The official newsletter of: Revs Institute Volunteers

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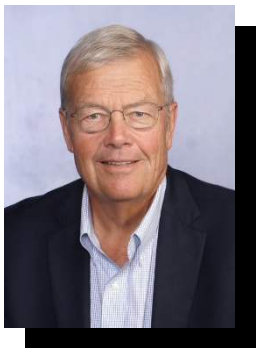
TAPPET CLATTER

Volume 29.5 January 2024



Chairman's Notes

By Chip Halverson

I want to use this month's letter to talk about something we may not directly notice but is a major reason why the volunteer experience at Revs Institute is special. Scott George says it best; *"One thing that has always set Revs Institute apart is our self-governing Volunteer Program."*

Whitney frequently meets with a group of area Volunteer Coordinators and commented; *"During meetings, I'm often struck by how fortunate I am to support a group of Volunteer leaders. While our members effectively serve in areas of elevated responsibility, that isn't the norm among my peers. In most cases, the Volunteer Coordinator and staff are responsible for all Volunteer initiatives and functions - from scheduling to recruiting, to training and evaluation."*

At Revs Institute, we operate in a very different fashion. Under the supervision of management, represented by Whitney, we have an elected Board and designated Committees to help with all those functions.

Some examples: We start by recruiting our members. Our Membership Committee developed creative ways to identify and recruit members in venues like car shows and schools. We engage guests who seem to have an interest. We helped offer new ways to serve by introducing the Steward, Guest Services, and Tenured Volunteer positions, ensuring we're able to capitalize on the unique strengths of our candidates.

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Chairman's Notes... continued

(Continued from page 1)

In the area of training, we create our own training content, determine the mix of classroom versus mentor training, establish criteria and do the actual testing for certification as a Station Guide or a Docent. Again, in peer organizations this would all be done by staff members.

To ensure an engaging Volunteer program, we identify and recruit outside speakers and coordinate our own social activities like the Gimmick Rally. Even in the area of technology, our Volunteers take a leading role. The excellent new car pads were developed by volunteer, Whit Turner. I could go on, but I think you get where I'm going. Our Volunteer Program is the gold standard largely because, as members, we take pride and ownership in its success.

Happy New Year, have a great 2024! *Chip Halvorsen*

Membership Report

By Tom Dussault

The Membership Committee is pleased to introduce two new members to the Volunteer team. Laura Jeffers *(right)* is a brand new Volunteer at Revs Institute. Laura is originally from Philadelphia and now makes her home in Estero. She is a student at FGCU majoring in forensic studies and planning a career as a crime scene investigator. Laura grew up immersed in her family's car collection which includes two Porsche 914s, two 911s and a Ford Model T. She loved working to keep the cars in running order as well as attending the many car shows. She wants to again be around interesting and fun cars while volunteering at Revs Institute. In her free time, Laura also enjoys reading and solving puzzles. Laura will be filling the role of Steward.

Brandi Simmons *(left)* is also joining us as a new Volunteer. Brandi is originally from Cape Coral and is now a resident of Fort Myers where she works in customer service at Ron Jon Surf Shop. Her first car was a Saturn Ion followed by a Chevy Volt. She eventually moved on to a Chevy Sonic to learn to drive a stick shift. Brandi is now the proud owner of a Scion FRS; number 159 of 1500 built. She says that, as a car enthusiast, she would love to share her knowledge, learn more about the collection and just enjoy being around our cars! Brandi is also joining us as a Steward.

Volunteer Board of Directors Elections

2024 Volunteer Board of Director Elections

All members who have served for two years or more and have contributed 60 service hours per year are eligible for the Board. Board members serve a three year term. You don't have to live in Florida full time to serve on our Board. We use email a great deal and have been using Zoom meetings as needed. During "the season" we meet once a month.

There are three of the nine seats coming up for election each year. The term of office is for three years. The election will be held at the monthly meeting in April. Once we have the new Board members in place, the new Board will elect the Chairman, Vice-Chairman, Treasurer and Secretary.

We hope everyone will seriously consider serving as a Board member. If you wish to stand for election, please submit a short biography and a picture (100 words or less) no later than January 26th to Nominating Committee Chairs Tom Dussaut at trd@bu.edu or Mark Komanecky at mkomanecky@gmail.com. Biographies of the candidates will be published in the February *Tappet Clatter.*

Events Calendar

Event	Date	Info or contact
Wounded Warriors Tour	Jan. 6 @ 10:30 am	Sign up on VicNet
Volunteer BOD meeting	Jan. 12 @ 10:00 am	Zoom Meeting
Estero Newcomers Club	Jan. 12 @ 10:30 am	Sign up on VicNet
Naples Newcomers South	Jan. 12 @ 1:30 pm	Sign up on VicNet
Volunteers and Staff Banquet	Jan. 20 @ 5:30 pm	RSVP to Jan. Evite
Gunster Law Firm Reception	Jan. 24 @ 5:00 pm	Sign up on VicNet
Welcome to Florida	Jan. 26 @ 10:30 am	Sign up on VicNet
Sunrise Rotary Club	Jan. 26 @ 1:30 pm	Sign up on VicNet
Ferrari Club Tour	Feb. 1 @ 1:30 pm	Sign up on VicNet
Shelby America-Wingate Event	Feb. 2 @ 10:00 pm	Sign up on VicNet
BorgWarner Dinner	Feb. 6 @ 5:30 pm	Sign up on VicNet
Madeira on Marco Island Tour	Feb. 9 @ 10:30 am	Sign up on VicNet
First Presbyterian Tour	Feb. 9 @ 1:30 pm	Sign up on VicNet
For a full list of daily tour groups and events, go to the 'Calendar of Events' on VicNet.		

