Volume 17 Issue 2 Q2 2020

Heart of Ohio NCRS

The Front End

- A BIG Newsletter
- President's Recap!
- Q1 Events

Inside this issue:

Chairman's Message

Chairman's Letter-Q2

Due to the Covid-19 virus we will be cancelling our March-May Events. It also looks like we will be canceling our April Chapter Judging meet. We hope we can reschedule the meet to a later date. As this situation is fluid, please make sure to check your email and the website for any updates. We've been engaged with the national on advice and are giving input and getting feedback on current event statuses. This is a painful process for all of us, so hang in there. The calendar will be revised and we are working to fill with other activities

2020 has started off with a host of HoO activities in the 1st quarter. In January, despite rainy conditions, the club met at my garage in Plain City. Mike Treece presented technical information on frames. I thought we had a great turnout and it was great seeing everyone after the holidays. Terry Buchanan handed out participation awards to deserving members including hats, shirts, and a special 3 year jacket.

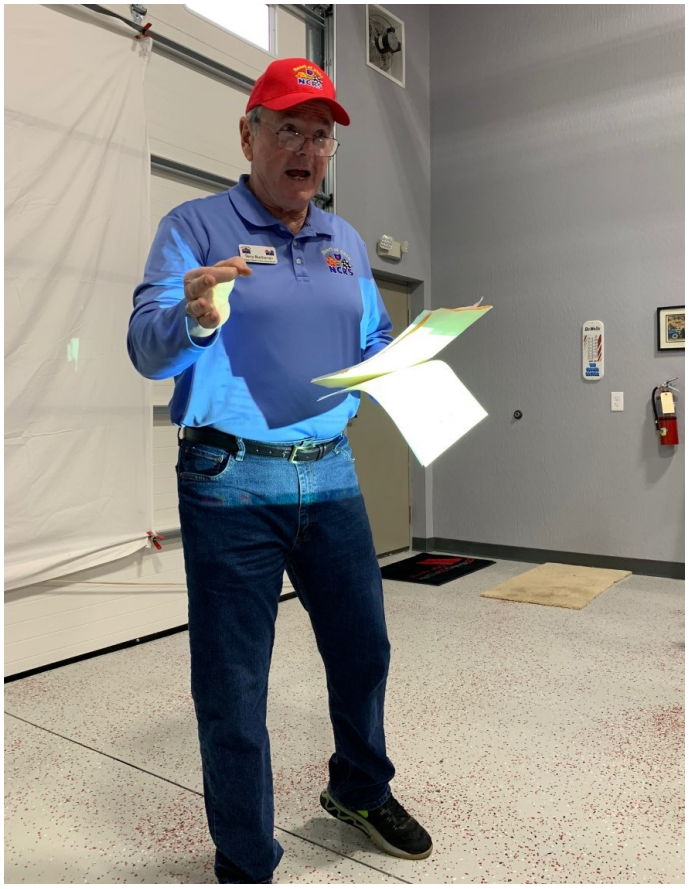
In February, a group of 6 members made it over to Ray Skillman's Car Collection just south of Indianapolis. We spent the 1st hour just walking Ray's incredible collection which included: Old Schwinn Bikes, Midget Racers, and classic Mustangs and Corvettes. In the middle of the collection is a fully restored old horse carousel. The Indiana Chapter hosted a nice lunch followed by a judging school by John Ballard. A C1 and C2 were up on lifts and the entire group benefited from John and Mike Treece's expertise. If you haven't been to Ray's collection, its something to put on your calendar.

At the end of February, the club met at Fred Richards cabin at Buckeye Lake. Mike Treece presented a tech session on Wheels and Tires. Fred did a great job of hosting the meeting, and again we had a great turnout for an early season meeting. Several new members were introduced as well: John Lanning, Duff Parsons, and Tim Keating.

We ordered and have been passing out name tags out the meetings. Additionally, I have refreshed the club directory and we will be passing it out at our next available meeting.

Please stay safe through this critical time.

January Meeting—Wes Wells Garage



February Meeting—Fred Richard's Garage

The February judging school was well attended with over twenty members in attendance. Corvette tires and hub caps were the topic of conversation for the day.

Ray Skillman's Garage

The Indiana chapter hosted a judging school at Ray Skillman's collection that includes a recently restored carousel in February that we had several members attend.

Ray Skillman's Garage

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Participation Awards - Terry Buchanan

Heart Award Update

It is early in the year but by the time you read this, we will have had three Chapter meetings and Heart Award points will have been earned by a number of Chapter members. If you are new to the Chapter, you are probably asking yourself, what are Heart Awards? These are awards given to members for their participation in the Chapter. You can learn about Heart Awards by going to our member's only page on our Chapter website at www.ncrs.org/hoo On that page, scroll over the Heart of Ohio Chapter banner at the top of the page and when it changes color from red to yellow, click on it. Then the member's only page will open. There you will see how points are earned for the Heart Award and the Chapter members accounting of up to date points earned. If you feel a mistake has been made or you have a question, please contact me at BuchananT@sbcglobal.net Mistakes are easily corrected.

To recap, come to meetings, drive your Corvette or write a tech article for the newsletter and you can earn free Chapter clothing. It is as simple as that and it only takes 20 points to earn a Heart Award. Thanks for your support of the Chapter!

