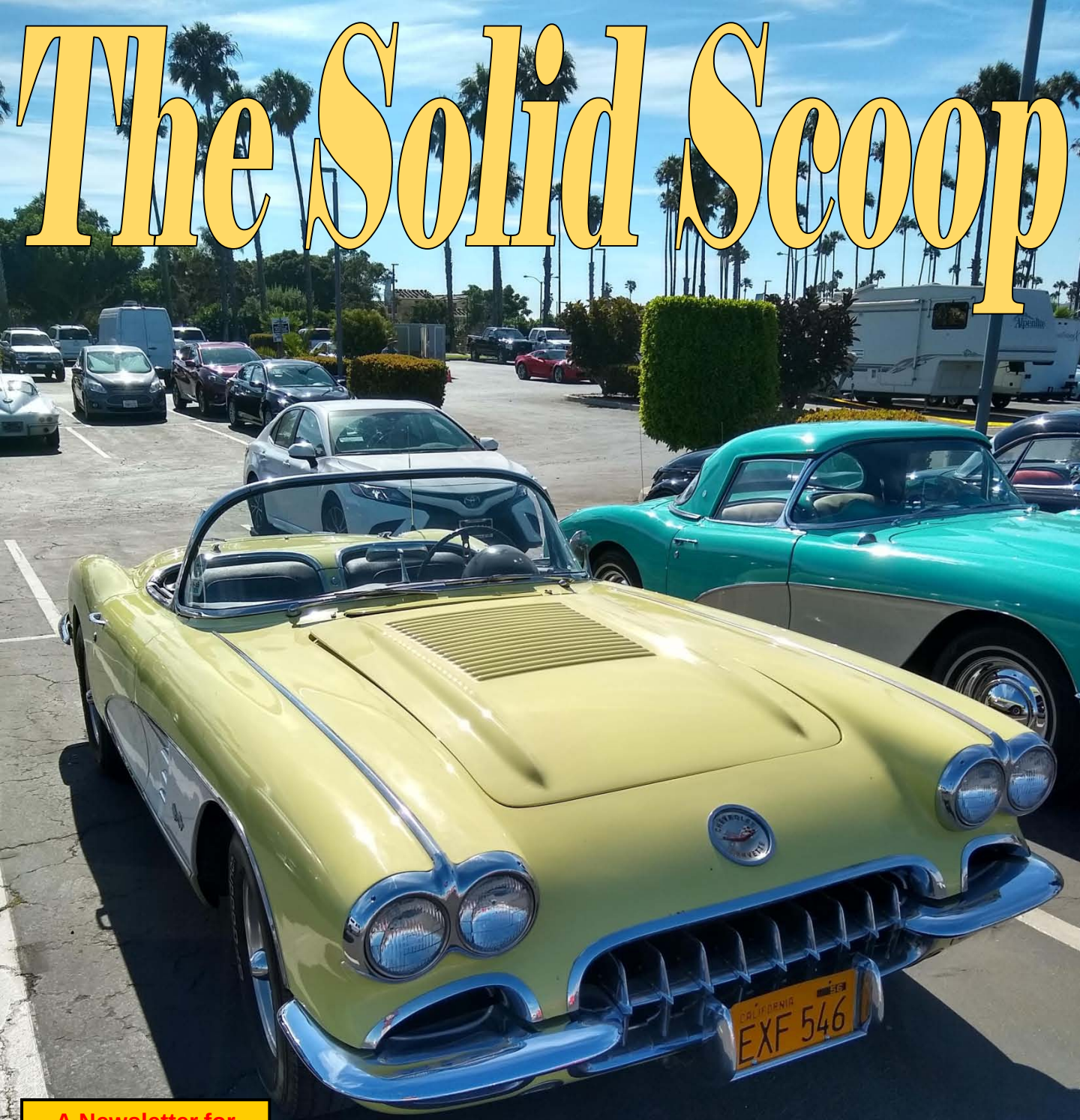
The Solid Scoop



A Newsletter for the Southern Calif. Chapter of the Solid Axle Corvette Club

Vol. 16 No. 3

September 2020

"We don't judge, we just keep them on the road"

See us on the web at **www.socalsacc.com**

On the cover: This Panama Yellow 1958 belongs to member Barry Charles. This photo was taken at the SACC National Convention in 2018 in Ventura, CA.

Scoop Features Inside:

2020 SoCal Planned Events

Date	Subject	Location	Organizer
Nov 7 2020	Fall Tech Session	Auto Driving Museum El Segundo	Joe LeMay

SoCal SACC New Members – Welcome!

Name	C1 owned	Location
Kurt Statts	1962	Oak Park, CA
Anthony Ruzicka	Looking	Fillmore, CA

Editor's Note:

I hope everyone is doing well during these trying times. With our events being cancelled due to the Covid-19 pandemic, this issue is mainly technical articles. I have received several articles from members– in fact, too many to fit in this issue! I will use them in the near future. I am always in need of content for future editions of The Solid Scoop. Please consider sending me photos of your car, photos from car shows, articles, etc., anything relating to Solid Axle Corvettes. And don't forget "For Sale" and "Wanted" ads are placed at no cost to members. Please contact me if you are not receiving the electronic newsletter via email. Fred Kokaska (fkokaska@yahoo.com), SCOOP Editor

Solid Axle *Corvette Club*

A National Organization dedicated to keeping these Corvettes "on the road".

