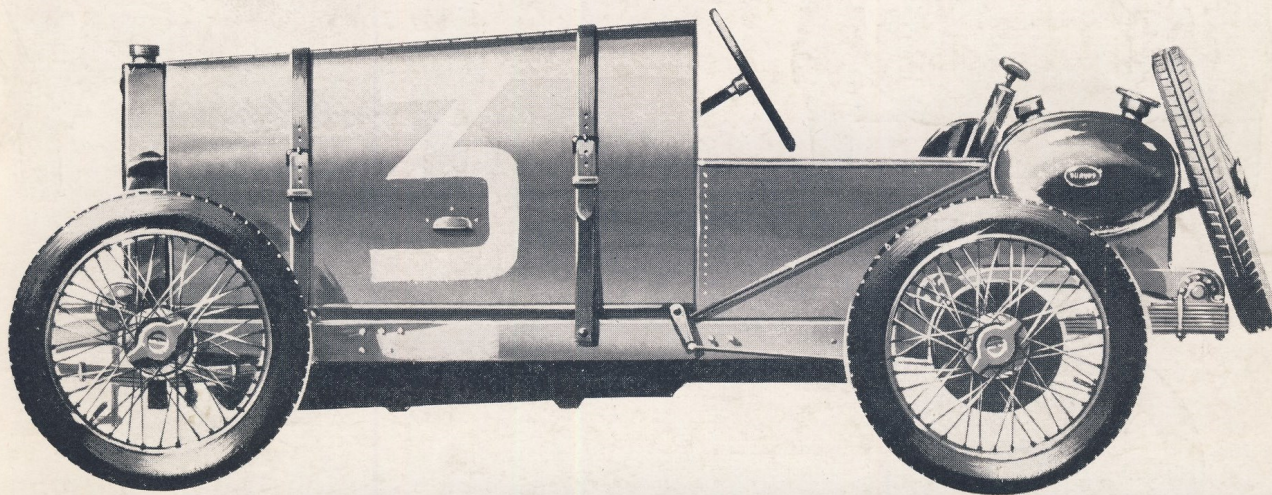


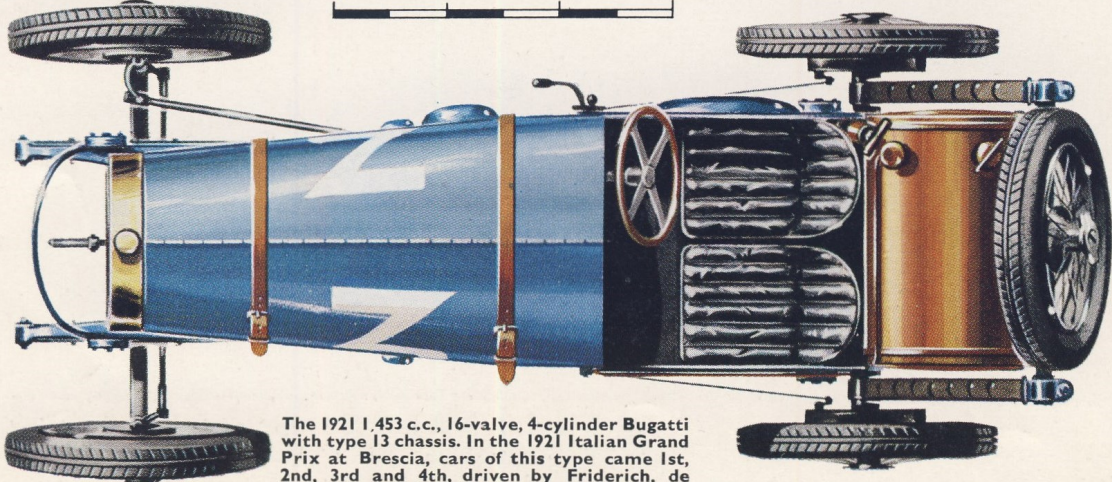
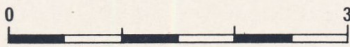
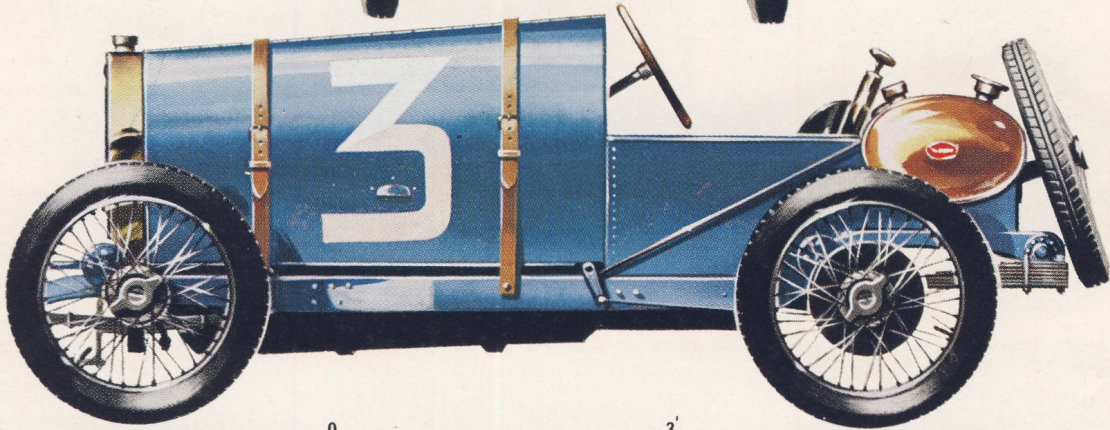
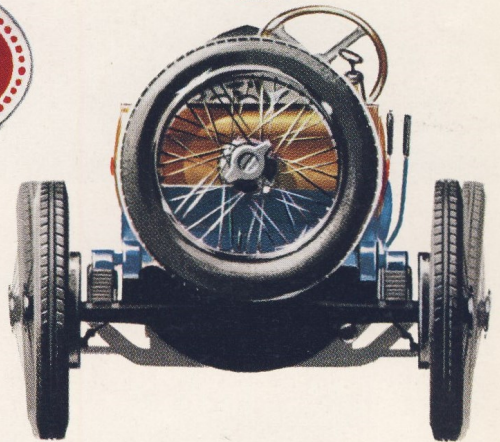
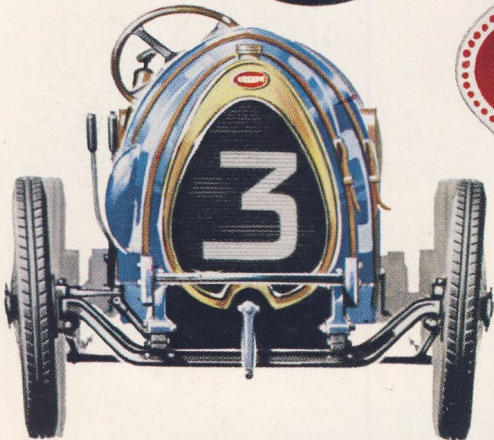
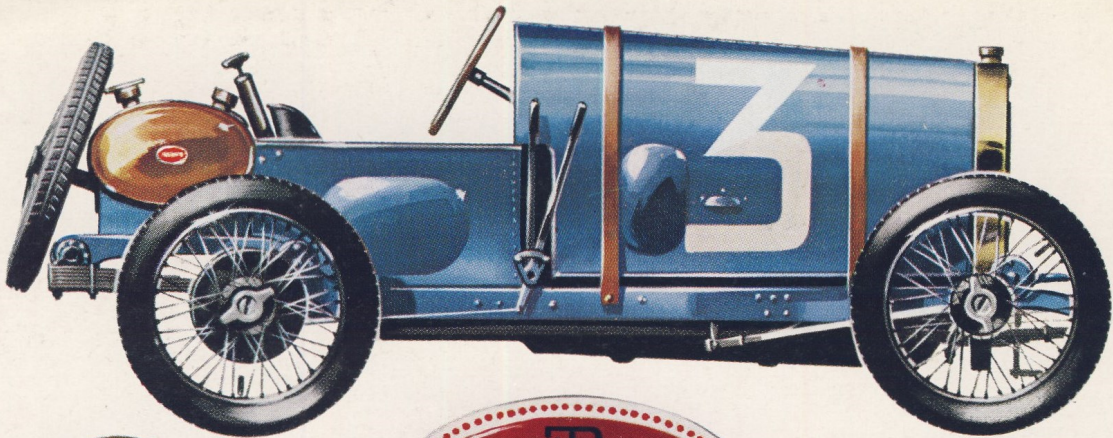
The Brescia Bugatti



