# THE OCTAGON NEWS

# Volume XLVIII No. 5

# March 2022



Special Election for Treasurer Early Automobile Navigation Systems



# Fast Idle

Ed Wolf

ope you are all as excited for the possibility of an early Spring as I am, and the chance to get out and drive with the top down again. With Hibernation Season mostly behind us, it's time to start planning for all the car events coming up. As we know, Spring in the Midwest pattern is а somewhat resembling 3 days of Summer followed by 3 days of Winter, repeated until late April or sometimes into May. So, enjoy the decent weather while it lasts, and then be ready to shovel snow again later that same week.

Tune up Clinic will be upon us before you know, and a big Thank You to Steve and Mimi for hosting us once again at MG Automotive. Stop by for some watching, learning or even doing. There's always plenty of grease to go around, so wear some old clothes and join in the fun!



Southwestern Ohio Centre -- MG Car Club P.O. Box 20032. Dabel Branch Dayton, OH 45420-0032

#### **Club Membership Information**

Membership dues for the Southwestern Ohio Centre of the MG Car Club are **twenty-five** (\$25.00) per year, payable during September and October. On January 1st. the names of delinquent members are removed from the roster. See *Carole Looft* for further membership information.

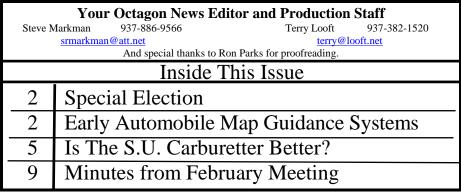
#### MG Car Club Monthly Meeting

The Southwestern Ohio Centre of the MG Car Club meets on the fourth Wednesday of each month at **Bennett's Publical Family Sports Grill,** 67 South Main St, Miamisburg 45342, at 7:30pm. The next meeting will be:

Next meeting March 23<sup>rd</sup>

# MG Car Club Officers

PresidentEd Wolf
phone937- 668-1298
emailed_wolf@trimble.com
Vice PresidentJohn Scocozzo
Phone
emailjscocozzo@hotmail.com
SecretarySam Hodges
phone937-581-4767
emailsammgb@earthlink.net
Treasurer Cheri Farrell
phone
email chersews@yahoo.com
Member at LargeCheri Farrell
phone
email chersews@yahoo.com
President EmeritusTerry Looft
phone937-382-1520
emailtlooft@earthlink.net
Web MasterJohn Scocozzo
phone937-231-9188
emailjscocozzo@hotmail.com
Activities ChairEd Hill
phone937-461-6688
email <u>ehillmgb@aol.com</u> Membership ChairČarole Looft
phone
email <u>carole@looft.net</u> HistorianOpen
phone
email
WebPagewww.mgcarclubswohio.



# Upcoming MGCC Events

#### Mar:

18 – National Biodiesel Day

23 – Meeting at Bennett's Publical

#### Apr:

- 5 National Read a Roadmap Day
- 23 Tune Up Clinic (rain date May 17)
- 27 Meeting at Bennett's Publical

#### May:

9 – National Lost Sock Memorial Day 25 – Meeting at Bennett's Publical

See meeting minutes for other area activities!!

And, finally, a word to anyone selling a car right now. If your vehicle for sale has a full tank of gas, you may want to mention that in the advertising. It could have an appreciable impact on the sale price.

Hoping to see you at the next event.

# Special Election for New Treasurer

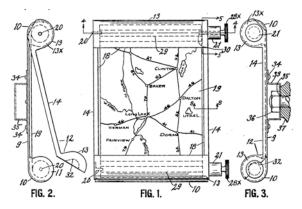
Please attend our next meeting. Cheri Farrell is resigning her position as treasurer because she is leaving the Dayton area and no longer can continue these duties. Our next meeting will be on March 23, so please attend for this special election. We wish Cheri the best in her move to live closer to family.

# Early Automobile Map Guidance Systems

Steve Markman

ith modern GPS-based navigation devices, most of us give little thought to finding our way to a new location (btw...GPS stands for Global Positioning System, a constellation of twenty four satellites orbiting the earth, plus a few spares in orbit, just in case you didn't know). But the first automated in-car navigation system was developed long before we had the technology to put anything into space.

I'm sure most of us have used folded-up paper maps, and if you grew up in the 50s - 70s and went on a road trip, you'll remember the AAA Trip-Tick, a custom made booklet of map pages that you flipped through to guide you from point A to point B.



