

VOLVO AND THEIR SPORTS-CARS

Editors Note: The following article was written by Jan O Hoegmark of Sweden. I have read this article and edited some words etc. to make it easier to read.
Bob Foltz.

During a period of 20 years Volvo built almost 50,000 grand touring cars. The later part of the manufacture, is mostly characterized by the fact that the engines of the cars became stronger and stronger and naturally the cars became even faster and faster, which led to an enjoyable driving for many.

If you look separately at the P1800 this cannot give you the whole truth. No, you will really love the P18 if you know the story before and in fact the P18 is a function or result of activities before. I have therefore put special attention to the time span before the P18, and that means naturally cars, Volvo's and others, manufactured in the time prior to P18. This only for just having the atmosphere and the feeling for the early fifties.

The idea with using sports-cars, as well as many other ideas that were used by the director of Volvo; Mr Assar Gabrielsson, in order to put speed on his company, came from America. The executive director of Volvo and one of the two founders, was a highly imaginative and sociable man who appreciated an open exchange of ideas. He found them to be very common back in the US. During an extended trip in 1953 Mr. Gabrielsson found the discovery which started the 20 year passionated interest for sports-cars at Volvo. It would have been more surprising if Mr Gabrielsson hadn't been interested. He was at this time 66 years old. The passionated love for sports-cars existed in the US in 1953. Nash-Healy had already been manufactured for several years, Kaiser made their plans official to build the two-seater Kaiser-Darrin and the same summer the very first Corvette came out from the assembling lines at Chevrolet in Michigan. Sports-cars seemed to be something coming, as well as the material which had been used by Kaiser-Darrin and Corvette; glass-fibre reinforced plastic.

Gabrielsson went to Flint to study how Chevrolet built their Corvette. He also visited a smaller company which had been a pioneer with using glass-fiber for car bodies. This company was Glasspar in Montecito, California. They assembled at this time the first proto-types for Kaiser-Darrin. Gabrielsson was much impressed by the director and designer of Glasspar, Mr Bill Tritt and the executive Mr Jerry Niger. They started to discuss the construction of a body, made in glass-fibre, for Volvo. This was an idea that the director of Volvo liked of more than one reason. He believed that the very first sports-cars of Volvo, would make the word Volvo as golden as it did for Chevrolet with their Corvette. He already had an engine in the development phase which ought to be the right one for the

car. This engine performance was 70hp at 6000rpm and the volume of the cylinders 1414cm³.

Most important, he wanted to research the possibility of using glass-fibre as material for use in the trucks of Volvo and also for their passenger cars. In order to proceed he had to make a car with glass-fibre body and use it in Sweden during Swedish conditions and finally analyze the results. During the time Gabrielsson spent in California, an agreement was made with Glasspar. The Californian firm should design a body for a Volvo sports-car, make the tools which were necessary to have to make the body, also make the first proto-type body and last, educate employee's from Volvo how to construct and design bodies in glass-fibre. For this work Mr. Ake Zachrisson was chosen and he went to California in order to be the special man in the Volvo organization regarding glass-fibre projects.

Bill Tritt started quickly to work out a suitable coach, while Gabrielsson was still in California. He had soon drawn a bold shape with rounded fenders and deeply plunged air-intake in an rich decorated front grille. Gabrielsson forwarded Tritt's plans to his engineers and told them to start the construction of a suitable chassie. For their gain he also bought one of the Glasspar bodies, laying in stock, and he had it sent by air to Gothenburg, so the engineers could face what kind of difficulties they would encounter.

"We worked day and night for a month to try to have the chassis ready" said Mr Raymond Eknor, who lead the project. He was assisted by Mr Erik Quistgaard. They started with the parts from PV444; engine, power transmission and wheel suspension with coil-springs, front and rear. They shortened the wheel base by 20 centimetres to be 240 centimetres but still kept the 444's track-width. Most of their work consisted of designing a complete new frame as the PV444 didn't have any separate frame. With the intention to have something that could be made in small series with cheap tools, Eknor and Quistgaard designed a frame made of steel pipes. The flanked girders of the frame, which were laying on the top as our times later circumference shaped frames, consisted of two 1-1/2 (one and a half inch) pipes on top of each other and linked together with a flange of steelplate which had been bored out not to be so heavy. There was six strong cross-girders and also plates on the corners. One the corners some chassie-parts were mounted. Under the tile was a light X-frame. The exhaust pipe was drawn close to the right flanked girder and a 55-litre gasoline tank was mounted to the left back and within the frame.

The three very first frames were made in Volvo's own workshop. The manufacturing of frames for the production cars was carried out in that way that Volvo hired a big Swedish company, Motala Verkstad, for manufacturing the frames. The first sports-car was completely finished by Glasspar and delivered to Volvo early in 1954. The fact that it had many weaknesses, was not surprising. In accordance with the nomenclature of Volvo, the body was not suitable for production at all. But this first car fulfilled one mission, Volvo announced officially in June 1954 that they worked with a sports-car which should be shown at the Brussel Exhibition in January 1955, the first show outside Sweden of a Volvo Sport, which also became the name of the car.

At the end of 1954 and early 1955 the body was re-designed, Volvo's own people made the interior, with a lockable luggage room and an oval dash-board with seven gauges. Also a hard-top was made in glass-fibre, which appeared to be a necessity because of the Swedish climate. Also the rear end was changed and a raised area was made, following the panel of the luggage room. The body parts and the panels came continuously from Glasspar although some castings and some manufacturing of plates was done at Volvo's in line with the proceeding within the programme.

Glass-fibre was something new to the engineers of Volvo. They didn't know how to work out in detail the shape of the body in an optimal way. "The glass-fibre was used too many times in an equal way as it had been plate of steel", Eknor recalls from memory. "The door-hanging, for example, was too weak." They tested their way to come forward step by step, at first night-time and in secret to find the reasons for the failures: scrambling, vibrations which too willingly occurred. One of the proto-types was driven through Spain, Italy and North-Africa only to find the defects. With The Sport so well developed it could be, Volvo planned a limited production during 1956. One hundred assembling lots was ordered and the assembling started in a small part of the Volvo plant, which was taken for this purpose. In the final form the Volvo Sport had a weight of 850 kilograms, was 4222 millimeters and rolled on Trelleborg tires 5.90 X 15.

One detail of implementation was not so happy for the sporting driver. That was the 3-gear gearbox. The early cars had a long, backwards bended gear-shaft, while the later cars had a short gear-shaft mounted on the transmission tunnel. Two or three experimental 5-gear gear-boxes was ordered from ZF in West Germany and were tested in the car, but never mounted and delivered in the production cars. Internally called PV1900, The Sport made the tour through the car shows in 1956, starting with Brussels in January. A gray and red car equipped with a hard top was shown in New York in April and an appearance in Earl's Court in London, was planned for the autumn. For stimulating the foreign market selling three of the first manufactured cars were sent to Portugal,

Casablanca, and Belgium. Main portion of the selling during 1956 was nevertheless within the borders of Sweden.

The reason to the fact that the selling was committed extremely slowly-which it really did-depended on the opinions of that man who had precisely taken his seat as the managing director of Volvo, Mr. Gunnar Engellau. "I drove it one weekend for 750 kilometres, and I thought the doors would fall off" he tells the writer Gladys Nicol. "By all means, we lost big money on each car, so it was a bad car and it had to disappear." He decided that it should be taken out of production as quickly as possible. His opinion was also that P1900 could be a dangerous car when linked together with Volvo, who stood for quality. that quality couldn't be found and maintained regarding the P1900. 44 cars had been built during 1956 and during the first quarter in 1957, 23 cars were built. The main total of these 44 cars in 1956, were sold within Sweden. Cars manufactured in 1957 were sold to America. From the group of cars shipped to the U.S. (23 cars) one car was kept by Volvo; serial 49, which is now in the museum of Volvo. And this is also the end of the history of the very first sports-car made by Volvo: 67 cars built plus 4 prototypes (officially 3 protos)

"You could say it was more or less a failure" the engineer Raymond Eknor said, "and that was also the intention". The Sport had been an experiment with glass-fibre and it is not always a successful entry with experiments. It had nevertheless the mission that Gabrielsson looked for. "We learned a lot, thanks to that" Jan Willsgaard, today chief-designer, explains. "We started to use a lot of glass-fibre in our workshop, for fixtures and much more like for designing purposes, tools in the press-workshop. But also the car had given Volvo a good and positive attention in the papers. Especially in America on the west coast, the Volvo sport generated a wish among the volvo-dealers to have a new real mass-produced Volvo sports car.

