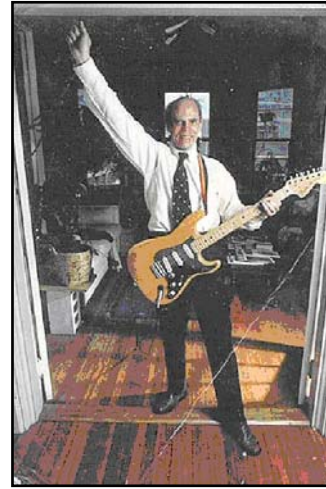


Laurence O. McKinney

I Was A Teenage Fender-Maker

A summer making Stratocasters

There's no question about it. When it comes to electric guitars I'm a geriatric. My affair with rock 'n roll dates to the fifties when it had been recently identified in the population as a form of social disease. Rock guitarists back then were tall thin Black men with pencil-thin mustaches who stood behind the singers, but in the summer of 1959 cousin Eric, a high school wrestling champ, dropped by with a real electric guitar. He played everything in one key, but it was suddenly clear. If jock Eric could sound like one of them, so might I. He sold me completely. He also sold me his wretched Marwin guitar for thirty-five dollars so I could inflict it on myself.



My first amplifier was made from a Popular Electronics plan and I soldered every socket. It even had a vibrato circuit. These days they would probably call it an effects generator, but I took it to boarding school that fall. I was fourteen. The Hill School wasn't big on rock. By then I had a Sears Roebuck Silvertone solid body made by DanElectro and a little Montgomery Ward amplifier. When "Rumble" is all there is, anyone had a chance. Besides, Link Wray played a DanElectro. It was way better than Eric's Marwin.

We mainly played at glee club dances for pre-debs. Filmmaker Oliver Stone was a fourth-former that year. He was Bill Stone then because no fourteen-year-old wanted to be called Oliver in 1961, and we seniors were rock gods to lowly fourth formers. Top forty those days was *Poison Ivy* or Neil Sedaka, so the Attitudes lurked about like junkies terrorizing classmates with vintage doo-wops or screaming "Jenny, Jenny, Jenny, Wooo, Jenny, Jenny" from the back of the glee club bus. Most of our classmates bought Joan Baez's first album, expensive Martin guitars and tried to look soulful. They thought folkie chicks were sexy. I wasn't concerned because I was already in love. With a guitar.

About the time my buddies had discovered Playboy centerfolds or sports

cars, depending on their hormones, I had gotten my hands on a Fender catalog. In 1959, the word Fender still meant “car part” to almost anyone. Bill Haley, Duane Eddy, Eddie Cochran, all the well tailored white rockers played big Gibson or Gretsch hollow body guitars that at least looked like guitars. The Fender shapes; shiny, solid, and thin as lozenges, looked like something Alexander Calder might have hung from his ceiling. Still, they seemed to be hanging from a lot of the people I wanted to hang with. Link Wray still sounded OK with my masonite wonder but *La Bamba* lack a certain Richyness, Peggy would have sued, and Mickey and Sylvia’s calypso *Love is Strange* kept sounding like Rumble. There was something lacking.

I knew exactly what it was. A Fender Stratocaster. They all had ‘em. Richie Valens had one. Buddy Holly had one. Both Mickey and Sylvia had them, matching white in their case. I cut out the picture of my dream guitar and carried it around in my wallet, as my Stratocaster fixation slowly became an obsession. In the summer of my 16th year, the Ventures came out with *Walk, Don’t Run*. It soared to the top of the charts and sat there for weeks, the first guitar instrumental to make it since Duane Eddy’s simplistic twangs. Just like I might have expected, Bob Bogle was wearing one of those killer machines. I cut out a picture of the Ventures and pinned it to my bulletin board next to my picture of the Holy Stratocaster. I would have sold my soul for that guitar.

Actually, I did worse. I hyped my younger brother into buying my Silvertone, took every cent I had, and hopped a bus from Pottstown to New York City. It didn’t take me long to locate Manny’s Music, where a young and chubby Henry Goldrich took everything I had in trade, knocked 30% off list, and sent me dazed and dreaming out of his shop with the glistening miracle guitar in my own hands. Every time I opened the case I’d gag a little at its splendor. In a state of mindless euphoria, I sank myself into debt and traded in my Monkey Ward amp for a second hand 1954 linen-finish Fender Twin-Amp. It was all true! Holly hollered. *La Bamba* bombed out the dorm windows. *Walk Don’t Run* ran down the halls. I had the ultimate weapon and I knew it. It was love at first power chord.

