



EAEC **Issue 7 • December 2009**

news

Newsletter to the Members of
EAEC Automotive Engineers' Societies

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

The end of the year is a good opportunity to look back and to have a glance to the future. Our main automotive congress was the **EAEC 2009 Congress** in Bratislava. It was not easy for Prof. Lesinsky, the Congress Chairman to organize this Congress in times of a worldwide crisis. This Congress can be regarded as a symbol of the automotive world that it is prepared for the time after "tomorrow". In this respect, I wish to thank again Prof. Lesinsky for his engagement in preparing a successful meeting.

In addition to this international regional event, there were 44 national automotive meetings in Europe, organized by the EAEC Member Societies and other national organizations. These meetings also show that the European automotive world is still alive and active. In the EAEC Newsletters I announced these meetings and reported, in some cases, after these events in the column "*Post Congress and Event Information*".

I had the chance to give verbal and written opening addresses at some congresses. It is a good signal that despite the crisis, so many congresses, conferences and symposia are still being held.

I also started this year with a revival of the EAEC Newsletters. This kind of service had a long tradition in printed versions. Nobody knows when and why this kind of information ended. In the Time of internet, it is easier to produce such a document and to reach the addressees.

In this 7th issue of the EAEC Newsletter, I am presenting information about European automotive events in the first half of 2010. If the list of 2010 is not complete, it will be updated step by step in the next issues. You can also find such congress information on the EAEC homepage, as well as all the previous Newsletters of 2009:

<http://www.eaec.net>

From the previous "autumn" automotive meetings, I can give you information how to get the proceedings in the column "*Post Congress and Event Information*".

May I draw your attention to the next FISITA World Congress which will be held in Europe:

FISITA 2010 Congress; Budapest, Hungary, 30 May to 4 June 2010

<http://www.fisita2010.com/>

In this Newsletter, please find more information about this event.

I am still looking for persons in your society and in your country, who have been honoured or are celebrating a special birthday. In this issue, I wish to inform about **Prof. Dr. Fritz Indra**, who received the **Béla Barényi Award**. I am also looking for anniversaries of your society or other automotive organizations in your country, so please let me know about such events.

The "*Historic Corner*" continues the information about the development of steam-powered vehicles with information about the development in France in the 19th century. Now I intend to stop for the present about steam vehicles. I will inform about steam powered vehicles in the last decades of the 19th century and the early 20th century later. In the first issue 2010, I intend to present the history of electric vehicles.

2010 will be a year of important decisions:

- *We have to find a candidate society for the EAEC 2013 Congress.*
- *For the period 2011 to 2015, a new EAEC President has to be elected.*

For both decisions, I will send separate e-mails and letters to all EAEC Societies.

Both elections both elections take place at the FISITA World Congress in Budapest, Hungary, 30 May to 4 June 2010, at the annual EAEC Council Meeting.

Christmas is a festivity of an old European and Occidental tradition and also a festivity of peace and goodwill. May I wish all the staff members and the individual members of the nation societies:

A Merry Christmas and Success and Prosperity in the New Year

A handwritten signature in blue ink, reading "Günter Hohl". The signature is written in a cursive style with a large loop at the beginning and a long vertical stroke at the end.

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

Future Main European Event:

Next year there is an important automotive meeting:



<http://www.fisita2010.com/>

The FISITA Congresses bring the world's engineers together in a spirit of co-operation to create efficient, affordable, safe and sustainable mobility,

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

In cooperation with FISITA, GTE has embarked on a number of activities to ensure that it holds a successful conference.

The goal is to make the FISITA 2010 Congress a forum for the latest achievements of the automotive industry.

Important dates are:

15 March 2010

Deadline for submission of final paper

30 May - 4 June 2010

FISITA 2010 Budapest

The Congress Topics are:



A Environmentally friendly vehicles

- A1** IC engines: goals and developments
- A2** Tools for emission reduction, zero emission in the future
- A3** Alternative fuels and related systems (e.g. electric, hybrid, fuel cell, NCG, LCG, bio-fuel)
- A4** Sources of noise, reduction of vehicle noise



C Test, simulation and calculation methods of vehicles and components

- C1** Advanced engineering technologies and tools
- C2** Methods of strength and service life estimation
- C3** Vehicle performance tests and simulation
- C4** Testing and simulation of vehicle and component dynamics
- C5** Tools and methods for whole vehicle systems engineering



E Intelligent systems in road traffic

- E1** Intelligent vehicle systems (e.g. driver-vehicle interaction, control of vehicles, crash avoidance)
- E2** Intelligent traffic systems (e.g. GPS based systems, driver's information, lane-keeping systems, control of traffic lights vehicle to vehicle communication)
- E3** Intelligent Transportation Systems (traffic and vehicle fleet management)
- E4** Connectivity of intelligent systems, security questions



G Vehicle standards, regulations, legislation

- G1** Globalization of vehicle standards and regulations
- G2** New directions in international regulations
- G3** General questions of vehicle and component approvals



H Efficient production and operation of vehicles and components

- H1** Performance/cost material selection, new materials
- H2** Modularisation in design for economical production
- H3** Life cycle concept in production, service and recycling
- H4** Supplying chain and logistics
- H5** Efficient new technologies in production
- H6** Customer based sales and services