With the decision to take away all further plans regarding the Volvo Sport, Mr. Engellau showed that he intended to take over the full control of the product planning. "Up to now Volvo had been a typical engineering company: The engineers made cars accordingly to their plans and then it was forwarded to the marketing people to sell them," chief-designer Jan Willsgaard recalls. Engellau, with experienced marketing background, turned this over. The future product planning begun to be decided by the marketing and selling staff and they, who didn't agree in this strategy, were quickly away from Gothenburg. A key man in the executive board and controlling the company and still left in the organization during this total turn-around, was the engineer Thor Berthelius. Mr. Engellau showed soon that he stopped the Volvo sport because it was a bad product of Volvo, not because he was generally against sportscars.

He also believed that a sports-car could improve the reputation of Volvo and perhaps most of all, accelerate the selling of all Volvo-cars on the U.S. market, on which he put his efforts. But he should probably not put special attention to this matter of importance, if not a consultant at Volvo's; Mr Helmer Pettersson, had been playing the game. Helmer Pettersson was also the father of the PV444 in the mid of the fourties. "I had nothing to do! I read the newspaper every day" said Pettersson. He was at that time 55 years old and in fact, his efforts to develop the 444 and the result, made the Volvo Company, based upon the success of the 444. Pettersson's last work for Volvo was to drive the Volvo Sport through The Southern Europe and North-Africa. He agreed to the defects of the car. "It was too lathy and bumped around too much."

Now, in the autumn of year 1956, he thought: "Why don't we make a real sports-car?" Pettersson made a few drawings of proposals and showed them to Gunnar Engellau. Engellau responded: "How about going down to Italy and look what they can do?" Volvo's own engineers and designers were very busy at this time with the final preparing activities for the 122-Volvo Amazon. The designer Jan Willsgaard admitted that "we became though very disappointed that we didn't get the task." Helmer Pettersson had a hidden goal when he made his proposal to Engellau. His son, Per Pettersson was at that time a 23 years old graduated engineer and he practiced industrial design in the U.S. Many readers perhaps know him from an other branch today, he is a former challenger in sailing for the America Cup with his own designed boat "Sverige".

Well, back to 1956 again. His Father saw in the sports-car project a chance to lead him into an auto career. In 1957 Helmer Pettersson arranged the employing of his son, i.e. Per Pettersson joined Ghia in Torino as a designer and it wasn't probably mere of a chance that Ghia was chosen to work with the Volvo sports car project. The real work was taken by Frua, as Frua was a sister subsidiary of Ghia and the agreement between Volkswagen and Ghia forbidded Ghia to deal with eventual competitors to Karmann-Ghia. (Have you by the way noticed that the rear roof line and area of rear window on the Karmann-Ghia is almost identical to the one of P1800?-my remark) Per, or as he mostly is called. Pelle Pettersson started his work as a designer at Frua's. His father believed and was anxious that Pelle shouldn't be allowed to work with the sports car project, so he didn't say a word to Gunnar Engellau about his son, and that he had arranged the employment at Frua.

In April 1957 Gunnar Engellau pushed the button for developing a proto. When we proceed will call this car STYLING MODEL just to have the nomenclature deviated from as well prototypes as preproductions. In July 1957 five different proposals were ready. Two of them were made by designers at Frua's two were from Ghia and one from Pelle Pettersson. When Luigi Segre, manager at Frua, saw how smooth and fine the U.S. educated Pelle provided his

proposal, he asked Pelle to re-chart the other proposals in the same manner and style, so that a presentation could be made upon same basic ground rules. Pelle did this-not with enthusiasm- he wasn't too much interested in the other proposals. Drawings regarding his own proposal were finalized between 29 and 31 of July in 1957.

In August 1957 Luigi Segre and Helmer Pettersson showed all the drawings to Gunnar Engellau in Gothenburg. Mr. Engellau didn't hesitate. He didn't look for the other proposals, but when straight to Pelle Pettersson's proposal and said: "This one is the one I want!". "We had not made that one, it is made by Pelle" Mr. Luigi Segre responded. When this got clear to Mr Engellau he got angry because he had been fooled in some way by Helmer. The elder Pettersson later admitted that this strategy probably was unwise. But Engellau stucked to his choice. It was Pelle's proposal in all details which was used and the P1800 we are used to seeing and admiring today is identical to Pelle's proposal, only few details deviates. But Frua, not Pelle, received the official honor for this by Volvo themselves. So the P1800 was born, though it wasn't named P1800 yet, only by project name i.e. P 958. A wide opinion at that time was that the design work had been made by Frua or Ghia, a few knew the truth which mean that the son was for the P1800, what the father had been for the PV444. A Swedish auto-magazine in 1961; External design of the new Volvo P1800 definitely is contrary to those home handi-works we are used to seeing from the plant at the Hising Island, but the car has also been drawn by the famous car tailor Frua. Accordingly to the agreement between Volvo and Frua, the later was supposed to build three styling models which were called P958X1, P958X2, and P958X3.

THE STYLING MODELS FROM ITALY

The work to build the X1 proceeded very fast. Pelle worked out the small details at the end and Helmer made the specifications for the basic body assembling. This was based upon-where it was possible- a shortened Volvo P122 floor-plate. The floor plate and other details were sent to Frua from Gothenburg. The engine was a modified B16 with a degree of tuning equivalent to 100hp. Electrical system 6 volts, rear side window possible to open, VDO-instrumentations for some of the cars though serial X2 has Smith's. The cover for the gasoline container was round, type screw on the right side (moved to the left on the production cars), very heavily expenced upholstery where, for example the padding of the dash board was continued into the crash pads on the inner door sides, which had small boxes. The bumpers were hand made of the bull-horns type which are famous today. The caps on the wheels were made like wheels on a turbine, but was taken away in the production.

The instrumentation and the dash board were almost identical to those of the production cars except for that we have in the production cars like two small dash boards below the sheet of aluminium. Pelle had designed an over all going dash board and the knobs on his dash board were more significative. Probably he was much influenced by American cars when looking at the chrome rings on the instrumentation. The inner roof light was close to the hung up for the safety belts. Furthermore, the shaft for the gear box had a remarkable length compared to what came on the production cars. In front of that and between the seats an ash tray was located. On the dash board mirror was placed, chromed and well finished, also with a remarkable length.

The bumpers were made precisely like model A but an arrangement on the middle part of the bumper was made in such way registration number plate was surrounded by chromed part and being part of the middle section of the bumper. Naturally no overdrives were mounted yet. A "V" mark was placed within the grille. The hood was equipped with a spring so when opening, the hood lifted itself and when pressing down, by weight, hood went down. These are the main things deviating the stylings from the normal production cars regarding interior and exterior. There are of course a lot of small details deviating but a non experienced person should hardly see the difference at all. The styling is quite equal to the production version. Many of these things were dropped off just to make it easier to assemble, and of course to don't make it too expensive. In the month of December when the first P958 was completed Gunnar Engellau came to Torino to have an accurate inspection.