Later that year, I got schematics from Gibbs Manufacturing, which

invented the reverb springs, and soldered a Fisher reverb right into the circuits of my Twin. Not for nothing I'd built my first guitar amp, and in the process I created the first Fender reverb amp two years before a Fender unit became available. Amplifiers were to tinker with, but I never took apart my Strat. It was sacred. My hyped brother, in a burst of sibling rivalry, gutted my old Silvertone and installed its parts and neck on a Stratocaster counterfeit he carved from solid maple. It weighed a ton and sounded just like a DanElectro. There was no comparing a guitar made by a brother to a guitar made by the gods.

In 1962, I thrilled the Hill by graduating and dismayed Harvard by arriving and immediately starting the first play-for-pay real rock band, the Deltas. Our fellow students treated us like the criminally insane. The administration forced us to practice in a store- room over the student union filled with Teddy Roosevelt's unwanted trophy heads. He'd shot a lot of things, it seems, and nobody knew what to do with them. The antlers served as mike stands and we worked on our licks. The Beatles hadn't happened yet, Baez was really big, Bob Dylan was getting discovered in the East Village and what was all this *Twist and Shout* business? We screamed it out in F like the Isley Brothers, four notes higher than the Beatle's weak-tea cover version. We delivered everything from Roy Orbison to Del Shannon and the spring of '63 we shot Dick Dale's *Surfer's Stomp* right up the spine of the Freshman Jubilee Weekend.

The *Surfer's Stomp* in 1963? Well, Bob the backup came from very Southern California where Dick Dale, King of the Surf Guitar, was the biggest thing since tacos. This was 25 years before *Pulp Fiction*, and although Dick Dale was born thirty miles south of Boston, he was the idol of everyone south of LA who could strum or surf. Our guy lived near Indio, out in the desert a few miles from the Betty Ford Center. He said a lot of surfer things like "bitchin'" and "hodad" and kept trying to bleach his hair blond with lemon juice. He never succeeded with the hair, but he did convince us to load our song list with Dick Dale hits like *Let's Go Tripping* and *Miserlou*. He also convinced us to load the Deltas into a dented 1949 Cadillac hearse and head west to spend the summer of '63 getting rich and famous in California.

Six weeks later we were down to our last can of refried beans and the Delano "Battle of the Bands" trophy. Not only did the real live Ventures seem to show up at every auditorium within twenty miles, when they didn't, the real Dick Dale would be there with his pack of electric beach boys and enough wattage to blow eardrums from Balboa to Costa Mesa. The surfers stomped and sneered at the first surf band from Boston. We changed our name to *Midas and the Mufflers* but it didn't help. It finally came to an abrupt end when Steve the bass player left to become a house painter and our Mexican drummer ate all the beans. By then nobody else could stand them anyway. Our bitchin' hodad with the ReaLemon™ hair slunk back to Palm Desert and proceeded to invent Brian Wilson meditation. He just stayed in his room the rest of the summer.

But for me, destiny was about to strike. Through a chance meeting with Sidewinder and Barbie Doll inventor Jack Ryan at a Bel Air party, I got a job milling F-86 parts in a Compton machine shop. After a few weeks, I had a better idea. Since I'd nearly invented the guitar reverb, maybe I could finish out the summer working in the Fender repair department. The company was in Fullerton, right down the Santa Ana freeway. I'd dropped in once for a replacement speaker and I sure knew the guts of their amplifiers. That afternoon I drove over in my wheezing hearse. I explained my plight, as well as my time plan to the only man who seemed in charge, a lanky fellow named George Fullerton. He had me fill out an employment form and hired me on the spot. The next morning I was to show up at eight thirty, a bona fide member of the Fender family. I didn't sleep a wink that night. I was much too excited.