Club Features:

- ***Membership Chapter Clubs across the U.S.***
- ***National Quarterly Magazine***
- ***Annual National Convention***
- ***Web Site: www.solidaxle.org (non-profit affiliation)***

Also visit the SACC National Web Site

www.solidaxle.org

The Solid Scoop **is a quarterly Newsletter published for the Southern California Chapter of the Solid Axle Corvette Club (SoCalSACC). The SoCalSACC Chapter is affiliated with the National Solid Axle Corvette Club (SACC). The SACC organization is a non-profit group with the intended purpose of bringing together owners and those interested in the early C-1 Corvettes (1953–1962) to help in appreciating these vehicles and "keep them on the road".**
C-1 Ownership is not a requirement for membership.

MEMBERSHIP: A prerequisite to become a SoCal SACC Chapter member, a person must belong to the National SACC. Applications for membership are available on our Chapter Web Site, www.socalsacc.com. Submitting an application along with the appropriate listed dues, is necessary for membership. The SoCal SACC Chapter will forward your National dues to assure your National membership. Once becoming a National member you will receive *On Solid Ground*, the National quarterly published magazine. Again, MEMBERSHIP APPLICATIONS AVAILABLE: WWW.SOCALSACC.COM

The Solid Scoop**, is intended as a communication for Chapter members about chapter activities, technical articles, classified ads and past events to maintain in keeping our membership informed. The Editor and the Board of Directors of So Cal SACC have made every effort to ensure that the Solid Scoop contains no inaccuracies or errors, either in technical articles, tour information, listings regarding flyer and non-flyer events or in advertisements and is non-offensive and non-political and disclaim liability for any that may occur. Should you find any problem, please do not hesitate to contact the Editor. We will make every reasonable effort to rectify the situation.**
Member submitted technical articles are encouraged. Many times these technical articles are based on personal experiences and preferences and as such are intended only as guidelines or helpful information for club members.

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Southern California Chapter Board
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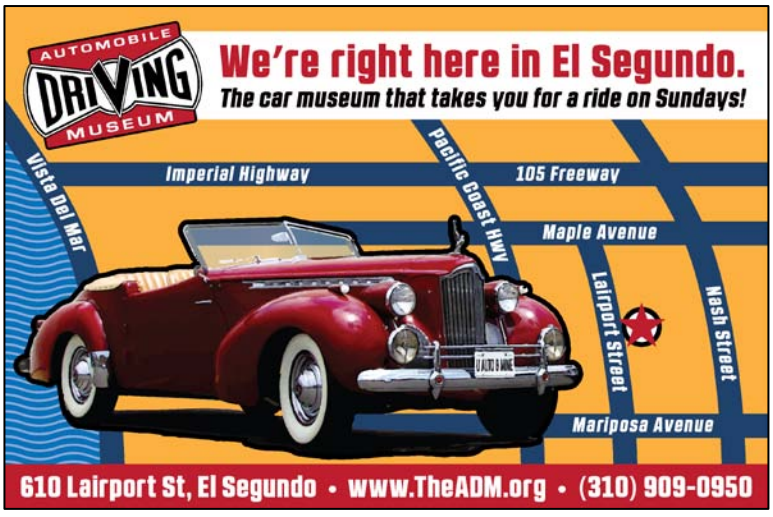
SoCal SACC Fall 2020 Tech Session

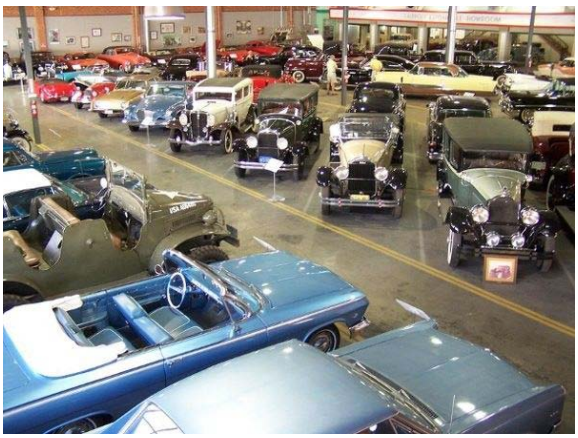
Saturday November 7th, 10am – 2pm

Location: Automobile Driving Museum, El Segundo

SAVE THE DATE – MORE INFO SOON

- We will have a series of presentations, 5-15 minutes each, covering maintenance or simple repairs on early Corvettes.
- We have reserved parking for all, with a special area for Solid Axle Corvettes that attend.
- Your entry fee includes coffee and snacks, full lunch, as well as entry to the Driving Museum. They have a nice collection for us to view; 130+ vintage, antique, and muscle cars.
- We will continue to monitor the Covid-19 situation and will send email when a final decision is made. If conditions don't allow us to gather, we will schedule an online ZOOM session at this time.