TAPPET TRIVIA

By Joe Ryan

This section is devoted to questions about the Miles Collier Collections cars or cars of the same period. Some of the questions might be a bit (very) obscure or (impossibly) tricky. Test your knowledge and *have fun!*

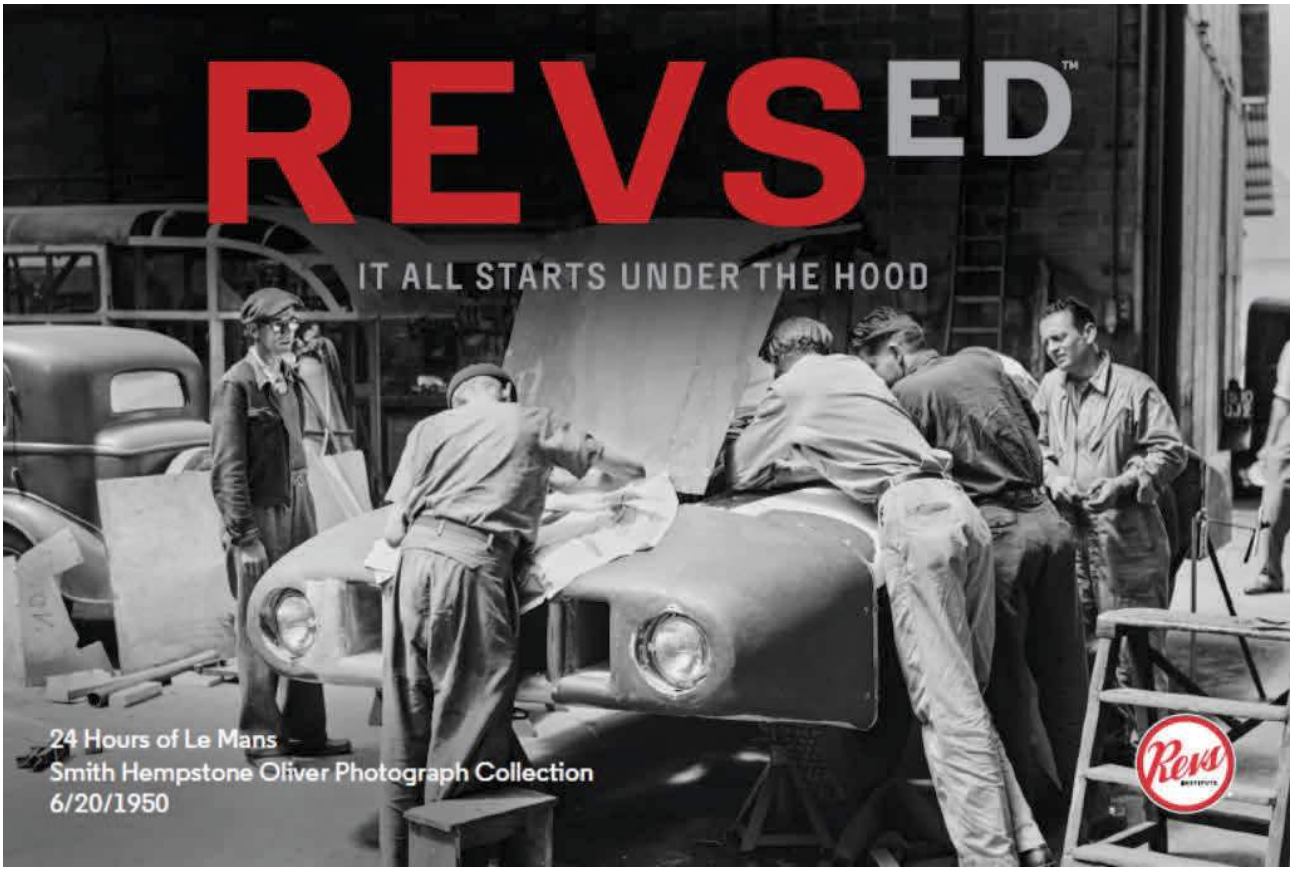
Each month I try to offer trivia questions that will cause our volunteers to think about a given car. If the questions are directed toward a car on display, the goal is to add to the knowledge of our volunteers. My hope is they are better able to enhance the experience of our guests.

This month's theme car is the 1953 Porsche 550 serial number 01.

1. **Question:** Before the 1953 Porsche 550, did Porsche race a purpose-built race car?
2. **Question:** Was Porsche involved with auto racing before building the 550's?
3. **Question:** Where was the oil cooler located on the 1953 550 serial number 01 ?
4. **Question:** Who built the bodies for the 550 serial numbers 01 and 02?
5. **Question:** Where did the 550-01 win its first race?
6. **Question:** What was the body configuration of the Porsche race car that won at the Nurburgring?

The answers appear later in this issue

Photo Courtesy of Revs Institute



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Steering & Suspension 101 Remove, inspect, and reinstall all components. Learn how to evaluate tire wear and the importance of wheel alignment.