The Fender Electric Instrument Company, in 1963, consisted of a small office area and nine huge beige-pink cement block factory buildings in a row along the rail line with large garage doors at each end. A chain link fence surrounded the entire layout. To the lines of workers who trudged through the gates that morning it was chain link but to me they were the gates of Valhalla. I was finally entering the Holy of Holies where the great craftsmen and engineers labored to design and perfect and create those magnificent instruments. I was so awed I didn't mind learning that I wasn't going to be working in the reverb repair department. I was the new assistant to the plant maintenance supervisor.

Thirty-five years and many Fenders later, I still remember with gripping clarity that day when to my utter dismay I was initiated into the Makers of the Real Stratocasters. Trailing Tony Palumbi through the plant, I was reduced to old age in eight hours as the genius of Leo Fender was, step by step, revealed before my unbelieving eyes.

First, three thick maple boards were glued together with long clamps. A Strat made from a single piece could split. Four Stratocaster outlines were then stenciled onto the blocks, and they were passed to an 85-year-old granddad operating a band saw. It was the same guy in the shop photo in my first Fender catalog. He was still there. After slicing out the general shapes, he hauled the stacked blanks like a pile of flat Strato-cookies to the next building. Now, I knew, I would learn the secrets. I was expecting to find a set of cubicles, I suppose, with guitar craftsmen rounding and finishing the maple bodies and fitting the electronics, but Tony flung open the door and delivered me to the inferno.

Everything seemed huge, cavernous, and very loud. I stared, halted and mesmerized as muscled Chicanos with chattering air tools screwed metal patterns right onto the maple blanks and with the delicacy of wholesale butchers slapped them onto one routing table after another. The whining, whirring blades tore into the blanks, chewing up the wood faster than a garbage disposal devours a grapefruit. In less than a minute, everything that wasn't a Stratocaster was chips or sawdust. The burly midwife tossed the newborn body onto a growing pile of identical clones beside him and reached for the next. Craftsmen? This was something out of *Modern Times* only nobody spoke English. People disparage Mexican-made Strats these days. They don't know who made the "classic" ones. Hola!

Stunned into silence, my mind was still racing to come up with any conceivable excuse for the scene I had just witnessed as Tony hustled me over to the electronics building. Here I would find the professionals in the white lab smocks with their circuit analyzers, the sine-wave generators, and all the precision parts to make those amazing sounds. But no. One at a time a middle aged woman in a black dress fitted steel bits chopped from a rod into tabs of black fiberboard. She stuck it onto a magnetizer, buzzed it into life, and clamping it to a winder, simply

twirled magnet wire onto it like spaghetti on a fork. Snapping on a white plastic cap, she completed another unique Stratocaster pickup. She tossed it into a basket with a dozen others like a pile of wired oysters.

My last hope was the fret boards. Surely, the fret boards. Here must be the real experts measuring the rosewood fingerboards with their guitar micrometers, slicing the grooves with diamond saws. Here they must be fitting the shiny frets with their special clamps and fret hammers with the care and patience of Zen monks. Tony led me through so fast almost missed them. I mean her. Another Latino woman, draped in another black dress, sat on a stool in front of her workbench. To her left was a foot tall tack of fresh rosewood fingerboards. In front of her, in a long rectangular depression, twenty-one tiny whirring saw blades spun dumbly in their slots. The woman turned slowly, grabbing a fingerboard in her muscled hand and jammed it onto the table. Zazz! I could have missed it if I blinked. She passed the slotted slat to a second woman working a foot treadle squashing an endless reel of fret wire into the grooves and cutting them off with a chop.

So that was it, eh? The room began to sway around me. This was no collection of craftsmen. This was a six-building guitar machine populated by factory workers, a monstrous clanking automaton gulping wood and sheet metal at one end and excreting a river of shiny instruments at the other. My glorious guitar, my beautiful, shiny, fire-spitting, spit-polished Stratocaster hit the earth with a thud like any other hunk of routed out board. I trudged slowly back to the forklift, marveling at the sort of mind that could make guitar making so totally mindless. At the moment, I was contemplating dumping him trussed onto one of his own routing tables and fretting his forearm for all my broken dreams. But it was too late. I was not only in on it; I was one of them.

