
SAAB TURBO

“IN THE

LONG RUN”



TALLADEGA



On October 7, 1986 three standard Saab 9000 Turbos set off on what was to be a record breaking high-speed endurance test.

The Alabama International Motor Speedway in Talladega, Alabama, U.S.A. (considered to be the world's fastest racing circuit) was chosen for the attempt because top speeds could be maintained at all times due to the steeply-banked curves.

The three unmodified turbo cars that set off on the "Long Run" were randomly selected off the production line by an official of the Fédération Internationale de Sport Automobile (FISA). Thereafter the 16-valve turbocharged engine, gearbox and transmission were sealed before the cars left the Saab factory in Trollhättan, Sweden. To ensure authenticity, the entire procedure was also supervised by a Notary Public.

After a 600 mile run-in, the cars were re-sealed and air-freighted to Talladega.

"The main purpose of the Long Run project is to test the endurance of our cars as part of our on-going testing program," explained Olle Granlund, chief of Saab's engine and transmission division and the man in charge of the Saab Turbo *In the Long Run* project. "The fact that we are, at the same time, setting out to establish international (and world) speed records

certainly adds an extra touch (of excitement) and will clearly show what can be achieved by a purely standard Saab." (As a safety precaution, the cars were equipped with a steel-tubed internal roll cage and full safety harness).

Shell, Pirelli and the Garrett Corporation — the turbocharger manufacturer — also participated in the project. Since Saab wanted to incorporate as many everyday conditions as possible into the test, it was decided to run the cars on Shell's premium gasoline and TMO motor oil, and to drive on Pirelli P600 V-rate radials (the same original equipment fitted on the 9000 Turbo).

Representatives from these companies were at the track to see how their products fared during the world's most gruelling high-speed test for standard cars.

The marathon session got under way at 8:00 a.m. Though each car began from a standing staggered start, they all registered speeds in excess of 125 mph before completing the first lap.

Over the next 20 days and nights the three Turbo cars were pushed non-stop at full throttle. They only paused for refueling, tire changes and servicing.

NASCAR officials were at the track to take charge of time keeping and technical checks on behalf of FISA. The clocks were kept running even while the cars were in

the pits.

The cars traveled equidistant throughout the project to make sure there was no speed advantage gained from slip streaming.

The first international speed record fell five minutes after the waving of the green start flag. The fastest of the three Saabs flew past the 10 km mark at an average speed of 126.004 mph. The second international speed record came minutes later, when the same car had completed 10 miles at an average speed of 128.770 mph.

By the 24th hour, each of the cars had clocked up the equivalent mileage it would take to drive from coast-to-coast on the continental U.S.A. At the same time, the cars had established 13 international speed records. The highest average speed during the first day was 136.678 mph, which is faster than the car's indicated top speed.

It wasn't smooth sailing at all times. Unseasonable rain, fog, heavy wind and a temporary loss of lighting around the track, didn't make it any easier for the drivers to round the 2.66 mile circuit.

The weather got so bad that officials offered to stop the clocks if Saab wanted to wait for the torrential rainstorms to pass. Saab pressed on regardless.

History was made on the 16th night when the fastest of the Saab Turbos swept past the 50,000 mile mark at an average speed of 132.782 mph — breaking the world record set by Ford in 1963. It was only fitting that Olle Granlund was behind the wheel.

"It is a fantastic feeling! This must be the world's fastest quality control!" said a jubilant Mr. Granlund. "If everything runs as smoothly as it has, we will stand a good chance of breaking the world record for 100,000 km."

Mr. Granlund proved right. The cars continued at their "pedal to the metal" pace day and night.

The climax came at 8:12 p.m. on October 26 when Olle Granlund took Car No. 2 into the pits after it had passed the 100,000 km mark at the world record-setting average speed of 132.542 mph



(213,299 km/h).

The two other cars soared past the milestone during the wee hours of October 27.

But the "Long Run" wasn't over. Not yet.

On the afternoon of October 27, journalists from many of the world's leading car magazines arrived in a chartered plane to see and test drive the record-setting Saabs.

At 4 p.m. that day, Les Richter, NASCAR's chief official at the track, waved the checkered flag to bring the "Long Run" to an end.

With the engines shut off and the records just waiting approval, the Saab Turbo "In the Long Run" team could begin celebrating their achievement.

Everyone agreed that 21 international speed records and two world records were conclusive evidence of what an exclusively-appointed five seater could do.

DAY IN DAY OUT PERFORMANCE

Watching the cars sprint around the circuit a few days before the official start of the Saab Turbo "In the Long Run," a NASCAR official remarked "This won't take long. It'll all be over in a few days; a week at the most. No car can last 100,000 km at full speed on this track"

NASCAR's doubts were only natural.

