

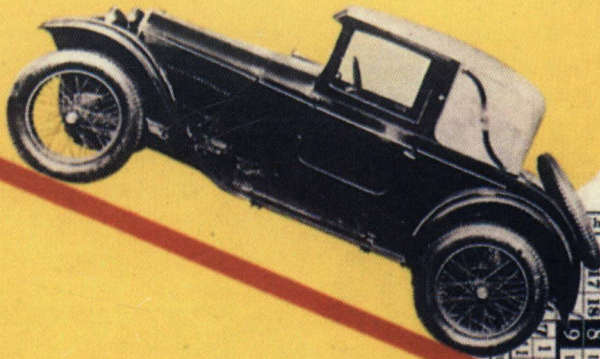
AUTOMOTIVE HISTORY REVIEW

Winter 2002



Issue Number 38

Aero



by hlav. města Prahy.

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EDITOR'S NOTES

The first thing you will notice is our color covers. This is the third time the *Review* has had a color front cover, and the first time that we've had color on the rear cover. The front cover is a 1929 poster on the Aero automobile. To understand the controversy that the Aero poster caused, you must read p. 23.

Our usual blue cover borders clashed with the colors of the poster so, for Number 38, we reverted to the black used for the covers of the first ten issues of the *Review*.

With this issue we examine a corner of automotive history that has been little studied other than in the languages of their respective countries. That is, the vehicles (principally passenger cars) manufactured in the central and eastern European countries after World War I and until the Iron Curtain fell. These countries are Czechoslovakia, Poland, Hungary, and the Soviet Union. We'll also take a glimpse of an experimental Romanian car. There appears to have been no indigenous motor vehicle industry in those years in Romania, Bulgaria, the Baltic States, and the lands that comprised Yugoslavia. Nor is East Germany included. Arguably, its interwar history, with such marques as Stoeber and Brennabor, is indivisible with that of the prewar German state; as a practical matter, no one had sent relevant articles to be used for this issue.

This is only an introduction and is intended to encourage you to learn more on your own about the automotive histories of these countries. For example, we haven't covered the periodic races on the Masarykring outside of Brno and the 1,500 cc class machines which competed.

Czechoslovakia

"Why do you like Czech cars?" asked the Slovak auto historian Mária Šuman-Hreblay. I had never really thought about it and could not immediately verbalize my interest, but have tried to do so in "The Far Away Country," this issue's first article.

The more relevant question for the reader is why you should be interested in Czech cars. The first reason is, I suggest, that the country had an

amazingly diverse range of sometimes innovative products between the two Wars. In the depths of the Depression, for example, Tatra's 1933 offerings ranged from a humble opposed two-cylinder air-cooled car to a magnificent 12-cylinder water-cooled one, and the following year, the company added a rear-engined air-cooled V-8 that set the pattern for the company's remaining 64 years of passenger car production.

The second reason is that comparatively little has been written in the English language about Czech marques, and learning more about them and the history of their manufacturers is an intellectual challenge. (Czech is not an accessible tongue but most books in that language have easily understandable charts of technical and production information). Like Everest, it is there, waiting to be climbed.

A further reason is that Czech vehicles were produced in very small quantities, and those that have survived the ravages of war and time are rare indeed. You are unlikely to see any of them on the Western side of the Atlantic, and few elsewhere. In three trips to the Czech Republic, I have never seen even one of the approximately 100 Hispano-Suizas manufactured under license by Škoda in the '20s. Creations of coach-builders such as Brožik and Jech are rarer still.

Of the central and eastern European countries, Czechoslovakia had the largest motor vehicle industry in the interwar years. While today only Škoda remains as a manufacturer of passenger cars, interest in the country's automotive history remains strong in the new Czech Republic, and a digression in that direction is in order. Perhaps the most active figure today there in the field is Miroslav Gomola of Brno. In the past four years, he has written two books on Tatra (the streamlined and non-streamlined cars), an encyclopedia on motorcycles, and most recently, a history of the Wikov marque. He has also started and edits *TIP PRO Oldtimer*, an automotive history magazine similar to the French *Automobil*. JUDr. Jan Tulis, also of Brno, is a frequent contributor to

Oldtimer, and to books on Czech auto history. In Prague, Karel Jičínský, is on the staff of *Motor Journal*; he is a mainstay of the Aero Car Club and his definitive history of the marque was published in 2001. A principal figure in historical circles is Petr Kozišek, the curator of automotive transportation at the National Technical Museum in Prague. To my mind, the English translation of his two-volume history *Laurin & Klement Škoda 1895-1995*, co-authored with Jan Králík, is one of the best works of automotive writing to have appeared in the 1990s. In Slovakia, Mária Šuman-Hreblay is the auto historian. Readers of the *Review* may recall his article in Issue No. 31, "The RAF—Austria-Hungary's Knight-Engined Car."

The Czech Tourist Authority has issued a booklet, *Oldtimer Czechia*, which has detailed information on 13 automobile, motorcycle, military, and transport museums in the country, as well as a list of some of the projects of Czech Veteran Cars Clubs and other motoring events. The Škoda, Tatra, and the Technical Museum in Prague are well worth visiting. No discussion of Prague would be complete without mentioning the Praga Museum, the sole creation and life work of Emil Přihoda, who, since 1957, has amassed a collection of 72 Praga vehicles including buses, fire apparatus, hearses, the 1935 Praga Golden limousine of President Beneš, and over 200,000 factory documents. Mr. Přihoda's museum is open two or three days a week.

Turning from the current Czech auto scene to the magazine before you, the first article you'll find is an introduction to Czechoslovakia, followed by a list of the offerings of each of the major Czech auto manufacturers from the mid-'20s through the late '40s on a year by year basis. This will bring home the diverse production of Škoda, Tatra, and Praga in particular. You will learn, as I did in compiling it, that automotive production continued on a limited scale in the country during World War II.

Everyone's favorite old Czech car today seems to be the Aero (say "EYE-ro"), particularly the earlier one-

continued on page 53

Taylor Vinson, Editor

Winter 2002



Issue Number 38

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Front Cover: poster, Aero automobile, 1929, by František Zelenka (b. 1904; d. 1944, Auschwitz), lithograph, 92 x 122 cm., Museum of Decorative Arts, Prague.

Rear Cover: rear cover, factory sales catalogue, Tatra 77a (1936), from the editor's collection.

Acknowledgments: In this issue, photo credits appear in each article.

Back Issues of Automotive History Review

Only four sets of the 21 available back issues can be supplied. These are numbers 4, 5, 7, 10, 11, 12, 14, 15, 16, 23, 27, 28, 29, 30, 31, 34, 35, 36 and 37. Price \$95.00 postpaid in the USA. Single copies are \$8.00 each plus \$2.00 postage, \$5.00 postage internationally. All payments in US funds, please, Mastercard and Visa accepted as well as checks. Orders and inquiries should be sent to Fred Roe, 837 Winter Street, Holliston, MA 01746-1159. Make check or money order payable to Society of Automotive Historians, Inc. Inquire for shipping costs outside the USA. This supersedes all previous lists and prices, which are no longer valid.

Czechoslovakia

The Far Away Country

In seeking to wash his hands of complicity in the German occupation of the Sudetenland in 1938, Prime Minister Chamberlain, the Pontius Pilate of British politics, airily dismissed Czechoslovakia as only “a far away country.” More than 60 years on, the world is a much smaller place, but in large measure, our knowledge of automotive history in that country remains “far away.” If one thinks of prewar Czech auto history at all, only the big rear-engined Tatra sedans are likely to come to mind. But there is much more.

It all began very early. In 1815, 46 years after Cugnot’s 1769 run in the *fiardier*, Josef Božek of Prague became the second person on the European continent to develop a self-propelled, steam-powered carriage. After a few demonstrations, Božek fell into debt and dismantled his machine. It is amusing to think that, but for Cugnot, SAH might be giving Božek awards and using his machine for its logo (which would require some imagination as only a few rough sketches of it exist). During the 19th century, the Czech Lands of Bohemia and Moravia (the “Czecho” part of the country that came into existence in 1918) developed into the industrial heart of the vast Austro-Hungarian empire which stretched from Krakow in the north to the Adriatic in the south, producing up to 70 percent of its manufactured goods. The Lands were noted in those years for steel, armaments, and railway rolling stock. This advanced industrial milieu produced two icons of automotive engineering, Dr. Ferdinand Porsche and Dr. Hans Ledwinka’, “Austrian” by birth but today regarded by the Czechs as their own. Chamberlain’s great adversary, Adolf Hitler, himself once said that “The Czechs possess a natural gift for technical matters.”

Thus, it is hardly surprising that, as in other industrial countries, the Czech Lands also had their own auto pioneers towards the end of the 19th century. Though not a manufacturer, Baron Liebig of Liberec is regarded as the earliest enthusiast, driving his 1893 Benz Victoria to Paris and back the following year. The Moravian railway carriage manufacturer, Nesseldorfer Wagenbau (NW), is recognized as creating the first passenger car in the Czech Lands, the *Präsident*, in 1897 (Fig. 1). A 4-seater powered by a water-cooled 4-stroke 2-cylinder boxer engine, the *Präsident* was, perhaps, the first automobile to be equipped with front fenders and a bumper. Its high-mounted front air scoop was also futuristic by the standards of the day. The following year, 1898, NW produced what the Czechs regard as the world’s first truck (Fig. 2), and shortly after that, the first purpose-built racing car (Fig. 3). Fitted with a Benz engine, the machine was ordered by the intrepid pioneer, Baron Liebig. NW changed its name to Tatra after World War I, and, 150 years after its initial creation, remains in existence as a truck manufacturer.

In 1899, a Bohemian bicycle maker, Laurin and Klement, produced the first motorcycle in the whole of central and eastern Europe, and became a manufacturer of passenger cars as well in 1905

(Fig. 4). The company was acquired by Škoda in 1925, which was building under licenses the French Hispano-Suiza passenger car and the English Sentinel steam truck. Škoda today is the last remaining volume passenger car producer in Bohemia and Moravia, or the Czech Republic as it became in 1993.

Toward the end of the 19th century, nationalism grew, as exemplified concretely by the music of Smetana in such works as “*Ma Vlast*” (from which “*The Moldau*” comes) and “*The Bartered Bride*.” Independence was achieved days before the Armistice of 1918. The egalitarian governmental form of a parliamentary, social democracy that followed unleashed reservoirs of Czech creativity. The *Deveštil* movement added a unique central European touch to architecture and graphics during the interwar years. No less creative were the automobile manufacturers. In 1922, Ledwinka, Tatra’s chief engineer, had developed the Model 11, with a horizontally-opposed 2-cylinder air-cooled engine, independent suspension, and the first commercially-successful use of a central tubular backbone frame method of chassis in a passenger car (Fig.5). This configuration was extended to a larger car in 1926, the Model 30, which, they say, was the world’s first automobile powered by an air-cooled flat-four engine. By 1930, Czechoslovakia had become the fifth largest producer of vehicles on the European continent. It is difficult to realize today that annual production of cars was so small in Europe that year: 181,260 for France, 150,000 for Great Britain, 54,000 for Germany, 34,150 for Italy, and, for Czechoslovakia, 13,000. By contrast, the US and Canadian production for 1930 was over 2.9 million.

The 1930s showed continued creativity by Tatra and others. All seemed to be influenced by the streamlining efforts of Paul Jaray in the 1920s. Tatra experimented with its prototype V570s of 1931-33 (Fig. 6) which eventually led in 1934 to the rear-engined air-cooled V8 Model 77, an even more radical car than its contemporary, the Chrysler Airflow. Škoda had its own experimental cars, the 932 (Fig. 7), and the 935 (Fig. 8), both rear-engined studies. Two cars featured full-length fenders (envelope bodies) a decade in advance of Kaiser and Frazer: the Praga Super Piccolo special sports car of 1934 (Fig. 9) and the Škoda 420 Popular Special (Fig. 10). Praga offered two models, a Super Piccolo and a Golden, with fully-enclosed front wheels (Figs. 11 and 12) But the pioneer of all of these aerodynamic experiments in Czechoslovakia was the smallest of manufacturers, Wikov, which, in 1931, rolled out the Kapka (Fig. 13). Twenty years later, its rounded front would be repeated on the 1950 Studebaker.

These remarkable years came to an end when the Germans occupied Czechoslovakia in March 1939. Recalling them brings to mind a line by Arthur Miller. Willy Loman’s widow remarked of her husband, “Attention must be paid.” The history of Czechoslovakia and its auto industry in those years is also worthy of attention and respect.

1. Arguably, Ledwinka should be the focus of any article on Czech motor vehicle engineering between the Wars, but his career is well known to automotive historians and has been amply covered elsewhere (see, e.g., Margolius & Henry, *Tatra—The Legacy of Hans Ledwinka*). The purpose of this issue is to call the reader's attention to less-covered aspects of the Czech motor industry.

2. Keegan (ed.), *The Goebbels Diaries 1939-1941* (London 1982), pp.34-35, as quoted in MacDonald and Kaplan, *Prague in the Shadow of the Swastika*, (Prague 1995), p. 51.

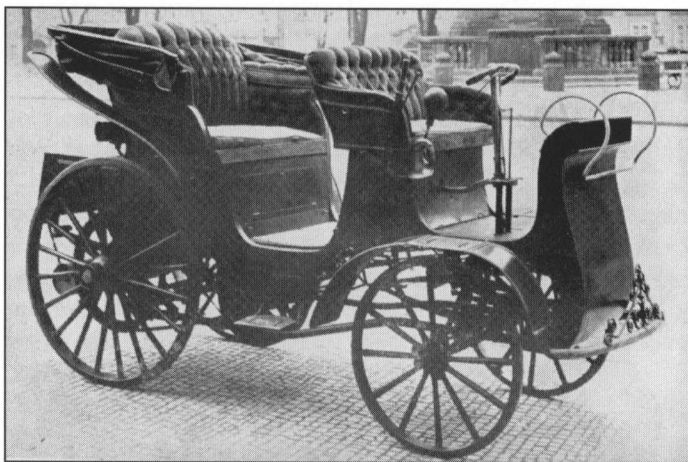


Fig. 1 – The Präsident (1897), regarded as the Czech Lands' first automobile, produced by NW, the predecessor of Tatra.
(From Tuma, *Tatra 1897-1947*)

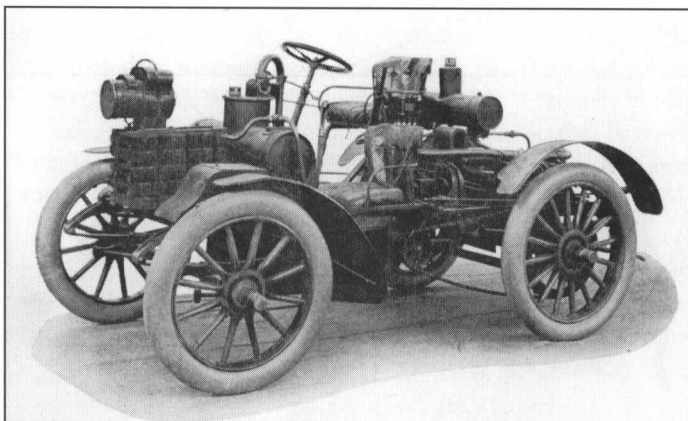


Fig. 3 – The first purpose-built racing car, by NW, for Baron Liebig (1899). (From Tuma, *op. cit.*)

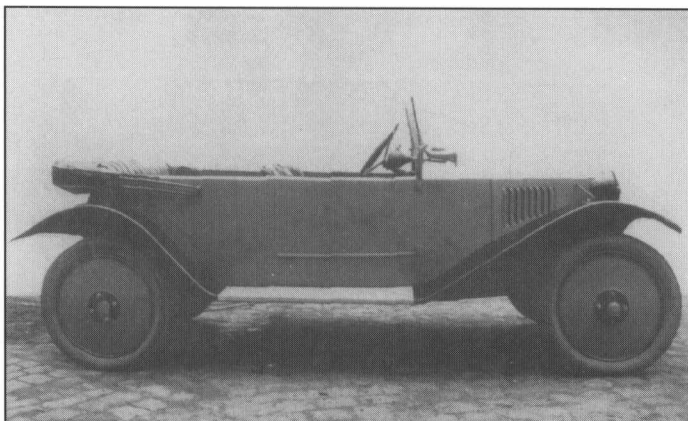


Fig. 5 – The radical Tatra 11 (1924)
(From Gomola, *Tatra 100 Let Českého Automobilů.*)

3. While the Czechs revere Thomas Masaryk as the founding father of Czechoslovakia, they seem almost as fond of President Woodrow Wilson for his role in Czech independence. In fact, the street in front of the central railroad station in Prague is "Wilsonova."

4. Model 11 was followed shortly by the Model 12, one of which Hitler used in his early political campaigns in the 1920s. Reportedly he was impressed by its reliability. Perhaps this was the genesis of his idea for a "People's Car."

5. Jičinský, *Automobily Aero a jejich doba* (Brno 2001), p. 15.

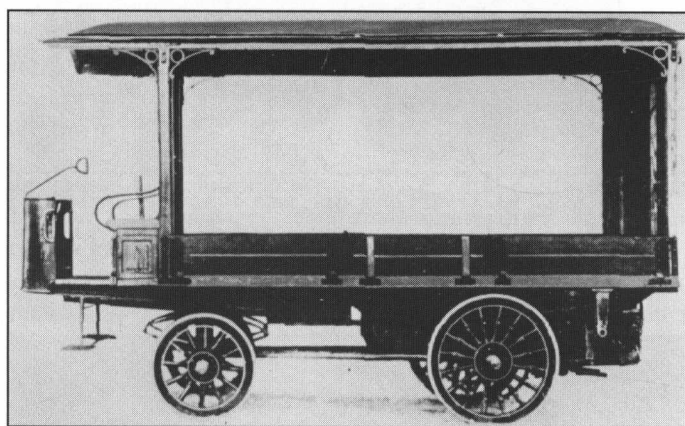


Fig. 2 – The Czech Lands' first truck (1898), also produced by NW.
(From Scharmbeck, *Die Geschichte der Tatra Automobile.*)



Fig. 4 – Laurin & Klement begins to build cars:
its 1905 Type A with a 2-cylinder engine of 6-7 horsepower.
(From Margolius & Meisl, *Škoda Laurin & Klement*)

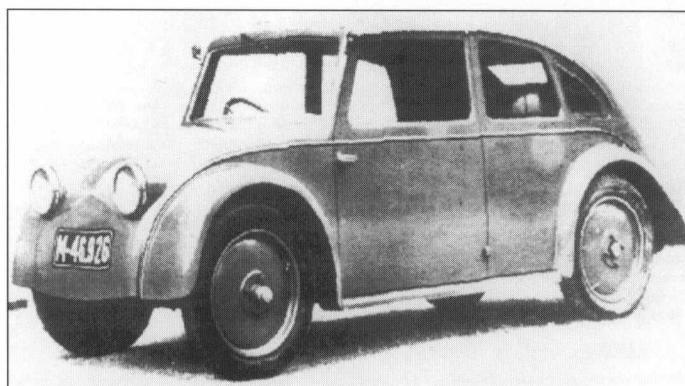


Fig. 6 – Tatra V 570 (1933) prototype, with 2-cylinder horizontally-opposed rear mounted air-cooled engine of 854 cc.
(From Gomola, *op. cit.*)

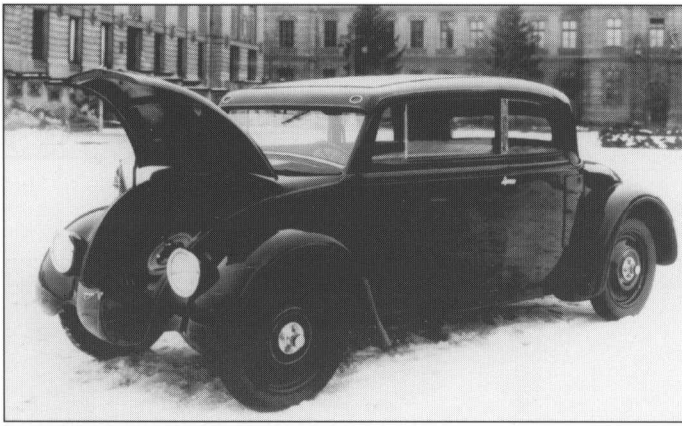


Fig. 7 – Škoda 932 (1932) prototype, with 4-cylinder air-cooled rear engine of 1,498 cc. (From the editor's collection.)

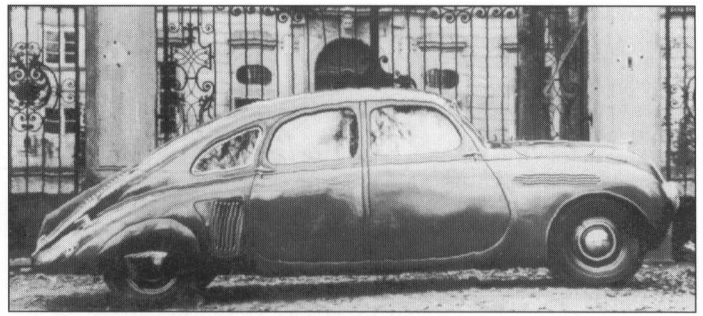


Fig. 8 – Škoda 935 (1935) prototype, with 4-cylinder water-cooled rear engine of 1,995 cc. (From Kozíšek and Králik, *Laurin & Klement Škoda 1895-1995.*)

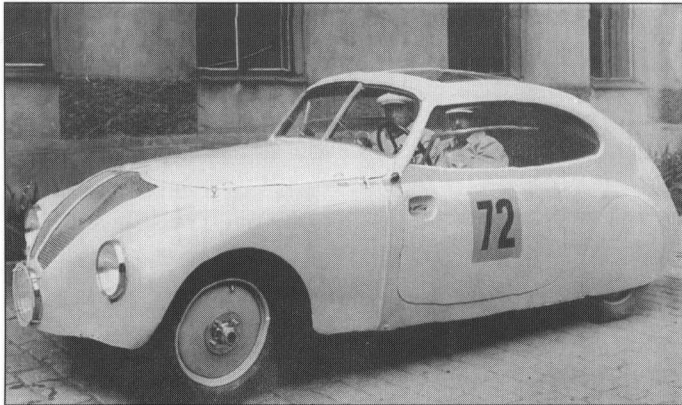


Fig. 9 – Praga Super Piccolo special sports car (1934). (From Příhoda, *Praga Devadsát let výroby automobilů.*)

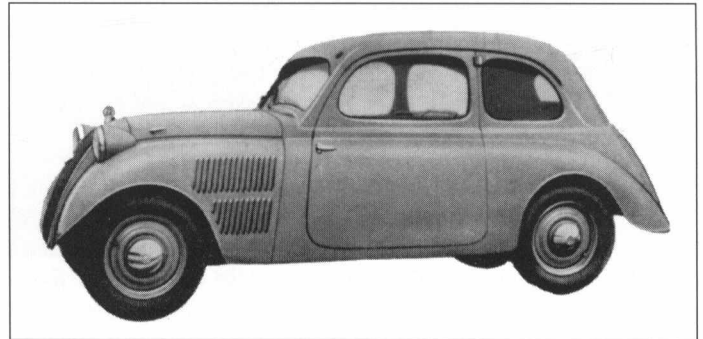


Fig. 10 – Skoda 420 Popular Special (c. 1936). (From the editor's collection.)

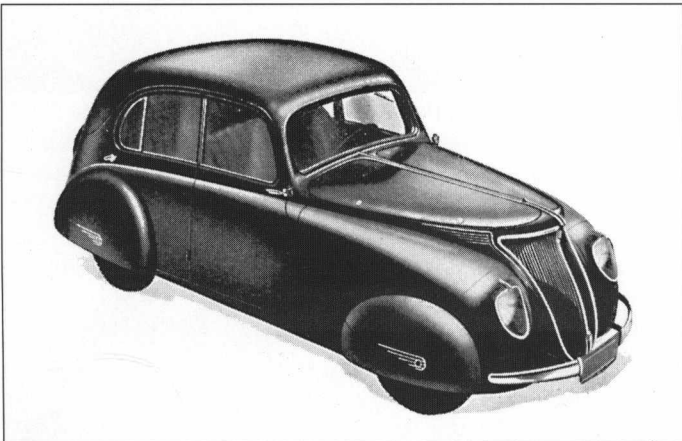


Fig. 11 – Praga Super Piccolo (1935). (From the editor's collection.)

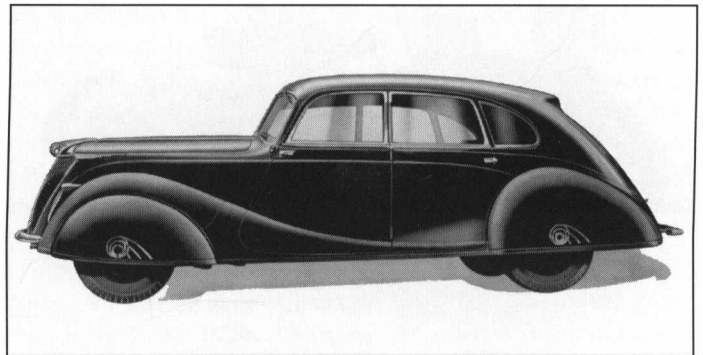


Fig. 12 – Praga Golden with streamlined body (1936). (From the editor's collection.)

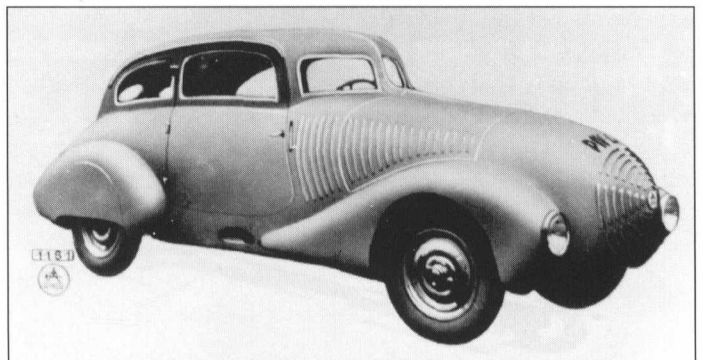


Fig. 13 – Wikov Kapka (1931), an unconventional design with a conventional 4-cylinder engine of 1,743 cc. displacement. (From the editor's collection.)

Passenger Cars Produced in Czechoslovakia (1925-46)

Two prominent car manufacturers of the Austro-Hungarian empire found themselves in the newborn Czechoslovakia when that country was created as a result of World War I. The elder of these was Nesseldorfer Wagenbau (1898) of Moravia. Its marque, NW, was renamed Tatra in 1922. The younger manufacturer was Laurin & Klement (1905), located in Bohemia. Its marque became Škoda, after being acquired by the armaments firm of the same name in 1925.

One can say that the 1930s was the golden age of automobile production in Czechoslovakia. As the 1930s began, passenger car manufacturers included Škoda, Praga, Tatra, Aero, Walter, and Wikov. During the decade Jawa came on the scene, and Wikov and Walter departed from passenger car production before the end of the decade. It was an era of licensing; several Walter models were, in essence, Fiats, while the first Jawas were developed from DKWs. Two German manufacturers, Röhr and Stoewer, produced Tatrás under license.

Production was never very large. In 1937, for example, the combined total of the four largest manufacturers was slightly less than 10,000 units: Škoda (4,452), Praga (2,145), Tatra (2,098), and Aero (1,277). Wikov's production that year was 17, and, earlier, in 1934, Wikov had produced 70 cars, to Walter's 634. Production was even less in 1933 when Praga led with 2,230 passenger cars followed by Tatra (2,109), Škoda (1,204), Aero (1,080), "Z" (844), Walter (563), and Wikov (73). According to Petr Kozišek, curator of automotive transportation at the National Technical Museum in Prague, there were several other marques, produced in even smaller quantity: Aspa (1925-27), Disk (1924-

25), Enka (1927-29), Gatter (1928-30), Kroboth-Favorit (1930-32), Myron (1934), Start (1919-22), Stelka (1923-25), and Trimobil-Sibrava, a 3-wheeler (1923-26).

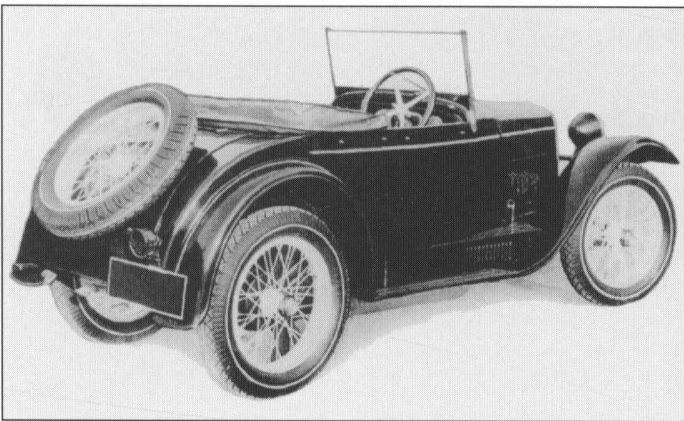
A unique feature of each Czech auto company was the fact that vehicle production was subsidiary to the manufacturer's principal business. This meant that the auto operations were subsidized by other operations, and economically unsound vehicles such as the V-12s of Walter and Tatra could be developed and introduced. Because auto production was ancillary, all passenger car manufacturers from those years remain in business today.

The following list of the major Czech auto manufacturers named above started as an effort to better understand the Czech scene. The years appearing under a manufacturer's name indicate the period in which a marque was produced. The list has been compiled from sometimes contradictory available sources, and is a breakdown of passenger car models available in each of the calendar years in the period 1925-46. Some of the engine displacement figures have been rounded to the nearest hundred cubic centimeters. The production numbers of some of these models is also indicated.

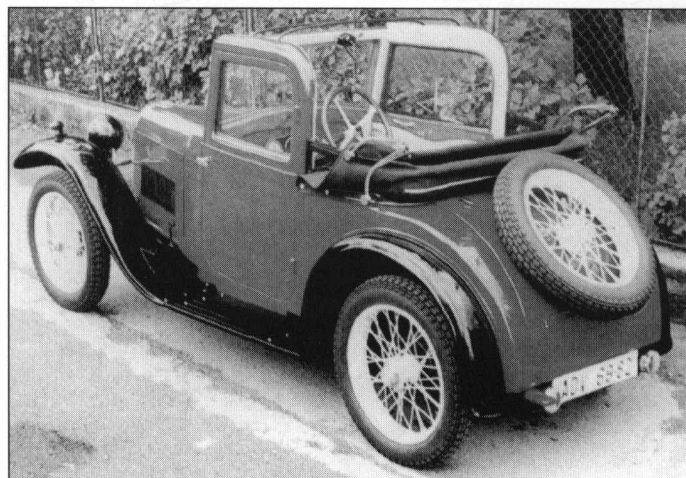
Unlike most other countries of the time, Czechoslovakia continued some passenger car production through the Second World War, although this was limited by demands of the German war machine for commercial vehicle production. Sales of passenger cars were limited to doctors and other categories of priority, as happened throughout the War in the U.S. with the final 1942 models whose sales were controlled.

Aero (1929-46)

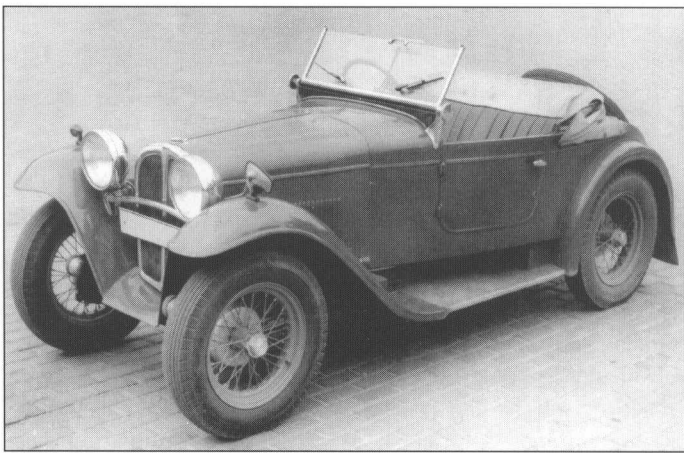
Photos from Gomola, Automobily Aero.



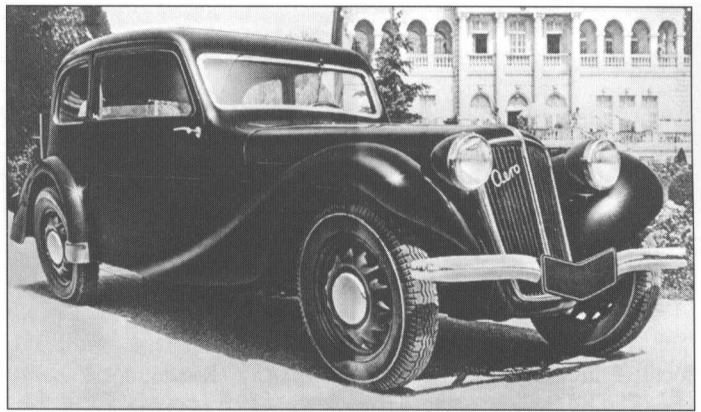
c. 1930 Aero Type 10 (Type 500).



