



# EAEC

Issue 3 • June 2010

# news

Newsletter to the Members of  
EAEC Automotive Engineers' Societies

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Dear President,  
Dear Secretary,  
Dear Members of the National EAEC Societies,  
Dear Friends and Colleagues,

Now we are in June 2010 and we are also planning the events for after the summer holidays, which can be seen on:

### **List of the local automotive events in Europe from now to the end of 2010**

Please send me information about automotive events, which are not on the list. I will announce them in the next issues.

The main congress next year in our EAEC family will be the

### **EAEC 2011 Congress**

14 – 16 June 2011

Valencia, SPAIN

Please find more information in this Newsletter and on the homepage

<http://eaec2011.com/>

### **The FISITA 2010 was successfully held in Budapest**

For the proceedings, please refer to the column "Post Congress Information".

In this issue, I have the pleasure to congratulate three persons, Prof. Pischinger, Dr. Vollrath and Mr. Stronach.

In "*The Historic Corner*", I am continuing the information about electrical vehicles in America and Europe with a presentation of such cars up to the turn and shortly after the turn of the 19<sup>th</sup> to the 20<sup>th</sup> century.

Brigadier ret. Prof. Günter Hohl  
EAEC President  
Vice President FISITA Europe

## Future Main European Events

Next year, one of the most important automotive meetings in Europe will be the:

### EAEC 2011 Congress

The Spanish Society of Automotive Engineers (STA) will host the 13<sup>th</sup> EAEC European Automotive Congress 2011, which will take place from June 14<sup>th</sup> to June 17<sup>th</sup> 2011 in Valencia, Spain.

The theme of the Congress is:

#### **The Automobile in the Second Decade: Sharing all Energy Solutions**

The biennial EAEC Congresses provide excellent opportunities for automotive experts to present the latest findings and to exchange information in the field of automotive and related industries.



The **First Announcement and Call for Papers** has been distributed and can be downloaded from the EAEC 2011 home page.

<http://eaec2011.com/>



## Submission of Abstracts

The procedure for sending abstracts can be found in the "Author's Area".

To submit a new abstract you must register yourself on the website using:

CREATE NEW ACCOUNT link, on the sidebar, below the "User login" area.

Once registered, you will have access to the option CREATE NEW CONTENT to submit your abstract and attach documents.

Abstracts must be submitted in English via the Congress web site, and should contain the following:

- Title of the paper
- Contact information (author/co-authors)
- Subject group
- Abstract: Clear description of the subject, main results and conclusions  
Min. 300 – Max. 500 words.
- 3-5 key words

Papers should be originals and should not have been presented elsewhere. Papers must be written and presented in English.

Oral presentations are allocated 20 minutes each.

### Important dates:

#### November 2009

First Announcement

#### April 2010

First Call for papers

#### October 2010

Deadline for abstract submission


#### January 2011

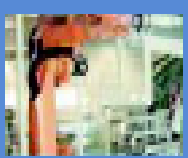
Publication of the Preliminary Programme


**Time Schedule:**

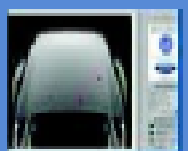
	Monday 13 <sup>th</sup>	Tuesday 14 <sup>th</sup>	Wednesday 15 <sup>th</sup>	Thursday 16 <sup>th</sup>	Friday 17 <sup>th</sup>
09:00 11:00		Opening Ceremony	Technical Sessions	Technical Sessions	Executive FISITA
11:00 13:00		Plenary Session	Technical Sessions	Closing Plenary Session	Executive FISITA
13:00 14:30		Lunch	Lunch	Buffet	Lunch
14:30 18:00		Technical Sessions	Technical Sessions	FISITA Committee EAEC Council	FISITA Council
20:00 22:00	Welcome	Social Programme	Congress Dinner	FISITA Meeting Informal Dinner	FISITA Dinner

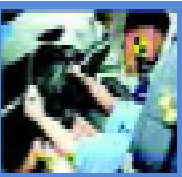
**The congress topics are:**

**A** Powertrain and Green Technologies 

**B** New Control Systems and Materials 

**C** Vehicle Dynamics 

**D** Manufacturing and Process Innovation 

**E** Safety and Human Factors 

**All aspects of automotive technology fit into the congress topics!**



EAEC 2009 Congress will take place at the:

**Universidad Politécnica de Valencia**

- Auditorium: 400 people
- Amphitheatre: 100 people
- Simple hall: 40-45 people
- Double hall: 80-85 people



The Technical University of Valencia is located in a big campus, American style, with all room and administration facilities for middle-sized congresses. A bus transfer from the hotels will be provided,



Valencia is not only famous for its historical buildings. Some of them were shown in the last issue of the EAEC Newsletters. The River Turia overflowed the city several times. Therefore, the river was detoured in a new river bed. In the former river bed the famous architect Santiago Calatrava, son of Valencia, built his “City of Art and Science”.



