

The official newsletter of

**Revs Institute  
Volunteers**

Revs Institute  
2500 S. Horseshoe Drive  
Naples, Florida, 34104  
(239) 687-7387

Editor:  
Eric Jensen  
[eric60@gmail.com](mailto:eric60@gmail.com)

Assistant Editor:  
Morris Cooper

**Thanks to  
this month's  
contributors:**

- Tom Dussault
- Dale Liebenthal
- Bill Vincent
- Lauren Goodman
- Brian Lanoway
- Whitney Herod
- Max Trullenque
- Joe Ryan
- Chip Halverson
- Anna McDowell

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# TAPPET CLATTER

Volume 27.9

May 2022



## Editor's Notes

By Eric Jensen

Since our Chairman, Chip Halverson, is guest authoring our special Indianapolis 500 *Tappet Trivia* this month, I decided to give him a break from the *Chairman's Notes*.

This month's issue leans a bit towards motorsports with articles about IndyCar racing and early road racing at Put-In-Bay. I thought it appropriate since the month of May contains two of the world's Great Races; The Indianapolis 500 and the Monaco Grand Prix. Also included is the 3rd and final segment about Lucy O'Reilly Schell. Since the Porsche 906 is back on display, Brian Lanoway's history of 906- 125 inclusion is appropriate making this our largest issue of the year.

As is customary, the May issue is the last *Tappet Clatter* of the season. This will give your editor and contributors a summer break to refresh and regroup so we can bring you great content next season. We will return in September as usual. We have a few new things planned for next season that will come together over the summer that we hope you will enjoy.

I have been privileged to serve as editor to this newsletter for two seasons. I have enjoyed working with and serving you in this capacity. The best articles come from you, the Revs Institute Volunteers. The research you do, the Adopt-A-Car reports you write and the articles created from your interests fill the newsletter each month. Thanks to you, we have articles already in the queue for next season.

Until September,

*Eric Jensen*

# TAPPET TRIVIA

*By guest author, Chip Halverson*

This section is devoted to questions about the Miles Collier Collections cars or cars of the same period. This month, in honor of one of the worlds three great races, the Indianapolis 500, the Tappet Trivia will feature Indy 500 trivia questions. Some of the questions might be

a bit (very) obscure or (impossibly) tricky. Test your knowledge and *have fun!*

The worlds three great races are; the 24 Hours of Le Mans, the Indianapolis 500 and the Monaco Grand Prix. These long running races represent the best of sports cars, American oval racing and Grand Prix racing.

For many years one of the most talked about things in the month of May was the Andretti luck, or lack thereof. The phrase “Andretti’s slowing down” was heard over and over on the PA. Don’t believe in bad luck? Check out these stats,

Driver	Total Career Laps Led	Wins
Mario Andretti	556	1
A.J. Foyt	555	4
Michael Andretti	431	0
Rick Mears	429	4

Like they say, you only have to lead the last lap to win.

There have been family feuds at Indy; Unser versus Andretti.

Family	Total Starts	Wins
The Unsers (Al Sr., Bobby, Al Jr.)	65	9
The Andrettis (Mario, Michael, Jeff, John, Marco)	76	1

### **Now the Questions...**

1. What five drivers have won both the F1 World Championship and the Indy 500?  
*Bonus Question: Which one did both in the same year?*
2. What was the last year a front-engine car won? Who was the driver?
3. What two drivers have won the both the 24 Hours of LeMans and the Indy 500  
*Bonus Question: Which driver won both in the same year, and what year was it?*
4. Name the 3 people in this famous picture taken at the Indy 500 in 1969 of the front row qualifiers (right), a copy of which hangs in the museum hallway leading to the auditorium. Careful, this is a trick question!

***The answers are posted later in the issue.***

*Photo of the Photo Courtesy of Eric Jensen*



## Membership Report

*By Tom Dussault*

During the month of April, the Membership Committee welcomed eight new Station Guides and one new Steward to our volunteer organization. Each new member attended both Orientation and the Intro Class for New Volunteers presented during the month. Orientation Class includes a presentation in the Revs Institute theater about the legacy of the Collier family, the history of the Miles Collier Collections and Revs Institute as well as a detailed overview of volunteer guidelines, responsibilities and benefits. John Balconi and Larry Gleeson then lead a behind-the-scenes tour of the museum, library and shop facilities to help familiarize our new members with the many facets of Revs Institute. The Intro Class, facilitated by John Wharton, overviews the best practices for engaging with guests and creating a memorable guest experience. In addition, members are shown how to access all the resources available to study the collection.

At a recent meeting of the Membership Committee, we agreed to reach out to many of our newer members to ask how you felt about our interview, orientation and mentoring procedures. If you are contacted by Jayne Gresch, Ralph Papa or Joe Ryan, please take the opportunity to share your opinion so that we may gain a better insight into how we are doing and do it better.

Once again, thanks to all of you who have referred candidates. Please continue seek out potential candidates such as our three new Volunteers below. Thanks to everyone for your support and have a great summer!



**Lou Farone**

Joined April 2022

Part Time Resident

Originally from Saratoga Springs, New York. He is a part-time resident of Naples and spends his summer in Colorado. Lou began his career as an attorney but transitioned to owning and operating retail liquor stores. He has owned a variety of great cars including a '73 Triumph TR6 and a '71 Mercedes 300 SEL 6.3L. Lou learned about Revs Institute from our recent presentation at Pelican Bay.



**Ray Petronko**

Joined April 2022

Part Time Resident

Originally from New Jersey. He spends his winters in Naples and summers in Sea Girt on the Jersey Shore. Ray retired from the Department of Education where he worked as a Computer Systems Administrator. Prior to that, his career included a number of positions including city council, firefighter and EMT. He was also a member of the Float Crew for the annual Macy's Thanksgiving Day Parade. Ray is a Corvette guy having owned a '73, a '75 as well as his current '19 model. Ray learned about volunteering during a visit to the museum and applied that very day.



**Bryan Roe**

Joined April 2022

Full Time Resident

Originally from Boston but raised in Texas, Brian is looking forward to retiring soon from his position as general manager of a Naples country club. At age 11, he rebuilt a lawnmower motor. That ignited a lifelong interest in all things automobile. He has owned a variety of high performance cars from a 1970 SS 396 through his current 1978 911 SC Targa. Thanks to Eric Judson and Jim McCarthy for referring Bryan.

Photos Courtesy of Revs Institute

## Volunteers Meeting April 2022

By Eric Jensen

As is traditional, the April Members Meeting is held as a "Thank You" to our Volunteers before some of them head to their summer residences away from Naples. April is also National Volunteers Month so the Revs Institute celebrates this meeting by providing lunch along with the program. Whitney Herod, our coordinator, opened the meeting with thanks to all the volunteers. Chip Halverson, our Chairman, reviewed the splendid accomplishments of the various committees for the past year.

The group then heard from Mr. Collier as he shared the Revs Institute's mission in four categories: Praxis; the use, care, restoration and conservation of the collection, Connoisseurship; maintaining the integrity of the history, Legacy; objects from the past preserved for future generations as examples of sociologic trends, and Society; the interaction with the public through visits, events and the media.

The goal continues to be maintaining, sharing and education about the history. In the connected world, this means expanding the global reach through social media. Those already following Revs Institute on Facebook, YouTube or Instagram have seen the results of this expanded reach. Like and Share whenever you see one. More is planned.

Scott George shared a long list of planned work and show events for the Miles Collier Collections cars in the queue for next season. Projects nearing completion include the Porsche 906, Chrysler Airflow engine, '58 356 GT's gearing changes, and of course, the 1919 Ballot. The Sunbeam has been replaced with the DuPont and is scheduled for some restoration and correction work.

A strong list of appearances is on the table for next season. Goodwood, Pebble Beach/ Monterey Historics, Bloomington Gold, Four-Cam Jam, Rennsport and more. Plenty of exercise for the cars and many opportunities to share the vision of Revs Institute.