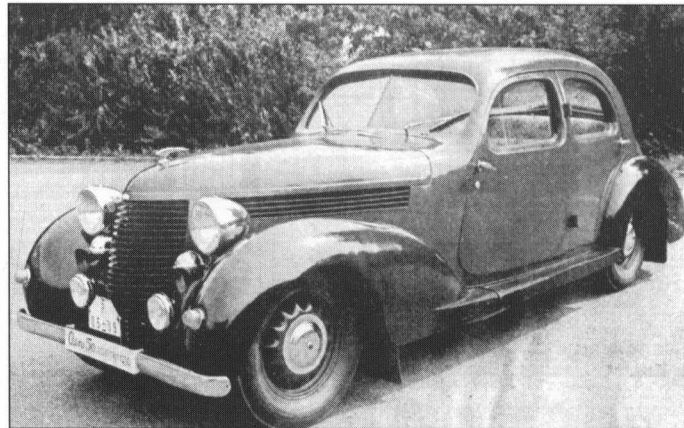
1932 Aero Type 18 (Type 662).



1933 Aero Type 20 (Type 1000).



1938 Aero Type 30; a hint of the Citroën Traction in the headlamps and grille.



1939 Aero Type 50 with a series-built Sodomka four-door sedan body.

For a history of Aero, see “The Aero Family—A Memoir of 80 Turbulent Years” elsewhere in this issue. (Although series production of the Type 662 ended in 1933, at

least 6 appear to have been assembled from remaining parts and are known as “1934” models.)

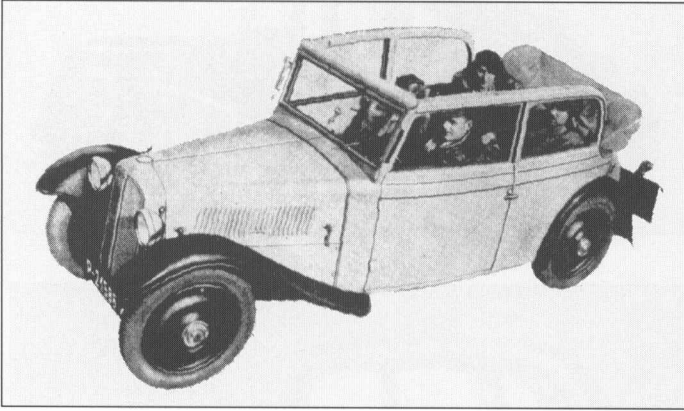
Year	Model Designation	Engine Characteristics
1931-32	Type 500 (Type 10)	500 cc 2 stroke 1 cyl.
1929-30	Type 500 (Type 10)	500 cc 2 stroke 1 cyl.
1931-32	Type 500 (Type 10)	500 cc 2 stroke 1 cyl.
	Type 662 (Type 18)	662 cc 2 stroke 2 cyl.
1932-33	Type 662 (Type 18)	662 cc 2 stroke 2 cyl.
	Type 1000 (Type 20)	998 cc 2 stroke 2 cyl.
1934-35	Type 1000 (Type 20)	998 cc 2 stroke 2 cyl.
	Type 30	1,000 cc 2 cyl.

Year	Model Designation	Engine Characteristics
1936-39	Type 30	1,000 cc 2 cyl.
	Type 50	2,000 cc 4 cyl.

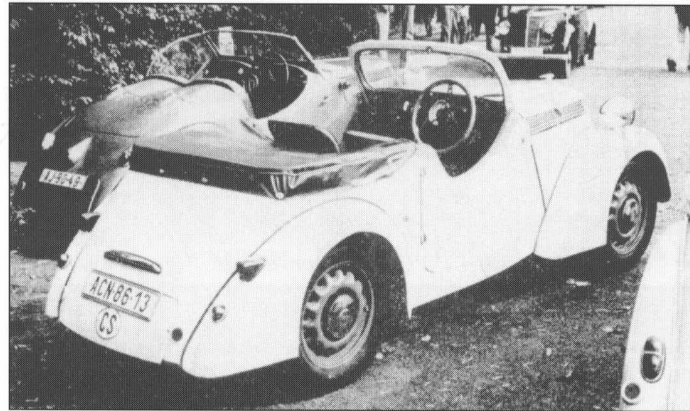
Production figures:
 Type 10: 1,359
 Type 662: 2,615
 Type 1000: 236
 Type 30: Unk.
 Type 50: Unk.

Jawa (1934-40)

Photos from Králik & Spremo, *Jawa*.



Jawa 700.



Jawa Minor.

Jawa was established in the early 1930s as a motorcycle manufacturer, a joint venture with the German car company Wanderer, a unit of Auto Union, which later licensed the

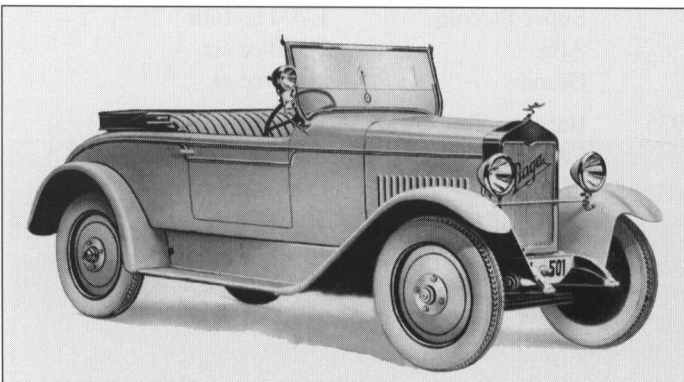
company to produce a version of the DKW Meisterklasse. Jawa continues today as a noted motorcycle manufacturer.

Year	Model Designation	Engine Characteristics
1934-36	700 (DKW Meisterklasse)	684 cc 2 cyl.

Year	Model Designation	Engine Characteristics
1937-40	Minor	615 cc 2 cyl.
(basis of postwar Aero-Minor)		

Praga (1907-47)

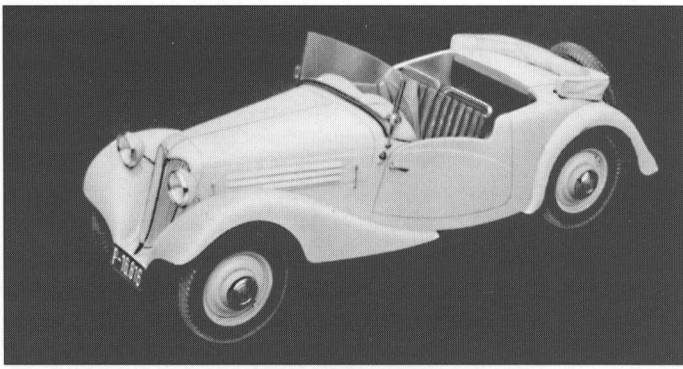
Photos from the editor's collection of factory sales literature.



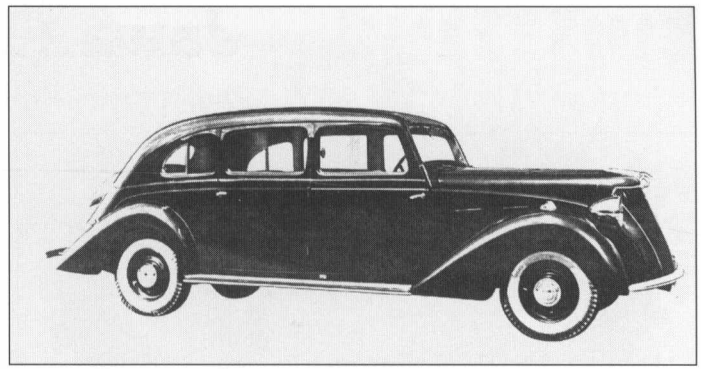
1928 Praga Piccolo sport two-seater.



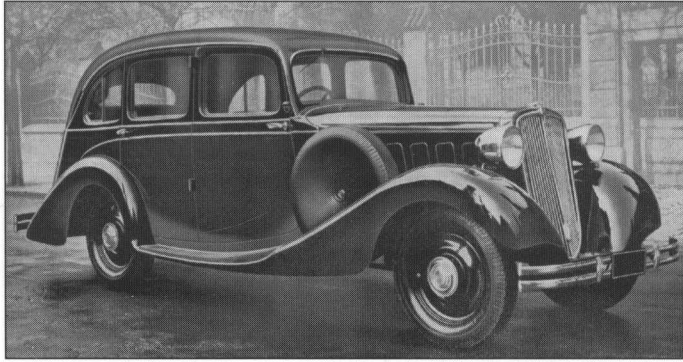
c. 1932 Praga Grand, cabriolet Kellner.



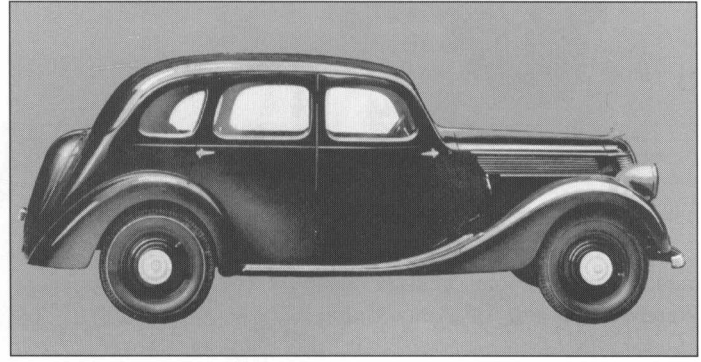
1934 Praga Baby convertible.



1935 Praga Golden.



1936 Praga Alfa.



1938 Praga Lady, very American in appearance.

After discontinuing passenger car production at the end of World War II, this Prague-based company continued to manufacture trucks until 1965, and continues in business today as a manufacturer of the UV 80 universal vehicle intended for all-terrain use. The company also manufactures gear boxes.

A 1990s factory publication indicates the following inclusive manufacture dates for the models named: Mignon (1911-29); Grand (1912-32); Alfa (1913-42); Piccolo (1924-41); Super Piccolo (1934-36); Baby (1934-37); Golden (1934-41);

and Lady (1935-42).

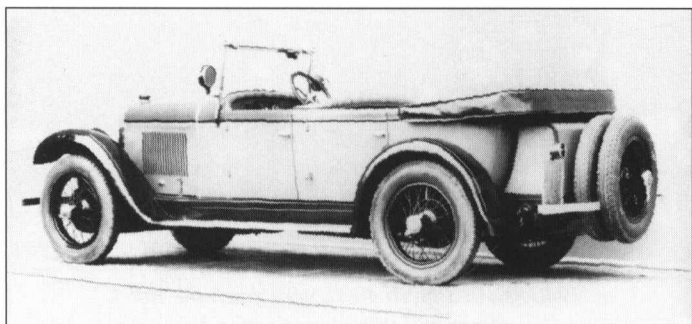
The flagship Golden model had a total run of 73 units (23 of them streamlined), including two convertibles. One of the last Golden's served as the official car for President Beneš. Production after 1937 is believed to be minuscule.

Praga cars were said to be sturdy machines for rough conditions. They lacked the character of sports cars but won many competitions and endurance trials.

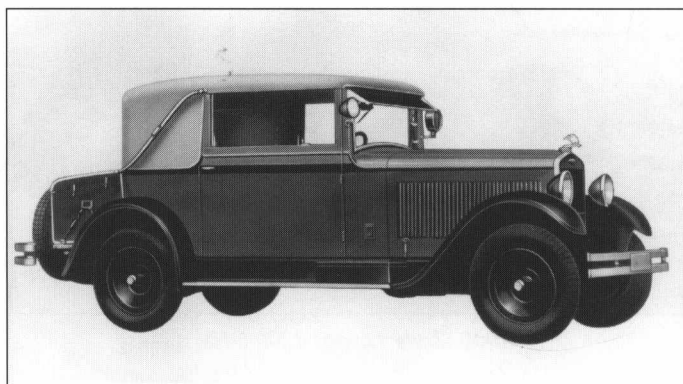
Year	Model Designation	Engine Characteristics
1924	Piccolo	707 cc four
1925-26	Piccolo	824 cc four
1927-28	Piccolo	856 cc four
	Alfa	1,496 cc six
	Mignon	2,490 cc six
	Grand	3,400 cc eight
1929-30	Piccolo	856 cc four
	Alfa	1,795 cc six
	Mignon	2,636 cc six
	Grand	3,400 cc eight
1931	Piccolo	856 cc four
	Piccolo 1.5	1,447 cc four
	Grand	4,423 cc eight
1932-33	Piccolo	995 cc four
	Piccolo 1.5	1,447 cc four
	Alfa	1,796 cc six
	Grand	4,423 cc eight
1934	Baby	995 cc four
	Piccolo	995 cc four
	Lady	1,660 cc four

Year	Model Designation	Engine Characteristics	
	Super-Piccolo	1,700 cc four	
	Alfa	2,500 cc six	
	Grand	4,423 cc ei	
1935	Baby	995 cc four	
	Piccolo	1,447 cc four	
	Lady	1,700 cc four	
	Alfa	2,500 cc six	
	Grand	4,423 cc eight	
	1936-37	Baby	995 cc four
		Piccolo	995 cc four
Lady		1,700 cc four	
Alfa		2,500 cc six	
	Golden	3,900 cc six	
	1938-41	Piccolo	1,128 cc four
Lady		1,661 cc four	
Alfa		2,492 cc six	
Golden		3,900 cc six	
1942	Lady	1,661 cc four	
	Alfa	2,492 cc six	

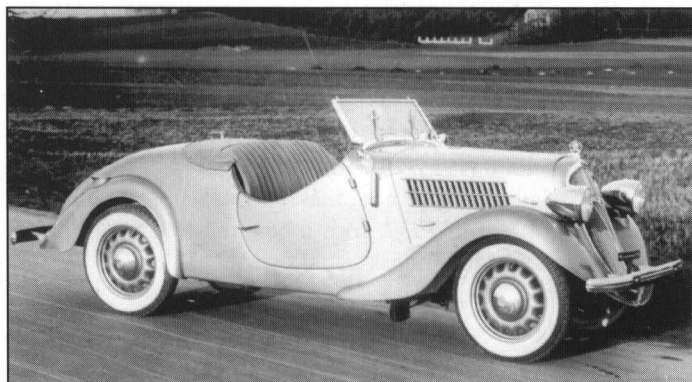
Skoda (1925-)



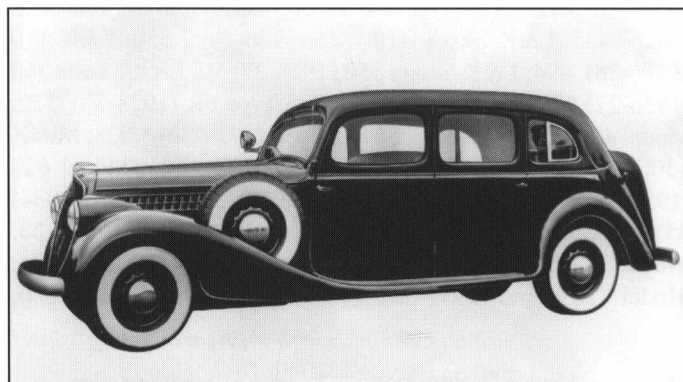
*c. 1929 Škoda 4R standard factory phaeton.
(From Kozíšek and Králik, L&K Škoda 1895-1995.)*



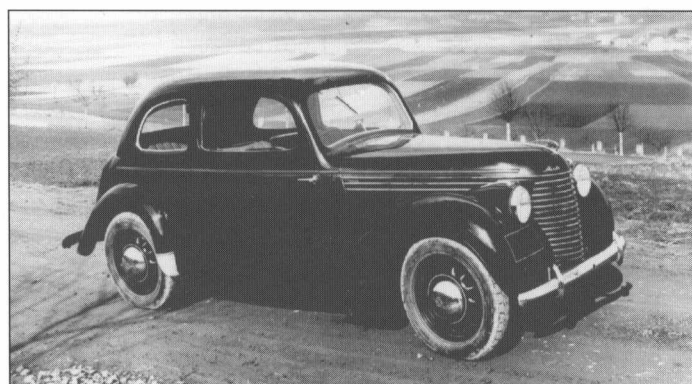
*c. 1929 Škoda 645 cabriolet.
(From the editor's collection.)*



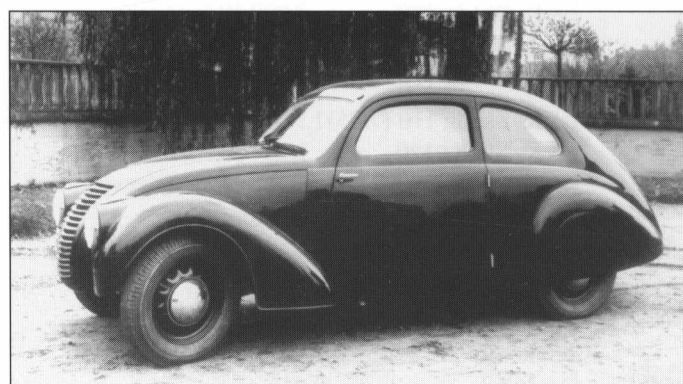
*1937 Škoda Popular roadster.
(From the editor's collection.)*



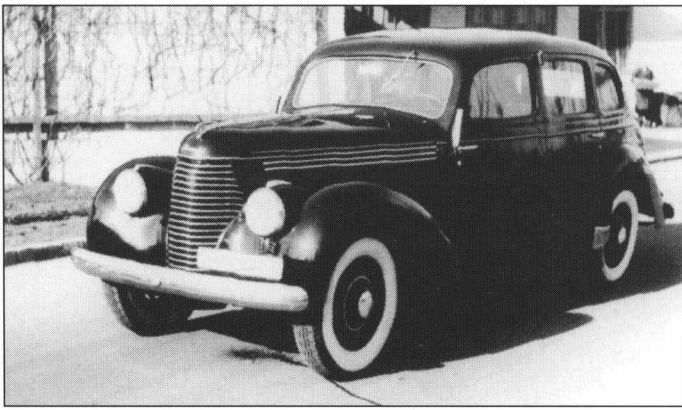
*1938 Škoda Superb limousine.
(From the editor's collection.)*



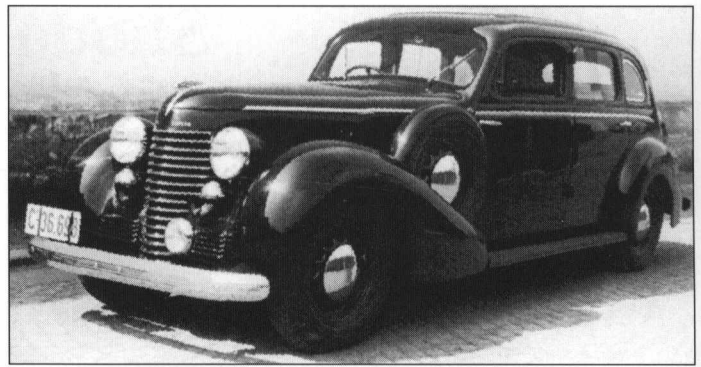
*1937 Škoda Popular.
(From the editor's collection.)*



*1939 Škoda Rapid 1500 OHV.
(From the editor's collection.)*



1940 Škoda Favorit 2200 OHV.
(From Kozíšek and Králik, op cit.)



c. 1940 Škoda Superb 4000, very much the Buick.
(From the editor's collection.)

Škoda was a leading armaments and railroad manufacturer in Bohemia which acquired the auto firm of Laurin & Klement in 1925. At that time, it had begun to produce the Hispano-Suiza under license. Over the years, it has become the largest Czech car manufacturer, and is now a unit of Volkswagen.

For the vehicles listed below, the production figures were: Hispano-Suiza (1925-29) 100; L&K- Škoda 110 7/20 (1926) 435; L&K-Škoda 110 7/25 (1926-29) 2,550; L&K 120 (1926-28), 494; L&K-Škoda 350 (1926-27) 50; L&K-Škoda 360 (1936-27) 27; Type 4R (1928-30),975;Type 6R (1928-30), 322; Model 422 (1931-32),3,435; Model 430 (1929-32) 3,028; Model 430D (1930-32), 651; Model 633 (1931-34), 504; Model 637 (1932-33), 11; Model 637D (1934-35), 39; Model 637K (1934-35), 17;Model 645 (1929-34), 758; Model 630 (1932-36), 58; Model 860 (1929-32) 49; Model 420 Standard (1933-34), 421; Model 420 Rapid (1934-35), 480; Model 418 Popular (1934),

200; Model 410 Popular (1934-38), 4,220; Model Popular OHV (1937-38), 5,510; Model Popular 995 (1939-46), 1,500; Model Popular 1100 OHV (1938-46), 6,600; Model Popular 1101 (1940-44), 1,019; Model Popular Sport Monte Carlo (1935-38), 72; Model Rapid Six (1935), 1; Model Rapid (1935-38), 3,900 + 600 with 1,564 cc engines); Model Rapid OHV (1938-47), 1,804; Model Rapid 2200 (1941-42), 34, Model Favorit (1936-39), 169; Model Favorit 2000 OHV (1938-41), 54; Model 640 Superb (1934-36), 201, Model 902 Superb (1936037), 53, Model 913 Superb (1036-39), 350; Model 924 Superb OHV (1938-49), 275 of which 162 were produced after 1946; and Model Superb 4000 (1939-40), 10.

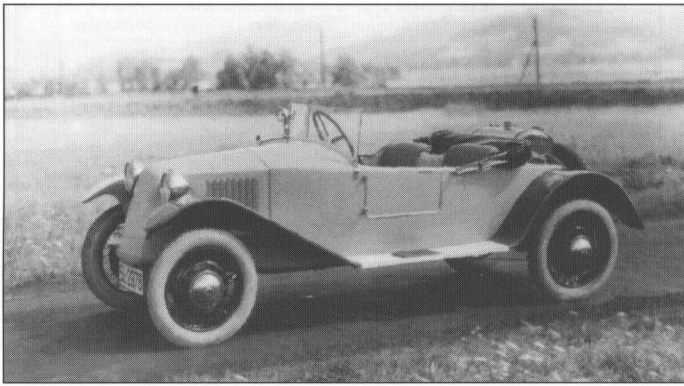
It is interesting to note that Škoda, whose production was less than 4,500 in 1937, rose a hundred-fold by 2000, to something around 450,000 passenger cars.

Year	Model Designation	Engine Characteristics
1925	Škoda-Hispano-Suiza	6,594 cc six
1926	L&K- Škoda 110 (7/20)	1,460 cc four (sleeve valve)
	L&K- Škoda 150	1,460 cc four (sleeve valve)
	L&K- Škoda 110 (7/25)	1,944 cc four
	L&K- Škoda 120	1,944 cc four
	L&K- Škoda 350	3,498 cc six (sleeve valve)
	L&K- Škoda 360	3,970 cc four
	Škoda-Hispano-Suiza	6,594 cc six
1927	L&K- Škoda 110	1,791 cc four
	L&K- Škoda 110 (7/25)	1,944 cc four
	L&K- Škoda 120	1,944 cc four
	L&K- Škoda 350	3,498 cc six (sleeve valve)
	L&K- Škoda 360	3,970 cc four
	Škoda-Hispano-Suiza	6,594 cc six
1928	L&K- Škoda 110 (7/25)	1,944 cc four
	L&K- Škoda 120	1,944 cc four
	Škoda 4R	1,944 cc four
	Škoda 6R	2,916 cc six
	Škoda-Hispano-Suiza	6,594 cc six
1929	430	1,661 cc four
	430D	1,802 cc four

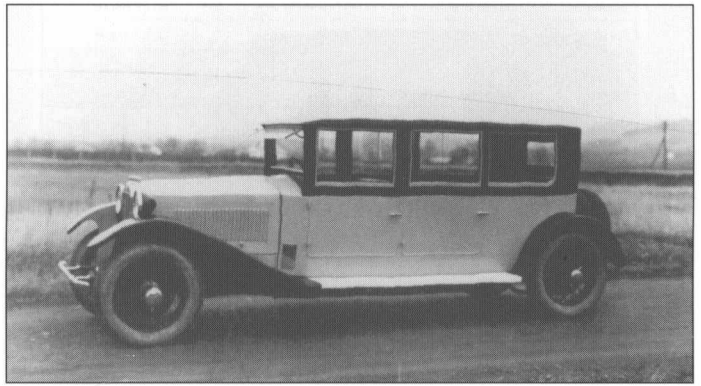
Year	Model Designation	Engine Characteristics
	L&K- Škoda 110 (7/25)	1,944 cc four
	4R	1,944 cc four
	645	2,492 cc six
	6R	2,916 cc six
	860	3,880 cc straight 8
	Škoda-Hispano-Suiza	6,594 cc six
1930	422	1,195 cc four
	430	1,661 cc four
	430D	1,802 cc four
	4R	1,944 cc four
	645	2,492 cc six
	650	2,704 cc six
	6R	2,916 cc six
	860	3,880 cc straight 8
1931	422	1,195 cc four
	430	1,661 cc four
	430D	1,802 cc four
	633	1,792 cc six
	645	2,492 cc si
	650	2,704 cc six
	860	3,880 cc straight 8

Year	Model Designation	Engine Characteristics	Year	Model Designation	Engine Characteristics		
1932	422	1,195 cc four	1938	Popular (iv)	995 cc four		
	430	1,661 cc four		Popular 1100 OHV	1,089 cc four		
	430D	1,802 cc four		Popular Monte Carlo	1,385 cc four		
	633	1,792 cc six		Rapid	1,386 cc four		
	637	1,961 cc six		Rapid 1500	1,564 cc four		
	645	2,492 cc six		Favorit	1,802 cc four		
	650	2,704 cc six		Favorit 2000 OHV	2,091 cc four		
	860	3,880 cc straight 8		913 Superb	2,916 cc six		
1933	420 Standard	995 cc four		1939	921 Superb	3,137 cc six	
	430D	1,802 cc four			Popular (iv)	995 cc four	
	633	1,742 cc six	Popular 1100 OHV		1,089 cc four		
	637	1,961 cc six	Rapid 1500		1,564 cc four		
	645	2,490 cc six	Favorit 2000		2,091 cc four		
	650	2,704 cc six	Rapid 2200 OHV		2,200 cc six		
	860	3,880 cc straight 8	913 Superb		2,916 cc six		
1934	418 Popular	903 cc four	921 Superb		3,137 cc six		
	420 Popular (i)	903 cc four	919 Superb 4000		3,991 cc six		
	420 Popular (ii)	995 cc four	1940		Popular (iv)	995 cc four	
	420 Standard	995 cc four		Popular 1101 OHV	1,089 cc four		
	420 Rapid	1,195 cc four		Rapid 1500	1,564 cc four		
	430D	1,802 cc four		Favorit 2000 OHV	2,091 cc four		
	633	1,742 cc six		921 Superb	3,137 cc six		
	637D, 637K	1,961 cc six		919 Superb 4000 (ii)	3,991 cc six		
640 Superb	2,492 cc six	1941		Popular (iv)	995 cc four		
1935	420 Popular (ii)			903 cc four	Popular 1101 OHV	1,089 cc four	
	420 Standard			995 cc four	Favorit 2000 OHV	2,091 cc four	
	Rapid			1,386 cc four	Rapid 1500	1,564 cc four	
	Popular Monte Carlo		1,385 cc four	Rapid 2200	2,199 cc six		
	430D		1,802 cc four	921 Superb	3,137 cc six		
	Rapid Six		1,961 cc six	1942	Popular (iv)	995 cc four	
	637D, 637K		1,961 cc six		Popular 1101 OHV	1,089 cc four	
	640 Superb		2,492 cc six		Rapid 1500	1,564 cc four	
1936	Popular (iii)		995 cc four		Rapid 2200	2,199 cc six	
	Rapid	1,386 cc four	921 Superb		3,137 cc six		
	Popular Monte Carlo	1,385 cc four	1943/44		Popular (iv)	995 cc four	
	430D	1,802 cc four			Popular 1101 OHV	1,089 cc four	
	Favorit	1,802 cc four			921 Superb	3,137 cc six	
	640 Superb	2,492 cc six			1945/46	Popular 1101 OHV	1,089 cc four
	902 Superb	2,704 cc six				Rapid 1500	1,564 cc four
913 Superb	2,916 cc six	921 Superb		3,137 cc six			
1937	Popular (iii)(iv)	995 cc four		1938		Popular (iv)	995 cc four
	Popular Monte Carlo	1,385 cc four				Popular 1100 OHV	1,089 cc four
	Rapid	1,386 cc four				Popular Monte Carlo	1,385 cc four
	Favorit	1,802 cc four				Rapid	1,386 cc four
	902 Superb	2,704 cc six	Rapid 1500			1,564 cc four	
	913 Superb	2,916 cc six	Favorit			1,802 cc four	
			Favorit 2000 OHV			2,091 cc four	

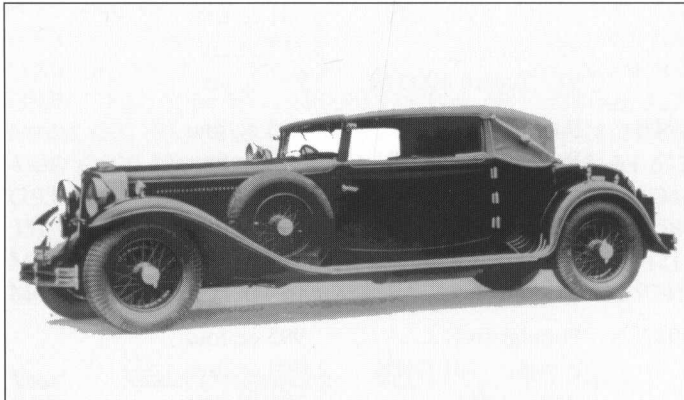
Tatra (1922–1998)



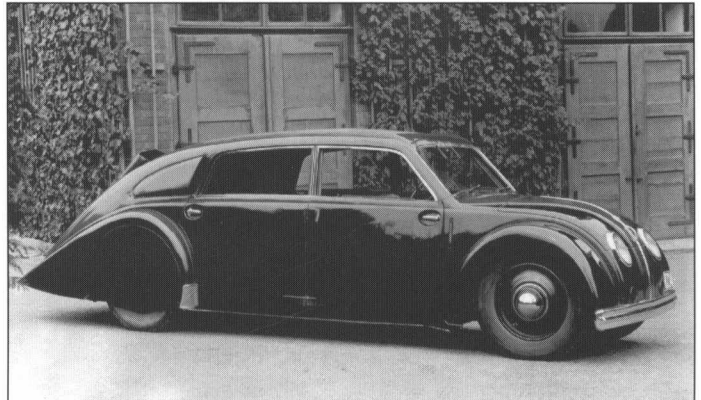
1926 Tatra 12 Sport.
(From Gomola, *Tatra 100 Let Českého Automobilu*.)