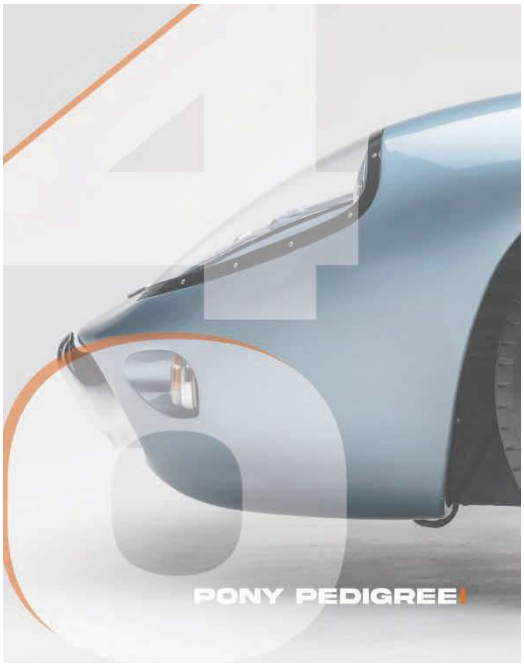
Electrical 101 Learn how all electrical components receive the proper voltage through specific wires at the push of a button.

Metal Fabrication 101 Learn how to design, cut, bend, and fasten sheet metal to construct a finished product.

1967 Ford GT 40 Mark III

By Lauren Goodman

We are pleased to unveil *Pony Pedigree* this holiday season, a captivating exhibition that explores the legacy of the Ford GT40 and its journey to triumph at Le Mans. The exhibition's highlight is the exceptional 1967 Ford GT40 Mark III, one of the rarest models, with only seven ever constructed. On loan from the Margie and Robert E. Petersen Collection at the Petersen Automotive Museum in Los Angeles, this automotive marvel will be on display at Revs Institute through July 2024. *Pony Pedigree* runs through June 2024



Photos Courtesy of Revs Institute
Unless otherwise noted

1942 Ford Jeep

By Ralph Stoesser

Welcome to the first truck to join Revs Institute. A recent donation to the museum of an early 1942 production model, Jeep serial number 37594 was produced by the Ford Motor Company, not Willys-Overland as some would assume. Originally marked "C.B." for Construction Battalion, the Collection vehicle is a "Seabee" Jeep.

1942 Ford Jeep - Revs Institute Photo

Given the significant production numbers reached and an influence that still reaches into the present, the Jeep is probably the most important four-wheel vehicle produced during the last world war. Indeed, a WW2 Jeep is now part of the New York Museum of Modern Art permanent automobile collection, which honors other seminal vehicles such as the Cisitalia 202, the Porsche 911, the Citroën DS and the Jaguar E-Type.

First, some background and history. Looking to fill a decades-old need to replace the Cavalry horse, the US Army invited dozens of companies in 1940 to bid on some unique specifications for a new reconnaissance machine:

- A maximum height of 36 inches.
- A curb weight of no more than 1,300 pounds.
- A carrying capacity of at least 2 men and one machine gun (plus 3,000 rounds of ammunition).
- The ability to transport 1/4 ton of cargo off-road, which in army lingo means double that capacity on hard paved surfaces, or 1/2 ton.
- Four-wheel drive with cross-country capabilities, while offering the potential for amphibious operation.

Not only that, the August 5th Army contract demanded that each bidder complete their design and deliver a pilot model in just 49 days' time!

The almost bankrupt Bantam Car Company of Butler, PA was the only company to meet the September 30th deadline. Their prototype *(left)* was a remarkable success.

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1942 Ford Jeep...continued

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Ford Prototype Jeep

Although overweight at 1,830 pounds, it was forgiven on the spot when it was found that two men could lift the vehicle out of a ditch. The US Army immediately moved the Bantam prototype forward into a full 30-day test program.

The major manufacturers were late to the party; Willys-Overland provided 2 prototypes (a two-wheel steer and a four-wheel steer) on November 11th and Ford offered two more on November 23rd. Their influence nevertheless would soon become significant.

Before the Bantam 30-day trial was over, the army decided that they needed a production rate of 75 vehicles per day. The best that tiny Bantam could do was 30 a day, but the army couldn't wait. On November 19th, the army ordered 4,500 vehicles: 1,500 each from Bantam, Willys and Ford. In July of 1941, Willys upped the ante with an all-or-nothing bid for 16,000 Jeeps at 125 units per day. Even that wasn't enough. Ford got a subsequent order to produce 15,000 additional Jeeps, albeit using the Willys engine. Despite getting an order for 3,000 vehicles, Bantam managed to only produce a few prototypes. The company was relegated to the production of Jeep trailers until the end of the war.

History shows that the Bantams had the least weight, Willys the best engine and drivetrain, and Ford the best manufacturing volume efficiency at only $738 per unit (about $14,000 today). Ford's production engineering became evident early in the process. Ford transformed Willys' complicated welded-slat front grill into the one piece, nine slot front face *(above)* that defines every Jeep today. Initially, both Willys and Ford stamped their names in the left rear body panel. (*right)* These are known today as "script" Jeeps. Wanting fully-interchangeable parts, the government banned this practice. Ford then simply stamped their little trademark 'F' on almost everything else, including their bolt heads!

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1942 Ford Jeep...continued

(Continued from page 8)

Some other talking points and specifications which may be of interest to our guests include:

Major specifications: Wheelbase 80 inches, length 132 inches, height 69 inches, weight 2,450 pounds, ground clearance 8 3/4 inches.

Engine: 4-cylinder flathead, 134 cubic inch (2.2 liter) displacement, 54 horsepower (US rating of 60 hp gross). Compression ratio: 6.48 to 1 with the ability to operate on 68 octane fuel. Fuel consumption: about 20 miles per gallon and half that in low range, deteriorating even further in four-wheel drive.