B Vehicle design and development

- B1** Styling, aerodynamics
- B2** New concepts, materials and tools in body design
- B3** Vehicle families based on platform-sharing, chassis design
- B4** Development of main parts, components and vehicle systems
- B5** Design for manufacturing, maintenance and repair
- B6** Development of vans and special vehicles (e.g. off road, mobile machinery)
- B7** Micro cars and low cost vehicles for emerging markets



D Safety on roads

- D1** Accident statistics, analysis and reconstruction techniques
- D2** Injury mechanisms, injury reduction and avoidance
- D3** Active safety issues (e.g. braking systems, steering, suspension, stability, lighting)
- D4** Passive safety issues (e.g. compatibility of vehicles, energy absorption, survival space concept, biological-load limitations, passenger retention systems)
- D5** Protection of vulnerable road users (pedestrian, bicycle)
- D6** Road infrastructure and vehicle safety



F Buses, trucks and heavy vehicles*

- F1** Development, new design, new vehicles
- F2** New propulsion system arrangements
- F3** Passenger comfort and safety
- F4** Protection of drivers and crew
- F5** Under-run protection
- F6** Fires in heavy vehicles, fire protection
- F7** Evacuation of buses, emergency exits
- F8** Performance based design of large special-vehicles for road use



The FISITA 2010 Congress will take place in the same area as the EAEC 2007 Congress, but with additional space for lectures and exhibition. The location is the new part of the Technical University of Budapest, near the River Danube, with excellent opportunities for Congresses.

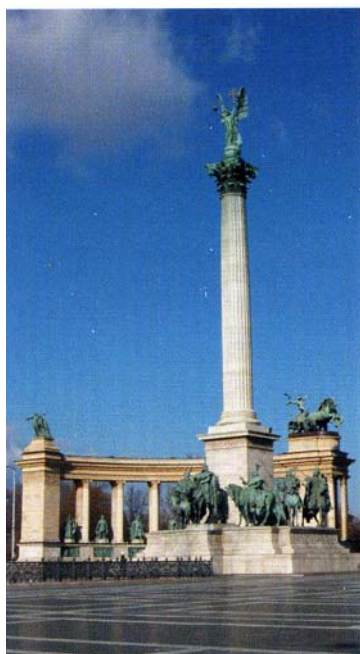
Budapest has a wide range of important sights. To make the most of your Budapest sightseeing, it's best to prepare a list about the major attractions so as not to miss anything important.

Budapest is that it has just the right size! Not too big, not too small! Most of the important sights are situated close to each other and even the farthest attractions in Budapest are easily accessible by public transport.

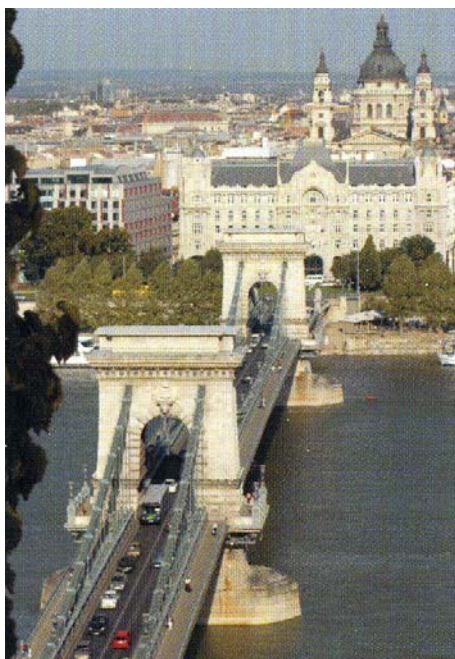
More information about the Congress can be found on the congress website:

<http://www.fisita2010.com/>

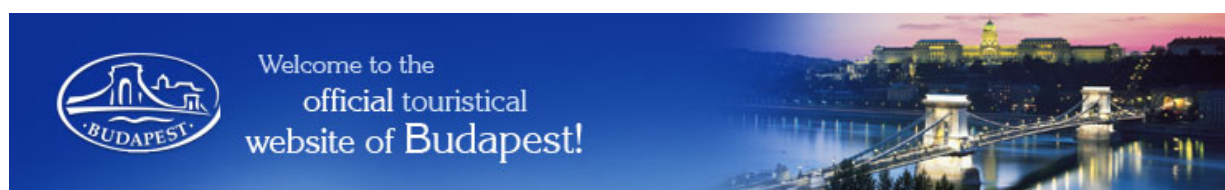
In this issue, only a few sightseeing attractions can be mentioned. In the next issues, more interesting spots will be presented.



Heroes' Square



Chainbridge



More information about Budapest can be on this website:

<http://www.budapestinfo.hu/en/>

The next **EAEC Congress** will be one year later in 2011.

EAEC 2011 Congress

	Monday 13 th	Tuesday 14 th	Wednesday 15 th	Thursday 16 th	Friday 17 th
09:00h 13:00h		Opening Ceremony Plenary Session	Technical Sessions Technical Sessions	Technical Sessions Closing Plenary Session	Executive FISITA
13:00h 14:30h		Lunch	Lunch	Buffet	Lunch
14:30h 18:00h		Technical Sessions	Technical Sessions	FISITA Committee EAEC Council	FISITA Council
20:00h 22:00h	Welcome	Cultural Encounters	Congress Dinner	FISITA Meeting Informal Dinner	FISITA Dinner

The EAEC 2009 Congress will take place at the:

Universidad Politécnica de Valencia



The Technical University of Valencia, founded in 1973, is a public institution devoted to higher education, and to research and development (R&D) activities. The main scientific and technological domains are information and communication technologies, electric, electronic, mechanical and chemical engineering, civil engineering, architecture, food and agricultural technologies, business sciences and fine arts.