Terry Buchanan, Chapter Secretary

Financials

Beginning Cash Balance 1/1/2020	
Fifth-Third Bank	$8,543.44
Paypal Account	$211.51
Beginning Cash Balance 1/1/2020	$8,754.95

REVENUE:

Membership Dues	$440.00
Chapter Meet Registration Fees	$910.00
Charity Car Show Income	$0.00
Total Revenue	$1,350.00

EXPENSES:

Operations & Planning	$534.57
Judging Meet Expense	$0.00
Charitable Contribution	$0.00
Charity Car Show Expense	$0.00
Paypal Service Fees	$55.28
Total Expenses	$589.85

Closing Cash Balance 2/29/2020	$9,515.10

Closing Cash Balance 2/29/2020	
Fifth-Third Bank	$8,849.27
Paypal	$665.83
Total	$9,515.10

Replacing Rear Sway Bar Bushings in a C-5 by Randy Early

Technical Article for replacing the rear sway bar bushings for a C-5.

Visual inspection will reveal compression and / or deterioration of the rubber, it may be gone.

Safely and properly jack up the rear of the car. Take pictures of the bar, bushings, mounts, and relative configuration for reference during installation / reassembly.

1) Using a 18mm combination wrench and a T -40 torque driver & ratchet, remove the lower end link nut. Use a spray lubricant to help the removal.

2) Remove the two upper 18mm bolts that hold the sway bar to the frame.

3) Using a 15mm ratchet and a 18mm wrench, take off the lower nut that remains on the lower sway bar frame mount. DO NOT remove the bolt; it holds the lower A-Arm in the car.

Replacing Rear Sway Bar Bushings in a C-5

4) Push out the lower end link studs and remove the bar from vehicle.

5) Place the new bushings on the Bar. Please look at the factory bar and install in the same manner.

Replacing Rear Sway Bar Bushings in a C-5

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6) Apply anti-seize compound to the two frame mount bolts. Apply lubricant to bushings per instructions with your bushing instructions (some brands may not require lubricant?)

7) Install the bar in the vehicle using the original brackets, start the frame mount bolts and nuts, remember, 3-4 threads.

8) Reinstall the OEM metal end links in the manner as removal. Fully tighten end link hardware with blue thread locker (Loctite?).

9) Tighten the upper frame mount with a 18mm socket and torque 35-40 ft-lbs.

10) Tighten the lower a-arm bolts with a 18mm wrench and 15mm socket and torque 60-65 ft-lbs. or reference instructions included with bushings.

11) Double check that you tightened everything and compare with your pre-installation pictures.

12) Safely lower your car

13)Re-check the fasteners at about 100 miles to ensure optimal performance of your new sway bar set.

Randy Early

Game Changer by Duff Parsons

There have been thousands of opinions rendered and awards given to the new 2020 Corvette. Virtually every automotive journalist has penned an article about the coming of the mid-engine Corvette. I'm throwing my opinion into the ring as a die-hard Corvette enthusiast and customer for the past 50 years.

I bought my first of 39 Corvettes in 1969, barely a decade after Zora Arkus-Duntov tooled and drove a mid-engine Corvette research vehicle, the CERV-1. Fast forward to 2019, and General Motors has finally released its first mid-engine Corvette for public sale. And as Johnny Lieberman of *Motor Trend* says, "Never before has so much four-wheeled exoticism been attainable for so little money."

The base price is under $60,000, which 2017-2019 Corvettes are still selling for. Add a few tweaks like a Z51 suspension, front lift, and goodies like one of the new seat options, and the price jumps into the $80's. So, what if its horsepower rating is less than recent models like the coveted Z06 and ZR1 cars? Its 495-horsepower engine, with the exhaust option, still takes the checkered flag at the quarter mile in 11.1 seconds—a hair faster than the Porsche 911S. And, two hairs faster than the new GT500 Mustang that clocked 11.3 seconds at VIR. The LaFerrari does the quarter in less than 7 seconds, but it costs about 30 times as much as the new Corvette and—let's be honest here—how often do you want or need to cover a quarter mile on a city street in less than 10 seconds?

The idea and design for a mid-engine platform has been around since before the turn of the 20th Century. Karl Benz played with the idea of a mid-engine drive train as early as 1885. The British Burney cars of 1928 are credited as being the first rear-engine cars. Then came the American CERVs and, later, Pontiac engineers who developed the Fiero, which is hailed as the first true mid-engine American car. That was 35 years ago, although the project at Pontiac began over 50 years ago.

So why are we just now seeing a mid-engine Corvette platform design? According to Dave McLellan and Dave Hill, for years Corvette owners displayed a lack of interest in changing the front engine layout, so Chevrolet sales and marketing guys just weren't interested in the mid-engine platform either. Over 60 years of name recognition, performance,

2020 Corvette: Aluminum chassis, composite body, with 61% of the weight over the rear wheels. Its 3.9" longer, 23.2" wider and 2.2" lower than Porsche Car-

and value is hard to chuck. But in 2005, with an aging customer base and the retirement of Corvette's chief engineer Dave Hill, Chevrolet had to do something.

Hill's replacement, Tom Wallace, (2005-2008) was a racer more than a Corvette expert, and he knew that Tadge Juechter was working on a mid-engine prototype. So shortly before the economy tanked, he moved Tadge Juechter into the chief Corvette engineer position. According to an article by Todd Lassa dated July 19, 2019, Juechter stated that "Chevrolet really got serious about the mid-engine car in 2004. We knew that we had to go after the Porsche's packaging, effectiveness, handling, responsiveness and performance levels and beyond." After GM filed for bankruptcy in 2009, a US Treasury Department consultant—and Corvette enthusiast—asked Juechter about the C7. When the Treasury got into GM's books and saw that Corvettes made money, Juechter got the go-ahead, and the team got the C7 out the door by 2013. Corvette was spared.