Transmission: Three forward speeds with synchromesh on 2nd and 3rd. A transfer case engaged the front axle for four-wheel drive and allowed the selection of a high or low range - effectively providing 6 speeds forward. Of special significance, the vehicle operator did not have to dismount to engage the front axle hubs for 4-wheel drive (that takes too long when you're getting shot at!). Consequently, tire wear was poor on hard-surfaced roads due to tire scrub and alignment.

Fuel: The vehicle's 15 gallon gas tank (and filler) was located under the driver's seat cushion, somewhat similar to the dual-engine Citroen 2CV – not a particularly good idea if one happens to drive over a hidden land mine. However, all Jeeps did have a small fire extinguisher on board as original equipment.

Often misunderstood: The spare 5 gallon gas tank on our Jeep (and most others) is not US-supplied, but rather a captured German army 'Jerry' can, highly prized by our GIs because of its better pour. The US gas can had a separate flex filler hose which often got lost or crushed.

Lighting: The vehicle's five-inch sealed beam headlights and front parking lights were equipped with "cat's eyes", which produced two tiny strips of light in each fixture. When activated at night and viewed head on, one does not see two strips but rather just one blob. Also fitted was a single front blackout driving light. There was only one service light at the rear. All Jeeps had an electrical plug in the rear body to connect a trailer.

Tools provided: A shovel and axe for un-ditching, with two small rear-mounted storage boxes that held a jack and the engine hand-starting crank. The glove box provided space for a gas mask. The manuals for first echelon service (usually lost) included a chassis grease point chart.

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1942 Ford Jeep...continued

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Performance: Maximum speed: approximately 65 mph. Gradient climb: 60 degrees maximum. Water fording depth was 21 inches.The latter was achieved without water-proofing the ignition. Instead, the driver would simply flip a quick-release bracket on the generator to allow the fan belt to slip and not splash water overthe spark plugs and distributor. After fording, all the operator had to do was reengage the bracket.

The final production number of the WW2 Jeeps is significant in its own right. Willys manufactured 363,000 Jeeps, all in Toledo, Ohio. Ford produced 295,128 in six plants nationwide, resulting in a total production of 658,128 units before the end of the war in 1945.

These machines were sent all over the globe by every branch of the service. A highly flexible support vehicle, Jeeps were not just used for army reconnaissance, but as M.P. traffic control vehicles, small unit command cars, radio cars and were frequently armed with .30 or .50 caliber machine guns. In infantry combat, the windshields were folded flat on the hood and many served as frontline ambulances with litters placed on the hoods for evacuation. Early Jeep folklore alleged that the low range, first gear, idle speed of the engine was selected to match that of the walking wounded, so the driver did not have to constantly slip the clutch while slow-driving to an aid station.

No one is certain how the Jeep name came about, but the early nomenclature of GP is thought to be as follows: Ford Model designator: GPW, the G standing for Government vehicle, the P for the 80 inch wheelbase, while the W stood for Willys! A Ford variant was the GPA, with A for amphibious. It is easy to see how the GP became 'Jeep' in early GI lingo. Earliest press usage was in the Washington Daily News on March 16, 1941, where the new army vehicle was referred to as a "Jeep."

Some deletions are also apparent. All Jeeps originally came off the assembly lines in a near-identical and very basic simplistic form. But also, as a practical matter, many combat jeeps got modified in the field to better do the jobs assigned. Often they were refitted with scavenged parts after being shot up and returned to rear areas for salvage or replacement.

The donated Ford-produced Jeep is a good early example, even though previous ownership has added some customization, such as a right front fender-mounted siren. This 1942 vehicle fills an important time gap, tells a great story and is a welcome addition to the Miles Collier Collections.

The Vanishing Manual Transmission

By Roc Linkov, Brian Lanoway, John Fritz, Eric Jensen, and Mark Koestner

As fewer and fewer automobiles offer a manual transmission, it seems appropriate to offer a remembrance of sorts. So a few Volunteers were asked to share their thoughts on the state of the vanishing manual.

Roc Linkov

I remember Thanksgiving 2015 when I was at my son's house. A fellow track instructor called me and asked me to talk him out of selling his new C7 and buying a C6 Grand Sport. I told him I wouldn't because I knew why he was doing that… the loss of visceral connection with the car and the road. Simply put, the electronics made the car extremely competent but not the driver who was insulated from the decision making and *feeling* of the road and car. This article, although focusing on the dying manual transmission, really defines that *whole feeling* and defines it really, really well.

Well, my fellow dinosaurs, our meteor is closer than we think.

I recently bought Consumer Reports' 2021 Z51 C8 Corvette. It only comes as an automatic transmission. Yes, pulling back on both paddles puts it in neutral so you can rev the engine, wow, whoop-te-do, be still my beating heart… NOT. I had a chance to drive it for evaluation a couple years back and driving around the back roads of Rhode Island and Connecticut. I played with sport settings on the twisty roads as well as manual shifting. In a small town using manual mode, I quickly discovered an irritation; when you come to a stop the trans shifts to 1st on its own, not a choice.

If you are stopped at a stop sign for example, and have to make a hard right turn at startup, the engine is whining and asking for a higher gear in the middle of the turn. Unfortunately, the squircle (a square circle steering wheel) is turned at a sharp angle. I realize that I don't have large hands but they aren't tiny either. Yet with the wheel turned I had to actually let go of the wheel with one hand, find the paddles and reach over to hit the up paddle to shift the car. Do that a few times and you quickly come to the conclusion in city/town driving leave it in automatic mode. There are too many gears!