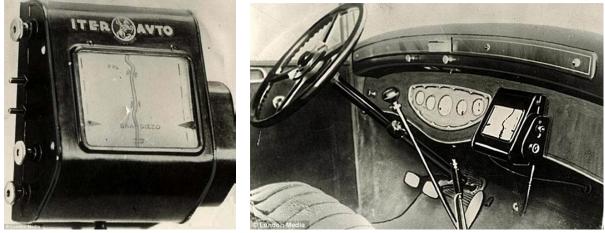
Paper maps could be cumbersome to use at times, requiring the driver to shift attention and hands between driving and folding a map (we've all fumbled with this, haven't we?). But the concept of the modern navigation system can be traced back to a US patent granted in 1921 to John J. Bovy. It was a dashboard-mounted navigation aid that used maps printed on rolls. As best as I can figure, the driver turned a dial manually to advance the map as needed. When you drove past the area shown on the map, you inserted another roll that picked up where the last one left off.

A few years later, in 1927, a British firm manufactured the Plus Four Wristlet Route Indicator, which was like a wrist-mounted version of the above. It came bundled with rolls covering many popular travel routes across the UK.

The next big step forward came in the early 1930s with the creation of the Iter-Auto, manufactured by an Italian company. The device was mounted to the car's dashboard and loaded with routes printed on long paper rolls. But the big advance was that it was hooked up to the vehicle's speedometer, so the roll would advance automatically in proportion to the car's speed and distance traveled. The maps themselves also included alerts of upcoming road features, like bridges and railroad crossings, as well as garages, hotels and such. With its connection to the speedometer, this level of automation offered a new hands-free approach to (very) roughly accurate navigation. Since the device's only input was speed, and not



direction, and maps printed were only useful for routes along predominantly straight roads. I don't know how accurately the device maintained the current location at the center of the display, but I'd assume there was a manual adjustment to reposition the roll as it got off center. Turning onto an intersecting road meant loading another roll with the new map. It's not surprising that the Iter-Auto never achieved mass-market success. Thus, it's not surprising that paper maps remained the standard for navigation for the next fifty or so years.



That said, the idea of combining telemetry with physical maps re-emerged in 1981 with the Honda Electro Gyrocator, but it proved to be a prohibitively expensive optional extra on only a few Honda models of the time. A driver would insert a transparent map over the 6-inch monochrome screen and move a dot to the starting location on the map. The dot then moved around the map overlay based on information fed to the device by the car's transmission and a motion sensing device contained within. Makes me think of the very first generation of home video games in which the computer generated only a moving dot and the user placed a sketch of a soccer field, ping pong table, or whatever on the monitor.

Unlike most navigation systems of today, the Honda Electro Gyrocator did not use GPS satellites to determine its position and detect movement of the vehicle. Rather, it used a simplistic, but ingenious inertial navigation system.

These systems already were in use on airliners and were very accurate, but extremely expensive. They



used a spinning gyroscope that could sense any change in speed or direction, left, right, or vertical. But these precisely-made gyros were way too expensive for the automotive industry. Honda's solution was to direct a stream of helium at two heated wires within a sealed capsule. When the car turned, inertia diverted the stream, hitting one wire more than the other. The temperature difference between the two wires then could be interpreted as a direction change. (Point of interest – Try this...point your car's vent at your face, then make a sharp turn. You'll feel the stream of air move to one side.)

The Electro Gyrocator couldn't choose a route for you, but it could trace a line on the screen, and in 1981, that was a big step forward. Users still had to place the appropriate transparent map overlay in front of the screen, swapping it out as needed. When it went on sale in Japan on Accords and Vigors in 1981, the buyer received a book of these maps covering all of Japan (Thus, I assume the system was available only in Japan). But, the device was not a success, as the Electro Gyrocator's capabilities were too limited and its price too high. At \$2746 USD, it was almost a quarter of the car's cost. It is not clear how many units were sold. But it formed a basis for future GPS-based systems that would arrive soon after the Electro Gyrocator's demise.

The Honda Electro Gyrocator was followed a few years later by the Etak Navigator. This system used inputs from wheel sensors and a compass to determine location, and displayed an actual digitalized map. The maps were input using cassette tapes, and required six such cassettes to cover the San Francisco area, the first map offered, but soon was followed by maps for other major metropolitan regions. Because the Etak Navigator could turn street addresses into longitude/latitude coordinates, it could actively guide the driver to the destination. The Etak Navigator first sold around July 1985, with the 450 model retailing for \$1,395 (about \$3,083 when adjusted to 2015 dollars) and the 700 selling for \$1,595 (the



difference was the size of the display). Map cassettes cost about \$35 each (not sure if this was per cassette, or per metropolitan area). Local car stereo dealers installed and calibrated the system. Etak changed hands and names several times over the years, and eventually was acquired by TomTom, one of the early makers of GPS navigation systems, namely for access to the extensive set of digital maps Etak had created.