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,



One of the university buildings is designed for congresses and fits exactly into the size of the regional EAEC Congresses:

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

It is also worth joining the Congress and visiting Valencia from the tourist side.

València is the capital and most populous city of the Autonomous Community of Valencia and the third largest city in Spain, with a population of 810,064 in 2008. It is the 22nd-most populous municipality in the European Union and the 35th most populous urban area in the European Union with a population of 2,3 million people living in the Valencia metropolitan area.



Cathedral and bell tower



Royal Park

Post Congress and other Event Information:

8th International Conference FUEL ECONOMY, SAFETY and RELIABILITY of MOTOR VEHICLES

ESFA 2009

Bucharest, Romania
12 – 14 November, 2009

This Conference was jointly organized by the Automotive Engineering Department from the University POLITEHNICA of Bucharest and the Society of Automotive Engineers of Romania (SIAR) under the patronage of

Fédération Internationale des Sociétés d'Ingénieurs de Techniques d'Automobile (**FISITA**) and European Automobile Engineers Cooperation (**EAEC**).



Opening ceremony: Andreescu (organizer), Tapus (UPB vice-rector), Geels (AVL), Andrei (NASR), Hohl (FISITA, EAEC)



Keynote speech: Philippe Prevel; (Renault Technologie Roumanie)

150 delegates (including 23 delegates from abroad) from 7 countries attended the ESFA 2009: Austria, Belgium, France, Germany, Romania, Ukraine and the USA. More than 70 MSc students from the University Politehnica of Bucharest also attended the sessions.

115 lectures were presented during ESFA 2009 in Plenary and Thematic Sessions and 27 companies showed their products at the indoor (15) and outdoor (12) exhibitions.

103 lectures were printed in the ESFA proceedings in 2 volumes containing 900 pages. The Plenary Session on the second day was dedicated to the symposium "EU – Initiatives and Programmes" organized in cooperation with the National Authority for Scientific Research (ANCS) and the European Commission.



Elena-Mihaela Williams (European Commission),
C. Andreescu, Anca Ghinescu (ANCS),
Beatrice Paduroiu (ANCS)



Plenary Session Presidium

Congress topics:

- Fuel economy and environment;
- Automotive safety and comfort;
- Automotive reliability and maintenance;
- New materials and technologies;
- Traffic and road transport systems;
- Advanced engineering methods and tools;
- Advanced powertrains;
- Hybrid and electric drives.

Proceedings are available via:

Prof. Cristian Andreescu

E-mail address: cristian.andreescu@upb.ro

Website: <http://esfa2009.upb.ro/index-1.html>

10th Automotive Day 2009



Venue: Bern, Switzerland

Organizer:

13 November 2009

Website: <http://www.automotiveday.ch/>

This Congress was under the patronage of FISITA.

A written opening address was given by G. Hohl.

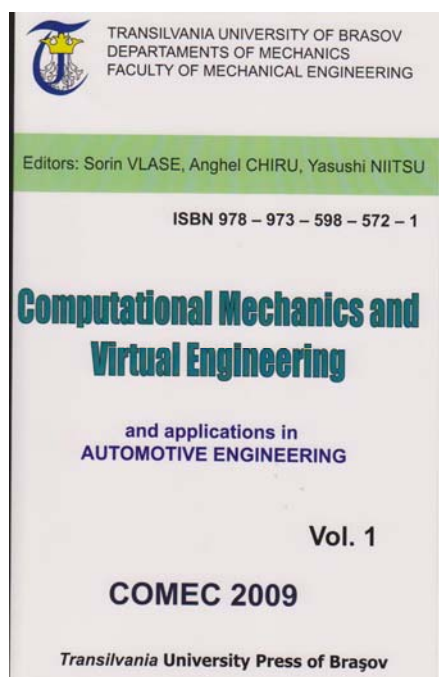
The main topics were:

- Energy for Mobility
- Energy distribution and storage
- Propulsion and Vehicle Concepts

The CD Proceedings are available via:

E-mail: daniel.christen@sae-switzerland

INTERNATIONAL CONFERENCE COMPUTATIONAL MECHANICS AND VIRTUAL ENGINEERING “ COMEC 2009”



The 3rd International Conference “Computational Mechanics and Virtual Engineering and Applications in Automotive Engineering” “COMEC 2009” was organized between 29th and 30th October 2009 at the Transilvania University of Brasov, Romania, under the patronage of FISITA, EAEC, the Romanian Academy of Technical Sciences and the Romanian Automotive Society of Engineers (SIAR).

Chairman of the Conference was Mr. Yasushi Niitsu, Prof.dr.eng. at School of Information Environment, Tokyo Denki University, Inzai-city, Chiba, Japan. The Scientific Committee has been formed by twenty-six members from which twelve were from abroad.