But GM/Chevrolet still needed to bring young buyers into the show room and offer them an exotic vehicle at an affordable price. In 2005, Harlan Charles opined that a "mid-engine Corvette had to add performance, be fun to drive, have good visibility, be a driving experience, be packaged with a V-8 and most of all, attract new customers." That's a tall order. All car guys know that placing the engine over the rear axle increases traction and therefore rear wheel torque and also reduces the chance of going into a skid while braking. Professional drag racers learned that lesson long ago. Don Garlits is credited with creating a working design for rear engine dragsters and debuted his rear engine dragster at Pomona in 1971, even though it was the Coleman brothers of Maryland who initially campaigned a rear-engine race car in 1960.

Prior to the market's 2008 dip, GM's Corvette design team took test trips to Ferrari and Porsche design studios. Once the C7 was out the door, the push for a mid-engine vehicle increased. As Lieberman pointed out, "this new Corvette has donned the clothing of the European exotics." Ferrari, McClaren, Lamborghini, and Porsche have been producing mid-engine cars for years. So why try to compete?

Vehicle [2020]	0-60 sec	MPH ¼ mi, sec	Cubic inches, HP	Ft lb Torque	Weight	Base price
Corvette mid-engine	2.8	123.2, 11.1 sec	376 cu in 495 hp	470	3,647 7.3 lb/ hp	$ 59,995
Porsche Carrera 911-S	2.9	124.3, 11.2 sec	181.9 cu in 443 hp	390	3,369 7.6 #/ hp	~$ 295,000
LaFerrari	2.4	124, <7 sec	384.3 cu in 789/950 hp	664	2,976 3.77 lb/ hp	~$2,000,000
GT500 Mustang*	4.3	131.6, 11.3 sec	351 cu in 750	625	4,054 5.3 lb/ hp	$ 73.995-$94,385

As Wallace Wyss, writing for *Hemmings* in October 2019, said,

> Chevrolet wants to have at least one model with a youthful image, a progressive we-like-innovation type audience. But no matter what changes and updates they made to the front-engine Corvette, the audience remained stubbornly middle-aged, even beyond what you could call the age for a mid-life crisis. You could blame that situation partly on price. Younger buyers, in their mid-30's, are busy getting mortgages and still paying off college loans. The older guys (average age of the Corvette buyer is 66 years of age) are able to walk into a dealership and buy one in cash.

Young buyers can't afford the likes of the European exotics. But with a base price under $60,000, the new mid-engine Corvette could be an appealing option to the high-end Subaru STI S209, Honda Civic Type R, Infinity Q60, a Nissan GT-R or even the NSX.

In 2019, 8 new Corvettes traveled around the country in an unveiling "blitz." I went to 2 unveilings, and the traveling teams escorting the cars were pretty well informed and gave nice general presentations. But if you're thinking of

***2020 LaFerrari:* With Hybrid assist = +161 hp, 186mph in 15 seconds. carbon fibre-monocoque structure.**

***2020 Porsche Carrera 911-S:* Launch-control warp drive, massive stopping power from optional carbon-ceramic brakes, a $8,970.00 option.**

***2020 Mustang GT500:* Have a look at what Ford fashioned with the new GT500 Mustang and it 4.66 seconds faster than the Corvette on the 3.3 mile VIR track. I just couldn't leave the Corvette's street rival out of this picture.**

CERV-1 (1959-1960)

Now, who shall we get to star in the movie, Corvette vs. Ferrari?

buying one of these beauties and heading to the track, consider this. Lead Corvette development engineer Mike Petrucci said his test drivers never commented on off-throttle oversteer. But independent test driver Kim Reynolds reported that on the mid-corner understeer, the car can become unglued off-power (trailing-throttle oversteer), adding that it can be stabilized immediately by applying moderate power. I guess the bottom line question is this: how many of us are going to head to the track with the car out of the showroom?

With a little research, I pulled up information on the Porsche 911S, and the LaFerrari, the which is a good “look alike” to the new Corvette. The Corvette wins in all of the categories that we Americans deem important. Let’s look at the similarities:

Pictured in this article are the 2020 Corvette, the 2019 Ferrari LaFerrari, the Porsche 911 Carrera S, the 2020 Mustang GT500.

Some journalists think they look alike. What do you think.

I hope you enjoyed this little recap.

Duff Parsons #64163

Judging Sheet from 1975 courtesy of Mike Treece

NATIONAL CORVETTE RESTORERS SOCIETY
Judging Form

OWNER _____ DATE _____

ADDRESS _____ City _____ State _____

MODEL YEAR _____ SERIAL NO. _____

LOCATION OF MEET _____ Driven ☐ Towed ☐ Trailered ☐

SIGNATURE OF JUDGE _____ Checked by: _____

Car to be judged as it appeared at final assembly, and must be driven under its own power to judging area.

Please raise hood, erect soft-top, one window on, cowl-vent and trunk open.

POINTS: Missing — 0; Poor — up to ¼ max.; Good — up to ½ max.; Very Good — up to ¾ max.; Excellent — up to Full Value.