As time passed, however, I grudgingly learned to admire the man behind instruments-by-the-ton. The Fender factory was a miracle of self-contained efficiencies. Multi-ton punch presses loomed in the cavernous metal shop, stamping out pick guards, bridge covers and name plates. In the wood shop, pine was sawed, fashioned, fitted, glued and covered. Amplifier bodies lined the wall, each awaiting an amplifier chassis

formed and spot-welded next door. In the paint shop, six-foot trees sprouted hundreds of Stratocasters, Jazzmasters, and Telecasters in various stages of sunburst finish.

The activity was constant. The Fender compound was a hive of buzzing, grinding, sanding, and polishing. When lunch break came, though, a silence would descend on the works broken only by quiet conversation among the workers. There was never any music on the factory floor nor, it seemed, anyone who cared about it. The one exception was an unknown worker I had dubbed "The Ghost of Building Four". It was some unseen amateur, I supposed, who could be heard occasionally during the quiet of the lunch hour. It wasn't power chords either. Just syrupy Hawaiian hulas dripping off a Fender pedal steel guitar in the dark recesses of the forbidden research and development building.

The R&D building was by far the most interesting place in the entire complex. It was Leo's lair, a top secret, limited entry sort of place that I could only get into with the most elaborate subterfuges. Anything that had tried and failed was there, as well as anything made by anybody else in various stages of guitar vivisection. Here was a guitar pickup mounted on a 2x4, on the bench a Gibson Les Paul was trailing its guts onto the floor.

Not only was Fender keeping his own engineers busy, he must have had some sort of kidnap squad of guitar harpies always on the lookout for a competing brand to post-mortem in building four. Off to one side was the original Showman amplifier, a huge array of a hundred ten inch speakers on wheels, higher than I could reach. By the time I'd replaced all the flourescents a dozen times they caught on and I was banished to eat my lunch with the workshop droids.

Rock 'n roll was claiming its father, as much as Fender disliked what his folksy country- western guitars had become. Clarence Leo Fender was never into rock. He was a self-taught radio tinkerer and he hated it. It blew out speakers and made a lot of noise and it wasn't until Dick Dale began to buy his replacements by the six pack that Leo came out with the Dual Showman with double fifteen inch J.B. Lansings that could hurt you before they died. With megawatts of these monster amps, Dick Dale

loaded his surf band on a bus and headed East to become the next teen idol. Unfortunately, he encountered the Beatles heading West at about Kansas City, and nobody ever heard of him or his surf guitar for twenty-five years when Quentin Tarantino resurrected him in *Pulp Fiction*. He went back on the road at 57 and I met him in Boston. He has a copy of this. He loved it. He still blasts speakers into confetti but the current Fender company subsidizes him now.

As an audio purist I was scandalized to learn that it was Leo who switched from the pricey Jensens to the cheaper Oxfords for most other models. Now that old Fender guitars are selling for more than original impressionists, I should probably lift the veil. The "Pre-CBS" Fenders made directly under Leo Fender were always made as inexpensively as possible so long as quality didn't suffer. The entire output was sold at a big markup to Fender Sales, which he owned, which marked them up again and sold them to music stores. Since he used nothing but raw materials and semi-skilled labor, it resulted in a phenomenally profitable business. It wasn't his name that CBS bought for \$13 million in the early sixties. The most famous Fender artists, from Hendrix to The Who, Bruce Springsteen to Eric Clapton, didn't exist yet and their Stratocasters hadn't been made. It was the total efficiency of the operation that was the real music, and it made a jingly sound all the way to the bank.

I sat down one day and figured it out. My Stratocaster had used up so much beech, so much plastic, so much time on the punch presses and so many hours from band saw to sunburst. It was being made at a parts and labor cost of about \$35.00. In parts and hours, a \$395.00 1963 Stratocaster cost less to make than my first junk guitar had cost to buy. Fender was an intuitive business genius. He had extracted both heart and soul from the manufacture of instruments and turned a luthier's atelier into a cost accountant's paradise. His greatest instrument was not the Stratocaster, but the amazing factory that made one perfect Stratocaster, Telecaster, and Fender Bass after another.