One hundred and seventy-three authors' contributions were presented in the following sections:

- Section 1: Computational Methods;
- Section 2: Computational Solid Mechanics and Composite Materials;
- Section 3: Applications of Computational Methods in Automotive Engineering
- Section 4: Biomechanics;
- Section 5: Industrial Applications and Applications in Agricultural Machines.

The volume with the proceedings has been published by Transilvania University of Brasov Publishing House with ISBN 978-973-598-572-1 in A4 standard format.

Proceedings are available via:

E-mail: siar@siar.ro



Venue: Aachen, Germany

Organizer:

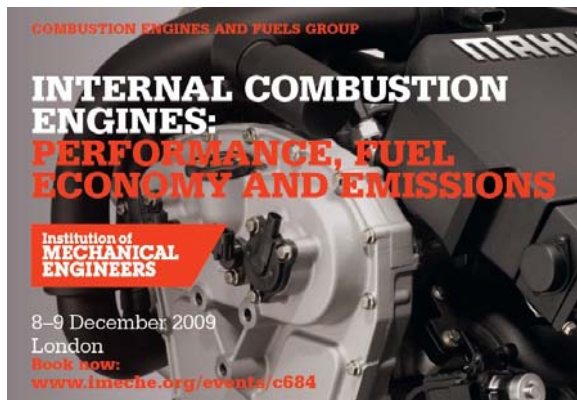
24 – 25 November 2009

Website: <http://www.aachenerK-akustik-kolloquium.de>

Aachen is one of the most important centres for development and research in automotive acoustics. The Aachen Acoustics Colloquium is an annual event for sharing knowledge among experts in industry and universities.

Proceedings are available via:

ruschmeyer@aachen-acoustics-colloquium.com



This conference, the latest in this successful biannual series on internal combustion engines, addressed drivers of change, technological developments and advances in the latest research. It looked closely at developments for personal transport applications, though many of the drivers of change apply to light and heavy-duty, on and off-highway, transport and other sectors.

The conference focused on spark ignition engine technology for fuel economy, engine downsizing design and analysis, diesel engine design and analysis, and fuels

Proceedings are available via:

E-mail: I_mckenna@imeche.org

CONGRATULATIONS

On 2 November 2009 the **Bela Barenyi Award** was dedicated for the fifth time by the Austrian Automobile Club to **Prof. Dr. Fritz Indra**.

Béla Barényi (1907 –1997) was a Hungarian Austrian engineer-regarded as the father of passive safety in automobiles. He was born in Hirtenberg near Vienna. After mechanical and electrical engineering studies in Vienna, he worked for some Austrian automobile companies before joining Daimler-Benz in 1939. Heading the pre-development department of Daimler-Benz from 1939 to 1972, he developed, for example, the concept of the crumple zone, the non-deformable passenger cell, collapsible steering column, safer detachable hardtops etc., and other features of Mercedes-Benz automobiles.



He is also credited with having conceived the basic design for the Volkswagen Beetle in 1925, five years before Ferdinand Porsche claimed to have made his version. Barényi was nominated for the award of Car Engineer of the Century in 1999 and inducted into the Detroit Automotive Hall of Fame in 1994.

Barényi died in Böblingen, Germany. A Mercedes advertisement featuring Barényi's image stated: "No one in the world has given more thought to car safety than this man."

Prof. Dr. Indra studied mechanical engineering at the Vienna University of Technology and finished his PhD studies in 1969. Between 1968 and 1971, he was an assistant at the Institute of Combustion Engines and Automotive Technology.

Between 1971 and 1979 he worked for BMW-Alpina as Head of the Developing Department and moved then to Audi in the function of the Head of the Engine Design Department.

In 1985 he took over the function of the Head of the Engine Development Department and became director for advanced engineering at the Opel Company. Here he designed the first Ecotec-Engine C20XE with an efficiency of 37%.

Between 1997 and 2005 he was responsible in the function of an Executive Director for the Advanced Engineering of General Motors Powertrain in Detroit.



After his retirement, he is still active in consulting and in education at the Vienna University of Technology as Honorary Professor, a title which he received in 1991.

Automotive Engineer Magazine

Automotive Engineer is the official EAEC Magazine. One page is always reserved for EAEC matters. In the last issues, the EAEC 2009 Congress was 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*.

In the issue 4/09, some aspects of the new layout of the magazine were mentioned. In this issue, more details of the new *Automotive Engineer* magazine are presented.

The magazine will still be published 11 times a year (July and August are a double issue).

Automotive ENGINEER

Europe's automotive engineering magazine May 2010

Front Cover

- New black & white logo that is clear, authoritative and modern
- Larger and better cover images
- Greater impact, the stories can be "sold" better to readers



List of the local automotive events in Europe in the first half of 2010:

The list of automotive events in the first half of 2010 are based on information from the national European Societies and from information of automotive organizations 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.