As I had told a fellow instructor who traded a C7 (manual) for a C6 manual, we come to the track to hone our skills and to enjoy the visceral feeling of being a part of the car.

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Photos Credited to Each Author

The Vanishing Manual...continued

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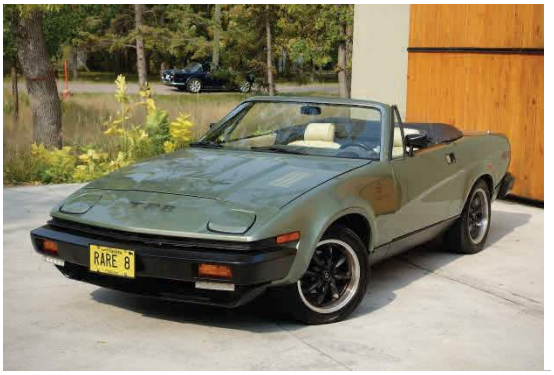
Brian Lanoway



A good friend of mine came over with his 1954 VW Beetle. He found it in a farmer's field, complete, but exposed to the elements for decades. After a two year rotisserie restoration, it was ready for the road but still looked apocalyptic. He had left the rust-colored patina on the body because "It took Mother Nature 40 years to create that look."

I jumped at the chance to take it for a drive. Every sense was sparked in an instant. A non-synchromesh first gear reminded you that stop means stop. The gear lever had a distinct shift pattern, but you had to feel your way through it. The clutch cable seemed fastened to the ball of your left foot and the brake pedal required full and deliberate leg action. As the staccato rasp of the engine pushed you forward, it was only natural to use your ear as the tachometer. With only 36 hp, a 30 mph drive down a gravel road became a safari adventure.

My favorite manual tranny was in my BMW 330xi. You could sense the sliding movement of the shift forks through the shift lever and it had a classic snick-snick touch, all perfectly placed in the palm of your hand. BMW even designed the center arm rest to make room for your arm when shifting in anger. My other favorite is the transmission in my son's Triumph TR3A; A stubby shift lever with a very short throw that must have been the prototype for the Miata.

Today, my daily driver is a 2018 6MT Golf R; A car that continues to impress me with its sheer competence in any driving situation. The 6MT shifter in my modern Golf R is light and precise, allowing great engagement with the engine power curve, but it feels like it's connected to nothing. I hated the clutch initially. It was so light that it was impossible to get the engagement point right. In their search for engineering purity, VW had added a clutch assist spring to the mechanism. Said spring is easily removed in about 30 seconds and the clutch now feels like it should.

My other daily driver in the summer is my 1980 Triumph TR8 with a five-speed manual. The shift lever is long and chunky, which suits the 3.5L V8 in the car. Fortunately, the clutch is a one toe delight and the whole affair allows you to be at one with the soundtrack of that small displacement V8.

As I get older, I'm thinking more and more about mechanical clarity. My recent drive in that VW Beetle has me searching for a 2CV and more adventures at 30 mph.

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The Vanishing Manual...continued

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John Fritz

BMW 2003 M3 Convertible with the SMG Transmission

(ed. The SMG is a manual transmission with automation function added. Default is manual shifting, but your left foot is bored while the driver changes gears unless automatic mode is selected)

Yes, a 3 series BMW was one of the world's best rated cars for a couple of decades, so having one on your "must buy" list isn't that unusual. And back in 2003 when I bought this E46 M3, I already had a couple of manuals in my garage so I decided to try the newest technology at the time and went with the SMG transmission (hydraulic and paddle operated)

As for the car itself, its smaller size and crisp handling provides that "analog feel' that is mostly lost in modern cars today, and the 8000 RPM redline is something that is rarely touched in the turbocharged era. Even better yet, it takes about 9 seconds to redline through the first 3 gears and that can be more fun than a supercar's 0 to jail in half that time.

But what about the transmission - is it better than a manual? Many writers today severely criticize the SMG and yes, in its early days it was a bit "balky and rough" in certain situations. But that is what makes it fun to drive. One must "learn" to drive it smoothly and adjust depending on the rate of acceleration. Sometimes you lift between shifts and other times you just keep it flat. And opposed to the "twin clutches" today that are so silky smooth that you have to listen to the revs to know it shifted, the SMG bangs from gear to gear and provides the excitement you want in a sports car. And with gear changes just at your fingertips, sometimes you find yourself shifting much more than in a manual, especially if you're going down several gears.

So in this case, "better" depends on the car, the driver and the situation. Yes, a manual could be more engaging than some cars with paddles, but not in every case. For instance, today's supercars are so fast that a manual just isn't realistic. And with the rev matching of a dual clutch, some cars with 8, 10 or even 12 cylinders sound just as good going down each gear as they do when accelerating. I'll hope to always have a manual in my garage but variety is a good thing too.

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The Vanishing Manual...continued

(Continued from page 13)

Eric Jensen

I have driven manuals since 1979 when I bought a 1971 Datsun 510. I taught myself to drive it on the test drive! The owner didn't know, nor really care since she didn't even come along. Money changed hands and I drove my first 4 speed manual home.