However, even before the Etak Navigator was released, numerous companies were conceptualizing the first satellite-based car navigation systems. When the full GPS system was made public in 1995, all prior systems became obsolete rapidly. (GPS was developed for military use and was accurate to within a few yards. Initially, a downgraded signal was available for civilian use, but still was accurate to abut 100 yards). Indeed, even standalone navigation devices faded as auto makers offered navigation systems integrated into the car's dashboard electronics. Or, if your car is more than a few years old, just call up an app on your smartphone. What's next? Who knows!!

Sources:

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# Is The S.U. Carburetter Better?

### From Collector Part Exchange, March 7, 2022 Thanks to Steve Veris for finding this

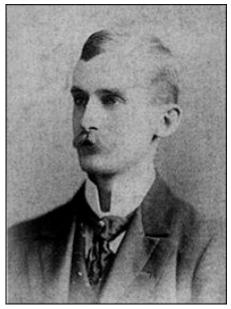
The Brits do things differently. They drive on the left-hand side, drink tea rather than coffee, and use variable-venturi carbs when everyone else uses fixed. On that last point, we'll be focusing on SU carburetors, or as the English spell it "carburettors," which are produced by the S.U. Carburetter Company. (I really do love you Britain, but your confounded spelling choices don't make it easy.)

If you've looked under the hood of a vintage British sports car, the S.U. carbs really do make an impression. The distinctive dashpots look like a row of mini "pot stills." You know, the ones in which whisky is made. More importantly, they use an alternative philosophy for regulating the air-fuel mixture. So we'll dive into the company's past and explore the variable-venturi approach that is the S.U.'s signature innovation.

### Mr. Skinner's Big Idea

Herbert Skinner was born in 1872 in central England. The son of a successful shoe manufacturer and retailer, Herbert followed in his father's shoes *<groan>* and joined the management of Lilley & Skinner. Herbert was responsible for modernizing the manufacture of shoes with equipment he acquired in the U.S. He was inventive, a problem-solver, and mechanical. These qualities served him well in the footwear business, but his true passion was motor cars.

He bought his first car in 1898, and got hands-on with engine development, along with his younger brother Carl who had taken a job at Farman Automobile in London. So much so that by 1900, they had filed three provisional patents for Herbert's new carburetor design, with a full patent granted in 1906. One of the early designs even used a leather bellows to pump fuel, sewn by Herbert's wife. Meanwhile, Herbert had time in 1908 to win a

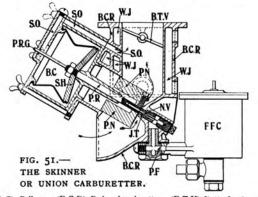


bronze medal in shooting at the Summer Olympics!

During the first years, Skinner had outsourced the carburetor's manufacture and branded it the Union

Carburettor. In August 1910, the brothers formed their own outfit, the S.U. Carburetter Co., with the initials being an abbreviation of Skinner-Union. Younger brother Carl ran this business, while Herbert oversaw the shoe business and continued to invent new ideas. Early customers were luxury car maker Wolseley Motors and the Rover Co.

Unfortunately, the business side of S.U. wasn't as successful as the engineering side. The post-war depression took its toll. In 1926, Carl arranged to sell the company to W.R. Morris, founder of Morris Motors, for 100,000 pounds. The operation was moved inside of Morris Motors factory in Birmingham and was still managed by Carl Skinner. Herbert passed away suddenly in 1931 at age 59.



(B.C) Bellows. (B.C.R) Body of carburetter. (B.T.V) Butterfly throttle valve. (F.F.C) Float feed chamber. (J.T) Nozzle. (N.V) Taper needle. (P.F) Petrol duct. (P.N) Plug. (P.R) Spindle. (P.R.G) Spindle guide. (S.H) Head of bellows. (S.O) Communication between mixing chamber and interior of bellows. (W.]) Hot jacket.

S.U. Carburetter prospered in this environment. New developments included the Petrolift in 1929, Aero carburetor in 1932, and the S.U. Electric pump in 1934. When WWII broke out, S.U. became a key supplier as their carburetors were used in many military aircraft.