ELEKTRONIKSYSTEME IM AUTOMOBIL

Venue: Munich, Germany

Organizer: Europaforum, The Conference Company
9 – 11 February 2010

Website: <http://www.elektroniksysteme-automobil.de>

IAMF 2010

Venue: Geneva, Switzerland

Organizer: Geneva Palexpo
9 - 10 March 2010

Website: <http://www.iamf.ch/en/>

AEA - Alternative Energies for the Automotive Industry

Venue:

Organizer: AMAA Office; VDI/VDE-Innovation + Technik GmbH
18 - 19 March 2010

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

31 INTERNATIONAL VIENNA MOTOR SYMPOSIUM

Venue: Vienna, Austria

Organizer: ÖVK
29 – 30 April 2010

Website: <http://www.oevk.at/>

Commercial Vehicle Workshop

Venue: Graz, Austria

7. May 2010

Organizer: TU Graz; Institut für Fahrzeugtechnik

Website: <http://www.ftg.tugraz.at>

AMAA 2010

Venue: Berlin, Germany

10 - 11 May 2010

Organizer:

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

ERTS Embedded Real Time Software and System 2010

Venue: Toulouse, France

19 - 21 May 2010

Organizer:

Website: <http://www.erts2010.org>

Diesel Engines, Facing the Competitive Challenges

Venue:

26 - 27 May 2010

Organizer:

Website: http://www.sia.fr/evenement_detail_motorisations_diesel_face_au_1044.htm

FISITA 2010 World Automotive Congress

Venue: Budapest, Hungary

30 May - 4 June 2010

Organizer: GTE

Website: <http://www.fisita2010.com/>

IFAC Symposium

AAC 2010

Advances in Automotive Control

Venue: Munich, Germany

12 – 14 July 2010

Organizer: VDI/VDE- Gesellschaft Mess- und Automationstechnik

Website: <http://microsites.vdi-online.de/index.php?id=1946>

Historic Corner

Great Britain was the first country with public traffic in the definition of our time with steam buses. This revolutionary idea was not generally accepted.

Progress in the development of steam cars saw stiff opposition from companies running horse-driven coaches. In the mid-1800s, turnpike charges (similar to toll charges) for the "early cars" were steeply increased. These heavy and crudely built steam-driven vehicles must have badly damaged roads, and to some extent the increase was possibly justified.



The 'Locomotives on Highways Act' (Red Flag Act) was passed by the British Government in 1865. It was intended to regulate the use of heavy traction engines pulling large loads. The Act limited speeds to 6.4 kms per hour in the country and 3.2 in towns. It also required that every road locomotive must have three attendants - one to steer, one to stoke and one to walk 50 metres ahead of the vehicle, bearing a red flag, signalling the driver when to stop.

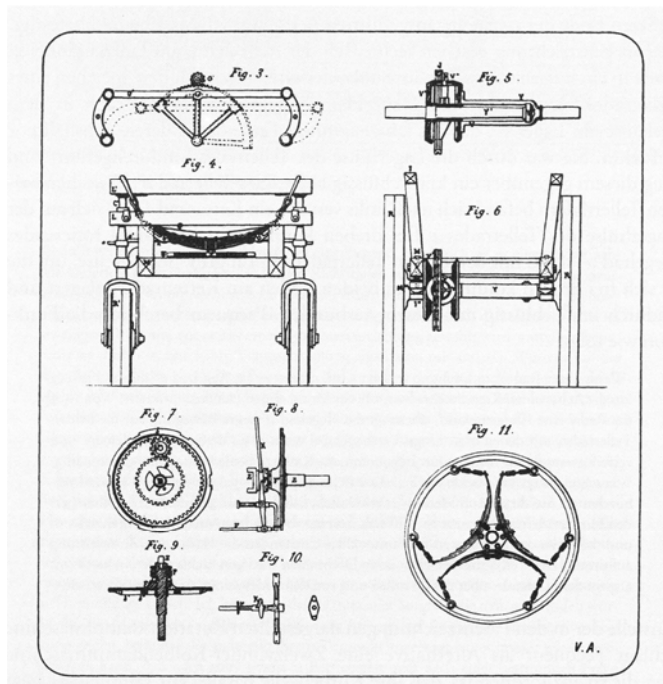
The Red Flag Act discouraged further developments of road-steam-vehicles. A subsequent Act passed 13 years later in 1878 did away with the red flag, but nevertheless the vehicle still had to be preceded by a man on foot to warn drivers of horse-driven coaches.

The term “red flag” is still in use for preventing development in technology by public authorities.

Also after the end of the “red flag” law, the development of light motor vehicles stopped till after the turn of the century. The English steam vehicle industry was forced to produce heavy hauling vehicles and tractors.

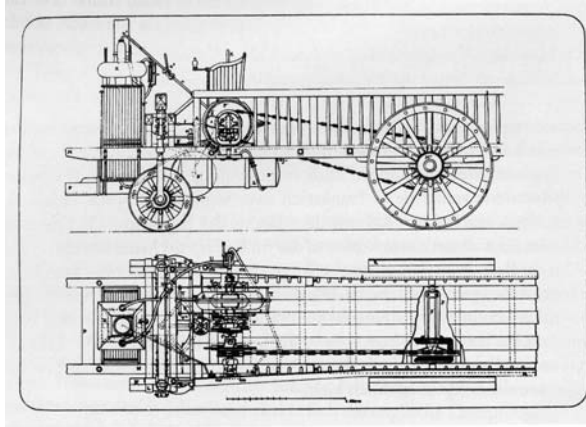
Contrary to England, France had more liberal laws. A remittal from 1865 regulated the use of steam vehicles on public roads by some very few and very clear administrative and technical rules. The steam vessel needed a certificate in the same way as stationary steam engines. A previous decree dated 1843 stated that a steam vehicle only can be put in operation when the starting point is announced to the administration of the local department. In this very modern decree technical data like steam pressure, dimensions of the piston and the safety valve as well as the name of the producer and the date of production had to be specified.