## Post Congress Information

### 31<sup>st</sup> INTERNATIONAL VIENNA MOTOR SYMPOSIUM



Proceedings are available via:

<http://www.fisita.com/publications/bookstore>

or

[info@oevk.at](mailto:info@oevk.at)

### 10. Euroforum-Jahrestagung Software im Automobil



Proceedings are available via:

Fax: +49 (0)211/9686-4000

Website: <http://www.euroforum.de>

### IAMF 2010



**International Advanced Mobility Forum**  
8 - 9 March 2011, during the Geneva International Motor Show



Proceedings are available via:

[iamf@geneva-palexpo.ch](mailto:iamf@geneva-palexpo.ch)

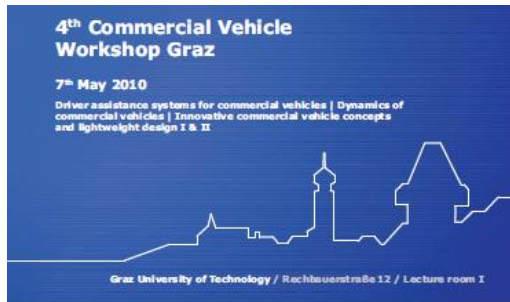
### 3. Grazer Symposium Virtuelles Fahrzeug (GSVF)(AT)



Proceedings are available via:

[office@v2c2.at](mailto:office@v2c2.at)

## Commercial Vehicle Workshop



Proceedings are available via:  
[office.ftg@TUGraz.at](mailto:office.ftg@TUGraz.at)

## AMAA 2010



**14<sup>th</sup> International Forum on Advanced Microsystems for Automotive Applications (AMAA 2010)**

Proceedings are available via:  
[office@amaa.de](mailto:office@amaa.de)

## ERTS Embedded Real Time Software and System 2010



Proceedings are available via:  
[erts2010@see.asso.fr](mailto:erts2010@see.asso.fr)

## Diesel Engines, Facing the Competitive Challenges



International Conference : *Motorisations Diesel, face au défi de la compétitivité / Diesel Engines, facing the competitiveness challenges*  
Rouen - INSA

May 26 & 27, 2010

Proceedings are available via:  
[info@sia.fr](mailto:info@sia.fr)

## FISITA 2010 World Automotive Congress



FISITA 2010 WORLD AUTOMOTIVE CONGRESS  
**Automobiles and Sustainable Mobility**

Proceedings are available via:

<http://www.fisita.com/publications/bookstore>

or

[mail.gte@mtesz.hu](mailto:mail.gte@mtesz.hu)

## 3rd Congress "The automobile future: Alternative powertrain systems"



## NGVA europe

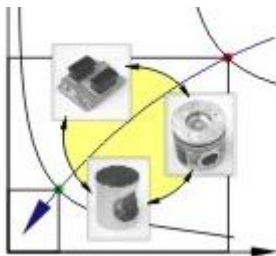


Proceedings are available via:

[info@ngv2010roma.com](mailto:info@ngv2010roma.com)

## 5. EMISSION CONTROL 2010

**5th EMISSION CONTROL 10th/11th June 2010**



Lehrstuhl  
**VERBRENNUNGSMOTOREN**  
Prof. Dr.-Ing. Hans Zellbeck

Proceedings are available via:

[Zellbeck@ivk.tu-dresden.de](mailto:Zellbeck@ivk.tu-dresden.de)



**Automotive Engineer** is the official EAEC Magazine and the leading magazine for automotive engineers. It is published by Professional Engineering Publishing Limited, the publishing company of the Institution of Mechanical Engineers (IMechE). One page is always reserved for EAEC matters. In the issues, the EAEC Congresses and other information about EAEC were announced.

It is usual that newspapers and magazines change their appearance from time to time. This change is the fifth one in the history of *Automotive Engineer*. Some aspects of the new layout of the magazine were presented by the publisher of the *Automotive Engineer* magazine, Mr. Paul Williams at the EAEC Council Meeting in Bratislava and in the previous EAEC newsletters.

The magazine will still be published 11 times a year (July and August are a double issue) and it is free for members of the national EAEC Member Societies.



News section

- Established at 4 pages
- 40-50 stories per issue
- More stories per page
- More reasons to read



Since the redesign in May 2009

- 11 editions of Automotive Engineer have been published
- Produced over 660 pages of content
- Nearly 440 pages of news, features and technology info
- Sent a copy of each edition free of charge to every EAEC society member



In addition to the hard copy of the *Automotive Engineer* magazine, the publisher also has a very informative home page:

<http://www.ae-plus.com>

**ae-plus.com** is the official website of **Automotive Engineer** magazine

**ae-plus.com** is for all automotive engineers, executives, researchers and enthusiasts who wish to update themselves on the industry's technology, business, news and general information. It is an English language website but it is intended by the publisher that the articles are written at a level of the English language which should be understood by all automotive engineers and other people who might be interested in automotive engineering no matter which country they come from.