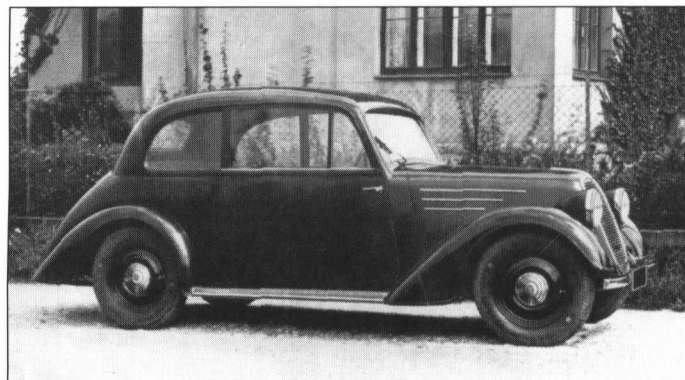
1926 Tatra 17.
(From Gomola, *op.cit.*)



1933 Tatra 80 V-12 carbioret.
(From the editor's collection.)



1934 Tatra 77 V-8 (air-cooled rear engine).
(From the editor's collection.)



1939 Tatra 57b.
(From Gomola, *op.cit.*)

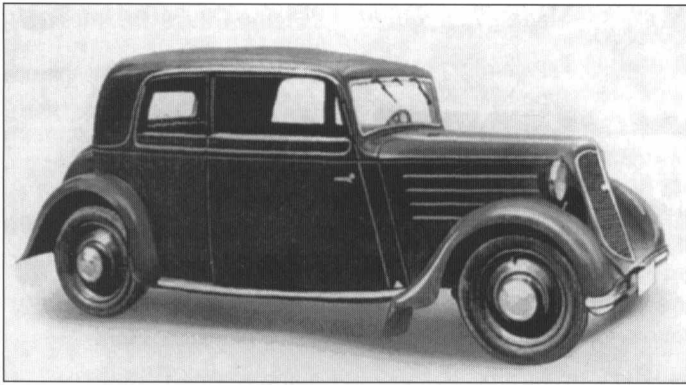


Fig. 1 – 1933 Röhr Junior of Germany, based on a Tatra 57 license.
(From *Automobile des Hans Gustav Röhr, Verkehrsmuseum Dresden.*)

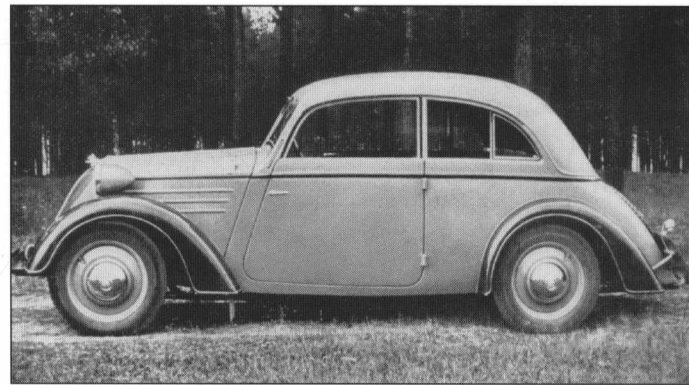


Fig. 2 – 1939 Greif-Junior of Germany, based on a Tatra 57 license.
(From *Auto, Frankfurt a. Main, 1 mai 1936.*)

The origins of Tatra go back a century and a half, to 1850 when Ignac Šustala began a carriage making operation in Moravia. The company diversified into rail carriage production in the late 19th century, taking the name Nesseldorfer Wagenbau in 1891. Its first car, the Präsident, was built in 1897 and its first truck a year later. Its vehicles were known under the name of NW until after World War I, when the name Tatra was chosen as more representative of a company and product of the new nation.

The production of some of these models was: Type 11 (3,656), Type 17 (378), Type 17/31 (318), Type 80 (26)m Type 70 (58), Type 70a (56), and the rear-engined cars Type 77 (95), Type 77a (154), Type 87 (3,023, including production until 1950), and Type 97 (510). Type 57b remained in production until 1948, Type 87 until 1950, and Type 57a until 1951. The company's last passenger car, the T700, retaining the air-cooled rear-mounted V-eight, is said to have been produced in 100 units during its brief lifetime (1996-98, though some say production ended in February 1999).

Type 57 was produced under license in Germany by Röhr in the years 1933-35, featuring the central tubular chassis, independent rear suspension, centralized chassis lubrication, and hydraulic brakes of the original but upgrading its flat four engine to 1,485 cc. The car was known as the Junior (Fig.1), and 1,700 were said to be made. Röhr sold the license to Stoewer, which marketed it as the Greif-Junior (Fig. 2), and sold 4,000 of them in the years 1935-39.

As of January 1, 1995, a separate company, Tatra Příbor, was formed for the exclusive production of passenger cars (in small quantity), but discontinued them during 1998. The truck manufacturing operations continued. Late in 2001, the Czech government approved the sale of Tatra to S.D.C., a U.S. investment banking firm headed by Gen. Alexander Haig, with the understanding that it would participate in joint ventures with the U.S. earthmover firm, Terex.

Year	Model Designation	Engine Characteristics
1922	Type 10 (NW Type U)	5,340 cc six
1923-24	Type 11	1,056 cc flat two
	Type 20 (NW Type T)	3,562 cc four
	Type 10 (NW Type U)	5,340 cc six
	Type 11	1,056 cc flat two
1925	Type 17	1,930 cc four
	Type 20 (NW Type T)	3,562 cc four
	Type 10 (NW Type U)	5,340 cc six
	Type 11	1,056 cc flat two
1926	Type 12	1,056 cc two
	Type 30	1,656 cc four
	Type 17	1,930 cc six
	Type 20 (NW Type T)	3,562 cc four
	Type 10 (NW Type U)	5,340 cc six
	Type 12	1,056 cc flat two
1927	Type 30	1,656 cc four
	Type 30/52	1,910 cc four
	Type 17	1,930 cc six
	Type 10 (NW Type U)	5,340 cc six

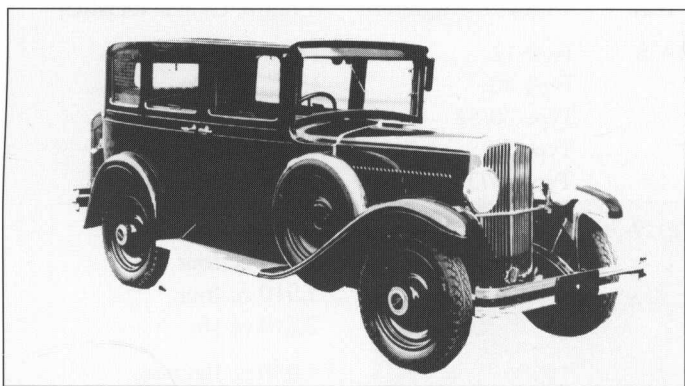
Year	Model Designation	Engine Characteristics
1928	Type 12	1,056 cc flat two
	Type 30	1,656 cc four
	Type 30/52	1,910 cc four
	Type 17	1,930 cc six
	Type 17/31	2,310 cc six
1929-30	Type 12	1,056 cc flat two
	Type 30	1,656 cc four
	Type 30/52	1,910 cc four
	Type 17/31	2,310 cc six
1931-32	Type 12	1,056 cc flat two
	Type 57	1,160 cc flat four
	Type 54	1,484 cc four
	Type 30	1,656 cc four
	Type 30/52	1,910 cc four
	Type 70	3,400 cc watercooled six
1933	Type 80	5,990 cc V-twelve
	Type 12	1,056 cc flat two
1933	Type 57	1,160 cc flat four
	Type 54	1,484 cc four

(con'd.)

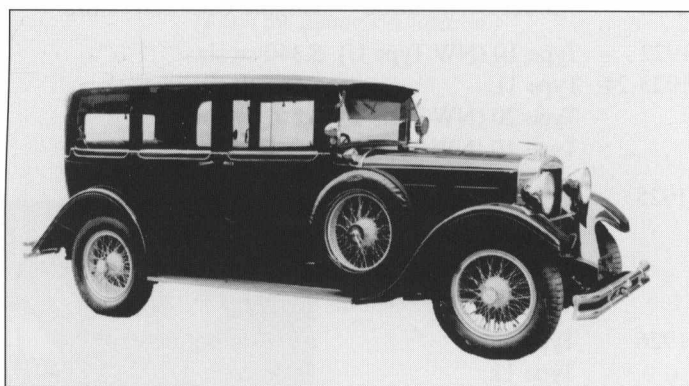
Year	Model Designation	Engine Characteristics	Year	Model Designation	Engine Characteristics
	Type 30	1,656 cc four		Type 52	1,910 cc four
	Type 75	1,688 cc four		Type 87	2,900 cc rear V-eight
	Type 52	1,910 cc four		Type 77a	3,400 cc rear V-eight
	Type 80	5,990 cc V-twelve		Type 70a	3,400 cc six
1934	Type 12	1,056 cc flat two	1937	Type 57a	1,155 cc four
	Type 57	1,160 cc flat four		Type 75	1,688 cc flat four
	Type 54	1,688 cc four		Type 97	1,760 cc rear four
	Type 75	1,688 cc four		Type 52	1,910 cc four
	Type 52	1,910 cc four		Type 87	2,900 cc rear V-eight
	Type 77	2,970 cc rear V-eight		Type 77a	3,400 cc rear V-eight
	Type 70a	3,400 cc six	1938	Type 57a	1,155 cc four
	Type 80	5,990 cc V-twelve		Type 75	1,688 cc flat four
1935	Type 57	1,160 cc flat four		Type 97	1,760 cc rear four
	Type 75	1,688 cc four		Type 52	1,910 cc four
	Type 52	1,910 cc four		Type 87	2,900 cc rear V-eight
	Type 77a	3,400 cc rear V-eight	1939	Type 57a	1,155 cc four
	Type 70a	3,400 cc watercooled six		Type 57b	1,256 cc four
	Type 80	5,990 cc V-twelve		Type 75	1,688 cc flat four
	Type 90	2,500 cc 4 cylinder, 2 made		Type 97	1,760 cc rear four
1936	Type 57a	1,155 cc four		Type 87	2,900 cc rear V-eight
	Type 75	1,688 cc four			
	Type 97	1,760 cc rear four			

Walter (1908-37)

Photos from the editor's collection.



1931 Walter Bijou, based on a Fiat 514 license.



1931 Walter Super.

Like so many car manufacturers, Walter began life as a bicycle manufacturer. It soon added engines to the bicycles and achieved fame as a motorcycle manufacturer. This led to 3-wheeled vehicles, and, after World War I, to the production of passenger cars and aircraft engines.

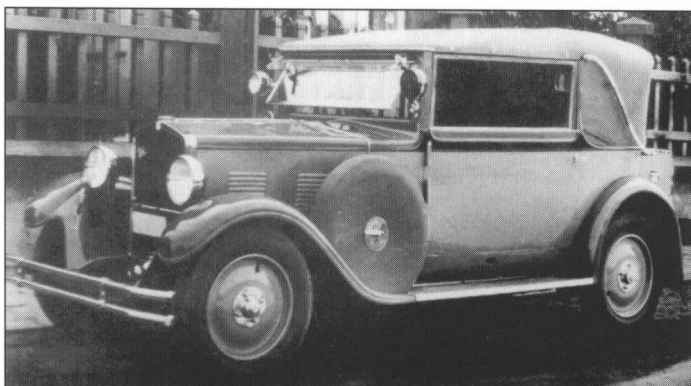
Of seven Walter models produced in the early 1930s, five were built under licenses with Fiat. Over its 29-year life,

Walter produced a total of only 10,000 cars, including 471 in 1933, 469 in 1934, 262 in 1935, 101 in 1936, and a final 13 in 1937. The total production of the V-12 Royal in its three years may have been as high as 12, though only 3 are said to have been sold. The company continues today in its principal line of business as a manufacturer and repairer of aircraft engines.

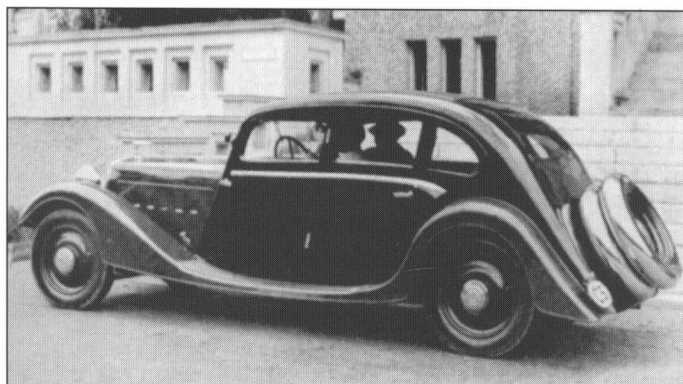
Year	Model Designation	Engine Characteristics	Year	Model Designation	Engine Characteristics
1925-27	P III	1,945 cc four	1933	Junior S (Fiat 508S)	995 cc four
1928-29	4B	1,908 cc four	Princ (Fiat 521C)	2,492 cc six	
	P IV	2,373 cc four	Lord (Fiat 521L)	2,561 cc six	
	6B	2,863 cc six	Regent	2,850 cc, 3,250 cc six	
1930	Standart 6	2,863 cc six	Royal	5,879 cc V-twelve	
	Super 6	3,257 cc six	1934	Junior SS (Fiat 508S)	1,089 cc four
1931	Bijou (Fiat 514)	1,438 cc four	Lord (Fiat 521L)	2,561 cc six	
	Standart 6	2,863 cc six	Regent	2,850 cc, 3,250 cc six	
	Super 6B	3,257 cc six	Standart S	3,257 cc six	
	Regent	3,257 cc six	1935/36	Junior SS (Fiat 508S)	1,089 cc four
	Royal	5,879 cc V-twelve	Regent	2,850 cc, 3,250 cc six	
1932	Junior(Fiat 508 Balilla)	995 cc four	Standart S	3,257 cc six	
	Regent	2,850 cc, 3,250 cc six	1937	Junior SS (Fiat 508S)	1,089 cc four
	Royal	5,879 cc V-twelve			

Wikov (1925-37)

Photos from Gomola, *Wikov*.



c. 1930 Wikov 7/28 cabriolet.



1935 Wikov 40.

Witcherle and Kovářik were two manufacturers of agricultural equipment, who merged and decided, in the early 1920s, to manufacture an automobile under their combined names, Wikov.

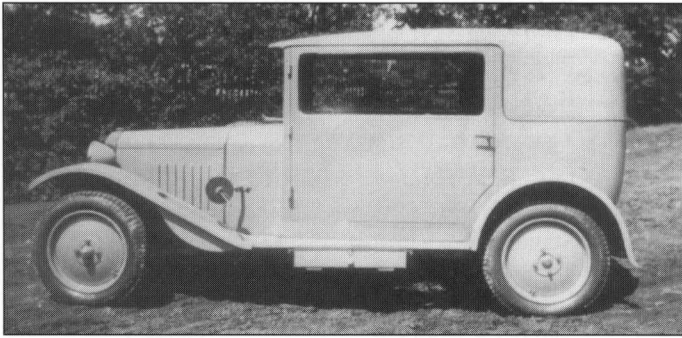
Some reference books say that the Wikov was built under a license from Ansaldo of Italy. More likely is that the Ansaldo served as the inspiration for the first Wikov of 1924, company management having purchased a functional chassis at

the Vienna Show of 1922.

The cars seem to have been technologically advanced with aluminum cylinder heads and use of aluminum in their construction. The company produced 280 of the Type 7/28, 150 of the Type 35, 330 of the Type 40, and only two of the Type 70. The Kapka streamline excited much press attention but virtually no buyers; its total production was three or four.

Year	Model Designation	Engine Characteristics	Year	Model Designation	Engine Characteristics
1925-27	Type 7/28	1,266 cc 4 cylinder	1931-32	Type 7/28	1,266 cc 4 cylinder
1928-29	Type 7/28	1,266 cc 4 cylinder	Type 35	1,743 cc 4 cylinder	
	1500 Sport	1,476 cc 4 cylinder	Kapka (streamline)	1,743 cc 4 cylinder	
1930	Type 7/28	1,266 cc 4 cylinder	1933-34	Type 35	1,743 cc 4 cylinder
	Type 35	1,743 cc 4 cylinder	Type 40	1,941 cc 4 cylinder	
		Type 70 (prototype)	3,485 cc 8 cylinder		
1935-37	Type 40	1,941 cc 4 cylinder			

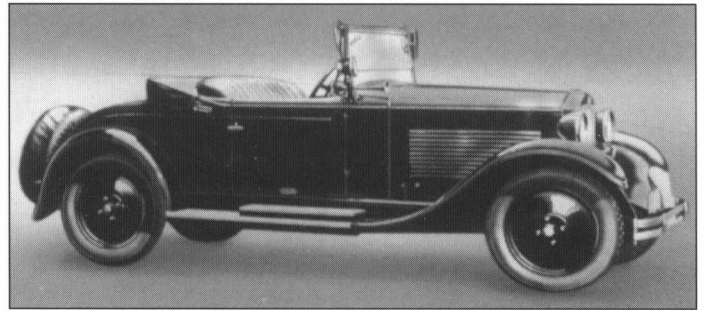
"Z" (1925-36)



1930 Z 4/18.

(From Popelka and Cincibuch, *S písmenem Z na chladiči.*)

Zbrojovka Brno was founded as an arms works in the Moravian capital of Brno in 1918. The company began the manufacture of small cars in the middle 1920s with the Disk.



c. 1931 Z 9.

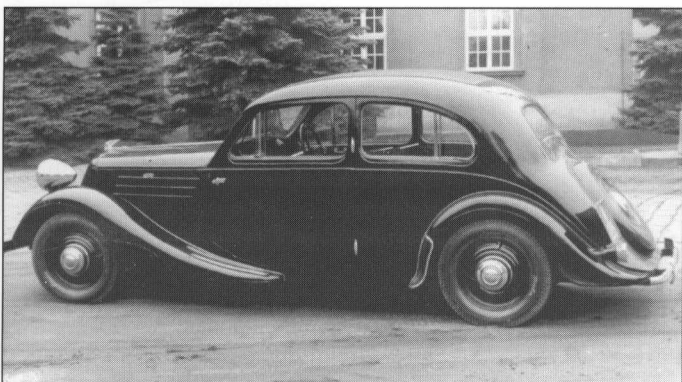
(From Popelka and Cincibuch, *op cit.*)

These were initially designed by Ing. Břetislav Novotný, who later went to Aero. The marque was called "Z."

The company lives on today, still producing arms.

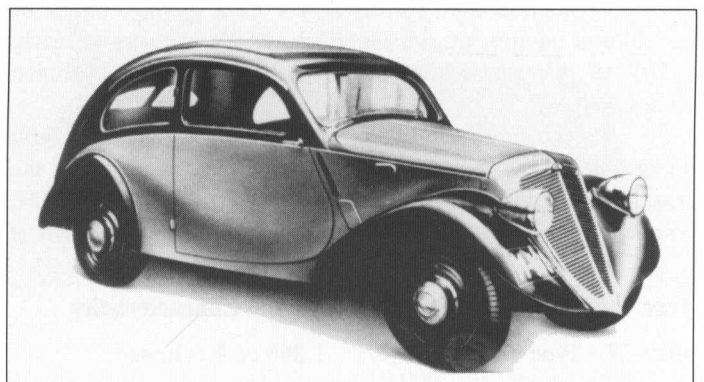
Year	Model Designation	Engine Characteristics
1925	Disk	598 cc 4 cylinder
1927-29	Z 4	1,004 cc 2 cylinder
1930	Z 9	993 cc 2 cylinder
	Z 4/18	1,004 cc 2 cylinder
1931-32	Z 9	993 cc 2 cylinder
1933	Z 4 (i)	905 cc 2 cylinder
	Z 4 (ii)	906 cc 2 cylinder

Year	Model Designation	Engine Characteristics
1934	Z 4 (ii)	906 cc 2 cylinder
	Z 4 (iii), (iv)	981 cc 2 cylinder
1935	Z 6 Hurvinek	736 cc 2 cylinder
	Z 4 (iv), (v)	981 cc 2 cylinder
	Z 5 Express	1,470 cc 4 cylinder
1936	Z 6 Hurvinek	736 cc 2 cylinder
	Z 4 (v)	981 cc 2 cylinder
	Z 5 Express	1,470 cc 4 cylinder



1935 Z5 "Express."

(From the editor's collection.)



1936 Z6.

(From the editor's collection.)

Czech Coachbuilders



Fig. 1 – Brožík: Škoda Hispano-Suiza (c. 1927).
(From Mária Šuman-Hreblay.)

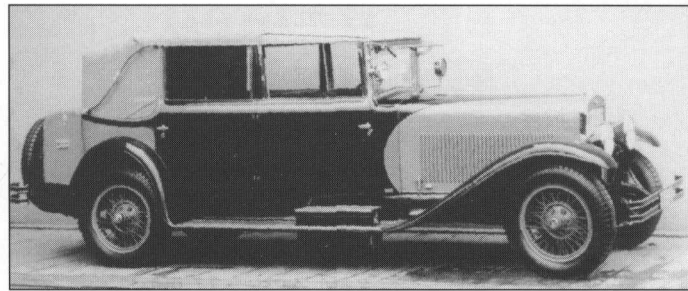


Fig. 2 – Jech: Škoda 860 cabriolet (c. 1930).
(From Kozíšek and Králik, *Laurin & Klement Škoda.*)

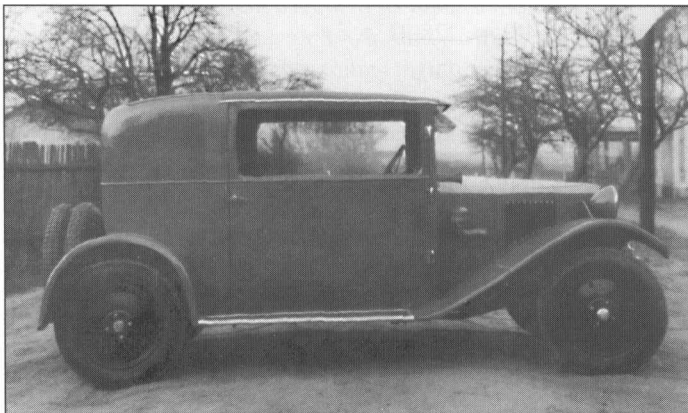


Fig. 3 – Lepil: Tatra 30 (1928).
(From Gomola, *Tatra 100 Let Českého Automobilů.*)

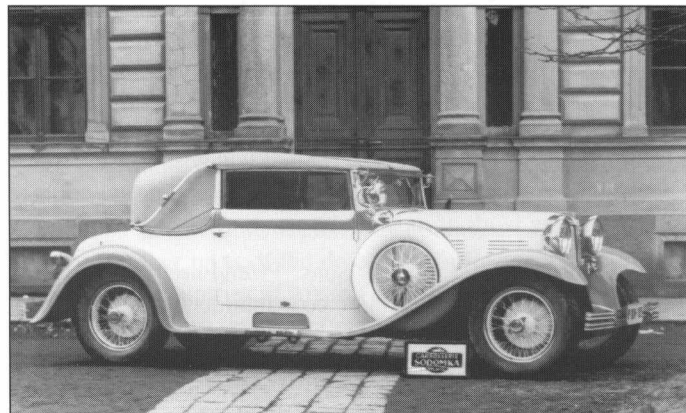


Fig. 4 – Petera: Praga Golden (1937).
(From Příhoda, *Praga Devadesát let výroby automobilů.*)

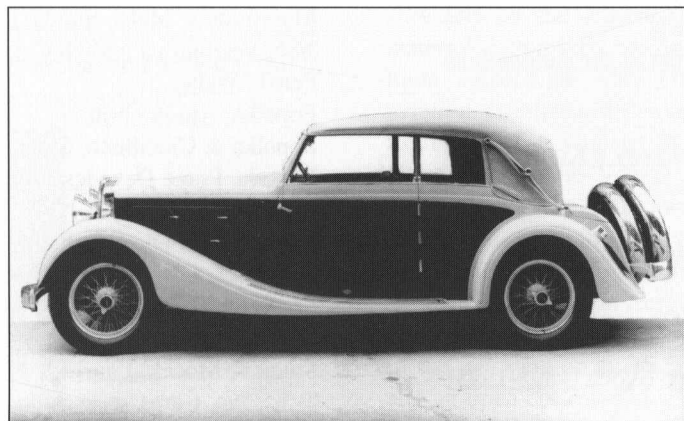


Fig. 5 – Sodomka: Walter Regent (1934).
(From the editor's collection.)

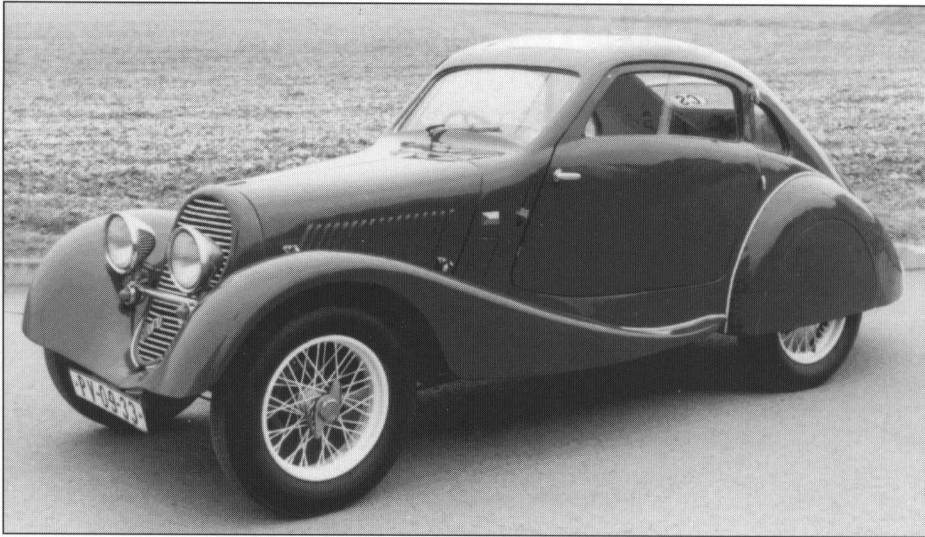


Fig. 7 – Uhlik: Aero 20 (1932), 1995 photograph.
(From the editor's collection.)



Fig. 8 – Uhlik: Aero 20 (1932),
2001 photograph.
(Photo by the editor.)

The following is a list of the principal coachbuilders in Czechoslovakia, supplied by Matt Sonfield, and the dates the companies produced bodies for passenger cars. Mária Šuman-Hreblay has written of each one in The Beaulieu Encyclopedia of Automobiles—Coachbuilding, and, if you wish to know more about these companies, the page references are given. An example of the work of most is shown.

Brožík, Vaclav a synove & Sons, Plzen/Pilsen (1899-1931), p. 101 (regarded as the finest coachbuilder in the country). (Fig. 1).
Jech, J.O., Praha/Prague (1904-30), p. 200. (Fig. 2).

Lepil (1919-48), p. 228. (Fig. 3).

Linie (1938-43), p. 230.

Petera, Ignac Theodor, Praha/Prague (1908-45), p. 269 (Fig. 4).

Pokorný & Beiwel, Praha/Prague (1913-41), p. 274.

Sodomka, Josef, Vysoké Myto (1925-56), p. 308. (The best known of the coachbuilders, continuing in business as Karosa, a manufacturer of buses) (Fig. 5).

Uhlik, Oldrich, Praha/Prague (1928-48), p. 325 (Fig. 6).

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Margolius & Meisl, Škoda, Laurin & Klement.

Nyč, Veterani na Našich Cestách #2.

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Popelka, Automobilů "Z".

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Tulis, Jan, Carrosserie Sodomka.

Tuma, Tatra 1897-1947.

Vadura, Automobil Aero.

The Aero Family — A Memoir of 80 Turbulent Years

by Vladimír Kabeš, Jr. as told to Taylor Vinson

I. Introduction: 1918-1929

On January 6, 1918, a convention of patriotic intellectuals proclaimed in Prague that the Czech Lands should declare their independence from the Austro-Hungarian Empire. Of lesser note for that day in Prague, I made my entrance into the world. Thus it was that for the first few months of my life I was the unwitting subject of His Royal and Imperial Majesty Karl I, until the dual monarchy crumbled and fell at the end of The Great War in November 1918. Then came the founding of Czechoslovakia and the glorious period of the two decades ending in 1938, when my country fell under the sway of the dual tyrannies, first nazism, then communism.

This is a short memoir of those years as they relate to the Aero car and its family, not only my own, which was its manufacturer, but also a tribute to its other families, the workers who made them and the people who still lovingly maintain them. I hope to show among other things the climate under which the Aero car was manufactured in the inter-war Czechoslovak democracy, and the oppressive conditions of the German occupation and the subsequent Communist rule.

II. Aero *Továrna Letadel*

The 68-year reign of Franz Joseph ended only 14 months before I was born. Although Bohemia was the industrial heart of the Empire and contributed much to it, the inhabitants of the Czech lands were looked upon as querulous provincials by both the fashionable folk of Vienna and the government. Still, the situation was benign, at least in comparison with what future generations would have to endure.

My father and namesake, Vladimír Kabeš, was born in 1886, and started practicing law before the 1914 outbreak of the Great War (Fig. 1). Always a motoring enthusiast, he was seriously injured in 1909 when he wrapped a Clément-Bayard around a tree. The effects of radiation were not well known in those days, and the ill-administered X-rays to check for broken bones eventually caused a cancer that killed him in 1947. But in the meantime, he had an intense and successful life.



Fig. 1 –
Dr. Vladimír Kabeš.
(From Jičínský,
*Automobily Aero a
jejich doba.*)



Fig. 2 – Aero A-10 (prototype?), the first
Czechoslovak-designed commercial aircraft.
(From Stroud, *European Transport Aircraft Since 1910.*)

When the war ended, the new country of Czechoslovakia was formed from Bohemia, Moravia, Silesia (historically known as the Czech Lands), Slovakia and the sub-Carpathian autonomous region. An optimism existed that was lacking in other parts of the defeated empire, such as the much reduced new countries of Austria and Hungary, due primarily to the industrial heritage of the region. Great advances had been made in aircraft during the war years, and the victorious countries of France and England were entering the pioneering years of commercial air transportation. Why not Czechoslovakia? Vladimír Kabeš was not content to sit in a law office, and his interest in mechanical things led him and a few associates to found Aero *Továrna Letadel* in 1919. The air was to become the Czech sea.

Aero started as a workshop repairing and refitting what was left of the Austro-Hungarian wartime military flying materiel. In the early twenties, Czechoslovakia had entered into trade agreements with France, which included commercial aviation, promoted in Central Europe by the *Compagnie Franco-Roumaine*. The Ministry of Public Works wanted to develop an air service Prague–Vienna and Prague–Dresden, and proposed specifications for what was to be the new republic's first commercial aircraft. In 1921, Aero began construction of a prototype, which eventually went into service with *Československé Státní Aerolinie (ČSA)* on the Prague–Bratislava run in 1924 (Fig. 2). Known as the A-10, the biplane was typical of the day with an enclosed cabin for three to five passengers, and an open cockpit above the cabin for the pilot. A single 200 HP Maybach Mk IVa water-cooled engine provided the power. The A-10 had a cruising speed of around 90 mph. Four were made, in addition to the prototype. One of them is displayed in the Kbely air museum outside of Prague today.

In the process of developing its own successful line of military aircraft, the Aero team produced a two-seat reconnaissance biplane for the Czechoslovak Army Air Service, called the A-12. They converted this into a commercial plane seating three, the A-22, and, in 1925, began operating a private air service between Prague and Mariánské Lázně (Marienbad). The service lasted two years, carrying a total of 961 passengers, and was noted for its safety and regularity. The A-22 was powered by a 220 hp six-cylinder water-cooled engine manufactured by the Czech company Walter, which produced cars as well. I believe that at least four A-22s were made. It was a bit faster than the A-10, cruising at about 108 mph.

The A-23 came along in 1927 to find a home in the ČSA fleet. This time, the exposed pilot sat well aft of the enclosed cabin with its maximum of six passengers. The A-23 was powered by a 20 HP Walter Jupiter IV nine-cylinder radial engine, uncowled (unlike the A-10 and A-22). Seven of these were produced, and delivered by August 1928. They were used on the Prague-Brno-Bratislava-Košice-Uzhorod air service. Their cruising speed was approximately 100 mph.

Aero's first monoplane was the A-35, a prototype of which was built in 1928. At long last, the cockpit was enclosed, but passenger capacity had not increased; the A-35 carried only four or five (Fig. 3). The production engine was a 240 hp Walter Castor. Two of these were built for Bata, the famous Czech shoe company. ČSA took delivery of six more production aircraft and the prototype as well. They were used on the same air service as the A-23 and on the Moravska Ostrava-Cluj service as well. The cruising speed had been marginally increased to 105 mph.

Aero's final pre-war commercial aircraft was the A-38 of 1929, a development of the A-23 which retained the bi-wing construction but was remodeled to enclose the pilot at the front of the plane. Passenger capacity had been increased by two, to eight. Two versions were built, the A-23-1 for ČSA, and the A-38-2 for the Compagnie Internationale de Navigation Aérienne (CIDNA). The ČSA planes were equipped with a 420 HP Walter Jupiter IV motor, and the CIDNA ones with 420 HP Gnome Rhône Jupiter 9Ady engines. Three aircraft were delivered to ČSA and two to CIDNA. Both cruised at 105 mph.

III. The Aero Car (1929–39)

There was a long automobile tradition in my family, starting well before the First World War, when my father had owned an Itala, but the family cars I first remember were a pair of 1920s Minervas, my childhood favorite being a small, blue coupé. Later, my father obtained the chassis of an early Chrysler 4 and had a Weymann body constructed for it. He loved to drive the little red American, my first introduction to the then dominant U.S. technology. The chauffeur-driven Minerva gave way to a Škoda-built Hispano-Suiza in '27, with Weymann sedan body (Fig. 4) built in Aero's own shop, which, in turn, was replaced by a '31 Chrysler Imperial Eight sedan, our last family car. Since 1930, both my parents ran their errands and city commuting exclusively in their own Aeros.