From the South

- From 405 North, exit El Segundo Blvd WEST
- RIGHT on Douglas Blvd
- LEFT on Mariposa Ave
- RIGHT on Lairport St

From the North

- From 405 South, exit to Hwy 105 WEST
- RIGHT on Nash St
- RIGHT on Maple Ave
- LEFT on Lairport St

USING SILICONE BRAKE FLUID – Tech article submitted by member Larry Pearson

Editors note: As background for Larry's article, I wanted to provide these definitions, as there is some understandable confusion around them.

Brake fluid Types

DOT 3 is the most common type of brake fluid used in most cars and trucks. It is polyglycol based, so it will damage painted surfaces, as well as absorb moisture over time. According to the SAE (Society of Automotive Engineers), it can absorb 2 percent of its volume in water every year. So by the 5th year, your brake fluid is as much as 10 percent water. It has a rated boiling point of 284 F/140 C.

DOT 4: is also formulated for use in all vehicles, as it is also polyglycol-based, but offers a higher rated boiling point (311 F, 155 C). It also absorbs moisture, but claims to be at a slower rate than DOT 3, however, I could not find any documented specs on this. It will also damage painted surfaces.

DOT 5: is silicone-based; it does not absorb moisture, nor does it damage painted surfaces. It has a wet boiling point of 356 F/180 C. This is the fluid Larry is describing is his article below.

DOT 5.1: THIS IS CONFUSING, but 5.1 is NOT silicone-based like DOT 5! It is polyglycol-based (the same as DOT 3 and DOT 4), but offers the highest boiling point (374 F/ 190 C). It will damage painted surfaces.

My name is Larry Pearson. I first became aware of DOT 5 Silicone Brake Fluid in 1975 when it started to be advertised in car publications as a better replacement for traditional (DOT 3) brake fluid. Specifically, traditional brake fluids (DOT 3, DOT 4, and DOT 5.1) are glycol-based and therefore readily absorb water from humidity in the atmosphere. This water causes rusting of the iron and aluminum components in every brake system and leads to fluid leakage and a frequent need to overhaul these brake systems. Moisture in the fluid also reduces its boiling point. DOT 5 is silicone based and, therefore, does not absorb the water that causes rusting of brake system components as well as reduces the boiling point of the fluid. It is completely compatible with all rubber components used in yesterdays and today's brake systems, and, unlike polyglycol fluids, does not absorb moisture over time, nor does it damage painted services. In my experience over the past 45 years DOT 5, when properly installed in a properly rebuilt brake system, is "forever". Over the past 45 years, I have installed DOT 5 in the following vehicles: 1949 Plymouth, 1951 Oldsmobile, 1955 Cadillac, 1956 Chevrolet, 1960 Corvette, 1962 Corvette (2), 1968 Caprice, 1972 Chevrolet C-20 truck, 1975 Chevy Monza (V8), 1977 Cadillac Seville, 1984 Oldsmobile, 1992 Camaro Z-28. I have not experienced failure of the hydraulic systems in any of these cars. All I have had to do is replace brake shoes or pads in these vehicles when they wore out.

I also wish to point out that the US Military initiated the development of DOT 5 and uses it in all its vehicles. The US Military has thousands of military vehicles in long term storage and discovered frequent brake failure using DOT 3 when these vehicles were activated. These vehicles must be ready to go at a moment's notice and brake failure is not acceptable. Despite its advantages, DOT 5 does have its "issues":

- It is much more expensive than DOT 3 fluids.
- It is not easy to find in automotive parts stores.
- Most mechanics are not familiar with it and how to properly install it.
- DOT 5 absorbs air in the form of micro bubbles when agitated in the presence of air, making it difficult to bleed, as well as making it incompatible with ABS braking systems..
- None of the automobile manufacturers that I know of use it in their new vehicles, or recommend it in their products.
- If you have your DOT 5 equipped vehicle serviced in a dealership or garage, despite whatever you tell them, they will "top off" your reservoir with DOT 3 fluid.
- Some DOT 3 formulations (not all DOT 3 is the same) will react with DOT 5 and turn everything to "jello" and cause brake failure.
- DOT 5 will contaminate surfaces and they will be almost impossible to paint over.
- DOT 5 is not petroleum based, and therefore petroleum based solvents will not dissolve it. The solvents that could remove it have all been banned by the EPA.
- If you spill DOT 5 onto concrete surfaces, they turn white when wetted with water.
- I know of no environmentally safe way to dispose of waste DOT 5 fluid.

Why does the automotive industry not use DOT 5? DOT 5 is incompatible with the ABS braking systems found in the vast majority of modern cars. It is expensive and time consuming to install. And besides, the automotive repair industry makes a whole lot of money repairing the frequent brake failures caused by DOT 3.

