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1 Fred Lang

Ralph Nader (Ralph Nader coined the term "whistleblowing".)

This is a celebration of the life of one engineer, a friend, Fred Lang, who lost his struggle against cancer last week in Florida. Engineers rarely receive much attention. By temperament, they are withdrawn; by profession they are often hidden behind their corporate or government employers.

But Fred Lang was different. He was up front, a pipeline safety crusader who took on the big boys, an inventor who tried to give you smooth, non-cracking highways, and a philanthropist whose work will go on.

I first met Lang at a conference in the late Sixties. He was then a DuPont engineer from Pennsylvania whose rural home was downhill to a new underground oil pipeline owned by the Colonial Pipeline company.

Since he did not relish the idea that highly pressurized, boiling hot oil could come down into his living room, from what he believed was an excessively brittle form of pipe, he asked me to help raise the larger issue of deficiencies in hundreds of thousands of miles of oil and natural gas pipelines.

We worked together to persuade Congress to enact the natural gas pipeline safety act of 1968. He then served on the advisory committee to the Department of Transportation's office of pipeline safety for six years before he quit in disgust. For the advisory committee and the office were dominated by corporate pipeline interests. There was no room for an independent engineer. The government's standards were to be written essentially by the very industry that was expected to obey them.

Lang left DuPont in the early Seventies to pursue his inventions that DuPont was not interested in developing. One was a way to build pothole free highways that do not buckle or crack in winter or summer. Such highways would need very little repair. Billions of dollars and large amounts of motorists' time and fuel, waiting or taking detours, could be saved every year.

Once again, Lang came up against a vested interest—the highway lobby composed of the cement, asphalt and state-federal bureaucrats who opposed another way of building highway pavement. Lang's pavement is made of two layers with a plastic sheet between them and uses less cement or asphalt. That means less money for those companies whose influence over the Federal Highway Administration—the agency that writes the standards for the states to meet—is all powerful.

Although strips of highway showed that Lang's invention would work and although companies stole his invention for use on vertical parking garages here and abroad—indicating its practical utility—, Lang could never break through. Bureaucrats and legislators would listen politely and then do nothing. His university engineering colleagues, with a few notable exceptions, were reluctant to speak out. They had consultantships, grants and contracts to worry about.

So Lang developed an alternative idea. Why not have the government simply rent the pavement under a competitive bidding process in accordance with smooth pavement standards? The winner would get the business (the government would still own the land under the highway) and receive rent payments as long as the pavement meets the standards. In this way, he reasoned, the best pavement design will win and corporate obstructionism would be bypassed.

His rent-a-pavement idea received some publicity but no adoptions. It would have made an excellent addition to the highway-mass transit law that passed Congress in 1992. But the highway lobby's dominance squashed it at the outset.

Lang's other crusade was on behalf of the lone inventor—still a prolific source of inventiveness in an era of big labs and big companies. Stealing the ideas of lone inventors or challenging these less than affluent people to sue them under the patent laws is a pastime of many corporations. Lang himself found that companies were purloining his invention without paying him royalties.

He retained a law firm in New Jersey whose lawyers take lone inventor cases on a contingent fee which they collect only if they win. The law firm won some cases for Lang and recovered several million dollars—only a fraction of what he was owed.

But Lang wanted to pursue numerous other ideas and ventures instead of wallowing in regret. Even when he was in his late Seventies, his youthful optimism and inventive mind never flagged. When the Colonial pipeline blew up outside of Washington over a year ago, he was on the phone with the press giving them his technical views. The same was true a few weeks ago when a pipeline blew up in Edison, New Jersey.

Lang won and lost many battles. In so doing he set an example for engineers to speak up and apply their code of ethics in courageous activity rather than hunker down and just grumble.

He leaves behind a foundation and active children who will further his causes. Fred Lang's example and legacy will continue his noble vision of an engineer's unique role in the betterment of society.