After the 1929 depression hit Europe, Aero realized that the demand for military as well as commercial aircraft was dangerously shrinking. Kabeš' policy was to avoid staff reductions and a search for new production lines became thus

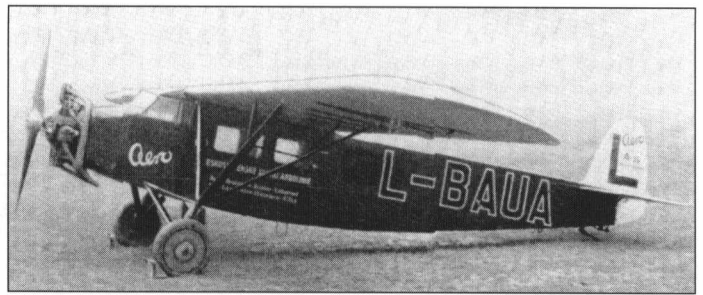


Fig. 3 – Aero A-35 prototype. (From Stroud, *op. cit.*)

imperative. Sidecars for motorcycles, luxury car bodies (Weymann franchise) and other new experimental items appeared under the Aero name, until the lucky strike of hitting upon the idea of a low priced motor car.

Thomas Bata and my father had something in common: both were socially progressive employers, introducing 5-day workweeks well ahead of other companies. In fact, the workers never struck at Aero during the 25 years my father ran the company, a rather unique feat under the often tense conditions of that period.

My father looked for an alternative product to manufacture. He noticed that the Czech motor industry lacked a small, inexpensive car such as the Ford Model T, Austin Seven, and Citroën 5 that were transforming other countries, and he decided to build one. At 18,000 Kč (Crowns, about \$550 at the time), it would be a car that his workmen could not only build but also drive themselves. The 5-day workweek had just gone into effect at Aero, and my father envisioned his men and the people at large enjoying their long weekends in the country, independent of public transportation. This was the era of the "tramp" movement, a glorious period of motorcycles and songs about the U.S. Wild West and "roaring Niagara." Thus was born the Aero Type 500 (Type 10), "the little car for big trips" as the slogan had it, a two-seater open car equipped with a 500cc 2-stroke 1-cylinder engine, so simple it did not even have a differential (this is the car on the cover of this magazine). The initial designs were by Ing. Břetislav Novotny, based on his ENKA car; later ones were by Josef Bašek, all with particularly attractive bodies by Josef Voříšek.

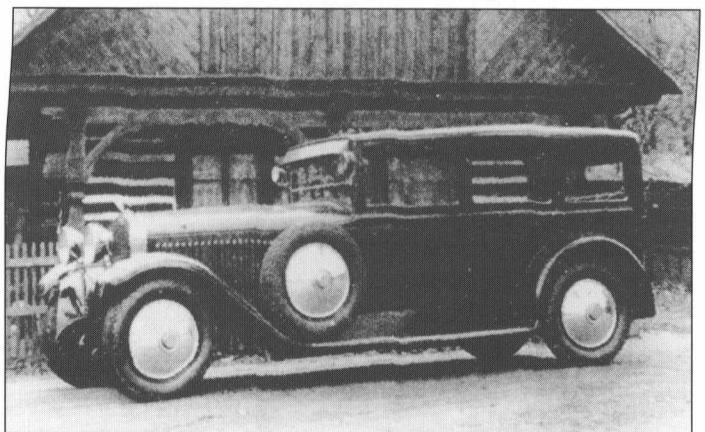


Fig. 4 – Škoda Hispano-Suiza with Aero-constructed Weymann body, perhaps the car owned by Dr. Kabeš. (Courtesy of Motor Journal.)

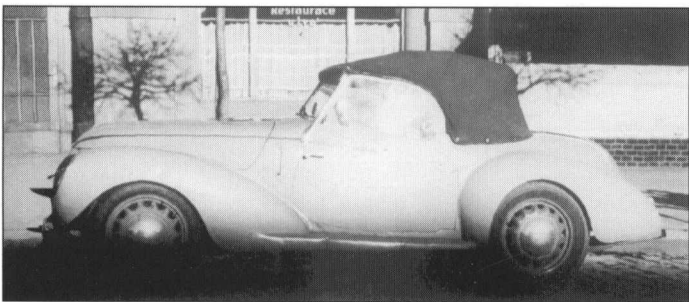


Fig. 5 – The experimental Aero Pony of 1940.
(From Gomola, *Automobily Aero.*)

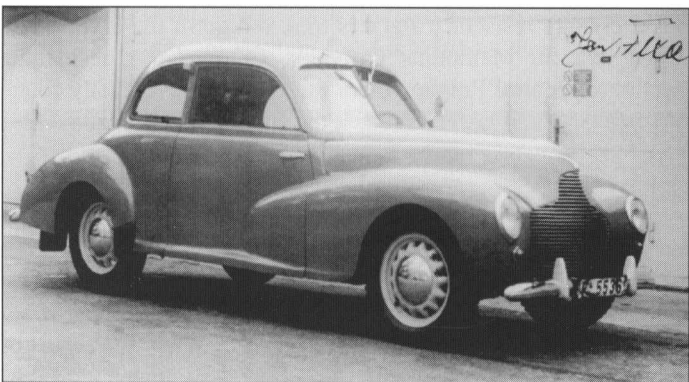


Fig. 6 – The experimental Aero R-1500 Rekord of 1942.
(From Gomola, *op cit.*)

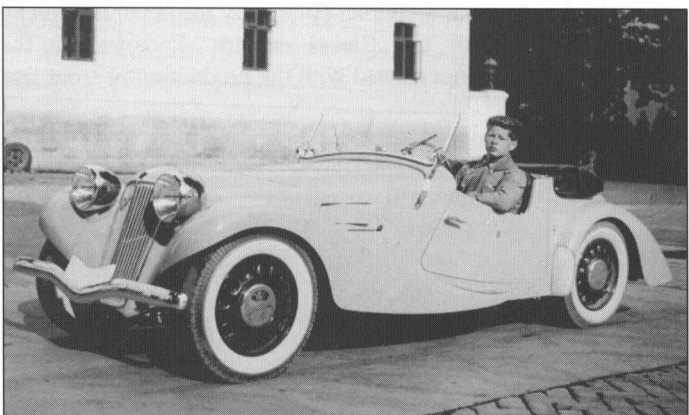


Fig. 7 – Crown Prince Michael of Romania in a 1936 Aero 30,
the Czech Jaguar. (From Vladimir Kabeš, Jr.)



Fig. 8 – The author's 1939 Aero 50 with body by Sodomka,
perhaps the best known car both of the marque and the
coachbuilder. (From Vladimir Kabeš, Jr.)

The Type 500 remained in production until 1932. In 1931, it was joined by the Type 662 (Type 18), another two-seater open car, powered by a 662 cc 2-stroke 2-cylinder engine. Although series production of the Type 662 ended in 1933, at least six appear to have been assembled afterwards from remaining parts and are known as “1934” models. From 1932 to 1935, the more powerful Type 1000 (Type 20) was in production, featuring an engine of 998 cc 2-stroke 2-cylinder. This was the last of the first generation of Aero cars.

My father had somewhat achieved his goal of a car for everyman and stirred some feathers in the process. A famous poster of the day (see cover) depicted an Aero, and tram and train tickets crossed out with a red X, the implication being that you don't need to go by tram or train if you own an Aero. The state-owned railroad company was furious and took Aero to court, alleging unfair competition. It lost its case, giving Aero a welcome public relations boost.

At this point, the Aero had become so popular that the dealers began to insist on a larger car and my father listened to them, which I think was a mistake. Alone in their class by then, the small Aeros could have aspired to a broad international following; Volkswagen was still on the drawing board! The higher priced new Aero models encountered stiff competition and their production was unprofitable. There were two larger Aeros, the Type 30 produced 1935-39, the Type 50, 1936-40. The former had a 2-cylinder 32 hp 1,000 cc engine and the latter a 4-cylinder 50 hp 2,000 cc engine. In addition to a convertible body, an enclosed two-door was also available, and a four-door as well for Type 50. Two experimental cars, prepared illegally during wartime duress, never entered production; the 1940 Pony 745 cc 2-cylinder (this was a small convertible) (Fig. 5) and the 1942 R-1500-Rekord 1,491 cc 4-cylinder (Fig. 6).

The Aero 30 car was favorably regarded, and deemed worthy of a State gift to visiting royalty. The teen-aged Crown Prince Michael of Romania (later king, and now a successful businessman in Switzerland) was presented with one in 1936 on the occasion of King Carol's visit to Prague (Fig. 7). Aeros were exported to Austria, Germany, Poland, Hungary, Yugoslavia, Bulgaria, and Romania. They participated in Monte Carlo rallies and other prestigious international competitions. Around 13,500 cars in all were produced, 800 of which are known to still exist.

The best admired Aeros today are certainly the luxury models Type 50 fitted with Sodomka bodies in 1938-39, sleek convertibles with fully-enclosed wheels. I would not say that I was spoiled, but I must confess that I was given one for my 21st birthday in January 1939, a handsome cream and brown car in which I toiled around the country until the outbreak of World War II (Fig. 8). The opportunity to enjoy the car would be all too brief!

IV. The German Occupation (1939-45)

From its birth in 1918 through 1938, Czechoslovakia had, on the whole, fulfilled its founders' dreams of a model democracy. Arts, manufacture and commerce flourished to an extent that, I regret to say, have not been seen in the more than 60 years since. The tragedy of Czechoslovakia was something over which its leadership had no control, namely its

geographical location and ethnic composition. Apart from less important Hungarian and Polish minorities, a large German-speaking population was encapsulated within the borders of the new country as a result of the Versailles Treaty. These were the Sudeten Germans, and much of the industrial might of Czechoslovakia was located here. Germany itself bordered the north, west and partly south. Its traditional opponent, France, was linked to Czechoslovakia by defense and commercial treaties. Tensions would have been natural under any circumstances, but manageable in the absence of a Hitler.

After Germany absorbed Austria in the spring of 1938, it increased its agitation among the Sudeten Germans for unification with their ethnic brethren and among the Slovaks for independence. Imagine if here in America, Mexico had five times the population of the United States, became an aggressive and militaristic nation, and fomented the Hispanic populations of Texas, Arizona, New Mexico, and California to demand a cession of territory on the Southwestern border, and you'll have an idea of what was going on in those days. This threat to the peace that Europe had enjoyed for 20 years led to the Munich Agreements six months after the Austrian Anschluss. In order to preserve "peace," Czechoslovakia was forced to cede the Sudeten territories to Germany, and other smaller chunks of its territory to Hungary and Poland. With them went some of the major industries that had been proudly Czech up to that time, such as Tatra. Towns were often given fancy German names (or reverted to the ones they had in Franz Josef's time) and Czech and Slovak populations were expelled from the ceded area. At that time, Aero's work force consisted of 500 employees in the automotive end, and 1,600 in aircraft.

In spite of the loss and the moral shock of surrendering without an honorable defense, we felt relief that the situation had not been worse, and we crossed our fingers that nothing more would happen. Yet, worse was to come. I went to Berlin that winter for the 1939 automobile show. There, crossing a courtyard, with only one or two officers in attendance, I caught a glimpse of Adolf Hitler himself, who was then obviously plotting my country's demise. Days later, on March 15, 1939, the Germans crossed our border and occupied the rest of my country without a shot being fired, our post-Munich president having bowed to the Nazi threat to bomb Prague. We were to be occupied for six years and two months, the longest that any country was under the German boot.

It is not well remembered, but there was a different legal situation in the countries that Germany occupied. Austria ceased to be a nation and became part of the German Reich. The wartime occupation of Poland was accomplished by force, it was a conquered country subject to no quarter. France was only partially occupied after its 1940 surrender. Since no state of war existed between Germany and Czechoslovakia at the time of occupation, Bohemia and Moravia were deemed to be under the protection of the Third Reich, and Slovakia was cut loose to be independent under a puppet government. The Nazis considered this a temporary arrangement, pending the end of hostilities in Europe. We now know that had they won and no longer needed us to man the factories for war production, they planned to Germanize most Czechs and relocate the incorrigible intelligentsia to the East, a euphemism for ethnic cleansing.

The Reichsprotektor, Konstantin von Neurath, was eventually deemed too soft and replaced by Reinhard Heydrich, Heinrich Himmler's No. 2 man at the SS and the mastermind of the Holocaust. He was regularly seen being driven in a two-door open Mercedes to his office at the Prague castle. It was on one of these runs that he was mortally wounded in May 1942 by two Czechoslovaks of the London based exile army who were parachuted to the occupied land. This was the only assassination of a high Nazi official during World War II.

It took some days for Heydrich to die, and the Germans used terror tactics in an attempt to uncover the perpetrators. In some ways, those were the worst days of the war for those of us who lived in Prague. The entire London commando and several local civilian resistance fighters took refuge in the crypt of St. Cyril and St. Methodius Orthodox Church in a residential section of central Prague where the Germans eventually found them. An SS unit began to attack the church; as we lived nearby, we could clearly hear the fusillade in the background. The gallant defense of the besieged was futile and they all committed suicide. The Czech reaction was somewhat ambiguous; people mourned for the men, but were relieved that the unbearable reign of terror had come to an end. As the world well knows, the village of Lidice was eradicated in reprisal. Heydrich's death and the persecution it brought about made things worse in the three years until the end of the war and all but wiped out the best elements of democratic resistance.

But what of Aero? By 1939, the aviation side of the business was concentrated on training planes, and this continued under strict military and civilian control by the occupiers, using Bucker, Focke Wulf and Siebel designs. Factories in the "Protectorate" were not trusted with the production of front line materiel.

As for autos, all motor traffic was streamlined according to the German pattern; most importantly, we no longer drove on the "British" side of the road. After the outbreak of the war, automobile production was reduced to a trickle and motoring limited to essential services. As the German military fortunes dwindled, the demands for forced labor increased and our main task was to preserve the hard core of the automobile department from being drafted for service in Germany. We were reduced to repair work, and, as noted earlier, derived some resistance satisfaction from developing and illegally testing the Pony and Rekord prototypes. I was then in charge of the human resources department and remember with some satisfaction our achievement in saving the auto people from recruitment for slave labor. I would like to acknowledge some help from those individual Sudeten Germans whose Nazi party membership did not completely erase a sense of basic decency. One of these was the owner of Tatra, Baron Ringhoffer.

Yet, the approaching end of the war brought grief to the Aero family, as a number of our staff and workforce became victims of the Nazi reprisals. Most painful for us was the loss of my 19-year old brother-in-law, a long time active resistance member who was killed by a German sniper in the very last days of the war while performing a mission for his underground unit.

IV. "The People's Democracy" Aftermath

Under the Yalta Agreement, Czechoslovakia was to be in



Fig. 9 – Badge of the Aero Car Club. (Photo by the editor.)



Fig. 10 – The author gives the go signal to Mr. and Mrs. Karel Jičínský in their Aero 30, Aero Car Club Rallye, Harrochov, Czech Republic, 1995. (Photo by the editor.)



Fig. 11 – Dr. and Mrs. Vladimír Kabeš, Jr. (1995). (Photo by the editor.)

the Russian sphere of influence. A day after the German surrender in May 1945, the Soviet army “liberated” Prague, and the government-in-exile returned from London. The Communists had had a presence in the Czech Parliament before the war, and were given some key offices in the new postwar government.

With the Russian bear behind them, the influence of these ministers was almost immediately felt. A decree went out nationalizing all banks, insurance companies, mines and factories with over 500 employees, including the aircraft and automobile industry, ironically on the very anniversary of Czechoslovak independence, October 28, 1945. The Communist

newspaper *Rude Pravo*, and the state-controlled radio became dominant among the media. Some months later, there appeared an article attacking my father, demanding to know why this capitalist remained at the head of a company that now “belonged to the people.” My father had the complete support of his workforce, yet, that very day, he cleared out his desk and left his office, never to return. He died the next year, in March 1947; he was just over 60 years of age.

There was no place for Aero as a car manufacturer in the “brave new world” of Socialist-Communist Czechoslovakia. The government implemented a rationalization plan under which three classes of automobiles would be manufactured, based upon engine displacements of under 1000cc, 1,000cc, and 2,000cc. These were to be manufactured respectively by Jawa, Škoda, and Tatra. Since the name Aero was now in the possession of the State, the first postwar Jawa cars were called “Aero Minor.” But these were not the Rekord and Pony cars that Aero had been developing during the War, and we had nothing to do with their development. Later they were known, properly, as Jawa Minor.

But all this happened after I left Aero in 1946 and started a new career on two fronts, working as press secretary in the Czechoslovak parliament and subsequently representing Lockheed Aircraft in its bid for the sale of Constellations to the Czechoslovak Airlines.

In February 1948, the Communists achieved total control of the country and, still a relatively young man of 30, I realized that there was no future there for my family and myself. My capitalist background, liberal political beliefs and U.S.-oriented business interests were all black marks in the communist book. As legal emigration was not allowed, I left by walking through the woods and over the border to the American Zone of Germany. My wife and two small daughters joined me there a little later; in November 1950, we arrived to the United States. My new career in the field of human rights and international civil service provided the proverbial “second chance.”

V. Aero Today

Aero continued to exist as a nationalized manufacturer of aircraft throughout the Cold War. After the Velvet Revolution of 1989, the new government encouraged foreign partners for local industry. The company is now controlled by Boeing and produces civilian aircraft parts and elements of Sikorski helicopters, and tests its own new small commuter transport while continuing to supply the Czech air force with subsonic fighter-trainers.

From its earliest days, the Aero car has been the object of much affection. Indeed, the venerable Aero Car Club came into being even before the first Model 10 was assembled and is more active than ever (Fig. 9). Each September, the Club sponsors a weekend rallye in the Czech Republic, Germany, Austria, Switzerland and other locations (Fig. 10). On the average, about 90 members arrive in their “little car for big trips.” In 2001, one was even driven all the way from Holland. While the put-put of so many 2-stroke engines and clouds of exhaust do nothing to improve the environment, they result in the good feelings of comradeship, and, for me (Fig. 11), happy memories of the Czechoslovakia that was and pride in Aero’s contribution to its economic and social progress.

The Myron: Czechoslovakia's Unknown Car

by Jan Tulis, translated by Ivan Margolius

At the beginning of the 1930s, automobile manufacture principally consisted of the major Czechoslovak producers based in Prague, Kopřivnice, Prostějov and Brno. Many smaller automobile companies wanted to break into the market and persuade the public with products of individual designs in small series. They desired to manufacture a quality automobile for a low price that would become a real people's car for broad strata of population. One of these cars, whose conception was connected with the Moravian towns Brno and Zlín, was an automobile with an exotic name—Myron.

In 1934, when Myron first appeared, it had to share the market place with other new cars such as the Aero 30, Jawa 700, Praga Baby, Škoda 420 Popular, the streamlined Tatra T77, the Walter Junior SS, and Z's Z4 (Series 3). However, none of these cars, despite their originality, could offer what the new Myron could—a very low price. The first contemporary Myron sales brochure indicated an attractive price of Kč 9,999, no trade-ins taken. It transpired that this low price was for the chassis only, a fact not clearly indicated in the brochure. A year later the company literature announced a price of Kč 14,800 for the standard model, Kč 16,800 for the streamline body, and a "luxury" cabriolet for Kč 17,500. Even with these prices Myron automobiles were bargains in the Czech market.

The surviving documentation indicates that the chassis frame was made out of a Mannesman steel tube that carried at the front a swing axle and the steering assembly. Hard to say, but the rear swing axle may have been sprung with coil springs. Two independent brakes had a diameter of 250 mm. The handbrake was built into the dashboard. The steering wheel was connected with flexible connection, which counterbalanced vibrations. The power unit was located at the front end of the tubular frame. For 1935 models, it was proposed to install a 2-cylinder engine in the same block as the gearbox and differential. The overall chassis weight was between 280 to 320 kg.

The Myron was powered by a 2-stroke water-cooled 2-cylinder engine with an aluminum head of 1,000 cc displacement (85 mm bore, 87 mm stroke), putting out 40 hp. at 3,800 rpm. Originally a vertical 1-cylinder engine had been considered of 800 cc (105 mm bore, 92 mm stroke) and 18 hp. at 3,200 rpm. It has to be pointed out that these parameters, if they could be verified, indicated the best engine practice of the time. The engine cooling was of the thermosiphon type. Solex carburetors would have contributed to reasonable fuel consumption not exceeding, even with maximum laden weight,

8 litres per 100 km. The gearbox with three forward gears and a reverse was of classic construction. At extra cost, freewheeling to the rear axle was offered.

The original Myron had basic body dimensions of 4,000 mm. length and 1,350 mm. height including an extendible canvas roof. Later variations offered a body of 4,200 mm. x 1,380 mm. Interestingly a three-passenger seat was considered but the narrow body width made this arrangement impossible. Wheelbase was 2,650 mm. with track of 1,100 mm and a ground clearance between 230 to 250 mm. The tires were 5.25x16."

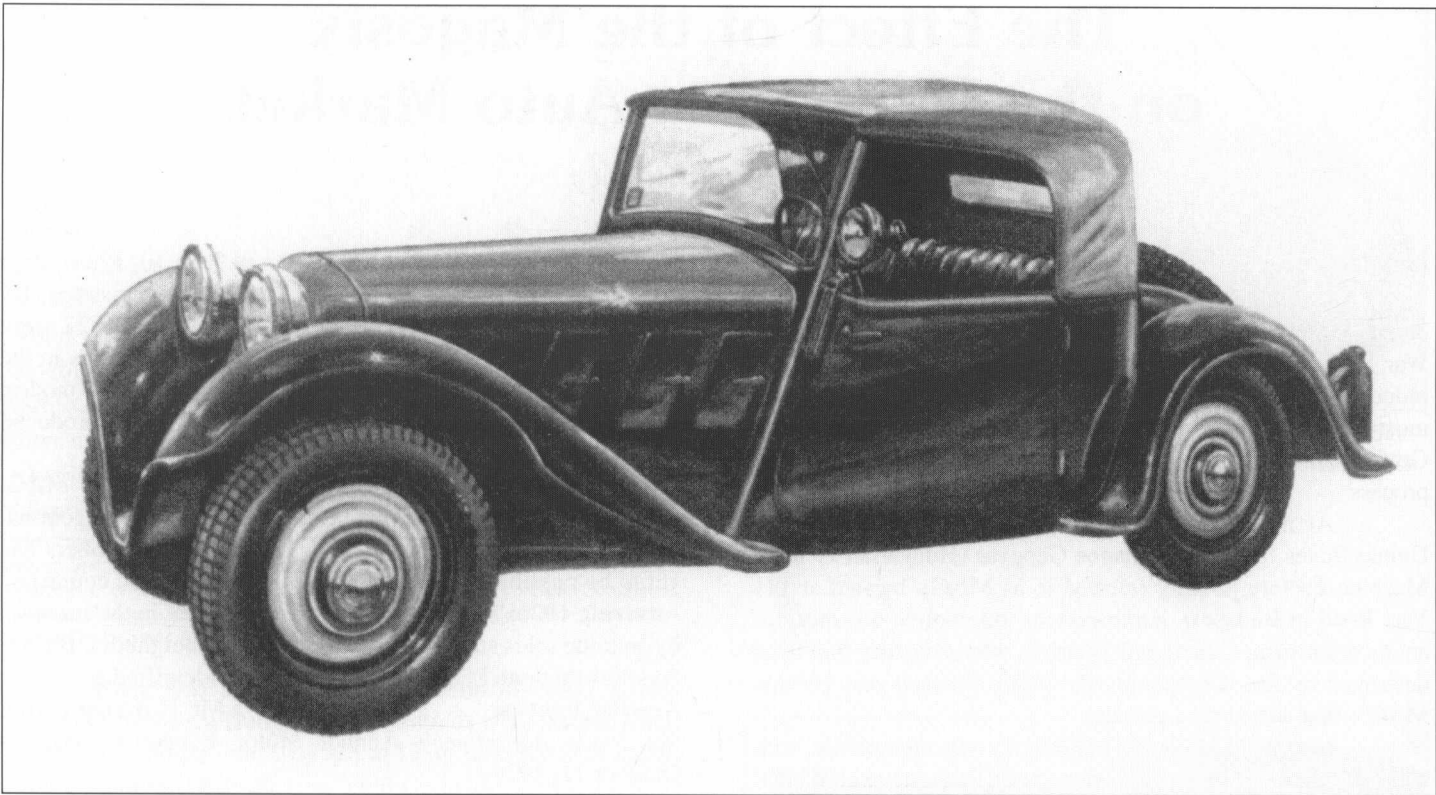
The Myron was equipped with a 90W electrical system. The electric starter was supplemented in case of emergency by the starting handle fixed to the side of the car. Other additional equipment to order was offered at additional cost. The company brochure gave the maximum speed between 90 to 110 km./h. depending on the engine used.

A sales argument for proof of simple and unproblematic servicing was that only one wrench was needed to tighten or loosen all bolts, as well as the spark plugs.

If we look carefully at the technical details, we find a number of technical solutions devised from the various leading automobile manufacturers of the day. It is known that Myron engaged the automobile designer Sulak from Brno who was also closely involved with ČZ Zbrojovka a.s. and other motoring enthusiasts.

Initially Myron would have produced the car at No. 6. Hvezdova Street, Brno, and from the spring of 1935, manufacturing operations would have been transferred to the Myron automobile and aircraft engine company based in Zlín. Despite the support of the Bata enterprise in Zlín, the relentless competition in the marketplace between the established major Czechoslovak automobile producers did not allow Myron to commence mass production of their model.

We know only that one example was made. It was shown at several auto-salons and was modified depending on the comments received from the public. Even though several contemporary articles were published in motoring magazines in addition to the surviving factory documentation, detailed information about this automobile is still lacking. From the memory of the survivors it is remembered that a number of respected personalities from technical and commercial spheres were connected with the Myron automobile including the famous Czech female racing driver—Eliška Junek.



*Fig. 1 - The 1934 Myron was powered by a 2-stroke water-cooled 2-cylinder engine.
(Photo provided by the authors.)*

Hungary



Csonka of Budapest (1906-1912) built this letter-collecting postal van. (From the editor's collection.)

The Effect of the Magosix on the Hungarian Auto Market

by Brooks T. Brierley

Introduction

One of the most interesting attempts to create a domestic automobile industry occurred in Hungary after World War I. The breakup of the Austro-Hungarian empire not only reduced Hungary's size, but separated the dual-monarchy's most substantial automobile building businesses (among them Gräf & Stift, Tatra, Austro Daimler and Steyr) from it in the process.

At about the time of the first Glidden Tour in the United States, Magyar Altelanos Gepgyar (Hungarian General Machine Factory, usually referred to as MAG), located at 141 Vaci Road in Budapest, purchased the automobile inventory of an Austrian firm, Cudell and Dietrich, whose factory had been destroyed by fire. Completing the partly finished cars became MAG's first automotive product.

In 1908 MAG began building its own automobile, with a 25 hp. engine. It had a cute appearance, with the engine hood tapered down from the cowl to the small radiator shell, somewhat like a megaphone. Production was modest: 15 cars in 1913 and 30 cars in 1914. During World War I no cars were built. Airplane motor production took over the MAG plant. The War was also the incentive for a new factory located just outside Budapest, at Matyasfold. It was an imposing Palladian-style building, with a long cement and stone facade and thick tower at the center, all suggesting a palace within rather than a manufacturing plant. About 1,000 people worked there at the end of the War.

In 1922 the first postwar MAG car was made, called the Magomobil (Fig. 1). It was a modest four passenger car with a four-cylinder 1.28 liter engine, described as resembling a small Fiat. MAG made a credible showing in mid 1920s automobile registrations. Of the 2,354 cars in use in Hungary as

of June 30, 1923, 100 were MAGs. As of June 30, 1924, when 3,482 cars were in use, there were 204 MAGs registered. By December 31, 1925, when 5,081 cars were in use, 322 were MAGs. As of September 30, 1926, 615 of the 6,300 cars in the country were MAGs. This car business seemed to be a modest success: MAG both increased the number of cars it produced while improving market share in a growing market.

About 50 MAGS, using the designation Wohl-MAG, are said to have gone overseas at this time—to Argentina, Chile, England, Japan and China. Tracing exact numbers has yet to be possible; these cars are not found in those countries' surviving 1920s registrations. Nor are any seen in the marque-by-marque sales statistics of MAG's Balkan neighbors. But we do know that one Magomobil, erroneously identified as "... an Austrian light car . . .," was driven by a Mr. F. Berner during the *Japan Advertiser's* Annual Motor Economy Trial on October 11, 1924.

The Trial, a day's run, ran from the Imperial Hotel in Tokyo into the mountain area of Nikko and back. A Tatra won the prize; the Magomobil results were not published.

The mid 1920s Hungarian automobile market was highly fragmented. The number of marques sold there offered a rich sampling of American and European automobiles of the time. While import restrictions—primarily a tax on engine displacement—favored European marques, American cars increased their popularity as the decade progressed. Comparisons of mid 1920s activity in total passenger car registrations offers an interesting progression to the peak year of 1928.

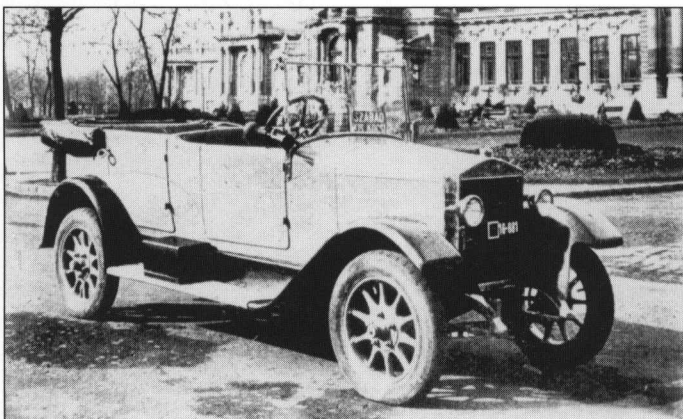


Fig. 1 – A Magomobil taxi about 1922. Small headlights were one of the characteristics of MAG design. (Courtesy of the Haris Testeverek Auto Muzema, Budapest.)

	6/30/23	6/30/24	12/31/25	9/30/26	12/31/28
Fiat	285	381	615	904	NA
Ford	151	237	336	562	1159
MAG	100	204	322	615	NA
Austro Daimler	113	197	242	269	NA
Benz	209	187	194	258	NA
Mercedes	146	172	182	187	NA
Laurin & Klement	116	170	180	173	NA
Steyr	63	102	121	163	NA
Opel	67	94	86	91	NA
Renault	57	95	130	222	NA
Gräf & Stift	38	71	87	83	NA
Itala	31	67	76	78	NA
Lancia	30	67	84	84	NA
Raba	13	29	32	38	NA
Minerva	0	38	52	87	NA

	6/30/23	6/30/24	12/31/25	9/30/26	12/31/28
Buick	6	38	98	143	422
Citroën	3	28	71	133	NA
Horch	0	21	27	28	NA
Packard	12	16	NA	NA	NA
Delage	1	11	10	21	NA
Studebaker	6	10	16	45	143
Hudson and Essex	NA	NA	31	83	282
Chrysler	NA	NA	14	68	376
Cadillac	NA	NA	8	21	NA
Chevrolet	NA	NA	12	13	280
Nash	NA	NA	NA	NA	178
Willys and Overland	2	10	6	14	112
Oldsmobile	NA	NA	14	24	50

Source: Special Circulars #529 of 2/16/25 and #827 dated 2/15/27 United States Department of Commerce, Bureau of Domestic and Foreign Commerce, Budapest, Hungary. Letter from S. H. Huret of American Consulate General in Budapest to Bougies A. C. Titan dated January 13, 1930.

There was also a small production of MAG trucks. Unlike the cars, total Hungarian registrations were insignificant: rising from eight on June 30, 1923 to 17 on June 30, 1924 and to 24 by December 31, 1926.

Changing Times

Then the automotive business competitive vise tightened worldwide: styling became very important and a horsepower race began, making new models with these features popular. The Hungarian market was seeing a number of such cars imported: there were 34 American marques listed as doing business in Budapest in November 1928—including the most obscure ones such as Elcar and Gardner.

In addition, new Hungarian automobile manufacturing was taking place. A Hungarian company, Unitas, assembled small two-cylinder Tatra cars in Budapest. A more direct MAG competitor was Manfred Weiss, also called the MW, whose Budapest-built vehicles were based on Fiat and Czech Praga licenses. MWs were formidable passenger cars with a double-stroke motor inside good-looking bodies. A third manufacturer, Raba, had very modest car production. (However, that company's emphasis on trucks made Raba the longest lasting of Hungary's domestic motor vehicle producers, until 1975).

