

Simple Stuff

Rain-Sensing Wipers

By Bob Vitrikas

On modern cars rain-sensing windshield (windscreen?) wipers are common place, but it wasn't always so. So where did these modern marvels come from and how the heck do they work their magic? Anglophiles please note there isn't one word in this article about British cars but I think you'll enjoy it anyway.

A simple Google search ("history of rain-sensing windshield wipers") aided by AI, reveals that Nissan was the first to employ rain-sensing wipers in 1983. How did they work? They used a piezoelectric sensor to detect vibrations caused by raindrops hitting the windshield. OK so how does a piezoelectric sensor work? Pretty simple really. When pressure is applied to a piezoelectric material such as quartz or a special ceramic, a proportional electrical charge is generated. No external power supply is required. In 1996 GM introduced rain-sensing wipers ('Rainsense') that used infrared light to measure moisture on the windshield. More moisture, more wiper speed. Voila rain-sensing technology was improved! Some manufacturers, Nissan included, have taken the technology one step further and turn on the headlights when the wipers are activated. A very useful feature in Virginia where headlight use is mandatory in the rain.



P.S. Wait there's more! Aha, Nissan was NOT the first manufacturer to use rain-sensing wipers. Gotta watch this AI stuff. Not as simple nor as accurate as you might think.

Being a closet Citroen SM enthusiast for my entire adult life (I still have an original 1971 sales brochure from the Citroen dealer in Roanoke and recently bought a 1984 Citroen 2CV), I knew that the SM had rain-sensing wipers over a decade before the Japanese Nissan brand came out with them. Google AI search “first car to have rain sensing wipers” reveals the truth, the 1970 Citroen SM was the first mass produced car to employ rain-sensing wipers. Here’s how they worked in that wonderful quirky French kinda way. The driver turned on the wipers to the intermittent mode and the wiper system would monitor how much current the wiper motor drew when it wiped. More electrical current, the drier the windshield, the longer the interval between wiping. Less electrical current draw, more moisture, the faster the wipers wiped. Voila!

P.P.S. Wait there’s even more to this story! Spoiler alert, this has nothing to do with windshields or their wipers, but it does have something to do with raining on your parade. If you own a LBC that is a convertible, you are probably familiar with what happens if you leave the top down and it rains. The inside gets wet and mildewy. Not a word but fun to say. Way back in 1914 a Detroit engineer named John Roby invented a way to detect rain. His idea was a sensor, actually a string, covered with a chemical that burst into flame when hit by a water droplet. The flame would of course cause the string to break thus tripping an alarm alerting an attentive attendant that it was raining. Needless to say this device did not reach the marketplace. In 1934 GM explored the use of sensors to close building windows when rain was detected. This approach was employed in a 1949 patent application by Hugh Nutter (no joke implied) to close car windows and raise the convertible top when rain was detected. This auto-closing feature was employed in the GM 1951 LeSabre concept car and later offered as an option on 1955 Chevrolet and 1958 Cadillac Eldorado Biarritz convertibles. Buy it now on eBay for \$1,573.60 plus shipping (<https://www.ebay.com/itm/205334345812>). OK, this is all very interesting but no rain-sensing windshield wipers until the French employed this new feature on their flag ship SM model in 1970. Vive la France!



GM design chief Harley Earl with the 1951 LeSabre concept car. Photo courtesy motorhistoria.com