**ae-plus.com** will not replace **Automotive Engineer** magazine or detract from its contents, but will be complementary to the printed publication. Articles published in the magazine are often archived on this site after three months (or longer). However, **ae-plus.com** is more than an on-line archive for it will generate its own copy, with business and technology news, the key topics and car company news updated regularly.



Headline of the start page

In addition, within each Key Topics subject is a Technical Review banner which takes the visitor to another page listing selected papers from the journals published by Professional Engineering Publishing Limited. These are updated on a regular basis. This is an invaluable resource for those interested in true academic research and is the only freely available source of this information.

## Key Topics

- 🕒 Brakes, Steering, Suspension
- 🕒 Car Companies
- 🕒 Commercial Vehicles
- 🕒 Design/Bodywork
- 🕒 Drivetrain
- 🕒 Electronics
- 🕒 Emissions
- 🕒 Fuel Cells/Batteries
- 🕒 Hybrids
- 🕒 Interiors
- 🕒 Lighting
- 🕒 Manufacturing

- 🕒 Materials
- 🕒 Motorsport
- 🕒 Powertrain
- 🕒 Safety
- 🕒 Software
- 🕒 Supply Chain
- 🕒 Telematics
- 🕒 Testing
- 🕒 Vehicle Design Highlights

### ARCHIVES

- 🕒 The AE Archive
- 🕒 Business News
- 🕒 Technology News

The site is wholly under the direction of the **Automotive Engineer** editorial team so that the high standard of editorial integrity and quality that has become a trademark of the magazine is maintained on [ae-plus.com](http://ae-plus.com).

In the page "**About us**" are explanations in nine languages.

Entering the page **Journals**, there is information about the portfolio of Journals representing the best in mechanical engineering published by the Institution of Mechanical Engineers.

## List of the local automotive events in Europe in the first half of 2010 and early Autumn

The list of automotive events in the first half of 2010 is based on information from the national European Societies and from information of automotive organizations that I have received directly.

Should there be more events in your country which are not on the list, please let me know and I will distribute the updated list again to all Member Societies directly or via the next Newsletter. Also congresses, conferences, workshops or symposia, which are held in the language of your country, will be announced and mentioned on the list. All European events will be put into the EAEC home page.

## Futur Events

### IFAC Symposium Advances in Automotive Control

Venue: Munich, Germany  
Organizer: VDI/VDE- Gesellschaft Mess- und Automationstechnik  
Datum: 12 - 14 July 2010.  
Website: <http://microsites.vdi-online.de/index.php?id=1946>

### AVEC 10

Venue: Loughborough, United Kingdom  
Organizer: Loughborough University  
22 - 26 August 2010  
Website: <http://www.lboro.ac.uk/departments/tt/avec10/>

### 22nd International AVL Conference 'Engine & Environment'

Venue: Graz, Austria  
Organizer: AVL  
9 - 10 September 2010  
Website: <http://www.avl.com>

### 36th International Scientific Congress on Powertrain and Transport Means European Kones 2010

Venue: Warszawa – Gdynia - Jurata  
Organizer: SIMP  
12 – 15 September 2010  
Website: <http://www.ilot.edu.pl/>

### 1. Győrer Tribologie Tagung

Venue: Győr, Hungary  
Organizer: AUDI HUNGARIA LEHRSTUHL FÜR VERBRENNUNGSMOTOREN  
12 - 15 September 2010  
Website: <http://www.auditanszek.hu/>

### ISMA 2010

Venue: Leuven, Belgium  
Organizer: K.U.Leuven Department of Mechanical Engineering, PMA  
20 - 22 September 2010  
Website: <http://www.isma-isaac.be/>

### Aachen Body Engineering Days 2010

Venue: Aachen, Germany  
Organizer: Forschungsgesellschaft Kraftfahrwesen mbH Aachen (fka)  
21 - 22 September 2010  
Website: <http://www.ika.rwth-aachen.de/index-e.php>

### FIVE Fires in Vehicles

Venue: Gothenborg, Sweden  
Organizer: EARPA - European Automotive Research Partner Association  
29 - 30 September 2010  
Website: <http://www.firesinvehicles.com/>

### The Aachen Colloquium "Automobile and Engine Technology"

Venue: Aachen, Germany  
Organizer:  
4 – 6 October 2010  
Website: [http://www.aachener-kolloquium.de/index\\_e.htm](http://www.aachener-kolloquium.de/index_e.htm)