Anticipating, or in response to, this competition, the Magosix was introduced in 1927 (Fig. 2). It was a much more substantial vehicle than the Magomobil; a six-passenger automobile with a 50 hp 6-cylinder engine having a 2.11 liter displacement. Many of the purchased parts were recognizable, such as a Zenith carburetor, Spicer universals and Bosch electrical system. During this period MAG production dropped from 315 cars in 1927 to 180 cars in 1928 (Fig. 3), then increased dramatically to 430 cars the following year. A variety of body styles were seen on the Magosix—sedans, touring cars and roadsters. Like many automobile producers then, MAG did not make bodies for its vehicles. Four karosserie—Metallo, Zupka, Misura and Neuschlosser-Lichtig—all located in Budapest, built them (Fig. 4). Two other firms, C. C. Freise and

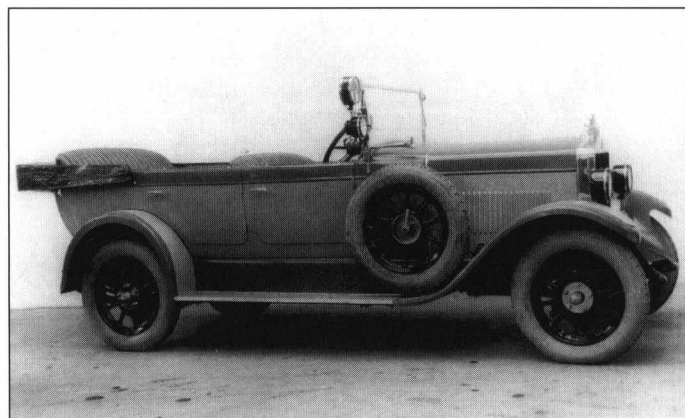


Fig. 2 – A Magosix touring car by an unidentified coachbuilder. The “Contax” directional signal was manufactured by Carl Zeiss. (From the National Archives, Budapest)



Fig. 3 – A Magosix ad from the May 14, 1928 issue of Pester Lloyd (Morganblatt) used attractive graphics. (From The Library of Congress, Washington, D.C.)

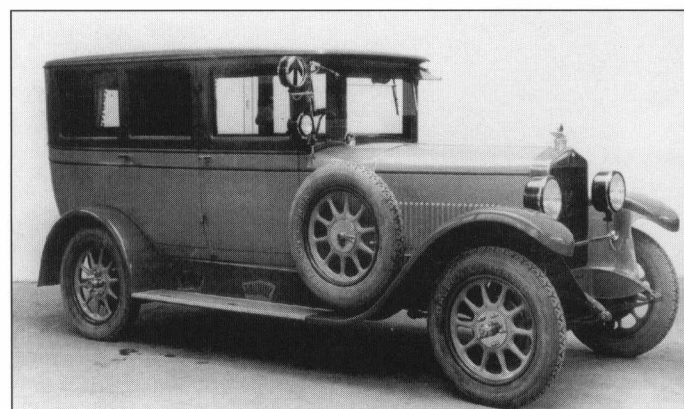
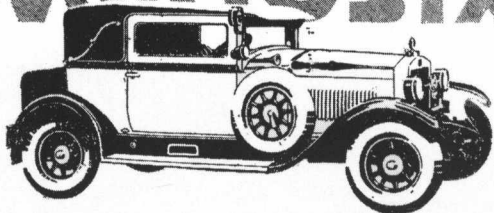


Fig. 4 – A Magosix sedan with Metallo body. (From the National Archives, Budapest)

MAGOSIX



• SZÉP • ERŐS • OLC SÓ •

Eladási központ: IV., Váci-utca 1.

Tekintse meg legújabb típusainkat a nemzetközi vásáron!

Fig. 5 – The visual details of the Geza Nagy-bodied Magosupersix convertible victoria made it a charming automobile. This is the model that won the gold medal at the 1929 Margaret Island car show. Ad from the May 12, 1929 Pester Lloyd (*Morganblatt*) (From The Library of Congress, Washington, D.C.)

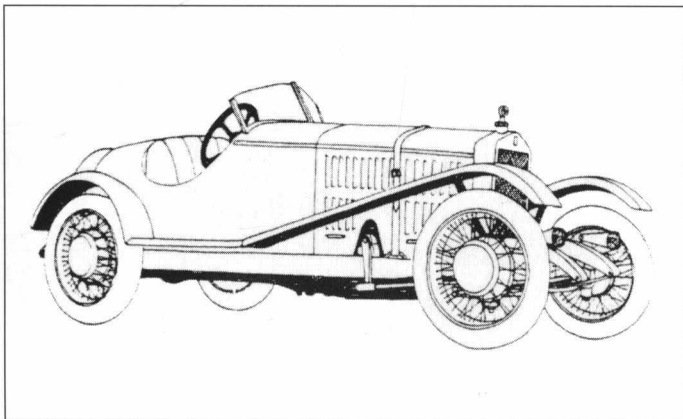


Fig. 6 – The sportiest of the MAG line was this speedster by coachbuilder C. C. Friese. Freise's work on MAG chassis also included an attractively-shaped touring car. (Courtesy of the Haris Testeverek Auto Muzema, Budapest.)

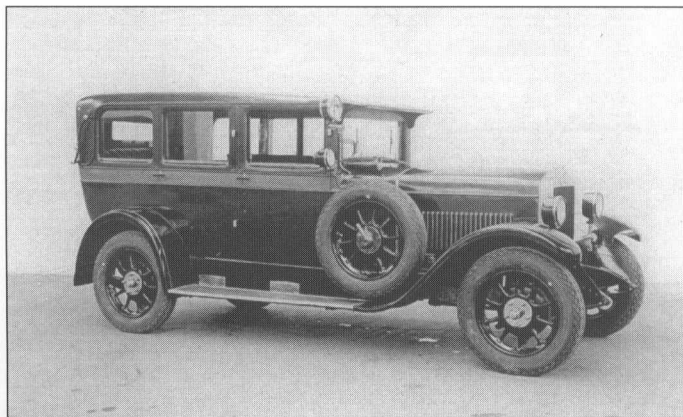


Fig. 7 – A Magosix sedan with a folding roof. This body style was popular in France in the mid 1920s. It was known as “L'Aerable” or “Aerale-Monobloc” by the French coachbuilder d'Alin & Liautard. It is not known if this body is French or was made in Hungary under the Aerale-Monobloc license. (From the National Archives, Budapest.)

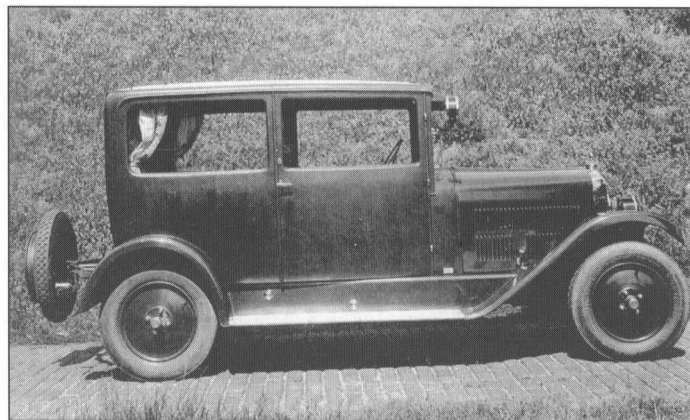


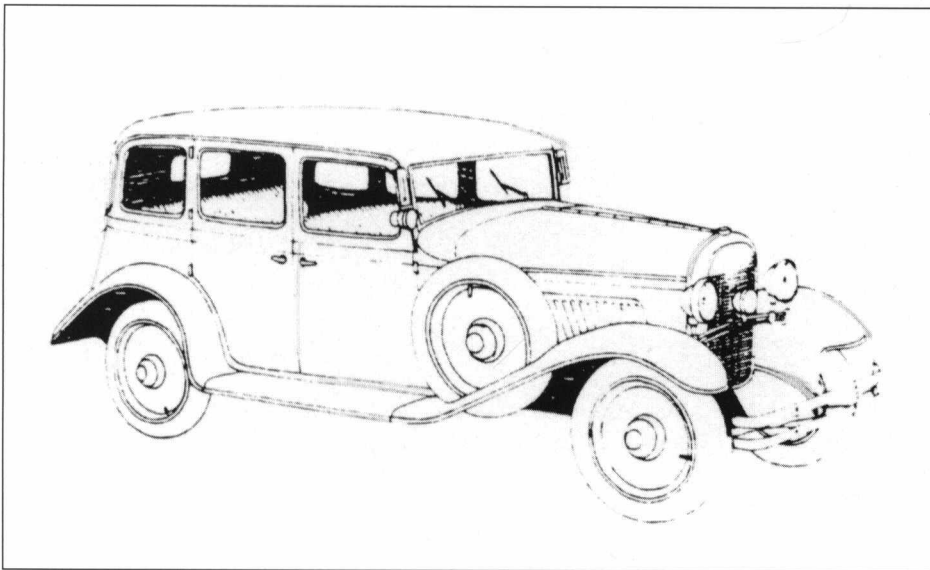
Fig. 8 – The Manfréd Weiss (MW) sedan that won second place in the 1929 Monte Carlo run has an attractive dull finish. Weymann-style body. (From the National Archives, Budapest.)

Geza Nagy, did just a few bodies with the most artistic coachwork (Fig. 5). Taxi bodies came from another Budapest bodybuilder, Favarosi.

Unfortunately, no builder of a few hundred mid-price cars per year, anywhere in the world, could compete against the avalanche of new Fords, Buicks, Chryslers et al. But MAG tried. An improved six, the Magosupersix, was introduced for the 1929 model year. It had a slightly larger engine displacement, 2.24 liters, with a 71.5 x 100cc bore and stroke versus the Magosix's 67 x 100cc. The 1929 model lineup added the convertible victoria bodystyle (built by Geza Nagy, whose elaborate style suggests he could be considered the Rollston or Saoutchik of Hungarian coachbuilders) (Fig. 7). This body style was becoming popular in Europe—and a design that had yet to be used on any but a custom body in the United States. The MAG version was an unusual combination of the latest automotive body style with mid 1920s detailing, such as drum-shaped headlights.

One Supersix was entered in the January 1929 Monte Carlo Motor Rally. Starting from different locations throughout Europe, 93 cars—Minervas, Fords, Lancias, Chryslers, etc., from points as diverse as Riga, Latvia and John O'Groats, Scotland—drove across the continent to converge on Monte Carlo on January 23. This famous Rally was an unusually difficult contest that year; only 24 cars finished the entire run because of severe weather (said to be the worst winter in Europe in 300 years). MAG's driver, Gyorgyek Udvardy, set out from Budapest, going through Vienna. But a snowstorm near Ulm, Germany, created conditions that ended the Magosix' run. It never reached Monte Carlo. However, a MW car began from Bucharest, Romania (going through Budapest and Vienna). The MW was the surprise of the rally, finishing second! (Fig. 8) Unfortunately, MW's limited availability and lack of export facilities did not allow the marque to capitalize on the win.

In mid-May the annual Budapest car show was held on Margaret Island, in the center of the city. It had the atmosphere of a concours d'élégance. All the great cars in the city came out to be seen with their owners. Many of the cars were American. But it was Geza Nagy's convertible victoria body on the Magosupersix chassis that won the gold medal that year. The car was sold to the Pester Lloyd insurance group.



*Fig. 9 – Meray's Supermagosix of 1934.
(Courtesy of the Haris Testeverek Auto Muzema, Budapest.)*

Turning Point

There were some idiosyncrasies in the Hungarian automobile market. Some were a function of the times: modern garages were scarce then, creating irregular servicing—and servicing costs—of cars. A June 1929 automotive market survey by H. C. Schuette, the assistant American automotive trade commissioner to Europe, estimated that three-fourths of most Hungarian automobile sales were on credit (with the exception that only about half of the high-priced cars were being sold on terms). Less popular marques such as Willys relied on financing for 95 percent of their sales. These loans had much shorter terms than today, but averaging 18 months in Hungary versus a general industry practice then of 12 months. General Motors' financing arm, GMAC, was said not to lend in the Hungarian market beyond 12 months. So there was a noticeable narrowing of credit availability beyond one-year terms. Scheutte believed that having only two banks in Hungary (one each German and French-controlled) making longer term loans was significant, and estimated losing 1,000 to 1,500 new American car sales per year for lack of financing.

The Italian government was also very interested in this issue. It not only subsidized interest rates to dealers selling Italian cars, it also offered financing for American cars if they were imported through the port of Trieste (to offset automobile shipments from the United States to Trieste taking ten days longer to reach Hungary than if shipped through Hamburg, Germany). Trieste must have become very busy from this subsidy, for despite all the obstacles to selling American automobiles in Hungary, in 1928 they accounted for 52 percent of all new automobile sales. Everyone wanted an American car. Schuette's survey did not discuss the extent to which MAG's bank was extending financing for sales, but he stated taxi sales were usually financed while sales to government entities were for cash. MAG was helped by Hungarian laws requiring vehicles used by the government or as taxis to be built in the country. However, the technical definition of what was a domestically-

produced automobile was flawed; it allowed Mercedes-Benz taxis to be assembled there. So that protection was only apparent and not sufficient to secure MAG's position. In defense, MAG held negotiations to consolidate with Renault, Steyr, and Fiat, with no result.

In late 1928, General Motors sent a team to Hungary to evaluate establishing an assembly plant there. Some six to ten people participated over several months' time conducting the study. That number of people and the length of their stay became conspicuous. Baron Ullman, the managing director of the General Credit Bank of Budapest, which controlled the MAG business, took notice. At the beginning of 1929 Ullman called on the American Commercial Attache in Budapest, William Hodgman, asking what General Motors intended to do. Hodgman replied he did not know. Ullman then got down to business.

He stated that if General Motors were interested in doing business in Hungary it should buy out MAG. If it did not, he added, the bank would greatly increase MAG production and seek protection from the government, to, as Hodgman reported, "... make it extremely difficult for foreign cars to find business in Hungary."

Hodgman later noted that General Motors and Baron Ullman never got together. At the same time, events leading up to the Depression were unfolding. Commodity prices softened, forcing agricultural countries like Hungary to find ways to preserve hard currency reserves. Restricting the importation of pleasure cars was often at the top of any list of ways to do this. Then currency restrictions went into effect as the Depression took hold. New Hungarian automobile sales registrations collapsed from 2,758 in 1928 (the peak year) and 2,576 in 1929 to 1,131 in 1930 and 322 in 1931. In 1932 only six MAG cars were listed in a total of 223 cars newly registered in the country.

First quarter 1933 sales of new cars in Hungary increased to 57 cars from 43 in the same period of 1932 (both a considerable difference from 367 in the record first quarter of 1929). Only one MAG car was on the list. Fiat remained the best selling car, albeit from only 11 new registrations. All the American cars listed (three Fords were the largest American sale) were 1932 models; currency controls stopped 1933 cars from being imported.

By April 1933 the MAG plant had closed. Liquidation of its inventory included seven taxis. Most of the company's machinery was sold to a dealer who broke it down for resale. Some of the MAG car equipment was bought by the Magyar Acelarugyar (Hungarian Steel Products Works), the builder of Meray motorcycles, who continued to manufacture parts for MAG cars. There is a drawing of a 1934 Meray Supermagosix (modifying the Magosupersix name), with the partly-streamlined body lines of the times, indicating this car looked up-to-date (Fig. 9). The engine's 2.41 liter size suggests some engineering work was done on the old Magosupersix engine.



Fig. 10 – c. 1927 Magosix open tourer and closed limousines used as taxis.

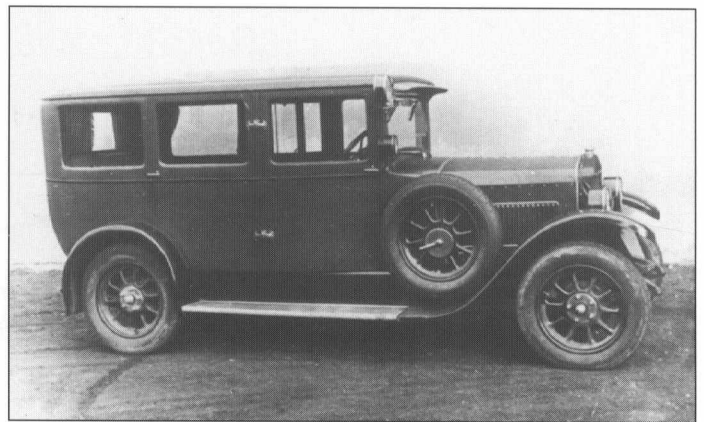


Fig. 11—Magosix limousine used by the Budapest Electric Company.

How much sales activity was accomplished by the Meray effort is unknown.

A Magosix taxi survives in the Kozlekedesi (Transport) Museum in Budapest. Another two MAGs are believed to be in private collections in Hungary. The MAG factory continues to be used for motor vehicle production; the Ikarus bus is now made there.

Ed.—When Pál Négesyi heard that this issue would contain an article on MAG, he had the following comments: “The Hungarian General Credit Bank had a controlling interest in MAG, in Meray the leading Hungarian motorcycle factory, and Velox Automobil Kft, distributor of Opel cars in Hungary during the mid-1920s. MAG had colossal losses from year to year. The Bank saw how fragile the Hungarian auto market was when they witnessed the downfall of Velox in 2-3 years time.

At some point during 1928, the Bank had had enough. The development of the Magosix, which used many American components, had required a large investment and it was evident

that the Bank would never get it back. In addition, the Manfréd Weiss concern, a local industrial conglomerate comparable to Škoda, was introducing a small car. The Bank realized that, if this were a serious effort, there was no way that MAG could compete (they didn’t know at the time that the MW effort would prove to be a disaster). So the Bank looked for alternative buyers, both locally and internationally (Fiat was the main target), and when they failed, they simply cut the lifeline to MAG.

It was very brave of Vilmós Heisler and Dávid Podvinecz to add automobiles to their thriving mill equipment factory business back in 1904. However, a 20-year struggle doesn’t necessarily mean success. We can take pride in the fact that MAG existed and produced some fine cars but we also have to be realistic: the Hungarian market was never big enough to justify the existence of a self-developed, locally-produced automobile.” Pál also provided two more photos of the Magosix (Figs. 10 and 11)

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The History of Ford in Hungary

By Pál Négyesi

Introduction

Hungary is a small country. Currently its territory is 93,000 square kilometers with about 10 million people living here. Our history is turbulent, full of wars, and usually we stood on the wrong side.

After centuries of German and Austrian command with a 150-year Turkish invasion in between, an agreement was reached in 1867 with the Austrians to bring long-lasting peace to this region. The Austro-Hungarian Monarchy functioned well, but the way they handled the problem of the minorities within their own countries partly resulted in the First World War. Hungary lost most of its land. And then in the Second World War, Hungarians were among the earliest to join the Nazis which led to even more suffering. After that War, the Soviets came along and, as they say, the rest is history.

Hungary, which focused most of its resources on agriculture, joined the industrial era within the framework of the Monarchy. However, with two or three exceptions, we didn't have large industrial factories employing thousands of workers. Therefore the age of mass motorization didn't dawn in Hungary until the 1930s and then in a much larger scale during the late 1950s with the arrival of the ubiquitous Trabant.

The Early Years

The first internal-combustion engined motorcar owned by an Hungarian was an 1895 Benz Velo. It seems a small group of enthusiasts upon studying the contemporary French press decided to try their hands on the new form of transportation. A Hildebrand-Wolfmüller motorcycle and the Benz Velo arrived within months. The Benz was ordered by Béla Hatschek, an optician who later became an artificial eye maker.

The first automobile exhibition took place in 1901 at the Budapest horse race-track. This was the first event organized by the newly formed Hungarian Automobile Club. Looking at the members' list of the club reveals that the automobile was still very much a plaything of the aristocrats.

Various individuals tried their hands at making cars and motorcycles while commercial banks questioned almost every major automaker around Europe trying to find a partner willing to establish an assembly plant in Hungary. A mill equipment factory added cars to their activities in 1905 and three years later, after much negotiations, the French Westinghouse company set up an assembly plant at Arad. Passenger car making was never a profitable business. Only 1,018 vehicles were in use by 1910. This is when the first registered distributorship of Fords in Hungary appeared.

Ford and Hungary

Let us not forget that Ford, the company, owes much to Hungarian soil. It is a widely known fact that Joe Galamb (1881-1955) played a vital part in the birth of the Model T and later became chief engineer at the Ford Motor Co. He was of Hungarian origin. His assistant, Eugene Farkas also came from

Budapest, just as did Joe's best friend, Charles Balogh—founder of the Hercules Motor Company. Farkas, who worked out the details of the Fordson tractor and powerplants, came to Ford from the Hercules Motor Co. Later Farkas and Galamb participated in the creation of almost all Ford and Lincoln motorcars before the Second World War.

According to the catalog of the 1908 Budapest International Autoshow, a 20 hp. Ford tourer appeared at the stand of Joseph Bárdi Automobil Ltd. Mr. Bárdi was a pioneer dealer who started with accessories for bicycles during the last years of the 19th century. Motorcycles and auto parts were the next step and a showroom with complete automobiles shortly followed. He had offices both in Vienna and Budapest. There's no further trace of his dealings with Ford besides this one occasion.

In May 1910, a new company was registered under the name Hahn Arthur és Társai (Arthur Hahn and Associates). It was established by three youngsters, Arthur Hahn, Eugene Neufeld and Ede Frey who, according to a manuscript written in 1958, worked at an agriculture machine factory and realized the potential in motorized ploughs. They took up the distribution of Case products and also Ford passenger cars and trucks. The Hahn company published a lavishly illustrated magazine in 1913, titled *Géperővel* ("With machine power"). Case tractors, the French Grégoire cars and, naturally, Fords appeared on the pages. The sturdy construction of the Ford models was highlighted which was necessary due to the very bad condition of the rural roads. An advertising campaign bragged that maintaining a Ford was cheaper than using a horse, and was very easy to operate. Well placed "news" pieces—in reality hidden ads—appeared in the few existing local car magazines quoting how satisfied the owners were with their Model Ts.

Before the First World War, the Budapest Water Company ordered three Model Ts. Among the other owners, Mihály Csesznek should be highlighted; his car was featured in *Ford Times* in 1930 proving how rugged the old cars were.

Unfortunately we don't have the statistics for Hungary itself for the period between 1910-1914 but 46 cars were imported in the Monarchy in the 1910-11 business year, 61 in 1911-12, 143 in 1912-13, and 242 in 1913-14.

After the First World War

The First World War had a terrible effect on Hungary. Most of its territory was lost, chaos and disorder followed. Consolidation came only in 1920. A country-wide survey registered 5,070 passenger cars, including 218 Fords, and 731 trucks. Many of them were no more than bits and pieces.

To improve the situation the Hungaro-Italian Bank grabbed 300 trucks and buses which previously belonged to the Italian and the French Armies. These commercial vehicles were in repairable condition. The Bank helped to re-establish the Hungarian service and coachbuilding industry and injected new life in the transportation business. Many of these vehicles wore the blue Ford oval.

In the meantime Ford shook up its worldwide sales organization. The Central European region belonged to the new Trieste office. Hungary was a relatively small market. In 1927 during the brief heyday of the Hungarian car commerce, only 622 new passenger cars, 459 trucks and 113 misc. Ford vehicles were registered. The latter meant fire-trucks and autobuses.

A cross-country sales network was established by that date. The Arthur Hahn firm was still the leading player. The company owners were respectable figures within automotive circles, Ede Frey being the vice president of the National Association of Hungarian Automotive Dealers. A nicely decorated showroom was opened in downtown Budapest in 1927 (Figs. 1 and 2). In the same year, Hahn opened a branch in Székesfehérvár 60 km from Budapest.

There was another Ford dealer in Budapest for a couple of years, Vilmos Haltenberger. Not much is known about his life but he probably spent a few years in the States and returned to Hungary in 1922 where he started to advertise Lincoln luxury cars and the Fordson trucks. Interestingly, separately, he also distributed Chrysler cars and Harley-Davidson motorcycles. He went bust in 1927 and his premises were taken over by the automotive arm of the First Hungarian Agriculture Machine Factory. They also tried their hands with Lincoln, attacked Hahn head on with an office in Székesfehérvár and by setting up a company to distribute Continental tires (Hahn sold Goodyear). In a couple of years they also vanished from the scene.

Joe Galamb, then chief engineer of Ford, tried to help his family who lived in Makó, south of Budapest. The Galamb brothers had their own Ford dealership in the region—helped by direct input from Joe!

One of the biggest commercial banks in Hungary, the Anglo-Hungarian Bank, also had an interest in Ford products; they had three different companies around the country selling mainly Fordson tractors.

The Fordson tractor, which was designed mainly by Eugene Farkas, reformed British agriculture and had the same effect on Hungary. The first sign of a Fordson tractor in Hungary was at a 1921 exhibition where among cows and carpets Arthur Hahn presented the new powerplant of the agriculture industry.

It is not known why, but from the 1st of January 1925 new customs regulations were applied to tractors, favorable to only one type: the Fordson. By 1928, of the 7,000 tractors in Hungary more than 3000 were of Ford origin.

To further enhance the popularity of Ford products in Hungary, in 1926, a caravan of 25



Fig. 1 – Arthur Hahn's Ford showroom, Budapest, 1927.



Fig. 2 – Interior of Arthur Hahn's Ford showroom, Budapest, 1927.

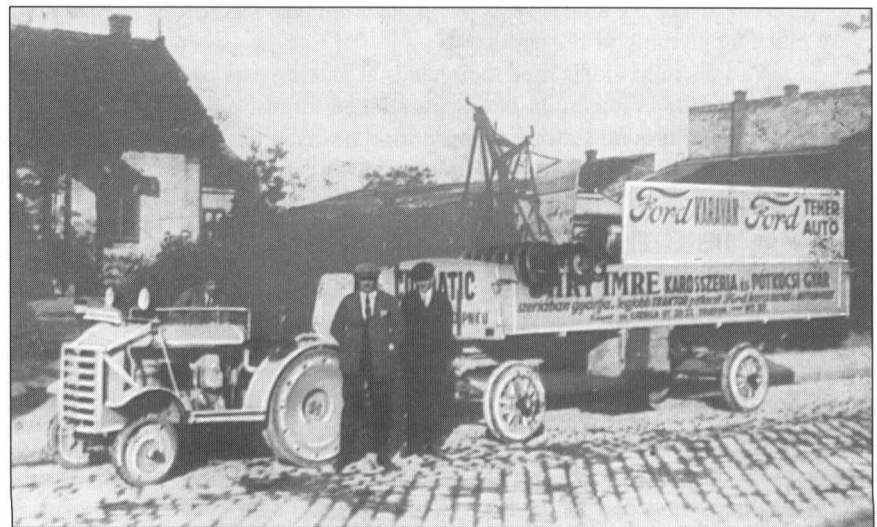


Fig. 3 – Fordson tractor and Ford truck, participants in the Ford caravan of 1926. Truck body by Uhri, a leading coachbuilder of the time.

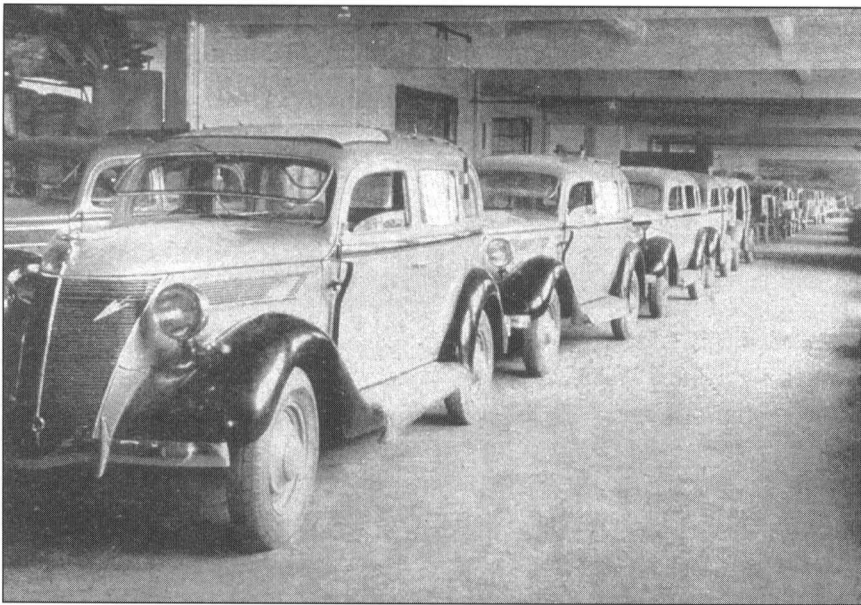


Fig. 4 – MÁVAG-Ford V8s, a factory picture from around 1937.



Fig. 5 – Ford Model A at the 1928 Concours d'Élegance, Margaretten Insel, Budapest.

Model Ts including a Touring Car, a Runabout, a Coupé, a Tudor Sedan and a Fordor, three different trucks, two Fordsons and two advertising mobiles, toured the country (Fig. 3). The caravan stopped at every major city and featured live ploughing, festivities and movies on Ford activities in the States. Leaders of Ford Motor Company d'Italia and a representative from the Trieste office participated and greeted the city leaders at each stop.

The Ford Model T was followed by the Model A and it was presented in Hungary during the autumn of 1928. By the end of 1928, Ford was the second most popular make in Hungary: 11,480 passenger cars were registered here, 1,272 Fiats and 1,159 Fords.

But the Depression almost killed the whole industry. Only the Hahn company was able to survive and it was happy to

sell the new Köln models from Ford Germany, more suited to European tastes. Later the Model C/Eifel also gained popularity partly due to the increasing German influence in Hungary.

The ties with Ford USA were severed in 1937 when assembly of a non-American Ford V8 car began at the Machine Factory division of the Hungarian Railways company (MÁVAG). MÁVAG was directed by István Horthy, older son of Admiral Miklós Horthy, regent of Hungary (which had remained a Monarchy but without a monarch). István met Joe Galamb when Joe gave one of his speeches in Budapest during the early 1920s. Istvan spent a few months in Detroit learning the Ford method. When he returned, boosted by his father's will, he became the vice managing director of MÁVAG. MÁVAG was heavily involved in making buses and trucks under a Mercedes-Benz license, which seemingly was not at all bothered by the company's new alliance with the Cologne concern.

The impetus for MÁVAG to enter the passenger car business came from one of the Budapest taxi companies which wanted to reshuffle its inventory. So its old Hungarian-made Magotax models were dropped in favor of the shiny new MÁVAG-Ford V8 taxis (Fig. 4). According to recently found material at the Henry Ford Museum, the car assembled in Hungary used a V8 engine from Dagenham (it had a different size than the German version), the chassis from Cologne, and a body designed by the taxi company. The V8 models were followed by a batch of Eifels of Cologne design. A few V8s were sold to the general public and some of them participated at Concours d'Élegance competitions locally.

The German influence was being increasingly felt throughout Hungary. When the Nazis invaded Austria in 1938, Ford Cologne decided that it was time for a Central European office. They hesitated between Prague and Budapest but the latter was favored because of the MÁVAG operations and, to put it simply, the bigger

number of Fords in Hungary. Ford Motor Limited was registered in October 1938 with a capital of 150.000 pengő. First, Ford Limited faced the problem of not enough dealerships. It kept Hahn and contracted with many companies throughout the country to sell cars. It also set up a new repair-center in Budapest, completed in November 1940 (the facility serves today as the BMW headquarters while across the street an ex-Opel service center now houses a Ford showroom).

The Second World War and the Years After

The Second World War saw increasing Ford activities in Hungary. The biggest industrial company, Manfréd Weiss Ltd., obtained a contract to convert 820 Ford 3-ton trucks to all-wheel drive based on the Marmon-Herrington technology. Ford

Motor Ltd. courted the Army and hundreds of V8 orders followed. Many of them were trucks, but commander's cars and buses were also listed.

The premises of Ford Motor were not destroyed during the War and, in February 1945, it started to repair the cars of the Red Army. The Soviets tried to get direct control over the company and, despite interventions from the American and British embassies, it was evident that sooner or later they would succeed. The company was put under State ownership in late 1949. The Hahn company, which had miraculously survived, suffered the same fate.

Everything was centralized and MOGÜRT, which originally was organized in 1946 to collect, repair and resell wrecks, was the only company allowed to sell cars in Hungary. Representatives quickly visited Ford in Cologne asking for spare parts for the Hungarian Ford cars. Although the Germans were willing to help out, a direct change in Hungarian politics which resulted in a ban on individual car ownership made their efforts futile.

Between 1950-1989 there was no official Ford presence in Hungary. Barter was made between the British and the Hungarian Governments, so a few Escorts arrived in 1969 and were sold to a lucky few but only the disappearance of the Socialist era resulted in the resurrection of normal car trading.

Ford currently has a parts factory in Székesfehérvár and its Southeast European headquarters is in Budapest.

The photographs for Figures 1-4 of this article were provided by the author.

Brooks Brierley observes that his research in Dearborn indicated that Ford Motor Company Ltd. (1938) was 53% owned by Ford of Germany, nationalized in 1948, then later taken over by MOGÜRT. He has provided two related items (Figs. 5 and 6) for the interest of our readers.

Alig fogyaszt

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Telefon: 111-800.

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VI. Andrásy-ut 10.
Telefon: 113-015.