The intensive development of steam vehicles in France started at the same time as as the general use of such vehicles in England. In the first half of the 19th century, the development of steam vehicles was not so rapid as in England, nevertheless the French engineer with the magnificent name Onesiphore Pecqueur (1792 – 1852) patented a technical principle which is valid till today. He was Chef des Ateliers of the Conservatoire des Arts et Métiers (CNAM) in Paris.



Onésiphore Pecqueur; Patent drawing of a differential 1827

Onésiphore Pecqueur invented the conventional automobile differential in 1827. It was used for the first time on his steam-driven vehicles and was a well-known device when internal-combustion engines appeared at the end of the 19th century.

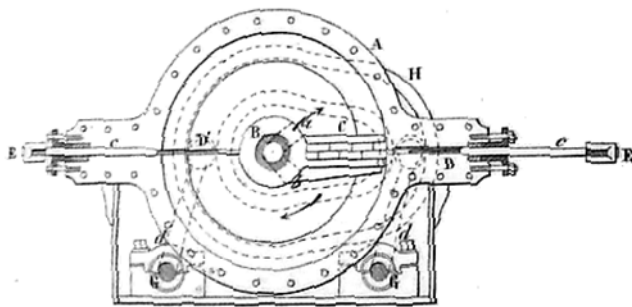


Onésiphore Pecqueur; Patent drawing of steam vehicle 1828



Replica

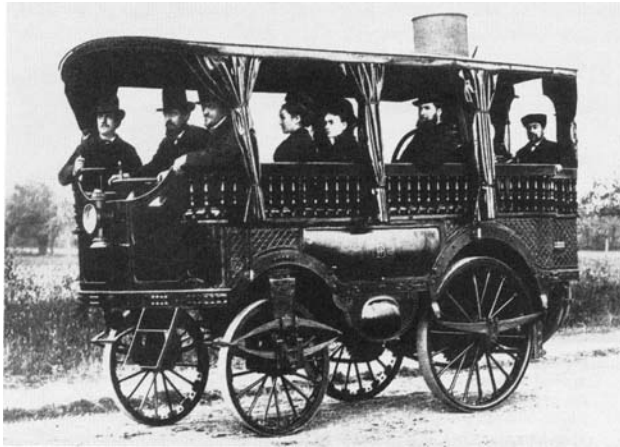
He also invented a rotary engine in 1840.



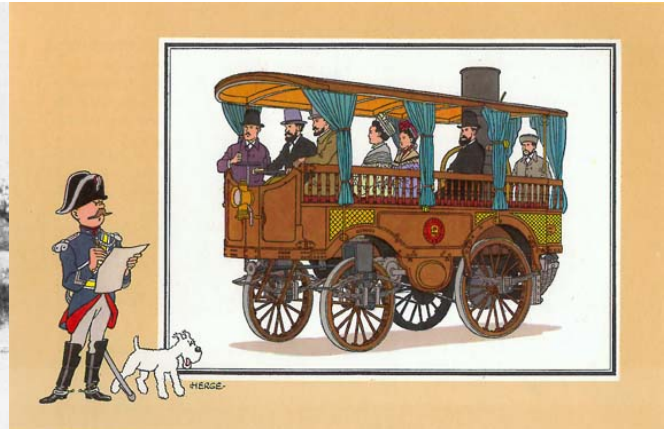
Onésiphore Pecqueur engine: 1840.
Patent drawing

Other French engineers, who were closely involved in the development of steam vehicles, were Charles Dietz and his sons who ran steam-driven road tractors hauling passenger carriages on routes around Paris and Bordeaux prior to 1850.

A most successful French pioneer and inventor of steam carriages and commercial user was **Amédée-Ernest Bollée** (1844 – 1917). Amédée-Ernest was the eldest son of Ernest-Sylvain Bollée, a bellfounder and inventor who moved to Le Mans in 1842. The family Bollée was famous for their bells in churches, e.g. in the cathedrals of Bordeaux and Saigon (now Ho-Chi-Minh City) in 1873, Amédée Bollée filed a patent for a steam road vehicle and two years later he built the steam stage that he named “l’Obeissante”. (The Obedient).