### **International Conference on Gears**

4 - 6 October 2010

Venue: Garching, Germany

Organizer: VDI

Website: <http://www.vdi-wissensforum.de/index.php?id=1308>

### **International Congress of Heavy Vehicles, Road Trains and Urban Transport**

6 - 9 October 2010

Venue: Minsk, Belarus

Organizer: Academic Automotive Association – AAA

Belarussian National Technical University – BNTU

Website: <http://truck2010.bntu.by/>

### **MVM 2010**

Venue: Kragujevac, Serbia

Organizer: Faculty of Mechanical Engineering Kragujevac

7 - 9 October 2010

Website: <http://www.mfkg.kg.ac.rs/>

### **AAC 2010**

Venue: Aachen

Organizer: FEV Motorentechnik GmbH

23 – 24 November 2010

Website: <http://www.vdi.de/aac.2010>

27 - 29 October 2010

### **International Congress on Automotive and Transport Engineering**

Brasov, Romania

Venue: Brasov, Romania

Organizer: SIA

27 - 29 October 2010

Website: <http://www.siar.ro/>

### **CVT Hybrid International Conference**

Venue: Helmond, Netherlands

17 - 19 November 2010

Organizer: Eindhoven University of Technology

Website: <http://www.cvt2010.org/>

### **11th Automotive Day**

Venue: Biel, Switzerland

17 November 2010

Organizer: SAE Switzerland

Website: <http://www.sae-switzerland.ch>

### **Thermo electrics goes Automotive**

Venue: Berlin, Germany

09 – 10 Dezember 2010

Organizer: IAV Automotive Engineering, Inc.

Website: [http://www.iav.com/de/4\\_veranstaltungen/iav\\_tagungen.php?we\\_objectID=16307](http://www.iav.com/de/4_veranstaltungen/iav_tagungen.php?we_objectID=16307)

## CONGRATULATIONS



**Prof. Dr. techn. Dr. e. h. Franz F. Pischinger** celebrates his 80<sup>th</sup> birthday on 18 July 2010. He received his Dipl.-Ing. in 1952 and his Dr. techn. in 1954 from the University of Technology in Graz.

He has spent his entire professional career working in the field of research, design and development of internal combustions engines.

He started his work in 1952. During his professional career, he has held positions as Head of Research and Development at Klöckner Humboldt Deutz AG, Professor and Director of the Institute for Applied Thermodynamics at the Aachen University of Technology (RWTH Aachen) and President and CEO of FEV Motorentechnik GmbH.

His research areas of focus have been combustion in Diesel and gasoline engines, exhaust emissions, engine noise and alternative fuels.

Through his numerous publications and patents he has contributed to the progress in these areas for over 50 years. He also directed the design and development of passenger car and light-duty truck engines as well as medium-duty Diesel engines. Prof. Pischinger has served in numerous professional bodies, committees and advisory boards.

He also passed on his experience to his many students at the University, where more than 200 of them achieved their doctorates under his guidance.

Among his many professional memberships, he is an SAE Fellow, Associate Member of the US National Academy of Engineering (NAE) and a Member of acatech (German Academy of Engineering and Technology). He has received several professional awards among them the Soichiro Honda Medal by ASME and the Decoration of Honour by VDI (Verein Deutscher Ingenieure, Germany).



Prof. Pischinger is currently Chairman of the Board of FEV Motorentechnik GmbH – a world-renowned powertrain engineering company which he founded in 1978.



**Dr. Ludwig Vollrath** was born on 4 June 1950 in Duisburg, Germany, a city in the heart of the “Ruhrgebiet”, Germany’s centre of the steel and coal industry.

At school he went “*the old fashioned way of education*” and studied Latin and Greek, but he always had an interest in technical issues. Since that time, he has been collecting cars and he still owns his first car, a 3-wheeled Messerschmitt “*microcar*”. After school, Ludwig Vollrath enrolled at the Technical University of Braunschweig for his studies in Mechanical Engineering. At that time, he started his engineering layovers abroad, working in a large foundry in South Africa. With his first diploma (Vordiplom) in hand, he moved in 1972 to Munich for the studies of Materials Science and Process Technologies.



In the Department of Metallurgy and Materials Science he became addicted to the world of Materials Engineering, working here as a student and later on as a research assistant and lecturer. His PhD thesis was also in this field, especially in developing new process technologies for microalloyed steels.

In 1983, Ludwig Vollrath went to Massachusetts Institute of Technology for a two-year post doctorate research.

In 1986 he started his career within the VDI, the German Association of Engineers. Since then he has been, and still is the executive officer for different VDI Societies such as Material Science or Polymer Processing. Since 2003, he has chaired the VDI Society for Automotive and Traffic Systems Technology, which is a member in FISITA and EAEC.

