

# French Protection

By the outbreak of World War Two, the Panhard 178 was considered to be the most advanced 4x4 armoured vehicle in the world – **Sheldon Rogers** traces its development



Panhard & Levassor had been producing armoured cars for the French Army since 1932 with their Type 165/175, and had previously supplied the engines for the 1925 prototype to the later produced Schneider (P16) M1928s and M1929s. However, even earlier than this, there was a Panhard & Levassor 24bhp touring car used as an unarmed reconnaissance vehicle during the 1905 French Cavalry manoeuvres.

The following year, a Capitaine H Genty adapted the vehicle to carry a machine gun. The Auto-Mitrailleuse was trailed by the cavalry during 1906 and 1907. During 1907, the Panhard-Genty machine gun car, as it became known, was hurriedly sent out to North Africa during a native uprising, and performed well according to the French Command in Algeria. After crashing in 1908, the car was returned and refitted with

the manufacturer of seven similar adapted cars from Panhard and Clement-Bayard following from its success. These were subsequently sent out to Morocco to counter similar tribal disturbances. The Panhard 178 therefore followed an already rich history in Panhard's involvement in armoured car development.

The Panhard 178 was a futuristic vehicle for its time. It was the result of a 1931 French Cavalry development programme, which incorporated three design-type criteria. One was the auto-mitrailleuse de reconnaissance (AMR), a light reconnaissance vehicle for short-range use, the second was the auto-mitrailleuse de decouverte (AMD) a fast vehicle for long distance reconnaissance for mainly road use and the third was the auto-mitrailleuse de combat (AMC) which was effectively a tank.

The full AMD requirements were released in

November 1932 outlining a vehicle that was four metric tonnes in weight, had a range of 250 miles (400km) and a top speed of 44mph (70kmph). The vehicle was required to have a 39 feet (12m) turning circle and 8mm of armour protection. The weapons were stated as 20mm with a 7.5mm coaxial machine gun.

The Panhard, was up against other manufacturers' prototypes with the Renault VX, Berliet VUB and Latil AMD. Panhard put their ideas into action for the AMD requirement, which resulted in the prototype version of their armoured car appearing in 1933, and demonstrated in January 1934 in front of the Commission de Vincennes.

Armed with a provisional Avis 13.2mm machine gun and turret. A second testing was carried out later in the same year by the cavalry, with the vehicle being accepted as the AMD



*Panhard 178 AMD 35 during a parade*



*Front view of a Panhard-Schneider P16 Type M29*

Panhard modèle 1935. Two orders of 15 vehicles were placed in the same year, one on January 1 and a second on April 29, 1935. However, delivery of the first order did not start until February 2, 1937 with the last of the second batch reaching the French Cavalry in November, due to strike actions by Panhard workers. Further orders followed, with more than 360 vehicles being in service with the three Divisions Légères Mécaniques, the French Cavalry's armoured formations. It was often referred to as the 'Pan-Pan' after the manufacturer Panhard.

Unlike their previous armoured car, the Type 165/175, which was modelled on a car chassis, this model, Type 178, was designed from scratch. What made it such an important innovation can be seen by its design specifications, with all four wheels driven by a rear-mounted engine.

Although it had beam axles and semi-elliptic leaf-spring suspension, it was equipped with large 42x9 Michelin run-flat tyres, which performed well off-road. The hull was a relatively straightforward riveted design of 6 to 20mm steel plate. The driver and co-driver sat in the hull with the co-driver operating the ER29 short range or ER26 long range radio sets.

The commander and gunner stood in the turret with simple leather belt-type seats to perch on. There were two access doors to the rear of the fighting compartment and a side door for the drivers.

The Panhard ISK 4FII bis V4 petrol engine produced 105bhp, sat low in the chassis, producing a low silhouette and was separated from the hull by a fireproof bulkhead. The steering wheels at both ends of the vehicle, allowed for fast withdrawal while undertaking

reconnaissance duties.

The eight-speed gearbox had four forward and four reverse gears. The gear changes for on-road performance were higher than the off-road and reverse drive performance. On road, the speeds achieved by the gears were: First 8.5mph (13.8km/hr), second 15.1mph (24.3km/hr), third 24.9mph (40.1km/hr) and fourth 45.1mph (72.6km/hr). Off-road and reverse were: first 4.9mph (8km/hr), second 8.6mph (14km/hr), third 14.3mph (23.1km/hr) and fourth 26mph (42km/hr).

The 'Pan-Pan', was not without its teething problems. The new APX3B turret, derived from the APX3 from the AMC-35, had problems with cracking gun sights and high internal temperatures. The vehicle was retested from June 29 to December 2, 1937 and the 1937 model, which began production in 1938, was fitted with a





**Panhard 178 AMD 35  
on a rafting exercise.**



ventilation system and a gun silencer.