FORD MOTOR R. T. BUDAPEST

Fig. 6 – 1940 Hungarian Ford-Taurus
(based on the German Eifel).
(Ad from Pester Lloyd, May 1, 1940.)

The Vehicles of Poland's Prewar Army

by Robert Przybylski

Between the two World Wars, the Polish Army's efforts to modernize its automobile fleet created an indigenous automotive industry.

Introduction

Right after World War I, a small number of vehicles left by the German occupiers was taken over by the transportation fleet of the Polish Army. They were mainly 3 to 5t (ton) Büssing trucks. Several hundred cars and trucks with the Polish Army in France plus decommissioned vehicles of the U. S. forces (bought by the acre) were exported to Poland.

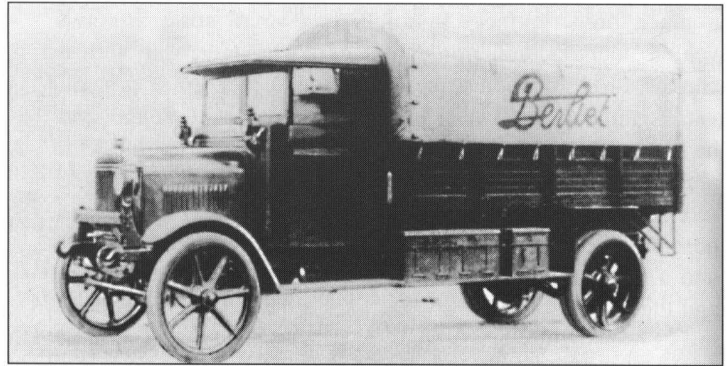
The French Berliet (3t), and the American Pierce-Arrow (5t), Packard (3t) and White (2t) trucks were the most popular makes in the heavy transport field, while the Ford Model T was the vehicle of choice in the lighter field. By the early twenties, most of the trucks were very worn and replacement was urgent. The Army needed at least 300 trucks. American Service offered its 2t trucks, but the quality was not there.

Private Suppliers

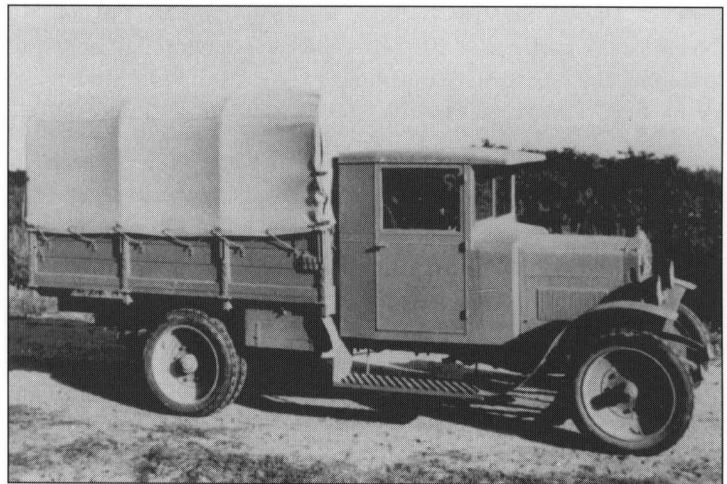
The Army's early expansion plans called for more equipment manufactured by reliable sources. In 1923 the Army offered a competition for trucks. The candidate vehicles would be a 3t truck with solid tires and a 1.5t one with pneumatic tires. Early in 1924, the competition was held on a run of 3,000 km. In the heavy category, Berliet won; in the lighter category, the Italian SPA. But the competition required that the winners have a factory in Poland. The representative of Berliet and SPA was Mechanical Works Ursus, a publicly-owned Polish company. Ursus, based in Warsaw, was a member of the machine industry, and, before World War I, was one of the biggest maker of industrial internal combustion engines in the Russian empire. The contract stipulated that Ursus should deliver 400 Berliet and 450 SPA trucks and that half of those should be assembled in Poland. Ursus did not obey, delivering all trucks assembled. The Berliet trucks were of pre-1914 design with solid tires, iron pistons, and cylinders cast in pairs. It was decided not to put them into production as they were already obsolete.

The truck was the Berliet CBA: very rugged, well built, and classified as a 4t vehicle (Fig. 1). The batch delivered to Poland had water pumps and semi-enclosed cabs. Later, the CBA was updated with a fully-enclosed cab. Approximately 650 of them transported ammunition and soldiers in September 1939.

SPA trucks were much more modern than the Berliets and production of this type was prepared. The chassis (frame, spring and steering gear) was reinforced, the engine was tweaked up from 35 to 40 bhp. from unchanged swept volume, and a fully-enclosed cab was designed. These trucks did not require complicated maintenance or special tools during repairs. In Czechowice (now Ursus) near Warsaw, Ursus



*Fig. 1 – Berliet CBA truck.
(From Jońca, Szubariski, and Tarczyński,
Wrzesień 1939 Pojody Wojski Polskiego, 1990.)*



*Fig. 2 – The Ursus A truck.
(Photo provided by the author.)*

erected a new factory for the Ursus A as the modernized version of the SPA was designated. The new facility could produce up to 700 trucks per year using one shift. Production began in 1928 and ended in 1930 when 884 Ursus chassis were delivered to the Army and to civilian customers. During the production run, a modernized A-30 version was made. Also quite successful was the AW bus chassis. The factory prepared a three-axle 6 x 4 design (model AT), but the Army was not interested. The Ursus A was one of the most popular trucks in the transportation fleet (Fig. 2). Production of Ursus trucks was much smaller than anticipated and financial difficulties quickly set in. By 1930, the Ursus company was bankrupt and taken over by Państwowe Zakłady Inżynierii—PZInż (State Engineering Works).

State of the Business

Right after World War I, the Polish Army organized workshops in order to maintain its fleet of vehicles. The biggest

one was in Warsaw and was designated Centralne Warsztaty Samochodowe (Central Automotive Workshops). In 1920, an armored Ford Model T was designed by Tadeusz Tański (an employee of CWS) and a batch of 17 or 18 vehicles was made. All of them were of great help during the Polish-Bolshevik war. During the next few years, 20 Renault FT tanks were assembled in the CWS works.

The commander of CWS, Kpt. Kazimierz Meyer, had a much bigger project in mind than small scale armored vehicle manufacture, production of a passenger car with a chassis strong enough to be utilized as a pick-up or a small van. Again Tadeusz Tański was responsible for the design, and he followed French design practice with an OHV engine with aluminum block and pistons. The design utilized only one screw gauge M10 x 1.5 (spark plug M18 x 1.5) and it was possible to dismantle the vehicle with one wrench (17 x 29) and a screwdriver. The engine prototype was ready in 1923 and the car prototype two years later. Production commenced in 1927, in small batches consisting of 40-50 units each, until mid-1931 (Fig. 3). All together, approximately 800 CWS T-1 chassis were made, most of them bodied as small vans for the Post Office and as Red Cross ambulances for the Army. The project was scrapped as unprofitable. Most of the ambulances took part in the hostilities of 1939.

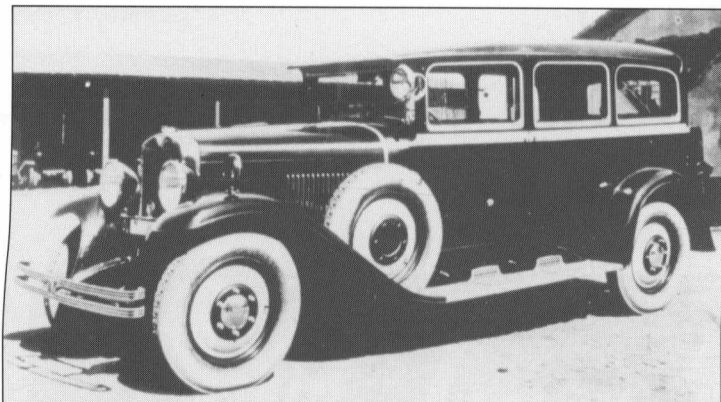
During the late twenties and early thirties Poland bought small amounts of different vehicles in order to test new solutions and concepts. Acquisitions ranged from Ford Model A to Fiat, Duvonque, Laffly, and Renault 6 x 4 trucks. Chevrolet light trucks were numerous, popular with both Army and civilian operators.

Fiat on the Scene

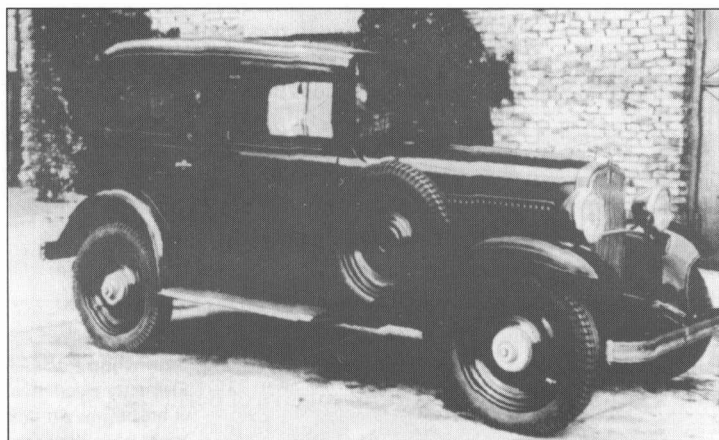
In 1927, PZInż was created out of CWS. In 1930, PZInż bought a Saurer license for internal combustion engines and for bus and truck chassis. Saurer trucks were very expensive. Approximately 120 chassis were assembled from parts sent from Switzerland. By 1939, approximately 400 6-cylinder engines had been manufactured in Poland, most of them used in 7 TP tanks. It is worth noting that the 7 TP was the first tank in series production in the world using a liquid-cooled diesel engine.

With manufacture of the CWS car and the Ursus truck terminated, the Army looked for another medium truck. This time Citroën and Fiat were interested in licensing production of a truck and a light car. Eventually, in 1931, Fiat got the deal. The Italian company licensed PZInż to produce the 621 truck and 508 car. The initial thought was that engines for both vehicles would be made in the former Ursus factory where Saurer engines were being built. However, that was not feasible. The next year the license agreement was broadened and Fiat agreed to design a new factory for the manufacture of trucks and cars. The new facility consisted of the greatly enlarged former CWS factory in Warsaw. The capacity was 2,500-3,000 vehicles per year with one production shift.

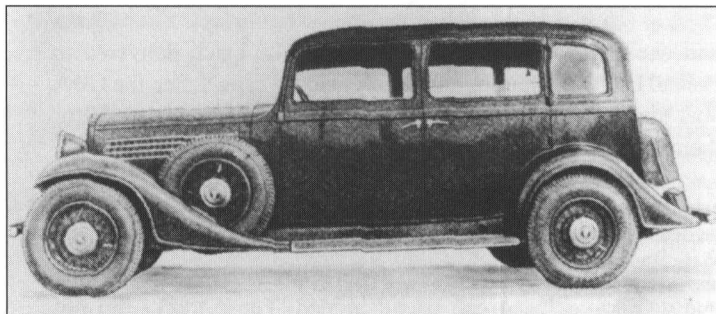
The Army's objective was to develop a skilled staff and manufacturing base, and to secure delivery of trucks and other vehicles. When the license was granted, there was no supplier industry and production was delayed until March



*Fig. 3 – The CWS T-1 passenger car.
(Photo provided by the author.)*



*Fig. 4 – The Polski Fiat 508i
(From Jońca, et al., op. cit.)*



*Fig. 5 – The Polski Fiat 518
(From Jońca, et al., op. cit.)*

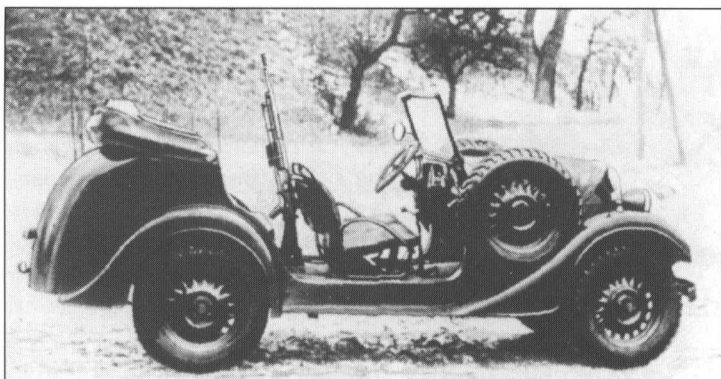


Fig. 6 – 1937 Polski Fiat 503/III field car
(From Jońca, et al., op. cit.)

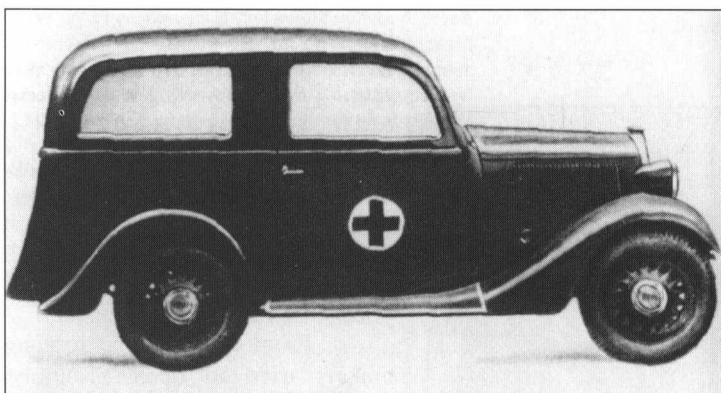


Fig. 7 – Polski Fiat 503/III ambulance.
(From Jońca, et al., op. cit.)

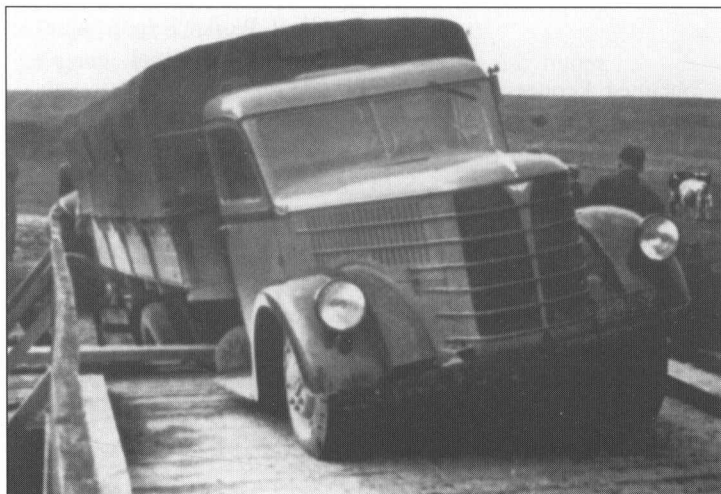


Fig. 8 – The PZInż 303 on trial.
(Photo provided by the author.)

1935, when the first Polski Fiat 621 truck rolled off the assembly line. With production growing every month, more parts were made in Poland. Eventually only ball bearings and carburetors came from outside the country, and plans were well under way to make them in Poland by 1940.

Polski Fiat 508 and 518

In 1936, the Fiat 508 car was finally added to the production (Fig. 4). In 1937, the Fiat 518 sedan came on line (Fig. 5), and, in 1938, the Fiat 618 light truck. Both cars were made for the civilian market, but their chassis were the base for staff cars. The most popular field car was the Polski Fiat 503/III made between 1936 and 1939. The car had open bodywork and lower gearing in the rear axle as well as a lockable differential. The first batch of field cars had short fenders, and a square trunk with two spare wheels attached to it. In 1937, a long-fendered version appeared with bulbous trunk and spares mounted on both sides (Fig. 6). Both versions had dropped tops and side curtains. The windshield could be tilted forward. A machine gun mount and grenade box were standard. Hooks were added front and rear. The pick-up version had a standard chassis. Drums mounted on rear wheel hubs acted as winches.

Red Cross ambulances had room for one stretcher and a crew of two (Fig. 7). Rear side windows were matted. Two rear doors opening from the center had small matt windows as well.

The Fiat 508 was also the base for a small artillery tractor, designated PZInż 302 and commonly known as 508/518. Its front end as well as its reinforced frame were taken from the small Fiat, while the rear axle was from the bigger 518 model. To enhance its cross-country capabilities, the PZInż 302 had a reduction gear and all-terrain tires. The vehicle could go off-road equipped with a 37 mm anti-tank gun.

But the Polski Fiat 508 was too small for staff work. In 1938, the 518 received a field body, a reduction gear in its drivetrain, and all-terrain tires. The fabric top was folded, the windshield tilted forward. In 1939, an improved version was introduced with two doors, independent front suspension and heavier load on the rear axle (65 percent of the car weight vs 58 percent previously). Clearance was enlarged by 70 mm to 280 mm and the angles of approach and departure were steeper. The turning radius was only 4.5 m B 1.5 m less than in the old design. The bottom of the car was flush. Two spare tires mounted at the rear acted as a bumper, and the gas tank was enlarged from 45 to 80 litres. To facilitate officers' work, a table was added and two cabinets on the running boards. The production volume of Polski Fiat 518 staff cars is unknown.

Further Plans

By 1939, the capacity of PZInż was enlarged to at least 7000 vehicles, while plans for 1940-42 called for 12,000 trucks. The Army wanted PZInż to concentrate on trucks, artillery tractors and tanks after 1940, when the Fiat license expired. Models of modern trucks of 3-4t (PZInż 703/713) (Fig. 8) and 2t capacity (normal control PZInż 603) were prepared. A normal control PZInż 703 clocked more than 25,000 miles in tests begun in 1938, and the forward control



Fig. 9 – The PZInż 703 on trial. (Photo provided by the author.)



Fig. 10 – Chevrolet 157 tractor pulling Polish postal service trailer. (Photo provided by the author.)

PZInż 713 and bus PZInż 723, 20,000 miles. In 1939, a batch of 100 of 3-4t trucks were under extensive field trials. A modular system was adopted as all trucks and artillery tractors were technically related to each other.

As a replacement for the PZInż 302 and Polski Fiat 518, PZInż prepared a model with 0.5t capacity, designated PZInż 303 (Fig. 9). It had all-wheel drive, all-wheel steer chassis with all wheels sprung independently. The PZInż 303 was powered with the engine from the Polski Fiat 518 and three prototypes (a staff car, a truck and an artillery tractor) appeared in 1938. After winter and summer testing, production was scheduled for winter 1939.

obtained a concession for automotive production. Lilpop chose to make Chevrolet Model 157 trucks (3t) (Fig. 10) and the Chevrolet Master Sedan. The Army had some older Chevrolet vehicles and was fond of them. It was understood that the Army would place substantial orders for Chevrolet trucks. The Chevrolet 157 was also a subsidy model. Chevrolet trucks and cars used the same engine and production of this component was prepared in Lublin. The factory was nearing completion and start up of production was expected to take place in October 1939. The German invaders dismantled the factory.

Beginning in 1940, the PZInż 303 was to have been the smallest vehicle made by PZInż. The replacement for the Polski Fiat 508 was prepared by the engineering staff of PZInż for an independent private company, Zakłady Przemysłowe "Bielany" (Industrial Works "Bielany"). "Bielany" was a supplier of pressed steel panels for bodies of Polski Fiat vehicles. "Bielany's" owner, Antoni Wigękowski (whose initials gave name to the car—AW) secured an order of 1,000 staff cars and planned to built south of Warsaw, in Warka, a new factory for light vehicles made for the Army and civilian market. The design was completed in late 1938 and tested in 1939. The AW had a 4-cylinder, side valve, 1.3l engine developing 36 bhp. On the designer's desks was an OHV version developing 40 bhp. Most of the tools weres imported from Germany. Machines were in crates when the German invasion flooded Poland.

Private Industry

From time to time foreign makers tried to open assembly facilities in Poland to circumvent high import duties for assembled cars and commercial vehicles. During the late twenties, Citroën and General Motors opened assembly operations in Warsaw, but the Depression put an end to their existence. GM appeared again in Poland in 1936 when the Mechanical Works Lilpop, Rau & Loewenstein joint stock company

Technical Data on Some Vehicles Mentioned in This Article

Berliet CBA

Engine: Berliet Z, gasoline, 4-cylinder, 4-stroke, SV, liquid-cooled, 5300 cc, 30 bhp. at 1,250-1,350 rpm
Dimensions: L x W x H B 6,100 x 2,100 x 2950 mm.,
WB 4055 mm, track front B 1,800 mm., rear B 1820 mm., clearance B 350 mm.
Weight: 3,250 kg, payload: 3-4 t
Frame: steel, ladder type
Tires: solid, front B 940 x 130, rear B 1,000 x 130
Speed: 30 kph.
Fuel consumption: 50 l/100 km
Range: 200 km

Ursus A

Engine: gasoline, 4-cylinder, 4-stroke, SV, liquid-cooled, 2873 cc., 40 bhp. at 2000 rpm
Dimensions: L x W x H B 5115 x 2,000 x 2,500 mm.,
WB 3,500 mm., track B 1,500 mm., clearance B 350 mm.
Weight: 1,540 kg, payload: 2-2.5 t
Frame: steel, ladder type
Tires: 32 x 6@
Speed: 60 kph
Fuel consumption: 21 l/100 km

CWS T-1

Engine: gasoline, 4-cylinder, 4-stroke, OHV, liquid-cooled, 2984 cc., 45 bhp at 2,500 rpm.
Dimensions: L x W x H B 5,000 x 1,700 x 1,950 mm.,
WB 3,420 mm., track B 1,400 mm.,
Weight: 1,540 kg., payload: 2-2,5 t
Frame: steel, ladder type
Tires: 860 x 160 or 16 x 50
Speed: 100 kph.
Fuel consumption: 18 l/100 km.

Polski Fiat 621 L

Engine: PZInż 367 (Fiat 122B), gasoline, 6-cylinder, 4-stroke, SV, liquid-cooled, 2,952 cc., 46 bhp. at 2,600 rpm.
Dimensions: L x W x H B 5,700 x 2,070 x 2,620 mm.,
WB 3,600 mm., track B 1,480 mm., clearance B 230 mm.
Weight: (dropside model) app. 3,000 kg., payload: 2.5-3 t
Frame: steel, ladder type
Tires: 9.00 x 20"
Speed: 50-55 kph
Fuel consumption: 24-25 l/100 km

Polski Fiat 508/III

Engine: PZInż 117 (Fiat 108), gasoline, 4-cylinder, 4-stroke, SV, liquid-cooled, 995 cc., 24 bhp. at 3,600 rpm.
Dimensions: L x W x H B 3,515 x 1400 x 1380 mm.,
WB 2,300 mm., track B 1,200 mm., clearance B 160 mm.
Weight: 760 kg
Frame: steel, with X reinforcement
Tires: 4.5x16"
Speed: 100 kph.
Fuel consumption: 8.5 l/100 km.

Polski Fiat 518

Engine: PZInż 157 (Fiat 118), gasoline, 4-cylinder, 4-stroke, SV, liquid-cooled, 1,994 cc., 45 bhp. at 3,600 rpm.
Dimensions: L x W x H B 4,270 x 1,650 x 1,679 mm.,
WB 3,000 mm., track B front-1,390 mm., rear-1,410 mm., clearance B 175 mm.
Weight: 1,070 kg
Frame: steel
Tires: 5.5 x 17"
Speed: 100 kph
Fuel consumption: 11.5 l/100 km.

PZInż 303

Engine: PZInż 157 (Fiat 118), gasoline, 4-cylinder, 4-stroke, SV, liquid-cooled, 1,994 cc., 45 bhp. at 3,600 rpm.
Dimensions: L x W x H B 4,340 x 1,800 x 2,275 mm.,
WB 2,600 mm., track 1,450 mm., clearance B 250 mm.
Weight: 2,050 kg.
Frame: steel
Tires: 7.00x18"
Speed: 60 kph.
Fuel consumption: 22 l/100 km

PZInż 703

Engine: PZInż 705, gasoline, 6-cylinder, 4-stroke, OHV, liquid-cooled, 4,670 cc., 75 bhp. at 2,400 rpm.
Dimensions: L x W x H B 6,950 x 2,250 x 2,600 mm.,
WB 3,900 mm., track front B 1,700 mm., rear B 1,720 mm., clearance B 245 mm.
Weight: 3,580 kg., payload: 3-4 t
Frame: steel, ladder type
Tires: 230x20"
Speed: 80 kph.
Fuel consumption: 30 l/100 km

Persu, a Romanian Study of Aerodynamics

by Ralf J. F. Kieselbach

Romania produced an excellent engineer and capable aerodynamicist, whose recognition among the engineering elite is long overdue. His name was Aurel Persu (Fig. 1).

Born in 1890 in Bucharest, the young Persu, who was interested in technology, decided after finishing his schooling to further his career by studying in Germany. He had a high regard for the technical college in Berlin, Charlottenburg, especially since the first systematic measurement on motor cars had been carried out there. He enrolled in the course of "higher technical mechanics" in 1909 and passed in 1913 with distinction.



Fig. 1 – Aurel Persu

In 1914, he took up a lecturing post in Bucharest with the faculties of electrical engineering and industrial chemistry. Later, he also lectured at the technical college in Bucharest.

After the First World War, he returned to Berlin to brush up on the latest engineering developments. He attended further courses at the technical college, held by the well known professors Gabriel Becker and Emil Everling. Everling later defended one of his own streamlined vehicles by referring to the automobile of his pupil, Persu.

In 1922, Persu applied for a patent at the German patent office in Berlin for a "four-wheeled streamlined power vehicle" with wheels integrated into the streamline shape. The patent was granted in 1924 with the number 402.683. Further patents for the same application were granted to him in all the important industrial nations.

At this stage, the "Automobilul Aerodynamic Persu" had already been built, since Persu had started work on his vehicle in 1923. His son Nicolas Persu recalls that his father had made a full scale wooden model so that he could shape the aluminum panels himself. He had deviated somewhat from the ideal streamline car that he had patented to be able to construct the car largely from standard parts. The main feature of the car was its 4-cylinder engine, manufactured by the AGA-Werke in Berlin. Persu wanted to carry out extensive tests on the vehicle so that he could sell his concept to a car manufacturer.

The original streamlined profile shape changed into a car with a bulbous nose and a gradually downwards sloping, elongated tail (Fig. 2). The cut-off rear section was used by Emil Everling in an essay in 1949 to support his own theory.

An American car manufacturer, whose name unfortunately is not known, is said to have shown strong interest in the Persu vehicle in 1924 and wanted to buy the patent. The purchase of the patent, however, was only to ensure that the vehicle would not go into production and pose a potential threat to the manufacturer's own production program. Aurel Persu refused to sell his patent, since he still believed the vehicle could be mass-produced. However, he had no luck in finding a manufacturer to produce it.

Persu had done extensive tests and measurements on his car, which he reported in technical literature. The numerous patents show that he also considered using an electric motor. Even a 12-cylinder(!) horizontally-opposed air-cooled engine under the floor was considered.

In 1925, Persu returned home and took the car with him. He resumed his taxing post as lecturer, later as professor, and, as part of his duties, held a series of 10 lectures annually on the technology of motor vehicles. While in charge of the royal Romanian Automobile Club, he organized and supervised all motor vehicle races in Romania.

From 1925 to 1937, he built and laid oil pipe lines for the Romanian railways, in addition to his lecturing activities. Persu was also an aviation enthusiast, which was probably the reason for his joining the management of the Industria Aeronautica Romana (Romanian aviation industry) as managing director from 1938 to 1940. *Motor Kritik* reported in February 1939 that at this time the Romanian automobile experts were negotiating with the "Georges" works (otherwise unidentified) about the establishment of a local automobile industry. This was not to be, and a Romanian automobile industry did not start until 1970.

Up to the time of his retirement in 1950, Persu was occupied with the laying of oil pipe lines. Technology continued to interest him, and he made his vast knowledge available to the Institute for Technical Documentation in Bucharest.

The streamline car had lived in Persu's garage from 1925 to 1969, when he presented it to the Technical Museum in Bucharest. The car was in running condition and had 62,000 miles on the odometer, according to Nicolas Persu. It was on display there for many years, and may still be, though I understand that it was to be displayed at the Deutsches Technikmuseum in Berlin in 1992.

In 1973, Persu published a pamphlet in French directed at the orthodox mentality of the international car manufacturing industry. In it, he presented his idea of a streamline vehicle from 1922 as "ultima ratio" for the sound construction of a motor vehicle, and corroborated this idea by presenting a modernized Persu teardrop-shaped car with a panoramic windshield (Fig. 3). Persu died in Bucharest in 1977, at the ripe old age of 87.

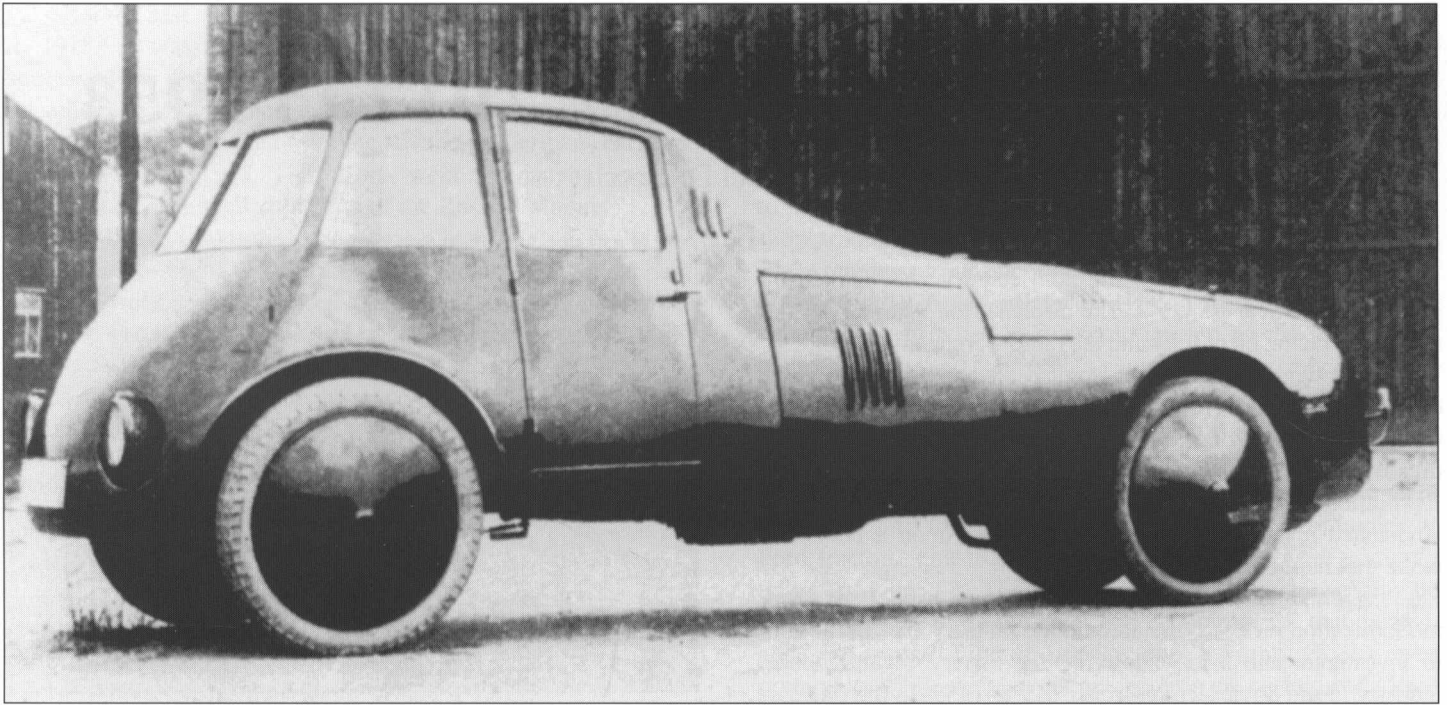


Fig. 2 – The Persu vehicle as shown to the public in 1923-24.