NUMBER 69

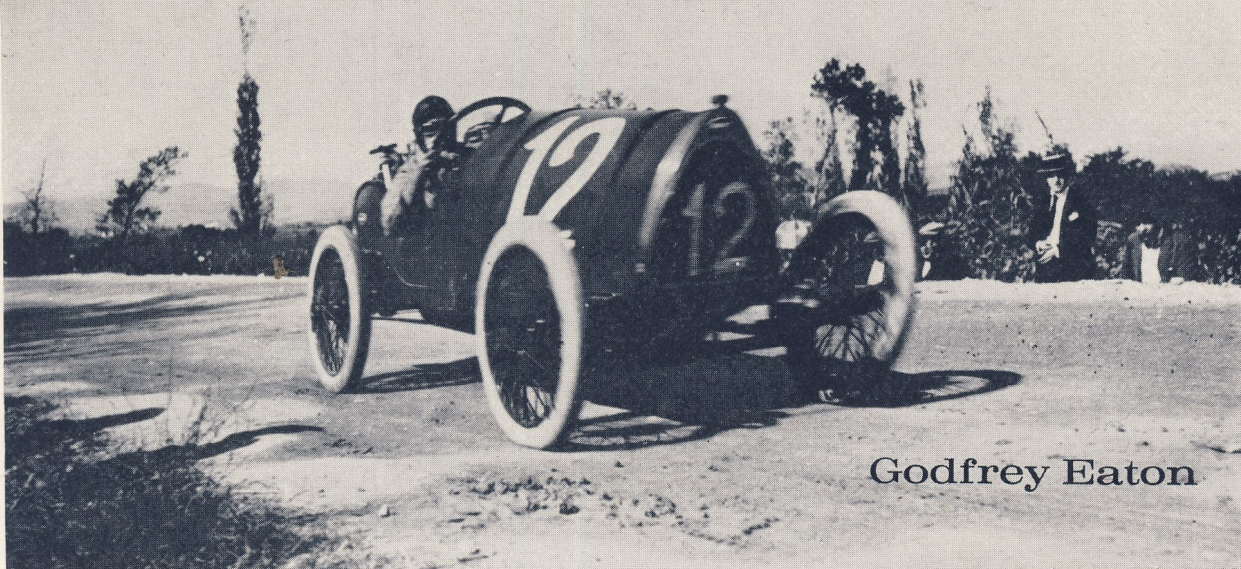
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PROFILE PUBLICATIONS



The 1921 1,453 c.c., 16-valve, 4-cylinder Bugatti with type 13 chassis. In the 1921 Italian Grand Prix at Brescia, cars of this type came 1st, 2nd, 3rd and 4th, driven by Friderich, de Vizcaya, Baccoli and Marco. (The car on which the drawing is based is now in the U. S. A., and has a copper tank and copper wings. The team cars had a matt black finish).

The Brescia Bugatti



Godfrey Eaton

A fine impression of speed at the Penya Rhin Grand Prix held at Villafranca on 16th October, 1921. Pierre de Vizcaya (No. 12) won at an average speed of 85.3 k.p.h. for a race distance of 517.65 km.

(Photo loaned by courtesy Capt. T. A. S. O. Mathieson)

There are few people interested in motor racing who have not at some time heard of the Brescia, a racing car which rightly earned its name after the resounding 1, 2, 3, 4, victory of the four cylinder 16-valve overhead camshaft Bugatti in the voiturette race for the Italian Grand Prix at Brescia in 1921.

It was a cobby lightweight racing car of distinguished ancestry. Frail-looking but extremely rugged in all departments, and although some might consider it crude in appearance compared to a number of the more sophisticated-looking racing cars of the period the author would prefer the softer tones of 'functional'.

A neat chassis with most of the bodywork forward of the scuttle, two bucket seats and a whisper of panelling on each side of the driving compartment afforded both driver and riding mechanic little protection from the weather. An exposed bolster tank which held approximately eleven gallons of fuel was set crosswise on the chassis behind the seats.

Apart from the racing Brescias there were Brescias sports and also touring models which were named Brescia Modifié. Their coachwork was naturally more in keeping for their everyday use on the road with four-seater tourers, two-seater roadsters and sports cars, a pretty three-seater clover-leaf, coupés and even some with extravagant and bizarre saloon coachwork which on some included *genuine* wicker work.

The Brescia and its derivatives were in production from about 1922, until 1926.

Before embarking on a description of the mechanics it is not only interesting but necessary to follow their development.

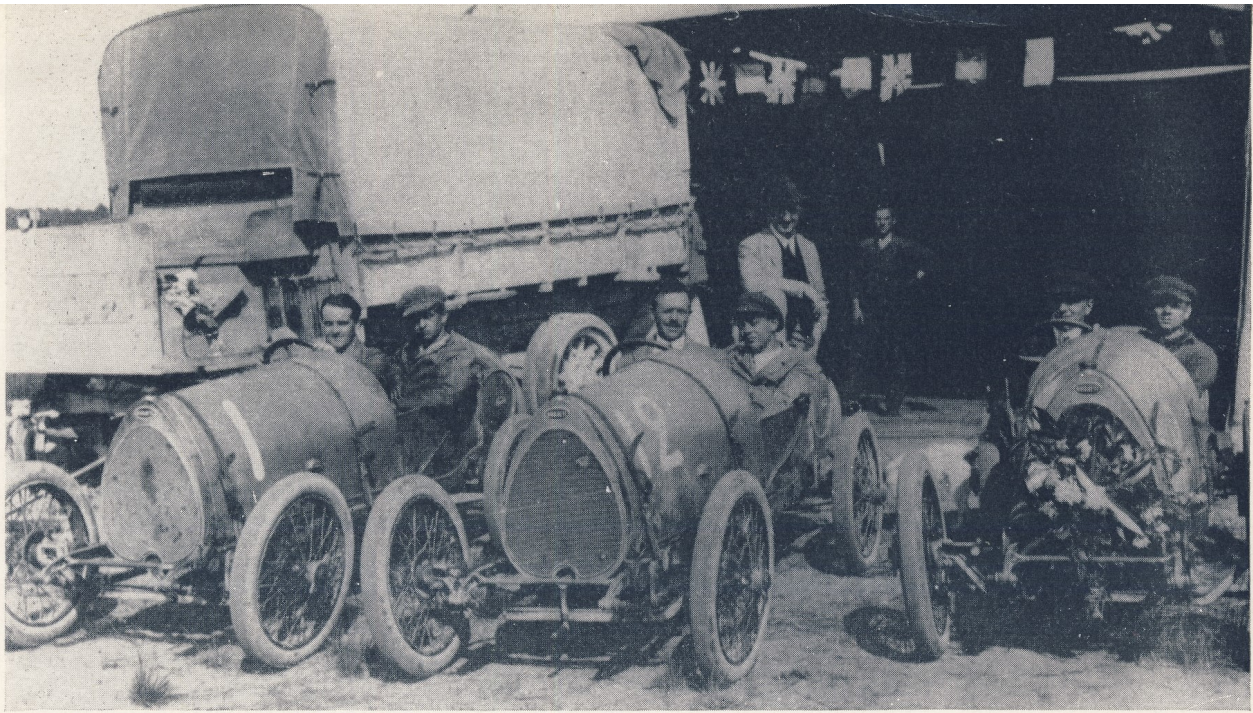
During the first decade of this century Ettore Bugatti designed a number of successful cars for other manufacturers and it was not until 1910 that he set up his own workshop as an independent manufacturer to produce the highly-successful ultra-lightweight 8-valve type 13. These cars had a bore and stroke of 65×100 mm. giving a capacity of 1,327 c.c. The wheelbase was 2 metres and track

1.15 metres with single half-elliptic rear springs. They were very competitive and had a number of successes in hill climbs and races against much larger capacity cars and remained in production until 1914.

During the same period other models were being produced, notably the 5-litre chain-drive sports car known as the 'Garros' after his friend the famous French aviator, but this car does not come into the story. The other cars were the types 15 and 17 both of which had improved 8-valve four-cylinder engines with the same bore and stroke as the type 13. They also had longer wheelbases; the type 15 being 2.4 metres and the type 17 2.55 metres which would take a larger body and, to cope with the additional weight, twin half-elliptic rear springs were employed. From 1914 these two types were known as types 22 and 23 and then in 1920 a 16-valve four-cylinder engine was installed, first with bore and stroke measurements of 66×100 mm. (1,368 c.c.) and later still the bore was increased to 68 mm. (1,453 c.c.) until finally the bore measured 69 mm., the stroke remaining at 100 mm. Other modifications were carried out to the engine, the cars having been fitted as early as 1914 with the well-known reversed quarter-elliptic springs which became a feature of Bugattis for many years after. The main bearings on the crankshaft of the early cars were plain bronze type and for the Brescia race the crank was mounted on ball bearings; this being the characteristic feature distinguishing the real Brescia.

The types 22 and 23 touring models with the 69 mm. bore which gave a capacity of 1,496 c.c. were subsequently known as the Brescia Modifié.