By the outbreak of World War Two, the Panhard 178 was considered to be the most advanced 4x4 armoured vehicle in the world. Production took place at the Panhard & Levassor factory on Avenue d'Ivry, Paris. Sub-contractor Batignolles-Châtillon of Nantes, produced the armoured hulls with the turret being manufactured by Société Française de Construction and the armament made by the Atelier de construction de Rueil (ARL). Hulls were produced at a disproportionate level to the turrets, for example in October 1939, plans for spring 1940 had 50 hulls for manufacture against only 40 turrets.

The Panhard proved to be an expensive vehicle to produce, with a single hull costing more than a light infantry tank at FF 275,000 in 1934. Nevertheless, the French Cavalry ordered more after their initial first two orders of 15 Panhards. A third order for 80 vehicles was placed on September 15, 1935, but due to the prior strike action, manufacture did not commence until around August 11, 1937.

The scheduled timeframe for delivery was from January and July 1938. However, due to more strikes and the lack of turrets the first arrived on June 24, 1938 and the final vehicle in February 1939. A fourth order for 40 and a fifth for 35 vehicles were made on January 11, 1938, with a predicted delivery for the fourth being between February 13 and July 31, 1939 and the fifth between July and December. A sixth order followed a week later on the January 18 for 80 vehicles for a delivery schedule of between June and November 1939. Of this sixth order 57 'Pan-Pans' were delivered prior to the outbreak of the World War Two on September 1, 1939.

Along with these armed vehicles some 24 radio command variants were ordered. Twelve in 1937 and another 12 in 1938 with production for all 24 beginning in December, with these variant being delivered between October and December 1939.

### **SPECIFICATIONS**

Make **Panhard**  
 Type **Armoured Car**  
 Model **178 (AMD 35)**  
 Production Run **1937-1940**  
 Engine **Panhard**  
 Type **ISK 4FII bis V4 eight-cylinder**  
 Fuel **Petrol**  
 Power **105bhp**  
 Transmission **Manual**  
 Gears **Four forward four reverse**  
 Suspension **Leaf spring**  
 Crew **Four**

### **Dimensions(overall)**

Armament **1 x 25mm SA35 Cannon**  
 Armour **9-20mm**  
 Length **4.79m**  
 Width **2.8m**  
 Weight **8,200kg**

This command version (Poste Commande) was intended for deep penetration into enemy territory. Produced with a fixed unarmed turret instead of the electric traversed APX3B and without the standard radios, it had an ER27 radio set, which could transmit between 80-150km and two ER26 radio sets with a range of 60km.

Another version was produced for North Africa. The prototype vehicle left for Morocco from Bordeaux in September 1936 and was tested by the 6e Cuirassiers on the mountains and in desert conditions in October. The vehicle was accepted as the heavy reconnaissance vehicle (automitrailleuse lourde) with the Laffly S15 TOE chosen as a light version.

The initial plan was to arm the vehicles with a 37mm and later a 47mm gun. However, due to the worsening situation in Europe, the North African version was forced to mirror the stand-

ard version known as the AMD 35 type Afrique Française du Nord, but with internal changes and a more efficient radiator.

A colonial version was also produced for French Indo-China. This had a smaller one man turret, known as the APX5, which was taken from the Renault AMR 35 ZT2 light tank. It was armed with a 25mm gun and 7.5mm machine gun. There was a crew of three with a gunner/commander, driver and driver/radio operator. The first order for this vehicle was made on September 14, 1938 for four vehicles with a second order of another four vehicles following on June 10, 1939. The first order made it to French Indo-China (now Vietnam), the first two in June and the second two in July 1939. The last order did not make it out of France in time and where issued to the Vichy forces after the armistice with Nazi Germany of June 22, 1940.

A late development was to adapt the 'Pan-Pan'



*Panhard 178 AMD35 of 2<sup>eme</sup> Goupes de Reconnaissance de Division d'Infanterie abandoned in Northern France*



into a tank destroyer. An initial proposal was put forward on January 14, 1939; this was to use the 47mm SA 35 in the existing turret. However, these were in short supply due to them being used to up-arm the Char Bs and to arm the Char D2s.

By April 1940, Panhard proposed their own version, the Voiture spéciale 207. This was effectively a Panhard 178 with a rear facing 47mm SA 37 gun, though this version only went to the development stage. Following this, there was a call for Renault to design a new closed turret. This resulted in a new octagonal turret which gave the vehicle a higher and more wedged shaped profile. The rear entry was replaced with a narrow top hatch. The new turret was heavily armoured, with the welded plate being 25mm thick with an added spaced 13mm appliqué plate on the front. It lacked the electric traverse mechanism, and instead had

## ***'Two days later, it was destroyed by its own crew at Cosnes-sur-Loire'***

to be hand cranked.

