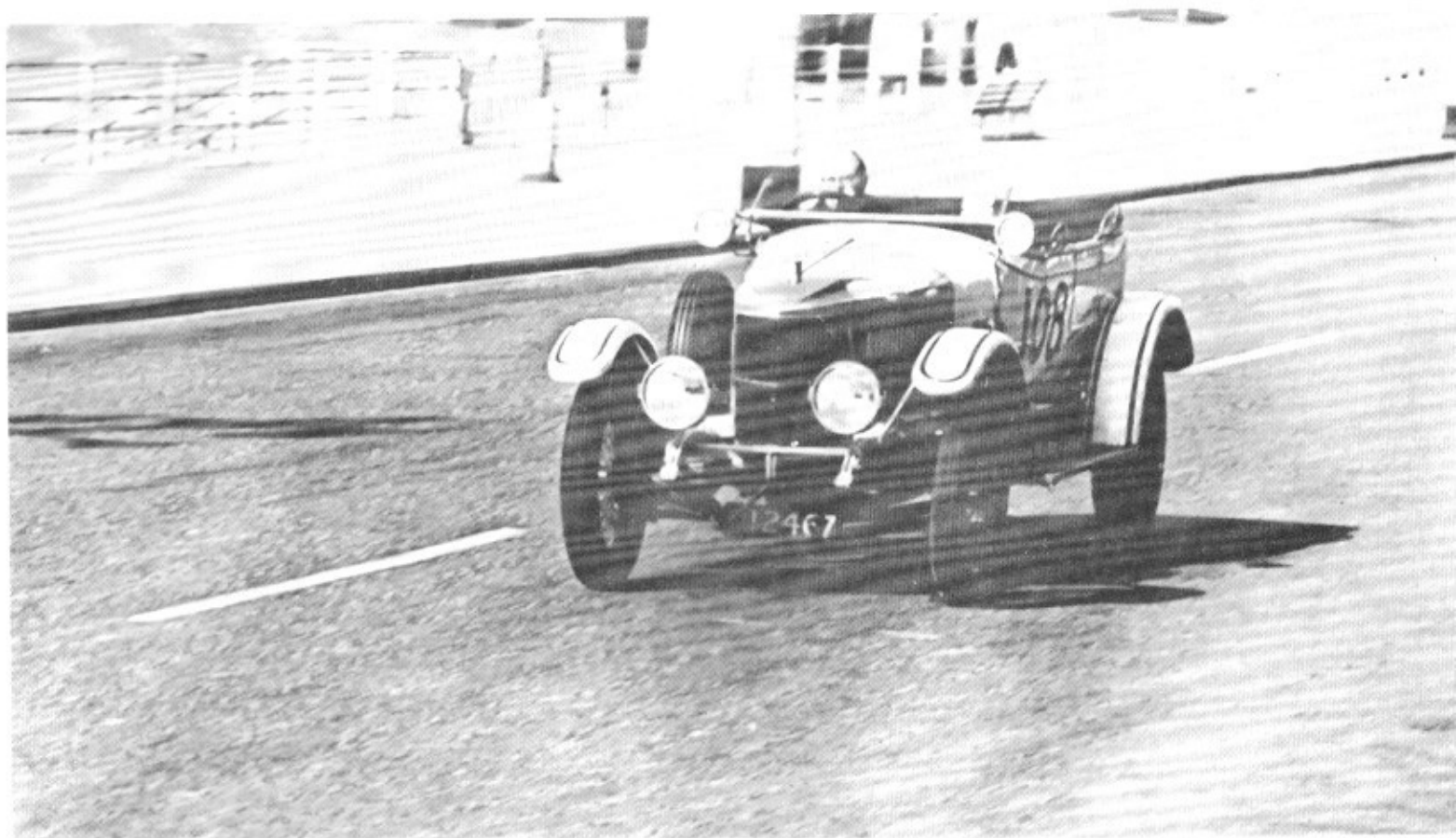


1911 The birth of the PRINCE HENRY VAUXHALL



by Laurence E. Pomeroy



The author at the wheel of his beautifully preserved "Prince Henry"