		Maximum Points	
I	GENERAL APPEARANCE (100 Points — Max.)		
	a. Color and quality of lacquer	.50	____
	b. Overall cleanliness and detail (includes chassis and gas-filler area)	.50	____
II	BODY DETAILS (100 Points — Max.)		
	a. Fiberglass quality — includes repairs	.25	____
	b. Soft-top: Color, Rubber, Hardware, Window	.20	____
	(Note: Includes detachable hardtop '56-'62 models so equipped.)		
	c. Wheels: Color, Wheel Covers, 5 correct size, type, style Tires	.20	____
	d. All Chrome: Includes grille, bezels, mouldings, screens, bumpers	.35	____
III	ENGINE COMPARTMENT (100 Points — Max.)		
	a. Engine type/color (Type from serial pad)	.15	____
	b. Carburetor(s) and air cleaner(s), complete/correct	.25	____
	c. Fuel/vacuum system, complete/correct	.25	____
	d. Electrical components, shields, harnesses	.25	____
	e. Colors, compartment and accessories, w/seal	.10	____
IV	COCKPIT (140 Points — Max.)		
	a. Upholstery, side trim, carpet: color/quality	.40	____
	b. Dashboard: Complete/correct — Color	.20	____
	c. Controls, Pedals, Mirrors, Ashtrays, Sill-plates, Steering Wheel, Ring/Cap, Cowl-Vent, Transmission	.25	____
	d. Glass — Includes side windows/curtains	.25	____
	e. All Lamp and Accessory Function (Radio, Clock, Tach, Brake-flasher, Turn Signals, Panel Lights, Courtesy Lights, Wipers, Coordinator, Horn	.25	____
	f. Door Seals, Vent Gasket	.5	____
V	TRUNK (60 Points — Max.)		
	a. Compartment: Color and Seals	.10	____
	b. Fibreboard Panel and Mat	.20	____
	c. Tools, Tool Stowage (Includes window bag on '53-'55 models)	.20	____
	d. Antenna: Complete, Correct (Allow for no antenna '56-'62 models without radio)	.10	____

MAXIMUM TOTAL POINTS = 500

TOTAL POINTS _____

Net Points = Total ÷ 5 to nearest tenth _____

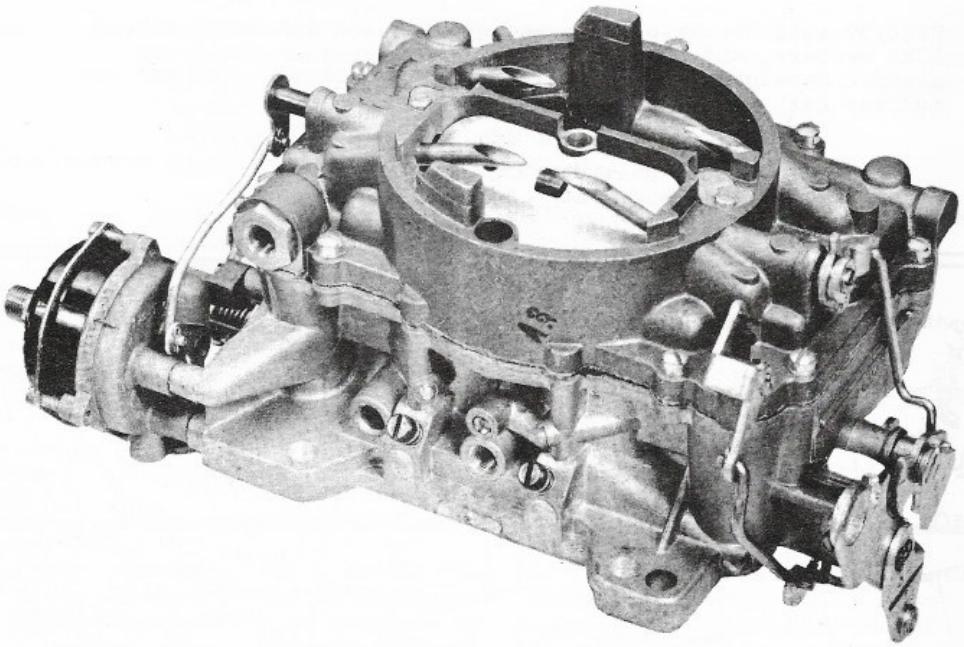
Mileage Points .2 (2/10) Point for each ten (10) miles driven — Crow Method — Add _____

GRAND TOTAL POINTS _____

— Revised 3/75

Carter Carburetor Manual courtesy of Mike Treece

CARBURETOR
CIRCUIT MANUAL



AFB-MODEL

CARTER

Carter Carburetor Manual

EXPLANATION OF CIRCUITS
CARTER MODEL AFB
CLIMATIC ® CONTROL CARBURETER

The Carter model AFB carbureter contains many new features. All major castings are made of light durable aluminum, and the over-all height of the carbureter has been reduced considerably. Five conventional circuits, as used in previous carbureters, are to be found in this unit. They are:

Two float circuits

Two low speed circuits

Two high speed circuits

One pump circuit

One Climatic ® Control choke circuit

The step-up rods, pistons, and springs are accessible for service without removing the bowl cover from the carbureter or the carbureter from the engine. Replaceable venturi clusters contain many calibration points of both the high and low speed circuits. Some models also have a built in dashpot or slow closing throttle device.

acf
Carter Carburetor Division

Form 3703
Printed in U.S.A

Carter Carburetor Manual

FLOAT CIRCUIT

The purpose of the float circuit is to maintain an adequate supply of fuel at the proper level in the bowl for use by the low-speed, high-speed, pump and choke circuits.

There are two separate float circuits. Each float circuit supplies fuel to a primary low-speed circuit and a primary and secondary high-speed circuit.

Setting the floats to specifications assures an adequate supply of fuel in the bowls for all operating conditions. Special consideration should be given in service to be sure the floats do not bind in their hinge pin brackets or drag against inner walls of bowl.