We then heard from Mike Barbone, Revs Institute Learning instructor about classes developed to teach engine basics. The engines 101 classes offered have been very well received and Engines 102 is currently in development. These are very hands-on classes with only 8 students, structured so that students can learn at their own pace with any background. About 70 students have been through these classes.

The Media Department, Max Trullenque, media coordinator, and Damian Beurer, filmmaker, shared some of the latest content posted on social media. The media presence has made a great strides recently with the efforts of these talented individuals. These links that follow tell the story! [Video A](#), [Video B](#), [Video C](#)



Photo Courtesy of Eric Jensen

## Meet the Volunteer Board of Directors

Since there have been some changes in the Volunteers Board of Directors due to elections and voluntary resignations, we thought it important to provide this information about your Board members for 2022 - 2023.



### **Chip Halverson - Chairman**

I started at the Revs Institute at the end of 2015 as a Station Guide and more recently as a Docent. In that time, I have served as Program chair, Adopt-a-Car chair and as Vice-Chairman.

I was attracted to Revs Institute like most volunteers by my passion for all things automotive. It began with my father taking me to the 1964 Indy 500. Since then, I have followed Indy and sports car racing. Fifteen years ago, I started vintage racing and continue to be active.

My career was focused on healthcare services. I was President of the Healthcare division of a Fortune 500 company and spent the last fifteen years involved in venture-backed healthcare companies. I have served on numerous boards.

Making the volunteer experience rewarding is imperative to recruit and retain the best possible people. I feel we have that quality in our Volunteers at Revs Institute.

### **Eric Jensen - Vice Chairman**

A volunteer since 2016, became a Docent in 2017, elected to the Volunteer Board of Directors in 2019. I have served as Vice Chairman for each of the last three years and as acting Chairman for a significant portion of 2019. I was Docent training chair in 2019 and assumed the role of *Tappet Clatter* editor from the September 2020 issue onwards. I was awarded the Joe Leikhim Award for 2021

I am a retired automotive engineer, sports car racer and autocrosser. I still run track days in my modified Mustang GT because I can't leave my car the way the Ford built it and to feed my need for speed.

I am privileged to serve the Revs Institute and its fantastic group of Volunteers.



### **Hank Berglund - Secretary**

I have enjoyed being a Revs Institute Volunteer since March of 2015. Received the award "Outstanding Library Volunteer" for research and recording of the Museum's Mascot collection. My career has been in international trade and distribution after completing my education in Sweden. My early ownership of sports cars was Swedish - a Volvo P1800 and a Saab Sonett. I participated in Karting at an early age, which led to my interest in Formula 1 racing. I have followed F1 for many years and have attended a number of races in Europe and the Americas.

I am honored to have been asked to serve as Secretary at the Revs Institute Volunteers Board.

## Meet the Volunteer Board of Directors



### Mark Koestner - Treasurer

A volunteer since 2014 as a Station Guide and a Docent, I also held Board positions as Chairman, Vice Chairman, Treasurer and, Programs Chair.

My first sports car was a 1974 BMW 2002. I purchased new a 1989 BMW M3 and put 235,000 miles on over 20 years. Also owned BMW X-5 4.6is with a Dinan S3 conversion. I currently drive a modified Mini Cooper John Cooper Works which I drive daily as well as participate in several track days per year.

I raced in the SCCA for 12 years in the GT-3 class. I have autocrossed as well as instructed for the BMW Car Club of America. Along with my son Matt, we successfully completed the 2005 Targa Newfoundland.

It has been an honor to be a part of such a special and unique organization.

### John Wharton - Training Chair

As an aspiring car guy, I joined SCCA and road-rallied before graduating high school, wrenched on early restoration efforts by a childhood friend and much later turned to autocrossing, winning class championships and participating in seven Solo2 Nationals.

At Revs Institute I've been able to apply some of my work experience as a science museum administrator. I also became involved in fostering professional standards in the field, as a volunteer peer reviewer in the American Alliance of Museums' Accreditation and Assessment Program.

At Revs Institute I've progressed from Station Guide to Docent to Board member to Training Chair winning Docent of the Year in 2019. I've been impressed with how effective our Station Guides and Docents are in interpreting the many facets of the automobile to our visitors while striving to safeguard the collection.



### Roc Linkov - Docent Training

I joined Revs Institute in January 2014 becoming a Docent about a year later. Volunteering at the Revs Institute was a natural extension of my previous experience at the National Corvette Museum. For those who love cars, Revs Institute is the ideal place both to learn and to share information. Meeting people from around the world is fun and visitors bring new information. I have learned much from my fellow volunteers.

I was glad to offer useful suggestions and contribute to Revs Institute including developing a tour and script for the Visually Impaired guests, developing a tour program for Porsche Parade and working on the parking arrangements for the first Revs Cars & Coffee. I have given numerous Docent and Special Tours and was awarded the Docent of the Year in for 2021. I continue to serve on the Board as head of Docent Training.

## Meet the Volunteer Board of Directors



### Tom Dussault - Membership Chair

I have served as a volunteer for three years and as a member of Revs Institute Board of Directors during the past year. It has been a year full of challenges for all of us. Upon the reopening, many volunteers did not return and we faced a challenge in staffing the volunteer positions.

As such, the Membership Committee has worked to identify candidates and bring onboard new qualified and enthusiastic members to fill the void.

We also helped to develop two new volunteer positions; Guest Services and Steward, to support our Guest Services employees and to provide security for the collection. To date, we have added more than sixty new volunteers. I hope to continue to recruit qualified new members to work alongside all of us.

### Lodge McKee

Over three decades ago the Briggs Cunningham collection of sports and sports racing cars was acquired and merged with a collection of Porsches to be housed and shared here Naples, Florida. Mr. Collier's plan envisioned a purpose-built museum, an Advisory Board, and a support group of guides to interpret the collection. It was to be a repository of historical artifacts with a distinct social relevance and educational importance. I was fortunate enough to be here and to be asked to participate, and my life in Naples has been enhanced immeasurably ever since. The mission has been refined and expanded; the name has been changed: and the cumulative works of study, conservation, research, presentation, and education have reached an extraordinary level today.



I believe that the tenets with which this endeavor was started are an important measure of its strength and success. We have achieved something exemplary and we have managed it with an unswerving spirit of volunteerism. It is my hope to see the Revs Institute Volunteers continue in that pursuit guided with a steady hand and an enthusiastic board of directors.



### Whit Turner - Technology Chair

I have been a volunteer at Revs Institute since the re-opening in 2014. Currently I am a Senior Station Guide.

In 2020, I was awarded the 2019 Joe Leikhim Award for my work on the creation of the CarPad application software and other contributions such as helping draft various presentations given at member meetings.

My wife and I are seasonal residents of Naples, typically spending half the year here and the other half in New Hampshire. When in Naples, I can be seen driving my "vintage" 1999 Porsche Boxster.

I am very much looking forward to serving on the Revs Volunteers' Board of Directors.

## The Put-In-Bay Road Races, 1952-1959

*By Dale Liebenthal*

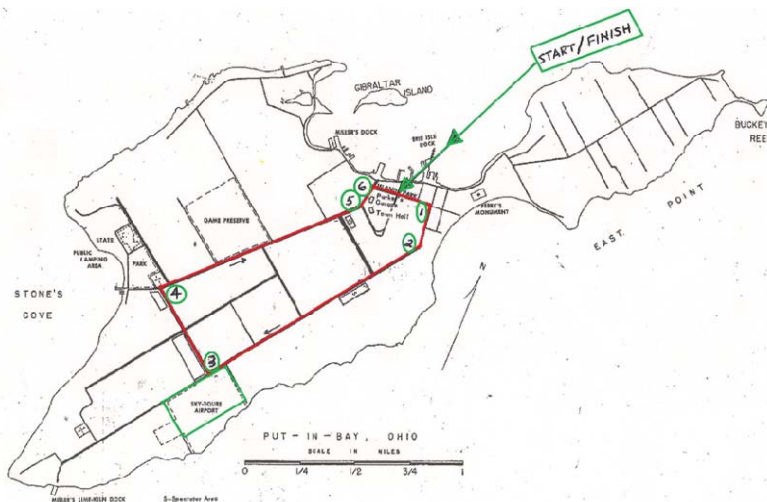
As the southernmost Great Lake, Lake Erie boasts a north-south chain of three islands in its Western Basin called the Bass Islands, comprised of North, Middle and South Bass. The southernmost Island features the village of Put-in-Bay, with a north-facing natural harbor famous as the staging area for the Commodore Oliver Hazard Perry fleet in the historic battle for the Great Lakes, just before their victory over the British in the War of 1812. One hundred and forty years later, the Island was famous once again as the location of the Put-In-Bay Auto Road Races.

