The story of Saab

Visit the Saab Car Museum and discover how automobile technology and design evolved over sixty years. Saab was an aviation industry until the end of World War II in 1945. When military aircraft were then no longer needed, it started making cars. Saab launched lots of new products that were copied by others. Saab cars were successful in races and Saab owners loved their cars. There was a special Saab spirit among the people of Trollhättan.

Two products from Swedish Aeroplane Corporation, SAAB, in Trollhättan

Aircraft production in Trollhättan, here with the Saab 21 fighter plane or J 21 with pusher propeller. Replaced after World War II with car production. The Saab 92 was the first model to leave the factory in 1950. Saab's civilian projects were numbered from 90 upwards. Numbers 90 and 91 had already been given to the civilian aircraft, Skandia and Safir.

So the car project was number 92. The car's streamlined shape is clearly the work of aircraft designers. The Saab 92 with its teardrop-inspired design and many other Saab cars are on display in the Saab Car Museum at Innovatum in Trollhättan. Photograph from the Saab Car Museum.

From aircraft to automobiles

Saab was established in 1937. With a world war looming, the state decided to invest in the manufacture of aircraft. SAAB, the Swedish Aeroplane Company was established in the town of Linköping, but the business was initially conducted in the workshops of Nydqvist and Holm (NOHAB) in Trollhättan. At the end of the War, it was decided to invest in the manufacture of cars in Trollhättan. There were many similarities with aircraft manufacturing. Trollhättan had an impressive technological and industrial background. The first Saab 92s came onto the market in 1950. It was a successful production. By 1976, 1 million cars had been made. The company then had 6,000 employees.

Saab has always been able to achieve something innovative and different. Initially, experience from the aviation industry was an asset in the development of new products.
The Original Saab – the Saab 92001

This prototype was completed in 1946. The body was handmade and the mechanical parts came from different cars. It has an 18 horsepower DKW engine. But some of Saab's hallmarks were there from the start – front-wheel drive and an aerodynamically-designed body. Work on developing the 92001 took place in Linköping. Only 15 or so people knew about the project. Photograph from the Saab Car Museum.

The Saab 92 with white tyre sidewalls

The first Saab car left the Stallbacka factory in 1950. It was extremely streamlined for its day and robustly built to ensure safe travel. The twin-cylinder, two-stroke engine is transversely mounted in front of the front axle and drives the front wheels. It is a 764 cc, 25 hp engine. It has a three-speed gearbox and a freewheel device. Photograph from the Saab Car Museum.

Stallbacka Moped

In those days, cars were given rather special names. Saab was called Stallbacka Moped, Volvo from Hisingen was Hising's Packard and Volkswagen became Pinneberg's Cadillac from the novel by Hans Fallada.

My first Saab

I bought my first car, a red Saab 93B, in the spring of 1961. The "B" indicated that the two doors were rear-hinged. That meant the handles were at the front of the door, which made it rather special.

When my colleagues heard that I had become a Saab owner, they suggested I join the Saab club. Membership gave some discounts and invitations to talks.

When you got into the car, there was plenty of floor space. There was no transmission tunnel, the car was a front-wheel drive. That was unusual in those days. The seats could be pushed forwards and backwards but not raised or lowered. If you wanted to sit higher, you could buy wooden blocks as spare parts. They were reversible to create different angles. You screwed them into place under the seats. I did!

The windscreen-washer was a pump. There was a button on the dashboard that you pulled out and pushed in again. When you did that, water was sprayed onto the windscreen.

A steering gear to a gearbox with three gears and a freewheel device for the engine. It was a two-cycle engine that needed 3 percent oil in the fuel to lubricate it. That meant you never have to change the oil in the engine. But if you didn't accelerate on
long downhill gradients, the engine didn't get any lubrication and that could lead to trouble. The engine could seize up and the pistons melt and fuse to the engine block. The freewheel device disengaged the engine from the transmission as soon as you released the accelerator. If you didn't like the freewheel, you could pull a lever below the dashboard and then it worked like any other car.

You could see cars with two-stroke engines from quite a distance. Blue smoke would be coming out the exhaust pipe. Saab was not the only make of car with two-stroke engines.

Oil that had not been combusted stuck in the exhaust pipe and silencer so there was no risk of them rusting. It was more likely that the silencer became clogged and you had to replace it. Some car repair workshops used acetylene torches to burn out the oil build-up. That must have created quite a lot of smoke. I never tried it on my car. You didn't have environmental problems with oil in the exhaust fumes in those days.

Two-stroke engines were lightweight. I can remember when the engine started running jerkily. It was time to replace it after 100,000 kilometres. That was considered a normal life span. I bought a second-hand engine for 140 kronor in a car park in Gothenburg and put it in the boot of my car. When I got home, I got my head under the bonnet, unscrewed the engine and lifted it out. I then installed the new one, fitting the drive shaft with splines into the gearbox. I needed an extra pair of hands, so my Mum helped me to turn the shaft the right way.