"The Americans were really surprised that we kept going when it rained. They never run a competition in such circumstances," said Olle Granlund.

The heavy rains and winds pushed the team of mainly amateur drivers to the limit.

Keeping in line with the "standard" nature of the project, it was decided to use as many "ordinary"



After a few days of high-speed driving and a number of international speed records later, the people of this organization had become deeply impressed. Even local citizens started coming to the track to see what the "crazy Swedes" were up to.

To everyone's disbelief (except Saab's) the three Turbo cars kept running and running at top speeds day in and day out. This can be directly attributed to the car's power source — Saab's third generation DOHC 16-valve intercooled turbocharged engine, which was run at extremely high rpm to propel the cars at full-throttle speeds. The turbochargers ran at 100,000 rpm.

The cars continued at tremendous speeds though torrential rains (uncharacteristic October weather for Alabama) threatened to flood the track. Even when night driving became nearly impossible after the track lights failed, the cars soared on. (A white fluorescent line had been painted along the infield which enabled the drivers to maintain daytime speeds with full safety even while zooming around the circuit during nightly thunderstorms.)

Even though front-wheel drive Saabs are renowned for being an exceptional bad weather vehicle, NASCAR's officials were prepared to stop the cars and the clocks if driving conditions became too difficult. Rain certainly wasn't going to stop the Saab team, though it did result in a slight drop in average speeds. Lap times rose from 69 seconds to 71 seconds which led to an average hourly drop of 3 mph.

drivers as possible. However, a few exceptions were made (to build a full team) by including such top Swedish rally drivers as Erik Carlsson, Anders Norstedt, Bertil Johansson, Kjell Olofsson and race car driver Göran Johansson.

Team members drove in 2-hour shifts.

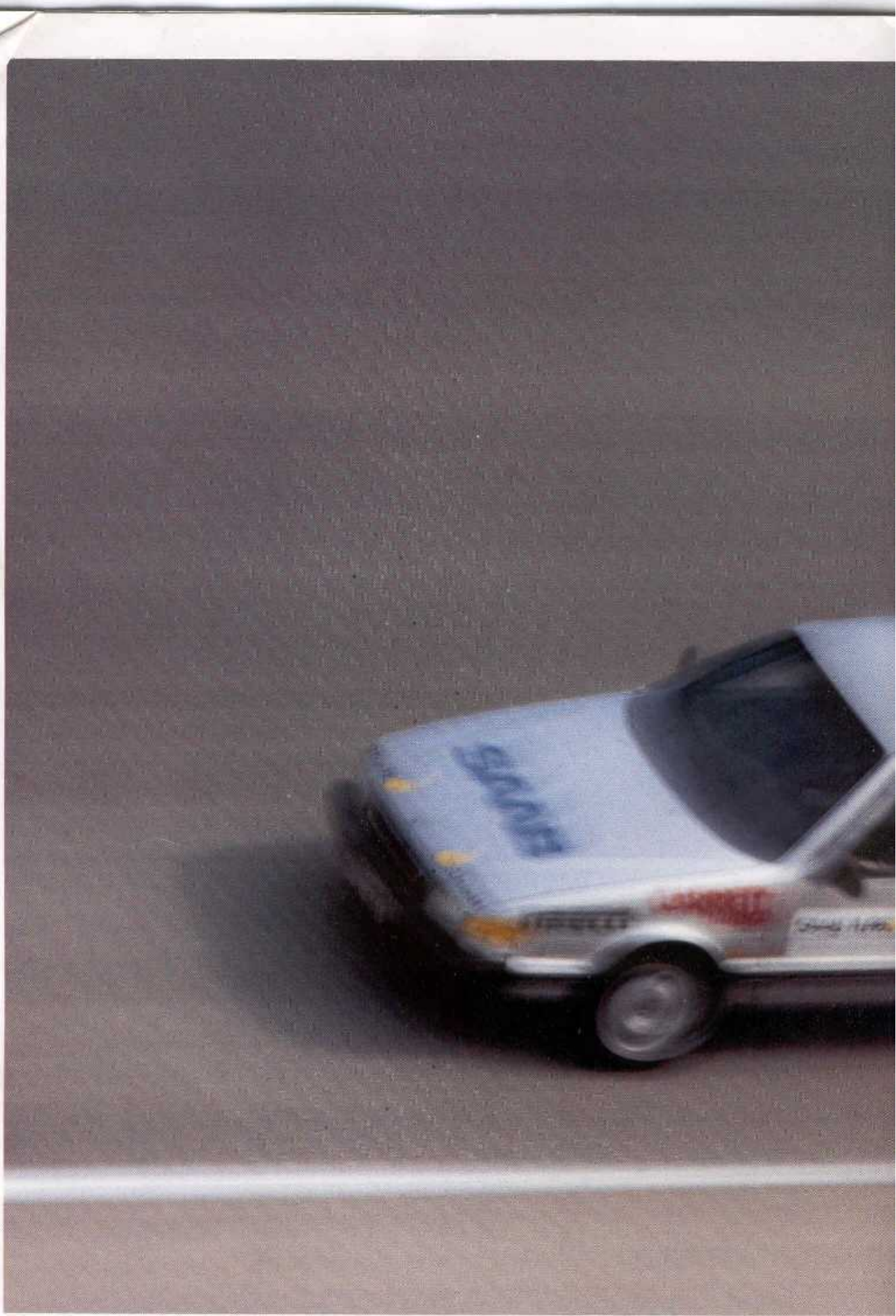
"Tough but fun," commented legendary rally driver Erik Carlsson after handing the wheel to another. "The car runs as smooth as can be, but you have to be on the alert at all times at the speeds we are traveling. The bends are so heavily banked that you don't have to let up on the gas pedal. But you really feel it in your whole body when you swing around the bends at over 135 mph."