The popularity of road racing after World War II is well-documented. Service members returned from the war with money saved, looking for the opportunity to spend and have some fun. With few consumer products made during the war, their attention returned to the roadsters and sports cars they had driven overseas. As these small, foreign cars gained entry into the US market, one could buy a relatively inexpensive small car with engines that were usually 2-liters or less.

Sports car clubs started to form. Members started to race at Bridgehampton, Watkins Glen and Elkhart Lake on race tracks laid out on public roads. But none of these early venues lasted as long as Put-In-Bay which ran from 1952 to 1959.

The members of the Cleveland Sports Car Club wanted their own circuit; one that could rival Watkins Glen or Elkhart Lake. Well-known to Cleveland-area vacationers, South Bass Island was an idyllic setting known for its beauty, where boats of all kinds, such as Thistle-class sailboats and Lyman wooden boats – built in nearby Sandusky – gleamed on the water with their varnished decks and cabins. At the east end of town was a 365 foot tall International Peace Memorial column celebrating the Perry victory. The island was known for wine production and excellent wine was available at many local outlets. Serviced by both ferry and air services, Put-in-Bay seemed to be the perfect location for a road race.

The 3.1 mile long Put-in-Bay race course was laid out in early 1951. It used the only four



connecting roads on the island to create a race track shaped like a rough rectangle (see the map). Most of the hazards were natural, with rock outcrops, trees and, if one wasn't careful, Lake Erie itself. The roads were so rough and narrow that the race committee limited the race cars to engine displacements of 2.0-liter stock and 1.5 liter modified.

*(Continued on page 9)*



## The Put-In-Bay Road Races.....*Continued*

*(Continued from page 8)*

Arriving from Detroit, Toledo and Cleveland, the race cars were carefully packed together, often only inches apart, in the hold of the Miller and Parker Ferry services. The small ferries could normally hold four American-sized cars but as many as eight race cars could fit on one load. Many would make the trek on the Friday before the race in time for tech inspection and practice rounds. Some could make the race on Saturday and drive back the same day, but most would enjoy the beautiful scenery and party throughout the weekend. The Island was shut down on Saturdays for the race.



*A packed ferry – two Fiats, an MG-TD, a Jaguar XK-120 and an Arnolt-Bristol.*

*Photo Courtesy of Rollin LaFrance.*

The 2-liter limit kept the big drivers out of Put-In-Bay. No Ken Miles, Phil Hill, no Ferrari's or Jaguar D types. Briggs Cunningham never raced there. The drivers who did race there were a cross section of professionals such as doctors, lawyers and business executives along with just average working-class people who could afford a small race car and wanted to have some fun. This parallels our museum volunteers who come from all walks of life but have a common language of cars and racing.

A great cult following developed around these races. Many of the drivers became well-known locally. Some of the names were Charlie Ellmers, Ralph Durbin, Jim Dever, Chuck Stoddard and Chuck Dietrich. Chuck Dietrich was a very dedicated racer who went on to race at Brands Hatch, Mallory Park, Goodwood and Snetterton. Dietrich then raced for the Elva factory in Europe against the famous drivers of the day including Jim Clark, John Surtees, Denny Hulm and Allan Rees. Racing from May 1951 to August 2002; 51 years. Chuck drove more than 400 races at 64 different venues in 27 race cars covering more than 20,000 racing miles.

Chuck owned a VW and MG dealership in my hometown of Sandusky Ohio. I was always thrilled to see him or his wife Suzy, an excellent race car driver herself, driving their supercharged MG TC on the streets of town. It led me to buy an MGA, but the races at the 'Bay were over by then.

When the Put-in-Bay race started in 1952 it was known as the "MG race" because most of the entries were the popular and inexpensive MG-T series. But as "foreign car" dealers started to pop up, other marques soon appeared: 356 Porsche Speedsters, Alfa-Romeos, Siatas, Lotus, Triumphs, followed by Morgans, MGAs, VWs, Elva Mk IIs, III, IV and finally Porsche 550 Spyders, Fiat Abarths and AC Bristols.

*(Continued on page 10)*

## The Put-In-Bay Road Races.....*Continued*

*(Continued from page 9)*

A total of 120 marques and models were driven by approximately 424 drivers, some repeat drivers and some one-time drivers. Entries went from 30 in 1952 to a maximum of 100 in 1959.

For eight years the races were an outlet for participants and spectators alike. Held on city streets with the fastest 'affordable' cars of the day and with no serious injuries, the race developed a large following. The friendly, respectful atmosphere was comparable to Watkins Glen or Elkhart Lake. But those venues closed between 1952 to 1956 as they moved to other locations with improved track safety and crowd control, often at unused air force bases as a result of an agreement between the Strategic Air Command General Curtis LeMay and the Sports Car Club of America.



*Two Porsche Speedsters cornering at the Colonial Inn in downtown Put-in-Bay at turn #6.  
Photo Courtesy of Rollin LaFrance.*

With street racing already starting to fall out of favor due to safety considerations, the Put-in-Bay race committee had instituted rolling starts and no passing zones. Even so, we would be shocked today at the race hazards. Safety equipment then was basic: a helmet and a single seat belt. Drivers were not required to attend racing school, nor did they need a competition license. Roll bars and flame-retardant suits were not required until 1958. With only taped headlights and temporary racing numbers, the car you raced was most likely the car you drove to work. There were many close calls, often with parts falling off cars because of the rough and bumpy roads.

Spectators were also a problem. Because of the island layout, the race was held in the open with no grandstands. Barriers were inadequate, limited to snow fencing and hay bales. On the straightaways, nothing prevented spectators from crossing the track. The archives are full of stories of people crossing the track, thinking the cars had gone by, only to find themselves staring at a speeding racer. Surprisingly, there were no spectator fatalities during the entire period of Put-in-Bay racing.

It all came to an end in 1959 when the State of Ohio passed a law against racing on public streets. The Put-in-Bay race was revived in 1963 on a shortened course, but only for one year. The race then disappeared.

*(Continued on page 11)*

## The Put-In-Bay Road Races.....*Continued*

*(Continued from page 10)*

In 2009, fans and descendants of the original racers organized a reunion on the island which developed into an annual revived race. The track was moved to the island airport and the first race was held in 2011. Today the race continues as the Put-In-Bay Road Race Reunion on an abbreviated 1.2 mile course. Run this year September 20th to 23rd, the event once again features social gatherings, a car show, current track touring and more.



*In the paddock with families gathered around between races and the grape vineyards.  
Photo Courtesy of Rollin LaFrance.*

Many of the photos used were from the collection of Rollin LaFrance. More photos of Rollin LaFrance and a comprehensive history and many fun stories of the races can be found in 'The Put-In-Bay Road Races' by Carl Goodwin, a McFarland & Company, Inc. book. If you are interested in visiting Northern Ohio this fall to take in the fun, you can find more information at:

<https://www.visitputinbay.org/event/annual-put-bay-road-race-reunion/>

And <https://www.pibroadrace.com/>

## Events Calendar

Event	Date	Info or contact
<b>Yeti Motorsports Tour</b>	May 6 @10:30 am	Sign up on VicNet
<b>Board of Dir. Meeting</b>	May 13, @10:00 am	Sign up on VicNet
<b>Members Meeting</b>	May 18, @ 11:00 am	Sign up on VicNet

For a full list of daily tour groups and events, go to the 'Calendar of Events' on VicNet.