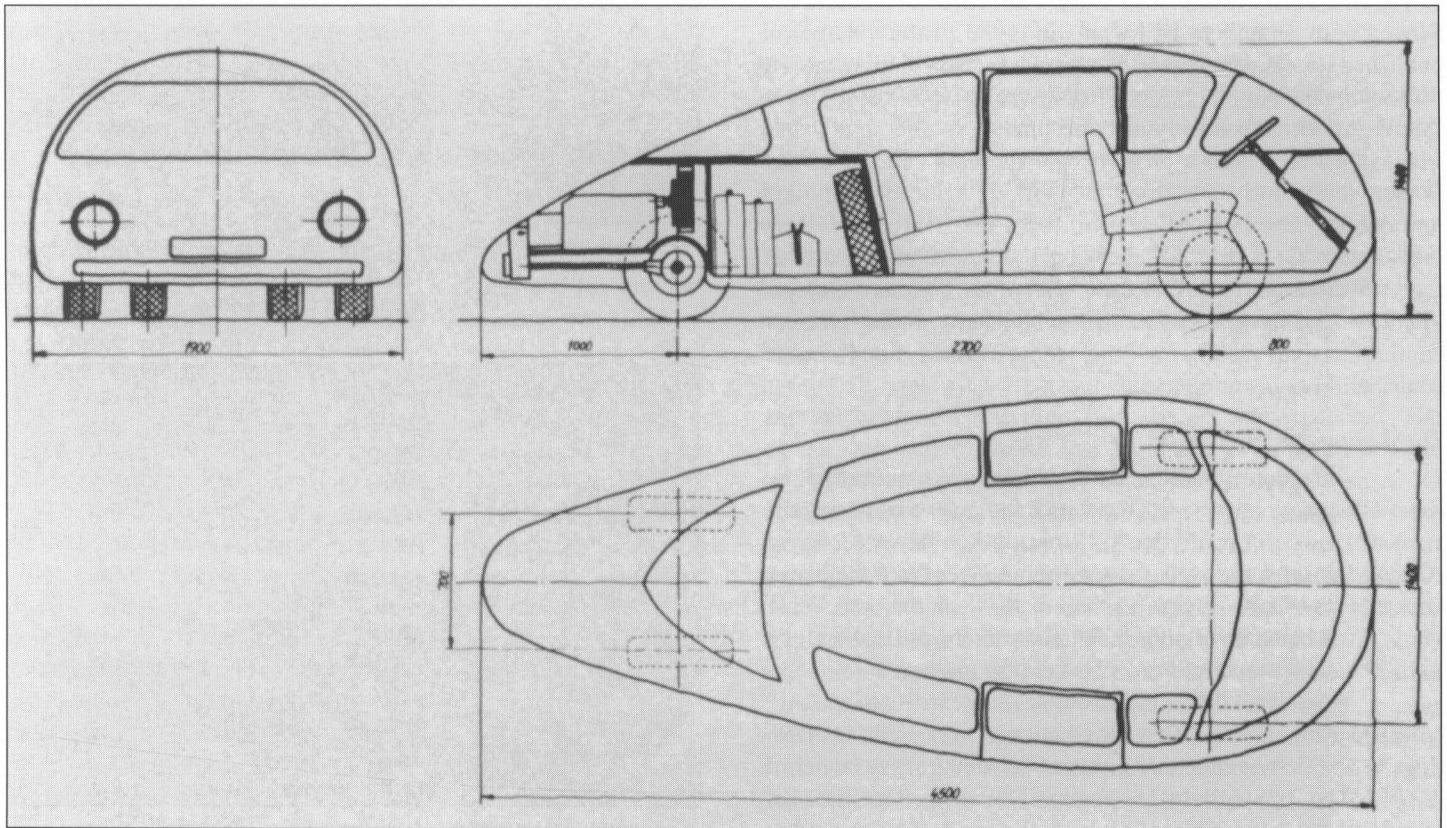


Fig. 3 – Persu's 1973 design.

The Soviet Auto Industry, 1917 to 1953

by Michael D. Besch

Introduction

The first quarter of the 20th century was marked by great technological progress. The airplane, the automobile, the truck and tractor, electricity and the radio were icons of progress. To a large degree, these technological advances by-passed the country of Russia. True, the nobles possessed some of these items but to the workers and peasants they were the stuff of dreams—if, in fact, they were aware of them at all. The Revolution of 1917 sought to change this. The Bolshevik leaders envisioned a modern Russia and embarked upon a course to make that happen.

This article will examine one aspect of this modernization process: the automobile industry. The purpose is to investigate and briefly describe the history of automobile industry in the Soviet Union from 1917 to 1953. In the process, these questions will be addressed. First, “What were the feelings and policies of Lenin and Stalin toward the auto industry and how did they differ?” And secondly, “Was there a distinctly Russian auto industry?”

The historian researching this topic is beset by incompleteness, inaccuracies, and a general lack of sources on the subject. Until recently, the only complete secondary work on the subject was A.S. Issaiev’s *From the Self-Propelled Carriage to the ZIL-111*, written under Soviet direction to promote the Soviet auto industry. However, in 1993, L.M. Shugurov published *Russian and Soviet Motorcars*, in two volumes, and K. Shlyachtinski, *Automobiles of Russia* (covering the post-World War II period), presumably more accurate accounts.

There is also a problem with primary sources in that Soviet production data from the period is inconsistent and unreliable. Even Ford’s own corporate records were inconsistent. Only by cross-checking and by assembling a wide array of disparate pieces of the puzzle does a picture emerge. There are and likely will continue to be pieces missing. A truly comprehensive history of this topic would be valuable contribution to historiography.

The Beginnings: Before the Revolution

The majority of the motor vehicles in Russia before the Revolution were imported¹. One source indicates that during the years of 1914-1917 nearly 40,000 vehicles were imported. These consisted of trucks as well as cars². Cars ranged from the heavy Packards and Rolls-Royces to the small but durable Model T Fords. Ford had a distributor in Russia as early as 1904 and, by 1914, Russia was one of Ford’s best export markets³.

However, there did exist a nascent Russian auto industry. Although the first Russian auto was built in 1896 (Fig. 1), the first commercially successful venture was launched in 1908. The Russko Baltiskoi Vagonnij Zavod in Riga, a maker of railcars, introduced a car known as the Russo-Baltique, often called the Russo-Balt.⁴ (Fig. 2) Reports of production numbers



Fig. 1 – The Yakovlev-Freze, first automobile built in Russia, 1896.
(From the editor’s collection.)

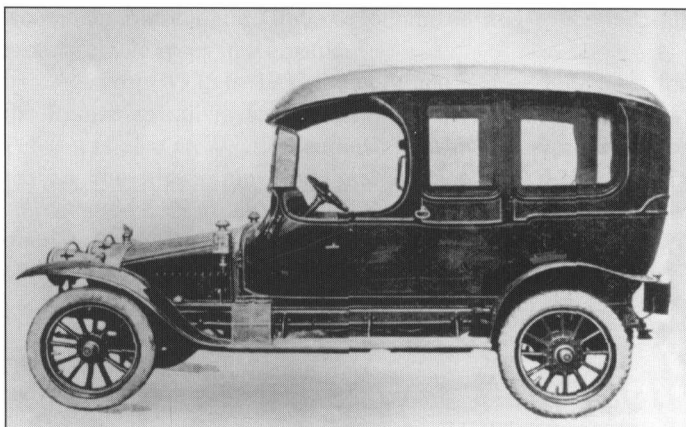


Fig. 2 – 1912 Russo-Balt C24/40
(From the editor’s collection.)

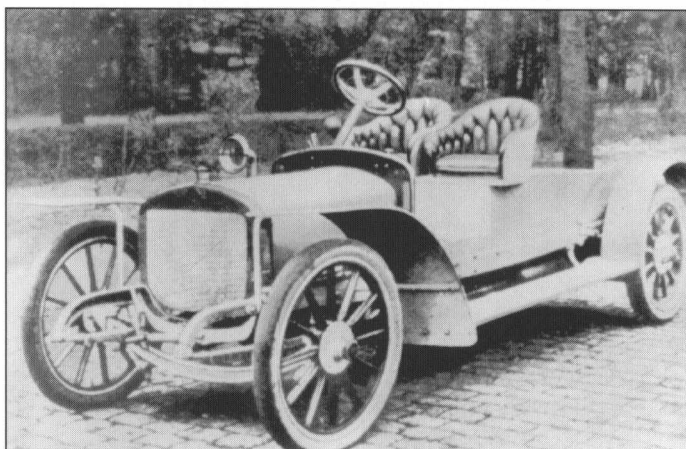


Fig. 3 – 1909 Russo-Balt C24/30 in sporting trim.
(From the editor’s collection.)

vary, but the best source indicates that 521 were built from 1909 to 1915.⁵ It was a large, heavy, luxury car, although it was successful in a few sporting events (Fig. 3). The Russians attempted to move some of the manufacturing equipment to Moscow as they retreated from the advancing German army that overran Riga in 1915. The efforts went for naught, and the German takeover spelled the end of the Russo-Baltique.

Other automotive factories, which existed in Russia before the war, included a Renault truck factory in St. Petersburg and an AMO plant to make Fiat-based trucks in Moscow.⁶ Renault also had begun a plant in Rybinsk; a truck plant had been planned for Yaroslavl; and Russo-Baltique had planned a factory in Moscow. All of these plans ended with the war.

The Early Soviet Years: 1917-1928

The early years of the Bolshevik government were marked by continued conflict and the necessity to provide the basics of food, clothing, and shelter to the people of Russia. Automobile production took a back seat. However, there were cars in Bolshevik Russia, and more were being imported during the period. There were none built in Russia, however, until the “Ford” plants were completed in 1930.

There is an interesting paradox in Lenin’s view of the automobile and his view of the auto industry itself. In a speech given in July 1913, he derided the western auto industry as a “fashionable” industry, the policy of which (making luxury cars for the very rich) would soon lead to an inevitable collapse. He saw the usefulness of the automobile if it could be made available to the majority of workers. He saw the possibility of converting land, which was currently devoted to raising grain to feed horses, being converted to the growing of food for people. The car could replace the horse⁷. Lenin saw less use for cars in the cities and in 1918, in a letter to Comrade Zinoviev, ordered him to send 137 automobiles from Petrograd to Siberia as he had determined them to be useless.⁸

However, despite this egalitarian, pragmatic approach to the auto industry in general, Lenin himself, and other Bolsheviks leaders as well, preferred luxury cars. Lenin himself never drove but always was driven about in his Rolls-Royce⁹. Stalin preferred Packards. Both Czar Nicholas and his brother Michael had owned 12-cylinder Packards. Michael was killed in his, but the Bolsheviks kept it and even entered and won a race with it. Many Packards were imported in this era for Stalin and other leaders.¹⁰ Eugenia Ginzburg in her book, *Into the Whirlwind*, says that the upper classes drove Lincolns and Buicks, the middle classes, Fords.¹¹

The greatest impact, however, came from the Ford automobile. The Ford name was well known in Russia. Many Ford tractors had been imported. Lenin and Trotsky praised Ford’s production methods. “Fordizatsia” represented high efficiency, mass production, and the large-scale distribution of cheap goods.¹² Ford represented modernism; the American automobile was seen as the “Totem of Progress.”¹³ Henry Ford was second to Lenin in popularity.¹⁴

Given this setting and support, it is not surprising that, early on, Ford was the major supplier of cars to the Soviets. In this period, Ford sold—Russia bought. The transactions were handled, from 1919-1922, by Ivan Stacheif and Company of

Petrograd. Initially, they were to purchase 400 Fords—they actually bought 238.¹⁵ After Stacheif, the Allied American Corporation took over the contract and was in charge of importing not only cars but trucks and tractors as well.¹⁶ During the period of 1922-1925, truck and tractor imports vastly outnumbered automobiles. While numbers from this period are to be used only with the greatest of skepticism, Ford records show that in these four years 414 automobiles, 865 trucks and 14,293 tractors were imported.¹⁷

In 1926, an official delegation from the Ford Motor Company was invited to Russia to consult on the servicing of tractors, trucks, and cars, with a view toward possibly opening a plant in Russia. The delegation recognized the huge market, but also inefficient operators, poorly trained workers, and poorly managed factories.¹⁸ The delegates had noticed a proclivity for the Russians to latch onto foreign designs and copy them without regard to patents or royalties. For instance, copies of Ford tractors, Fiat trucks and Bosch magnetos were currently being produced.¹⁹ They recommended that no plant be established due to the political and economic risk that existed, and that establishing a service and training facility was preferable. While the visit did not result in the building of a Ford plant, the visit did lay the groundwork for perhaps the greatest of all Soviet automotive enterprises—the great Nizhnii-Novgorod automobile factory.

The First Five Year Plan: Nizhnii-Novgorod, 1928-1933

In a speech in 1933, Stalin said that prior to the first Five Year Plan there was no Russian automobile industry. There were a few exceptions—the AMO plant in Moscow, the small Il’ich truck plant in Moscow, and a truck plant in Yaroslavl. The 1927 government program included no provision for auto production.²⁰ The first Five Year Plan changed this.

The first proposal by Gosplan, the Soviet economic planning organization, envisioned a small facility producing around 10,000 cars per year after five years. N. Osinskii, Head of Central Statistical Administration, proposed a production goal of 100,000 autos per year. He was backed in this plan by Valerian Kuibyshev, later the Deputy Premier. This debate which had begun in 1926, continued until 1928 at which time Osinskii and Kuibyshev prevailed upon the Presidium to go with the bigger plan.²¹

It was clear that to achieve these goals, western assistance would be needed. This was not unprecedented. The Brandt Company of Detroit and the Hercules Company of Ohio had provided equipment and technical support for the AMO plant in Moscow and the Yaroslavl plant.²² Two companies were considered likely candidates: Ford and Chevrolet. The Chevrolet was rejected as being too expensive and too complicated to build and maintain.²³ In 1928, a delegation was sent to America to begin discussions with Ford. The first delegation failed to reach any sort of agreement, but, later in that same year, a second commission, led by Valery Meschlauk, had much greater success. The initial agreement was to provide knocked down units and parts as well as technical assistance.²⁴ Details were decided at meetings held in Moscow in 1929. Charles Sorensen represented Ford, and A.I. Mikoyan, and A.F. Tolokontzen represented the Soviet government. Although Stalin took no



Fig. 4 – The Ford-based GAZ-A leaving the factory
(From Shugurov, *Russian and Soviet Motorcars*.)

active part in the discussions, he would occasionally stop in to say “Allo Sharley” to Sorensen, and it was evident that he was very much interested in the project.²⁵

The final agreement, officially between Ford and the Amtorg Trading Company, provided the following:

1. Ford would supervise the building of the factories.
2. Ford would design the layout of the equipment.
3. Ford would supply plans for the Model A and AA vehicles.
4. Ford would train fifty Russian technicians per year in the U.S.
5. Ford would provide continued technical expertise and advice.
6. Russia would pay the costs involved in building plants and acquiring equipment.
7. Russia would pay the salaries for all personnel.
8. Russia would cover the expenses of the Ford engineers in Russia.
9. Russia would purchase 72,000 cars and trucks in knock-down form over a period of four years at 15% over cost.
10. Russia would purchase all replacement and component parts from Ford for the next nine years.

This agreement was signed on May 31, 1929.²⁶

There is considerable confusion among secondary sources regarding the succeeding four years. The confusion stems from historians’ misunderstanding of the terms “assembly” and “production.” An assembly plant is one in which gathered components are assembled into a finished product. A production plant is one in which the component parts are actually produced and then, usually, assembled into a finished product. Under the Amtorg-Ford agreement there were to be two assembly plants, one at Nizhnii-Novgorod and one in Moscow, and one production plant, at Nizhnii. The assembly plants were brought on line first, and it was there that the knocked-down units were assembled.

There were many problems in bringing all three plants into operation. There were problems with a lack of trained workers. Former Ford line workers were hired from the U.S. and given titles of “experts.”²⁷ There were supply problems because coal and iron resources were located far from Nizhnii-Novgorod. There was so much bureaucracy that it took up to four weeks to prepare blueprints that in the U.S. would be done in five minutes.²⁸ There were problems transporting raw materials for construction of the plant itself. Horses were used to haul wagons, and at one point a lack of oats prevented the use of horses!²⁹

Despite these problems the two assembly plants began assembling vehicles in 1930; the Nizhnii-Novgorod site in February; and the Moscow site in August.³⁰ The production plant eventually produced its first automobile in January of 1932. It was by then named the Gorky Automotive Works, and the cars were called “GAZ,”³¹ the first Ford Model A-based cars the “GAZ-A” (Fig. 4).

By 1933, the end of the contract with Amtorg, the Soviets had purchased and assembled 28,000 vehicles—not 72,000.³² The Gorky plant was producing about 24,000 vehicles annually—not 100,000.³³ Whether Ford made money or not is an open question. Even Ford’s figures do not agree. However, production figures from *Automotive Industries* magazine show production of cars and trucks rising from 2,000 in 1929 to 26,700 in 1932.³⁴ These figures are slightly greater than Shugurov presented in his 1993 book. He indicates that total car and truck production in Russia rose from 1,627 in 1929 to 23,782 in 1932.³⁵

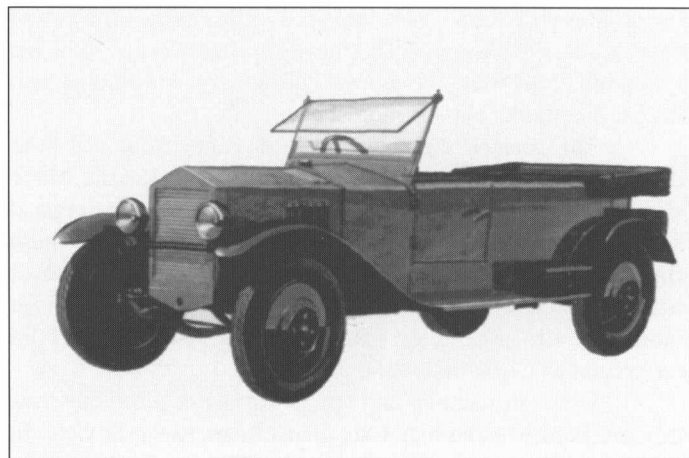


Fig. 5 – 1929 NAMI-1. (From Shugurov, *op. cit.*)

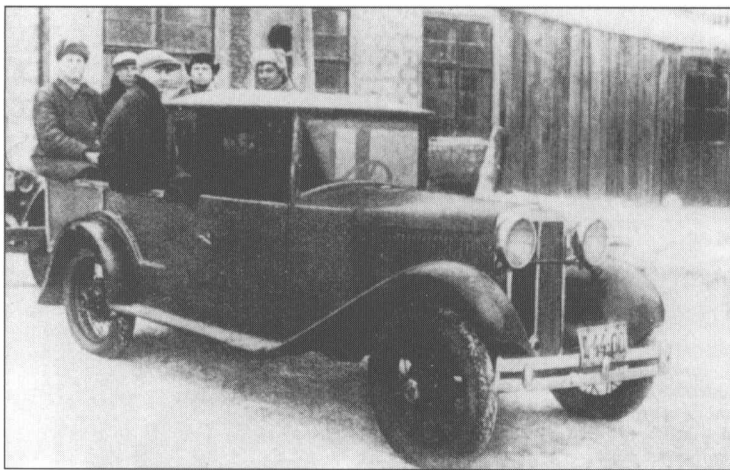


Fig. 6 – 1932 NATI-2
(From Shugurov, *op. cit.*)

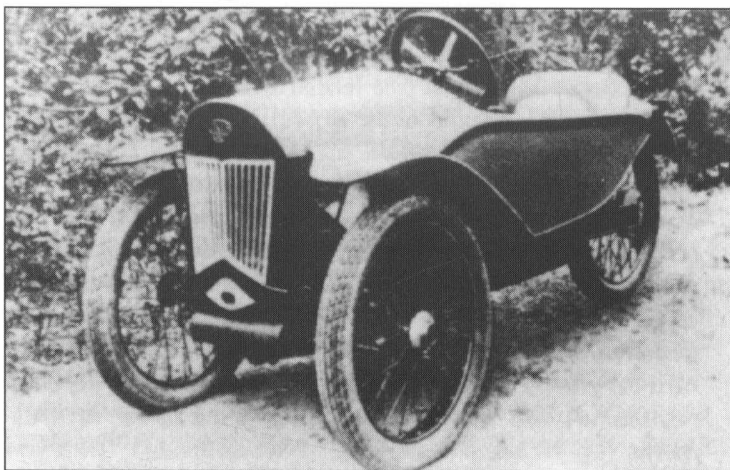


Fig. 7 – 1933 OKTA
(From Shugurov, *op. cit.*)

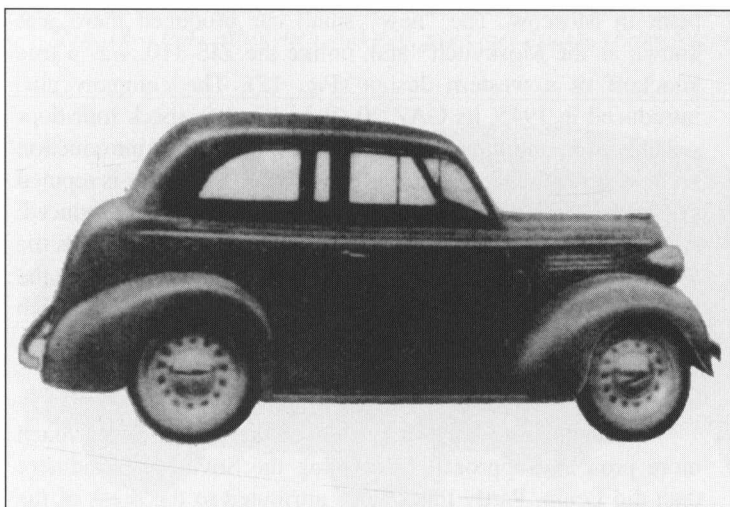


Fig. 8 – 1940 KIM-10
(From Shugurov, *op. cit.*)

During this period, the Scientific Automotive Institute (NAMI) existed to evaluate and develop automotive and truck designs for future production. The first such, first shown in 1927, was called NAMI-1, a rather truck-like open two-door car (Fig. 5). It was apparently manufactured in small quantities, Shugurov indicating total Soviet car production at 50, 156, and 160 vehicles in 1928, 1929, and 1930. NAMI-1 was to be succeeded by the NATI-2 (reflecting a change in NAMI's name to Scientific Motor and Tractor Institute), a five-model range which included a two-passenger roadster, a four-passenger phaeton, and a pick-up with a load capacity of 400kg (Fig. 6). NATI-2 was to have had an air-cooled 4-cylinder engine, but the project did not meet Stalin's approval and it was cancelled.

Because development of small economical vehicles was gaining official favor, an experimental three-wheeled vehicle was developed by OKTA but it apparently went nowhere (Fig. 7).

The Quiet Years: 1934-1940

The period of 1934-1940 is one of which very little is known of the Soviet auto industry. The Gorky plant, the Nizhnii and Moscow assembly plants and the Yaroslavl (YAGAZ) and Moscow truck plants all continued to run. A plan existed to build four new automobile plants near the centers of iron and steel production.³⁶ One piece of evidence that auto production grew dramatically during the period is that steel usage by the auto industry rose from 14.2 thousand tons in 1932 to 494 thousand tons in 1938.³⁷ Production figures show output (including trucks) rising from 26,849 in 1932 to 215,000 in 1938³⁸ (Shugurov: 23,782 in 1932 to 209,359 in 1938). Walter Carver, writing in March of 1932, noted a market gap: the lack of an upper middle class car. He also indicated that there was rumor of a possible new plant in Cheliabinsk to build such a car.³⁹

A new car was introduced in 1935. This car was known as the ZIS. The letters were the first letters of words which loosely translated meant "Factory in Honor of Stalin." The ZIS used an engine and a basic body design that were influenced much by American practice of the period, some seeing a resemblance to GM's cars.⁴⁰ In a photo of Stalin standing next to his new 1935 ZIS 101, one can recognize the distinctive radiator grill modeled on the 1934-35 LaSalle.⁴¹ The bodies themselves, however, were built with dies and presses designed and installed at the Stalin works by the Budd Company of Philadelphia.⁴²

An interesting sidelight to the era, and an insight into Stalin's thinking about the auto industry, was his interest in producing a small economical car for the masses. In 1932, Stalin invited Ferdinand Porsche to visit Russia. Stalin was very impressed with Porsche and his design for a smaller car. He offered Porsche the position of head of the Russian auto industry, a villa in the Crimea, a blank check for research, and a chance to build a small car. After lengthy deliberation, Porsche decided he was too old to relocate his family to Russia and declined. The small car became the Volkswagen.⁴³ Stalin did not forget the idea of a small economical car, and, in the late '30s the KIM was developed

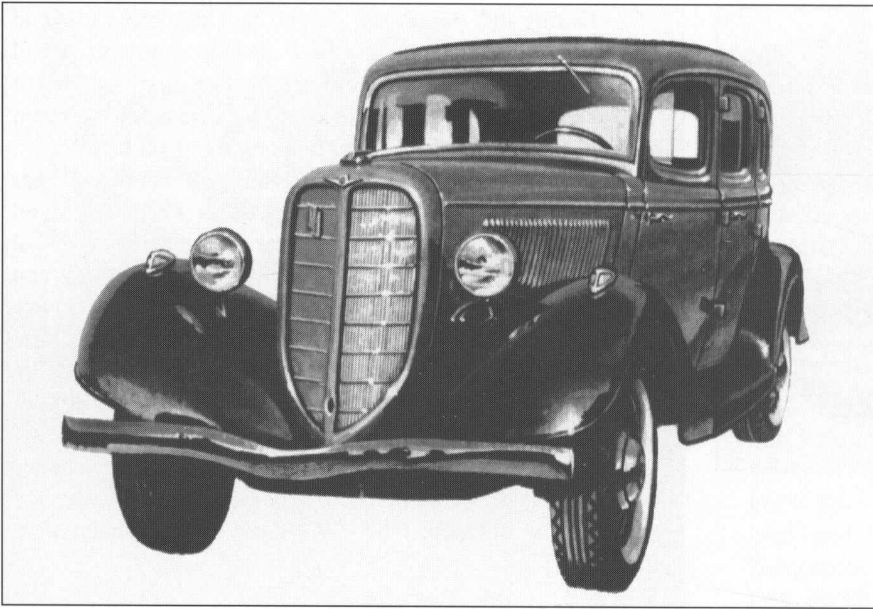


Fig. 9 – 1936 GAZ M-1 (From Shugurov, *op. cit.*)

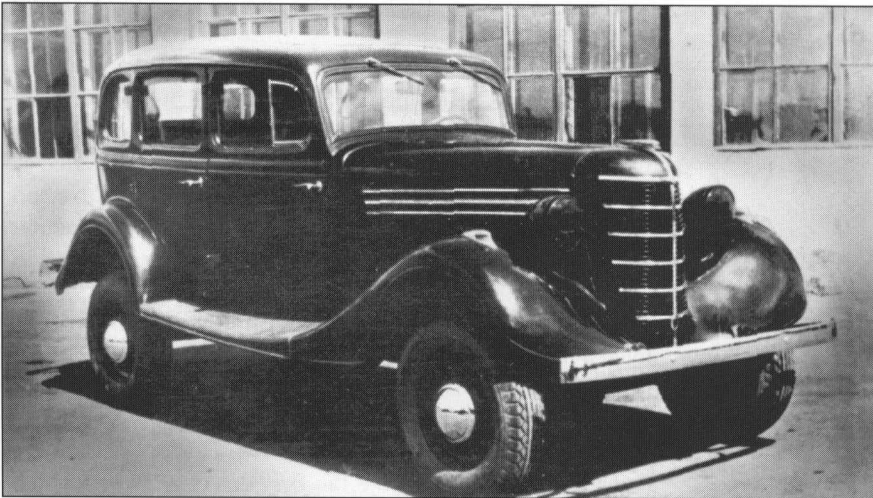


Fig. 10 – 1941 GAZ-61. (From the editor's collection.)

(Fig. 8). Unfortunately, the car never went into production, the development cut short by the war.

In 1936, GAZ modernized the Ford design with its model M-1. While the body resembled those of the 1933-34 Fords, the grille was more like that of the 1934 Hudson (Fig. 9). A further front-end update occurred by 1941 (Fig. 10). Later in the 1930s ZIS introduced the 102, a four-door convertible version of the 101, and the 101-A, an update of the front sheet metal of the 101 to replace the LaSalle-like grille with one resembling that of the 1938 Chrysler (Fig. 11).

1938 was the peak of Soviet car and truck production in the prewar years. According to Shugurov, it fell to 198,416 in 1939, and 141,469 in 1940.

The Postwar Years: 1946-1953

Vera Dunham in her book, *In Stalin's Time*, presents a hypothesis that in exchange for their loyalty Stalin would offer the middle class material goods and a chance to "get ahead." His

policies toward the auto industry were consistent with this hypothesis. As in the prewar days, the source for new automotive products came largely from the west.

Stalin liked Packards, and it was only logical that the next version of the ZIS was to reflect this interest. The story used to be that at some point during the war, the Roosevelt administration approached Packard with a proposal to sell its old dies and equipment to the Soviet Union. These dies had been used to produce Packard's older series cars for three years. The move would provide Packard with a financial return on equipment that in a year or two would be sold for scrap. The move would give Russians a new car. However, Russian historian Issaiev writing in 1961 described the development process beginning in 1943, the organized preparation plans, the building of dies, jigs molds etc., and the awarding of the "State Prize" to the design team in 1947. So the ZIS 110 was a local product (see related article that follows, "The Origins of the ZIS 110").

The ZIS 110 took the name of the discontinued prewar ZIS 101-A. It was a passable copy in most respects, except the electrical system, of a 1941-42 Packard 180 sedan. It was also available in a parade car version with top struts resembling those of the last American touring cars of the late 1930s. By the time of successor models, Stalin was out of favor so the ZIS marque disappeared and was replaced by ZIL, causing no end of confusion for Western historians. The "L" was the initial of the "designer" of the new car, and not, as some supposed, Lenin.⁴⁴

Russia had also acquired the old Opel Kadett factory's equipment from Brandenburg and transported it to the old GAZ assembly

plant in Moscow. The "new" small car produced there was known as the Moskvitch⁴⁵ and, unlike the ZIS 110, was a true knockoff of a western design (Fig. 12). The company also introduced in 1945, its GAZ 20 (Pobeda), a fastback four-door sedan with a continuous fender line that preceded its introduction in the U.S. by the Kaiser/Frazer line (Fig. 13). This car is reputed to be the first all Russian design to actually be produced. Although it is beyond the scope of this essay, later in the 50s the Soviets once again used Packard and Cadillac design cues in the GAZ-12 (ZIM), GAZ-13 (Chaika) and ZIL-111 sedans, which were produced until the mid 60s and late 70s respectively.

