



YPSILANTI AUTOMOTIVE HERITAGE MUSEUM NEWSLETTER

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SPRING EDITION 2016

President's Report

BY RON BLUHM

Early in December of 2015, after discussions with the Tucker Automobile Club of America led by TACA president and YAHM board member John Tucker, we received a fully restored Tucker that was built for the movie *Tucker: A Man and His Dream*. It is a real beauty! It is a must see and is expected to be on display at least through the summer of 2016. Our unrestored movie car left to be restored.

Just before the holidays, Dr. Otto Gago and his son stopped by and asked if we would be interested in having his 1926 Overland. We are always interested in donations, particularly donations that fit our mission to tell the rich automotive history of our area. It happens that the National Hudson Motor Car Company Museum was a Willys-Overland dealership during the 1920s. Dr. Gago's donation nicely accents this history of our museum.

We are appreciative of the many donations we received during the holidays. With a personal donation from Ken Poynter, a donation from the Hudson Hometown Chapter, and a donation of shelving from the Michigan Firehouse Museum's owner Norma Weaver, we were able to take a catch all room and convert it into a room to store our archival materials.

We started the restoration of the National Hudson Motor Car Company building two years ago with the replacement of decayed common bricks. Donations enabled us to complete major structural, electrical, heating, and aesthetic improvements in the building. To complete the work, that portion of our museum has been closed. Work will be finished later in the spring. Admission to the rest of the museum has been free with donations appreciated. Visitors have been generous.

Using display board covering material donated by board member Dave Novak, display boards telling the history of the Willow Run complex were installed with our display



Tucker Movie Car

of Hydra-matic transmissions. Display boards start with Henry Ford's Camp Willow Run in the 1930s and transition to Ford's B - 24 Bomber Plant, Henry Kaiser's Kaiser-Frazer plant, and General Motor's Hydra-matic/Powertrain factory. In mid-January, it was announced that the property will become the home of driverless car research.

We always look forward to Detroit's auto show in January. At that time, we get auto show visitors from around the world that take time to visit us in Ypsilanti. This year was no exception.

David Kimble spent much of his career using his unique ability to visualize the insides of complex systems and draw cutaways of the systems. He professionally used this unique

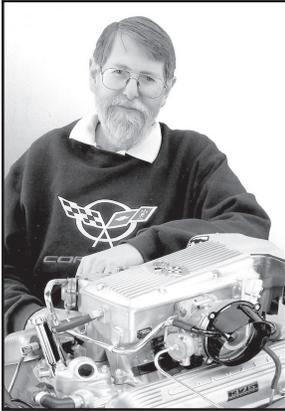
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ability to draw cutaways of automotive engines, whole automobiles, cruise ships, and factories. He collected and placed his drawings in a book recently published. We were



David Kimble

honored to host David for a book signing on Monday February 1st attended by many automotive enthusiasts.

Planning is underway for our 20th Annual Orphan Car Show. In conjunction with the Tucker Automobile Club of America's national conference, Tucker will be the show's featured car. We have been told to expect three to five Tuckers to enter the show – five would be 10% of the entire

production of Tucker automobiles. In addition, a new show rule has been adopted allowing all orphan cars that are twenty-five or more model years old and must be factory stock. That means cars that are 1991 model year or older are invited. That is a big change for the Big Three orphans including Plymouth, Mercury, Pontiac, and Oldsmobile. The 2016 Orphan Car Show will now exhibit the automotive history of the entire Twentieth Century. Be sure to mark the date of the show, Sunday September 18th on your calendar. Sponsorship of the show (and Depot Town Cruise Nights) are available starting at \$100. Call the museum at 734-482-5200.

THANKS to everybody who sent holiday donations and renewed their Friends memberships last December. Donations and memberships continue to be the largest portion of our annual income.

