

1891 Panhard et Levassor P2C (2 seat phaeton)

4th car produced by the company in 1891. The numbers 7 and 8 have been found stamped on the front stub axles, you would assume the first would have 1 and 2 and the second 3 and 4 and so on. The car was 'modernised' in 1902 with the fitment of a steering wheel, new engine, a radiator and a 'streamlined bonnet'. It made the car look like others at the time and stayed this way until the mid 1980's when it was restored back to it's original configuration.

Chassis is made of channel iron with wooden inserts called 'fitch plate' which is metal sandwiched between two pieces of wood. A subframe holds the engine and exposed 3 speed gear shafts on a sliding transmission type that would become standard for all cars until the synchromesh came along in 1928. It is not called a 'gearbox' as there is no 'box' around the gears as this was invented in 1896. There is also no reverse gear as this came in the mid 1890's as well.

Bore : 72mm

Stroke : 120mm

Cubic capacity : 997cc in a V twin arrangement at 15 degrees

Induction : automatic inlet valve

Compression ratio : about 3.5:1

Ignition : Is by 'hot tube ignition' where small burners, using white spirit fuel, heat a platinum tube protruding horizontally from the cylinder head horizontally, red hot. The air/fuel mixture is then compressed by the piston and forced into the red hot tube where it explodes and forces the piston back down. The timing of the firing is done by the distance the flame hits along the tube. Bring the flame closer to the cylinder and it will 'fire' earlier, and further away will see it 'fire' later. The engine takes a while to get going, but is extremely reliable once going, except during windy days where a burner can go out where there is a noticeable loss in power.

Exhaust : The exhaust valves are operated by a push rod utilising an ardlor camshaft inside the internal flywheel.

Engine speed : Is controlled by a governor set at 750rpm. It works by a spring mechanism that pulls a lever interrupting the exhaust pushrods contact with the valve stem.

Lubrication : Is by drip feed into the cylinder walls. A 100% full loss system as the oil vents out of the rear of the engine.

Carburettor : Daimler constant speed type. (Originally it had an evaporative type fitted but these were not very efficient)

Cooling : None, it just gets hot and boils and you top up the water levels held in two tanks.

Maximum speed 12MPH (19kmph)

Horsepower :2HP

Wheels : front 770mm rear 1090mm wooden wheels with solid rubber tyres. (You had a choice of 'tyres' in 1891, either steel or rubber)

Length of Wheelbase : 1250mm

Width of Track : 1250mm

Drive: via chain to rear differential

Brake : 4 forms of braking are present

- 1) a foot brake operating on to a drum on the gear output shaft,
- 2) a handbrake operating on to a drum on the rear axle by means of cable,
- 3) a shaft that was dropped down onto the ground to stop you rolling backwards at a stoppage. Once going it would bounce along behind you until you pulled the string onto the holder and
- 4) a block of wood that would be inserted in front of the rear wheels to stop you rolling forwards. This would be pulled up and stored prior to moving off.

Suspension : Front : Full elliptical, Rear : 1/2 elliptical

Weight : Approx 500kg's

Steering : Tiller steering, very direct and confusing as you pull tiller to the right to go left and to the left to go right.

Lighting : Candles.

Car was purchased by my late father, in 1984 as an '1896 Panhard et Levassor'. It had a rear seat that made the car look unbalanced and likely to topple. The front axle had been moved forward and a steering wheel had been added instead of the tiller steering. Upon a full tear down restoration it became evident that the car was a lot earlier than 1896 and with the numbers 7 and 8 stamped on the front stub axles and the number 4 stamped on various brackets around the car it was traced back to the 4th car made out of 6 cars that Panhard et Levassor made in 1891.

A new engine was sourced and put into the sub frame with the gears. The burners at the front including the burner box and tiller steering were made to period design. Most of the information came from the few other 1890/1 Panhard's in museums in Europe and measurements and photographs were taken of these cars for reference.

Where possible the original wood and horse hair filled seat cushions have been retained. The top part of the rear swab is mostly still the original leather. The wood was stripped of its paint and reprinted as were the wheels. It was painted on, sand painted off several times over and over in order to get a deep covering of paint to replicate the paint of the early 1890's.

The cars restoration was completed in 1990 with my father doing the bulk of the restoration in our basement at his home (my job was the wheels and front engine cover). It was sent over to England in 1991 for the cars 100th birthday to run the 1991 London to Brighton run for veteran cars. The car made it about 40 miles before a soldered joint at the base of the burner fuel canister failed due to the excessive vibrations. The canister was re made and the car went back to the 1996 London to Brighton Centenary run and made the full distance in 7 hours. (It's 60 miles in length).

I enjoy working on it as it is extremely basic in its application of everything. It is, maybe, the first or second car ever made to have the engine in the front, followed by the gear assembly and drive taken to the rear wheels. This layout was called 'Systeme Panhard' and set the convention of modern cars until the more recent front engined/front wheel driven cars. This change in layout came during the cars made in 1891, of which there was 6. We know that the first 2 were rear engined cars.

Panhard were early leaders in automotive engineering. There are still several things designed by Panhard that are used today. The 'Panhard bar' is one of the most obvious one.

Currently it is the 7th oldest car in existence, the oldest outside Europe and one of the first 100 motorised vehicles ever produced. It is one of two of the oldest cars in private hands, the others are in museums as static displays and are rarely started and may not be operational. This car, however, runs and has been in several veteran rallies, usually as the oldest car and has proven to be very reliable.