Following the war, it was back to automobiles. Carl was getting up in years, and stepped down. Morris Motors merged with Austin Motor Co. in 1952, to form British Motor Corporation. This concern grew even larger in 1965 when Jaguar and Coventry Climax were folded in as well. By this time, S.U. production was at full tilt with more than 30,000 carburetors being produced per week. S.U. was used in Morris, MG, Jaguar, Rolls-Royce, Bentley, Rover, Austin, Triumph, and Swedish automaker Volvo. Oh, they were also a popular upgrade to Harley-Davidson motorcycles.

Over time, the British automotive industry became less competitive, and competing vendors started chipping away at the carburetor business. Eventually, they started getting supplanted by fuel injection. The carburetors remained in production cars through 1994 but the company liquidated in 1994. In 1996, British company Burlen Fuel Systems acquired the name and rights. They reconstituted it as The

S.U. Carburetter Company Ltd. and continues to produce carburetors, pumps, and components aimed at the classic car market.

### How S.U.'s Work

A carb's job is simple: deliver fuel at the correct amount and mix it evenly with air. In the early days, they experimented with many different ideas, including using wicks and evaporation by passing air over the surface of gasoline. However, as engines gained power, the fuel needed to flow at higher rates and be delivered to the combustion chamber in a consistent way.

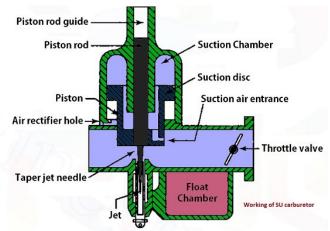
A carburetor, in its basic form, consists of two main components: 1) a jet or nozzle to atomize the fuel, and 2) a tube that air passes through. That tube tapers down in the middle to create suction, and the faster the air flows the more vacuum it creates. That's Bernoulli's principle, and the tube is called a venturi. In a carburetor, air can reach a velocity of 800 miles per hour which creates a **lot** of suction.

The most common type of carburetor is a **fixed venturi**, which includes Webers. The tube is always the same size and taper, and airspeed is controlled by a butterfly valve that lets in more or less air depending on the throttle position. Fuel is delivered via multiple jets that deliver more and more fuel as the airflow increases to create more suction.

Herbert Skinner had a different idea: the variable venturi or constant vacuum, and it's a unique

approach that makes an S.U. carburetor unique. In this design, there is only one fuel jet, but the tapering in the venturi tube varies. In the S.U., the increased airflow (also controlled by a butterfly valve) causes a piston to open up the venturi tube.

In Skinner's design, there is one jet, and how open or closed the piston is determines the amount of fuel. You see, the piston has a tapered needle attached to it. When the piston is closed, i.e. not a lot of air is flowing, the needle plugs the jet so very little fuel enters the chamber. When the throttle opens, the piston



withdraws, unplugs the jet, and fuel flows more and more freely.

For a quick visual aid, extend an index finger and then grip it with the opposite hand. Slowly withdraw your index finger. Imagine the fuel entering from the pinky end of the fist, this gives you an idea of how the needle works in opening up fuel flow.

The piston design that controls the needle's position is particularly clever. It withdraws based on the pressure differential between the atmosphere and the venturi tube. The piston has an oil dampener combined with a long piston spring to control the rate at which it opens and closes, much like a miniature suspension. The result is the suction or air pressure is always the same, not fluctuating wildly like in a fixed venturi. The fuel will atomize the same no matter what the speed. It is an elegant design and its seeming simplicity takes advantage of some complex ideas.

Both systems have float bowls to control fuel delivery, idle circuits to continue minimally sufficient fuel delivery when the throttle valve is fully closed, and chokes that temporarily increase the fuel richness to help with cold starts.

### The S.U. Carb Difference

The three main advantages of S.U. carburetors are as follows:

**Simplicity.** S.U. carburetors are beloved because they are so simple to maintain. (*Editor's note...huh?*) They work great, require little maintenance, and can be set up easily since one only needs to tune a single jet. Rebuilds are a breeze.

**Dependable.** With few moving parts and only one jet to worry about means they tend to stay in tune for longer periods. Keep the oil a half-inch from the top and it is good. In older units, make sure the float hasn't perished as that can cause fuel to overflow.

Compactness. S.U. carburetors are comparatively small units so they can fit into tight spaces, most

notably they are used on Harley-Davidson motorcycles.