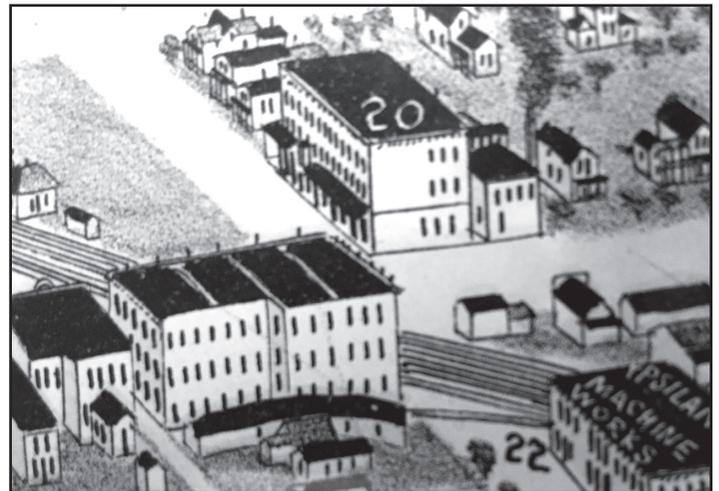
HOW OLD?

BY BILL NICKELS

Our Ypsilanti Automotive Heritage Museum is an assembly of three separate buildings with two additions. We have known for a long time that the main portion of the National Hudson Motor Car Company Museum is the oldest portion of our museum. While restoring windows, we discovered they were assembled with wood pegs. According to Eastern Michigan University Historic Preservation Program Director Ted Ligibel, that practice was used during most of the 19th Century. A historic plaque on the building is dated 1892, the year the Ypsilanti Electric Company was founded in the building. It is not clear if the Electric Company used an existing building on the site or demolished an existing building on the site and built a new one.

We have two birds eye views of Depot Town, one dated 1860 and the other dated 1865. Both show a medium sized building on our site with a reverse gable roof line, just like the old part of the National Hudson Museum. The same birds eye views show the Sidetrack building across the street to the west and the Thompson Building across the street to the north. Both are brick structures like ours. When the Sidetrack did exterior work that produced extra bricks, we were able to use them for our brick restoration.

It is claimed that a blacksmith shop occupied the museum site prior to 1892. The present one car garage door that exits



1865 Bird's Eye View of Depot Town

onto East Cross Street is consistent to that use.

Interest in the history of our building started with our brick restoration project in 2014. We were nominated for a Historic Preservation Award by the MotorCities National Heritage Area for that work. The restoration work continues with structural repairs, cleaning, and interior painting.

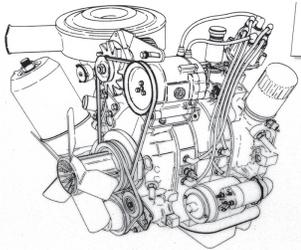
Was our building built in 1892 or sometime before 1860? More research is needed to determine if our building is 114 years old or over 156 years old. Either way, it is OLD!

Bill Nickels is YAHM Secretary.

General Motors Forgotten Engine

BY MATT LEE

Edward Cole was President of General Motors for part of the 1960s and 1970s. He was interested in the Wankel style rotary engine. It was an engine with very desirable characteristics; it was light weight, small enough to package under almost any size hood, was very smooth in operation, and had few parts



Rotary Engine

The engine had a pair of almost triangle shaped rotors which operated in a special shaped combustion chamber. The rotation of the rotors, mounted on a single shaft, replaced the vertical piston stroke and crankshaft which changed the power stroke into a rotary

motion. The simplicity of the rotors created a very smooth and simple engine, eliminating many reciprocation parts and reducing overall expense.

The engine was to be built under license from Curtis-Wright, Audi-Nsu, and Wankel. General Motors paid the

first installment of the license agreement of \$5 million in December of 1970. Payments of approximately \$10 million were made in 1971, 1972, and 1974. General motors plan was to build the engine for the worldwide market.

The board of General Motors picked Hydra-Matic Division, here in Ypsilanti, to build the Wankel style engine. It was always a controversial project at General Motors, championed by GM President Edward Cole. When Cole retired in 1974, the engine lost its champion. The engine was cancelled and the tooling was scrapped shortly afterwards. There were concerns with meeting Government emissions standards and the poor gas mileage figures actually achieved. There were pre-production units for testing and advertising; one is on display at our Ypsilanti Automotive Heritage Museum.