## The Iceberg in Motorsports, Part II

*By Bill Vincent*

In the March Tappet Clatter we explored the immense amount of preparation required before the first race of the IndyCar season. This month we continue our look below the water line of the "Iceberg of work" in racing, we move from the Sebring test to the first race of the season: The Firestone Grand Prix of St. Petersburg. I was fortunate to compete in the first St. Pete GP, back in 1985, when it was a Trans Am / Can-Am event. It has since become a mainstay on the IndyCar calendar, as the season opener. But that's ancient history; back to the subject at hand.

After that Sebring test, the teams headed back to their respective home bases for their engineering staffs to "crunch the numbers" and digest what they learned from the test. While that was going on, the mechanics were "turning the cars around" - which is basically tearing them down, or disassembling them, and then rebuilding them for the upcoming race. In doing so, the mechanics check for any cracks and unusual wear and replace parts that have "miledaged out". A "miledaged out" part has reached the end of its life span, as determined by its manufacturer or the team's experience.

As the cars go back together, they are set up to the specs the team feels would best suit the course they're about to run. Those specs include: wheel alignment (for all four wheels), gear ratios in the transmission, brake cooling ducting, and aero dynamic trim, some of which is set by the IndyCar series rules. All these specs are again a combination of past experience of the team and what they may have learned in testing.

The teams don't really do that much with their engines, aside from "dress" them, which is mounting the exhaust headers, some ancillary bits, and installing them in the chassis. Anything beyond that and they go back to Honda, or Chevrolet, depending from which supplier the team leases their engines.

The engine in an IndyCar is also a structural member in the car, as the car has no "frame" per se. The driver sits in a carbon fiber "tub", or monocoque. That tub also holds the fuel cell.



The car is then built out from there. The front suspension bolts to the front of the tub. The engine bolts to the back of the tub. The transmission bolts to the back of the engine. The rear suspension then bolts to the transmission. And all the aero and outer bodywork attaches over all of that. Not only does this design technique save weight. It's integral to the car's safety. The idea being that, in an incident, the car would come apart in layers. Absorbing the energy of the impacts in layers protecting the driver as much as possible.

*All hands on deck to repair minor damage  
All Photos Courtesy of Bill Vincent*

*(Continued on page 13)*

## The Iceberg in Motorsports Part II... *continued*

*(Continued from page 12)*

When my wife and I arrived at the track, shortly before 10:00 am Saturday, the teams had completed their second practice session (the first being Friday afternoon) and were gearing up for qualifying. Some repairs had to be done to the side of the #5 car after a brush with the concrete walls. The team had to work quickly, as qualifying started at 12:30 pm.

The #7 car just needed a thorough going over and alignment check. Every time the cars go on track there seems to be some adjustment, or “tweak”. Remember the ultra-flat and level terrazzo slab in the floor we all walk around in the shop at the Revs Institute where chassis set ups are done? Well the Indy teams have their own portable versions (*in carbon fiber - of course - below*). Their “set up pads” also incorporate four scales, to measure how much weight at each wheel. But measuring “toe-in/toe-out” for each wheel is still done using a trusty string.



Sadly qualifying did not go quite as planned, as the #5 had another brush with the concrete, bending a part in the rear suspension, while the #7 car had troubles on their “red tires”. The #5 ended up 16th, with the #7 in 21st, in a field that saw the top 25 cars all within a spread of only 1.5 seconds. (*Almost as fast as you can snap your fingers!*)

IndyCar has Firestone supply two different tire compounds to the teams for a given race weekend. A black sidewall tire, which is a “hard” compound that is less “sticky” so it is slower per lap but wears longer and a red

sidewall tire, which is a “soft” compound that is more “sticky” and faster but wears out very quickly. The rules say the teams have to run a minimum of two race laps on each compound.

But they can’t use the red/soft tires until qualifying. How the teams use their tire allotment through the race weekend all plays into their strategies. This year Firestone introduced a new red tire that’s softer and wears out even faster.

Sunday, race day, had an on-track morning warm-up, which both cars thankfully got through unscathed. Then it was check and re-check, before they rolled out for the grid and get lined up for the start. The pit stalls are organized, and a quick team meeting for each car’s crew (right).



*(Continued on page 14)*

## The Iceberg in Motorsports Part II... *continued*

(Continued from page 13)

The race was interesting and hard fought as the #7, starting farther back, went “off strategy” pitting early gambling for a yellow flag that never came and #5 pitted when they thought there would be a yellow flag, for a car that had spun, but then it got going just as the #5 entered pit lane.

Both cars had pace, being just a few tenths off the fastest lap of the race - and they still improved from their starting spots, finishing 12th (#5) and 17 (#7). The average speed of the race, for the top 21 cars was all within one mile an hour of each other at just over 96 mph!



Soon after the cars, spares, pit equipment, and set-up pads were prepped to be loaded back in the trucks. Then all that was left was the floor matting. Hours, weeks, and months of work for the first race of the season. And it lasted just under two hours; the part of that iceberg the public sees.

Well... An often claimed Enzo Ferrari quote; “*What’s behind you doesn’t matter!*”

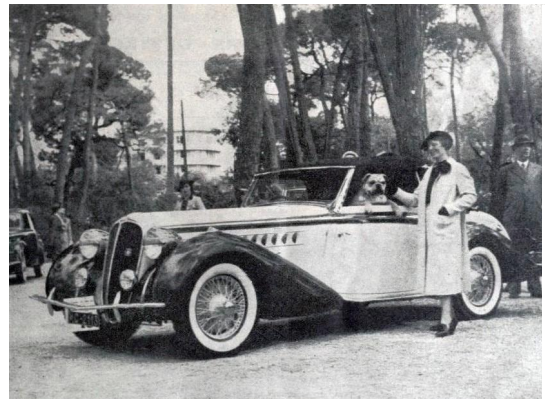
There’s still more work to be done. So now, for all the teams it is on to the next race in Texas, and the rest of the season!



## Lucy O'Reilly Schell, Racer, Owner, Innovator, Part III

*By Lauren Goodman*

We continue Lucy O'Reilly' story at the end of 1938. At home, Lucy had been distracted by Laury's health: after a bad car accident after the end of the 1938 season, Laury had been partially paralyzed and never regained full strength. The terrible blow, however, would fall on the family in October 1939. Lucy, Laury, and their niece were on the road from Monaco to Paris when a large truck caused their chauffeur to crash. Laury eventually died from his injuries. Lucy was still in the hospital during Laury's funeral; Dreyfus, who had become good friends with the Schells over the preceding three years, stood by her sons. Then, of course, he had to report back to his military training: France was at war. As before, the US hesitated to enter the worldwide conflict. But something happened to put the French cause front and center. Within a month, she had contacted Dreyfus with her next plan: entering the 1940 Indy 500.



*Lucy O'Reilly Schell with her Delahaye cabriolet with Chapron bodywork, Wikipedia*

### INDIANAPOLIS 500

Dreyfus was aware that Lucy and Laury had been planning an attempt at Indianapolis for some time. However, he didn't think he'd be able to go: after all, France was at war and he'd received his orders. Lucy waived his concerns: she'd see to that.

It is a testament to her iron will - even in grief - that Dreyfus found himself called to the office of the Minister of Information and given instructions to go to America and race at Indy. [I suspect it helped that L'Auto had run two front page op-eds calling on the Minister to release Dreyfus and Le Bègue for the 500, and complained that any European entrant would need at least a month to acclimate and get familiarized with the track.] Lucy was still not well enough to travel, so she sent son Harry in her place. Along with the "two Renés" and Harry came Luigi Chinetti as mechanic and reserve driver - yes, the same Chinetti of N.A.R.T. Beside the Argentinean driver Riganti, also running a 3 liter Maserati, Dreyfus and Le Bègue would be the only foreign nationals on the grid.