Every car I, and my wife, had after that car were manuals until I got a van to tow my race car and she until her knee could no longer handle a clutch pedal. The best was my Honda S2000. I could shift that brilliant gearbox up OR down all 6 speeds without using the clutch. It was that good! Pulling a quick shift at the car's 9000 rpm redline connects you to the machine. Amazing from a company not known for rear-wheel drive cars. Honda no longer makes the S2000 nor, sadly, do I still own one.

My current Mustang is equipped with an automatic that can be shifted manually. This car was a replacement for a 5 speed manual Mustang GT. Southwest Florida traffic is just too unfriendly to manuals.

I have always manually shifted my GT on track-day visits... never let it shift for me. While I might give up the clutch pedal, I won't give up gear selection control.

I miss my old Camaro race car sometimes. Its T-10 4-speed was stiff, precise, and could be shifted as hard as your arm could stand. The lack of rubber in the car sent every vibration and bump straight to the barely padded aluminum race seat. When the 5 point harness was pulled tight, the driver was a *part* of the car, not just *in* the car. Mechanical purity, direct connection, ultimate control. Closer to the road cars that preceded it than today's insulated nanny-protected cocoons.

Mark Koestner

My first car with a manual transmission was a 1970 Chevrolet Camaro. I lived in Michigan at the time. The Camaro was not very good in the snow, even with snow tires. I got pretty good at putting the car in 1st gear, dropping the clutch so that the rear wheels would spin and jumping out and pushing the car till it got unstuck, caught up and hopped in... pretty sure that's not happening today!

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The Vanishing Manual...continued

(Continued from page 14)

My 3 kids, 2 grandkids and one nephew all know to drive a manual transmission car… my contribution to the cause.

I refer to a 3 pedal car as a "modern day anti-theft device." There was one time that I had valeted my Mini at a local yacht club where I had been many times in the past. I could hear the car running and stalling about 6 times…. When I could smell the clutch, I finally had to go get the car myself.

Driving a stick car is a lost art.

"Heel and toe" to pretty much other than my Revs Institute buddies, gets a look like I'm speaking some alien language.

I know, I know, dual plate clutch with paddle shifters are much faster and more efficient than 3 pedal set up but, just seems to me that real sports cars should require a certain amount of skill and input from the driver.

OK, I'm going to put my Sabre tooth tiger outfit on now and go club a Brontosaurus for dinner.

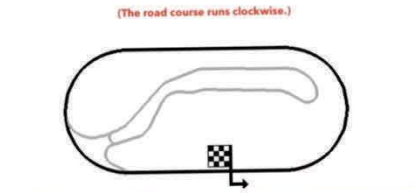
The Milwaukee Mile

By Bill Vincent

With the 2024 IndyCar season schedule comes a welcome return, "The Milwaukee Mile."

Many wouldn't think too much about that but besides being another driver favorite, there is also a lot of history involved. Now bear with me for a moment as I think race tracks, museums, and institutions like the Revs Institute have a bit in common. They all give us a great reference or "yardstick" to see where we were, and how far we have come.

So… The Milwaukee Mile is the oldest operating motor speedway in the world. What was originally a one mile private horse racing track in 1876 was purchased in 1891 by the Agricultural Society of the State of Wisconsin. This was intended to become the permanent site for the Wisconsin State Fair. It has since hosted at least one auto race every year since 1903, the exception being during World War II.



The then dirt track was paved in 1954 and it's still situated as part of the Wisconsin State Fair Grounds today. That first race, held in September of 1903 was won by William Jones of Chicago. It was a five lap "speed contest" and the first track lap record was a 72 second, 50 mph dash!

The facility also has a 0.8 paved road course in the infield, which combined with the oval, makes for a 1.8 mile road course lap *(upper left)*. A non-motorsport tidbit: That infield was the Milwaukee home of the Green Bay Packers from 1934 to 1953! At one point, in its early days *(right)* - there was even Ostrich racing!

That road course was also the site of my first "deceleration record attempt" *(left)* in a C-Production Jaguar E-Type. *(Ahh… the memories!)* Although a number of race series have competed at "The Mile" over the years, it's probably best known for IndyCar - *and for those of us of a certain age* - The Rex Mays Classic.

Photos on this page courtesy of Bill Vincent

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The Milwaukee Mile...continued

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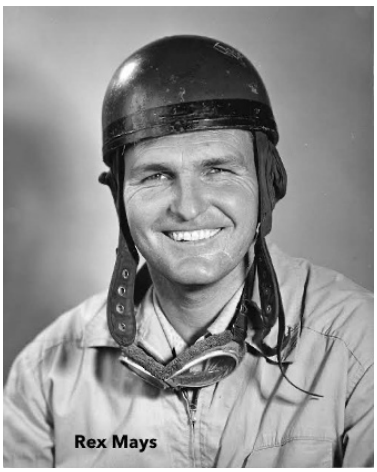
Rex Mays

Rex Mays *(right)* was a driver who dominated races at "The Mile" beginning in 1937 and throughout the 1940s.

There's a plaque just outside the Media Center to commemorate the time in 1948, when Mays deliberately spun his car against the wall to avoid running over Duke Dinsmore, who had been thrown from his car seconds earlier in an accident, saving Dinsmore's life! Sadly, Mays was killed in the only Champ Car (IndyCar's predecessor) race held at the Del Mar Fairgrounds race track in Del Mar, California in November 1949. He was 36 years old.