To go back to 1913/14 and bearing in mind Ettore Bugatti's interest, in fact, passion, for motor racing it was obvious that this facet of his business would not be allowed to lie dormant; so with the anticipated revival of the Coupe Internationales des Voiturettes in 1914 he designed the 16-valve four-cylinder engine with bore and stroke of 66×110 mm. and, using the 2-metre type 13 chassis, completed three cars



A well-known picture of the 1920 Bugatti *équipe* at Le Mans. A smiling Ettore behind Baccoli's car (No. 12). Pierre de Vizcaya in No. 1 and the winner E. Friderich in No. 23.
(Photo by courtesy Mr. C. W. P. Hampton)

for the race. Unfortunately due to the war breaking out there was no race and the cars were stored away from Molsheim for the duration.

However, the time spent in building these cars had not been wasted, as they were entered again for the race which had been postponed for six years and Ernest Friderich duly won at Le Mans in 1920. Thus began a time of success for the Patron which brought his cars to the notice of the public and also financial reward.

This first post-war success was consolidated when the cars were entered for the *voiturette* race of the Italian Grand Prix at Brescia the following year where as already related they swept the boards. It was after this race, these cars were given the appellation 'Brescia'.

The full Brescia, as some people call it, was a racing or sports car with a 16-valve four-cylinder engine in a type 13 chassis. It had a bore and stroke of 69×100 mm. a ballbearing crank as opposed to the normal plain bearings, and twin magnetos.

The Brescia Modifié had a similar engine with only one magneto which was usually placed to the fore of the engine on the offside. The chassis being either type 22 or 23.

THE CHASSIS

To re-cap the Brescia (type 13) had a wheelbase of 2 metres while the Brescia Modifié (types 22 and 23) had wheelbases of 2.4 and 2.55 metres respectively. All had the same track width of 1.15 metres.

The chassis frames of all three types were simple and of channel section and did not vary in depth throughout their length except for a normal tapering off towards the dumbirons which were not tied by a tube. They were slightly upswept towards the tail-end. There was some additional bracing where the scuttle was joined to the top part of the channel section this being increased in width and from this point the chassis narrowed to the front end.

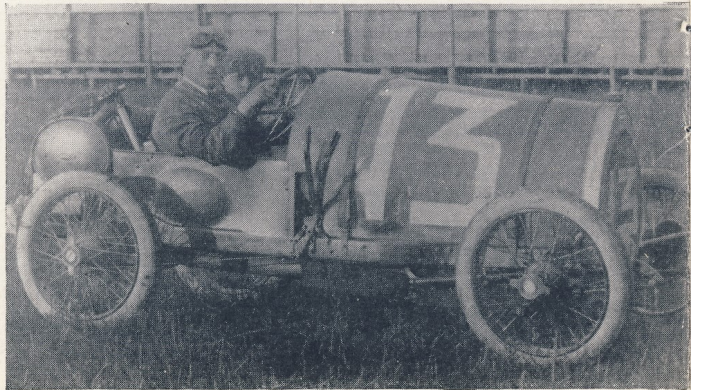
The engine braced the forward section and the

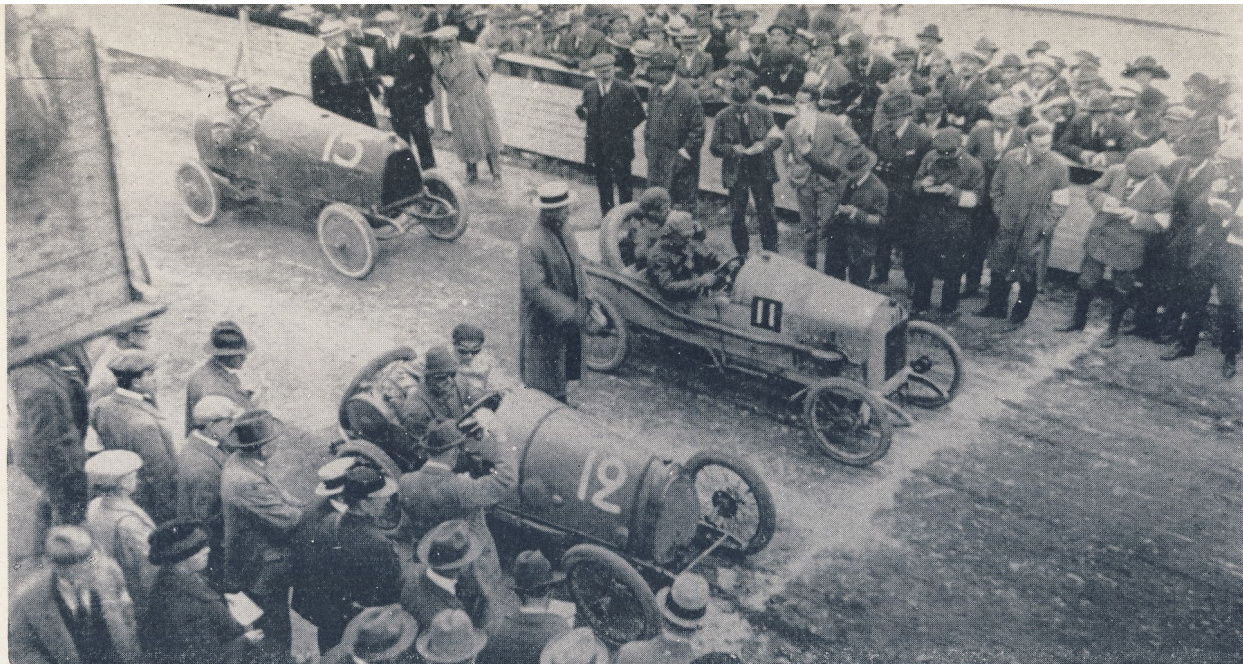
gearbox which was a separate unit anchored the centre portion—an admirable arrangement for stiffening the whole frame. Three cross-shaft members were used two fore and one aft of the rear axle. Additionally a bowed tubular cross-member braced the chassis across the front shock-absorbers. It is interesting to speculate on the varying positions of this cross-member, for the 1920 Le Mans cars had a split-ended tube which fitted into the channel sections of the chassis, and the 1921 cars which won at Brescia had a straight tube which was connected to the two front shock-absorbers.

The front springs conformed to normal practice for the period being taken over the H type front axle which was upswept some 35° or more at each extremity. At the rear, the now well-known reversed quarter-elliptic springs were fitted.

The early Brescias of 1920 had the very distinct pear-shape radiator, but from 1923 onwards this became more oval in form as can be seen from the illustrations. A better comparison would be the differ-

Ernest Friderich, victor of the *voiturette* race for the Italian Grand Prix at Brescia in 1921. The name 'Brescia' was given to subsequent short-chassis type 13 cars.
(Photo by courtesy of Mr. C. W. P. Hampton)





Coupe Internationale des Voiturettes 1920. The race run at Le Mans was won by E. Friderich. No. 12 driven by Baccoli, on the start line, finished fifth. The car alongside is a Major. (Photo loaned by Capt. W. G. A. Faber)

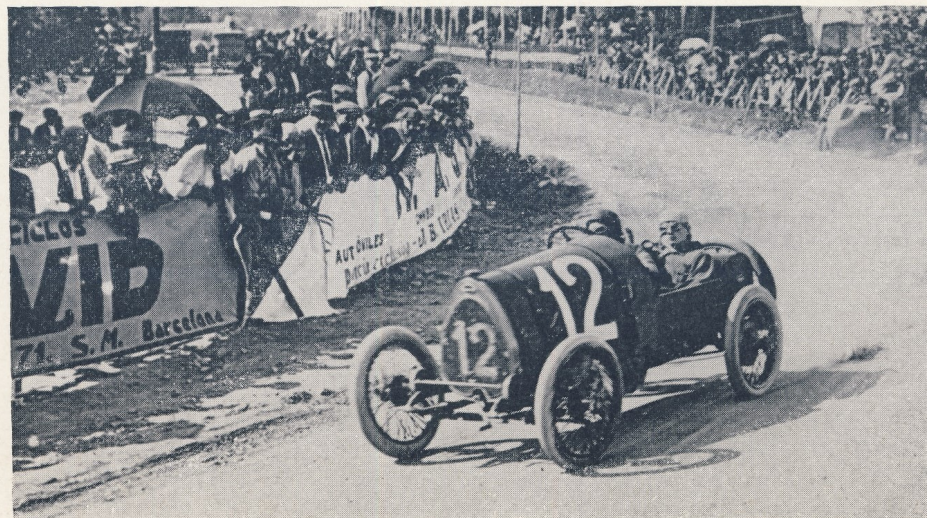
ence in shape between a Conference pear (1920) and a Comice pear (1923) although one can be quite certain that Ettore did not have fruit in mind when designing the radiators but rather horseshoes and possibly some architectural design such as an arch, for amongst other things he was an artist in the true sense of the word.