There's already a lot of information on the 3030 chassis in our collection, so instead I want to give some color around the event:

According to Dreyfus, Harry spoke perhaps a dozen words of English and spent the ocean crossing flirting with every woman aboard their ship. They were met in New York by Bernard Mesnik, a smooth-talking 'special correspondent' for both Le Journal and L'Auto. He had been recruited to be their manager and translator. Apparently, a great deal was lost in translation, which led to the confusion already well documented in the museum's materials about the 3030.

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## Lucy O'Reilly Schell, Part III...continued

*(Continued from page 15)*

Their arrival was a real press event, though, doing much to generate sympathy for the French fight against the Nazis - perhaps reminiscent of Lucy telling the people of Reading about her work as a nurse in WWI. When the team arrived at the speedway, Augie Duesenberg kindly offered space in his garage for prepping the Maseratis.

It's perhaps fortunate for team operations that their principal was in absentia. No women were allowed in the pits. Dreyfus recalled how Le Bègue's timekeeper (who also happened to be his wife) was built a special tower so she might watch the driver without setting foot in the forbidden territory. Pedestals are, after all, another form of prison, and Lucy was not one for constraints. Per Dreyfus:

*A feminist - and Lucy was that, decades before the term came into vogue again - would not have found Indianapolis to her liking [...] Knowing Lucy, she probably would have picketed Gasoline Alley.*

As Team Schell battled the rain at the Speedway, Paris was falling to German forces. After the 500, Lucy instructed Luigi to sell the Maseratis, told René (who was Jewish) to stay abroad,



*Harry Schell, Sebring 1956  
Photo Courtesy of Revs Institute from the Tom  
Burnside Photograph Collection*

and she herself decamped to her home in Monaco. She did not return to motor sports after the war - at least not officially. By 1947, Harry was making a name for himself on the European sports car circuits in his Cisitalia. Her younger son, Philip, also spent time in sports cars: at the Pau GP of 1951, he narrowly edged out his brother for the win. But it was Harry who would go on to become the first American to compete in the newly organized Formula 1 Championship in 1950. In fact, at Monaco that year, he became the first driver to enter a rear or mid-engine car (but of course no such car would post a win in a Grand Prix until Sir Stirling Moss drove the Cooper Climax display car to victory in Argentina). Harry became a well known figure on the European racing scene. At least twice, he entered his car under the name 'EcurieBleue, keeping it alive in grand prix racing. A full report on him will be sure to turn up his many connections to other cars on display at Revs Institute; most notably, though, he died during a practice session at Silverstone in 1960 while driving for Moss's Yeoman Credit Union outfit - yes, the very same team that ran the display Cooper T51.

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## Lucy O'Reilly Schell, Part III...continued

(Continued from page 16)

It was undoubtedly expensive to support two jet-setting, car-crazy sons who (given the lack of any evidence to the contrary) were more interested in spending money than making it. In the National Archives is a sad postscript to her life. Lucy died in Monaco in June 1952, and her death was reported to the US Consulate as per regulations. Attached to that report is a chain of State Department correspondence that paints the following story:

A New York attorney wrote to the US Consulate to inquire as to the existence of a will for the late Lucy Schell. The attorney was, in all likelihood, working for Harry's soon-to-be-ex-wife and was sniffing around for assets. The attorney received no response but, per his complaint, gossip about Lucy's estate had reached the New York papers sometime in June. Incensed at the 'embarrassment' his client endured, the attorney demanded to know: what gives? Next comes the state department's answer for its delay: no one could get hold of Harry. Furthermore, a French official had gone to secure the tangible personal property at Lucy's residence - only to find very little which might be secured. From the State Department's response:

*It was reported to the Consulate that Mrs. Schell has of late sold little by little all of her belongings. In fact, for the last six months, she was being taken care of by her sister, Mrs. Hanki, with whom she was residing at Monte Carlo.*

Lucy is buried next to Laury in Brunoy, France.

### IDENTITY

Looking at the 3030, a Franco-Italian car with an Irish name painted on the side, you may well wonder how Lucy felt about her nationality and if we can claim her for the U.S. of A. Any contemporary might have been forgiven for thinking the Schells were French natives: Laury's English was lightly accented, and Lucy herself did not visit Reading, Pennsylvania until she was 18. Yet the Schells and their sons considered themselves American through and through; Lucy, Laury, and Harry were always listed as U.S. nationals in race results. And from Lucy's interview in Paris-Soir about her withdrawal from the French GP:

*I am American, I love automobiles and I love France. I wanted, with the collaboration of Delahaye, to contribute to the rise of French prestige. I believe, to succeed as we have these past eight months, is down to my care and financial support for a firm which, perhaps, with only its own resources, would not have assumed such a heavy expense.*

Here again is the delightful René Dreyfus:

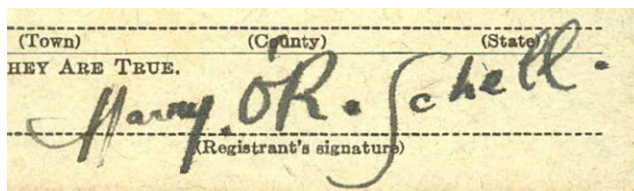
*She was assertive, forceful, aggressive – and since these were qualities one seldom found in European women, French women particularly, I assumed they were entirely native to that huge country across the Atlantic. What Lucy wanted Lucy got, and not by wile but by will[...] That was unheard of on the continent. That had to be American.*

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## Lucy O'Reilly Schell, Part III...continued

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Another remarkable finding was the preservation of the O'Reilly name. Records suggest that Lucy intended her sons to carry on her name. Harry's birth record at the US Consulate capitalizes both O'REILLY and SCHELL after the French custom of printing family names in capital letters. A passenger list has Harry filed under O'Reilly, with the ship steward's later marginalia pointing to Schell as the last name. Harry, too, signed his draft card as Harry O.R. Schell, and his flourishing signature reminds me of the L.OR. Special on the 3030 Maserati. Even during Laury's lifetime, the Herald Tribune referred to him and his wife as Mr. and Mrs. O'Reilly Schell when, of course, Laury was not an O'Reilly!



*National Archives at St. Louis; St. Louis, Missouri; WWII Draft Registration Cards for Florida, 10/16/1940-03/31/1947; Record Group: Records of the Selective Service System, 147; Box: 396*

Finally, this investigation revealed much this author found personally important. There are nigh-on infinite examples of women being excluded from racing. And yet, as I researched Lucy's records, I found she was not the only woman on the podium. I say this not to undermine her achievement - far from it! Certainly she was a rare figure in Grand Prix racing. But in competitions open to women, mostly for sports and touring cars, hers was not the only "Mme" or "Mlle" in the lists of winners. Hellé-Nice, Rouault, Lamberjack: scanning the French papers for results, I was sure to see these names. Women were not racing solely against one another: they regularly entered competitions open to both genders, and they frequently fared better than their male peers. And this, of course, was happening a century ago. So it seems to me that women in motorsports is not new - in fact, it is motorsports without women that has been the latest development. As we preserve the future of the past, are we preserving the history of these women as well? When we, as devoted conservators, take these antique Delahayes, Bugattis, and Alfa Romeos out on the track, how many drivers are women? This question is not only important for equality in 2022; for historical accuracy, 1922 included many women drivers as well!

If you will permit me to editorialize for a moment: a car doesn't care about gender. An engine doesn't know if your father is rich, or if you're good-looking, or if you're short or tall. What does a carburetor know about prejudice? The automobile, therefore, has the power to be a great equalizer among our species. And this is precisely why those in power have tried to limit access. There's a long history of humans placing obstacles between other humans and the automobile - women in Saudi Arabia have only been able to get a drivers' license since 2018.

This is the real power of the internal combustion engine: it's a future measured not in horsepower, but human movement. Freedom of movement is my birthright, as pure an expression as any other form of speech. But how can freedom exist unless it is exercised? And how can exercise happen without access?

## Porsche 906 Serial Number 125

*By Brian Lanoway*

**I**t was never Ferdinand Piëch's intent to work at the family automobile firm. He had studied aeronautical engineering at the Zurich Technical University and he would have preferred to work in this field, but when he graduated in 1962, no post-war Allied aviation firm would have him. So it came to be that the 26-year old Piëch arrived at Porsche AG in 1963 for his first job as just another engineer; a member of the Porsche-Piëch family to be sure, but one without the right surname.