For a long period of time, Ludwig Vollrath has been engaged within the FISITA framework, working in committees and organizing the 2008 World Automotive Congress in Munich.

Five years ago he started the Formula Student in Germany, now with more than 60 German universities participating.

The Magna-founder **Frank Stronach** was awarded for his lifetime achievements

Frank Stronach was honoured on 10 June 2010 with the Joseph Schumpeter Award 2010. The Austro - Canadian industrialist received this award for his entrepreneurial life's work. The ceremony was held at the Vienna Technical University and the award was presented by Vienna's Mayor Dr. Michael Häupl. The Schumpeter Award commemorates Joseph A. Schumpeter (1883-1950), a Harvard economist of Austrian origin.

Schumpeter ruled Harvard during the period of the "depression generation" of the 1930s and 1940s. The Joseph Schumpeter Award is dedicated to Austrian persons, who have had a successful economic career abroad and vice versa to foreign persons for distinguished contributions to the Austrian economy. Prof. Lenz, President of the Austrian Society of Automotive Engineering, held the laudation.

Frank Stronach, the Austrian-Canadian businessman. was born in 1932 in the small village of Kleinsemmering, Styria, Austria. Stronach's childhood was marked by the Great Depression and the Second World War. At the age of 14, he left school to become an apprentice as a tool and die maker. In 1954, he arrived in Montreal, Quebec, Canada, and later moved to the province of Ontario.



He is the founder of Magna International, an international automotive component parts company based in Aurora, Ontario, Canada, and Magna Entertainment Corp., which specializes in horse-racing entertainment.

He currently resides in Oberwaltersdorf, Austria and Aurora, Ontario.

(From left to right) Former Austrian Chancellor Dr. Franz Vranitzky, President of the Joseph Schumpeter Society, Frank Stronach, Dr. Michal Häupl, Mayor of Vienna.

## The Historic Corner

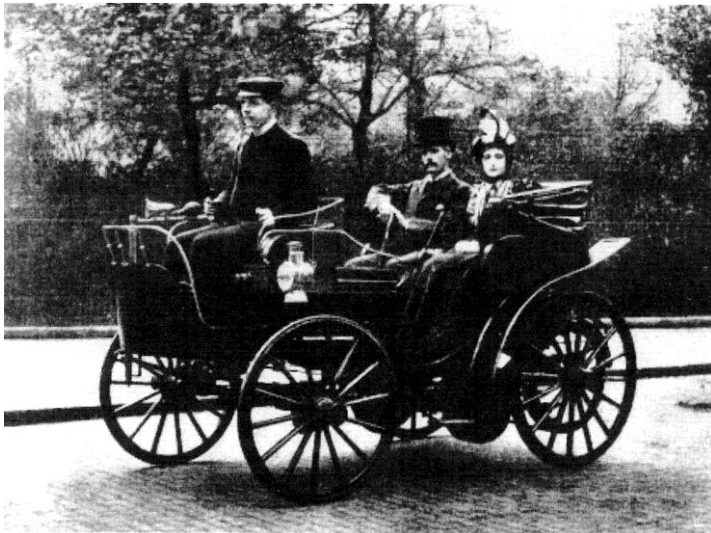
The great time of electric cars in Europe and America was at the turn of the 19<sup>th</sup> to the 20<sup>th</sup> century. The German automotive magazine "Der Motorwagen" (The Motor Carriage) which was the predecessor magazine of the well-known periodical ATZ, mentioned in the issue 14 in 1900:

*"In the last seven years a remarkable success in electric propulsion systems on tram and trains as well on electric carriages could be observed. The main developments were carried out in efficient and reliable electric motors, in easily transportable batteries and light weight design of the whole vehicle"*

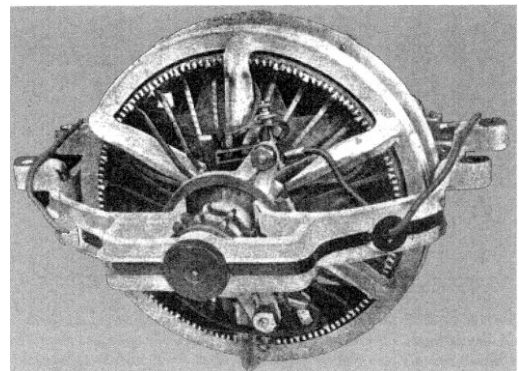
This statement seems very modern and is still valid today.

On both sides of the Atlantic Ocean there were great developments of electric cars.

From 1899 to 1902, the National Motor Carriage Ltd Syndicate in England built electric cars, which were named after their designer - **Mr. Henry M. Joel**. These cars were powered by two motors that propelled the rear wheels separately with chains. This became well known in the race from London to Brighton, without using a battery charge.