He was indeed so satisfied so he decided that the production cars should follow the styling as close as possible. The things disappearing on economical reasons have been described. Later on two more stylings were completed i.e. serials X2 and X3. The colors were cream yellow for X2, light blue for X1 and X3. Also there are suspicions regarding a green one, but only 3 have been built by the Italians on the other side. X1 was right hand drive and X2 and X3 left hand. Mr Landqvist, still employee at Volvo bought the X3 and Mr. S-O Anderson, still at Volvo, the X1. Mr. Andersson made the transmission tunnel more wide to get an overdrive into. He also made the hole for the windshield larger because no standard windshield could be assembled without difficulties. Later Mr Andersson bought a new body, coming directly from the scottish manufacturer and disassembled all from the X1 and put it into his new body. The X1 was then sold to Uppsala, north of Stockholm and still in traffic in the autumn of year 79. But it is not a P1800, the stylings were registered as P958. The X3 is disappeared and the X2 is in the showroom of Volvo in Gothenburg.

Just before Christmas in 1957 Helmer Pettersson was driving the X1 (later Mr. Andersson's car) north to Osnabruck in West-Germany, the Karmann head office. Pettersson hoped that Karmann should take the

manufacturing of tools and also the assembling of the coupe, Volvo themselves had no time available due to all activities regarding the 122. The engineers at Karmann's had, in fact already prepared preliminary drawings of how to work it all out since they had earlier received the wooden model from Frua's. Pettersson and the managing engineer Thor Berthelius did meet there, tested the car and discussed with the leadership of Karmann's. It seemed that they did go well together. This meant that the first production cars should be available for the public as early as in the end of year 1958.

But in February the bad news came: The most important customer for Karmann was Volkswagen and Volkswagen didn't allow Karmann to take the job because the Volvo could be an eventual competitor to the Karmann Ghia. Suddenly the P1800 was a car with no home place. The most important thing for Helmer Pettersson now became to keep the project proceeding accordingly to the new and changed situation. He did this with energy and feeling. He asked for quotations on the body construction from NSU and Prautz in West-Germany, two among all. Helmer Pettersson can also be the man beyond the leaks to the swedish papers, who published pictures showing the styling model, in the summer of 1958. This forced Volvo to admit that such a car was planned. But the negotiations made by Pettersson were dislike in Gothenburg. In a desperate mood, and believing he should never see his and his sons' coupe coming into even production phase, father and son started in the autumn of 1958, activities which should mean that they should build the car themselves and use components from Volvo. This illustrates fairly well how convinced they were regarding a successful entry. When the leadership of Volvo got knowledge about this, and also that father and son had received economical support from others for the sports car project, the interest of Volvo suddenly increased for the P1800. Perhaps this was a tactical plan from the father.

T.G. Andersson, who had for a long time been one of the colleagues of Assar Gabriellson, and Chairman of the board and vice managing director, was instructed by the board to find a new place where to build the coupe. Upon the mission of Andersson's Volvo's engineers started to look for a supplier. Thor Berthelius went to Germany to investigate a Hanomag-section. That was refused basically because the products of the firm had a bad reputation in Sweden. Raymond Eknor went to England. While he was there he was visited by T.G. Andersson. T.G. Andersson made one thing clear: "You must understand that we have to build the coupe in a country where I can practise my golf!" Eknor then understood that they had to find an English supplier (if you look at early sales brochures you can often see a P1800 in a golf field with open luggage room and golfing trunks into!) He visited Bristol and after that Jensens. The Jensen Brothers, who owned and run the Jensen Motors Limited, made a good impression and an agreement was made.

This agreement would cover a production of 10,000 cars. Through the agreement with Jensen's also, naturally an agreement was made with Pressed Steel, which today is in fusion with British Leyland. Pressed Steel was these days England's largest independent car body shells manufacturer and in December 1958 the final agreement was signed covering 10,000 cars with possibility to prolong the agreement for cars over that number. The car was already at that time more than a year passed the time planning schedule. But from the Volvo peoples point of view the future looked a little bit brighter and they thought the difficulties now had been overcome.

Accordingly to the agreement Jensen's had the formal responsibility for establishing a production concept to be forwarded to Pressed Steel. But Volvo had apparently overestimated Jensen's ability to do that. We can now, with the answer in our hands, say that the engineers of Jensen's really wanted but didn't have the capability. During this time Jensens manufactured their own Jensen CV8 with Chrysler engine. The weekly program was 5-10 cars. Jensen also assembled the Austin Healey "3000" with a weekly program of 200 cars. Approximate number of employees was 1200. Especially manufacture of CV8 was made on a very manual handicraft base and these methods initialize a lower degree of quality regarding the construction concept. The assembling of Jensen CV8 and Austin Healey was made in Carter's Green, while assembling of the P1800 was to be done in a brand new location of Jensen's, Kelvin Way in West Bromwich, West Midlands.

The facilities in Kelvin Way were of high class with for example floor of concrete (!) The Volvo-people assisted Jensens to get the required concept for Pressed Steel, basically because Volvo wanted to proceed and of the reason that Jensens were not successful. Now, afterwards you could say that it had been more wise of Volvo to buy the car body shells apart and separately away from the Jensen's assembling work. If working that way Volvo could have directed their requirements directly to Pressed Steel. Through the interference of Jensens the Volvo people were put in a position where they couldn't control or steer the project as the construction concept program was Jensen's responsibility. During this time Pressed Steel also made the Hillman Imp- with the tail engine- and if the design and construction department of Pressed Steel was compared to the equivalent one at Jensens it was a difference like night and day. Jensens, just for an example, used the same paper that painters use in roofs prior to painting, for their drawings! It was therefore unwise to hand over the construction responsibility to Jensens, should have been Pressed Steel, who had the capability.

The trips made by Volvo people to England were uncountable. a special car, a P122 was located at the London Airport Heathrow. The luggage were mostly documentation of all kind. Later this was changed to all kind of hardware like transmission shafts, gear boxes and

all between heaven and earth. In December 1958 all ended up in an agreement which was based upon the material provided for Pressed Steel and this also meant that the car had been delayed for more than a year from the schedule mostly because of Jensen's influence on Pressed Steel. With these new groundrules the making of tools had to start again. Volvo and Pressed Steel cooperated and Pressed Steel finally made the construction for the body. All the metal pressing was to be done in England and the original idea to use parts from the P122, was abandoned. Pressed Steel made metal sheet work and assembled the body in their plant in Linwood, Scotland, an ideal landscape for golfing. The body shell were then transported south to West-Bromwich, Midlands. The tool capability allowed making of 100-150 cars a week at Jensens.

We have earlier taken up the X-cars or the styling, as they also are called. Jensens also produced X-cars and these cars are called "pre-productions" or "try-out-cars". It took two and a half years of providing activities to have the production started in England. The very first "preproductions" from Jensens appeared in Gothenburg in the Autumn of 1960. In October the same year they were tested by American motor-journalists.

Well, in which way will the Jensens manage? There will be new difficulties and as quickly as the first car is delivered, the customers start claiming about water coming in and the paint is not so good!

Prior to the assembling would like to explain the building and use of the "preproductions" from Jensen's, mostly because I am personally an owner of one of these x-cars with serial X01, and therefore have put a lot of interest into these cars. These cars were handbuilt at the experimental and model shop, and as earlier mentioned, also defined "try out cars". After finishing the preproductions in a rough, half-complete car but available for driving and testing, all kind of accessories were assembled, taken off and new equipment assembled again. The engineering changes were very frequent and you could say that none of these cars had a frozen technical specifications. Also comparisons were made and analysed between different equipment. From the preproductions the usefulness should be derived and brought over to the production series.