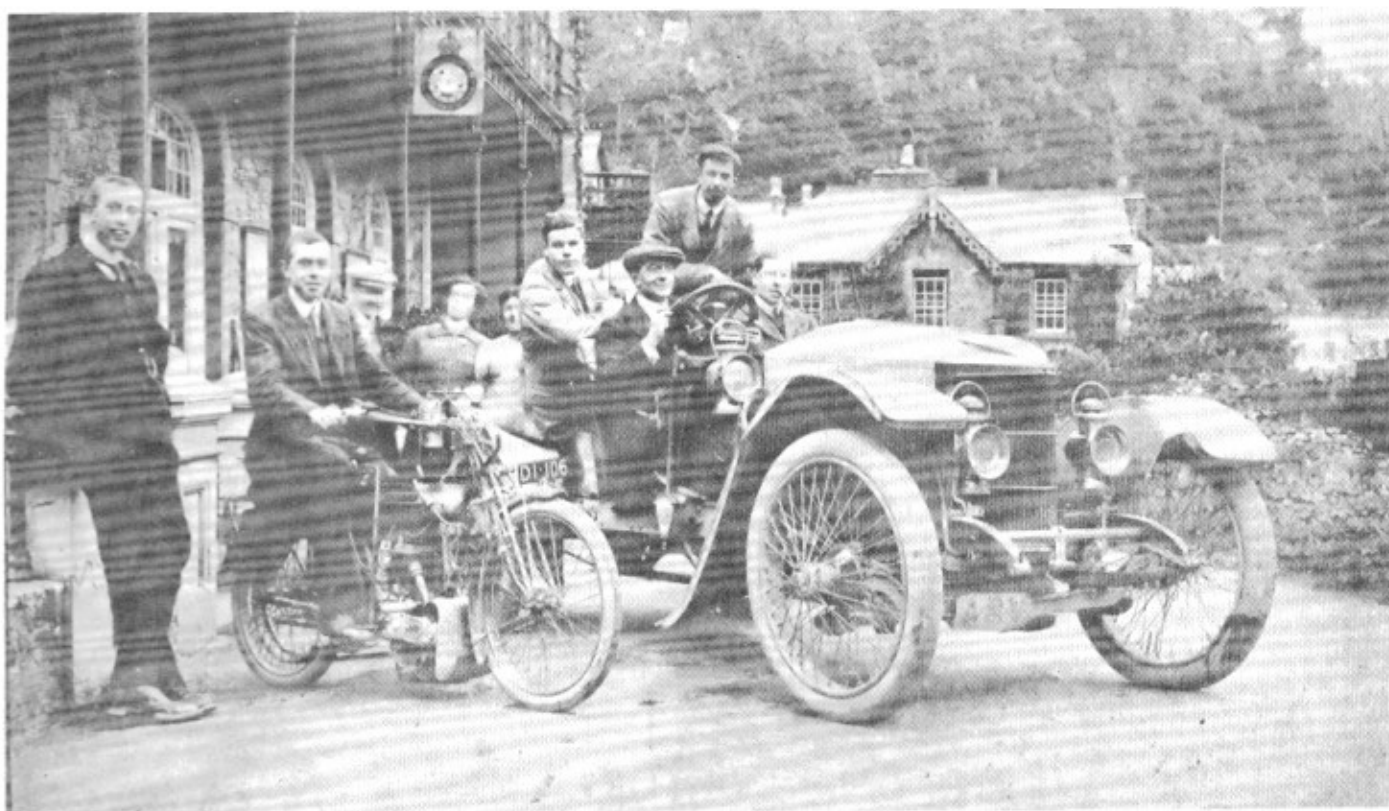
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In October 1911 the Vauxhall Motor Company's stand at Olympia displayed a doorless four-seater car called the Prince Henry model, which has some claim to be the first catalogued sports car offered by a British manufacturer: in some senses to be the first of its kind in the world.

Technically, the story of this car goes back to the winter of 1907/8. In the former year Laurence H. Pomeroy joined the infant car division of Vauxhall (originally Marine engine makers) at Luton as assistant draughtsman. At the age of 24 he had many academic distinctions including being a Whitworth Exhibitioner, but he had failed in his "matric" by reason of poor ability in the French language. He sought to remedy this by reading French text books in a subject with which he was already familiar, that is to say, the design of motor cars, and thus there came into his hands one of the first treatises on the basic principles of automobile design which was written by Heirman and called *L'Automobile a l'Essence: Principes des Construction et Calcul*. This work stressed the importance of adequate valve area and high compression ratios and irrespective of any greater fluency in French which L.H.P. may have derived from reading it, it became his technical bible. As a favourable conjunction during the winter of 1907/8 the Chief Engineer of the company went on holiday in Egypt, and the directors decided to enter a car for the 1908 2,000 miles Trial.