Conclusion

In looking back, it is evident that Stalin had a much more proactive approach to building the Soviet auto industry than did Lenin. Partly this can be attributed to the press of the issues of survival that existed during Lenin's time. More important, however, is the evidence that Stalin saw the

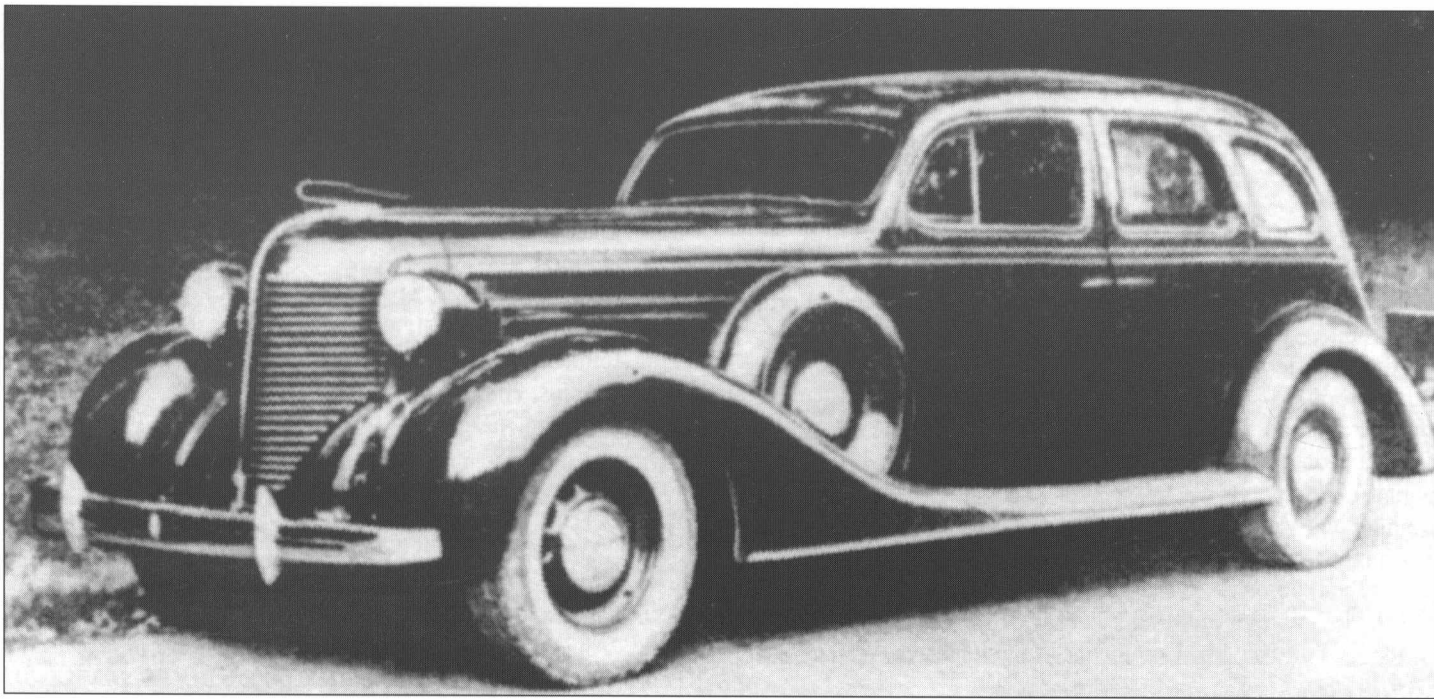


Fig. 11 – 1940 ZIS 101-A (From Sugurov, *op. cit.*)

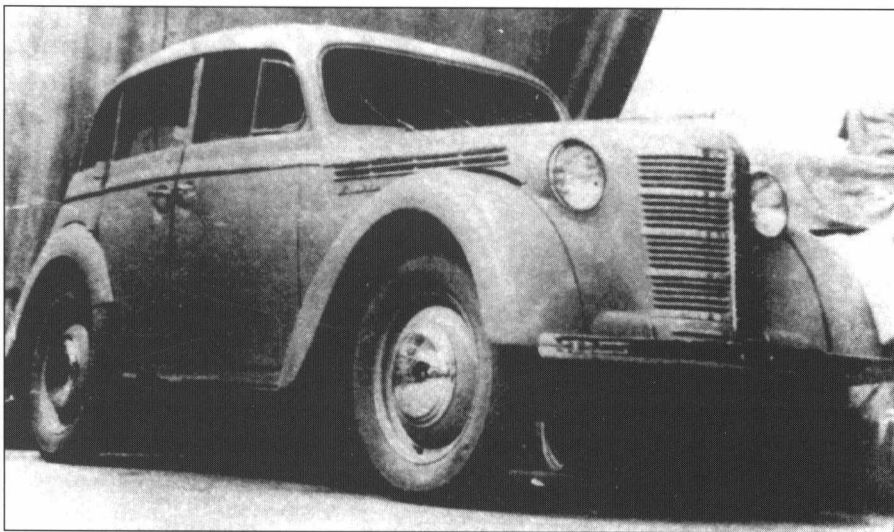


Fig. 12 – 1947 Moskvitch 400-420, née Opel Kadett. (From Sugurov, *op. cit.*)

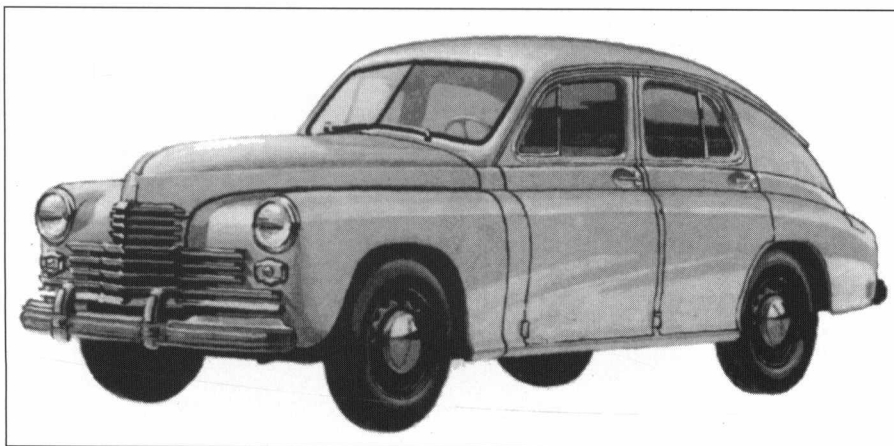


Fig. 13 – 1945 GAZ-20 (Pobeda). (From Sugurov, *op. cit.*)

automobile as a symbol of progress—as evidence of technical and industrial achievement. If he was to build a great country, he needed to provide the accoutrements of a great country which in the 20s and 30s included the automobile. He was realistic enough to realize that in the short span of time he had, the quickest way to acquire that industry was to import it. The industry itself, until after World War II did not produce, except for the Russo-Baltique, any original products. All were copied or built by others. However, Stalin did establish an industry which, at his death in 1953, was producing a range of vehicles from the little Moskvitch and mid-size Pobeda to the large ZIS. Production of cars had gone from near zero in 1928 to 77,000 in 1953—despite the devastation of six years of war.⁴⁶

Notes

1. Shugurov, Russian and Soviet Motor Cars, volume 1, reproduces pre-World War I ads for U.S. marques Case, Ford, Hupmobile, Metz, National and Michigan; French marques Berliet, Brasier, Charron, De Dietrich, DeDion Bouton, La Buire, Lorraine-Dietrich, Mors, Panhard, Peugeot, and Renault; German marques Benz, Komnick, Mercedes, N.A.G., Opel, Oryx, and Protos; Belgian marques Metallurgique and Minerva; Italian marques F.I.A.T. and Isotta Fraschini; British marques Daimler and Vauxhall, and the Austro-Hungarian marque Laurin & Klement.

2. *Ibid.*, 66.

3. Mira Wilkins and Frank Earnest Hill, American Business Abroad: Ford on Six Continents (Detroit: Wayne University Press, 1964), 27, 62.

4. Alec Ulmann, "The Odyssey of the Russo-Baltique," *Automobile Quarterly* 14-2 (Second Quarter 1976): 208-215.

5. *Ibid.*, 215.

6. James M. Laux, The European Automobile Industry (New York: Twayne Publishers, 1992), 66.

7. V. I. Lenin, The Collected Writings, Volume 19 (Moscow: Foreign Language Publishing House, 1960-1970), 283-284.

8. *Ibid.*, 31:96.

9. Griff Borgeson, "Resurrection in Moscow," *Special Interest Autos* 55 (February 1980): 18.

10. Tom Mahoney, "Packard: A Great Name Passes On," *Automobile Quarterly* 1-3 (Fall 1962): 229.

11. Eugenia Ginzburg, Into the Whirlwind (New York: Harcourt Brace, 1967), 37.

12. Allen Nevins and Frank Hill, Ford: Expansion and Challenge, 1915-1933 (New York: Charles Scribner's Sons, 1957), 673.

13. Richard Sites, Revolutionary Dreams (New York: Oxford University Publishing, 1989), 149.

14. Beverly Rae Kimes, "The Model A Ford," *Automobile Quarterly* 11-4 (Fourth Quarter 1973): 421.

15. Wilkins, 209.

16. *Ibid.*, 212.

17. *Ibid.*, 212.

18. *Ibid.*, 213.

19. Nevins, 674-676.

20. *Ibid.*, 678.

21. Kurt S. Schultz, "Building the Soviet Detroit: The Construction of the Nizhnii-Novgorod Automobile Factory, 1927-1932," *Slavic Review* 49-2 (Summer 1990): 201.

22. Laux, 132.

23. Schultz, 203.

24. Charles Sorensen, My Forty Years with Ford (New York: W. W. Norton, 1956), 195.

24. *Ibid.*, 197.

26. Wilkins, 208.

27. Sorensen, 197.

28. Nevins, 679.

29. Schultz, 205-206.

30. Wilkins, 222.

31. *Ibid.*, 224.

32. *Ibid.*, 225, 227.

33. Schultz, 211.

34. "Annual Automotive Statistics," *Automotive Industries* 66 (February 27, 1932): 286; and *Ibid.*, 68 (February 25, 1933): 220.

35. Shugurov, p. 74, p. 160.

36. M. Gardener Clark, The Economics of Soviet Steel (Cambridge, MA: Harvard University Press, 1956), 210.

37. *Ibid.*, 16.

38. "Annual Automotive Statistics," *Automotive Industries* 80 (February 25, 1939): 203.

39. Walter L. Carver, "Amo and Nizhnii-Novgorod Plants Lead Soviet Vehicle Plans," *Automotive Industries* 66-11 (March 12, 1932): 420.

40. Terry B. Dunham and Lawrence R. Gustin, The Buick: A Complete History, 3rd edition (Kutztown, PA: Kutztown Publishing, 1987), 398.

41. Robert Tucker, Stalin in Power (New York: W. W. Norton & Co., 1990), 440.

42. Stan Grayson, "The All-Steel World of Edward Budd," *Automobile Quarterly* 16-4 (Fourth Quarter 1978): 362.

43. David Owen, "Porsche: The Man," *Automobile Quarterly* 9-2 (Fall-Winter 1970): 125, 132.

44. Borgeson, 18-23.

45. Laux, 168.

46. Richard Moorsteen, Prices and Production of Machinery in the Soviet Union, 1928-1958 (Cambridge, MA: Harvard University Press, 1962), 287.

Russian Straight Eight

The ZIS Examined and Sampled Russia a Competitor in World Markets?

DURING the weeks when the United Nations were meeting in the Central Hall at Westminster a large black saloon was often to be seen parked outside flying the Soviet flag. Closer investigation revealed that it was a ZIS-101 and was one of the only two Russian cars ever to be imported into this country. By the courtesy of the Russian Trade Delegation it was possible for *The Autocar* to examine the car more closely and to try it on the road.

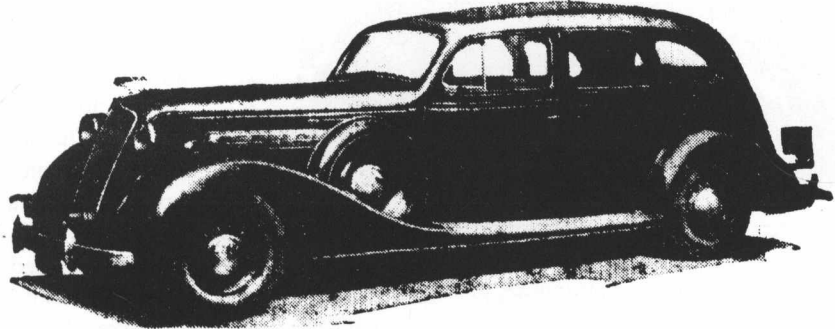
First impression is of its resemblance to a rather rugged-looking American car of the mid-thirties, an impression strengthened upon raising the large bonnet, when a straight eight engine is revealed that bears a marked resemblance to the Buick engine of 1932 and 1933. It has the distinctive six-branch water outlet of the 1932 Buick, but has the 1933 type of induction and exhaust manifolds, even down to the coiled tube thermostat controlling the volume of hot air admitted to the carburettor via the extended intake. The wing nuts securing the overhead valve cover are also identical with the type employed on the Buick.

Drive to the Auxiliaries

The drive for the auxiliaries on the near side of the engine is again typical of Buick practice, with the distributor at right angles to the dynamo, which is driven from the camshaft by gears, and with a long shaft carrying the drive from the dynamo to the water pump at the rear of the engine.

The fact that a considerable number of Buicks was purchased in this country by the Arcos Trading Mission in the early 1930s and subsequently shipped to Russia may have some bearing on the strong family likeness of the ZIS to the Buick.

No detailed information was available as to the engine's internals, not even its bore and stroke, but it is rated at 37 h.p. and so probably has a capacity of about 5½ litres. It drives through a three-speed gear box which appeared to have synchromesh. On entering the car one's first impression is of the spaciousness of its interior. The steering is on the left, and the driver is confronted by an imposing array of instruments which extend



Typically American in appearance the Russian ZIS-101 has yet managed to achieve a distinctive and powerful-looking front end. The mascot surmounting the radiator incorporates the Red Star emblem.

across nearly the whole width of the fascia board. As they are calibrated in Russian, the function of many of them remained a mystery. A large car heater of Russian make is fitted under the scuttle in front of the passenger.

Acceleration away from rest is rather sluggish on first gear, but improves considerably with the change into second gear, when it appears to be well up to normal American standards. Once top gear is engaged the car cruises effortlessly at 40-45 m.p.h., although the engine makes itself felt and is more noisy than in the usual run of American vehicles. It should be emphasized that this particular car was by no means new, however.

Road-holding and Braking

Normal suspension by half-elliptic springs at front and rear is employed, giving a very soft and comfortable ride. The ZIS seemed to handle well on the normal fast main-road bend, but rolled somewhat if sharp corners were taken at any speed. The brakes were powerful and pulled the heavy car up in a straight line when applied hard at about 40 m.p.h.

The external and internal finish is well up to standard, and a definite feeling remains that if the new ZIS, the 110, can be placed on the market at a reasonable price it should sell without any difficulty.

The possibility of the Soviet Union becoming a serious competitor in the world's car markets in the not very distant future should not be altogether ignored. It is to

Very reminiscent of the Buick is the ZIS straight eight engine. The distinctive six-branch water outlet and the extension of the air intake to collect warmed air from the radiator will be noted.

be remembered that Russia now occupies a dominating political and economic position in such Central and South-eastern European countries as Poland, Rumania and Hungary.

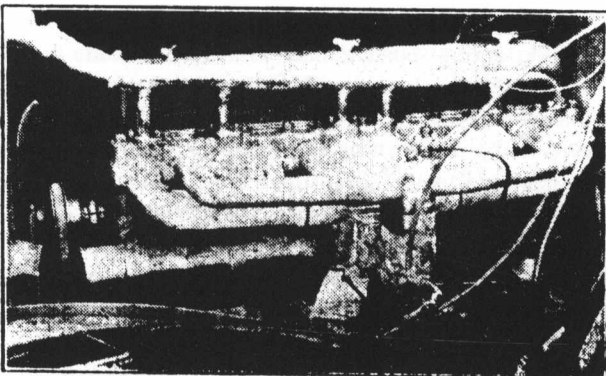
Last August the Soviet Government approved a five-year plan for increasing the output of cars and commercial vehicles to three or four times its pre-war level at a cost of 4,000 million roubles.

The increase in production will be achieved mainly by the expansion of existing factories. The Stalin automobile factory at Moscow, where the ZIS-110 seven-seater limousine is built, will considerably exceed its pre-war output during the next two or three years; the Gorki factory now building the Pobeda (Victory) model, a low-priced five-seater, is to be expanded in order to double its present output and will eventually turn out more than 1,000 cars and trucks a day, and the Moscow Low Power plant is to put the Moskvich (Moscovite) low horse-power four-seater into full production. Additional new factories are being erected in the Ukraine, Siberia, Belorussia, Georgia and in the Volga area. Assembly plants will also be erected at a number of other points.

Machine Tool Programme

Attention will be concentrated on obtaining the maximum output per head from each factory, as there is no labour surplus in the Soviet Union. A minimum of 5,000 new machine tools will be required and the development of automatic processes will be carried as far as possible.

It is interesting to remember that the Russian motor industry was brought into existence by the First Five-Year Plan 1928-1932, when the huge Stalin and Gorki factories began production. Output increased year by year until it is claimed that by the outbreak of war the Soviet Union was the fourth largest car-producing country in the world and was the largest builder of commercial vehicles in Europe. Much of this productive capacity was converted to the production of armaments and munitions during the war, but motor vehicles continued to be built for the Army.



The Origins of the ZIS 110

by Robert Przybylski

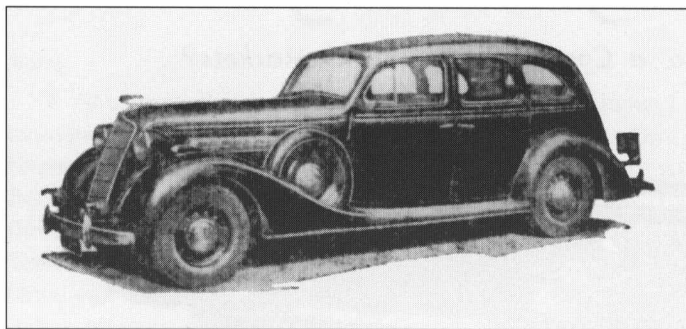


Fig. 1 – The ZIS 101.
From *Autocar*, March 29, 1946.

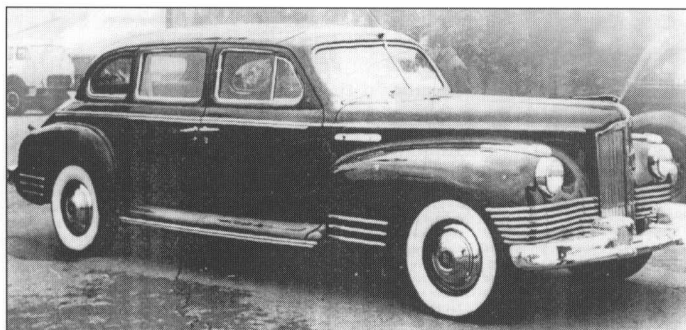


Fig. 2 – The ZIS 110.
From *M/Hobby*, 1/97.

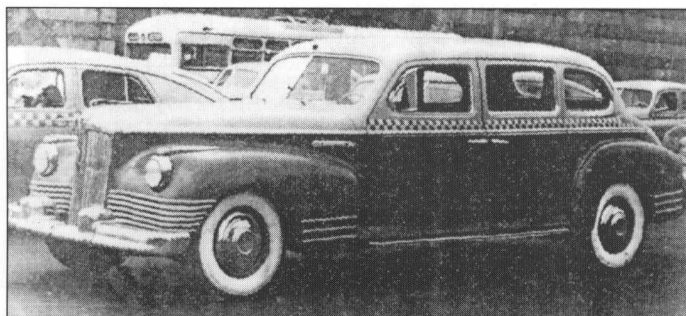


Fig. 3 – The ZIS 110 in taxi livery.
From *M/Hobby*, 1/97.

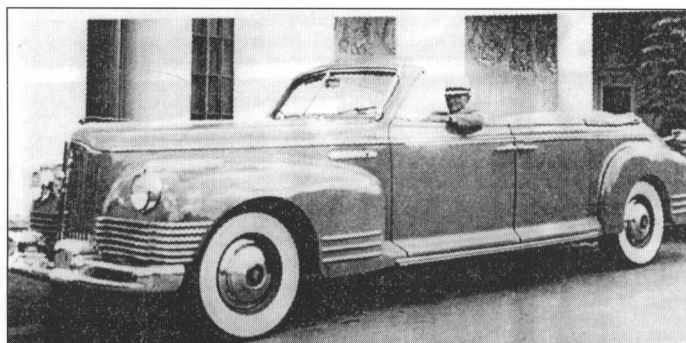


Fig. 4 – The ZIS 110B “Phaeton.”
From *M/Hobby*, 1/97.

In the book *Russian and Soviet Motorcars*, written by Lev Shugurov, there is a short history of the ZIS 110. I also found some information about this vehicle in the Russian magazine *M Hobby* (model hobby) No. 1/97 “Packard in Soviet Guise,” written by A. Strachov-Baranov. Shugurov is a well known authority on the Russian and Soviet automobile industry. I know nothing about Strachov-Baranov.

The story of the ZIS 110 began during the winter of 1942. It is interesting that Stalin decided to start work on a luxury car at a time of great national calamity. Industrial production had dropped steeply and automobile production almost collapsed, going from 124,176 vehicles in 1941 to 34,976 in the following year. In September 1942, the decision was made to follow closely the Packard 180 of model year 1942. The chief engineer of the project was Andrei N. Ostrovcov. Because 1942 was a very difficult year for Russia with the continuing successful German invasion, the design bureau was transferred from Moscow to Sverdlovsk in the east. The biggest problem of the designers was how to make an all steel body for the car. For the prewar ZIS 101 body (Fig. 1), the dies had been made in the United States by Budd (for approximately \$1.5 million), but this time there was no money available. The designers decided to use stamping dies made of zinc-aluminum alloy. The dies were not milled but cast. The technique was much cheaper and durable enough for a small scale production. Welding equipment was modeled after that delivered by the Americans for the ZIS 101.

As a matter of high priority, work progressed swiftly and on September 10, 1944, the National Defense Committee (I am not sure of the translation of this name) approved the prototype, in spite of the fact that the engine required gasoline with a rating of 74 Research Octane Number (RON), while only 66 RON fuel was available at that time. Approval was given because Stalin requested the automobile and nobody wanted to oppose such a request. Production began on June 20, 1945, when the first ZIS 110 rolled off the assembly line in Moscow’s Stalin Factory (the S in ZIS) (Fig. 2).

The ZIS 110 was the first Russian car with independent front suspension, hydraulic brakes, stabilizer bars on both axles, hypoid rear axle, hydraulic window lifters and other features as well.

The ZIS 110 was also employed as a taxi (Fig. 3). A four-door touring sedan, called “Phaeton,” became available in 1949 ZIS 110B, (Fig. 4). This was followed in 1952 by an ambulance version ZIS 110A, (Fig. 5). In 1956, a prototype ZIS 110P with 4 x 4 drive was made and then two more units were “manufactured” with limousine and phaeton body. When the vehicle was designed, the decision was also made to manufacture an armored version, designated ZIS 115. That is why the ZIS body is wider than Packard’s. Two versions were made: with heavy and light armor. The heavy one weighed more than 7 tons. It had a truck axle, special suspension and tires. An example of the lighter version was brought to Poland for the opening of Stalin’s Palace in 1952. Rumor has it that Stalin

was"expected, but "Uncle Joe" left Kremlin only rarely, and eventually the lesser sort of Soviet apparatchiks came to the opening ceremony.

The armored cars were made parallel to civilian car production which spanned the years 1945-1958. There were 2,089 ZIS 110s produced with the limousine body, and several dozen each of the phaeton and armored versions.

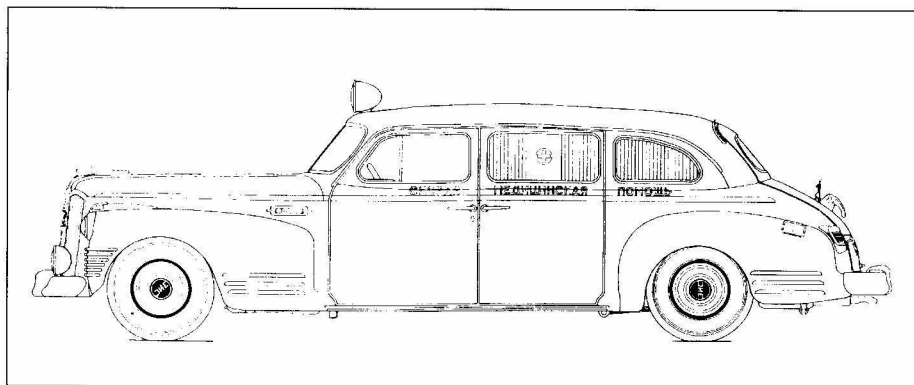


Fig. 5 – The ZIS 110A ambulance.
From M/Hobby 1/97.

EDITOR'S NOTES—continued

and two-cylinder models manufactured in the early '30s. You haven't lived until you've heard the sound of a hundred two-stroke engines put-putting their way to the start line of an Aero Car Club Rallye, their smoke befouling the atmosphere ("We're eco-terrorists," one owner said cheerfully to me). For some years, it has been my good fortune to know *Dr. Vladimír Kabeš, Jr.*, the son of the founder of Aero, and I prevailed upon him to tell us the story of the company against the backdrop of the prewar (democracy), wartime (fascism), and postwar (communism) environments. He does so in "The Aero Family—80 Turbulent Years." Vladimír's later (and perhaps less turbulent) career of great distinction included serving as Executive Secretary of the International Commission of Jurists and Secretary General of the International Touring Alliance (AIT), both in Geneva. Today, at 84, he remains active in Czech affairs in the Washington, D.C. area.

Jan Tulis is no stranger to our members, having contributed many items to the *Journal* over the years, as well as being the author of a book on Sodomka, the famous coachbuilder. A friendly and enthusiastic man of about 50, Dr. Tulis lives a busy life as a commercial lawyer in Brno, the capital of Moravia. His article "The Myron: Czechoslovakia's Unknown Car," tells virtually all that is known about a little car that never got off the ground. The article was translated by *Ivan Margolius*, who has co-authored books on Tatra and Škoda, and, most recently, one on automobiles and architects. He was born in Czechoslovakia and now lives in England.

One final word. Czech may look like a language starved of vowels with accent marks tossed randomly hither and thither, but the pronunciation is comparatively simple. The first thing to remember is that *every* word is stressed on the first syllable. "C" before "e" is "tse"; thus Lidice, the town the Nazis razed after Heydrich's death was "LEE-dit-se." "C" is "tch" as in "Charles." "ř" is "zh", as is "ž." "š" is "sh." But "w" is pronounced as in English, not as in German. So it's "Walter," not "Valter."

Hungary

As an agrarian country, Hungary only sporadically produced motor cars. The manufacturers who are primarily known were all products of the old Empire. The earliest was Csonka of Budapest (1906-12), which produced about 150 vehicles in its six years. Rába of Győr was in business a bit longer (1912-25), producing vehicles under license from Praga.

A more successful brand was Marta. *Robert Przybylski* supplied the following translation from a German encyclopedia (Schrader): "When [the French company] Westinghouse opened its branch in Le Havre in France, Hungarian engineers prevailed and in 1909 the company opened a branch in Arad as well. The very same year the first Hungarian Westinghouse vehicles left the factory. They were heavy trucks with 4-cylinder engines and chain-drive cars. Beginning in 1912, vehicles appeared with the Marta brand name (Magyar Automobil Reszveny Tarasag Arad) under a new owner, Austro-Daimler. The

company then concentrated on the manufacture of trucks and buses. Approximately 650 Marta vehicles were made including 150 produced under the Westinghouse license."

Finally, there was the Magosix. As the author of *Magic Motors 1930: Auburn, Reo, Franklin and Pierce-Arrow Versus Cadillac, Chrysler, Lincoln and Packard, There is no Mistaking a Pierce-Arrow*, and numerous articles in *AutoWeek*, *Brooks T. Brierley* is a name usually associated with American cars. With "The Effect of the Magosix on the Hungarian Automobile Market," Brooks demonstrates that he is just as knowledgeable about an obscure make from another country. Brooks won the SAH Benz Award of Distinction in 2001 for his article "Origins of the French Concours d'Élégance," which appeared in *Car Collector*.

Hungary depended on imports and transplants as well. "The History of Ford in Hungary," by *Pál Négyesi*, is condensed from a booklet he has just written with the same title. At 28, Pál is one of our younger members. He is managing director of Broadspeed Kft, the Hungarian arm of Broadspeed Ltd., an independent UK car dealer. He was a contributor to the *Beaulieu Encyclopedia of Automobiles*, and is currently finishing a series of articles on the history of Hungarian car commerce which will be featured in a local classic car magazine, *Veterán Autó és Motor*.

The Kozdekelesi (Transport) museum in Budapest displays examples of the rare Hungarian marques as well as aircraft of the period. When I was in town

continued on page 54

EDITOR'S NOTES—continued

in 1993, the local automotive history scene was the province of the Haris Twins, gentlemen then near the end of their 50s, who had disassembled three veteran cars, carrying them in pieces in a two-person elevator to an apartment above, where they reassembled them. The brothers had row on row of boxes filled with clippings and literature of wheeled exotica of the region, such as a diesel-powered '36 Packard (Brooks has used some of their photos in his article). They spoke no English and I certainly no Hungarian, but I was reminded of the Marx Brothers as we communicated through grunts, laughter, and gestures through a memorable and delightful afternoon there in the Haris Testeverik Auto Muzema.

Poland

Like Hungary, Poland was an agricultural area with little inclination towards motorized transport until after World War I. The CWS was a passenger car made in small quantities. Fiats were produced under license before World War II, and Fiat remains an especially influential presence in the country. Some of you have met our member in Warsaw, *Robert Przybylski*, who has visited Hershey and been to several of SAH's Paris dinners. Robert first appeared in the *Review* in Issue No. 31 as the author of "The Jelcz Truck and Bus of Poland." His contribution to No. 38 is "The Vehicles of Poland's Prewar Army." An energetic 40-year old, Robert is an editor of *Moto Magysyn*, which reports on contemporary matters. He advises that a new magazine devoted to old cars has not been very successful.

When I was in Warsaw in 1995, Robert showed me the local car museum, which consisted of three dim rooms. As I recall, two featured Fiats and the post-war

Syrena, with some prototypes, while the third was, in effect, a garage where members of a local car club stored their cars. He says that it remains much the same.

Romania

Romania is a Central European country which never had a local motor vehicle manufacturing industry in the interwar years, but depended on imports. However, *Robert Przybylski* reports that the Schrader Encyclopedia contains an entry indicating that "during 1922-1924 Fabrica Romana de Vagoarne si Motorae in Arad (before 1919, the factory belonged to the Hungarian company Marta) [known as Astra], manufactured buses, trucks and cars. The company made as well a certain number of cars with 8-liter, 4-cylinder engines" (which sounds unusual to say the least).

As Ralf Kieselbach shows in "Persu, a Romanian Study in Aerodynamics," there was at least one man in the country who had inventive ideas. Herr Kieselbach is the author of Stromlinienwagen in Europa und USA, from which "Persu" is reprinted with his kind permission, and a companion volume, Stromlinienwagen in Deutschland. Thanks to *Ivan Margolius* for reminding me of this article.

Another Romanian from the interwar years who should be mentioned is Georges Constantinesco, who became a British citizen. He designed a torque converter automatic transmission for small engines but, despite widespread publicity in the journals and salons of the '20s, found no takers.

Herr Kieselbach mentions a technical museum in Bucharest, which would appear to be worthy of a visit for travelers to Romania.

The Soviet Union

The Easternmost and last country in our survey is the Soviet Union, specifically Russia. The first Russian car is considered to have been manufactured in 1896. Before World War I, rich folk in Czarist Russia imported a wide variety of vehicles, particularly from the United States, France, and Germany. However, there were also some local products, most notably the Russo-Baltique. The situation changed totally with the Revolution, as *Dr. Michael D. Besch* relates in "The Motor Industry in the Soviet Union, 1917 to 1953." Mike is Vice President of Adult and Continuing Education at Concordia, Wisconsin, where he teaches courses in business policy and marketing, and pursues other interests such as naval and maritime history.

Finally, in "The Origins of the ZIS 110," *Robert Przybylski* tells us of the wartime genesis of a car that many people still mistakenly think was made with Packard dies. One of the purposes of SAH is to correct errors when they are perceived, and Robert does so admirably in this revealing article.

With its numerous unfamiliar words and accents, this has been an unusual issue to produce. I am more than usually grateful to proofreaders *Kit Foster* and *Pat Chappell*. And more than usually indebted to Ruth Siegel whose Mountain Laurel Press produced this issue, and to Fredy Hernandez, whose Arena Press printed it. They have both helped with several previous issues. Especially critical this time was to get the color cover right. I think they did.

— Taylor Vinson

FOURTH AUTOMOTIVE HISTORY CONFERENCE

April 10th - 13th, 2002

Auburn, Indiana

The Society of Automotive Historians and the National Association of Automobile Museums are sponsoring their fourth biennial automotive history conference to be held in April 2002 in conjunction with the Auburn Cord Duesenberg Museum. Entitled "Knowledge of the Automobile—Creation, Competition, Evolution," the conference will be a symposium exploring the development and impact of the automobile in the world and the directions in which it might be headed. Of interest to a wide range of people, from academic researchers to lay historians to museum professionals, it will be held April 10th, 11th, 12th and 13th, 2002 at the ACD Museum in Auburn, Indiana, USA.

At press time, the schedule called for two days of presentations on automotive history and collateral workshops on topics of concern to automobile museums. One day is reserved for tours of automotive heritage sites in the Hoosier State, whose automotive heritage dates from July 4, 1894, when Elwood Haynes took his first drive in Kokomo.

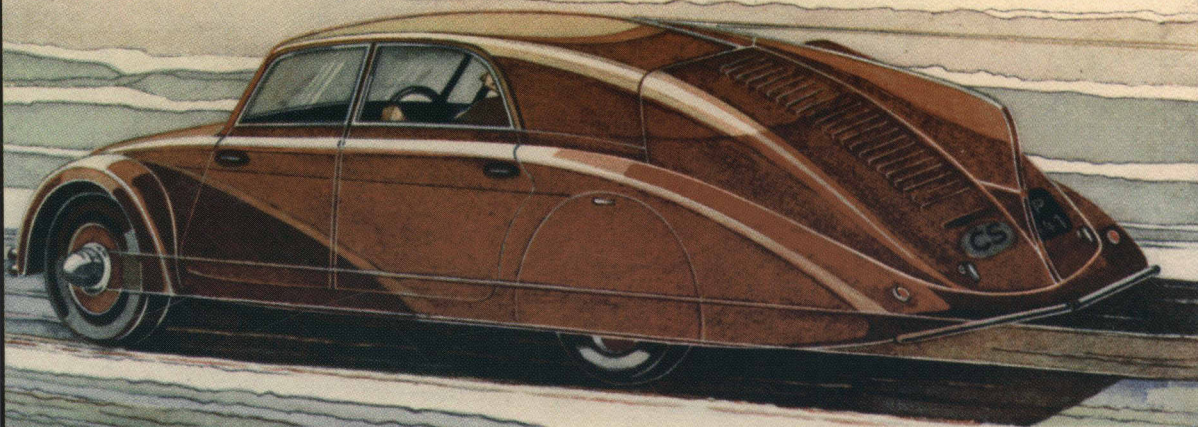
Further information on the conference may be obtained from:

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TATRA-WERKE



PRAG-SMÍCHOV

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