### S.U. vs. Webers?

This exact question was answered by Carl Heideman in *Classic Motorsports* (Sept. 2010), so check out his excellent analysis. The answer is "either is good, but neither is perfect" and the ultimate answer is the dreaded: "It depends."

In repeated dyno tests using a mule MGB engine, the horsepower numbers came out almost exactly even, with Webers a single point higher. If properly tuned, both perform about the same. Generally, it seems that most think Webers are inherently superior, but the data doesn't back it up.

The differences come down to how you use it. The parameters to weigh include budget, skill set, throttle response, choke, type of ignition system, tuning needs, emissions, expertise available, and looks. (Again, read the article for a detailed discussion, no need to repeat it here.)

In the end, it is the owner's choice of what to do. However, I think originality is paramount. There is something that is "just right" seeing a Jaguar E-Type's V-12 with a row of shiny S.U.'s -- it is the epitome of a British sports car motor. (Another editor's note...motors run on electricity, engines run on the expansion of a gas. I just can't let this common error go uncorrected.)

Just as we saw with Lucas electronics, the British automotive industry prefers its own, and S.U. was the standard for Le Mans racers and luxury coaches. The brilliant simplicity of Skinner's piston controlling the needle and the jet allowed it to endure, and that is a testament to the inventor's ingenuity.

### **References:**

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Heideman, Carl, SU or Weber Carburetors?, Classic Motorsports, September 2010.
History, S.U. Carburettor Corporate (Burlen)
How does a CV Carburetor works - Quick and simple explanation, Custom Cez, February 23, 2016.
Kalyani, Usha, Adjusting an SU carburetor, Auto Pro Tips, May 12, 2021.
Skinner's Union: The Story Behind S.U. Carburetter, PreWarCar, February 29, 2016.
U Carburettor, George Herbert Skinner, and Carburetor, Wikipedia

# Classifieds

**For Sale:** 1973 MGB, yellow, currently not running but all there...\$2000. Contact Dave Schwager, 937-751-4872 (11/21)

**For Rent:** Car storage in Wilmington, Ohio. \$30/mo for one car, \$50/mo for two cars for club members. Non-club members \$35/mo per car. Indoor heated and dry. Electric for battery maintainers. Terry Looft 937-527-7353 or <u>tlooft@earthlink.net</u>. (10/21)

Free classified policy: We are happy to run your auto-related ad for three months free of charge, but may cut older and non-MG related ads as space requires. If you wish to continue the ad for an additional three months, contact srmarkman@att.net or 937-886-9566.

# Minutes from February Club Meeting

Sam Hodges



President Ed Wolf called the meeting to order precisely at 7:30. President Ed Wolf, "Welcome everyone. We've got a good turnout tonight (26 in attendance). I'd like to start off with the Vice President's Report, but he's not here. He emailed me, but I have to admit that I didn't read most of it. So, moving on, next up are Minutes. Did anyone read them?" Ed Hill motioned to accept the Minutes as reported. Dave McCann, Sr. seconded the motion. The MGCC voted, all approved.

Treasurer's Report was next. Treasurer Cheri Farrell, "I know some of you already know, but I'm moving to Pennsylvania in a couple of months so we'll need to elect a new Treasurer. We need to get a name in the newsletter so that when we transfer the ownership of the account, the bank needs to see where that person was nominated and voted into office." Terry Looft, "So it'll be an empty meeting." Lois Gribler, "Sam has to take accurate minutes." Secretary Sam Hodges, "What, now I've got to take accurate minutes?!?" Carole Looft, "According to the MGCC Bylaws, in the event of an Officer not being able to fulfill their term, a special election shall be held to elect a new office. The Secretary shall send out notice of this special election no later than 10-days prior to the meeting." Terry Looft, "That's what's I said." Ed Wolf, "The Newsletter need to advertise that there will be a special election." Sam, "Wait?!? Now I've got to send out notice?!? More work!" Newsletter Editor Steve Markman & (I) Sam had a separate meeting within the meeting and we're going to get the Newsletter out 1-week early (*standard November timeframe*) to meet the 10-day window.