INSTALLING DOT 5 BRAKE FLUID

Before installing DOT 5 you should completely rebuild all components of your brake system and flush out any "sludge" left over from DOT 3 corrosion. This sludge can cause the rubber seals to leak. When rebuilding the master cylinder, wheel cylinders and calipers, you must **never** use any sort of petroleum based solvents or lubricants. The rubber formulation used in brake components will be destroyed by petroleum based lubricants and solvents. Petroleum based lubricants coming in contact with brake system rubber components will cause the rubber to swell up and become unusable. Always use brake fluid when honing the bores, assembling the components and flushing the system.

As noted in #4 above, DOT 5 absorbs air in the form or micro bubbles when agitated in the presence of air. DOT 3 does not have this problem. It takes about 24 hours for these micro bubbles to congeal into large bubbles that can be removed by bleeding. To avoid this problem, introducing DOT 5 to an air filled system must be done **very** slowly.

Do not shake the container. Carefully pour DOT 5 into the master cylinder in such a way to avoid splashing. The traditional system of pumping the brake pedal three times and then having your helper at the farthest wheel cylinder/caliper open the bleeder screw will not work with DOT 5. It causes the DOT 5 to be “blasted” through the lines and results in micro air bubbles to form in the fluid. You will never get a hard pedal with these air bubbles in your system. Pressure bleeders cause an unacceptable agitation of DOT 5 and cannot be used.

If the master cylinder is located higher than the wheel cylinders/calipers, you should gravity bleed the system. This means going to the farthest wheel cylinder/caliper from the master cylinder and opening the bleeder screw and wait for the DOT 5 to appear. When it starts to appear, you should rap the wheel cylinder/caliper with a rubber hammer to dislodge any air bubbles that are stuck inside. The advantage to this method if that it can be a one-man operation. The disadvantage is that it takes lots of time. Repeat this operation for each wheel cylinder/caliper, ending up with the one closest to the master cylinder. During the bleeding operation always make sure that there is brake fluid in the Master Cylinder reservoir.

When done with one of the above bleeding procedures, you need to check the operation out. The brake pedal operation should be hard with no sponginess. If it is at all soft, you have air in the system and you have to repeat the bleeding operation, looking for bubbles. Since the bubbles at this point could be the dreaded micro bubbles, you should wait 24 hours for these to congeal into large bubbles before attempting to repeat the bleeding operation. Remember, all brake fluids are liquids, and liquids do not compress in any measurable amount with the pressures encountered in our brake systems. If you have a soft pedal, you have air in your brake system, no matter what type of fluid you are using.

Once you get the desired hard pedal, you need to test for leaks. Firmly depress the brake pedal and observe if the pedal slowly goes down to the floor. If it does, you have a leak somewhere and you have to find it and fix it. I had a troubling leak in a stainless steel sleeved master cylinder. The leak was between the stainless steel sleeve and the cast iron bore. It went back to the rebuilder to re-do it. This is a potential problem with any sleeved brake component.

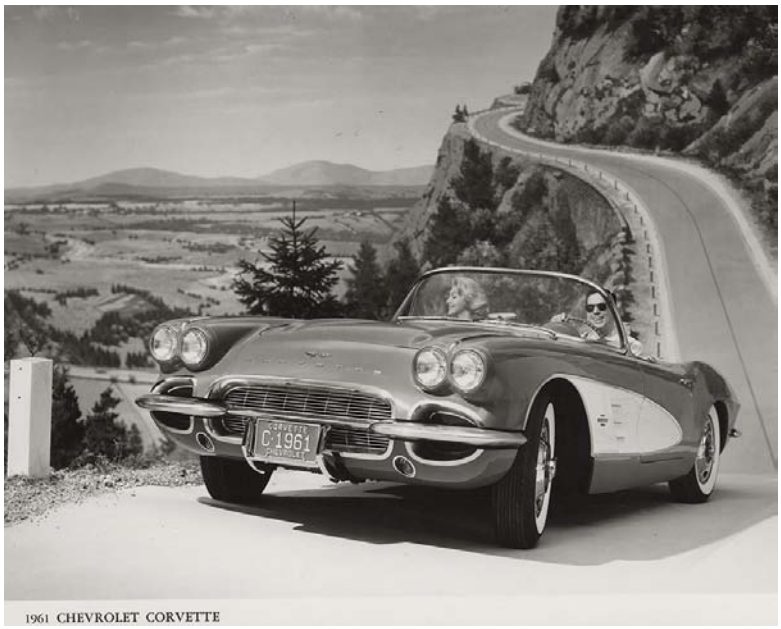
When I bought my 1992 Camaro Z-28 new, I immediately converted it to DOT 5 without draining or rebuilding it. It was new. I used a turkey baster to suck the DOT 3 fluid from the master cylinder. Then I carefully filled the reservoir with DOT 5 and bled each caliper, starting with the furthest one, until the purple DOT 5 appeared. This method did not assure that all of the DOT 3 was removed, but it has been 27 years and I never have had a leak or a problem.

