



## Aircraft, Software, COTS, GOTS, and a 1967 Chevy BelAir

I grew up an Air Force brat living in nine different houses before I turned 18. Some kids might feel that this constant changing of houses and schools was bad – but I loved it! Back in 1966, my dad was wrapping up a 2-½ year tour in Istanbul, Turkey. We had shipped a car over to Turkey with us, but sold it prior to Dad’s transferring back to Sheppard Air Force Base. So before leaving, he ordered a car from Chevrolet (nothing online back then – catalogs, phone calls, and telegrams took care of it). We flew back to the United States in late December 1966. On Christmas Eve, Dad went down to the local Chevy dealer and picked up our 1967 Chevrolet BelAir. It was bright white, huge, and ours. I was 11 years old at the time, and I grew up with that car. I named it Cynthia.

I first learned to drive in Dad’s Chevy. It had a manual transmission with the stick shift on the column. It also had an overdrive lever under the dash. It had a 283 cubic-inch engine and an oversized clutch. I not only learned to drive in that car, but being a one-car family, it was the car for my early (and very limited) adventures in dating.

Eventually, I moved out, joined the Air Force myself, and after 23 years retired from one career and moved on to another. I now live in Utah.

A few years ago my mom and dad decided it was time to sell the Chevy. They had become a two-car family in the 1980s, but by the mid-1990s didn’t need two cars any more. My mom and dad asked if I was interested in owning the Chevy – I thought long and hard about it. I had always loved that car, and every time I visited my parents in Orlando, I would help Dad wash and wax Cynthia, and then take her for a test drive. Every so often, I would cruise in it up to Daytona Beach. I even knew just how to tune-up the engine. (Remember actual tune-ups with tachometers and dwell meters, points and a rotor to replace? Heck, the engine

compartment was so big you could stand in it.) The car was indestructible on the outside – it even survived me learning to parallel park! I’m pretty sure that Mom and Dad would have given me a great price on Cynthia (in fact, had I asked, I am pretty sure I could have just talked them out of it). After almost 30-plus years of waiting, I could own a



classic ‘67 Chevy BelAir, complete with antique license plates.

But, I decided to pass. I guess I was both older and wiser, even though the car was a classic – a 30-year old classic with no air conditioning, no power anything (brakes, steering, or windows), rear-wheel drive, and no air bags or shoulder belts. I would have had to drive it from Orlando to Kaysville, Utah – more than 2,300 miles. And once I had gotten it here, well, a rear-wheel drive car with no weight in the back is probably not the best vehicle to own during winter in the state with the “Best Snow on Earth.” Not to mention the problems with trying to get parts for a 30 year-old car. So Mom and Dad sold the car to a friend in Alabama, where I am sure that Cynthia is still in action.

What in the world does that have to do with a column for CROSSTALK? This issue is about avionics modernization. Well, we have B-52 airplanes currently flying that first entered the

Department of Defense (DoD) inventory back in 1955 – a life span so far of 46 years, and current engineering analyzes show the B-52’s life span to extend beyond the year 2045<sup>1</sup>. Now put into perspective that the Wright Brothers first flew in 1903. Out of the 98 years that the world has known powered flight, B-52s have been flying for almost 50 percent of that time! If the B-52 flies until 2045, as projected, it will have been deployed for 90 years, almost 65 percent of flight’s history.

We sometimes forget the life span of the hardware that our software drives. If you’re working on avionics software now, can you imagine somebody trying to update (and debug) your software in the year 2091?

Face it, it takes a *long* time to write and update the software for avionics applications. In fact, one recent avionics system calculated that they averaged only about 0.4 lines of code per hour. That’s one reason commercial off-the-shelf (COTS) and government off-the-shelf (GOTS) software

are important nowadays. They are a lot better then purchasing one million lines of pre-written code and then only having to write 100,000 lines of “software glue” to make the COTS/GOTS work. You just saved more than 2 million person hours at 0.4 lines of code per hour. In addition, the advantages of extending the life span of existing aircraft can save the DoD billions of dollars.

So the next time you’re driving a four- or five-year-old car and you feel that it’s getting old, and you’re itching for a new car, remember that the aircraft you supply software for might have a projected life span of 50-plus years. Sort of puts things in perspective, huh?

By the way, what did the 1967 Chevy BelAir have to with software or avionics? Not much – but it sure was fun reminiscing.

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1. [http://www.af.mil/news/factsheets/B\\_52\\_Stratofortress.html](http://www.af.mil/news/factsheets/B_52_Stratofortress.html)