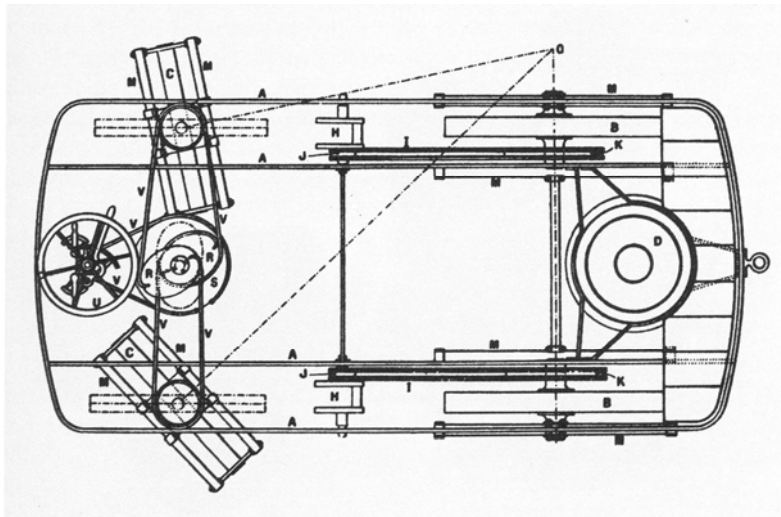


‘Obeissante’ 1875



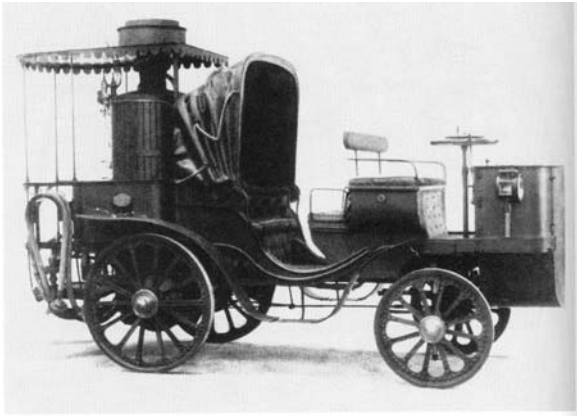
Obeissante”; Cartoon

It was even chronicled in the songs of the day and was made a topic of amusement at the variety theatres. This steam omnibus did 30km/h - “*Much more than buses in cities today*”- and a maximum speed of 40 km/h This carriage had 12 seats for passengers. During his first trip from Le Mans to Paris, he received 75 forewarnings from the police. Contrary to the previous steering systems, the design of the steering system was very modern as the wheels made correct geometrical movements around a certain point. For cars with combustion engines, this system was invented again by Maybach in 1899 and with slight modifications by Benz in 1893.

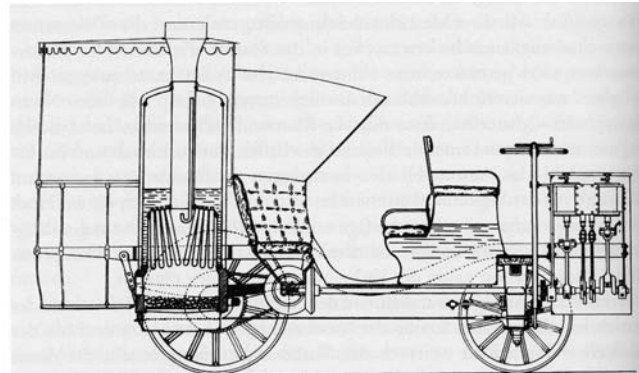


“l’Obeissante”; Drawing of the steering system 1872/73

Between 1873 and 1875, Bollée built several carriages. In 1876, he worked with Dalifol and made a tram-car that would carry fifty passengers. This vehicle was put into the steam omnibus service in Rouen. Two years later he made another steam omnibus that he called “*La Mancelle*” (The Lady from Le Mans). This vehicle, in June of that year, was run from Paris to Vienna and developed a speed on level roads of twenty-two miles an hour. In Vienna this vehicle was the subject of much talk and was largely caricatured



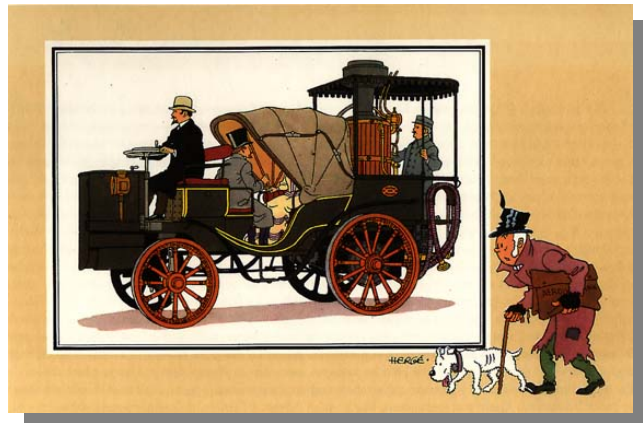
“La Mancelle”; Photograph from 1875



“La Mancelle”; Drawing of the drive line
1872/73



“La Mancelle”; Original
Musée de l'Automobile de la Sarthe.



“La Mancelle”; Cartoon

With “La Mancelle”, Bollée created a modern vehicle concept. It was the first time that the engine – in this case a steam engine- was located in front of the front axle. This system was used for vehicles with combustion engines some decades later.

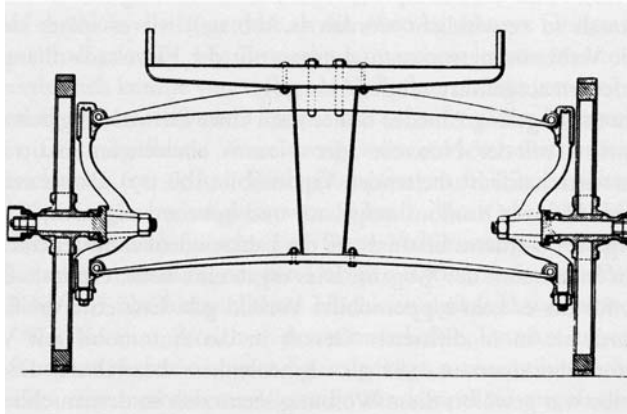
The *Mancelle* is regarded as the first automobile to be put into series production, 50 being manufactured in all. It possessed (for the period) such advanced features as rear-wheel drive (via shaft to the differential and then via chain to the rear wheels) and independent suspension on all four wheels. The original vehicle is preserved in the collection of the Musée de l'Automobile de la Sarthe.