As the test progressed, NASCAR officials began to change their tune.

"This type of endurance has never been carried out before in the United States. Saab's Long Run will certainly be talked about in the automotive world for a long time to come," summed up one official.

Another went on to say: "I thought it was going to be a bit boring. You know turbocharged production cars and that sort of thing. But it wasn't monotonous. This was a really interesting test — I was impressed by it. And that engine: it's a helluva racing engine."







LIFE IN THE PITS

Car No. 2 zips into the pits for its specified 12,000 mile service check.

Like a well-oiled machine, the pit crew whirl into action. Almost instinctively, a mechanic thrusts the gas nozzle into the gas tank, feeding the car with Shell premium gasoline. Another one slides effortlessly under the car to drain the oil. Yet another pops open the hood to replace the filters, change the plugs and insert the Shell TMO motor oil. A quick

32,717 miles, was called into the pits after showing signs of overheating. The cause? A burned out exhaust valve. Time was of the essence, so instead of grinding a new valve, the cylinder head was replaced. For safety's sake, the Garrett T3 turbo-charger and fuel pump were also replaced.

The other two cars went through the same procedure on the following day.

(According to FISA's rules, the cars could only



check of the tires, fan belt and various chassis mountings and the service is over and the car is off in pursuit of 100,000 km.

A typical four minutes in the pits for the Saab Turbo "In the Long Run" service team.

Life was never dull for the 32-man crew. Several times an hour they were prompted into action by the arrival of one of the three cars. During these refueling stops, the oil was checked and, if need be, the tires changed. Because of the severe stress and side slip caused by the high lateral and vertical g-forces (1.5 down and 0.5 side) induced by the steep banking, the crew replaced the Pirelli P600 tires on the front wheels every 12 hours and on the rear wheels every 24 hours.

Occasionally the pit crew's rhythm was disrupted by the unexpected.

During the first day the water pump on Car No. 3 began to leak, but it took only 15 minutes to change it. On the same day, Car No. 1 had to make an unexpected stop because grease was spitting out of the universal joint. After putting a spot of lubricant in the joint and fitting a stronger clip on the rubber bellows, the car was out of the pits and on the track.

A few days later, the oil hose to the power-steering on Car No. 1 ruptured. A replacement also failed so the crew started to look elsewhere for the fault. They quickly found it — the servopump's bottom attachment had shaken loose — and quickly fixed it.

A real test of the crew's talents came around the project's halfway point. Car No. 1, after clocking up

use the spares they carried. The weight of the spare parts was restricted to five percent of the car's total weight plus 44 pounds (191 pounds in all).

Although the mental and physical strain put on the crew may not equate with the strain put on the cars, it was a gruelling time for these 32 mechanics (some who doubled as drivers) who worked in eight-hour shifts.

The crew endured the long hours, blazing sun and pounding rain, and ensured that the cars maintained peak performance throughout their long run.

And after the last kilometer was completed, the crew quickly turned their attentions to the sweet taste of success and thrill of being part of the record-setting team.

WHAT THE EXPERTS SAID

After each of the cars had past the 100,000 km milestone and before they were sent back to Sweden for a technical postmortem, Saab invited members from the international motoring press to drive the record-breaking Turbos. Here's what they had to say.