Cheri continued with the Treasurer's Report. The MGCC had gains of: Membership Dues (\$304.00) for a

total gain to the MGCC of \$304.00. We had total expenses of: January Gumball (\$10.00) + Christmas Party food (\$824.40) + Carson funeral flowers (\$77.90) + Postage (\$1.56) for a total expense to the MGCC of \$913.86. Monthly total gains when added to the loses means a loss of \$609.86, to the MGCC. When subtracted from our beginning balance of \$5,132.48, leaves the MGCC with an ending balance of \$4,522.62 in the primary checking account. The savings account now has \$382.35, with cash-on-hand of \$30. Total ending balance of all accounts was \$4,944.97." Lois Gribler motioned to accept the Treasurer's Report as presented. Eddie Hill seconded the motion to accept the report. MGCC voted. Treasurer's Report approved.

President Ed Wolf, "We got thank you notes from Jim Carson's wife, the Salvation Army, and the Food Bank."

Membership was next. Carole Looft, "We currently have 65 members. That's about normal."



Birthdays in January: Andy Hein, Mark Schneider, Bob Hanseman, Carole Estelle. March 9th is Charlie McCamey's 90th. Please send Charlie an email on his birthday.

Carole continued with Sunshine Committee. "Mary Planeaux is recovering from a fall and we're sending a card. Ryan Looft was not acting his age, slid down a hill, crashed & burned a sled and tore his rotator cuff. Now he needs surgery. But no card for him." *How does a sled burst into flames and catch fire in the snow?* 

Activities with Eddie. Ed Hill, "Newsflash, the date has been set for the annual Tune-Up clinic. I've forgotten the date." Steve Miller, "Saturday, April 23rd." Ed, "Saturday, April 23rd is the date. Rain date is May 7th. As always it will be held at MG Automotive at 9:00. If you come early, there wont be any coffee or donuts." Steve Miller, "Come early and you'll be waiting to get in." Ed Wolf, "What, no coffee or donuts?" Eddie, "Only if you're there early." Dave Gribler, "Did you clear this with Skip for the coffee?" Eddie, "No. He's just going to have to get with the program." Thanks to Steve & Mimi. Eddie, "We all know about BCD and the other annual events, Colorado Springs, Perrysburg, OH, Dillard GA, Stowe VT. More details as we get closer to them or you can look them up now."

President Ed. "We've been invited to the Moraine Airpark on May 1st. We're invited to the 63rd annual Fly-In. It's a breakfast event. There will be a special place to park our cars. Runs from 7:30 to about 1pm." Terry Looft, "Is there a special place for air[plane parking if I fly in?"

Newsletter Editor Steve Markman, "I looked more into having most of my articles printed in a book as I mentioned last month. It looks like it might be about 200 pages and hopefully I can sell them for about \$15 each, giving me enough profit on each to cover my monthly beer here at our club meetings. Otherwise, I've got nothing new."

Webmaster John Scocozzo was not present. Carole Looft, "It would be nice to put on the website recommendations for paint, chrome, upholstery, and keep a running list of the people we all regularly use."

Beer Brake called for 7:47. Back from Break 8:04.

Ed Wolf, "Break's over, who's old business? We don't have any old business, do we have any new business?"

Lois Gribler, "They (motioning to Ryan and Leann) have new business." Ryan Looft, "It's really Leeann's car so she should tell you about it." Leeann, "We just bought a 1996 MGF. We found it in Wisconsin but it was a nightmare to buy." Ryan, "I was about to tell him where to stick it when Terry told me to shut up and buy the car." Terry, "This guy was an importer of Japanese cars and he was absolutely offended that we would want to inspect the car. Came across as aggressive and offensive. The car looked good. The seller didnt' want a cashier's check, nor bank checks, cash only." Steve Veris, "I'd take it to him as singles, in a wheel barrows." Leeann, "We didn't want to burn that bridge in case someone else has to deal with him in the future." Ryan, "Will MG Automotive work on it?" Steve Miller, "Yeah, we're into A/C and automatics." Terry, "It's a right hand drive import from Japan. Only 40K miles." *I said it then, I'll say it now. I don't like you. I was looking for an MGF. I thought I'd have to import one, not that there were any already here. - Sam.* 

Tech Tips. Dave McCann, Sr., "You might have seen that traffic cams are coming back. I got a ticket on Hillcrest in Kettering doing 28 in a 20 and costs me \$85.00." Sam, "I got caught by one in the Corvette

and the fee to contest the ticket was a non-refundable \$85. The fine for speeding was coincidentally \$85." A brief discussion about the legalities of these money-trap traffic cams was had by the club. We're unanimous in disliking them.

For Sale? Squat (one owner, low miles)

Gumball Rallye, Giuseppe wins.

Motion to adjourn 8:19.