Milwaukee used to be THE race after the Indianapolis 500 since 1947 and was renamed in Mays honor in 1950. It remained under that banner through 1987 when it came under Miller High Life sponsorship. (*Sadly cash always seems to trump tradition…*) It even got a plug in the 1969 movie *Winning (left)*, where Robert Wagner's character delivered the line: "Everybody goes to Milwaukee after Indianapolis!"

Sadly it's hard to pin down accurate records of race car entries from way before the internet, so I couldn't determine if the Revs gallery 1924 Miller ever completed at Milwaukee. But there were a number of Miller chassis competing in that era, along with some Alfa-Romeos, Bugattis and in 1947, an Offy powered Maserati! Although there was some question as to how much of that car was really Maserati *(above)*!

What is documented is that the Miles Collier Collections beautiful Jorgensen Eagle *(left)* did compete there. Bobby Unser finished 4th, driving it in 1974 and 2nd in 1975 - to go with the Eagle's Indy 500 history!

Peter Harholdt Photo Courtesy of Revs Institute

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The Milwaukee Mile...continued

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Here is some "yardstick comparisons": In 1939, the race's average speed was: 83.651 mph. Emil Andres took the pole in a Stevens chassis powered by an Offy engine at 88.583 mph. All under American Automobile Association (AAA) sanctioning.

Things peaked in 1998 under CART (Championship Auto Racing Teams) sanctioning when the race's average speed was 131.349 mph. Patrick Carpentier captured the pole then with a sizzling 185.5mph in a Reynard chassis with Mercedes/Ilmor power.

As rules changed with IndyCar Series sanctioning, things backed off a bit and while the 2015 race average was 130.373 mph Will Power's pole speed was *"only"* 170.223 in the Dallara chassis with a Chevy/Ilmor power plant.

What makes the speeds pretty impressive though, is that this oval is only 1.015 miles long with the corners banked at only 9.25 degrees so it's pretty flat! Although "flat" I guess is a relative term, in that the track does have to contend with our wonderful Wisconsin winters - so it's by NO means smooth!

Obviously the track has gone through a number of improvements over the years. One of the more recent renovations included an update to the Media Center that included a wonderful mural on one wall *(above)* highlighting some of the past history of the track. So on August 31st and September 1st, IndyCar returns to The Milwaukee Mile for a double header race weekend - and new history to be made.

It will again be interesting to see how things compare today with those in the past!

Special thanks to Ian Heilman, Director of Event Services, Wisconsin State Fair Park, for his help in getting the pictures at the track!

Photo courtesy of Bill Vincent

TAPPET TECH

Oil Seals

By Eric Jensen

Shortly after the invention of the wheel, some bright person decided it would work better if some slippery material was applied to make turning that wheel easier. The animal fats they used stayed in place fairly well, oozed out over time and more was added. The lubricants just dribbled away or dropped off as thje machine went about doing its job. This is called a "total loss" lubrication system. It works fairly well for slow moving parts.

Early cars lubricated the engines with this system. Cars like the 1912 Mercer or the 1914 Simplex needed large oil tanks to constantly lubricate the engine. Castor oil, made from pressed castor beans, was a popular lubricant in those days and considering the most of the roads were dirt, maybe the oil kept the dust down.

As engines became larger and more powerful, the need for oil increased so the total loss systems were replaced by recirculating the oil. Much like today, oil was contained in the oil pan (or sump) and splashed on the moving parts. Later pumps were added to feed pressurized oil to the moving parts. Now, if you have a big container of oil, you'd like to *keep* that oil inside the engine. So how do you do that beyond a wish and a prayer?

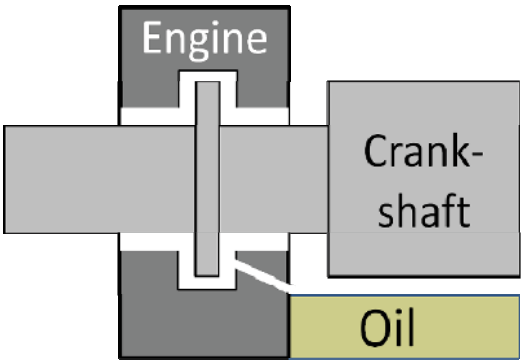

Figure 1

Early seals were made from leather. With slow shaft rotation in a cool spot, leather can work. Rubber might be considered; it works for tires, but natural rubber is not very heat nor wear resistant. This doesn't work for engine crankshaft seals; a hot, fast spinning shaft. Labyrinth seals were developed.

Labyrinth seals are best shown in a picture. *(see Figure 1)* While it may be *called* a seal, it really isn't what most would consider a proper seal. Pressure from the engine running was vented outside so the oil pan was not pressurized. Remember oil draft tubes? That was how the internal engine gasses were vented. That allowed the pressure inside the engine to be pretty much the same as outside. The spinning elements of the labyrinth seal tosses the oil around but not out. Is it a perfect seal? No, as lovers of English cars found when looking at their garage floors well in the 1960s.

Figure 1 courtesy of Eric Jensen

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TAPPET TECH

Oil Seals

...continued

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Figure 2

Rope seals *(Figure 2)* had been developed as a reasonably effective pressure seal for rotating shafts so were used as crankshaft seals. Rope seals are exactly what their name describes; a fabric rope impregnated with a lubricant fitted tightly into a groove to seal a rotating shaft. If properly installed, they were mostly effective at keeping oil in. These were used as late as the 1970s as one was still used in this author's 1975 Buick V6 engine. There were still oil drips under the car, but not puddles.