Piëch's arrival must have been controversial. Ferry preferred to promote his three sons through the company, but since Piëch was the first engineering graduate in the family, he started in the same department as engine designer Hans Mezger. Piëch was assigned responsibility for the race version of the company's new 901 engine.

Bristling with talent and conviction, Piëch advanced his race engine so much faster than the production version, he was given responsibility for both within six months. Demonstrating rare engineering talent, he became manager of the company's Experimental Department in just two years.

1964 was a troubling time at Porsche. The company had just completed its most advanced race car, the 904, but the chopped fiberglass body and steel box-section chassis made for a heavy race car. After just one year, even the most powerful 904/8 version fell victim to Ferrari's new feather-weight Dino 206 S. Seeking solutions, Piëch sent a dozen experts to assess the 904 at Freiburg-Schauinsland Hillclimb. They returned with an unsettling conclusion: the one-year-old 904 was obsolete.

Piëch decided to do the impossible. As Hans Mezger later said, "In the beginning of August, we made a new car very fast." Operating in secret during the traditional 1965 summer holiday break and unknown to most company managers, Piëch and his team built a totally new race car: a fiberglass-skinned, tube-framed, 8-cylinder spyder for the Ollon-Villars Hillclimb. They built the car in just three weeks.

With rare bravado, Piëch's team even sought and purchased the state-of-the-art 13 inch wheels and suspension kit from Team Lotus at the Formula One pit lane at Nürburgring, hastily loading the components into the back of an American station wagon.

Working three shifts a day at an unheard of pace, the new car was completed in just 24 days. Hans Mezger later called the Ollon-Villars Spyder the most spectacular feat of creativity in Porsche company history.

*All Photos in the Article Courtesy of Revs Institute*

*(Continued on page 20)*

## Porsche 906... *continued*

*(Continued from page 19)*

The team's expectations were high. The new Spyder weighed 272 pounds less than the Dino 206, but success remained beyond their grasp. Unfamiliar with the Lotus suspension, they chose the wrong tires and the Dino 206 won the Ollon-Villars Hillclimb.

Spoiling for a win, the team convinced Ferry Porsche in 1965 to form a separate Racing Vehicle Design department to avoid the distractions of production. To meet the threat of the Dino 206, the 28-year old Piëch and the new Porsche Racing team was given free rein to design and build an entirely new race car.

Designated internally as the 906, but soon to be known to the outside world as the Carrera 6, the new car came to embody Ferdinand Piëch's determination to produce the lightest possible vehicle, with the highest possible performance, in the shortest possible time....regardless of cost.

Largely based on the Ollon-Villars Spyder, the tubular frame in the 906 was hailed as a sign of a



new generation at Porsche; but, tubular frames had been used at Porsche since 1956. Moreover, because of the need to quickly produce 50 examples, Piëch chose to make the frame out of steel instead of aluminum. The improvement

though was still considerable: the 906 maintained the torsional stiffness of the prior 904/6 coupe but at substantially less weight.

The body shape of the new car was spectacular. Conceived by Gerhard Schröder and Butzi Porsche, it was the first to be tested by Porsche in a wind tunnel. Karl Ludvigsen later wrote that, "It was so low at 38.6 inches that one looked down on it, rather than at it", further declaring that "It marked a breakthrough in the functional shaping of a sports-racing car."

To minimize the car's frontal area, the rounded passenger compartment was designed to be as narrow as possible. Overhead gull-wing doors were used to allow the driver to reach up and close his door for a Le Mans-style start.

The inordinately high front fenders revealed the one compromise placed on the team. With 100 sets of obsolete 904 suspension in inventory, Ferry Porsche insisted that the new car use these components and their 15 inch wheels; a distinct disadvantage compared to the lighter 13 inch wheels used by the Dino 206.

The rest of the body design was filled with purpose. Large air scoops at the front of each rear fender fed cooling air to the rear brakes and transaxle. The rear of the car was covered with a large, clear-yellow plastic canopy with louvres to supply intake air to the carburetors and the engine's cooling blower.

*(Continued on page 21)*

## Porsche 906... *continued*

*(Continued from page 20)*

Inside, the amenities were sparse. The dashboard was nothing more than a ledge between two tubes topped with two instrument pods. A simple fiberglass panel formed the floor. An open fiberglass box on frame tubes served as the mandatory FIA luggage space. With its deep, square headlights and gull-wing doors, the 906 was nicknamed the “Batmobile” by the motoring press.



Despite the “new” tubular frame, the real engineering feat in the 906 was the sorcery used to transform the 901 production engine into a competitive racing power plant. Indeed, Piëch gave his team the almost impossible challenge of increasing the engine’s power from 130 hp to the 220 hp of the Dino V6, while matching the Dino’s 1,276 pound homologation weight. This meant that the engine had to go on a massive diet, reducing its 405 pounds by almost 30%.

Mezger’s weight reduction strategy was simple: change the steel parts to titanium and the aluminum parts to magnesium; but, the engineering effort was complex and immense, especially given the need to finish the car in less than six months’ time.

The details are fascinating. The connecting rods and even the long studs holding the cylinders to the crankcase were made of titanium, with the latter uniquely coated with glass-reinforced plastic to minimize thermal expansion. The conventional cast iron bores were abandoned for lighter aluminum cylinders with hard chrome running surfaces, lightly dimpled to maintain an oil film. Each Mahle forged aluminum piston even contributed a 1<sup>3</sup>/<sub>4</sub> ounce reduction in weight.

The results were striking for just 2-liters of displacement. The new 901/2 racing engine was capable of producing 225 hp at 8,200 rpm. Compared to the 904 it replaced, the 906 was 200 pounds lighter and 30 hp more powerful. More importantly, the new Porsche could match the power and top speed of its rival Dino 206 S while carrying 76 pounds less weight. The team believed that the legendary Porsche designed-in toughness would do the rest.

The first 906 race car was completed at a furious pace and was ready for test in December 1965. Winter conditions that month were so harsh that the car had to be fitted with spiked snow tires to finish its 690 mile run at the Wolfsburg proving grounds. The next month was equally cold, but the 906 bettered the 904 by achieving 1.125g at the Weissach skid pad.

With surging confidence, Piëch gave his first and only 906 a coat of brilliant navy blue paint and presented it to a small group of automotive writers at the Hockenheim track, just one month before the car was to cross the Atlantic for its debut at the 24-Hours of Daytona in Florida.

The journalists raved about the car. They were impressed with the lightness of its controls, its superb brakes and the engine power over 4,000 rpm. Unlike most other race cars of the time, they marveled at the fact that the 906 could simply be started with a turn of an ignition key.

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## Porsche 906... *continued*

*(Continued from page 21)*

But the journalists struggled to describe the “simply shattering noise” of the engine; a noise so great that works driver, Hans Hermann, later remarked that “if he raced on Sunday, he couldn’t hear until Tuesday.” Henry Maney, of *Road & Track*, concluded that “The Batmobile is probably the best value-for-money racer on the market today.”

This same navy blue 906 gave notice to the racing world at Daytona on February 6th, winning its 2.0-liter class and achieving a 6th place finish overall, bested only by a quartet of Ford GT40s and a lone Ferrari 365 P2.

The real test however occurred at Sebring on March 26th. Now well into production, two works and three private 906s faced their arch-rival Ferrari Dino 206 S for the first time. Offering a glimpse of the future, four of the 906s finished 4th, 6th, 7th and 8th. Still a threat, the lone Dino 206 led the Porsches for the first five hours, but had to retire early, earning 5th place.

The new 906 dominated the 2.0-liter class in all eight races of the US Road Racing Championship Series, piloted by talent such as Ken Miles, Scooter Patrick, Ralph Treischmann and Joe Buzzeta. At the first championship race of the season in Europe, the 1,000 kms of Monza on Ferrari’s home track, five Porsche 906s came 1st, 2nd, 3rd and 5th in the 2.0-litre class, while the Dino 206 finished 4th and 6th.