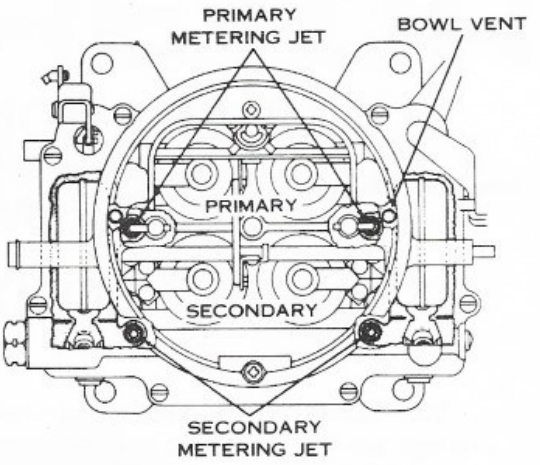
The intake needle seats are installed at an angle to provide the best possible seating action of the intake needles.

Intake needles and seats are carefully matched during manufacture. Do not use the left needle in the right seat or vice versa. To avoid unnecessary bending, both floats should be reinstalled in their orginial positions and then adjusted.

The bowls are vented to the inside of the air horn and on certain models also to atmosphere. A connecting vent passage effects a balance of the air pressure between the two bowls. Bowl vents are calibrated to provide proper air pressure above the fuel at all times.

Baffles are used in the bowls to provide a stable fuel supply for the primary and secondary main jets.

The carbureter bowl and the intake strainer screen should be clean and free of dirt, gum or other foreign matter. To assure a positive seal, the gasket surface of the castings must be free of nicks and burrs. An air or fuel leak at these points can result in a mileage complaint and cutting out on sharp turns or sudden stops. A new air horn gasket should be used when reassembling.

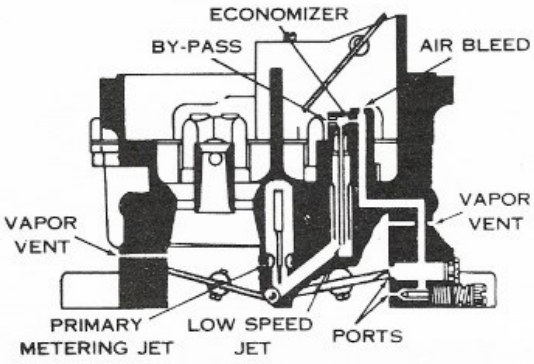


FLOAT CIRCUIT

LOW SPEED CIRCUIT

Fuel for idle and early part throttle operation is metered through the low speed circuit. The low speed circuit is located on the primary side only.

Gasoline enters the idle wells through the main metering jets. The low speed jets measure the amount of fuel for idle and early part throttle operation. The air by-pass passages, economizers and idle air bleeds are carefully calibrated and serve to break up the liquid fuel and mix it with air as it moves through the passages to the idle ports and idle adjustment screw ports. Turning the idle adjustment screws toward their seats reduces the



LOW SPEED CIRCUIT

LOW SPEED CIRCUIT (Continued)

quantity of fuel mixture supplied by the idle circuit.

The idle ports are slot shaped. As the throttle valves are opened, more of the idle ports are uncovered allowing a greater quantity of the gasoline and air mixture to enter the carbureter bores. The secondary throttle valves remain seated at idle.

All by-passes, economizers, idle ports, idle adjustment screw ports, as well as the bore of the carbureter must be clean and free of carbon. Obstructions will cause poor low speed engine operation. Worn or damaged idle adjustment screws or low speed jets should be replaced.

The low speed jet, air bleed, economizer and by-pass bushings are pressed in place. Do not remove in servicing. If replacement is necessary, use a new venturi assembly. To insure proper alignment of the low speed mixture passage, the primary venturi assemblies were designed with interlocking bosses so they can only be installed in the proper locations.

(When the primary venturi assemblies are placed in the wrong side of the carbureter, they will not fit all the way into the casting.)

Air leakage at the gasketed surface surrounding the low speed mixture passages or between the flange and manifold may cause poor idle and low speed operation. Tighten venturi assemblies securely. Always use new gaskets.

To assist in quick hot engine starting on some models, fuel vapor accumulated in the primary and secondary bores are vented to atmosphere through vent passages above throttle valves.

HIGH SPEED CIRCUIT

(FUEL FLOW)

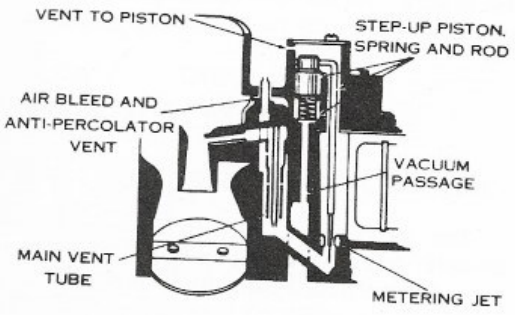
Fuel for part throttle and full throttle operation is supplied through the high speed circuit.

PRIMARY SIDE

The position of the step-up rod in the main metering jet controls the amount of fuel admitted to the nozzles. The position of the step-up rod is controlled by manifold vacuum applied to the vacuum piston.

During part throttle operation, manifold vacuum pulls the step-up piston and rod assembly down, holding the large diameter of the step-up rod in the main metering jet. This is true when the vacuum under the piston is strong enough to overcome the tension of the step-up piston spring. Fuel is then metered around the large diameter of the step-up rod in the jet.

Under any operating condition, when the tension of the spring overcomes the pull of vacuum under the piston, the step-up rod will move up so its smaller diameter or power step is in the jet. This allows additional fuel to be metered through the jet. The step-up rod does not require adjustment.



PRIMARY HIGH SPEED CIRCUIT

SECONDARY SIDE

Fuel for the high-speed circuit of the secondary side is metered at the main metering jets (no step-up rods used).