"Certainly one of the nicer aspects of driving the Saab 9000 Turbo is that it does everything so well without a lot of effort, and I think that's the secret of its success. It instills a great deal of confidence in the driver and makes for relaxing motoring even at speeds in excess of 130 mph. Certainly if it performs in this manner under record setting conditions, imagine the pleasure of driving the 9000 Turbo in a real-world environment. I can think of very few cars that could approach what Saab has accomplished in dependability, speed and comfort at any price."

*Bill Warner
Road & Track
United States of America*

"I was surprised at the lack of drama and noise at speeds constantly indicated in excess of 140 mph, but the ferocity of the bumps on the first 33 degree banking emphasized that this truly has been just as much a test of chassis (Particularly the rear suspension) as it was of a turbo-charged engine under full boost.

"There were absolutely no thumps or groans from the running gear and the car generally felt as taut as one could hope for after such a rugged test session. The gearchange worked fluently and I was more surprised at the sheer speed of this 16-valve front-wheel drive sedan."

*Jeremy Walton
Motoring News
Great Britain*

"We have the Formula 1. We have the Rally World Championship. We have the Paris-Dakar rally. All of these represent motor racing at its very best. The motor racing scene is full of records and sensations. So what is a world record set on a track somewhere in the wilds of America worth nowadays?"

"I have been asked this question many times. I haven't answered the question directly, preferring to tell people that I saw three Saab 9000 Turbos driving for three weeks. Day and night round the clock. In that time, they covered 100,000 km (62,000 miles). They were perfectly ordinary cars, straight from the assembly

line. And all they needed was routine inspections and tire changes.

"The most amazing part of it was the average speed of 130 mph. When people heard this they fully understood what the world record was worth."

*Alfred Weinzierl
Auto Bild
West Germany*

"The thing that impressed me most was the fact that Saab had publicized its ambitious record attempt in advance, even mentioning the number of cars taking part. This was in defiance of all conventional wisdom. Usually this kind of attempt takes place in the strictest secrecy and is only publicized and used for marketing purposes if it is successful. Considering the fact that it would have been quite possible for all three cars to have succumbed to the arduous test under constant full load, those responsible at Saab are to be congratulated on the courage they showed in taking this risk."

*Max Nötzli
Automobile Revue
Switzerland*

"Until I drove the car myself, I didn't have a full appreciation of what these automobiles had just been through.

"Think about it, twenty days, 137 mph plus 5,500 rpm. Each engine has turned over 165 million times. Each turbo-charger spun at least 30 billion times. And each piston covered a distance of 18,000 miles. Each car has covered a distance equal to what the average (European) motorist drives in eight years. And they've been flat-out at top speed the whole way.

"It may be years, if ever, before any other car maker could take a charge at Saab's records. The first requirement will be to build a much better car than the Saab 9000 Turbo. Nobody in the world is doing that at the moment."

*Len Coates
World on Wheels
Canada*

"Nothing happened at Talladega. That is an odd way to summarize a punishing three-week marathon, but nevertheless: nothing happened at Talladega. That was the whole point. That was why Saab technicians and engineers had labored for years, that was why drivers drove round the track 24 hours a day without a break for more than 100,000 km: to be sure that

nothing would happen. No technical failures, not a single one, interrupted the triumphal progress of the three strictly standard Saab 9000 Turbos. Everybody who was at Talladega has a lot of tales to tell, but those are the little stories. The big story is that it is possible to drive 100,000 km at full throttle, over 125 mph, with a turbo engine. That is the finest testimonial one can give to a technology that was marginal not so long ago."

*Jean-Francois Marchet
Auto Hebdo
France*

"The only way to come to grips with Saab's performance was to be at the Talladega circuit and personally witness the cars in action. I was one of the lucky few who could, with my own eyes, attest the cars' incredible display of speed and endurance.

"To further underline the cars' abilities, Saab invited each of the journalists at the track to test drive one of the record-setting cars.

"It surprised me that a car, which had been pushed to the maximum for three weeks, could feel so fresh. Neither the engine, transmission nor suspension showed any apparent signs of flogging."

*Gert Karlsson
Bilsport
Sweden*

FOR THE RECORD BOOK

It's 8:00 p.m., October 26. The sun's gone down but the excitement is rising.

Car No. 2, with Olle Granlund in the driver's seat, is fast approaching the 100,000 km mark.

In just a matter of minutes (12 to be exact) Saab will set the 100,000 km record at an average speed of 132.542 mph thus shattering Ford's 23-year old record by more than 22 mph.

The second Saab Turbo completes the course at



3:00 a.m. on the following day. Its average speed was 130.250 mph.

Three and a half hours later, the third Saab joins the illustrious team by completing 100,000 km at the average speed of 129.458 mph.