Fifty years later, I have a Saab 9-5. I would never even think of changing the engine out on the driveway.

Carlsson "on the roof" - the first great star of rally driving!

In the 1950s, everyone knew who Erik Carlsson and Saab were. Erik's success on the racetrack in a Saab is like a fairy tale.

Speed is always relative to the conditions. An early Saab was not fast, but Erik could squeeze every drop of energy out of an engine. Today, all cars have a hundred horsepower, but the day that Saab managed to get 85 horsepower out of an 850 cc engine was a day to celebrate and the entire rally crew was treated to cake.

Carlsson "on the roof"

Erik drove off the road and rolled the car onto its roof during a Swedish championship race. C-G Hammarlund, who was behind Erik, saw the flipped-over car when he passed.

When Hammarlund reached the next checkpoint, the official there asked where Carlsson was. Which Carlsson? said Hammarlund, a well-known presenter of a Swedish car radio programme from 1956 to 1973. Do you mean Carlsson on the roof? It was a joke that all Swedes understood because of an Astrid Lindgren character who could fly.

Her children's book "Carlsson on the roof" was broadcast every Saturday evening on the radio. In a moment of inspiration, Erik was given the name "Carlsson on the roof".

Dutch Tulip Rally in 1959

Erik drove a Saab 93 with 65 hp, a four-speed gearbox (the original only had 33 hp and three gears) and minimal weight. Erik had been moved up to the class for sports cars with 1.5 litre engines, because not enough cars had been entered in the Saab's cylinder capacity class. He was competing against Porsches, Triumphs and MGs. Erik still had a winning chance when the caravan of cars drove from the hotel to the Zandvoort Grand Prix circuit on the last day. This was the final race in the rally.

However, the cars moved slowly through the crowded streets which the heavily-tuned Saab engine did not like. When they arrived at the circuit, a spark plug was covered in oil and was not working. Erik wasn't allowed to change it either. Parc fermé rules applied, which means cars are left in a secure car park and no maintenance may be performed. But as soon as the car was ready to start on the circuit, the rules no longer applied and they could change the spark plug. And they made it in time before the flag dropped.

Erik asked Ingemar Johansson from Bredaryd in a Porsche to stay in the pits as long as he could, which he did, not driving out until his name been called over the loudspeakers several times. During
which time, Erik changed the spark plug. He then went on to win the class.

First-rate driving skills, excellent car, good organisation, fine co-workers and smart thinking. In the 1950s, Erik Carlsson built up the combination of details and qualities that laid the foundation for his success as a rally driver. The victory at the Tulip Rally was a major triumph. Erik became well known in the international rally driving fraternity.

Rally Sweden
Saab had been competing in Rally Sweden for years but had never won an overall victory. Rally Sweden 1959 was totally uneventful for Erik. His race was flawless and well-calculated, and he won. Never before had the team and all Saab enthusiasts been so elated. There were 25 competitors, driving Porsche Carreras and other exclusive cars. But Erik won with his Saab!

RAC Rally
The Saab 96 with a larger engine and four-speed gearbox arrived on the scene. It was the start of an international career for Saab and Erik Carlsson. In the autumn of 1960, Carlsson and Saab began a suite of three victories in the British RAC Rally, a display of skilled driving and the car's performance capabilities.

Monte Carlo Rally
Erik had won the Rally in 1962 with Gunnar Häggbom. In 1963, Gunnar Palm was his co-driver and tells us here about the Monte Carlo Rally that year.

We started in Stockholm and I drove through the whole of Germany. It was important that Erik got as much rest as possible before the real race started in Monte Carlo. We practically lived in the car all four days of the competition.

There were other occasions when Erik needed to sleep. It was too exhausting to drive all the time. The co-driver's passenger seat could be reclined flat and we always had a down-filled pillow and clean pillow cases in the car. It made all the difference when we wanted to take a nap. Erik would sleep for about twenty minutes then wake up feeling refreshed and rested. Then he was back at the wheel, driving as normal again.

We practised changing places without stopping. Erik ran kept his foot on the accelerator while moving his body forward and to the right. I then slipped in behind him, bringing my legs down to the left of his body and placed my foot on the accelerator pedal so that we didn't have to release it. Erik steered with his left hand before I took over the wheel. Often, no one noticed that we changed drivers. And it puzzled those that did.

We were out in good time before the rally, test driving and making our own "notes". Erik and I had a code language that no one else really understood. We used small combinations of words that were quick and easy to say.