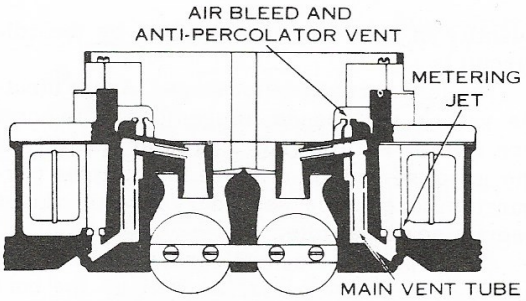
The main vent tubes on primary and secondary sides mix air drawn through the high speed air bleed with the fuel before it passes out of the nozzles.

A clogged air bleed or main vent tube may cause excessively rich mixtures. The high speed bleed and main vent tubes are permanently installed. If replacement is necessary, use a new venturi assembly.

HIGH SPEED CIRCUIT(Continued)

ANTI-PERCOLATOR

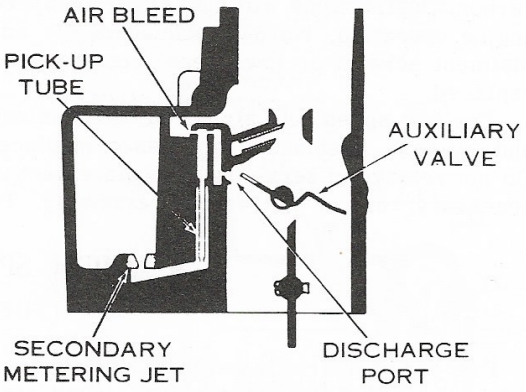
The high speed bleeds also act as anti-percolator vents when a hot engine is stopped or at idling speed. This will help vent fuel vapor pressure in the high speed and idle well before it is sufficient to push fuel out of the nozzles and into the intake manifold.



SECONDARY HIGH SPEED CIRCUIT

SECONDARY INITIAL DISCHARGE

On models with auxiliary valves, initial discharge ports are incorporated to assist the starting of the fuel flow in the secondary high-speed circuit. These ports are located next to the venturi struts. When the auxiliary valves start to open, the vacuum at the discharge ports pulls fuel into the pick-up tubes. Air bleeds serve to break-up the liquid fuel and mix it with air as it moves through the passages to the initial discharge ports where it is discharged into the air stream. As the auxiliary valves continue to open, and the secondary nozzles deliver additional fuel, less fuel flows from the initial discharge ports.



INITIAL DISCHARGE CIRCUIT

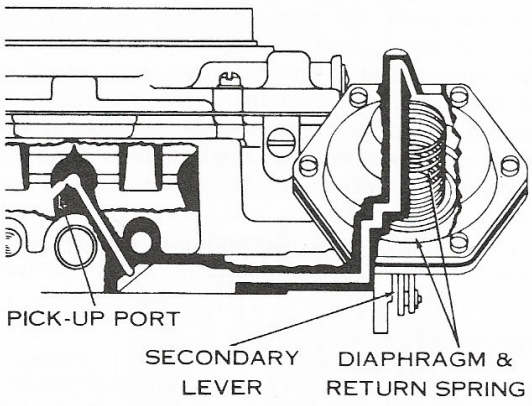
SECONDARY THROTTLE VALVE OPENING DEVICES

VACUUM OPERATED SECONDARY VALVES

The secondary throttle valves, on some models, are vacuum controlled. This feature provides the added capacity of the second carbureter only when the engine is able to make use of this capacity.

When the accelerator is fully depressed, the secondary valves are cracked open manually a few degrees. Air passing through the primary venturies determines the amount of vacuum applied to the secondary throttle operating diaphragm, by way of the primary vacuum pick-up port. When the vacuum is strong enough to overcome the diaphragm spring, the secondary valves open. A vacuum pick-up port, located in the secondary venturi, supplies vacuum to overcome the partial loss of vacuum at the primary pick-up port, when the secondary valves open.

A mechanical over-riding linkage insures, that the secondary valves will always close with the primary valves.



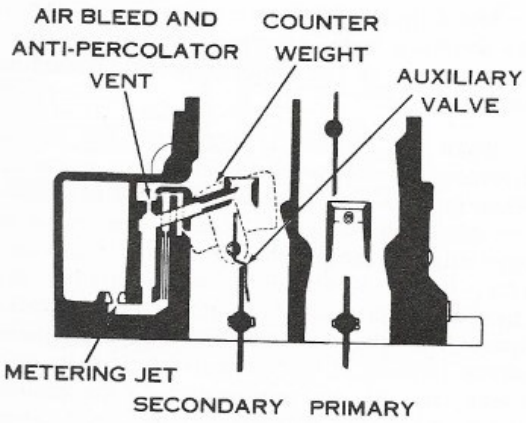
VACUUM OPERATED SECONDARY

Carter Carburetor Manual

AUXILIARY VALVE OPERATION

Some models use offset valves above the secondary throttle valves. These are called: "auxiliary throttle valves". Counterweights are located on the ends of the auxiliary throttle shaft. The auxiliary valve counterweights operate in a recess inside the carbureter body. Throttle valves in the secondary side remain closed, until the primary valves have been opened a pre-determined amount. Air velocity through the carbureter controls the position of the auxiliary valves. The auxiliary valves open when the force of the air against the offset valves is able to lift the counterweights.

When the accelerator is fully depressed, only the primary high-speed circuit will function until there is sufficient air velocity to open the auxiliary valves. When this occurs, fuel will also be supplied through the secondary high-speed circuit.