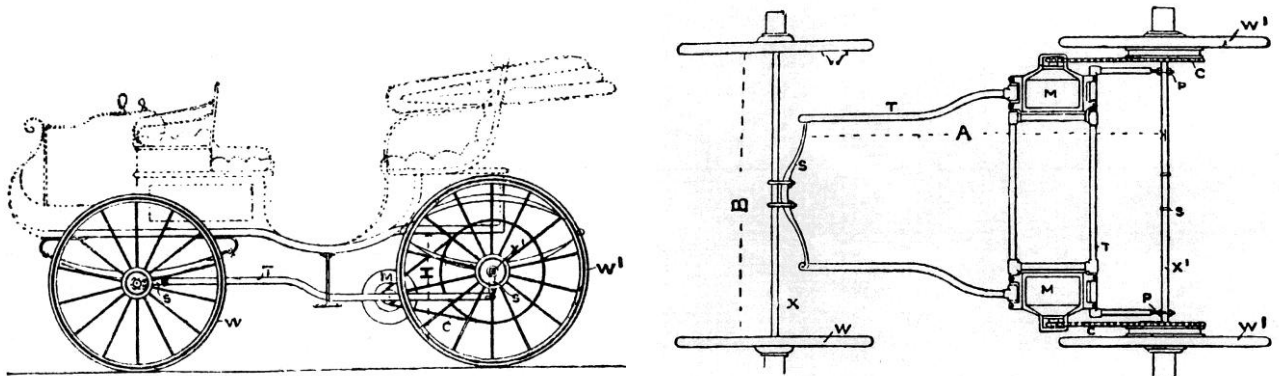


Electric car about 1900 designed by Henry M. Joel



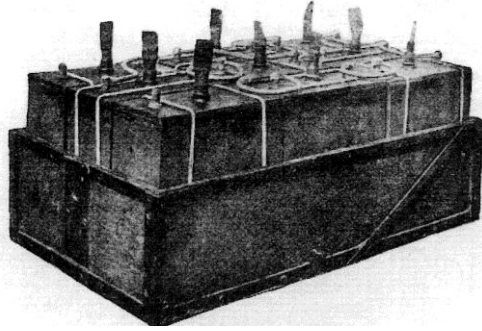
Electric motor

The electric motor had a power of 4 HP, the current was 40 V and the engine had 600 – 700 rpm. The electric motor had, compared to previous models, a new concept. The electric armature rotated out of the field magnet with the advantage that the armature was the flywheel mass and caused constant movement.



Sheer plan (left) and ground plot (right) of the Joel electric car.

M..... Electric motor; T.....Frame ; W.....Wheels



The electric motors were fixed at the frame T. Five speeds 3, 6, 8, 10 and 12 mph (4, 8, 9,7, 12,9 and 19,3 km/h) could be selected. The maximum speed of 12 mph could be extended to 20 mph (32,2 km/h). The reverse speed was 3 mph. The range was about 80 km.

The motor could be used as a generator with braking abilities; this could be regarded as the first step to hybrid technology.

The overall weight of the vehicle inclusive batteries was 850 kg.

#### Batteries of the Joel electric car

Most people think that electric cars are a recent phenomenon. Parallel to the European development of electric cars in the USA, the electric cars played an important role in individual mobility. In the early 1900s the electric car was a common sight on the American road. Electric cars were used to a large extent by women and doctors. The reason that electric cars were very popular for ladies was due to their easy handling, low noise and no odour. To start a car with a combustion engine using a hand crank was impossible for ladies. It is interesting to note that the expression that someone is "cranky" reportably comes from trying to start a crank car. When it would not start, it was being cranky because you had to crank it so much. In fact, one of the downfalls of early electric cars was that they were thought of as a woman's car and men did not want to be seen driving them. In later years, the cars were built with what looked like a radiator in front. An example is the picture below of the 1912 Detroit Electric car.

Doctors needed a car that they could get into and drive immediately. Gasoline engines were not that easy to start or reliable. Hand-cranking a car was difficult, to say the least, and could be downright dangerous.

At the beginning of the 20th century, 40 % of American automobiles were powered by steam, 38 % by electricity and 22 % by gasoline. In 1901, even in New York there were 50 % electric cars and 30 % steam cars and only the rest were cars with combustion engines. The culmination of the production of electric cars in the USA was 1912 when 20 producers built 33.842 electric vehicles. In the face of the gasoline car's unreliability, noise and vibration and the steamer's complications and thirst, the electric offered attractive selling points: notably, instant self-start, silent operation and minimal maintenance.

The most important electric car companies were Baker Motor Vehicle Company (see Issue 2-2010), Ohio Electric Car Company, Detroit Electric, (both mentioned in this issue) as well as Columbia Automobile Company and Studebaker Electric (both mentioned in the next issue).