It has not been clearly evaluated how many preproductions were made but the total was probably 3-4 cars. The cars were taken into use and registered with Volvo as owner, and apparently one of the cars was all the time in the model shop, while another was at the test track Mayra. Cars used were carrying green registration plates intended for temporary use. The drivers of these cars had the possibility to drive the cars openly, as they were of no competition to the previous models from the company. The engine was the brand new B18 and that fact was not revealed by Volvo, many thought that the engine was a tuned B16. This complete silence depended probably on that fact that if it came to the public that a new B18 was mounted that would have perhaps had an impact on the selling of the PV 544, with the old B16, and the P122 'Amazon' also with the B16. As a matter of fact the preproductions also were tested by motor journalists, but none was allowed to lift the hood and visiting journalist at Jensen didn't meet anything but silence, when coming into the matter of engine.

After completion of tests and the decision of the final production specification, the cars were of less use to Volvo, as frequency of engineering changes decreased. As a special benefit to the employees, these cars could be bought for a small amount but should be kept for one year minimum, as it otherwise could have an influence on the selling market as temptation to speculation and profit. Nowadays these x-cars corresponding to new Volvo-models are taken out to special collision tests, and after final use burned, smashed and destroyed with no chance to have them back on the roads again although being brand new cars.

During the year 1959, while the tools for the shells manufacture were made, between the strikes in Scotland, Volvo tested the Frua-made protos with the approach to finally freeze the chassis specification the wheel base was shortened from the P122's 2500 millimetres to 2430 millimeters i.e. 96.5 inches, the track width was 1315 millimeters i.e. 51,75 inches. The wheel suspension was equal to P122's with coil springs and wishbones in bridge in the front and a movable rear axle which was kept in place with side-rods and radius rods on each side and also a cross bar (Panhard-rod). The steering gear was cam and roller giving 3.2 number of revolution on the steering wheel between full turnaround. The P1800 was lowered 25 millimeters, compared to the P122, through fitting a special front axle and shortened coil springs at the rear. These were also softer than the ones in the P122. The front coils springs were equal to those of the P122 but the anti-roll bar was made stronger. The shock absorbers were of American make and worked under pressure with assistance of freon gas in sacks of nylon.

It was also discovered that the car was very heavy to operate through the steering wheel and after extensive tests Volvo made the decision to have Pirelli Cinturato tires, radial, on 4.5 inch wheels. The brake system was Girling make with discs in the front. The discs themselves were

manufactured by Volvo and the brake housings had two small cylinders on the outside and one alone, larger on the inside. Vacuum strengthening was assembled as standard and the tank was mounted inside the left fender close to the inner fender. This tank rendered servo assistance although an engine starvation. Naturally the engine was of the greatest interest to the Volvo-enthusiast, disregarding the outfit of the body of the car, The P1800 was the first car in which the new five bearing crankshaft engine was mounted. The new B18! The initiative to the development of this engine came from the sports car project, October 12, 1957 Volvo's technical committee declared that a revised four cylinder engine should be developed for the P1800. As it was developed basically from the old B16, it had initially the designation X2-B16.

The engine was developed under the leadership of Mr Stahlblad, chief-engineer of the engine department. A dane, Mr Erling Kurt had an important role during the development of the engine. B16B- the tuned version of the B16A- performed 85 h.p. from a volume of 1583 cm³. This old engine had given a real surprise to the engineers of Volvo, due to the long life time of the engine. They had already made experiments with a five-bearing crankshaft, as they thought a such one should be needed. When they had a long range perspective, mainly based upon the manufacture of sports cars for a long period, they planned a new four cylinder engine, modelled exactly like the old B16, but with a five bearing crankshaft and with better possibilities for extension. "It was developed as a 2 litre engine, but it started life as 1,8 litre (109 cu. in)", Erling Kurt said. Even if the B18 was much like earlier Volvo four cylinder engines, it was completely new except for some few details. The engineers used 1650 working hours for the preliminary planning, 9000 hours for making experimental engines and some ten thousand hours to prepare and provide the manufacture. At the introduction it had the measurements 84,1 X 80,0 and cylinder volume 1780 cm³ (109 cu. in.). The weight was only 143 kilograms, thanks to that some casting surfaces had been taken away and that aluminium was used for water pump, oil pump and some other details. In B18B-version, which was used for the earliest P1800, the engine had a compression ratio of 9,5:1 and performed 100h.p. SAE at 5500rpm. When the very first P1800 were engine mounted, they surprised everybody because of the silent running and the non-vibrating performance of the engine.

The new four-cylinder had to pass through very tough final tests. Before it was released for production it was stressed and pressed, with no failures, in 500 hours with the maximum performance having glowing exhaust pipes. What a impressive sight and song! After these tests engines were dis-assembled and measured up and no damages could be found. It could also be kept for long periods at the valve rebounding point at 7800 rpm with no damages. Many motor journalists emphasized at that time that the B18 was at that time, and may be still- one of the most well-built engines in the world. An example, many technical solutions are so exquisite, so they renders the B18 to leave such expensive engines like the Maserati's V12 engine far behind. Today, 20 years after, it is not unusual to get 150-160 h.p. out of a B18, tuned with Webers, another cam and other goodies, and all this out of an engine with only 1800 cm³! At that time when the B18 was built the possibilities to extension were much increased by the separate induction ports in the cylinder head and was probably the most remarkable advantage compared to other four-cylinders earlier leaving the factory. Also these induction ports replaced the double induction port that had been on earlier engines. For B18B the induction was carried out thru double S.U., horizontal 1,75 inch carburetors, type HS6.

An extra-ordinary detail on the B18 engine was the oil cooler in the Volvo marine engines, but altered to the B18 it consisted of a heat exchanger oil-to -water in the shape of a disc, approximately 180 millimetres in diameter and 25 millimeters thick. It was mounted into the cylinder block on the right side with help of the oil filter, which was screwed upon the heat exchanger. Through this solution tempered oil could be supplied to the engine. Water, as a carrier of cooling, was taken through a hose from the radiator. (A special warning, the cooler, if you still have it mounted today, can cause you trouble due to being rusty. Ends up with a mix with water in your oil and this is definitely not health for your engine. Can anyway be discovered when looking at the oil stick) "We decided to try this solution" said Erling Kurt, "as we had temperatures of 170-180 C, which was too much for the oil of that time". The cooler had a cover of plate and consisted of a number of small segments of brass plate in a sandwich shape and seemed to crack due to the different pressures in the lubrication system. In a test bench the engineers managed to make 200,000 pressure cycles with no cracking. "It was very difficult to make" Kurt Erling said "but finally we managed." It was fitted in the sports car and after that in the sedan and also in the police car, the P122, which needed the cooler when driving fast. Immediately after that it was dropped off. "Improved oils managed to lubricate even at these temperatures, so we didn't need it anymore!"

To the B18B was a 8,5 inch Borg & Beck clutch mounted and also a three-gear gearbox of aluminium. The gearbox for P1800A was Volvo's own M40, with a prolonged arm and cover, holding a short gear lever. This was deviating from the first prototypes as they had the gear lever mounted

on the top of the transmission tunnel. Regarding the production version the transmission tunnel was changed in order to suit the overdrive unit M41. As optional an overdrive could be ordered, make Laycock de Normanville with a ratio 0,76:1 with an overdrive the rear axle ratio was 4,56:1, otherwise 4,10:1 Designation in question was for car having the unit P18395, P18394 without.

While the details of the chassis were worked out the engineers in England made a very good job, although they did proceed slowly, with the task to "link over" the Pelle Pettersson's Frua model to a production car. The exterior changes were small. A "V" mark within the grille was taken away. The wheel hubs, which were designed as wings of a turbine, were taken away and replaced by the large wheel hubs which covered the entire wheel like "baby-moons". The separate rear bumpers with upwards twisted inner points, were disregarded as a very last minute change and replaced by a straight bumper in three sections. These bumpers were used up to 1965, and we all know the front with the characteristic "bull-horns". Regarding the interior the well designed, american inspired, deep chrome bezel surrounds were kept in the dash board as well as the two spoke steering wheel, made in brushed and polished aluminium with a ring of hard plastic. As optional a steering wheel could be ordered through the Volvo dealers with a wooden ring. VDO-instrumentation was replaced by equal, but of Smith's make.