In conclusion, installing DOT 5 is a lot more trouble and expense to install in your car’s brake system compared to DOT 3. But when successfully done, in my experience, it is “forever”. You should never experience brake component failure ever again. If you do stay with traditional brake fluid (DOT 3, DOT 4, DOT 5.1), you should flush the fluid every few years to remove the moisture that the fluid has absorbed.

Joe's Garage

SoCal SACC Technical Manager Joe LeMay (jlemay5@aol.com) shares tips and information on common C1 maintence and restoration projects.

Elevation Changes and How They Affect Engine Tuning



1961 CHEVROLET CORVETTE

During the trip in my 1957 to Lake Tahoe, I went up to 8000 ft. elevation a few times. The eastern Sierra is a beautiful drive and I have climbed many peaks and routes along the 395 and slept at much higher elevations. It is one of my many passions.

Back to the car; It was immediately noticeable that the engine was not running as it had a sea level and once in Tahoe, I also had to turn in the idle screw to regain the idle speed I wanted. Here is some of the information on how to adjust the engine for better performance at altitude.

Driving a car into the mountains can sometimes be challenging to get it to run well, as your engine is tuned for your home elevation and not the higher mountains. The elevation change can affect engine combustion and how much power you are able to generate, making the engine run poorly at higher elevation. Even if it is for a short while you are not happy. If you are going to be staying at a higher elevation for an extended period, you may want to adjust your fuel system setup to the elevation where you'll be living and driving.

Joe's Garage

Why Compensate For Less Oxygen?

In an internal combustion engine, combining a fuel source with oxygen in a cylinder and igniting it creates a controlled explosion. Changing how much oxygen and how much fuel are present in the cylinder can result in more power out of that controlled explosion. However, this can be tricky because the amount of oxygen in the atmosphere at any given time fluctuates due to factors such as the weather and elevation.
If there is too much fuel in the mixture, it will not generate enough heat. The rich fuel mixture acts as a cooling affect. If there is too little fuel, combustion will not be efficient and power will be down significantly. Also with a lean mixture, there is less cooling and that might generate so much heat that engine damage may occur. In between, you get what you are wanting. Basically, you want to control the ratio of air-to-fuel to an appropriate amount to get the most power without engine damage.

The amount of air (pounds) in a cubic foot is air density. One cubic foot of air located at sea level has a column of air above it that stretches into the upper atmosphere. That column exerts a pressure that creates a certain amount of oxygen along with the other molecules that make up a cubic foot of air. A cubic foot of air located at 1,000 feet above sea level has 1,000 feet less of air than the column at sea level, resulting in thinner air. Since combustion in an engine requires a specific amount of air and fuel, thinner air throws off that ratio and causes problems with the engine's performance. Barometric pressure is a way of measuring the pressure from the column of air above us. The higher we go in elevation, the smaller the column above us and the less pressure there is to measure. Higher altitudes correlate with lower barometer values indicating less oxygen in the air. You can track how much oxygen is in the air by monitoring the barometric pressure.

Mechanical Fuel Injection

Mechanical fuel injection works well for naturally-aspirated or forced-induction engines and handles most any type of fuel - gas, ethanol blends, methanol, and even nitro blends. Fuel is delivered directly to the engine for fast startup. It is simple to tune: there are only one or two adjustments to make, with air-to-fuel ratio as a powerful parameter to guide precise tuning.

Operation is simple- a driver-controlled throttle air valve with a simple hydraulic system to deliver the fuel. Mechanical linkage connects the throttle valve to the fuel valve. When the throttle valve is opened, providing more air to the engine, the fuel valve is opened, providing more fuel to the engine. Additional components are added for air and throttle control for power modulation, for deceleration, and for cold start. For tuning, simple changes control how much fuel enters each cylinder.

Joe's Garage

Mechanical Injection Operation

Different fuel injection systems can be described in two ways ~ by where the fuel is injected and by whether it is timed or continuous in flow. Here was how it was observed during the time of GM fuel injection development in the 50's.

One system which had been in use for many years is the **timed direct cylinder injection** system such as used in a diesel engine, where the nozzle is right in the combustion chamber and sprays fuel into the chamber when the piston reaches top dead center on compression. This system involves rather complicated and expensive timing devices and pump equipment.

A second system is **timed port injection** which had been offered by several manufacturers. The nozzle is located in the intake port and sprays fuel toward the intake valve whenever the valve is open. The timing equipment required is still rather expensive and there is some question as to whether the timing of the discharge has enough advantages to offset the additional cost.

Continuous flow port injection (including Rochester FI) had been used for some time as an accessory for racing applications. Fuel is sprayed continuously into the intake port at such a rate that a full charge is delivered over a complete cycle of the engine. Since injection of this type involves a nozzle with no valve of any sort, vacuum effects on the fuel spray had been a problem. With pressure behind the nozzle and a variety of vacuum values ahead of the nozzle, it had been very difficult to control fuel flow particularly at idle and low speeds.

