showing rough and finish sanding techniques, with materials skillfully listed and procedures carefully outlined. The Smiths are quite well known for their articles on this subject. I squeezed in one final session just before my departure to the airport, this one a carefully prepared step-by-step 356 link pin replacement procedure given by Tim Goodrich, PCA's 356 Tech Question expert whose experience and knowledge of precision showed us that there is only one proper way for installation without possible damage, and the bag of parts that he brought along with his illustrative slides, showed us the good, the bad, and the ugly of link pins and spindles. Tim reminded everyone, as well, that his phone is open for any 356 tech question and his pleasant California manner assured me that he, along with all the other speakers, truly enjoys showing and sharing his many years of experience at Porsche service.

Since my choice of sessions favored 356's, let me briefly list some of the others:

"Bosch Automotive Systems - A Review" - Al Krenz

"Porsche Water Pumps - What's Wrong With Them" - Jay Pineau

"New Performance Tire Technology"
Rick Brennan

"Aerodynamics - Do's and Don'ts"
Bob White

"Restoring the Severly Rusted Porsche"
Al Zim

"Customized Bosch Motronics"
Ken House

"Late Model Suspension"
John Truman

"Programmable Performance"
T. Wilson & D. Dickey

"Air Conditioning for the '90's"
Scott Hendry

"911 Engine Modifications"
Bruce Anderson

As we were riding to the Will Rogers World Airport for my return journey to Baltimore (with a brief changeover in Chicago to share a beer with my beautiful friend, Doris Voce, Editor of Chicago Region's Chicago Scene), I was reminded of that famous Oklahoman Will Rogers and his well known statement that he had never met a man he didn't like. Well I've never met a Porsche owner I didn't like - well, almost never - I sure didn't at War Bonnet Tech.

War Bonnet Region, I've got to believe that somewhere out there someone is swinging a lasso and smiling down on you. Thanks for sharing your Tech with us. Will I be back next year? You bet your sweet "Sooner" I will.

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References Available Upon Request

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PCAMember

Sure they made Porsches without mid-engines, but who the heck cares?

By Pat Moyle

Reprinted from RMR Vista

Ever since its' introduction in late 1969, the heritage of the 914 has been questioned by Porsche "purists". "It's just a two seat VW." has been a common attitude among the misinformed. To address this attitude I will refer to what most "purists" feel is the most real of the real Porsches, the 356.

The 356 started life as a hot rod VW with a nice swoopy aluminum body. Sure it evolved over the years as all things must, but even in its' final form in 1965 it still contained a great number of parts directly interchangeable with the VW of the day. Besides, what's wrong with being compared to the VW? After all, it was one of Professor Porsche's most successful, enduring designs.

Anyway, now that we accept the fact that the 914 is a real Porsche, we will get into the real nuts and bolts of this dissertation, which is to talk about 914s and what to look for when considering the purchase of one. Probably the best place to start would be a brief overview of the various models that were produced and their strengths and weaknesses.

The 914 started life in the 1970 model year with a 4 cylinder 1.7 litre engine which at that time was considered by

most journalists to be rather under powered for the wonderful balance of the suspension. The car had a 5 speed gearbox which was basically the same as the 911 of the day, except for the linkage and the gear ratios. Unfortunately, in their selection of gear ratios they chose the tallest 5th gear that was ever used in a production Porsche (.71 versus .785 for the same production year 911, both using a 7:31 ring and pinion for a 4.43 final drive ration.) This did nothing to enhance the performance of the poor old 1.7 engine and I suppose they were rather slow. 1971 was virtually identical to 1970 and the only significant changes in 1972 brought us 5.5" wide wheels (versus 4.5") and an adjustable seat for the passenger.

1973, however, brought some very worthwhile changes in the car. In response to the cry for more power, the 2.0 litre 914S was introduced to supplement the 1.7 and the shift linkage was redesigned to eliminate the "broomstick in a bucket of oatmeal" feel the original "tailshift" linkage gave. This new linkage has become known as the "sideshifter" and the difference in the feel of the two is like night and day.