Ed Cole held 18 patents; probably the most important was the catalytic converter.

For a close up look at the real GM produced Wankel style engine and many other automotive milestone cars and their history, visit the Ypsilanti Automotive Heritage Museum.

Matt is a YAHM board member and Hydra-Matic historian during the 1980s.



Local Calendar of Events 2016

MAY 1

Ypsi Area Show & Shine Car Show, Riverside Park

MAY 21-22

Michigan Vintage Volkswagen Car Show, Riverside Park

JUNE 2 – AUGUST 25

Depot Town Cruise Nights (every Thursday evening)

JUNE 10

Back To The Bricks Car Show, Depot Town

JUNE 30 – JULY 3

Camero Superfest, Riverside Park

AUGUST 27

Fire Truck Muster, Riverside Park

SEPTEMBER 18

Orphan Car Show, Riverside Park

2015 Orphan Car Show Correction

We mistakenly left out three 2015 Orphan Car Show award winners in our last newsletter.

Also earning awards were-

Class N, Patrick Laus' 1964 Corvair Spyder Coupe

Class O, Gayle and Mike Riley's 1933 Essex Terraplane

Class P Trucks, Marcia and Bob McCrary's 1924 Standard K Truck

Congratulations to all of our 2015 winners.



Preston Tucker at Tucker Introduction

Unveiling the Tucker

The following article reprinted from the September, 1947 issue of Popular Mechanics prepares everybody for viewing our restored Tucker movie car, the 2016 Tucker Automobile Club of America convention being held in Ypsilanti, and Tucker being the featured marque for our 2016 Orphan Car Show.

From the world's largest factory comes promise of a new automobile incorporating many engineering principles born of Indianapolis Speedway experiments and wartime advances. It is the Tucker car, a rear engine sedan with disk type brakes, luggage compartment under the hood, a windshield that breaks free for safety in impact, and a headlight that "sees around corners. Its home is the 500 acre wartime Dodge plant in Chicago, 20 baseball parks bigger than famed Willow Run. It designer and builder is Preston Tucker, who learned by working for Ford, Cadillac, Studebaker, Chrysler, Pierce Arrow, and by building race cars.

In 1926, Tucker and the late Harry Miller became associated in designing and building racing cars. In 15 years, Miller Specials won 11 Indianapolis Speedway classics. The team of Tucker and Miller brought many refinements to the automotive industry, including one of the first conversion heads which changed the shape of the combustion chamber for higher compression and bigger valves.

Now, after 15 years of experimenting and testing, Tucker is building a passenger car that embodies many race car ideas. The first Tucker – a hand built job recently unveiled – is only 60 inches high. It has a third "Cyclops Eye" headlight mounted in the center of the hood. This light is connected to the steering apparatus so that a beam of light turns and illuminates curves as the front wheels turn right or left.

The Tucker's six cylinder 150 horsepower engine is mounted at the rear directly between the rear wheels. The main parts are aluminum, making the engine 500 pounds lighter than conventional engines of comparable horsepower.

The Tucker is designed to cruise at 100 miles per hour and the speedometer registers up to 140. With fuel injection, high frequency ignition, light weight and elimination of about 800 parts used in the average auto, the Tucker – its manufacturer predicts – will travel 35 miles per gallon of gasoline at moderate speeds.

With a wheelbase of 128 inches, the new car weighs approximately 2800 pounds roughly 1000 pounds less than other cars the same length. Door tops extend a few inches into the roof to provide additional head room for a person entering the car.

Safety is emphasized in the design. A sponge rubber crash panel, covering the entire dash and front passenger compartment, acts as a cushion in case of accidents. Gauges, instruments, and electrical controls are mounted beneath the steering wheel.

The windshield is held in place by channels designed to give way and let the entire piece of safety glass push out, if a crash hurls the driver or a passenger forward. All windows and the windshield are made from case hardened glass which pulverizes into coarse, gravel like particles when broken, instead of splintering.