Wire wheels were fitted with 710×90 tyres. The rear brakes initially had cast-iron shoes but later were Ferodo lined; they operated through rods from a hand brake lever which was situated on the right, but outside the body on the racing cars only. The foot brake, via levers, operated a band brake on the transmission. Front wheel brakes were not standard until 1926 and were operated by a similar chain and cable system to that used on the type 35 Grand Prix cars.

The gearbox was compact and a delight to use with well-spaced ratios of 11.90, 7.50, 5.30 and 4.09 with a normal rear axle ratio of 13.45. Some of the racing Brescias had remarkably high top gear ratios, these being quoted even of the order of 2.2 to 1. The Modifié cars had a normal axle ratio of 12×45 and the gear ratios for both the types 22 and 23 varied.

The gear lever was on the right, usually inboard on the Modifié, but outboard on the racing cars with the gear change operating in a gate, and rotating on the hand brake cross tube.

Pierre de Vizcaya at Villafranca (Penya Rhin G.P. 1921): The riding mechanic looks quite unperturbed and in fact comfortable in spite of the cramped space in the cockpit. (Photo loaned by courtesy Capt. T. A. S. O. Mathieson)



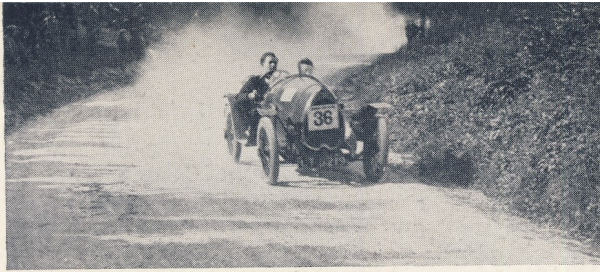
The rear axle was of the three-quarter floating type with main shafts 32 mm. diameter and the crown wheel attached to the split differential housing. There was the usual tension rod which was Bugatti practice, across the bottom of the axle.

The steering wheel was of Bugatti design, finely made and strong, with four flat spokes. The steering box on the Brescia Modifié was attached to the crankcase whereas on the Brescia model it was affixed to the chassis.

THE ENGINE

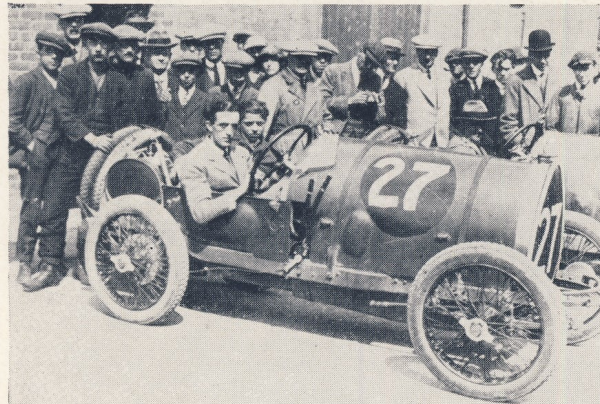
To distinguish it from the other motors also installed in the types 13, 22 and 23 chassis and which had plain bearings, the Brescia had a plain front bearing with ball bearings on journals 2 and 3 with circular webs. A taper joint was used in joining the two halves of the crankshaft.

The four-cylinder engine had a bore and stroke of 69×100 mm. giving a capacity of 1,496 c.c. and the 16 valves with double springs were operated by an overhead camshaft which was shaft and bevel driven.



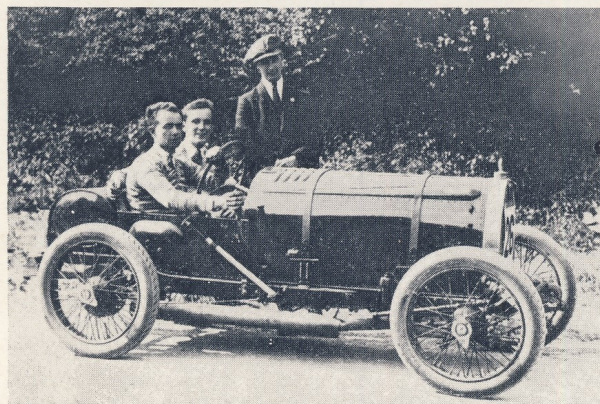
The public highway and no protection for spectators at South Harting Hill Climb in 1922 as Raymond Mays and riding mechanic keep a close line in 'Cordon Rouge'.

(Photo loaned by courtesy Capt. T. A. S. O. Mathieson)



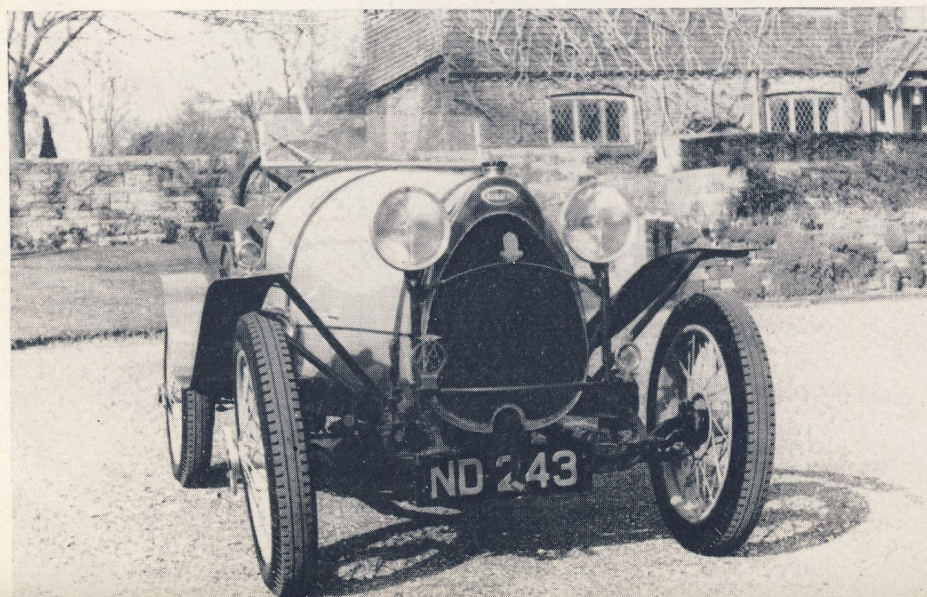
Mones Maury was placed third in the International '1500' Trophy Race in the Isle of Man, 1922. Alleged to be a Crossley-Bugatti. The team prize went to the Bugattis.

(Photo: Montagu Motor Museum)



'Cordon Bleu' one of Raymond Mays' much-modified Brescias.

(Photo: Montagu Motor Museum)



This 1923 car was fully restored by C. W. P. Hampton and subsequently exported to the U.S.A.

(Photo loaned by courtesy Mr. C. W. P. Hampton)

The cambox carried the well-known so-called 'banana' tappets.

At the base of the top portion of the crankcase, which was split in two, and at the front left side of the engine was the water pump driven from a transverse drive off the vertical shaft drive for the valve gear. It was the same type of pump that Ettore used on practically all his cars.

Ignition for the Brescia Modifié was by magneto located directly opposite the water pump on the off-side while the full Brescia had facia-mounted twin magnetos which were driven from the rear-end of the camshaft. No one type of magneto was standard fitting and cars were to be found with Bosch or S.E.V. and others.

Mention should be made of the pistons since they were of incredible length with three compression and one scraper rings. Firing order was 1, 2, 4, 3.

There was a unique system for lubricating the crankshaft, oil being drawn by suction through external copper tubing located on the exhaust side of the engine by a simple gear pump which then delivered it via further copper tubing on the inlet side to a pressure filter. It was then fed to a gallery pipe situated on the exhaust side (left hand-side) of the lower crankcase and from this point four jets squirted oil to the circular webs of the crankshaft, the webs having troughs and channels drilled to allow the lubricant to feed the big ends. Camshaft lubrication was achieved by means of a by-pass at the rear of the oil pump.

The clutch, which is mated to the gearbox by a short dumb-bell shaft, had steel and cast-iron discs, the former were inner driven numbering six and the latter seven driving discs including the end plates which were thicker. The clutch working mechanism was certainly unusual as two coil springs attached to the clutch pedal lever under the floor boards operated clutch withdrawal through striking forks and a collar. Lubrication was, as usual, effected by squirting a 50/50 mixture of kerosene and oil through a hexagonal filler plug on the clutch casing.

Fuel was fed under pressure from the tank, in the Brescia this was by means of a pump situated behind the driver and operated, if needs be, by the riding mechanic or passenger. At the rear of the camshaft a piston-operated plunger pump maintained a lowish pressure in the tank under running conditions so as to obviate the need for continual hand pumping.