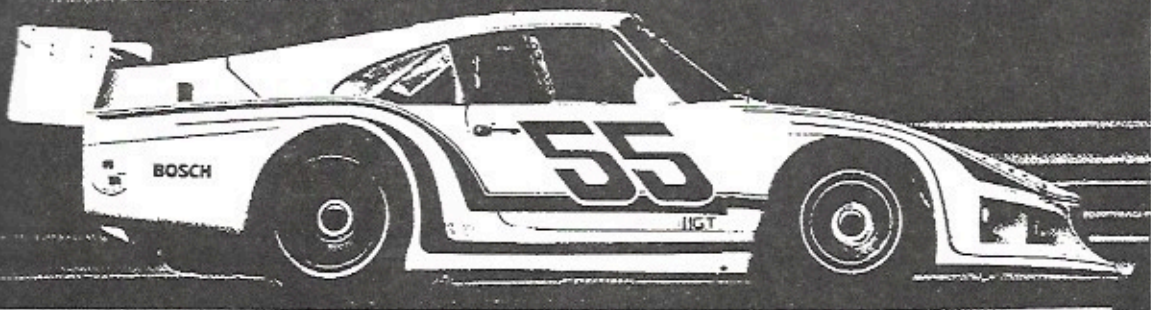
The 914S designation was only used for the 1973 model year and in subsequent years became known as simply "2 litre". The reason for this, I suppose, was that on

Bob Dumont

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the 1973 2 litres (or 914S's) a great many items were standard equipment which became options in later years. These included the "appearance group" which included the instrument console that provided 3 additional instruments, (oil temp gauge, voltmeter and clock), and the leather covered steering wheel in addition to a few other cosmetic items. Also standard, were front and rear sway bars and Fuchs alloy wheels which also became optional in later years.

1974 brought no significant changes in the 2 litre other than the deletion of standard equipment, but the 1.7 was increased to 1.8 and on this model only, the original D-jetronic fuel injection (MPC or manifold pressure controlled) was changed to L-jetronic (AFC or air flow controlled). This less complicated system was not used on the 2 litre, however, which used the D-jetronic until the demise of the series in mid 1976. The increase in engine size from 1.7 to 1.8 did not seem to improve the performance of the smaller engine car and the 2 litre remained the star performer of the line.

1975 brought a few more changes which did nothing to enhance the performance but did arguably improve the appearance of the car. The bumpers were completely changed and for the first time actually provided some protection, which was not provided by the original design. Aesthetically, people seem to be as divided on the appearance as they were in 1974 when the 911 got its' first major facelift. These bumpers did add a significant amount of weight to the car

and combined with a new exhaust system and increased pollution control on the 2 litre, the performance deteriorated slightly.

1976 was the swan song of the 914. The 1.8 was dropped completely and the remaining 2 litre was only produced for half the model year, stepping aside for the first water cooled Porsche ever; the 924.

The other significant 914 model was the 914-6, which was produced primarily in 1970 with dwindling production until 1972. These cars presented the best of both worlds, the handling and the agility of the 914 and with their 2 litre 911T engine, the performance of the 911. Unfortunately, they cost within \$1,000 of a 911T and most people shopping in this price range chose the "real Porsche". Because of this, sales were poor and after a production run of approximately 3340 cars, it was dropped from the line. This was a pity to all but the lucky few who own one now.

914's have not been without their inherent problems and, like all early Porsches, one of the most significant is rust. Because of a couple of design quirks, there are some very common areas to check when looking for one to buy. Check very carefully under the removable rocker panels around the jack points. Mud gets packed in there and holds moisture, rotting away the jack point and eventually continuing into the door sills.

Lawton and Saturday Morning

WILMES PORSCHE, 4330 NW Cache Road in Lawton will be the site of coffee and donuts the second Saturday of each month. Bring your mirror glaze, wax, P-21S, Armor All, Hide Food, or whatever you please, and we will sit around and have good fellowship, tell war stories, have coffee and donuts, and spend a little time being productive with our Saturday morning. The wash rack will be open and there is plenty of shade for cleaning that "baby" of yours (and don't forget to include the spouse). This will be an excellent time to invite all of the Porsche owners you know to come on out and get to know each other. Starting time will be at 10:00 AM- BE THERE!!!

Contact Don Scott at 405/355-7144 if you have any questions.