AUXILIARY VALVE OPERATION

PUMP CIRCUIT

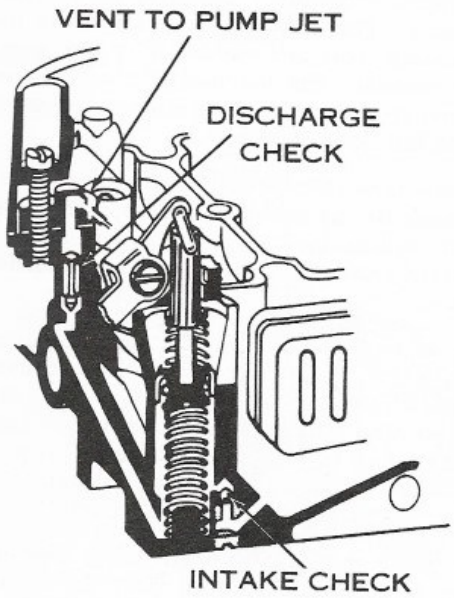
The accelerating pump circuit, located in the primary side, provides a measured amount of fuel necessary to insure smooth engine operation on acceleration at lower car speeds.

When the throttle is closed, the pump plunger moves upward in its cylinder and fuel is drawn into the pump cylinder through the intake check. The discharge check is seated at this time to prevent air being drawn into the cylinder. When the throttle is opened, the pump plunger moves downward forcing fuel out through the discharge passage, past the discharge check, and out of the pump jets. When the plunger moves downward, the intake check is closed, preventing fuel from being forced back into the bowl.

At higher car speeds, pump discharge is no longer necessary to insure smooth acceleration. When the throttle valves are opened a pre-determined amount, the pump plunger bottoms in the cylinder eliminating pump discharge.

During the high speed operation, a vacuum exists at the pump discharge ports. To prevent fuel from being drawn through the pump circuit, the pump jets are vented on some models by a cavity between the pump jet restrictions and discharge ports. This allows air instead of fuel to be drawn through the pump discharge ports.

Be sure the pump plunger leather is in good condition and the intake and discharge checks and pump jet are free of lint, gum or other foreign matter. To facilitate service, the intake check ball and seat may be inspected and replaced by removing the screw plug in the face of the flange without complete disassembly of the carbureter.



PUMP CIRCUIT

CLIMATIC ® CONTROL CHOKE CIRCUIT

The Climatic ® Control circuit, located in the primary side, provides the correct mixture necessary for quick cold engine starting and warm-up.

When the engine is cold, tension of the thermostatic coil holds the choke valve closed. When the engine is started, air velocity against the offset choke valve causes the valve to open slightly against the thermostatic coil tension. Intake manifold vacuum applied to the choke piston also tends to pull the choke valve open. The choke valve assumes a position, where tension of the thermostatic coil is balanced, by the pull of vacuum on the piston, and force of air velocity on the offset valve.

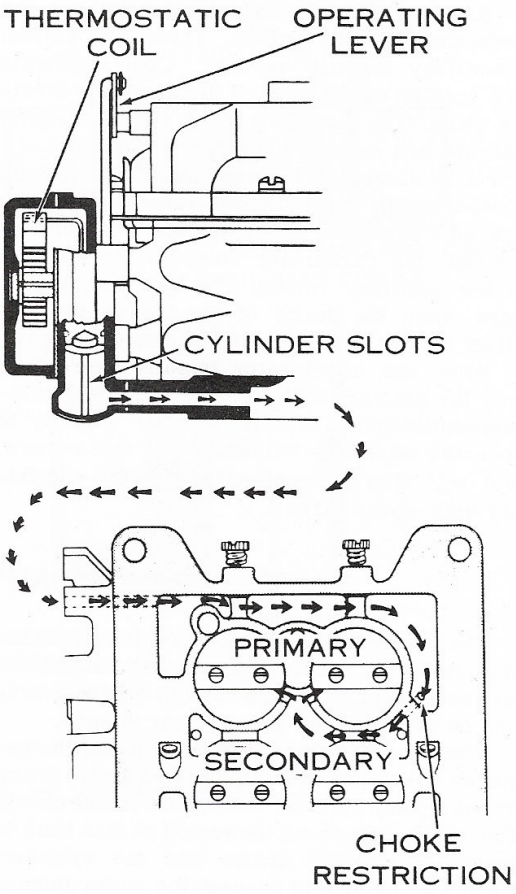
When the engine starts, slots located in the sides of the choke piston cylinder are uncovered, allowing intake manifold vacuum to draw warm air through the Climatic ® Control housing. This air is heated in a tube running through the exhaust cross-over passage, or a manifold stove. The flow of warm air heats the thermostatic coil and causes it to lose some of its tension. The thermostatic coil loses its tension gradually, until the choke valve reaches full-open position.

If the engine is accelerated during the warm-up period, the corresponding drop in manifold vacuum allows the thermostatic coil to momentarily close the choke, providing a richer mixture.

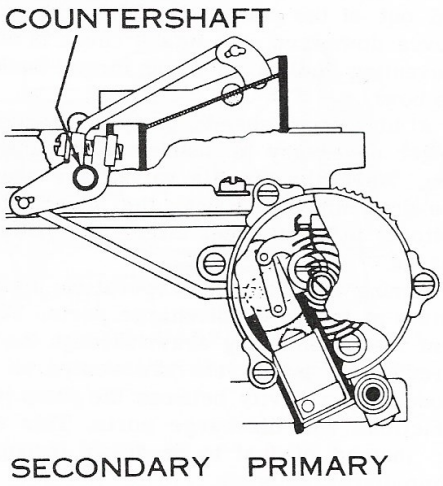
On some models, to combat engine stalling during warm-up on cool humid days, caused by "carbureter icing", heated air from the choke housing is circulated through the passage in the base of the carbureter flange. The heat transferred helps eliminate ice formation at the throttle valves edges and idle ports.