RACING HISTORY

The Brescia and the earlier 16-valve racing cars had a long and distinguished competition career even though it was not all-conquering. They won a number of important post 1914-18 war races and had

innumerable successes in other forms of motor sport such as long and short handicap races at Brooklands, sprints and hill climbs. There is no doubt that they would have made an even greater impact in voiturette racing if it hadn't been for the Talbot-Darracqs. On the other hand, while race bred, they were on sale to anyone who could afford to buy a high-class lightweight sporting or racing car and this had a bearing on their popularity with those who wished to race or drive fast.

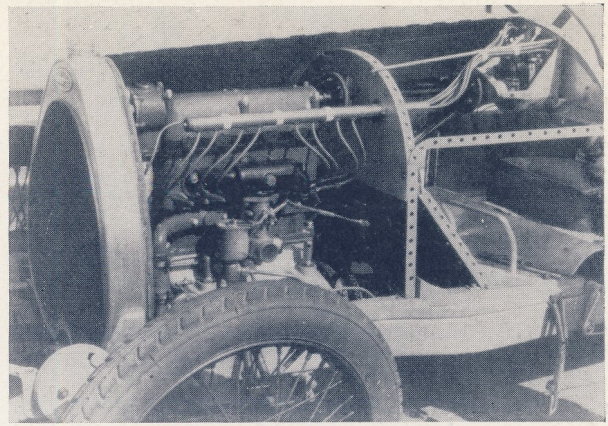
Coupe Internationale des Voiturettes 1920

This race, which had previously been run between the years 1905 and 1910 and was then discontinued, was to have been revived in 1914, but the war intervened. In readiness for the race a number of manufacturers had been preparing cars, including Ettore Bugatti who had completed three but they had to be stored.

Having been baulked by the war the Automobile Club de l'Ouest set about re-organising it immediately hostilities ceased and after much searching eventually settled on a course a little to the north of Le Mans, a part of which now forms a section of the permanent Le Mans circuit.

The race which took place on 29th August was for voiturettes and cyclecars and the regulations for the former limited engine capacity to 1,400 c.c. and a maximum and minimum dry weight of 500 and 350 kg. The works Bugattis entered were those which had been completed before the war being four cylinder cars with 16 valves and a bore and stroke of 66 x 100 mm. (1,368 c.c.). These cars, while not Brescias as such, had the type 13 chassis and it is relevant therefore to include this race as it was part of their development.

The entry was interesting but apart from one or two makes not particularly distinguished. The starters for the voiturette class included a Bébé Peugeot, Mathis, Corre-la-Licorne, three cars running under the famous Sizaire-Naudin banner, Tic-Tac, four Majolos, three Eric Campbells renamed Silver Hawks, three Bignan sports cars and the three Bugattis in the hands of Ernest Friderich, Baccoli and Pierre de Vizcaya.

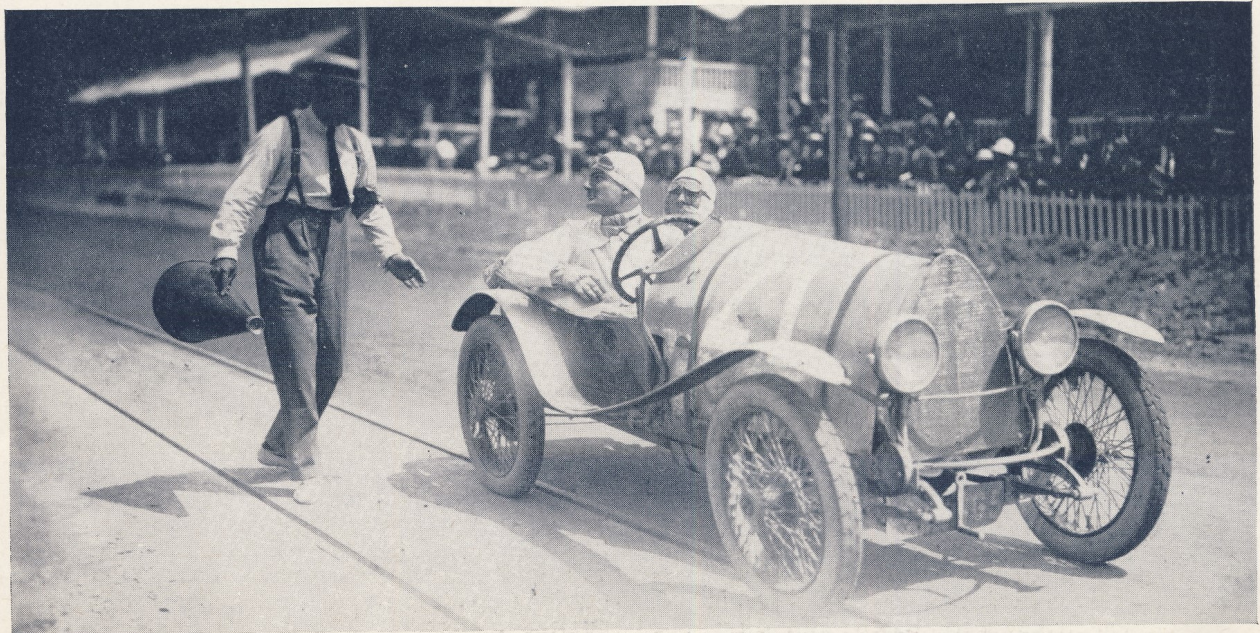


The neat lay-out of the 'works' shows how accessible everything was.

(Photo loaned by courtesy Mr. C. W. P. Hampton)

Following the usual practice of the time the cars left in pairs at half-minute intervals with de Vizcaya carrying number one first away and after the first lap leading the field by 31 seconds. The Major cyclecar driven by Violet was keeping Baccoli out of second place. Bugattis were one, two, three at half distance, but the running was not processional as the cars were continually changing order. They were fast and extremely steady which was just as well for, although the centre part of the circuit road had been resurfaced, the sides were in a pretty atrocious state which made overtaking a hazardous venture for most of the competitors. On the twentieth circuit, four laps from the finish, de Vizcaya came into the pits to take on oil and as he was re-joining the fray Ettore whipped off the radiator cap and was subsequently disqualified since only drivers and riding mechanics were allowed to attend to the cars. Actually de Vizcaya would have retired, as he had run a bearing. This had occurred during practice and although the engine had been stripped prior to the race to locate the offending bearing the trouble had obviously not been overcome. The full story of the disqualification was

What can I do for you? Baron de L'Espée stops on the tram lines during the G.P. de Turismo de Guipuzcoa, San Sebastian 1923.
(Photo loaned by courtesy Capt. T. A. S. O. Mathieson)



related by the riding mechanic Mischall in *Bugattics* Vol. 21, no 4.

After 4 hours 27 minutes and 46 seconds Friderich took the flag, having averaged 57.6 m.p.h. for the race distance of 256.5 miles. Baccoli, who had been having plug worries towards the end, was finally forced to change them but then had the utmost difficulty in restarting; he eventually finished fifth. The second man home, Nougue in one of the Bignan sports cars, finished 20 minutes in arrears.

Italian Grand Prix 1921

The famous Targa Florio races were about the only contribution Italy made towards motor racing in the pre-World War I period but with a number of Italian car makers becoming interested in the sport the picture soon changed after the war.

The Grand Prix was for 3-litre cars while voiturettes competed for the less important award. The race took place on 8th September over a triangular course adjacent to Brescia; it was a fast circuit with approximately 10.88 miles to the lap and the smaller cars were set 20 laps or about 217 miles.

The regulations for the voiturettes stipulated a maximum engine capacity of 1,500 c.c. and for the race Ettore Bugatti prepared 16-valve four-cylinder cars increasing the bore from 66 to 68 mm. but leaving the stroke measurement as before at 100 mm., giving a capacity of 1,453 c.c. On the crankshaft the front bearing was plain but the other two ball-bearings, with roller-bearings for the big end. Two Bosch magnetos mounted in the scuttle were driven from the rear of the camshaft and the fuel mixture was fed via two Zenith carburettors. The chassis was still the well-tried 2-metre type 13. These modifications over the 1920 Le Mans cars bring us to the Brescia, or 'full Brescia' as some will have it for the racing type.

Opposition to the four works Bugattis to be driven by Friderich, de Vizcaya, Baccoli and Marco came only from Italian works with four O.M.s, three Chiribiri, an obscure Restelli driven by the designer, and an S.B. allegedly of Bugatti design.