Up to this point the seals were not perfect, but adequate. Oil still leaked out. At historic races, you can always tell where the English sports cars are paddocked by the large oil spots. Smaller spots appeared at the older American and German car gatherings, but they still leaked. Oh, well, it just keeps the oil pan and the underside of the car from rusting!

The world changed with the invention of synthetic rubber in the 1930s. More heat and wear resistant than leather, rope or natural rubber, it was a far more effective seal material. As better and better materials were developed, less and less leaks occurred. Used in every fluid-holding system on an automobile, this technology keeps the various oils and greases, brake fluid, and even air conditioning refrigerant gases sealed.

Figure 3

Subsequent generations of material development have greatly improved sealing technology. If you happen to watch film of roadways or parking lots from the late 1960s and compare them to video of today. There are far fewer oil spots in parking lots and dark trails running down the center of the road. The improvement in sealing is very noticeable (and better for the environment).

Figure 3 shows a highly engineered modern crankshaft seal that maintains a drip-free seal for a hundred thousand miles. In the old days, an oil spot on the garage floor was normal. Today, even a small oil spot is a reason for concern.

TAPPET TRIVIA

By Joe Ryan

And Now The Answers….

1. **Q:** Before the 1953 Porsche 550, did Porsche race a purpose-built race car? **Answer:** No! Racing specials like the 356 SL or the 540 were based on the 356 platform.

2. **Q:** Was Porsche involved with auto racing before building the 550's? **Answer:** Yes, the Porsche factory was racing the specially modified 356 SL Gmünd aluminum bodied coupe. The Gmünd started the racing tradition for Porsche as the first to enter the 24 Hours of Le Mans… and win its class the first time out! Porsche also built the model 540, the America Roadster as a lightweight racing special, again based on the 356.

3. **Q:** Where was the oil cooler located on the 1953 550 serial number 01? **Answer:** The external oil cooler was located in the nose and joined the wet sump lubrication system.

4. **Q:** Who built the bodies for the 550 serial numbers 01 and 02? **Answer:** Weidenhausen of Frankfurt, (West) Germany.

5. **Q:** Where did the 550-01 win its first race? **Answer:** The famous Nurburgring race track.

6. **Q:** What was the body configuration of the Porsche race car that won at the Nurburgring? **Answer:** The 550 was raced as a roadster in the rain! The top was added before racing at the 24 Hours of Le Mans.

Source: Revs Library

Contributions to the column are always welcome.

Photo Courtesy of Revs Institute
Peter Harholdt Photo

Adopt-A-Car Program

Available Adopt-A-Car Automobiles and Engines

Alfa Romeo Guilietta
Alfa Romeo AutoDelta
Ardent Alligator
Austin Cooper S
Bugatti Type 55 Super
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Cisitalia SC
Cooper Climax T-43
Cooper T-51
Cunningham C-1
Cisitalia SC
Cunningham C-3
Delage Grand Prix
Delahaye 135 CS
Duesenberg Model J
Elva Porsche
Fiat Abarth TCR
Jorgensen Eagle
Lancia Aurelia B20
Lotus Elite
Maserati Tipo 60
Mercedes Benz W-154
Mercer Raceabout
Miller board track racer
OSCA Sports Racer
Porsche Elva
Porsche RS-60 Spyder
Porsche RS-61L Spyder
Rolls Royce Silver Ghost
Scarab Sports-Racer
Simplex
Stutz Black Hawk
Trabant
Vauxhall 30-98 Type OE
Waymo Firefly
Abarth 1000-TC-R engine
Alfa Romeo GTZ engine
C-6R Offenhauser engine
Cadillac OHV V-8 engine
Chrysler Hemi (C-3) engine
Duesy Sprint Car engine
Ford GT-40 Transaxle engine
Ford Turbocharged Indy
Gurney Eagle GP engine
Jaguar XK120 Series engine
Meyer-Drake Turbo Prototype
Columbia Three-Track
Humber 58" Ordinary Bicycle
Velocipede Bicycle

To adopt a car or engine, contact: Brian Lanoway, Adopt-A-Car Chair at blanoway@shaw.ca

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Adopt-A-Car Program

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Alfa Romeo Guilietta	Fiat Abarth TCR	Vauxhall 30-98 Type OE
Alfa Romeo AutoDelta	Jorgensen Eagle	Waymo Firefly
Ardent Alligator	Lancia Aurelia B20	Abarth 1000-TC-R engine
Austin Cooper S	Lotus Elite	Alfa Romeo GTZ engine
Bugatti Type 55 Super	Maserati Tipo 60	C-6R Offenhauser engine
Cadillac Series 61	Mercedes Benz W-154	Cadillac OHV V-8 engine
Cisitalia SC	Mercer Raceabout	Chrysler Hemi (C-3) engine
Cooper Climax T-43	Miller board track racer	Duesy Sprint Car engine
Cooper T-51	OSCA Sports Racer	Ford GT-40 Transaxle engine
Cunningham C-1	Porsche Elva	Ford Turbocharged Indy
Cisitalia SC	Porsche RS-60 Spyder	Gurney Eagle GP engine
Cunningham C-3	Porsche RS-61L Spyder	Jaguar XK120 Series engine
Delage Grand Prix	Rolls Royce Silver Ghost	Meyer-Drake Turbo Prototype
Delahaye 135 CS	Scarab Sports-Racer	Columbia Three-Track
Duesenberg Model J	Simplex	Humber 58" Ordinary Bicycle
Elva Porsche	Stutz Black Hawk	Velocipede Bicycle
	Trabant	

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