The Porsche/Ferrari dual continued at the Targa Florio on May 8th, a brutal race well suited to both cars. The 906 continued to dominate; finishing 1st, 3rd, 5th and 8th overall. Of the three Dino 206s entered by Ferrari, only one had a notable 2nd place finish.

The 906 faced the Dino 206 again at the Nürburgring 1,000 on June 5th. Privately-entered Porsches came 1st and 2nd in the 2.0-liter Sports Car class.

At Le Mans, the ultimate race of the 1966 season, 906 LEs overcame their long-tail handling instability to finish 4th, 5th and 6th overall behind the historic trio of Ford GT40s. A standard 906, entered in the 2.0-litre Sports Car class, finished 7th overall. It was the best Le Mans showing for Porsche since 1958.

The once formidable Ferrari, which had won every Le Mans race between 1960 and 1965, was relegated to an 8th place finish in a 275 GTB/C.

*(Continued on page 23)*

## Porsche 906... *continued*

*(Continued from page 22)*

The Ferrari Dino 206 S fared no better as 1966 progressed. Unable to fabricate and homologate 50 cars because of labor unrest, Ferrari produced only 18 Ferrari Dino 206s, forcing it into the prototype class. When it did manage to get to a race track, the Dino 206 did press the 906 hard; but with a 40% DNF rate, the threat to Porsche never materialized.

Piëch and his team continued to improve the 906 after Sebring. More than 40 refinements were made before Monza in April. Inlet-port fuel injection was added for the 1967 season. Four later versions were fitted with 8 cylinder engines. This second and final run of 13 cars brought the total number of 906 Carrera 6s manufactured to 65.

From their 904 experience, Porsche knew that it would have no trouble selling 50 race-only versions of the 906. Purchased by buyers from around the world, we now pick up the story of the Miles Collier Collections' Porsche 906- 125 in Finland, where it was sold as a *Rundtreckenmeister*, or Circuit Master, to Antti Aarnio-Wihuri, whom we will simply call AAW.

Born in 1940, AAW was the son of an affluent wholesale entrepreneur who ran the largest auto importing business in Finland. When AAW was only 23 years old, he was given responsibility for the VW business and AAW immediately began to tune and race the VW 1500 S. With his racing ambitions running hot, AAW bought a new Porsche 904 in 1965 and ran it in Finland's X-Class against all comers, which included Mini Coopers, Plymouth Valiants and the odd Formula 3 car.

AAW ordered Porsche 906 serial number 125 for the new Finnish Sports Car Championship, which was to be run for the first time at the just-finished Keimola race track on June 19th, 1966. His 1st place victory in this race against top-of-the-line Swedish opposition is still a point of pride.

Spoiling for more, AAW registered 906- 125 for the 1967 Nürburgring 1,000 but failed to arrive. He did run the car in the 1968 race but Paul Toivonen over-revved its engine for a DNF. The Collection's 906- 125 was entered at the race again in 1969, where Hans Laine achieved an impressive 13th place overall, even though the three-year-old car was now past its prime.

The fate of 906- 125 was sealed when AAW bought a new Porsche 908 Spyder. While with AAW Racing, the Collection's Porsche 906- 125 competed in 11 events and earned six 1st place finishes. Driver Helmut Bross managed to achieve a splendid 4th place finish in the car's last recorded race at Hockenheim on November 29, 1970.

The Porsche 906 model range was rapidly eclipsed by Ferdinand Piëch's barrage of new race cars. In just 38 months, the Piëch team designed and built seven new cars at a pace so fast his engineers literally ran from one project to another; completing the drawings for one as the last was just hitting the race track.

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## Porsche 906... *continued*

(Continued from page 23)

The 906 was quickly followed by the sleeker and more aerodynamic Porsche 910, with the coveted 13 inch wheels; then by the right-hand drive 907, where the aluminum tubular frame appeared on 907- 011. There was even a brief appearance by a 909 hillclimb race car, where the driver sat unusually forward between the front wheels, presaging the light-weight 908/03 short-tail Spyder. The effort soared when the team added a 12-cylinder engine to their race chassis in March 1969, creating the prodigious Porsche 917 which won the ultimate 1st place prize at Le Mans in 1970.

None of this was for the faint of heart. Never one to be tempered by fiscal realities, Piëch spent seemingly endless amounts of money on his race program, culminating with the homologation build of 25 Porsche 917s in April 1969.

With this appetite for cash, Ferry Porsche feared for his company, but the ever-audacious Piëch, backed by his fiercely determined mother Louise, refused to let the small matter of affordability slow him down. The Porsche-Piëch family quarrel over the company reached its apogee in 1971, when all family members agreed to remove themselves from company operations. Ferry Porsche and his sons paid a heavy price to remove Ferdinand Piëch.

In isolation and with a still-unrequited need to prove himself, Piëch ran a small consulting company until he joined Audi in 1972. He then rose through the ranks and remade the staid old company into an up-market technical powerhouse. Piëch was then asked to rescue Volkswagen from near bankruptcy in 1993. He personally led the transformation of the company into the global leader that it is today.

It was decades before Piëch's outsized ambitions were upended when he lost a Volkswagen boardroom battle he had personally provoked. He was forced to resign as Chairman of Volkswagen in April 2015. Piëch went into self-exile and died at dinner on August 25, 2019. The Hon.-Prof. Dr. techn. h. c. Dipl.-Ing. ETH Ferdinand Karl Piëch was 82 years old.

Porsche 906- 125 did not have a similar trajectory. Somehow crossing the Atlantic, the car reappeared on August 20, 1981 when William T. Currie of Harvard, MA sent a letter to Porsche inquiring about the car's history. Mr. Currie wrote that he had purchased 906- 125 in 1980 and the car was being "completely restored" under his ownership.

The trail was lost again until March 1, 1983 when Leonard Cummings in Stow, MA wrote a similar letter to Porsche inquiring about the car's history.

Documentation in the Revs Institute files shows that 906- 125 was, at one time, purchased from an ad in the back of a car magazine and then driven on the street. There is no further ownership evidence until the Miles Collier Collections acquired Porsche 906- 125 in the mid-1980s. As an interesting historical footnote, 906- 125 appeared in the February 1986 television episode of *Miami Vice*.

As the first huge footprint of many left by Ferdinand Piëch, Porsche 906- 125 is now on display as the perfect and essential bookend to the mighty Porsche 917, each flanking the progression of other Piëch race cars and an era that still reverberates through racing history today.



# TAPPET TECH

## *Hybrid Autos*

*What is Old is New Again*

*By Eric Jensen*

**H**ybrid cars seem to be everywhere in modern automotive life. The Toyota Prius is often credited with creating the hybrid car but history tells us a very different story. A story with connections to Dr. Ferdinand Porsche and other automotive inventors.

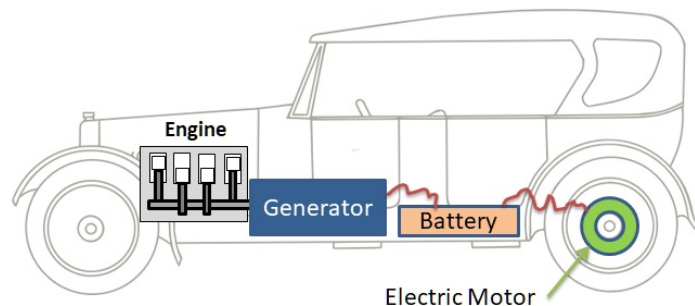
So what does "hybrid" mean? Hybrid means that there are two forms of propulsion that are used to move the car, either in concert, or on one or the other alone. Typically there is an internal combustion (IC) engine along with an electric motor to propel the auto. Some versions have large banks of batteries that can be recharged overnight to allow the electric motor to drive the auto until the batteries are depleted or additional power is required from the IC engine.