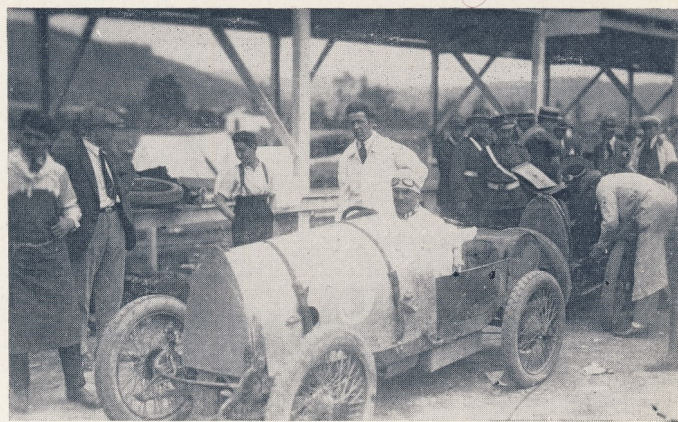
At one-minute intervals the cars were flagged away in pairs. It was a hard-fought and fast race, with little to choose between the contestants, although it would be true to say that the cars from Molsheim had the edge. Friderich was in his accustomed first place at half distance with Silvani in the S.B. pressing hard only 5 seconds behind, although it must be remembered that a burst tyre had delayed Friderich earlier on. Behind the S.B. the other three Bugattis were running in very close company. The pace was so hot that shortly after half the race had been run only the slower but more reliable O.M.s. were left to challenge the flying Bugattis which had routed the opposition by holding the first four places. Ernest Friderich won at an average speed of 72 m.p.h. in 2 hours 59 minutes and 18 seconds, de Vizcaya was second, with Baccoli and Marco holding third and fourth respectively.

A truly remarkable performance and one which was to be commemorated by the future naming of certain type 13 cars 'Brescia' and types 22 and 23—'Brescia Modifié'.

* * *

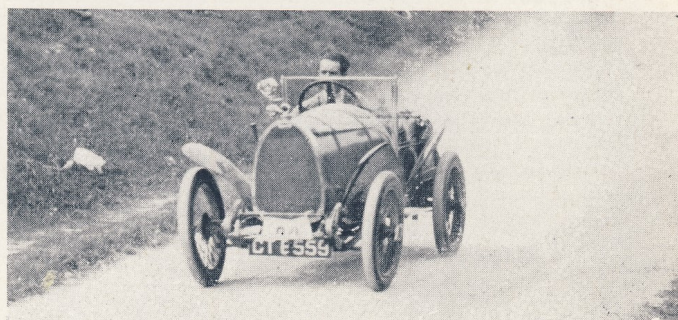
The two foregoing races are related in some detail as they were important steps in the development of the racing Brescia which subsequent races confirmed.

Ten days after the Brescia race in 1921 Ettore had



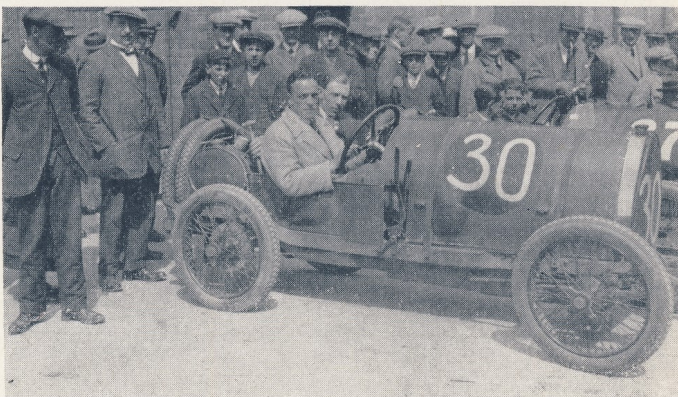
The same type 13, but stripped this time for the G.P. des Voiturettes, San Sebastian 1923. Note wire guard for radiator. Baron de l'Espée wears the 'traditional' white cloth helmet of most racing drivers of the period.

(Photo loaned by courtesy Capt. T. A. S. O. Mathieson)



Typical of hill climbing in the early 'twenties. Raymond Mays lays a smoke screen with 'Cordon Bleu' at Spread Eagle, 1924.

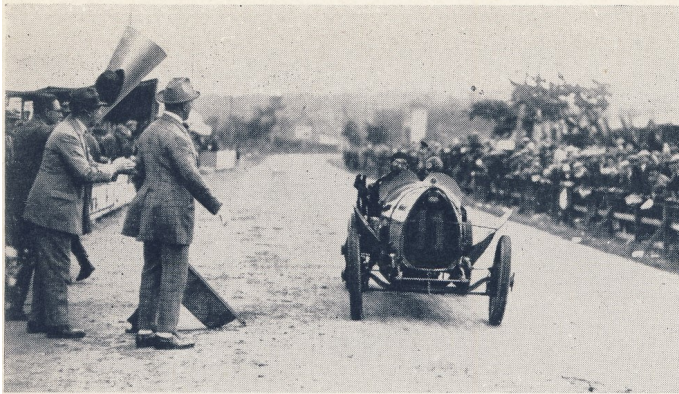
(Photo: Autocar)



B. Marshall, a well-known Brescia driver at Brooklands and on the Continent, who won innumerable awards including the Boulogne Grand Prix in 1924 and 1925. Marshall sometimes had his cars painted in Ettore's personal racing colours which were black and gold.

(Photo: Montagu Motor Museum)

an entry for the Le Mans event, but the cars failed to appear. Their next appearance was for the J.C.C. 200-mile race at Brooklands on 22nd October; an event for cyclecars up to 1,100 c.c. and voiturettes up to 1,500 c.c. Two cars were entered which showed a further increase in the bore dimension to 69 mm. and it so happens that this figure was also quoted for the cars which had been down to run at Le Mans. This was possible as some of the later 1921 plain bearing engines had bores of this size but these were not the engines fitted to the Brescias, which had



B. S. Marshall taking the flag when winning the G.P. des Voiturettes at Boulogne in 1925.
(Photo loaned by courtesy Capt. T. A. S. O. Mathieson)

ball-bearing cranks and other modifications. Everything points to the 69 mm. bore engine first being produced either in late 1922 or early 1923; more likely the latter if one takes the instruction book issued in September 1923 as valid evidence, although this is not conclusive proof.

As further evidence of engines with a 69 mm. bore at this time perhaps the failure to appear at Le Mans was due to their not being ready, although the unkind will say that Ettore funk'd facing the Talbot-Darracqs. On top of this the cars arrived late at Brooklands so there might have been a rush on to finish them. The drivers Pierre de Vizcaya and Mones-Maury arrived even later giving neither of them any time to familiarise themselves with the track.

A large and interesting field came to the start: three Talbot-Darracqs fresh from their voiturette triumph at Le Mans on 18th September and to be driven by Segrave, Lee-Guinness and Campbell, three Horstmann, five A.C., four Aston Martin, two each Lagonda, Alvis, Marlborough, Charron-Laycock and one each A.B.C. and Enfield-Allday, plus the two Bugattis.

While two of the Talbot-Darracqs led the race a fierce battle was waged for third place between Kenelm Lee-Guinness (Talbot-Darracq), the Bugatti of de Vizcaya and Bedford's Hillman. As the race progressed the dominance of the Talbot-Darracqs was apparent, with Segrave just winning by 5 seconds from Lee-Guinness with Malcolm Campbell third. De Vizcaya was by no means disgraced coming in fourth, and Mones-Maury held sixth place.

* * *

On 22nd June, 1922, the first post-war Tourist Trophy race was held over the Isle of Man circuit; a race for cars of up to 1,500 c.c. for the International '1500' Trophy and larger capacity cars not exceeding 3,000 c.c. for the T.T. itself. Three Bugattis allegedly Crossley-Bugattis (Ettore had made arrangements for Crossley Motors Limited of Manchester to build 16-valve cars under licence) with bore and stroke of 69 x 100 mm. and in the hands of de Vizcaya, Mones-Maury and B. S. Marshall, faced some of the previous years J.C.C. 200-mile cars—namely the Hillman, Aston Martin, Enfield-Allday and three Talbot-Darracqs.

The author feels that Crossley Motors could not have tooled up etc. to have produced the cars on the starting line in time and the cars were in fact actually built in Molsheim.

Once again the Bugattis were no match for the Talbot-Darracqs but took 3rd, 4th and 6th places and were awarded the team-prize.

* * *

The 16-valve Bugattis continued to put up excellent performances in the major races of the period which were open to them. They were undoubtedly strong, sturdy and reliable cars and Leon Cushman who owned several was continually in the money with his 1921 car (with 69 mm. bore?) with which he won over 300 awards. He competed in several J.C.C. 200-mile races in the 1923 event driving the same 1921 car he finished second at the high average speed of 91.10 m.p.h.

Raymond Mays with 'Cordon Rouge' at Porthcawl Sands. Behind is an Enfield Alldays.