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The other most common rust area is in the battery box section of the engine compartment. Rust will start in the battery tray and, if left unattended, will eventually spread all the way to the inner trailing arm mount on the chassis. From there, check the usual areas behind the front fenders, check the base of the windshield, the base of the roll bar, and also open the rear trunk and pull up the mat to check under it. Under the car, take a good look at the heat exchangers and exhaust system; also look under the front where the "A" arms attach to the body.

Unfortunately, because of the "it's only a VW" attitude toward these cars, a great many of the problems we see are related directly to the kind of care and maintenance they have had. People who would cringe in horror at the thought of anyone but a qualified technician touching their 911 or 356 would think nothing about relegating 914 repairs to the local "Guido's All Foreign Car Repair", where it would suffer, along with Fiats, Opels and their ilk, at the hands of less than caring or experienced mechanics. These digressions from proper care and repair can all be made right, but not without expense.

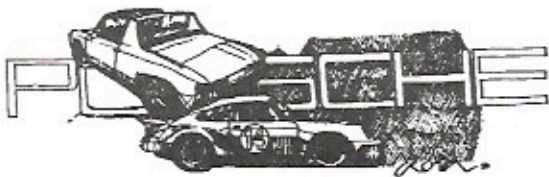
Drive the car and check carefully the operation of the shift linkage and synchros; check for proper clutch operation, and notice any running problems the car may have (missing, stumbling, poor throttle response). Also, if it is a 70-74, ask the seller if the fuel pump has been moved. The early cars were prone to vapor lock and in 1975 the factory moved

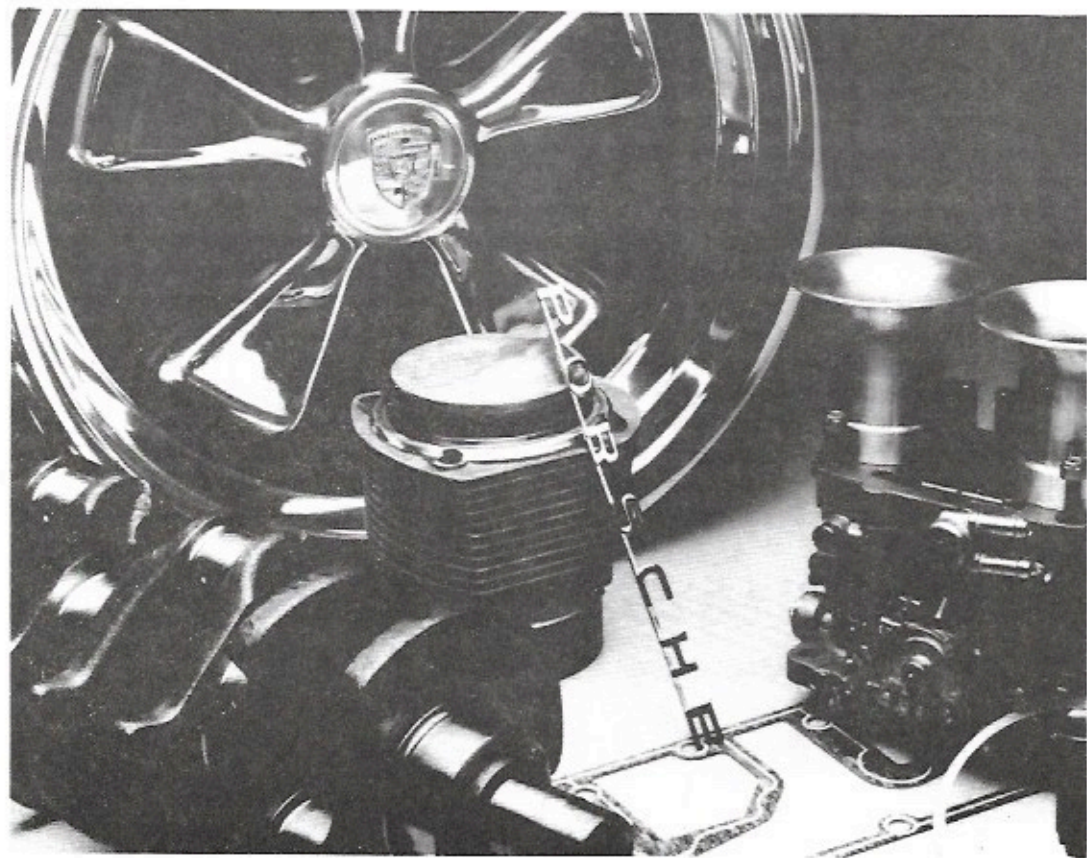
the pump to the front from its' original location directly adjacent to the right heat exchanger outlet. Also, I would shy away from one which has air conditioning.