The simplest to create may be the "series" hybrid by attaching an electric generator to an internal combustion (IC) engine. The electricity from the generator would then be fed to an electric motor to propel the car. This type of car usually has a bank of batteries with the generator to boost the electric motor for more power as well as extend its range. The generator can also be used as a starter motor for the IC engine. This "series" hybrid" is essentially how large diesel locomotives operate.

The drive motor can be separate from the drivetrain as in the figure to the right. This system provides the propulsion afforded by an electric car without the anxiety of running the batteries low far from a

recharging point. Braking the auto can be partially accomplished by switching the motor into a generator to help recharge the batteries thus saving fuel and brake wear. This arrangement also eliminates the need for the car to have a complicated multi-speed transmission - a big advantage in early automobiles. It also allows the capture and re-use of electrical energy to move the auto making it more fuel efficient.

This layout describes the Austrian Lohner-Porsche hybrid from 1901 developed by Dr. Ferdinand Porsche. This innovative car had an IC engine driving an electric generator driving electric wheel motors. The electric motors were mounted in the auto's large wheels. This wheel-motor arrangement allowed front-wheel-drive as well as four-wheel-drive.



*Series Hybrid Drive, Figure Courtesy of Eric Jensen*

*(Continued on page 26)*

# TAPPET TECH

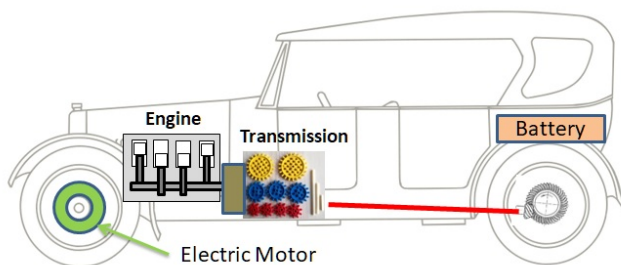
## Hybrid Autos

....continued

(Continued from page 25)

The series hybrid can also have the motor as an integral part of the drivetrain to act as a booster and for brake energy capture. The [Armstrong](#) automobile from 1896 used the series arrangement with the flywheel starter generator to start the IC engine and to assist in accelerating the car. Clearly hybrids are not a new idea.

Another implementation of this concept is known as a "parallel hybrid". The IC engine and the electric motor both are connected to the drive wheels in some fashion. Both or either can be used to power the car. The diagram below shows a simple example with the IC engine driving the rear wheels. The electric motor drives the front wheels powered by the battery pack. This can be used to boost the acceleration for the car powered by the battery pack.

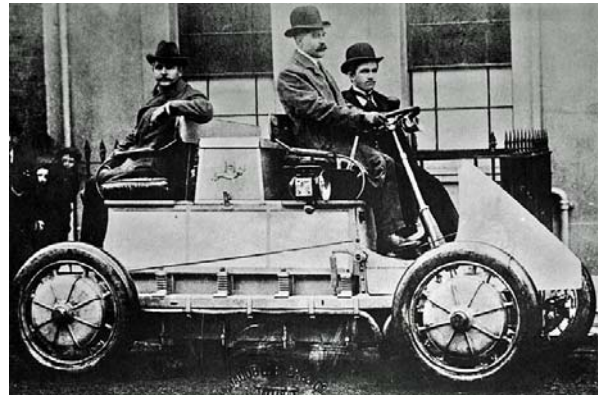


Parallel Hybrid Drive, Figure Courtesy of Eric Jensen

Using the motor as a generator under braking, this can help slow the auto. Since the motor is generating electrical energy this can then be used to recover energy from braking to be stored in a bank of batteries. Since braking energy is recovered, not just transformed into heat as in conventional autos, the hybrid will be more fuel efficient.

The parallel hybrid system is used in the Toyota Prius and many other modern hybrids in a wide variety of configurations. Some directly connected to the transmission, some as shown in the figure with rear wheel drive and a front motor to drive the front wheels.

The differences developed over the last 100 years are the electronics and computer controls applied to modern hybrids that did not exist in the days of the Lohner Porsche or the Armstrong. It would seem that building an auto with two propulsion systems would be heavy (they are), complicated (most certainly), and expensive (most definitely), modern controls make carrying and blending two propulsion systems more efficient and transparent than early autos could ever hope to achieve.



1901 Lohner Porsche, Wikipedia

# TAPPET RIVIA

*And now, the answers...*

1. **Q:** What five drivers have won both the F1 World Championship and the Indy 500

**Answer:** Graham Hill, Mario Andretti, Jimmy Clark, Emerson Fittipaldi, and Jacques Villeneuve

**Bonus Question:** Which one did both in the same year? What year?

**Answer:** Jimmy Clark, 1965

2. **Q:** What was the last year a front-engine car won? Who was the driver?

**Answer:** The year was 1964 and the driver was A.J. Foyt; his second Indy 500 win.

3. **Q:** What two drivers have won the both the 24 Hours of Le Mans and the Indy 500?

**Answer:** Graham Hill and A.J. Foyt.

**Bonus Question:** Which driver won both in the same year, and what year was it?

**Answer:** A.J. Foyt, in 1967. A.J. won the Indy 500 driving his Foyt Coyote/Ford and won the 24 Hours of Le Mans co-driving with Dan Gurney in a Ford GT40 Mark IV less than two weeks later. Six days after winning Le Mans, Dan Gurney would win the Formula 1 Belgian Grand Prix in a car of his own design that now resides in the Miles Collier Collections at the Revs Institute.

4. **Q:** Name the 3 people in this famous picture taken at the Indy 500 in 1969 to commemorate the front row after qualifying, a copy of which hangs in the museum hallway leading to the auditorium.

**Answer:** Left to right; Bobby Unser, Aldo Andretti, A.J. Foyt. Yes, Aldo Andretti, not Mario. Mario's twin brother was a "stand-in" for this famous picture taken at the Brickyard in 1969 because Mario had burned his face crashing and totaling his Lotus in practice yet qualified his Brawner-Hawk on the front row in second place. Mario was embarrassed to be photographed with burns on his face and Aldo was, after all, his twin.



## Adopt-A-Car Program

### Available Adopt-A-Car Automobiles and Engines

Alfa Romeo Guilietta	Lancia Lambda	Waymo Firefly
Alfa Romeo GTZ	Lotus Elite Series II S.E	Abarth 1000-TC-R
Alfa Romeo 8C 2900	Maserati Tipo 60 Birdcage	Alfa Romeo GTZ engine
Alfa Romeo AutoDelta 1600	Mercedes Benz W-154	C-6R Offenhauser
Ardent Alligator	Mercer Raceabout	Cadillac OHV V-8
Austin Cooper S	Miller	Chrysler Hemi (C-3)
Ballot	Packard Speedster	Duesy Sprint Car engine
Bugatti Type 55 Super Sport	Porsche 718 RSK Spyder	Ford GT-40 Transaxle
Cadillac Series 61	Porsche 904 Carrera GTS Red	Ford Turbocharged Indy
Cisitalia SC	Porsche 904 Carrera GTS	Gurney Eagle GP engine
Cunningham C-1 Prototype	Porsche 907	Jaguar XK120 Series
Cunningham C-3	Porsche 911	Porsche Type 771
Delahaye 135 Comp Special	Porsche RS-60 Spyder	Porsche Type 901/20
Detroit Electric	Porsche RS-61L Spyder	Porsche Type 901/22
Duesenberg Model J	Scarab Sports-Racer	Porsche Type 908
Elva Porsche	Simplex	Porsche Type 916
Fiat Abarth TCR	Stutz Black Hawk	Columbia Three-Track
Jorgensen Eagle	Vauxhall 30-98 Type OE	Humber 58" Ordinary
		Velocipede Bicycle

To adopt a car or engine, contact: **Brian Lanoway, Adopt-A-Car Chair** [blanoway@shaw.ca](mailto:blanoway@shaw.ca)

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The editor is **Eric Jensen**, [eric60@gmail.com](mailto:eric60@gmail.com). Although email is preferred, correspondence can be mailed to: The **Tappet Clatter**, 2500 South Horseshoe Drive, Naples, FL 34104.

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