Locating the engine in the rear produces additional safety, according to Tucker. It puts 60 percent of the car's weight on the rear wheels and 40 percent on the front wheels. In front engine cars, the weight distribution is reversed. With 60 percent of the weight on the rear wheels, the Tucker's disk type brakes stop the car in two thirds the distance required for cars equipped with conventional drum brakes, Tucker engineers report. The disk brakes are similar to those used on some airplanes to assure a quick stop after landing.

A single aluminum disk between two friction surfaces provides much greater braking area than drum type brakes, Tucker explains. Instead of relining disk brakes, the entire brake assembly on the new car can be replaced when necessary. Advantages of the rear engine listed by the engineer include improved roadability and elimination of engine odors and noises. The block and head are made from a single aluminum casting and since the block and pistons have the same coefficient of expansion, Tucker predicts that the engine will give trouble free service three times as long as ordinary engines with a cast iron or steel sleeved block. In the conventional engine, Tucker declares, the piston expands

about eight times as much as the piston wall, causing wear and eventual oil pumping.

The six cylinders are opposed but slightly offset, with a six throw crankshaft that has four main bearings. Valves are operated by a hydraulic mechanism. If the oil supply gets low, the valve mechanism shuts off the engine to prevent any damage.

The engine is cooled by a sealed liquid system, with Prestone providing a temperature range from 250 degrees above zero to 50 below. Thermostats will keep the engine temperature at approximately 210 degrees, which Tucker considers ideal.

Mounted by only four bolts, the engine can be replaced in the manner of a storage battery in less than an hour. Airplane type connectors for electrical, gasoline, oil, and hydraulic lines can be unfastened in a single operation.

Under the service plan, Tucker dealers will keep a number of replacement engines on hand. When a Tucker owner brings his car in for engine repair, the old engine will be removed and a replacement engine installed so the car will be ready for use in an hour. Then the old engine will be sent to the factory for servicing.

In the Tucker engine the conventional power-transmission assembly is eliminated; in its place, hydraulic torque converters transmit power from both ends of the crankshaft to the rear wheels. This does away with transmission, clutch, drive shaft, and torque tube, full width rear axle and conventional differential. The Tucker has no drive shaft tunnel to make a bump in the floor.

Each of the four wheels is individually suspended by heat treated aluminum forgings that act independently when the car goes over obstructions or rough roads. Rubber assemblies replace leaf or coil springs. Up and down motions of the suspension arms are controlled by rubber biscuits fastened to the frame. Inside these biscuits, metal disks are bonded to rubber with bars extending to each side of the upper suspension arms.

To increase safety and driving ease, the 13 inch wheels have a 1/32 inch toe in in front and 1/16 inch toe in in the rear. The front wheels have a special mounting which Tucker says will eliminate any swerving if a front tire blows out a high speed.

Tucker says the major operating parts such as bearings with sealed in lubricant will require no repairs for at least 100,000 miles. If the Tucker does everything the creator claims, it may revolutionize the automobile industry. Time will tell.

Kennedy Limousine

BY JACK MILLER

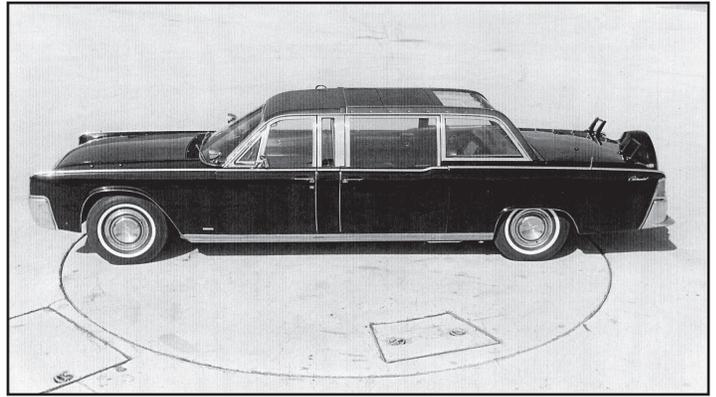
The 1961 Lincoln Presidential car was engineered and styled jointly by Ford Motor Company's Engineering and Styling Divisions and the Hess & Eisenhardt Company of Cincinnati, Ohio. In 1961, Hess & Eisenhardt had built vehicles for American and international dignitaries for eighty-five years. Among their clients were presidents, kings, and queens.