(Photo: Montagu Motor Museum)

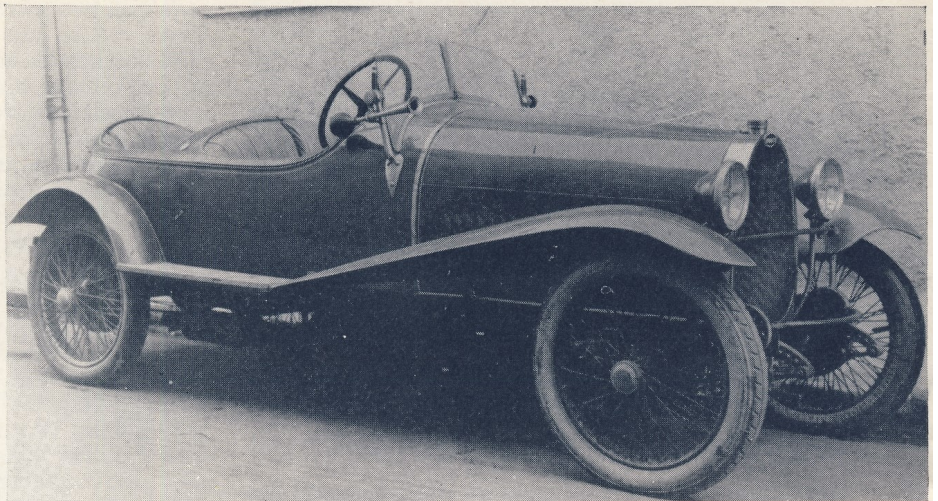


A very sporting carriage-Brescia Modifié.
(Photo loaned by courtesy Mr. C. W. P. Hampton)

B. S. Marshall, who had several Bescias was also a highly successful racing driver for the marque and two of his most outstanding wins were in the 1924 and 1925 Boulogne Grands Prix averaging 54.46 m.p.h. and 64.30 m.p.h. respectively for a race distance of 779 miles.

Pat Densham was another successful driver using a special type 13 16-valve car with a more conventional racing car body. He appeared at most Brooklands meetings and many hill climbs in the early and mid-twenties. Incidentally hill climbing at this time usually took place on public roads with the connivance of the local constabulary who always found it more convenient to attend to business in some area away from the event.

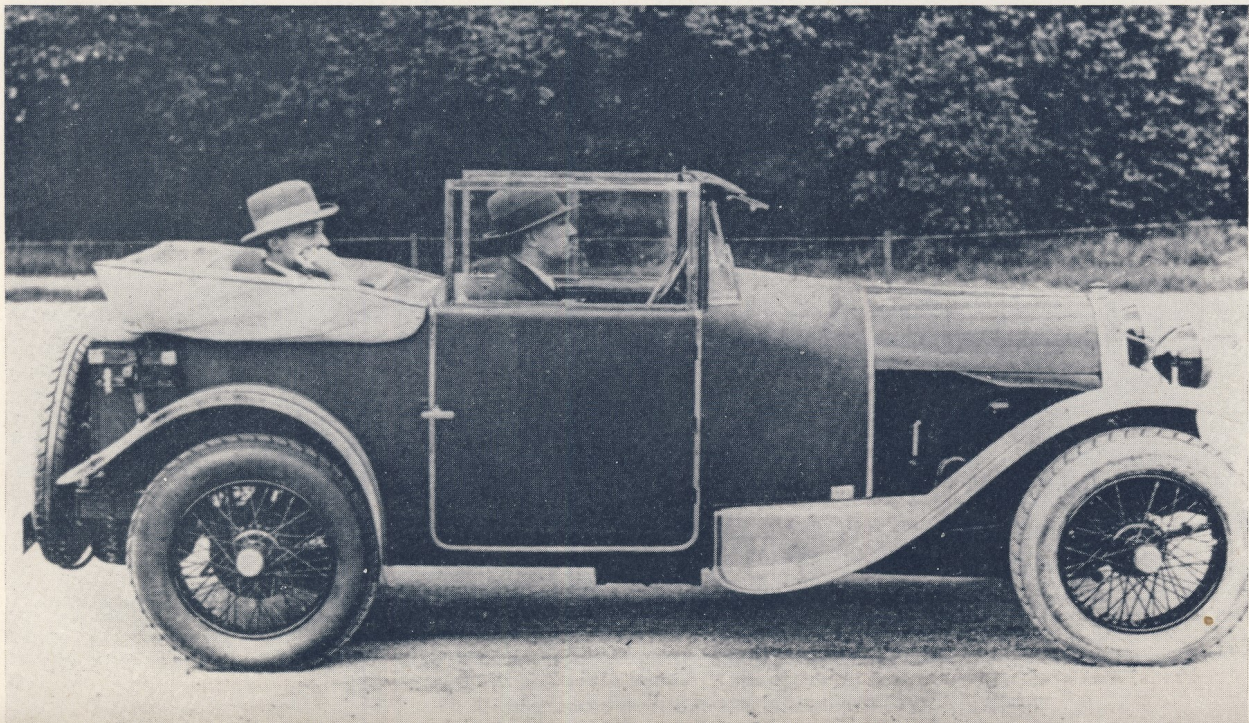
By 1924 the Brescia was in full production and while the 1924 J.C.C. 200-mile race was not their first race it was probably the first occasion that the full Brescia cars appeared in an important event in England. Three cars were entered by J. O'Day to be driven by L. Montant, Clive Gallop and B. Blackstock. Their bodywork conformed to that of the conventional racing car of the day and the radiators were shrouded in cowling; the whole appearance being one of neatness. They were however still without front wheel brakes. The only car to finish was Montant's and he was placed no higher than 10th. Leon Cushman, however, with one of his faithful short-chassis cars was as consistent as ever and managed to work himself into fifth place.