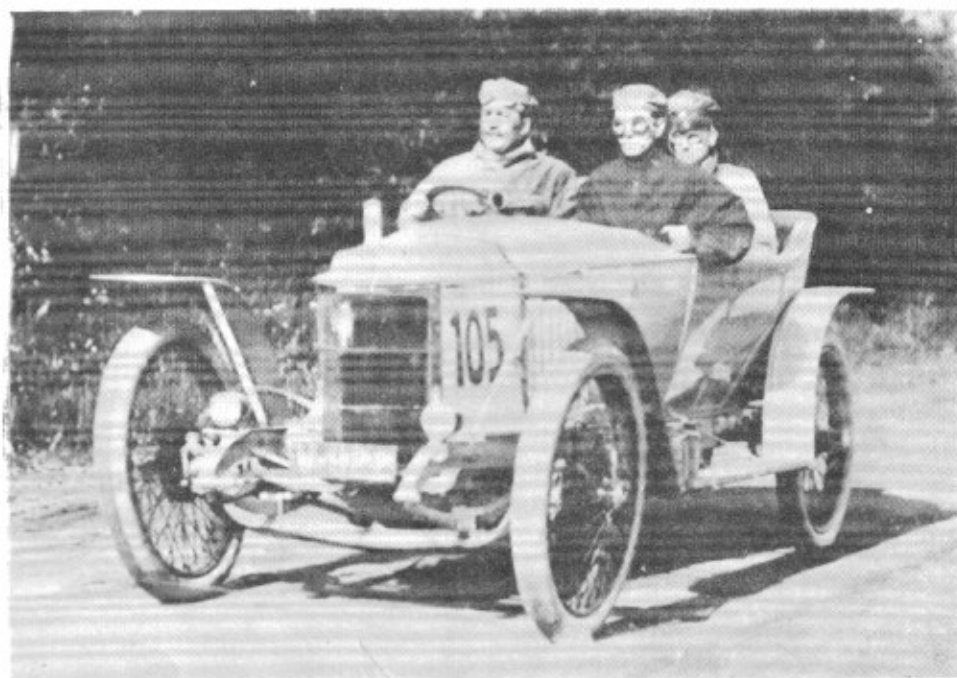
The existing 3-litre engines developed little over 23 h.p. at 1,800 r.p.m., and one may imagine their astonishment when their youthful draughtsman guaranteed to give them 40 h.p. if he were allowed to design a new engine of the same size. To put this proposition into perspective recall that the Grand Prix racing engines of that date were giving no more than 10 b.h.p./litre, so that it is rather as if a designer of a 1-litre engine intended for production today was suggesting that he could get 130 b.h.p. from it without going to any great complications in construction.

It is to their credit that they gave him the chance: it is a fact that in the early stages of testing this engine gave 38 b.h.p. at 2,400, and although the compression ratio was so high that it pre-ignited violently after more than five minutes on full throttle, L.H.P. calculated that the engine would never, during the Trials, be flat out for so long a time. Its performance was a triumph. In the whole distance it made no stops except for putting in petrol (averaging 26 m.p.g.); it was 37 seconds faster on hills than any other car in its class and at the end of the trial it had only the inevitable points deducted in respect of fuel consumed. These amounted to 77, and the next lowest deficit, recorded by a Silver Ghost Rolls-Royce was 115.



Laurence Pomeroy Senior at the wheel of a prototype "Prince Henry".

Lynmouth 1911.



Vauxhall "Prince Henry" en route with German Army officers during the Prince Henry of Russia trials.

