

GM Retiree Recalls Work with Balance Engineering

by Gerald Scott
News Dept.

Have you ever heard the phrase, "institutional knowledge"?

When it comes to former GM unit Balance Engineering, one Ronald F. Buck was and still is that local holder of its institutional knowledge.

Buck, now 75, is the retired chief engineer of Balance Engineering when it was inside of General Motors and he was also the first-and-now-retired president of BE once it successfully spun off back in 1987 as a private company based in Troy.

Today, Buck is also effectively a walking history book about General Motors and its industrial impact throughout the 20th century.

He not only helped steer Balance Engineering through the mid-20th century years and decades but he was an original, 1955-era employee of the GM Tech Center in Warren as it opened and he even personally knew Charles Kettering, GM's head of its Research Labs and chief scientist from

that early 20th-century era. Coincidentally, this year happens to mark 25 years since Balance Engineering (affectionately known as BE) left the GM fold, and Buck sat down at the National Coney Island on Van Dyke across from the Tech Center the other day to share a cup of coffee and a fountain of knowledge.

"Our group was spawned as part of GM Research Labs, we were a major part of the Research Labs," Buck recalled.

"BE really started in 1923. It was a group within Delco in Dayton, Ohio.

"Our department was started by Charles Kettering.

"D-E-L-C-O, the acronym there, Delco, is Dayton Engineering Laboratories Co., a lot of people don't realize that, but that was the forerunner of the GM Research Labs.

"Our first machines were made for Buick, for crankshafts, these were made in 1926, first balancing machines. This kind of work was never done before in a production environment.

"Balancing a crankshaft in those days might've taken,

probably at best, maybe 15 minutes – you needed a lot of machinery and a lot of people. It was laden with all sorts of expense, and now we'll balance crankshafts in like 10 seconds and with closer tolerances. Transfer lines maybe 80 feet long.

"It was in about 1925 when they moved to Detroit right behind the GM Building, on Milwaukee Street, that red brick building they call the Argonaut Building? That building there was actually the GM Research Laboratories and we (Balance Engineering) occupied the whole 9th floor.

"I started in February of 1955 and in 1954 or so they had moved out to the Tech Center (in Warren)."

According to Buck, what was then called GM Balance Engineering was a function of the GM Research Labs in both Detroit and Warren from its inception, through about 1972.

From there, Balance Engineering was shifted to an internal-GM group called CEMS, and it moved from within GM Research & Development



PHOTO: GERALD SCOTT

Ronald F. Buck, now 75, was the former chief engineer of GM Balance Engineering who oversaw the entity's spinoff from GM back in 1987 and became its first president. Some 25 years later, Balance Engineering and its sister company, DynoTech Driveshafts, are successful private businesses in Troy. Buck, who spent most of his career at GM, even bought a Chevy Volt recently.

building to the industrial sites south of 12 Mile Road, across from the main GM Tech Center campus.

So from 1972 until 1987, GM Balance Engineering continued to prosper in its new industrial site south of 12 Mile Road under the CEMS flag.

Added Buck, "CEMS Staff (Current Engineering & Manufacturing Services) was sort of a catch-all of a lot of small operations, many of which were a profit center. We, Balance Engineering, were a profit center.

"GM Photographic was also part of CEMS. Argonaut Realty in the GM Building handled all of our real estate, the gas fields in Ohio and all of that. They managed the Proving Ground. It was based in Warren. We reported to that hierarchy.

"I was called manager/Engineering and Service.

"I worked at GM for about 32 years. I retired in 1996 on my birthday – I was 60 years old (June 1 of that year)."

By then, BE had spun out of GM for about a decade and Buck went with it as BE's first president of the privately held company – in fact, Buck led



PHOTO COURTESY RONALD BUCK

Ronald F. Buck, left, was the GM Balance Engineering / chief engineer who led a manager-buyout of the entity back in 1987. Buck, left, is seen here above signing the separation papers with GM Vice President Chuck Brady 25 years ago.

the buyout by about a dozen Balance Engineering managers, of the entity, from General Motors back in 1987.

What's neat about Buck is that he points out that there was so much more to BE than just balancing driveshafts and crankshafts for GM.

Said Buck, "We had machines that could balance everything from watch movements, to gyros for torpedos, bomb sights, we balanced large gyro rotors for ships – ships couldn't leave port unless they had a gyro operating and compass operating, both – we balanced these things.

"(And for cars) we balance everything from small little armatures for seat adjuster motors in cars, power antennas, to windshield wiper motor armatures, to alternator armatures to large traction motor armatures that weigh several tons in locomotives, we do all of that."

Buck is especially proud of the Arsenal of Democracy years in which Balance Engineering quietly did major favors for the U.S. government and the military.