There was also no provision for a machine gun. The first prototype was finished on May 31, 1940. There were plans to build four of these vehicles a day and from August onwards to produce 35 a month. However, due to the evacuation of Paris on June 10 and the factory likewise being evacuated on June 12, 1940, the now finished prototype, known as Voiture 47, remained the only tank destroyer.

It saw action with 1er Régiment d'Artillerie de Montagne (RAM) on June 15 when it defended a bridge, destroying two German tanks and a column of vehicles.

Two days later, it was destroyed by its own crew at Cosnes-sur-Loire, while in retreat, as the bridge could not take the weight of the vehicle.

By the outbreak of the World War Two, there was around 219 Type 178 armoured cars available for action with the French Cavalry. The 6e Curiassiers were the first to receive the Panhard 178 in April 1937. By 1939, there were 11 squadrons equipped with the Panhard armoured car.

In the spring of 1940, the Panhard saw action in Norway with the 21e Escadron. By the summer of 1940, there were more than 370 vehicles in the reconnaissance squadrons for the mechanized and armoured divisions of the French Army. Reconnaissance squadrons were sent



into Belgium and Holland where they conducted skirmishes with the advancing German Army. They also engaged German reconnaissance vehicles at the battle of Hannut, in Belgium, where they suffered little or no damage.

After the defeat of the French Army in 1940, about 190 Type 178 armoured cars were taken over by the German Army and used in the reconnaissance role. They were given the designation of Panzerspähwagen P204 (f) and were used in Operation Barbarossa against the Soviet forces in June 1940, but became heavily reduced in numbers after the loss of 107 vehicles. Some that remained, were the Panzerspähwagen (Funk) P204 (f) versions with their large frame antenna which were still active on the Eastern Front in 1943, many being up-armoured with space armour by this stage.

Some 43 Panzerspähwagen (Funk) P204 (f) were converted to Schienenpanzer, railway patrol vehicles. The Vichy regime was given 64 Panhards for patrol duties, with their guns replaced with a machine gun. Thirty-four of the patrol Panhards, were taken back by the Germans and converted to open top gun carriers mounted either with the 50mm L/42 or L/60 guns. It is also reported that two Panhard armoured cars were taken by the Italians in November 1942.

However, some 45 Panhards had been hidden from the Germans. By April 1941, a new turret was being produced for these chassis, by Engineer J Restany at the Camouflage de Matériel and armed with the 47mm SA35 or 25mm SA35 guns. The turrets had 20mm plate for the sides and 10mm plate for the top. There was a

top hatch but a rear hatch was later added. By January 28, 1943 all 42 turrets were completed. Another later addition was a 7.5mm FM 24/29 machine gun. Some were put together with the hulls for trial purposes.

The majority of the cars were hidden or dumped when the whole of France was occupied by the Germans in November 1942. A number of these converted Panhards were also seized, and used by the Germans with some reportedly making it into resistance hands in the summer of 1944.

In 1944 plans were enacted to produce an upgraded Panhard known as the Panhard 178B. Fives Lille designed a new turret the FL1 which could mount the large 75mm SA45 L/32 gun and was of a larger cylindrical shape. There was an uprated four-cylinder engine and an

EM3/R61 radio set. A 47mm SA35 gun and machine gun were put into the turret replacing the proposed L/32 gun after the initial order was made on January 5, 1945, which was confirmed on July 31, 1945.

In total there were 414 of this type built. These vehicles were used by French and colonial forces in Syria, Tahiti, Vietnam and Madagascar. In Vietnam, some 24 178Bs were used by the French Far East Expeditionary Corps, which was raised in 1945 during the Pacific War, and later fought and lost the First Indo-China War (1946-1954) against the Viet Minh.

The French 15e Escadron Blindé d'Infanterie de Marine, were still using the Panhards in 1960 in Djibouti during the first referendum when joining Somalia was voted upon. The newly formed country of Syria took over old French equipment in 1944, including a number of Panhard 178B. These served briefly during the first years of the cold war.

In total there were some 729 Panhard 178s built before and during the World War Two with some 414 Panhard AMD 178Bs produced soon afterwards. Today, there are only a small number of these vehicles left in existence. There is one Panhard 178 at the Musée des Blindés in Saumur, France painted in the colours of the 8th Cuirassiers.

There is a second one at Patriot Park, Kubinka, painted in the colours of a Nazi Germany reconnaissance unit. Finally, there is a Panhard 178B somewhere in Syria. It was formerly at the Damascus Military Museum, but seems to have been moved to an unknown location. Hopefully, it has not found its way onto the black market. ◀

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**A Panhard 178B with FL1 Turret. JL**