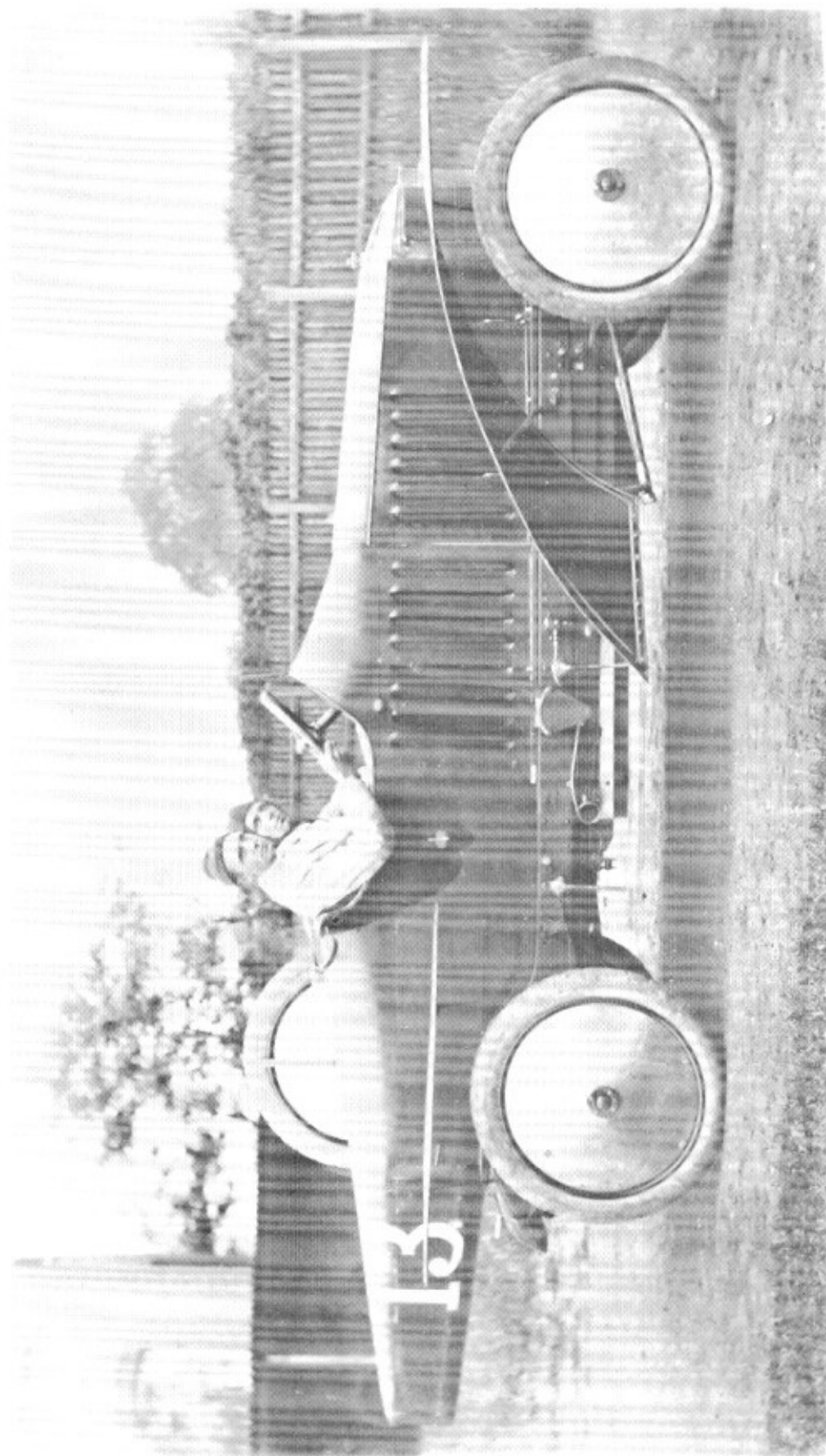
The engine was a straightforward side-valve unit but with a five-bearing crankshaft, full pressure lubrication to all the bearings (at a time when splash feed was normal), and every effort was made to lighten the moving parts.

The first cars had a cone clutch driving a four-speed gearbox converted from the existing three-speed type and needing a separate lever for a supplementary reverse gear. Behind the box, mounted beneath the driving seat, an open propeller shaft drove a rear axle which was controlled by a torque arm. A new and properly designed gearbox was soon brought into use and remained almost unchanged for the subsequent 20 years. So also did a multi-plate clutch of which the 1912 Instruction Book rather encouragingly says: "...if clutch is working well, i.e. so that a top speed start along the level can be accomplished with ease...!"

There are certainly few cars today where such an operation could so calmly be contemplated, and going back in time it was remarked in one of the motoring papers "that 1908 performance brought the 20 h.p. Vauxhall from a comparatively uninteresting background into the full glare of public interest". Further trials successes were gained in 1909, and at the end of this year a very narrow single-seater body was put on this chassis and 20 h.p. class records shattered at a speed of 88.8 m.p.h.

In this year also, it was decided to enter the 1910 Prince Henry Trials in Germany, and L.H.P.'s notebooks show that he planned an original and elaborate power unit for this purpose. It was to have an overhead camshaft with double the number of cams so that it could be moved endwise to give one valve timing for maximum torque at low speeds and another for high power output at around 2,800 r.p.m. The inclined valves were of abnormal size, and this was its undoing, for the gas velocity was so low that it failed to equal the power given by developed versions of the 1908 side-valve engine which, by 1910, had been brought up to 60 b.h.p. and had propelled the record-breaking car at 100 m.p.h.

