

Ford Sensor Technology Monitors Drivers' Heart Rates on the Road

AACHEN, Germany – Ford Motor Company is developing a raft of innovative technologies for an aging society, including a virtual reality CAVE (Cave Automatic Virtual Environment), which enables engineers to assess the practicality of future interiors.

Engineers have also developed a "third-age suit" to simulate restricted movement and dexterity, and a seat that can monitor a driver's heart rate and detect irregularities.

"We're not just a car company – we are also a 'lifestyle enabler,'" said Sheryl Connelly, manager, Global Trends and Futuring, at Ford.

"That involves making sure our customers are equipped with efficient and well-designed tools that allow them to live their lives the way they desire."

Founded in 1994, the Ford Research and Advanced Engineering Centre in Aachen, Germany, plays a crucial role in the development of Ford products around the globe.

It collaborates with suppliers, institutions and universities worldwide to make sure each Ford model meets the demands and needs of an ever-changing population. This includes responding to and improving the health and well-being of Ford's customers.

Ford is quietly studying cars that monitor driver/passenger health, such as heart rate or blood pressure.

The effectiveness and quality of vehicle interiors can now be tested long before any new prototype model is actually built.

Engineers observe the ease of driver and passenger interaction in a virtual reality environment.

User-testing gauges the emotional responses of virtual drivers and passengers to the virtual interior and this helps engineers to fine-tune the layout to ensure the comfort of future occupants.

CAVE is used in conjunction with Ford's "third-age suit" to improve understanding of the needs of some more mature drivers; however, virtual reality testing can bring real-life benefits for people of all ages, shapes and sizes, allowing engineers to create interiors that take into account customer needs at the very beginning of the production process.

Ford engineers have created a padded "third-age suit," incorporating gloves and goggles, to better understand the difficulties faced by some older drivers. The suit may also be used to gain a better understanding of mobility challenges faced by people of any age.

A corset and shoulder straps restrict upper body and hip flexibility; further straps around the knee, elbow joints and feet, simulate stiff joints; and a rigid collar reduces head movement.

Latex gloves simulate a reduced sense of touch, a potential consequence of diabetes, while fingerless mitts simulate a reduction in manual power and dexterity.