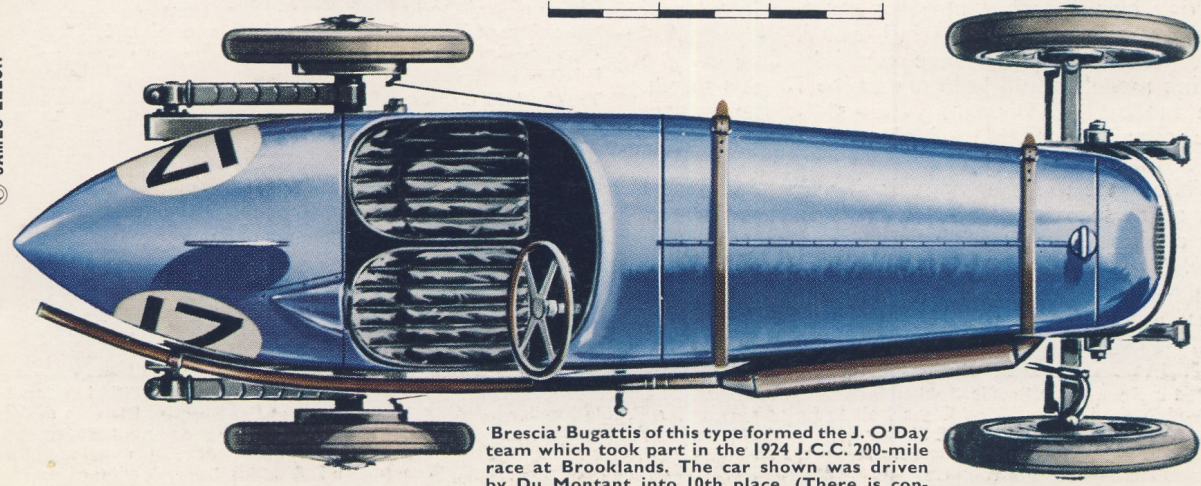
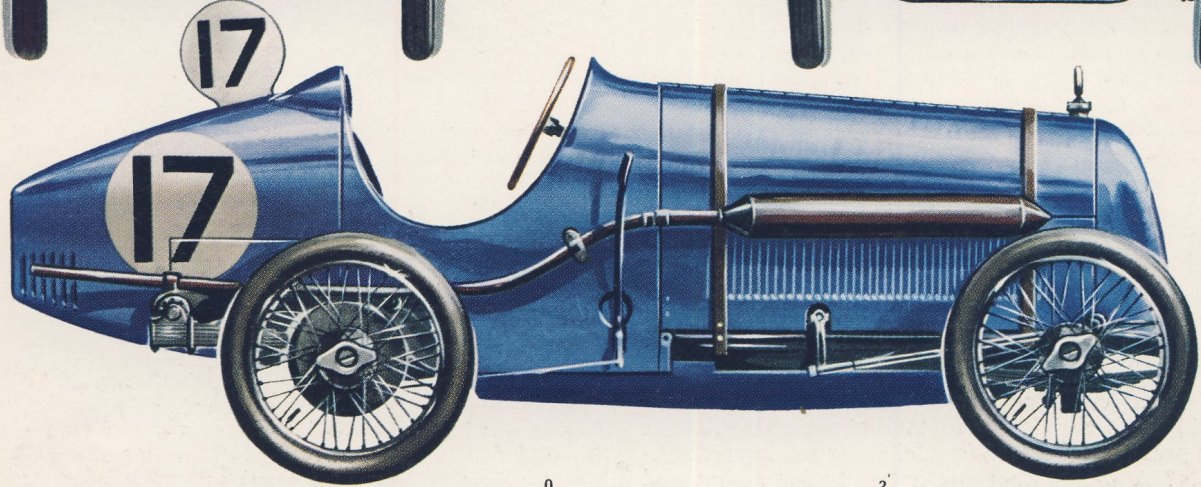
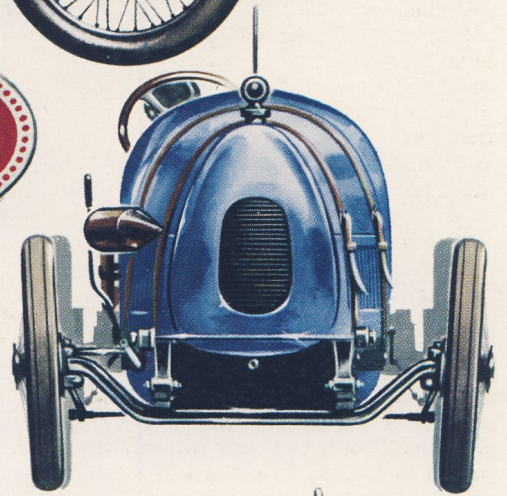
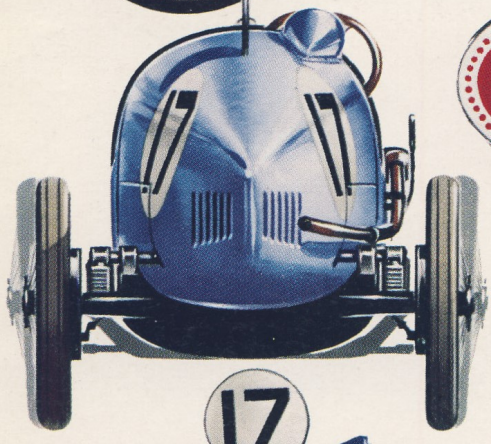
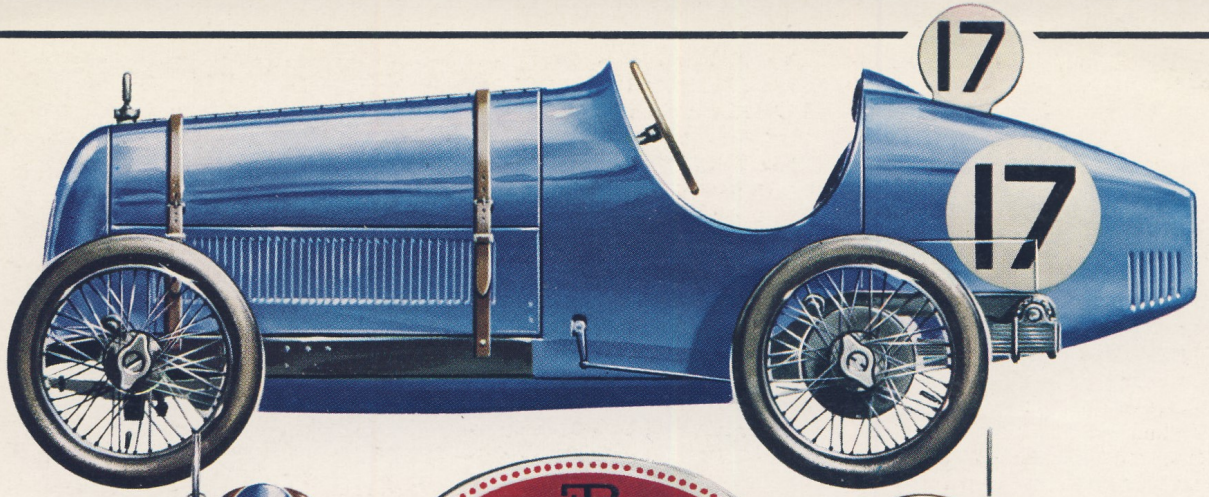


It is also interesting to recall that H. O. D. Segrave acquired the winning 1920 Le Mans car which he raced on occasions.

Perhaps the name best known in the United Kingdom as a former driver of Bugattis is Raymond Mays—for who has not heard of the 16-valve cars named Cordon Rouge and Cordon Bleu? Cordon Rouge was the earlier car purchased in 1922; it had plain bearings and such engines normally rotated at round 4,500 r.p.m. but it was Mays (or perhaps strictly speaking his friend Amherst Villiers) who first showed just what could be done with the four cylinder engine when modified. They claimed some 6,700 r.p.m. and with Cordon Bleu, the ball-bearing car, a figure of 6,900 r.p.m. was quoted. This is not to say that reliability was consistent if these figures were held for any time but then Raymond Mays was usually more concerned with hill climbing and sprinting with these cars. The main 'ingredients' to produce such figures were extremely careful attention to cam design, a lubrication system which was

A town carriage of miniature proportions giving comfort and, for the time, a reasonably high speed. Typical coachwork on a Brescia Modifié.
(Photo loaned by courtesy Mr. C. W. P. Hampton)





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'Brescia' Bugattis of this type formed the J. O'Day team which took part in the 1924 J.C.C. 200-mile race at Brooklands. The car shown was driven by Du Montant into 10th place. (There is controversy as to the colour. It has been suggested that they were yellow but, by this time, Bugatti's cars were French blue.)



A well-known vintage rally car in the Scandinavian countries. Imported to Norway in 1927 and restored to original in many respects in 1955 by the husband of the present owner, Kirsten Bertheau. (Photo: Montagu Motor Museum)

certainly non-standard and the raising of the compression ratio to 8:1.

Cordon Bleu unfortunately achieved fame or otherwise (depending on how you look at such things) by being the instrument in the hands of a novice, Francis Given, which mowed down a number of spectators at Kop Hill in March 1925 when out of control but happily without any fatalities. The incident did, however, have an unfortunate ending as thereafter all public thoroughfares were closed to motor sport in England.

SUMMING-UP

Those who have driven Brescias and their derivations still extol their virtues—handling was superb and as with most Bugattis the roadholding magnificent. The four speed G.P. gearbox on the sports racing cars made gear changing a pleasure. With all this who would be so churlish as to cavil at their noisiness or even protest at their far-from civilised seating arrangements? A magnificent car not only for racing and sporting occasions but also for more sedate travel when one thinks of the Brescia Modifié.

For their day they were certainly fast, as the touring models could hold a genuine 70 plus m.p.h. at a modest 3,500 r.p.m. whereas the racing cars were certainly capable of about 100 m.p.h. and safe at that speed.

While there are not many racing Brescia around after all these years those that are can still hold their own against other cars of their class in appropriate races. The Brescia Modifié is still a popular and sought-after car and quite a number are still giving value for money.

SPECIFICATION: THE BRESCIA BUGATTI

Type: BRESCIA—16-valve type 13, BRESCIA MODIFIÉ—16-valve type 22 and 23.

Model: Racing, Sports, Touring.

Engine: Cylinders 4. Bore 69 mm. Stroke 100 mm. Capacity 1,496 c.c. B.H.P.: Racing 40 plus (approx.), Touring 30 plus (approx.). R.P.M.: Racing 4,000/4,500, Touring 3,500 plus. Camshaft: 1 overhead, bevel and shaft drive. Valves: 16 (4 per cylinder). Valve timing: I.O.—5. mm., E.C. + 55 mm.; E.O.—80 mm., I.C. + 20 mm. Valve clearance (cold) 0.4 mm. (inlet and exhaust). Plugs: 1 or 2 per cylinder. Firing order 1, 2, 4, 3. Clutch: Wet multi-plate. Ignition: magneto (Brescia 2, Brescia Modifié 1) either Bosch or S.E.V. Ignition timing on flywheel 65 mm. advanced, 25 mm. retarded. Flywheel diameter 190 mm. Crankshaft: 1 plain bearing (front), 2 ball bearing (on journals 2 and 3.)

Carburettor: Zenith. Settings as recommended with known fuels of the period. Brescia—choke 19, main 90, compensator 105. Brescia Modifié—choke 18, main 85, compensator 100.

Steering: Worm and worm wheel.

Gearbox: Separate from engine. Ratios: Brescia 11-90, 7-50 5-30, 4-09; Brescia Modifié type 22 11-00, 6-90, 4-87, 3-75; Brescia Modifié type 23 10-16, 6-39, 4-50, 3-46.

Rear Axle: Ratios: Brescia 13:45; Brescia Modifié 13:45 and 12:45.

Brakes: Rear Wheels (hand lever) and transmission (foot pedal). Front wheel brakes fitted about 1926.

Wheelbase: Type 13—2 metres (also quoted as 1,967 mm.). Type 22—2.4 metres (also quoted as 2,417 mm.). Type 23—2.55 metres.

Track: 1.15 metres.

Tyre Size: Original 710 × 90. Wire wheels.

Oil: Sump 5 litres.

Petrol: Tank 50 litres (approx.).

Weight: Approximately 610 kg (Brescia).

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