On some models, to permit lower over-all height, a choke countershaft over the secondary bores connects the choke linkage to the choke valve.

The choke shaft and fast idle cam must operate freely without any tendency to stick or bind. Remove gum or dirt accumulation on the choke operating parts by through cleaning.



CHOKE VACUUM PASSAGE



COUNTERSHAFT LINKAGE

Carter Carburetor Manual

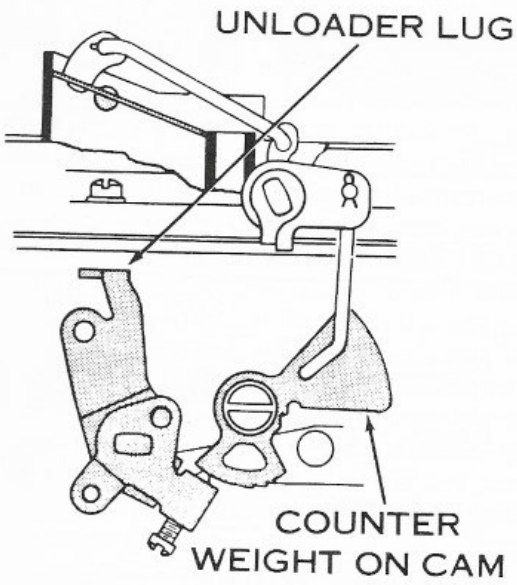
CLIMATIC® CONTROL CHOKE CIRCUIT (Continued)

FAST IDLE

During the warm-up period, it is necessary to provide a fast idle speed to prevent engine stalling. This is accomplished by a fast idle cam connected to the choke linkage. The fast idle adjusting screw on the throttle lever contacts the fast idle cam and prevents the throttle valves from returning to a normal warm engine idle position, while the Climatic® Control is in operation.

UNLOADER

If during the starting period the engine becomes flooded, the choke valve may be opened manually to clean out excessive fuel in the intake manifold. This is accomplished by depressing the accelerator pedal to the floor mat and engaging the starter. The unloader projection on the throttle lever contacts the unloader lug on the fast idle cam and in turn partially opens the choke valve.



FAST IDLE AND UNLOADER LINKAGE

HYDRAULIC DASHPOT

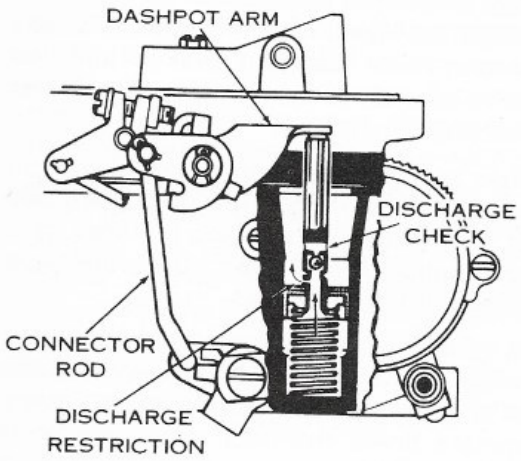
SLOW CLOSING THROTTLE DEVICE

An internal dashpot is incorporated on some models to slow the closing of the throttle, to prevent stalling on quick deceleration.

When the throttle is opened, the plunger spring pushes the plunger upward. The intake check opens allowing fuel to fill the cylinder below the plunger. When the throttle is closed, the plunger is pushed downward. The intake check is closed and fuel is forced through the discharge restriction delaying the closing of the throttle valves.

Be sure the plunger leather is in good condition and the intake check and discharge restriction are free of lint, gum or other foreign matter. The plunger shaft must operate freely in its guide in the air horn.

It may be necessary to adjust the dashpot on the car due to engine — transmission combinations and individual driving habits. Be sure dashpot arm does not contact air horn next to plunger shaft at idle. This condition may cause inconsistant idle speeds.



DASHPOT

Heart of Ohio—Calendar of Events

Volume 17 Issue 2 Q2

Check the website for any changes/add to the calendar.

The Board of the Heart of Ohio Chapter met by conference call on Wednesday, March 25, 2020.

The purpose of the conference call was to evaluate the future of our Saturday, April 18, 2020 Chapter Meet in Marysville, Ohio. With current shelter at home conditions in the state of Ohio because of the Corona-virus outbreak, **the Board has decided to cancel the April Chapter Meet with the possibility to reschedule the meet later in this current calendar year.** With that said, however, everyone who has registered for the Chapter Meet will receive a full refund. Our Meet Administrator, Nick Petruzzi, will be sending out a separate email with the notice of cancellation of the Chapter meet.

Your refund will be either through your PayPal account or by check.

Your safety is of paramount concern with us taking this action. We hope many of our planned Chapter activities can be administered later in this current calendar year. The National NCRS Board has cancelled the Top Flight Chapter Program for the 2020 year. We will keep you posted each month on the status of our Chapter activities.

Please stay safe. We will get through this.

Letter from the Editor—Eric Sponseller

Thank you for reading my first issue as editor.

We hope that you will find that each newsletter is filled with educational information, helpful hints and tips, events, and news. We want this newsletter to be valuable for you so *please, please* share your feedback and suggestions to help us improve.

Tech articles can be sent to me via email at: dsponz@hotmail.com