After testing all the current systems at the time, GM engineers concluded in 1955 that continuous flow port injection was the most practical system for American automobiles, for no system on the market had been able to provide the necessary full range in performance. Therefore, the GM Technical Center Engineering staff designed a new continuous flow fuel injection system. This is Rochester FI.

The new fuel injection system was unique in several respects. The system contained a float controlled fuel reservoir for the high pressure gear pump, which eliminates the need for a pump overflow line to the gas tank. With this design there is always fuel available for starting. Since the gear pump is in the reservoir, no pump plumbing is required. Pressure from the gear pump must be regulated to provide the right flow at the nozzles.

Joe's Garage

To avoid vacuum effects on the nozzle orifice which have caused previous trouble with continuous flow systems a vented fuel nozzle was designed in which the fuel is sprayed directly into atmosphere, across an air duct and through a small hole into the intake manifold. With this type of nozzle, vacuum effects are nearly negligible and positive fuel control at all speeds is possible. Other features include mechanical simplicity, instantaneous response, and outstanding performance from low idle to full power

How Does Electronic Fuel Injection Work?

Electronic fuel injection was developed as a replacement to the carburetor. Complex electronic circuits were developed then shrunk into small packages. This expanded engine fuel management and automatic compensation for altitude. Inlet sensors were developed to determine air density characteristics. Exhaust sensors were developed to measure combustion. The combination produced air/fuel ratio controls to compensate for air temperature, humidity, and air pressure effects from weather or altitude. Additionally, electronic functions were added to benefit cold starting, reduced emissions, and improved mileage.

The driver's throttle position and engine speed is measured along with inlet air density. Oxygen sensors in the exhaust measure whether the exhaust has a fuel rich or fuel lean characteristic. That data is sent to the engine management system to control the fuel down or up. In this feedback mode, the correct amount of fuel is delivered, regardless of air density changes from altitude. While the engine is running, the determination and control of the amount of fuel occurs on a continuous basis.

Carburetors and Jet Sizing

For small changes in altitude, carburetors will compensate without any modifications. For larger altitude changes, carburetor jetting adjustments may be needed. Installing a smaller size jet will reduce fuel flow, which is ideal for high-altitude conditions where air is limited. A larger jet size increases fuel flow for oxygen-rich, low altitudes. With this knowledge, you'll be able to understand how to correctly change the jets to regain the engine performance levels that were lost due to improper jetting.

The amount of jetting change is dependent on various factors including the carburetor manufacturer and the method of mid-throttle transition. Remove the jets and insert a smaller/larger set based on the vehicle's new operating altitude. Changes to float levels may also be needed. There may also be metering rods that will affect richer or leaner running conditions.

When the operating altitude of the engine will be 2000 feet higher than your normal altitude, you'll need to insert a jet one or two sizes smaller than the size currently installed in the carb, which reduces the amount of fuel entering the engine to match the reduced level of oxygen in the air. If the altitude is dropped 2000 feet, you'll need to insert a jet that is one to two sizes larger than the current size, increasing the fuel flow to match the higher oxygen levels.

Joe's Garage

Jet Sizing When the Temperature Changes

Install a smaller jet size if the ambient temperature dips below 35-degrees Fahrenheit. This creates a lean condition that runs the engine hotter, ideal for cold conditions. When the air temperature rises above 105 degrees, larger jets will be needed to increase the amount of fuel entering the combustion chamber, known as a "rich" condition. Rich conditions allow the engine to operate at a cooler temp.

Jet Sizing As It Pertains To Air/Fuel Mix Ratio

Change the jets whenever you increase the performance characteristics of the engine. This could be anything from a larger intake manifold, long duration cam shaft or milling the cylinders for increased displacement. In essence, when an engine's performance level is increased, more air is required to run the engine. That means more fuel will be needed to maintain a balanced air/fuel mixture ratio. This ratio is different for each engine, requiring simple testing.

Always Check

These jet sizing tips are designed to help you understand the basics of carburetor jet sizing and what engine/exterior factors may require a jet sizing change. After a jet sizing adjustment, check your spark plugs to see whether the changes are fouling or burning the plugs. If either happens, make adjustments to the jet sizes again until the plugs do not appear excessively dry or filled with black carbon, indicating burning and fouling respectively.

Carter Metering Rod Technology

We are talking about C1 Corvettes with WCFB carburetors and metering rods. What does a metering rod control? It is a method of changing the calibration of the carburetor in response to different conditions by inserting a movable tapered rod through the main metering jet. The effective calibration at any time would be the area of the jet less the area of the portion of the rod currently in the jet.
Carter began using metering rod technology on some 1929 Chevrolet 6-cylinder updraft carburetors. The early installations were mechanical in operation; that is, the metering rod was directly connected to the opening of the throttle shaft, and the position of the rod in the jet was determined by the amount of opening of the throttle valve.