The three unmodified cars had been running non-stop for 20 days and nights, leaving the record book for production cars in tatters. In all, Saab set 21 international speed records for production cars and two world records for cars in all categories.

There's no question that Saab's achievement is monumental. The fact that these standard cars went the distance at speeds above and beyond the call of duty says a fair deal about the performance and durability of a Saab 9000 Turbo in particular and the entire Saab range in general.

After the cars had driven the equivalent of seven trips around the world, Mr. Granlund had this to say.

"The result of "The Long Run" shows what a modern high performance car can achieve without any special preparation or tuning.

"We were looking for engine wear. I don't think we'll find much. I was listening to the engine during the final laps and it was running very smoothly.

"We are proud and happy. We believe it will be difficult for other manufactures to beat our records with pure standard cars," he concluded.

SAAB TURBO "IN THE LONG RUN"
100,000 KM
AT 132 MPH



ALABAMA INTERNATIONAL MOTOR SPEEDWAY, TALLADEGA, U.S.A.
 OCTOBER 7 - 27, 1986. 21 INTERNATIONAL SPEED RECORDS.
 2 WORLD RECORDS

Hear are the vital statistics.

After the third 9000 Turbo 16 crossed the finishing line, it was time to take stock of the records.

In all, Saab set the following 21 records:

10 km	126.064 mph	International speed record
10 miles	128.770 mph	International speed record
100 km	135.911 mph	International speed record
100 miles	136.490 mph	International speed record
1 hour	137.010 mph	International speed record
500 km	135.043 mph	International speed record
500 miles	134.898 mph	International speed record
1,000 km	135.271 mph	International speed record
1,000 miles	134.651 mph	International speed record
6 hours	134.846 mph	International speed record
12 hours	133.550 mph	International speed record
24 hours	133.465 mph	International speed record
5,000 km	133.475 mph	International speed record
5,000 miles	133.279 mph	International speed record
10,000 km	132.650 mph	International speed record
10,000 miles	132.085 mph	International speed record
25,000 km	132.161 mph	International speed record
25,000 miles	132.863 mph	International speed record
50,000 km	133.162 mph	International speed record
50,000 miles	132.782 mph	WORLD RECORD
100,000 km	132.542 mph	WORLD RECORD

The Saab Turbo "In the Long Run" high-speed test was sanctioned by FISA and run according to its international rules.

Here's a few more facts and figures.

Total distance covered (per car):	62,140 miles
Years of normal driving needed to achieve equal mileage (USA standards):	5 years and 2 months
Number of laps (per car):	23,566
Average lap time:	69.5 seconds
Gasoline consumed (per car):	7,133 gallons
Tires used (all three cars):	437
Total number of engine revolutions:	165 million
Total number of turbocharger revolutions:	3.9 billion



Every model in Saab's fleet is a winner.

During the last two years, Saab topped a dozen leading car authorities ranking lists. A third of these prestigious prizes have been awarded by car experts in the U.S.A.

It's not surprising that Saab cars are named time and time again.

That's because Saab cars are an exclusive means of transportation, representation and self-expression.

One of Saab's goals is to pioneer car performance and technology. Another is to create refined, superior handling and prestigious power machines that prove their mettle on the road everyday. To fulfill the owner's individual demands is yet another.

Saab has a series of award-winning lines: each one with its own, specific personality. The lines have a generous scope of choice to allow you to find your own means of expression. Though the cars differ in performance and equipment, they all provide an exciting, challenging and sensational driving experience as attested by the numerous awards and the records set at Talladega.

You see, our ideals match those of every Saab driver. That's the key to our joint success.

THE EXPERTS' VERDICT 1985 and 1986

Saab 9000 Turbo

- "One of the year's 10 best cars," Car & Driver — USA
- "Best Engine," Car & Driver — USA
- "Car of the Year," What Car? — United Kingdom
- "Best Sports Sedan," Jury of Automobile Journalists — Canada
- "Best Executive Car," Motor — United Kingdom
- "Best Manager's Car," What Car? — United Kingdom
- "Car of the Year," Jury of Journalists — Portugal
- "Best imported car in the USA," Motor Press Association — USA
- "One of the 10 most significant cars introduced in 1985," Autoweek, Editor's Choice — USA

Saab 9000 S

- "Sweden's Best Car," Teknikens Värld — Sweden
- "Best Family Car," AutoBild — West Germany

Saab 900 Turbo

- "Good Design Product," Japanese Ministry for International Trade and Industry
- "Best Mid-size Imported Car," Auto, Motor und Sport — West Germany
- "Best Executive Car," Wheels Magazine — Australia



SAAB

Approved for advanced driving