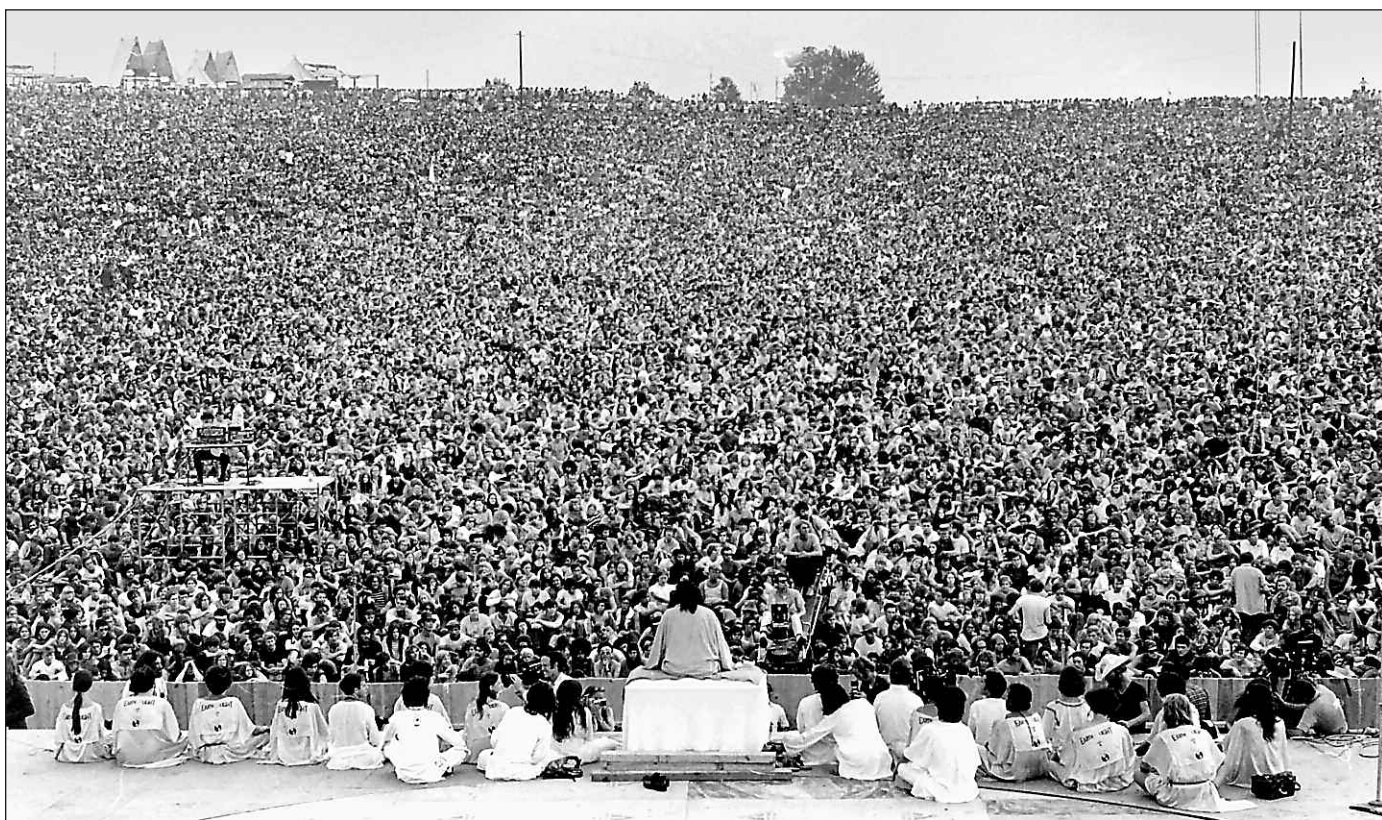
Earplugs are also worn to simulate hearing loss, while goggles demonstrate the consequences of different eye diseases, including glaucoma and cataracts.

More people die annually from cardiovascular disease than from any other cause. Ford is developing a seat designed to detect cardiovascular problems and issue an advanced warning that may give the driver time to pull over.

The prototype seat employs electrocardiograph (ECG) technology to monitor the heart's electrical impulses and detect signs of irregularity that can provide an early warning that a driver should seek medical advice.

The Ford ECG seat has six built-in sensors that can operate through the driver's clothing – as opposed to a traditional ECG machine where metal electrodes are attached to the skin.

Ford aims to develop the system in conjunction with voice-activated in-car connectivity system SYNC. This could open up the possibility of the driver's mobile phone being used to send a message to medical centres to alert doctors, who can then analyze the data and advise patients on the next course of action.



Yesterday's Woodstock generation has become today's Silver Tsunami – a new social term describing the aging of the Baby Boomers.

Silver Tsunami: Boomers Cause Another Fuss

By Gerald Scott

So get ready for the Silver Tsunami.

That's the buzzphrase surrounding the pending retirements of up to 74 million Baby Boomers and how society will handle this gradual withdrawal of everybody's favorite generation from the workforce.

Or not. A large part of a recent conference hosted by Gallagher Benefit Services, Inc., and entitled "Managing Risk in an Aging Workforce," dealt with the cold hard truth that half or more Baby Boomers will have to continue to work full-time indefinitely.

The Silver Tsunami refers to how the long-haired Woodstock generation has morphed over the decades to become the silver-haired Tsunami of retirement-age citizens who keep pushing the limits on what we expect of our "senior citizens."

Supposedly, over the next 20 years or so, all of those remaining 74 million Baby Boomers are supposed to retire, but a number of factors are compelling them to keep working and this is causing any number of backlashes and unexpected consequences.

Speakers included Dean Clune, Area Senior Vice President at Gallagher and Patrick Haddad and Mark C. Knoth, both members of law firm Kerr, Russell and Weber, PLC.