Porsche never manufactured or authorized AC for 914's and the after-market systems installed at dealers were, for the most part, poor at best and have proven to cause many problems.

In spite of its' humble, controversial reputation, the 914 has proven to be more "bangs for the buck" than anything Porsche has built for years. If maintained properly they are long lived, and with their well balanced mid engine design, you can get away with things in a drivers' school you wouldn't dream of doing in a 911.

These days, asking prices for nice 2 litres seems to be in the \$4,000 to \$6,000 range and, as always, be prepared to buy the nicest you can possibly afford; have it checked out by a qualified shop, and you will have more enjoyment for your car dollar than you can imagine.





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David Kraszewski
Oklahoma City OK
405/840-2931

Luther Lauderdale
Oklahoma City
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Celebrating club anniversaries are:

G.A. Roberts
20 Years (Last March)

Stephen Joosten
15 Years in June

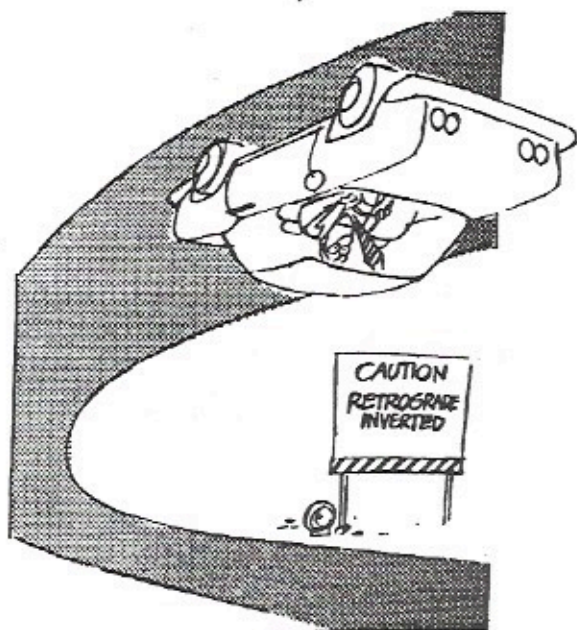
Jim Blakewell
15 Years in June

Sam Flippo
10 Years in May

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5 Years in May

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IS ANYONE HOT YET?

Summer is here and I felt it was time to check out a few of the new cars on the import lots. What I found (without naming names) was more entertaining than Saturday Night Live. I believe I have discovered the difference between Oral Roberts and a car salesman. The car salesman knows when he is lying.

At one of the Rice Burner lots I found that the ADM (added or additional dealer markup) on the Miata was required by law. It can be hard to tell where ignorance ends and the misstatement of fact begins.

At one of the smaller dealers I overheard the sales manager discussing the overall allowance on the trade in by several thousand dollars in order to get the customer into the 20% down payment range, required by most banks, without a nickle cash out of his pocket. One may wonder if car dealers and bankers don't deserve one another.

On a lighter note, Ron Mc Atee has taken the duties of Vice President. His first job has been to locate the club pylons. If any one has knowledge of the whereabouts of the cones, give Ron a call.

A board meeting was held a few weeks ago. Several matters regarding the region and the club were discussed. The most pressing was locating a site for region auto crosses. Two sites are being approached, and if approved, a autocross will be scheduled ASAP. A few other events being planned are a fun rally east of OKC

that will end up at a dinner meeting. A meeting with the BMW club on working together to produce a drivers school at Hallet.

A few members from the region are going to Monterey for the PCA Parade. For the many of you who haven't taken the opportunity to attend a Parade, let me assure you that there are some of the nicest folks and perfect cars in one location that you would ever want to meet or see. You don't have to be a Porsche "NUT" to enjoy the Parade. I'm sure those of us going will have some interesting stories when we get back.