Where Pelle had a padded roll below the instrumentation across the entire car along the dash board this was replaced on the production cars by taking away a middle part of the padded roll. In that way there come to be two minor dash boards on the both side of the steering, giving place for all switches and indicator lights. Pelle had all these mounted below the padded roll, but with inconvenience to reach the switches at the passenger side. The interior with ribbon pattern along doors and rear space as well as the place for good below the hat shelve was over-taken from the Frua-model. These changes the we have now described were most depending on a certain wish to simplify the assembling at Jensen's and also Volvo saved some money with a lower self-cost. Anyway a model A production car is looking cheap and poor compared to the Frua-model.

The Petterssons had initially hoped that the weight of the car shouldn't be over 1000 kilograms. The Frua-built proto types were 1045 kilograms and there seemed to be possibilities to decrease this figure. But in the last phases of development the weight increased, instead of the contrary. The production version of the P1800 had a weight of approximately 1100 kilograms. 46% of the weight was on the rear wheels. The exhibition of one of the Frua-models, number X03-later owned by Mr. Lankvist as earlier mentioned- at the New York Show in April 1960 turned out to be far too early. This was even more the fact for the European debut at the Brussels exhibition in January 1960. Other exhibitions at that time was October 16, 1960 in Paris and November 13, 1960 in Torino. Not before May 1961 serial made production cars left Jensen's in considerable numbers. These were all with steering wheel on the left side. Outfit with right hand drive started to be shipped in December 1961. The price in Sweden was 17950 Swedish crowns. The car was showed in public in Sweden during the spring of year 1961. The initial production demand order for the P1800 was 10,000 cars. That was also the number of lots and components booked from different suppliers within and outside Volvo.

The first 250 cars from the assembling line were shipped to Sweden for quality inspection before they were forwarded to patient buyers. Cars with a serial over 250 were sent directly to the market country, mostly America. Following the delivery books at that time it can be read that serial 3 was passed over to special safety test, number 2, red color, to Switzerland, number 6, white color, to USA, number 8, white color, to Switzerland- can't we have a chapter is Switzerland too?- number 10 PR-car. Number 10 is today owned by Mr. Bo Kailqvist in Stocholm, Sweden. Following what we know today, number 11 is in Mr. Ira Pasternack's garage in Colorado, and within the club too. Number 5 and 13 were used as temporary spare parts cars i.e. when being completed they had to be dis-assembled again and supplied back to production line, for making it possible to proceed. Naturally they were afterwards built again not to have a serial sequence jump.

Following the delivery books number 64 was delivered to the Princess of Sweden, The Princess Birgitta. Regarding her car following is absolutely true and not a fairy-tale, because it has been told to me by a very reliable person. At that time The Princess lived at the Royal castle in Stockholm and the car was to be shipped to the castle. The Volvo dealer filled up some petrol, but calculated and measured so petrol filled into the tank was precicely to reach the royal castle. When coming on the Castle's bridge, very close to the castle, he became short of gas and had to abound the car for a while to get petrol. You could hope that the Princess did not look through the window, anxiously waiting for her coupe!

Three years had passed since the first news in 1958 had been brought out to the public up to that time when the first pre-productions occured and were delivered. In the US many buyers had paid deposit more than a year prior to shipment. It is quite easy to understand that a part of the very first enthusiam for the P1800 had gone with the wind up to that point when the cars finally occured in the display windows at the Volvo-dealers. But they, who had been willing to wait and suffer, found the car to be silent, rigid and comfortable. A grand touring car with a very good performance on the road, with a keen eye on it's lines and a performance which was enough even if it wasn't an excitement. The maximum speed was 175 kilometers per hour. The wide opinion was that the car was a good value for the initial price of 3490 dollars in the U.S.

After shipment of the first 250 cars, the shipment mode was directly from England to the customers. At this point the difficulties also occured. Perhaps it was unavoidable that the matter of quality was the new difficulty that Volvo had to meet. Volvo engineers, quality technicians, in tremendous numbers left for England. The only thing they could do was to overlook the assembling. The painting and outfit didn't give full justice to the reputation of Volvo. It was completely impossible to figure out what caused the claims and point a finger on that. No specific things were discovered and therefore no solutions either. All the time, as the cars were delivered, new claims were recognized and and the P1800 received a reputation as the car which catches water into, when raining.

A theory, which may be correct, is explained in the following, Jensen, when making the Austin Healey and the Jensen, worked with these cars in a very different way, compared to making the P1800. You could say that the character of manufacturing was unlike. Jensen's own manufacture was a mode of "extended hand built cars", especially the Jensen. This was of working were practiced for the P1800, it was still the same employee, but these methods of their own didn't go well together with Volvo's quality specifications and Volvo's demands regarding the numbers in the production program. The manufacturing speed was probably one of the reasons to claims. The speed on the assembling line naturally caused large strains for the jigs, tools and fixtures which finally, all together with other related circumstances did contribute to an uneven quality.

THE WHISKEY CARS

A German ship had loaded cargo in Germany. The cargo was steel pipes and from Germany the trip was to England to load whiskey and P1800 cars, apparently two things that make life worth living. The intention was to put the cars upon the steel tubes and the cars were packed on wooden frames. After leaving the loading harbor, still on the Thames River, things turned out very badly, so badly that the ship took in a lot of salt water and following my sources it was so bad that the ship had to be abandoned on the river. After a while the ship was taken to the dock and the guardmen watched the ship very efficiently as they thought people should steal whiskey from the cargo. Eye witnesses and Volvo people still remember the odor from the whiskey and all the cars were impregnated with whiskey and salt water, but the salt water didn't smell! What did then happen to these special cars? None can advise, no car went to the bottom of the Thames, no car was sold in the market and they didn't go to any scrap yard. It is very mysterious, apparently Jensens had to reprint new serials not to have a gap in the serial sequence and this finally leads to the matter that a few more cars have been manufactured on the top of the official number of coupes.

THE LAST CARS ARE MANUFACTURED AT JENSENS....

The improvements of the manufacturing at Jensens were not easy to aim. When customers claims were forwarded to Jensens and the method engineering people, they looked into the certain difficulties with the goal to solve ONE specific problem. Jensens on their side were "problem shooting" in following manner. They knew exactly how to hit for example the hammer to have an expected result. Let me give an example. The air intake for fresh air close to the hood was manufactured in such way that two airlets were often unlike each other regarding the dimensions. On the assembling line the men knew what to do by experience and he used the hammer to have it mounted. When customer then buy the part as a spare part the difficulties occur. Well, this information regarding manufacturing difficulties were not forwarded to the basic engineering concept for the car. The final result, based upon all this, was an uneven quality, but no certain points to face, as Jensens men did what they could to meet the difficulties but not an effort to update the method engineering. With a tremendous activity of secret a production car was taken to Gothenburg. The intention was to completely disassemble the car and hopefully through that put the finger in the eye of Jensens and advise what had to be improved. Unfortunately no fault were recognized: the cars were not of the high quality which was one of the groundrules in the sports car project and claims were received as well as the production continued. The quality was that poor that Volvo decided to sell the first production series, it was sent to Volvo representatives.

Another point of importance for the future for the P1800 was that during the spring of 1963 the manufacturing of other Volvo cars in Sweden was moved to the new plant at Torslanda outside Gothenburg. All passenger car production was moved and through this facilities became free at the Lundby plant. (Today truck manufacture) As claims came continuously Volvo decided to take Jensens manufacture to the Lundby plant. Volvo started negotiations with Jensens in order to be released from the contract. As this plan was a termination, originally 10,000 cars, Jensens asked and required compensation from Volvo. Volvo agreed to this and they paid a secret number of Swedish crowns, and when car, serial 6000 rolled off the line, production was terminated. Many thought that moving and "cleaning up" the assembling line after serial 6000 should be as time requiring as starting the production. Nevertheless, as soon as serial 6000 rolled forward, during the same time all fixtures and tools were gathered together behind the car. It seems that Jensen wanted to forget Volvo as quickly as possible and this activity taking apart the assembling line was in fact one of the most efficient things Jensens did when collaborating with Volvo. All in all 6000 cars were built by Jensens with addition to the try-out cars plus the whiskey cars, all designated model A, between years 1960-1963.

