

SAAB AT KEBNEKAJSE: COLD CLIMATE TESTING IN SOME OF LAPPLANDS COLDEST REGIONS!



Saab 96 test car in Norrland alongside a reindeer and owner.

Both old and new forms of transport can be seen in the mountain region of Northern Sweden recently!

In the above photograph one of Saab 96 test cars can be seen passing the remote Nikkaloukta Tourist station which stands at an elevation of 870 meters (2788 ft) above sea level! In the background the summits of the mountains Tarfaleolke, Kebnekajse and Tjauratjåkko can be seen.

This is no sightseeing trip, but part of Saabs' annual winter test schedule where engineers evaluate individual experimental test cars for their performance in extremely cold weather conditions.

Saabs engineering manager Rolf Melde informed - The development team are in Kiruna to test components and systems i.e. engine, brakes, shock absorbers, tyres, etc, during extreme winter driving conditions.

We are also able to gain a better understanding of how the engine starts and the cars steady-state driving performance in these cold conditions.

Rolf Melde continued, all the test cars have been carefully prepared at Saab's engineering department in Trollhättan and include several instruments to continually record some 20 or more temperature measurement points. These practical tests verify further earlier test results gained in the cold climate laboratory in Trollhättan.

To be able to perform several different test schedules during a full working day in such cold conditions is a much-valued asset for car manufacturers.

The town of Kiruna has been the engineers central base for most of the testing and includes some late-night driving to some well-known “cold spots” in the region.

Saabs first test schedule was performed in February, but due to insufficiently low temperatures the team chose to return to Trollhättan and return in March where ambient temperatures averaging minus 26 °C (-14°F) could be recorded.

Although sufficiently cold to complete the test schedule, even colder temperatures would have been a lot more appreciated!

Below some early photos of winter testing in Kiruna, Sweden:



The cars extra equipment included a specially installed temperature gauge to record ambient temperature – here engineer Kjell Kristiansson records an ambient temperature of -26°C at the start of an early morning ‘cold start performance’ test.



Cold start schedule of the three test cars at -26 °C.

Early morning at the winter test facility: Three test cars have been “soaked” all night in -26°C and are ready to be evaluated for starting performance.

Test Engineer Kjell Kristensson (in white helmet) is almost ready to start the first test car and its drive away performance - note the check list he holds to record initial temperature values from several engine and interior measurement points etc.

It may look like a heater unit in front of the first car, but in fact it's a special fan used to blow cold air through the cars grill into the engine compartment.

Extra comments and discussion

Mechanics can be seen in the photo 2 above, presumably fitting a warm charged battery in the remaining two test cars.

At sub-zero temperatures, a car battery state of charge becomes greatly reduced and can struggle to crank the engine -Hence most testing is done with a battery that has been stored during the night in the warmth of the test facility.

The tests described above are like many of the winter tests annually performed by Saabs development teams throughout the lifetime of SAAB and became a normality even for many other car manufacturers.

Even today the roads surrounding Kiruna with its renown “cold spots” are still frequently sought after by car manufacturers. In recent years new highly modern winter testing facilities have been established in the Kiruna area i.e. Arctic Falls, Colmis, Arjeplog etc.

This article is a forerunner of a series of articles devoted to early test and development programmes and routines that, in most cases, lead up to improvements being introduced into production cars at SAAB.

The winter tests in Norrland discussed in this article resulted in further improvements to the Saab 96 interior heating system introduced on the 1963 production models.

This will be discussed in a later SAAB HISTORY article entitled “Thermostat regulated interior temperature – one of several improvements in the 1963 model Saab 96”. Here test results at a somewhat unbearable -40 °C are discussed!