"We're talking about something that really is on a lot of companies' minds – how do we cope with an aging workforce, what is special about that and how do we handle it?" said W. Bryan Hirn, Area President at Gallagher, which is a Bingham Farms benefit services company that consults on these issues.

"Some 74 million Baby Boomers – that's a lot of people – are moving toward retirement," Hirn added. "But one of the things you're going to hear today is: some of them aren't moving toward retirement that fast. They're slowing down, and staying in the workforce. That's a big concern now, watching the average age creep up in the (auto) plants and watching how much money these folks make and wondering, how productive is that and how affordable is that (for the employer)? That is a challenge that many of our organizations now face."

Indeed, the speakers at Silver Tsunami described an environment where many firms really do want to lay off or retire some of their senior employees to get out from under

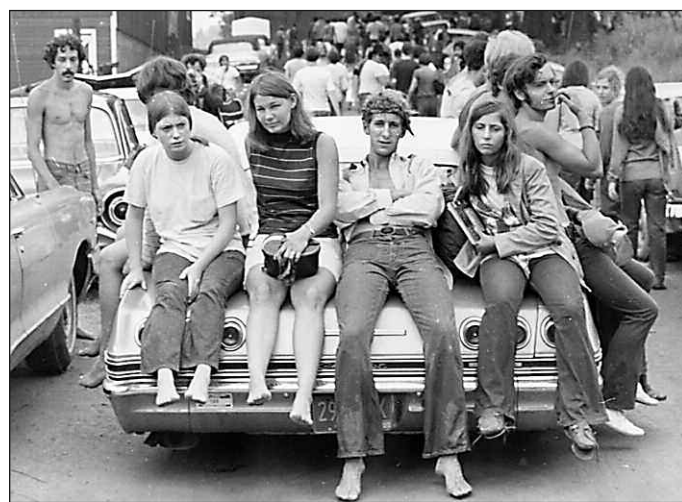
their high payroll, benefit and pension burdens, but of course age-discrimination laws prevent wholesale layoffs of this category of employee.

It's a unique challenge for larger society as the Baby Boomers, the so-called watermelon passing through the pythons, are now causing as much disruption as they did on the streets of America back in the 1960s and on college campuses in the 1970s.

Modern science means we're all living longer, so Baby Boomers are turning 65 years old at the rate of 10,000 per day in the U.S. and their expectations from health care, from their retirements and for society accommodating their lifestyles remains large.

Statistics presented at the conference suggest that at the very least, some 32 million of those surviving 74 million Baby Boomer cohort cannot afford to retire and so they continue working endlessly at their current job – retiring at your desk is another buzz phrase – or they pick up entry level jobs such as at McDonald's or Starbucks just to generate a paycheck and keep afloat.

That many people are now living longer lives was exhibited in one particular statistic, which showed that back in 1950 in the U.S., there were only 2,600 people in the entire



Teenagers and young adults on the road to Woodstock in 1969.

country over the age of 100.

By 2015, meanwhile, there will actually be some 600,000 people who are Centenarians and that is a bellwether of what's to follow because the generation born between 1946 and 1964 are living out long and productive lives, from their view and they want to take the "life to which they've become accustomed" with them into retirement.

Except that, in many cases now, they can't afford it. Although the Boomers were the beneficiary of the largest transfer of wealth in history – reportedly up to \$2 trillion, as the Boomers inherited their parents' World War II generation's homes, cars and wealth, but as the Greatest Genera-

tion has been dying off since about 1980, the Boomers have been using that windfall just to stay alive and stay current.

One speaker said that the workplace of the future will now have to be completely redesigned to accommodate the Boomer workforce that isn't going to actually retire anytime soon.

It's an interesting conundrum for society and one suspects that this won't be the last time you hear the phrase Silver Tsunami thrown around in relation to the I-Me-Mine generation.

The first-born Boomers, those born in 1946, are leading the charge where they have one foot in the workforce and one foot in retirement.

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