The cars built in Sweden were called P1800S. Pressed Steel still made the most important body panels and sections and the bodies were delivered to Sweden grey painted. Lacquer and final assembling were carried out in the Lundby plant. The first 2000 cars, up to serial 8000, were made in accordance to the same english basic chassie specifications and were called model B. The minor outfinishing details were changed normally when finished on the shelves in the warehouse. An example on that are enamels blue and yellow flag on the rear roof panel behind the back-seat window, which was changed at serial 6177. Serial 6178 hasn't any. On the rear panel the enamel P1800S was mounted and this can be explained by following. The Volvo people really wanted to show and emphasize that the quality was now of Swedish origin and on its way increasing, no future difficulties! The english car had a bad reputation of collecting water and for example the door insides were called bird-baths. The last car, within the group of english origin with serial 8000 rolled off the line in August 1963.

SPECIAL CARS-ITALIAN INFLUENCE ON THE P1800

Fissore, Zagato, Coggiola, names that closely connected to the P1800, how come?

In the early beginning we brought up Frua and the design of the car. Apparently the Italians have felt the honor of the car as they probably think of the car as theirs from the point of design and origin. Anyway, the Italians have always been famous car tailors and I guess that I put the Italians and the Englishmen on the number one place in the world. I also think that if the Italians had succeeded in their attempts, the P1800 had been terminated in production far earlier than it did, and we had may be admired these cars instead. Judge yourself and decide if it was good or bad!

It started already mid in the 60's with a very special and very elegant car which reached a hearty commendation on the Torino Exhibition in 1965. The Volvo importer in Italy, Motauto, appointed Fissore to make a special car. It was identical to the cars we know but the roof line was gradually sloping in the manner of the "fast-back" version we know; for example like Ford Mustang Mach 1 and the Shelby Cobra. The rear side window was changed to an almost four square shaped, and beyond the window were small ventilator scoops. The luggage room could be reached from both inside and outside and the color was BRG. It was for display in Fissore's area together with other truly sports cars from the Fissore production. Out of that there come nothing and the coupe was just an attractive thing and Volvo made no further activities.

The Italians made their second attempt about five years later. In time, before the Torino Exhibition in 1970, Motauto again put his special interest on the P1800 and Motauto appointed Zagato for the task. At that time the P1800 was quite an old car and the possibilities, or the chances, to have a successor this time in 1970 were naturally higher than in 1965. Also, the demand of a new car grew higher and many thought the coupe already was too oldfashioned. Zagato designed a special body based on a 2-litres Volvo. The lacquer on the exhibition car was Penta's own: blue and orange and Motauto started to negotiate with Volvo in Gothenburg and they believed that they should be more successful now than five years before. But no, Volvo couldn't, they found the car to be far too expensive and too exclusive.. another matter of fact providing this decision was probably that Volvo couldn't afford to quit the production of the coupe.

Only in the last production years the coupe started to contribute with some profit. Volvo were anyway that stingry so Motauto sold the car in front of the very eyes of Volvo, to others for only 3000 dollars when there were no chance to negotiate further. Motauto found for the second time that all had been done for nothing. In the last negotiations Volvo told Motauto that a special body can't be

combined with a 2-litre engine. Notauto clinged to this opening and started to evaluate the possibilities, as they thought Volvo had an interest after all. Motauto made a concept based upon Volvo 164-series (with 6 cylinder powerplant) and in four months Motauto had the necessary concept available, to be used when negotiating with Volvo. Motauto also bought a chassie and a powerplant from Volvo. Zagato had the chassie and the engine from Motauto and continued, with a groundrule to use the earlier ideas, but now taking into consideration Volvo's demand to have another powerplant to make it possible to easily distribute the costs. The goal for Zagato was to make a car that the market had a need for, a four seater with good road performance, deasant room for luggage, good sight and an emphasis on safety too.

Volvo 3 GTZ is an quite different car compared to the 164-series, it is larger, 13 centimeters shorter, 7 centimeters wider, 10 centimeters lower, 135 kilograms lightened and this together with tests in air tunnel and more aerodynamic shape than the 164-series, did contribute to an increased top speed, from 172 kilometers/hour to 200 kilometers. The intention was that a tuned powerplant could have been ordered as optional. This powerplant used should be the Volvo Penta tuned engine on 190 h.p. SAE and by this, a top speed of 200 kiloneters per hour, could be achieved.

On the chassie and the frame work in steel plate Zagato build the entire coach in light metal, but with a rigid driving bar built into the body. As mentioned the characteristic shape of the body was designed with use of air tunnel tests and by making the radiator 3 centimeters shorter and lower they achieved the imposant and characteristic low nose profile. The interior was calculated for four, but there is hardly enough with room for the feet for the back passengers. On the other side this was compensated in such way that also the rear seats were easy to change in all directions. A neck support was mounted on each seat. A deviating wall to the luggage room isn't existing and the luggage room isn't large. Just a place where the golf clubs could be stored as being a certain Volvo demand! Why make difficulties out of that with a luggage compartment lid when there exists a large rear window? This is a milestone question and probably an initial question when the ES wagon later on was developed.

Zagato solved this in a following way. Precisely as in his 2 litres Volvo last autumn-can't bear it was sold for 5000 dollars!- and lots of other cars of special interest that Zagato designed, he implemented the method of combined using. Rear window-luggage compartment lid-ventilator exhaust was his idea. When you close the screen from outside there is a remarkable big open section underneath. When pressing a linkage inside the window was closed electrically. The idea was that you could decide what size you wanted for ventilation. There was made 50 cars for the Italian market and Zagato hoped to see a number of 1000 cars ordered for Volvo's international market, mostly USA. Volvo still remained calm and in April 1971, Volvo told that they were naturally flattered that Motauro and Zagato used the Volvo, but they didn't agree to collaborate for further activities. With this Motauro failed for the third time and Volvo continued the production with no changes for the coupe, based on eventual impact from the Italian activities.

All in all, 6000 cars were manufactured at Jensens and they are called A, year of manufacture 1961-spring 1963. After the production had started at the new site in the Lunby plant, 2000 cars were built up to August 1963, i.e. serial 8000 built in August 1963. These 8000 cars were all made accordingly to the basic concept and Volvo now started to make changes and improvements while an extensive advertisement took place. P1800S for Swedish. The quality of the car, was now supposed to be Swedish, and the time of collecting water into the car was now definitely to its end, following the advertisements. (I know for sure that some ES-wagons still collected water as late as 1973) Pressed Steel still made the most important pieces to the car and they were delivered to Sweden as "bodies in white", in wooden crates. As time went on this manufacture was taken over by the company Olofstrom, a former subsidiary of the Alfa Laval Group (separators for milking machines), but afterwards Volvo bought the Olofstrom company.

These first 2000 cars were called model B. An accurate look in the registration documents of a car will show model VB or HB (VB model B left hand drive and model HB right hand drive. Volvo's purchase engineers and their production people had a certain habit to change the outfit of the car without any rules or technical advise prior to the change. Pieces to the car were put together as long as they were on the shelves in the warehouse. That is the reason why the serial numbers versus changes of modifications are so odd. One car has for example labels on the rear pillar, while the car next after hasn't. It is therefore most urgent, if you start with a basket case. that you can ask an experienced freak or have the bible. I mean the parts catalogue for the car in question. Otherwise you perhaps pay and collects parts which hasn't ever been on your car. Also, when restoring, the sales brochures are not always describing the real outfinish, as they are normally made so long time before the sale of the car.