In the late 1890s, electric vehicles (EVs) outsold gasoline cars ten to one. EVs dominated the roads and dealer showrooms. Some automobile companies, like Oldsmobile and Studebaker, actually started out as successful EV companies, and only later came the transition to gasoline-powered vehicles. In fact, the first car dealerships were exclusively for EVs and in 1896, the first car dealer sold only EVs. In 1895, there was the first auto race in America and it was won by an electric car.

Early production of EVs, like all cars, was accomplished by hand assembly. In 1910, volume production of gasoline powered cars was achieved with the motorized assembly line. This breakthrough manufacturing process killed off all but the most well-financed car builders. Independents, unable to buy components in volume died off. The infrastructure for electricity was almost non-existent outside of city boundaries – limiting EVs to city-only travel. Another contributing factor to the decline of EVs was the addition of an electric motor (called the starter) to gasoline powered cars – finally removing the need for the difficult and dangerous crank to start the engine. Due to these factors, by the end of World War I, production of electric cars stopped and EVs became niche vehicles – serving as taxis, trucks, delivery vans and freight handlers.



A forgotten inventor, who did not belong to the famous electric car companies, was **William Morrison** (1850? -1927). William Morrison was decades ahead of his time when he built his electric automobile. He was largely forgotten when Detroit car manufacturers decided on gasoline engines, but in recent years has regained recognition. He was born in Scotland, came as a chemist to Des Moines Iowa, in 1880 and later worked on his car project in "The Cave", a secret basement laboratory.

William Morrison's battery-powered surrey-type car had front-wheel-drive, steel-clad wooden tires and was ready in 1890. It could maintain a speed of 14 miles (23 km) per hour. The four-horsepower front-wheel-drive vehicle required 24 battery cells, stored under their seats, and had a top speed of 20 mph and needed recharging every 50 miles, which was a major drawback .



Electric cars designed by William Morrison,

The car was reportedly finished in 1887 and made its first appearance at a parade on the Des Moines streets in 1888, amazing thousands of parade-watchers who had never seen a horseless carriage. The car created worldwide attention and Morrison received thousands of letters from around the globe.

It was the talk of 1893's Chicago World Fair!

The development of batteries, not cars, was Morrison's chief interest. Morrison charged the batteries. He became wealthy when he sold his battery interests to the Willard Battery Co. of Philadelphia. His private life was full of tragedies; both his wives and his son died very early and he became an eccentric. During the last years he was active in the gold mining business in California.

The **Ohio Electric Car Company** produced "premium" electric cars, which were mainly bought by rich customers during the late 1800s and early part of the 1900s.



Ohio Electric car

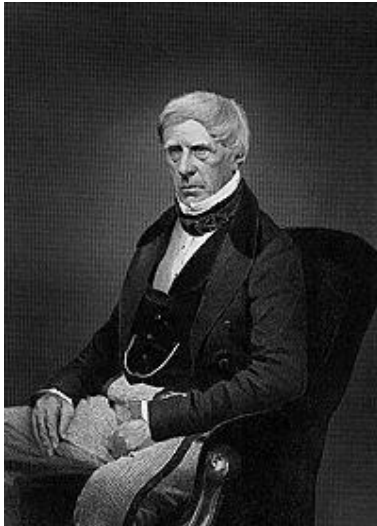


Advertisement for a Ohio Electric car for ladies

In 1914 Ohio Electric claimed "*thousands of satisfied owners*". After a few open cars the company focused on fancy "*Broughams*" for wealthy ladies.

A Broughams was a four-wheeled, one-horse carriage. originally designed (appr. 1838) by Henry (later Baron) Brougham, a former Lord Chancellor of England.

The Brougham carriage is named after Henry (later Baron) Brougham (pronounced „*Brum*”), a former Lord Chancellor of England the first Lord Brougham (pronounced „*Brum*”) who designed the carriage 1838-39; a four-wheeled closed carriage adapted to either two or four persons having a curved opening underneath the driver's seat in front, able to turn in a narrow space. It was a one horse vehicle with variati of ons "single", "double" or "bow front”.



The Brougham carriage had a low coupé body, appearing as if the front were cut away, that enclosed one forward-facing seat for two passengers; a coachman’s seat was attached to the front, where a third passenger could also ride. There were many variations on this design, such as the country brougham and depot brougham, and many broughams were later converted into hacks called growlers. One style of carriage had a folding child’s seat inside, facing backward,

Henry Peter Brougham, 1st Baron Brougham and Vaux (1778 - 1868)



Brougham Caarriage



Cadillac Eldorado Brougham 1957

The name "*Brougham*" was also use after the "*horse carriage time*" for elegant and luxurious cars, like the Cadillac Eldorado Brougham 1957. Cadillac used this name for a series of cars until 1992.