The public presentation of *L'Obeissante* and *La Mancelle* had secured orders for the Bollée factory, and Amédée accepted an order for a road train which was completed in 1879. Developing 100 hp, the *Marie-Anne* had a variable speed transmission with three gears and was capable of towing 35 tons on a 6% slope.^[2]

The *Marie-Anne* was of a similar design to *La Mancelle*, with a vertical boiler mounted at the rear driving front mounted engines which transmitted their power to the rear wheels via driveshafts and chains. A tender carried coal and water reserves.

It is claimed to have been the first creation of the man to whose family much credit is due for the modern French automobile.

Other very innovative technical details were the axle suspensions. This vehicle had a “steering swivel system”, a design principle which is still in use. Bollée created an independent front suspension with two transversal leaf springs. The principle of an independent suspension was used again centuries later in the 1920s. This design was used later, e.g. in Daimler-Benz cars (1931-1950).

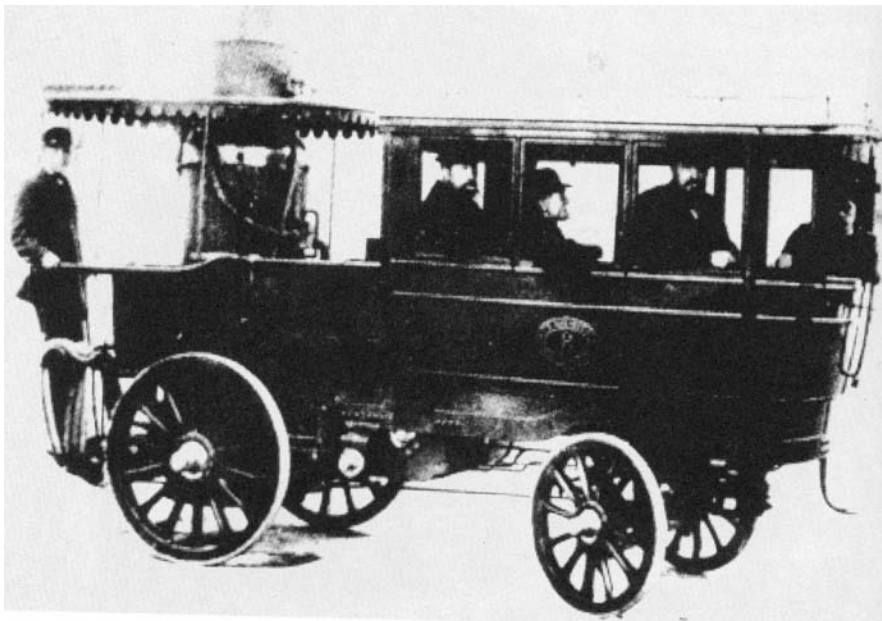


“La Mancelle”; Axle suspension



Daimler-Benz AG: Typ 170V/170D
Front axle suspension,

In 1890 Bollée buildt after a developing time of only seven months, a new steam bus “La Nouvelle” (The New One) on the way to an economic “vapomobil”. This vehicle was a small bus with a driver and six passengers. It was entered in the Paris-Bordeaux competition in 1895, and was the only steam carriage that covered the course in this race.



“La Nouvelle” 1890

This was the first time that the driver sat behind a glass windscreen and the passenger compartment was surrounded by glass windows, too. This was a very modern concept and thirty years later, it was used for cars with a combustion engine and got the “new” name in side driver vehicles but, in reality, was based on an old previous concept. Another very new concept was that the windows of the driver compartment as well as those of the passengers compartment were vaulted precursor of the now used “panorama windows”. This style of buses started again in the fifties of the last century coming from America.

“The Nouvelle” was longer than the “l’Obeissante”; with a weight of 4,800 kg but had a gross weight of only 3,200 kg. The engine had a power of 30 hp and the consumption of coal could be reduced from 2,5 kg to 1,3 kg/km as well as the water consumption from 14l to 7,5 l/km.

With a capacity of 460 l water, the “The Nouvelle” could cover a distance of 60km with a maximum speed of 45km/h.

In 1881, Bollée designed another steam vehicle the “*La Rapide*” –“The Fast One”. This vehicle could also carry six passengers, but contrary to the other vehicles’, the vessel was located in front of the driver, who also had the function of a fireman. This design made the steam bus smaller and lighter.



“*La Rapide*” Photograph from 1871



“*La Rapide* ; Cartoon

Bollée knew that the Otto engine would be a competitor of the steam engine. He realized that the technology of a steam engine could not really be improved and he was sceptic about the future of steam engines in road vehicles.

EAEC Member Societies

(In alphabetic order of the countries)

The data of the Member Societies are from the FISITA Member Directory October 2009.

Please check all data. If any corrections are necessary, please inform me and

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AAA

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Belgium

Union Belge des Ingenieurs de l'Automobil

Flämisch

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Society of Automotive Engineers in Bulgaria
SAEB

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CroSEV

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Česká Automobilová Společnost
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Finland

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Germany

VDI-Gesellschaft Fahrzeug-und Verkehrstechnik
VDI-FVT

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GTE – Vehicle Devision

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