The brand new 1961 Lincoln Continental convertible (model 74A) was built at the Lincoln plant in Wixom, MI. When the car left the plant, "assigned Pres. U.S.A." was hand written on the shipping document. According to the shipping copy, the sticker price was \$7,347.00. Ford spent over \$200,000 creating the car. The car was leased from Ford Motor Company for \$500 per year.

Among many special features were two retractable steps on each side of the car for use by Secret Service agents. The agents rode on those steps when the car speed was increased above five miles per hour. For the convenience of the Secret Service agents, a rear step was incorporated in each side of the rear bumper assembly. They were put to use on that fateful November day.

Specially fabricated lap robes were carried in depressed pockets on each rear door. The robes were dark blue broadcloth lined with gray crush plush. Each robe was fitted with a hand embroidered presidential seal. What happened to the robes after November 22nd is unknown.

On the day President Kennedy died, the Secret Service made the decision to return the car to Ford for armoring and a new interior. The Secret Service flew the car back to Washington, DC the night of President Kennedy's death for examination and removal of the windshield as it contained bullet holes. The car was then flown to Ypsilanti's Willow Run Airport by the Secret Service on December 12, 1963. Once on the ground, it was Ford's problem to get the car to Ford Engineering in Dearborn.



Kennedy Limousine After Restoration

Learning that the car was being returned to Ford, the national media immediately covered the area anxious to get pictures of the condition of the car. The media was out foxed by Ford and the Secret Service.

On receiving the car, Ford securely stored the car in an area of Hanger 1 where the airport control tower was located. Late the following night, the car was driven down I-94 to the Oakwood Avenue exit and north to Ford Engineering with the national media not knowing what had happened.

After refurbishing, the car remained in service for presidential transportation until 1978 with Washington D.C. license plate number 227-100. Willard Hess, retired president of Hess & Eisenhardt, said that the Kennedy Lincoln had been remodeled four or five times, in addition to several quick fixes.

As a lease car, the Kennedy Lincoln was returned to Ford Motor Company who in turn donated it to the Henry Ford Museum where it is displayed as part of a collection of presidential automobiles.

This article is based on a discussion between Ypsilanti resident John Calder and Peter B. Fletcher which centered around the disappearance of the Presidential Lap Robes when President Kennedy's limousine got to Ypsilanti's Willow Run Airport. Peter always felt that John Calder might have known more. John Calder worked for the Ford "Advanced Vehicles Group" and was also Mayor of Ypsilanti from 1961 to 1965. Information from a collection donated to the Ypsilanti Automotive Heritage Museum by the niece and nephew of Ford executive Lee Kollins also contributed to this article.

Jack Miller is YAHM's retired curator and a frequent contributor to our newsletter.



Original Kennedy Limousine



**YPSILANTI AUTOMOTIVE
HERITAGE MUSEUM**

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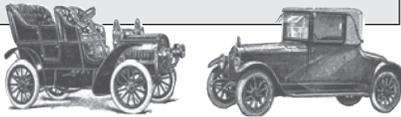
MUSEUM HOURS

Tuesday-Sunday
1:00 to 4:00 P.M.
Monday
Closed

Admission \$5.00 adults
Children 12 and under are free
when accompanied by an adult

CONTACT US

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HERITAGE MUSEUM**

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- Free museum admission • Quarterly newsletters • 10% Gift Shop Discount •

Name _____

Address _____

City _____ State _____ Zip _____ Phone _____

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Do you own a historical automobile? yes no

Make _____ Model _____ Year _____

Are you interested in becoming a museum volunteer? yes no

Areas in which you have interest:

Single \$25 Family \$35 annual (2 adults) Supporter \$100 annual (4 adults)

Contribution for upgrading and developing new exhibits \$ _____

Amount enclosed \$ _____ check MasterCard VISA

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Donations made to The Ypsilanti Automotive Heritage Museum are tax deductible to the extent of the law.