In 1932, Carter started using another method of calibration change, based on vacuum, rather than throttle opening. This method, consisted of a vacuum piston held in a certain position, which would change position when vacuum was reduced by additional throttle opening. The vacuum piston would open a ball bearing valve. Additional fuel would then flow through a fixed auxiliary jet. Thus enrichment occurred, but only at a fixed rate.

Joe's Garage

By 1940, Carter combined the tapered metering rod with the vacuum piston/spring combination on their more expensive carburetors. This is the system we have in the WCFB carburetor.

WCFB System Metering Rod Components

The system components are: (1) the main metering jet, (2) the metering rod, (3) the vacuum spring, and (4) the vacuum piston. Considering each of these components:

Main metering jet- The main metering jet resembles a main metering jet from other carburetor manufacturers, with an orifice that is larger than a competitor's jet from a comparable sized carburetor because of the rod. The size of the jet must be sufficiently large to flow enough fuel for Wide Open Throttle with the smallest diameter of the rod in the jet.

Metering rod- Carter used metering rods with a single step, 2-step, 3-step, and 4-step. The single step rods were basically an on/off condition similar to the function of a power valve. The multiple step rods (series WCD, AFB, WCFB, etc.) have their own group of rods. Some series have multiple rod lengths; all series have variable step diameters and step lengths.

Vacuum spring- Vacuum springs come in a variety of tensions, are placed beneath the vacuum piston, and hold the vacuum piston in the up (fully rich) position when there is low vacuum. As the movement of the piston (hence the rod) is determined by the vacuum and spring tension, a change in engine vacuum because of a change in camshaft profile can cause the calibration of the carb to change. For example, the spring in a hydraulic lifter engine is different than the spring in a Duntov cam engine.

Vacuum piston - The vacuum piston is in a cylinder that houses one end of the vacuum spring. The vacuum piston is attached to the metering rod(s). The piston bottom is exposed to engine vacuum. The piston will physically move up and down inside the chamber due to the opposing forces of the spring tension and engine vacuum, moving the metering rods.

Carter WCFB Adjustments

There are two items in this carburetor that allows changing the fuel mixture: the main jets and the metering rods. Main jets can be changed similar to any other carburetor jet. To access the main jets, the carburetor air horn must be removed, which is not an easy process.

Joe's Garage

It becomes involved and is a good option when doing a carburetor overhaul. The metering rods on the other hand, are easily accessible. I have changed these several times and it is done in ½ an hour. There are leaner metering rods for some of the carburetors installed in Corvettes.

It is always important to have the carburetor adjusted to specs prior to trying a custom rod/ jet setup.

Rochester FI

The air/fuel ratio can be varied by changing the linkage leverage between the control diaphragm and the spill plunger. This is accomplished by shifting the pivot point on the control arm. When the "ratio lever" rests against stop "P" (Power), the air /fuel ratio obtained is for wide-open throttle operation; when resting against stop "E" (Economy), part throttle fuel requirements are fulfilled. For automatic operation, the ratio lever is controlled by the spring loaded enrichment diaphragm which is subjected to manifold vacuum; at light load (high vacuum) the level is held at position "E;" at full load (low vacuum) at position "P."

The stops are set to obtain a best economy air/ fuel ratio (about 15.5/1) at part throttle. The maximum power air/fuel ratio (about 12.5/ 1) is set at wide-open throttle. You would:

1. Set the Economy Stop during highway cruise for an air/fuel ratio of 15.5/ 1.

2. Adjust the length of the Enrichment Diaphragm rod such that the Ratio Lever begins to transition off the Economy stop at a specific manifold vacuum. ***

> ***The enrichment diaphragm spring is set to hold the ratio lever in the economy position above about 7 in. of Hg vacuum for FI engines using the "30-30" PN 3849347 cam, and about 9 in. Hg vacuum for FI engines using the "Duntov" PN 3736097 cam. We have not seen a specification or the hydraulic cam FI engines but 10-12" vacuum seems to work for engines with the PN 3733431 cam.

3. Set the Power Stop during full throttle acceleration for an air/fuel ratio of 12.5/ 1.
As altitude increases dramatically, Rochester FI will operate slightly richer, but not to the degree observed with a carburetor. To a significant degree, Rochester FI is self compensating for temperature and altitude changes.

As a documented example: A well instrumented FI engine with a correctly calibrated Rochester FI unit was driven from sea level to an elevation of 4000' during which the air/fuel ratio became richer by approximately 0.6%; a negligible amount.