Erik was extremely quick to understand what the next curve or straight would look like. That enabled him to control the speed and vary his driving precisely to suit him to maintain maximum speed while driving completely safely.

Erik was a master of this means of communication. He had a special ability to listen carefully to what I described, while he knew instinctively exactly where the car was on the road and heard that the engine was at the right revs. Perhaps these gut feelings were his most valuable asset. Erik could coordinate all of this with his feet and hands. I could feel it myself when everything was going smoothly and we were doing a perfect run. We were a rally equipage, both of us completely at one with our car. (Gunnar Palm)

In 1962 and 1963, Erik Carlsson won the Monte Carlo Rally – in a red Saab 96 each time. He was greeted by cheering crowds when he returned to Trollhättan in Sweden.

The 1963 Monte Carlo winner
The 283 is a replica of the car that Erik drove to victory in 1963. The engine is the Saab 841 cc, three-cylinder, two-stroke engine, souped up from 38 hp to about 70 hp.

The car on the right is a 1966 Saab Sonett II. Erik Carlsson drove a Sonett II in the French Coupe des Alpes in 1966. The engine was bored up to 940 cc and produced 93 hp. The car's light weight of 660 kg contributed to its excellent performance.

Erik Carlsson in the book about Saab
Lots of people looked at my car in Monte Carlo and then laughed behind my back. I didn't get angry. I felt sorry for them. I knew what my car could do. They didn't.
The innovative car company – from two-stroke to turbo

Saab's place in automotive history is not just about building exclusive cars or about rally victories in the 1960s. It is also about its role as a pioneer that swiftly developed unique products. The 70s and 80s were the most innovative decades for Saab.

Its cars featured seatbelts ten years before the law in Sweden required them to be fitted. Saab was the first carmaker to present a freon-free air conditioning system and asbestos-free brakes, not only because it wanted to eliminate any risk of exposure to asbestos during manufacture, but also because it wanted to prolong the life of the parts. The new brake pads, semi-metallic on the front and organic material on the rear, improved braking performance and doubled the life of the pads.

Saab 99 1969
The concept behind the Saab 99 was large on the inside and small on the outside. Designed by Sixten Sason, it was nick-named the “broad-shouldered Swede” and had a 1729 cc four-cylinder engine that produced 87 horsepower. The design of the 99 was the start of a Saab style that would continue into the next century with the 900, 9000, 9-3 and 9-5 models.

Saab was the first carmaker to introduce a diagonal braking system in 1963, automatic dip-beam headlights in 1969 and the headlight wiper in 1970. Saab was the first manufacturer to produce shock-absorbing bumpers with self-healing characteristics that met the future US requirements for collisions at speeds of up to eight km/h. It introduced electrically heated seats, which has been a blessing since then for all drivers on cold mornings.

In 1972, Saab incorporated airbags in the doors, a feature that was copied by almost all car manufacturers in the world. Saab was the first carmaker to introduce a one-piece, sound-absorbing roof and headlights with halogen lamps that were necessary in the long, dark Nordic winters.

In 1996, Saab introduced an interactive system that protected the head against whiplash injury.

Turbo engines
Although Saab was not the first car manufacturer to introduce turbo, it was this small company that put the turbo on the map and made it reliable and widely available in the market. No other manufacturer had succeeded in doing this before.

A normal engine still allowed 30 percent of the fuel to pass through the exhaust system without it being used. The exhaust fumes were used by the turbo system and one horsepower from the exhaust system could be converted into four at the crankshaft. This meant that the system delivered power to two engines, one for normal driving and a more powerful one for overtaking.

This was followed up with Automatic Performance Control (APC), which adapted the engine automatically to the petrol's octane rating. APC controlled the boost pressure, adapting the engine speed to power requirements and the detonation level. This allowed the engine to run on fuel ranging from 91 octane without any problem. This meant that in 1983, Saab was able to increase the compression in the Saab 900 Turbo from 7.2 to 8.5:1 and fuel consumption was reduced by as much as eight percent.

Direct Ignition (DI) replaced the old ignition coil and distributor with an individual coil for each spark plug. In one fell swoop it was possible to remove all the old types of ignition coils that caused engine trouble. The distance between the battery and spark plugs was no longer significant. Being able to increase the voltage of the spark from 25,000 to 40,000 volts meant a revolution in engine construction.

It was followed by a deluge of improvements that created a whole new benchmark for Saab and provided its owner, General Motors, with valuable technological know-how. Saab was a hothouse of innovation that made it a jewel in General Motors' crown.

The success of the turbo engines gave Saab cars great charisma. The turbo made Saab a car for connoisseurs and a bit of a cult car. At the turn of the century, the future looked bright for the people working at Saab and living in Trollhättan. But harder times were to come...

Text and photographs: Bo Björklund.