Another well-known name for electric cars was the **Detroit Electric**. The founding name of the producing company was the Anderson Electric Car Company in Detroit, Michigan.





Detroit Electric Cars

The company production was at its peak in the 1910s selling around 1000 to 2000 cars a year.

Anderson had previously been known as the Anderson Carriage Company (until 1911), producing carriages and buggies since 1884. Production of the electric automobile, powered by a rechargeable lead acid battery, began in 1907. For an additional \$600.00, an Edison nickel-iron battery was available from 1911 to 1916. The cars were advertised as reliably getting 80 miles (130 km) between batteries recharging, although in one test a Detroit Electric ran 211.3 miles (340.1 km) on a single charge. The top speed was only about 20 miles per hour (32 km/h), but this was considered adequate for driving within city or town limits at the time.

The Detroit Electric was mainly sold to women drivers and physicians who desired the dependable and immediate start without the physically demanding hand-cranking of the engine that was required with early internal combustion engine automobiles. A statement of the car's refinement was subtly made to the public through its design which included the first use of curved window glass in a production automobile, an expensive and complex feature to produce.

Towards the end of the decade, the electric car was helped by the high price of gasoline during the First World War. In 1920, the name of the Anderson Company was changed to "The Detroit Electric Car Company" as the car maker separated from the body business. The production reached its climax in the 1910s with an output of 1000 to 2000 cars per year.

McClure's—The Marketplace of the World

## The Social Side Of The Electric

Friendships are kept wholesome and sweet by frequent intercourse—sunshine and fresh air are daily entering their beneficent influence upon scores of women and children through the medium of the

### POPE Waverley ELECTRIC

It is essentially the carriage of convenience, of distinction, of sociability and of social prestige. Wherever a fashionable function is in progress there you will find the Pope-Waverley. Does any other car—even the costliest gasoline motor—compare with it in many-sided usefulness?

VICTORIA PHAETON MODEL 67, Like Illustration, \$1,700

With Washers, Brushes, Spring, Oil and Chain Lubricators, Road, Spring and Delivery System. Latest Trade in Construction. Agents in all Principal Cities.

**Pope Motor Car Co.**  
Waverley Department INDIANAPOLIS, IND.

Advertisement for a Detroit Electric Car

# DETROIT ELECTRIC

## Society's Town Car

BY TOM LAMARRE  
COLOR PHOTOGRAPHS BY ROY D. QUINN

Henry Ford had help in turning the company from a department store trading in buggies. A. S. Sorenson, who held the position of vice president from about 1907 until he died in 1915, succeeded in raising the price of the cars, which he considered should be sold for the price of a horse. He had the Detroit Electric car built for the occasion.

The Detroit Electric Company is a very successful company's business success. It is now the only car built through the Detroit Electric Company. It is now the only car built through the Detroit Electric Company. It is now the only car built through the Detroit Electric Company.

THE MAN BEHIND THE DETROIT ELECTRIC was William Anderson, whose first big personal sale was an electric motor for \$1,000 in the Detroit Electric car from a Peck and Snyder Store. Anderson was a business man and a politician. He was the chairman of the City of Detroit's Board of Public Works and the head of the Detroit Electric Car Company. He was the first to build a car for the city of Detroit. He was the first to build a car for the city of Detroit.

How in Michigan, Ontario, in 1875, Anderson moved to Lansing, Michigan, where he, in 1884, he established the Anderson Carriage Company in nearby Port Huron. In addition to manufacturing carriages, he furnished farm implements—a business venture which proved profitable for the company. In 1893, the Anderson Carriage Company moved to Detroit, Michigan, where it remained for 15 years. Anderson, who resided at 45 Beaubien Street, was known to many as a prominent Motor Man. He was a member of both the Detroit Automobile Club and the Detroit Club.

Newspaper article about Detroit Electric

At the end of the decade, the bit-by-bit end of the electric vehicles was initiated by the progress of the internal combustion engine. The high prices of petrol helped the electric cars during World War I. In 1920, the name of the Anderson Company was changed to the Detroit Electric Coach Company, as the auto production by the horse carriage production which became a part of the company. In the 1920s, the sales of Detroit Electric cars sank but the enterprise remained in the business up to worldwide economic crisis of 1929. During 1910-1916, electric trucks were also produced. In the the last years till 1939/41 the enterprise went bankrupt; however, it was bought up and produced for some years, in each case on order, a small number of cars. The last Detroit Electric was finished on the 23 February 1939, and in 1941 Detroit Electric was dissolved. Altogether 12.348 cars and 535 trucks were produced.

William C. Anderson retired in 1918. A few months later the electric car division was reorganized as the Detroit Electric Car Co. although the production body business continued as the Anderson Electric Car Co. (sometimes still referred to as the Anderson Carriage Co. or Anderson Body Co).

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(In alphabetic order of the countries)

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