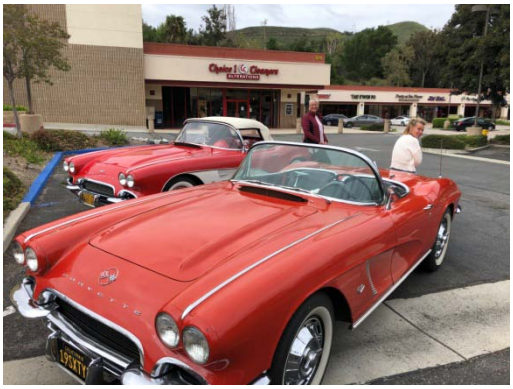
Joe's Garage

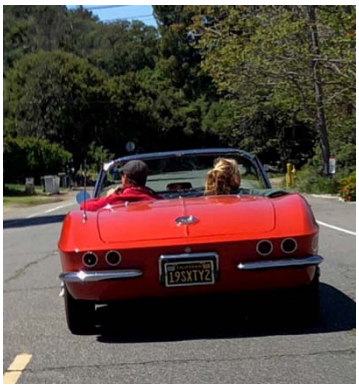
As altitude changes significantly, the air/ fuel ratio will change requiring a change in the stop locations. However, as a practical matter, a properly calibrated Rochester FI unit can be used over a wide range of altitudes without concern about how the air/fuel ratio varies. One final comment about FI: An owner should "never" adjust the Economy or the Power stop screws unless said owner has FI experience and air/fuel measuring equipment. This can be considered an absolute requirement.

Conclusion- Regardless of whether the fuel system for an engine is mechanical fuel injection, a carburetor, or electronic fuel injection, controlling fuel mixtures for elevation is important. Air/fuel ratio control for changes in elevation helps maintain consistency and power for engine performance.

I want to thank Jim Lockwood for his comments on tuning the Rochester FI units.

Meet our newest member – Kurt Statts





"I am a retired Navy officer and served as an F-14 Tomcat RIO. I still work for the Navy as a civilian flight test engineer. My wife Lisa owned two Corvettes when I met her - a white '76 and a blue '85, so she had to take my mechanical skills into account when she decided to marry me! My brothers and cousins helped me restore my '67 Camaro RS convertible my senior year in high school, which I used as a daily driver for decades, and I still have today. Lisa and I both always wanted a C1 though. I fell in love with this '62 Corvette in the '90s, when my cousin Terry got it as a project. He completely rebuilt the 340 horses back to original specs and drove it regularly to Carlisle. He left the car to his daughters when he passed, and in their care it was treasured, but not driven regularly, or maintained to Terry's standards. I took stewardship of it in late 2018. It is roman red, quite faded to almost orange with an interesting 'patina', and has a white ragtop and a hard top. It runs great! Lisa and I both have a lot of fun not just driving it, but also getting to know the many fun C1 owners in the area."

Corvette C1 Classified Ads

FOR SALE: ***REPRODUCTION 1953 to 55 EXHAUST EXTENSION, First style, short extensions, were used from 1953 to 1954 (vin # 2628).. $875.00, Second style, long extensions, were used after vin #2628 in 1954 thru 1955. $1525.00, Both styles are made from extruded polished stainless steel, as original. The long extensions have the correct rolled end and metal formed deflector. They all have correct appearing insulators with a die formed steel reinforcement and brass adjusting tabs. I reproduce these myself here in the US. For photos and any questions email Gary at polowhite53@gmail.com.***

WANTED: ***Distributor for 1954 Corvette. Must include mechanical tachometer port and cap. jackhstrong@yahoo.com***

FOR SALE: ***57-61 dual quad intake. 62 fuel injection base plate, T-10 4 speed empty cases, Corvette valve covers off set holes high script, 6.70 x 15 tires good tread for spares, misc front bumper brackets, vintage Ansen 2 piece cast iron scatter shield, original rear springs several dates, 56-60 copper radiator with good top tank, misc front license bracket pieces, 58-62 steering box, 58-62 speedometer, 58-62 clock. Chip Werstein 818-554-6560 or chipsgarage@aol.com.***

FOR SALE: ***283 engine 3756519 dated K40 for your early 61 , $350 - Eric May 805-208-9342***

FOR SALE: ***Engine hoist "Cherry Picker" Lifts 2000 lbs. Boom extends to reach over C-3's long front end. Steel casters Folds for storage. $75. Pick it up in Castaic. Mike McCloskey, 661-373-0617***

WANTED: ***Pictures, movies, or programs of any 1957 Corvettes at the racetracks, streets, or dealerships in Fresno, Madera, Hanford, Merced, Stockton. Mid Valley California. Ray 570-656-3420 rcdfirst@mail.com.***

WANTED: ***Chevy heads 3748770 or 3755550 with staggered valve cover holes. Eric May 805-208-9342***

FOR SALE: ***Early 1956 Corvette, currently on display at the Petersen Museum in LA; Frame-off original restoration about ten years ago; Black with silver coves, Solid red interior, Early 265cid engine (ram horn exhaust manifold oil dip stick is on passenger's side, Dual quad carburetion (correct early manifold and valve covers), Two speed automatic transmission, Power convertible top, Hard top, Windshield washer, Signal seeking radio, Power windows, Known issues: Window wiper motor not working and not matching numbers, Power top works but needs actuator switch adjustments, Missing jack. $140,000 invested asking $100,000. Jim Plowden, Jimp_99@yahoo.com; 310-291-4756***

For Sale/Wanted ads are FREE for current SoCal SACC Chapter members. Email your ad text to the editor (fkokaska@yahoo) for inclusion in the next edition.