"I had met (Dr. Charles) Kettering, he had retired back in 1947 but he was still actively involved," Buck recalled.

"There was a lot of special work that was done. Infra-red technology, things of that variety. They had groups of people that worked from the late

1920s and then throughout World War II – heat-seeking missiles, infrared technology where you could see ships moving in the middle of the night when you were in a fog and so forth.

"The fellow that ran the electronics for Balance Engineering was Kettering's right-hand-man. They called our group originally Special Problems, later Balance Engineering. Kettering loved our department because we were a can-do operation."

Although GM Research Labs are famous for having helped develop the first artificial heart back in the 1950s, Buck recalled that Balance Engineering also helped Dr. Jonas Salk perfect the liquid vaccine for polio by using a device called a "Centri-filmer" as developed by GM.

The Centri-filmer (centrifugal filmer) helped Salk's team to develop the liquid polio vaccine that saved a generation of youth from what was then a scourge disease.

And to think that the key Centri-filmer came out of GM's industrial operations in humble Warren, Michigan.

As observed, Buck sure is the living legacy of institutional knowledge for "all things Balance Engineering."

Finally, note that Buck still lives in Warren and he even bought a brand new Chevrolet Volt recently.

Ford Pushes Its Fuel Economy

By Jim Stickford
Special Writer

Ford's path to great fuel economy in 2015 and beyond actually began in 2007, and despite the crisis of 2008, the company has kept steady, with the payoff being top in class vehicles that are setting the pace for performance and fuel standards.

Three top level Ford executives spoke to auto writers about Ford's plans for improving fuel economy, past and present, recently at the Dearborn test track.

First to speak was the Ford's chief economist, Ellen Hughes-Cromwick.

She began by saying that the company's long-term planning is affected by three major factors – global growth of energy demands, supply conditions of energy sources i.e. oil and "this volatile world and how it affects consumers."

Hughes-Cromwick said that we are undergoing an unusual period of global growth. More than 50 countries around the world are in the "take off" stage of economic expansion.

That means the average income of citizens is growing to the point where they can buy middle class goods and services. While China and India are at the top of the list, there are 46 other countries in the mix.

"We've done a lot of research on vehicle use in countries during the take-off stage," Hughes-Cromwick said. "In China there's about 25 vehicles for every 1,000 citizens of driving age. In the United States, that figure is

pretty close to one per one. In Europe, it's about 800 vehicles per 1,000 people of driving age."

She noted that in 2000, global oil consumption was at about 77 million barrels a day. In 2010, that figure moved up to 87 million barrels a day. That's 3.9 percent growth per year. And because there are now more countries in the mix, that figure isn't likely to go down, even with improvements in energy consumption efficiencies.

Research shows that exploration for new oil sources and development of current supplies in areas such as Canada's oil sand deposits indicate that supply will try to keep up with demand, Hughes-Cromwick said.

As to volatility, she said that there was a recent shut down in a major Saudi oil pipeline that some were afraid might have been caused by terrorism. That caused a \$4 a barrel spike in prices.

Recent concerns over Iran and its nuclear program have caused oil prices to spike as much as \$3 a gallon. In the past few years prices have varied from \$147 a barrel to \$85 a barrel. Gas prices have swung from under \$2 a gallon to about \$4 a gallon in the past four years.

"People are acutely aware of changes in fuel prices," Hughes-Cromwick said. "So we started, a few years ago, thinking that with prices trending up, along with price volatility in the short run, consumers, like us, will begin to embed this information in their buying behavior."

So Ford had to start building cars that would get better mileage. Derrick Kuzak, group vice president of global product development addressed how Ford developed a blueprint for a sustainable growth and mileage improvement.

"We began talking about this in December of 2006," Kuzak said. "To reach our goals we've introduced all kinds of new technology to reduce mileage. We're also looking this problem from the climate change perspective. We also want to reduce our CO2 emissions to 450 ppm by 2050."

Kuzak said that when they started doing the work they saw that the reducing CO2 emissions and improving fuel mileage would be driven by competition, customer demands and regulations, which vary in different countries.

The first phase of their plan, from 2007 to 2012, used affordable, ready technology such as six-speed transmissions, eco-boost engines, hybrid cars, diesel engines and such.

The second phase is using new tech such as auto start/stop and week reduction. The long-term phase will continue to leverage electric vehicles (EVs) and develop new engines that run on different energy sources, such as hydrogen of natural gas or electricity.

This tech will also have to provide performance and be affordable to Ford customers, Kuzak said.

The introduction of electric power-assisted steering helps with mileage, but also improves performance.

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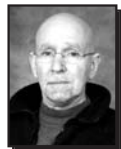
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