The major changes on the first Swedish cars compared to the Jensen-made were following: The hub caps; big ones were out and instead the caps with a red circle inside were mounted, which were mutual with the ones of the Volvo Amazon P122, label insignia with the crown and the blue and yellow flag was out, leather in passengers and drivers seat, new rear inside section in the coupe i.e. the small "boxes" in the rear seat disappeared, compression ratio increased from 9.5 to 10, engine output increased to 108 h.p. SAE at a rev. of 5500 rpm. Also in the tach, the scale was changed to read 6500 rpm; earlier 6000 and also the red warning field for overrunning was changed accordingly. The torque was increased from 15.0 to 15.2 at 4000 rev. A radiator fan with four wings, earlier only two. The speedometer gets a certain point at 50 kilometers and the gas gauge gets an area to mark spare and the small gauges have an improved light. On the rear panel the "S"-label is put. The inner door panels are changed. The back seat can be twisted down and luggage straps are mounted. Also the drivers and passenger seat are adjustable up and down with help of a tool. For the directional-lights an orange lens was made, both front and rear; they were all red before. A new battery is fitted; earlier 57 Ah, now 60. Officially the "P" in the designation disappears and the name of the car is now only Volvo 1800S. The headlining is new and the inner height in the car is improved with 35 millimeters. Earlier car could be ordered both with, and without overdrive unit (P18394/P18395) but from now on it is only possible to have with overdrive unit.

All these changes were implemented for cars model B and D between spring 1963 to 1964, the total now reads 12500 cars manufactured. During the coming period of four years the production was stabilized to 4000-4500 cars annually; a considerable low number compared to the number of cars produced each year nowadays, but naturally of different quality and different cars with different production techniques. Naturally it is not easy to derivate the model years regarding outfinish, but there are though some points of exterior matter. The bull-horn bumpers, loved and adored by many, disappeared in model E year 1965 and the rubber moulding along. The grille was substituted by one in a thin aluminium and the pressed wheels had holes in for ventilation purposes and the caps changed to have a black circle with a "V" inside. The rear bumpers changed not to go beautifully towards the rear wheel along the body line. In interior, for model E 1965 following were implemented: The filling of oil into the engine changed to the front of the valve cap instead of the middle, new adjustments for drivers and passenger seat, new back mirror with changed position, ne handle on the dash, new horn; loud horn for overtaking on high ways disappears, overdrive switch moved from the dash to the steering wheel, the stone protecting rubbers on the panels at the rear wheel are implemented and a new clutch is mounted. We now totally count 16500 cars.

MODEL F CARS

The model F was manufactured during 1965-1966 in 4500 cars. In some way I think of the model F as the last "virgin" P1800 as these models were the last ones having the curved side chrome mouldings along the doors. Also the 1966 F was the first model having a non-grease treatment maintenance for all the balljoints. Earlier cars prior to the F had a regular need of manual grease treatment maintenance. The engine was much improved regarding the breathing and blow-out. A car engine is much like an air pump i.e. the more air you take in the quicker you have to get rid of the air. Improved blow-out was achieved by a new manifold with two exhaust gates and furthermore the exhaust pipe had two separate pipes from the flange at the manifold, which merged in line at the fly-wheel. Thanks to the improved breathing the performance was increased to 115 h.p. (SAE) at 6000 rev./minute. The mufflers were also improved and all this gave a nice "song" out of the engine compartment compared to earlier models. The brakes were also improved in rear by assembling a shock reducing valve. The basic function and purpose for this was to distribute the hydraulic power to the front discs. The crank-case ventilation was changed so that the hoses from the block were connected to the carburettors. (Closed type ventilation). The wheel anchoring of the rear suspension-basically transferred from the Volvo P122 in 1960- was improved by a more firm anchoring. By this the road performance at curvy roads, was improved.

Regarding special outfits of the car during this period specifically The Fissore Fast Back Car has to be mentioned. At that time convertibles were produced, but not by Volvo. Convertibles were produced in Great Britain by a firm called Radford. Rumours also tell that convertibles have been produced in Northern America, eventually as well Canada and US. For 1966 the compression ratio was 10:1.

In 1967 the M-model was manufactured, also the same numbers as the previous model: 4500. Changes for the model was a new grille, new cheapened side chrome mouldings, new power transmission shaft with new middle hung-up for the supporting bearing, new license plate holders rear and front, a small box between the seats for keeping small things. Small, plastic knobs on the locking mechanism on the ventilating windows indicates that the protection of not stealing the car, has been taken care of. New, well designed exterior door handles were implemented, in shape of being a part of the chrome mouldings on the wings. Fatter air filters on the S.U. carbs, new locking mechanism on the safety belts and light-reflecting Volvo decals on the doors protecting others drive off you door when opened, were other details for the year. Also the choke handle was moved to the dashboard and the heat control adjustments improved.

In 1968 the P model was manufactured in only 2800 cars. Changes now were new three-spoke plastic padded steering

wheel, larger area on the lenses of the control lamps on the dashboard, a plastic cover on the ignition switch key, changed interior door handles with improved safety locking from inside, the anchoring of the seats improved as well as the glide shoes. A few other items that were changed; the handle grip on the ash tray, a plastic cap on the upper anchoring of the safety belt close to the headlining. This cap to avoid head injures of the eventual back seat passengers in case of collision. Instead of chrome on the wind screen wipers, a non-shining metal treatment was used.

During these years, all from the start in 1961 no major changes hadn't been made on the car. On the other hand, even changing a small nut on a car costs a fortune. Volvo got by this time criticism, for not bringing something real new. The changes thru the years were more or less small items, which were changed when Volvo emptied their stock.

For 1969 model S we can read the lowest number of P1800 cars ever produced: only 1693 cars. Anyway 1969 is a remarkable year because of one specific reason, the B20 engine. Fellow reader with a good remind: the newly introduced B20 was designed originally from the old-fashioned B16, but when the B18 was introduced it was already from the first meant to be a 2-litre! Finally, Volvo had the sportscar and now at last, the engine with power behind, the two-litre! At last Volvo could live up to the sportscar name and it is possible for the fun to begin. The B20 was bored out of the B18 with the volume of 1986 cc and a piston circle of 88.9 millimeters. The engine performance was now 118 h.p. (SAE) at 5800 rev./minute. For some markets a new exhaust refining system was assembled, and this rendered the compression ration to go down to 9.5:1 and as well S.U. carbs or Strombergs could be fitted, depending on market. Other changed items were a new alternator with a capacity of 35A, new rotating mechanism for the radiator fan, two-circuit brake system which always, in case of brake failure, gives you brakes on three wheels, an improved clutch, new handles for the side-window regulating, a new B20 marque within the grille, a warning lamp to the left of the speedometer, for the parking brake, new type of air filters, warming lamps in case of hazardous situation, rear axle geared to 4.3:1 and a changed overdrive ratio of 0.797:1 and finally the oil-cooler, water-to-oil, is taken away.

Well, with the B20 the car finally got some muscles under the bonnet. anyway, the real fun first happens when the B20 is combined with electric fuel injection. fuel injection was introduced in 1970 for the model T.

THE MODEL T.

In 1970 the body manufacture was transferred to Sweden, i.e. from Pressed Steel to Volvo Olefstroemsverken. The most important thing is anyway the matter that for the first time the engine was stressed to be a high performance engine. This was achieved by combining the new "full hole bore" B20 with a electronic fuel injection system, marque Bosch Jetronic. Also together with this there was used a special inlet manifold in light-alloy with separate gates to each of the four-cylinders in the compression space inside the cylinder head. Secondly there was a chamber connected to all four gates and this voluminous and heavy piece was supported by a bar down to the block close to the alternator. This equipment is also the most dominating thing in the engine compartment, and naturally the absence of carburetors. To summarize, this was the first time ever that the separate inlet holes in the head did contribute to a high effective and economic use and way of most optimal fuel distribution in the head if you by optimal mean the horse power output versus fuel and fuel economy. The engine had for 1970 a compression ratio of 10.5:1. 130 h.p. (SAE) 120 DIN at 6000 r/min. The engine also rushed the car to a speed of 185 km/h with a superior ability for overtaking.