The three cars prepared for the Prince Henry Trials set off, therefore, with this basic production engine. The rather high doorless bodies were characterised by a new vee-fronted radiator with flutes running into the grooves which continued for the full length of the bonnet, but these entries could not cope with the 7-litre engines that powered the Benz and Austro-Daimler, and Porsche won the Trial at the wheel of one of the latter which he had himself designed. Nevertheless, the Vauxhalls were 100 per cent reliable, acquitted themselves well, and were timed at 72 m.p.h., which was exceedingly fast for a four-seater car of this size at this time.



1912/13 "Prince Henry" with A. J. Hancock at the wheel.

Already many sporting amateur motorists were using stripped-down standard 3-litre Vauxhalls at Brooklands, and the Works single-seaters won the O'Gorman Race at Brooklands, which was a major event of the time, in 1909 and 1910. In that year also, 100 m.p.h. was exceeded the first time by one of these single-seaters which did 101.4 m.p.h. over a kilometer and averaged 96.2 m.p.h. for 25 miles. So the directors became completely satisfied that this high-output engine running (at that time) at the remarkably high speed of 2,500 r.p.m. could safely be put in the hands of the public, and it was with this background that the Prince Henry sporting four-seater was displayed at the Motor Show.

Shortly afterwards two cars were entered for the 1912 Swedish Winter Trophy and one of them, fitted with the actual engine from the record-breaking Brooklands car, proved so satisfactory on the road that it won the Trial against considerably larger vehicles.

During 1912 some 50 cars of this type, that is to say 90 x 120 mm. engine installed in the 9ft. 6in. wheelbase chassis with 4ft. 6in. track were made and in the hands of their owners began to compete with immense success in hill climbs and competitions of every kind.

The life of the 3-litre was, however, brief and during 1912 the same chassis was fitted with a 4-litre 95 x 140 mm., which was introduced in the first place for the 25 h.p. touring car which had a 10ft. 10in. wheelbase chassis and a 4ft. 8 in. track. Although weighing only 500 lb. the new engine developed 75 b.h.p., or about 20 b.h.p. more than the production type 3-litre, and this naturally put up the performance to a considerable degree. Unfortunately, the 3-litre radiator had insufficient cooling area, and this model was notorious for boiling if driven fast upon a summer's day. Nevertheless, this small light car was tremendous fun to drive, and I remember as a boy many long journeys sitting in the dickey seat of my father's two-seater.

In 1913 the Prince Henry grew into its last stage when the bigger engine was fitted into the bigger chassis with a 10ft. 10in. wheelbase and the 4ft. 8in. track. This permitted large four-seater bodies to be fitted so that the car became more of a high-speed tourer than a very light sports model, but nevertheless a first-class performance could be maintained and a single-seater version of this car broke all world's records (i.e. with no limit on engine capacity up to seven hours at a typical speed of 91.5 m.p.h. for five hours).

This was in August 1913, and already the 30/98 was in being. This model was to become Vauxhall's major contribution to sports car design, but it should be remembered that the engine was in fact a bored-out Prince Henry (from 95 to 98 mm.) with the 70 mm. throw crankshaft cold stretched to 75 mm. This gave a $4\frac{1}{2}$ -litre swept volume. This enlarged engine was put into the original small Prince Henry chassis so that strictly speaking the E type, as it was called, was a straight-forward development of the C type Prince Henry model.

But whereas only six 30/98s were built before the outbreak of World War I, in August 1914 the company made 100 of the short-wheelbase cars with a 4-litre engine and 200 of the big Prince Henry. To indicate the position which these cars held in the British sporting world, let us look at the season of 1913 in which we find that the works cars and private owners gained 35 wins in hill climbs, 23 first at Brooklands, and were victorious in 14 Reliability Trials.

These results are all the more remarkable because the cars could be used with complete satisfaction in everyday motoring. The Autocar wrote at the time, saying also that this is "a wonderful car and delightful to drive", that "There was no opportunity for testing the top limit of speed, but from the slowest crawl to 50 m.p.h. or more there is scarcely any perceptible change in quietness or smoothness. When one knows by the speedometer that the engine is revolving at 2,000 r.p.m. at least, it is difficult to believe that such is really the case. Not only is the car, as a whole, smooth as well as highly efficient in the usual sense of the term, but it is even smoother than many cars for which no suggestion of high power output or unusual efficiency is made".

It must also be emphasised that these results were attained by completely orthodox means, the design being not only efficient but also simple, and not less important, profitable. Between 1908 and 1914 Vauxhall built less than 2,000 cars, at prices varying between £1,000 and £2,500 in terms of modern money, for an overall profit of little less than the equal of a quarter of a million pounds, and this combination of giving pleasure to the buyer and profit to the producer must be rare indeed.