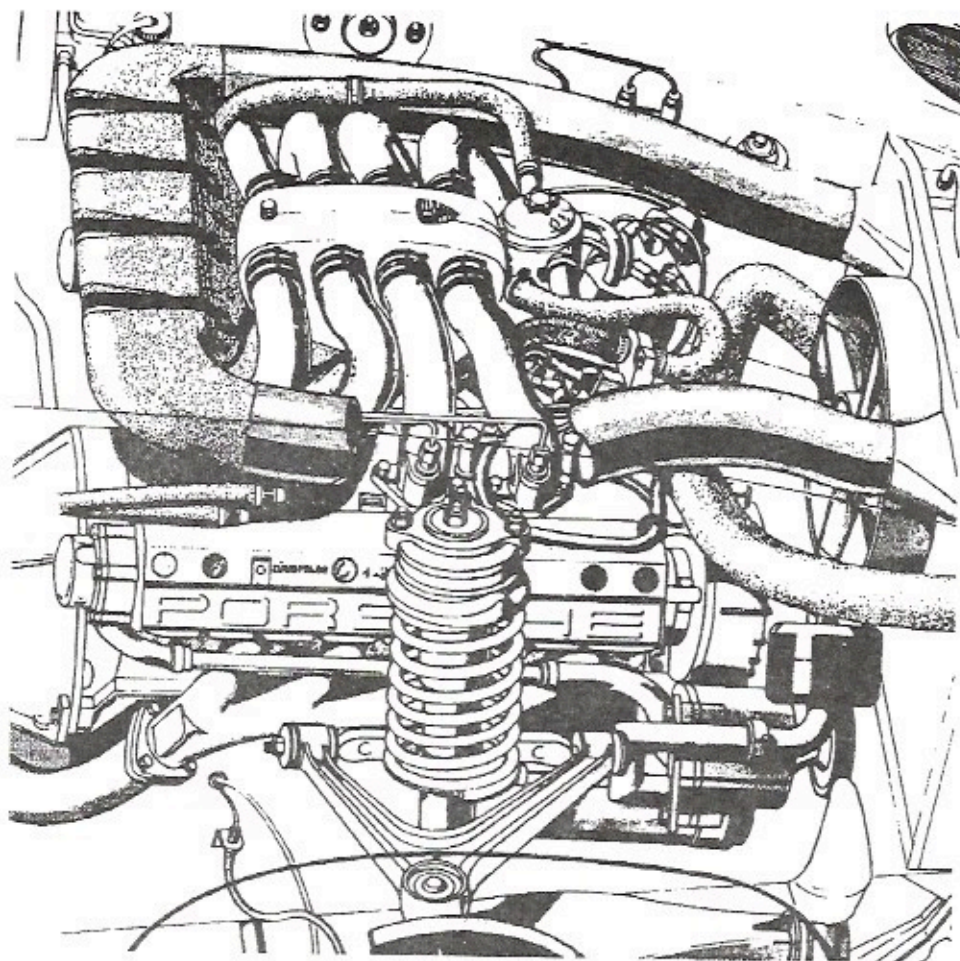
There is new management at Bob Moore Porsche/Audi/Mazda. I recently had my car in the service department for some annual work and found that some seemingly minor problems were more major than I suspected. I can say it is a pleasure to have a staff in the service department that suggest repairs (even though the repairs are under warranty) rather than avoiding the question. Warranty work doesn't make the dealers bottom line, but it can sure generate good will among customers. So thanks to Dan and Martin. You fellas do some fine work.

The new Porsche owner asked the service manager what the tachometer was for. After the explanation he replied that he "thought you shifted when the engine got noisy."

Al Lang

1990 Calendar

- August 16-19 Whistler Weekend
September 1-3 Whiskey Bay Region Cajun Classique
September 8 Progressive Dinner
September 14-16 Hill Country region Porschedillo
October 26-28 Fall Foliage Tour (see page 11)
October 12-14 Maverick Region Round-up
December 8 Christmas Party Interurban Dining Car.



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