If I should personally try to get a nice "modern" coupe I think I should cling to a 1970 or a 1972. Perhaps to 1970 of one major reason, all the new improvements compared to previous models. First the gear box was new, the M410 from Zehnraadfabrik, ZF. in West-Germany, and the old Laycock de Normanville-english- was abonded. This box was also used in the 6-cylinder sedan, the 164. Ventilation, which also Rooger Moore had certain claims on, was improved by having outlets on the rear wings. Also filling of petrol was combined on the left side with the ventilator outlet. Earlier many owners had to have lacquer damages around the filling cap, caused by the pipe from the gas filling pump. In interior one thing was much visible. All the instrumentation had new british like, the digits were white on a black background. This wasn't all on the dash, a wooden like section in the mid of the dash did give a british look of the dash. For the cars for the swedish market we had some few details implemented, which were standard equipment on the US-cars. These items were the soft knobs on the dash and the neck supports on the chairs. Also the steering lock was standard i.e. lockable with the ignition key. A new rear mirror was mounted, the light switch for the beams moved from the foot section to the steering wheel. A new designed box, lockable, on the transmission tunnel, new tires 165HP 15 5X15, aluminium wheels, maybe the most beautiful wheels on a stock car 11 years ago! The brake system was much improved and the system was a 2X3, i.e. in case of brake failure-disconnection of a tube or hose- always two front wheels and one rear still in function. Also there were discs on all four wheels. A warning lamp on the dash for brake failure gives you immediate information.

MODEL U

Years 1970-71 the model U was produced in 4750 cars. The serials within this production are 32800-37549. Year 1971 is anyway a remarkable year so far that it is the highest number in Volvo history of two-seater coupes produced and sold. Most of the 1971 production was sold to the USA, and today only 135 cars are still in Sweden and therefore a 71 must be considered as quite a rare car. The changes for the model U were quite few for the second year production of the 1800E. One of the major options were that an automatic transmission could be ordered. This was the BW 35, which had been used in the sedan, the 144, since 1969. In the sports car Volvo did place the gear-shift on the transmission tunnel to stick to the sporting image. The manual transmission box, the M410, was abandoned and the old one, the M41 was taken into use, after improvements on the 2nd gear. During this time, and also earlier, many complaints had been directed against the 1800, as Volvo didn't come with something real new. On the other side many motor journalists had written, due to rumors, about a completely new sports car. No smoke without fire, in fact, during 1971 some plans had been drawn to make a fully changed car, being the successor of the coupe. In parallell to the very first plans in 1960 the interest for using the car at the country club playing golf, did again have an influence on the re-development of the car and the grand old concept.

Meanwhile, in 1972, the very last coupes were produced and for the last model W we count only 1865 cars produced and a coupe 1972 is most rare here in Sweden and should be a winner. The new things introduced for the coupe will be mutual to the things introduced on the new car. Following the new concept design for the car Mr Thor Berthelius - one of the pioneers the first time- thought it would be good to have a prolonged luggage room, in which a golf-bag could be transported to the country club. These were the groundrules for the styling of the 10 year old design of the body. With an 1800-body Jan Wilsgaard and his designers did work out a rear body end in clay. Naturally many ideas were taken into consideration but two of them showed a considerable interest. One of them had the original shape of a coupe but the roof line did continue back and did end up with a glass door i.e. 3 doors coupe only 2, which is also the reason to why coupe is denominated P182 (two doors) and the latter P183. The second styling was more away form the concept and did look like the old English cars with "boat tails" This did later catch the nick name Rocket. Both proposals did get their approvals and it was hard for the management to take a decision only upon the clay models. An amount of money, to build drivable cars of both type, were therefore provide for the purpose. Coggiola in Italy received the contract to make the more conservative car shilst Frua had the task to make "Rocket". When they were both completed and tested, Volvo did take the decision to obtain the less conservative car. Very late in 1971. The new

car was taken into production as a 1972 model. The car was called Volvo P1800ES.

THE LAST YEARS

In 1972 Volvo introduced the ES for the first time and it did cause a considerable interest. Probably it was the first station wagon in the world that had its heritage on a sports car chassis. In parallel, during 1972 both the coupe and the station wagon was manufactured, but in 1973 the coupe was definitely dropped out.

Volvo didn't achieve an increasing number of requests from the selling organizations in Sweden. The whole programme of manufactured cars were more or less shipped to foreign countries, especially America. The ES played the same role as the 262 Bertone today, i.e. people in Sweden did not buy, the ES was on the price lists and could be offered if someone especially asked.

At this time, the price was considerably high, and if interest for a sporty car existed in your mind, there were certainly more sporty cars for example in the British market. Also, the public opinion about the car was that they really couldn't figure out for what the station wagon was intended for. A small station wagon with a good road performance; apparently the group of customers was small. From a point of car collector's view the car is exciting. Anyway, the ES is the car you love into madness, or you hate it, because it isn't a coupe!

The engineering changes between model 72/73 were very small. The electrical switches on the 73 were changed and also the federal and state mandated safety programs for cars, active and passive, and that did contribute to the protective steel tubes inside the doors and the move out of the bumpers to provide a solution to the requirements of 5 mph impact at collisions. A filter unit for emission control was placed inside the grille. During 1972, 3,070 cars were manufactured.

In 1973 rumors came along that Volvo had intended to quit production of the ES. After a short time, in the year of 1973 production was terminated, with a total of cars this year of 5,008, altogether for the ES only 8,078 cars for both model years. The last ES rolled into the museum of Volvo. When it came to public that production was stopped, that did, in fact, create a demand and that could be the explanation to the selling of low-mile cars which still exist. When the last ES rolled off the line, it was immediately passed over to the group of collector's cars, mostly due to the low number of cars produced.

It is in some way a coincidence but the main purpose for Volvo and the manufacture of, as well the P1900 and the P1800 was to use the glamour of these cars to stimulate the volume cars in the manufactured fleet of stock cars. All time the production cost figure for the P1800 had been written

with red ink and probably had the losses been paid on accounts in the budgets of the marketing staff. For the very last years the car did create an overhead making it possible for Volvo to get the money paid back. On the other hand, the concept for the car was over 20 years old and not even the extended roof could make the car younger and also new safety demands created during the sixties and seventies, wasn't easy to implement on the 20 year old car easily. The selling was good, the car was profitable to Volvo but did it fulfill its basic purpose? Yes, it did, the selling of volume cars in America had been increased year after year, and if that had been possible with or without the glamour of the P1800, isn't easy to answer. Nevertheless, obviously the basic purpose had been achieved and with a good selling in America in mind, the P1800 died. America is today Volvo's fastest growing market.

Will there be a new sports car? Probably not. Many attempts have been made over the years. One of the most beautiful was the P172, a 6 cylinder coupe, probably the most beautiful car ever designed by Volvo. As the economists rule the companies, there will never be a new sports car as it will never contribute to an overhead mixed together with the volume car manufacturing. Today's formula is either/or and the times have also changed since the sixties so far that the household have less money today, the petrol consumption and its eventual shortage, Arab oil embargo, price of petrol, pollution control are all matters that will make it necessary for car manufacturers to specialize. The market for a special sports car has turned out to be very small for all manufacturers and probably the cars for the future will be small plastic bubbles, all like each other with the only deviation of different keys and license plates!

Figure out how happy you will be at that time when you bring out your 1800 for an early, sunny morning drive with some petrol or alcohol in your rear!

JAN HOGNARK