Each *was* a perfect Fender. Fender was nuts about that. Everything had to be perfect. The shiny new guitar bodies, glistening in Dupont Duco auto lacquers, could not have the slightest flaw. Should the smallest imperfection be found, the body was yanked and sawed into four pieces

so nobody could raid the Fullerton dump and expect to get lucky. Nobody ever got their hands on less than the best they could make. When thirty-five dollars worth of wood and steel turns into four hundred just by cutting, bolting, sanding, painting, and polishing there's every reason to keep the breed pure and the magic intact.

Wastage was also avoided. We painted the guitar drying "trees" with aluminum paint made from aluminum powder and shellac. Across the street was a huge warehouse full of obsolete parts and old amplifier cabinets stacked to ceiling as if Fender couldn't bear to throw anything away if it were made right. I was delighted to discover the last hoard of nameplates from the discontinued "*Fender Harvard*" amplifier. They were promptly liberated and ended up all over Harvard College the next year. Occasionally I would see him walking about, a short stocky figure resembling an avocado with a small mustache. I never spoke to him directly. He was Leo Fender, and I was on the maintenance crew.

On my last day of work I was munching on a sausage sandwich when the noonday silence was again gently broken by the strains of honey-dipped pedal guitar schmaltz wafting gently from building four. Fearless now, with nothing to lose, I slipped through the door and tiptoed down the center aisle. I made out two figures, both with their backs to me. One was seated at a Fender pedal steel guitar, a top of the line model, pulling wavering melodies from the strings. The other stood at his side, nodding and tapping appreciatively. Together they were like two school kids enjoying something very personal away where Leo wouldn't catch them. Actual music! I was less than a dozen feet away when the secret musicians turned and discovered they had an audience. Only it was me on center stage. The one playing the guitar was head engineer Freddie Tavares and his delighted audience of one was Leo himself.

I nodded quickly and beat a hasty retreat, but somehow, suddenly, everything was all right. No wonder the man was the master of the machines that made the guitars. He wasn't a tough nut at all. He was a total softy with a heart stuck in small-town country music. Left alone, he was a just happy geek, a typical electrical engineer off in his own world with his buddy in a tinkerer's playhouse having some fun. I waved from

the door.

Go Leo!

With no band to hold me back, the return to Boston was quick and vacant. Where six eager rock 'n rollers had traveled westward, I returned alone with my clothes, my battered Twin Amp and my dear old Stratocaster. Bands and Beatles came and went, I kept current and kept the faith. I graduated in 1966, and went in North Carolina on a writing fellowship, studied with Emmylou Harris before she met Gram Parsons, and then headed to Harvard Business School. It was five years after Fender and Fullerton, in the summer of '68 in the midst of a screaming crowd of Kansas City rock fans, I watched Peter Townshend in his pre-*Tommy* go-for-broke days demolish his Stratocaster for the finale.

Or, I should say, I watched Peter Townshend try very hard to demolish his Stratocaster.

He took it off its strap and threw it to the floor.

It bounced.

He snatched it up again and pounded it by the neck on the stage like a sledgehammer.

It knocked a hole in the stage.

Now Townshend was beginning to lose it. He'd studied off Link Wray, and you could put your fist through a Danelectro if you were drunk enough. This was a tough one. Seizing it in both hands, he threw it against the amplifier stack.

It ripped a hole in the grill cloth, did a half-flip and bounced off the stage again. In growing frustration Townshend grabbed it by the neck again and brought it down on the footlights. The footlights smashed and bent in a shower of sparks and glass.

Wrapping his fists around the neck, he threw it at the stage, but it

ricocheted off the mike stand and skittered across stage left. Groping after the still yelping instrument, he grabbed it by the cutaways and bashed it, bottom first, onto the floor until he got granddad's glue joint to split. With a cry of victory, he sailed the armload of wood, wires, strings, and glue out over the audience and collapsed.

I watched with a quiet smile. It takes a genius to split a Strat. He shouldn't have tried. Once you've helped make a couple of them, you don't worship them anymore but you have a healthy respect for them. Strats you can count on. You can bat balls or shoot pucks with them and they'll stay in tune. You can dig a well with them, dry them out, and they'll sound fine. You can even chop them up for firewood if things get rough and replace anything you sacrificed when you get back to town. It's still the only one of its kind.

The man who put all the tuning keys on one side of the famous Fender neck might have had a heart of mush under that engineer's exterior, but he made one helluva instrument. You can take Frank Perdue and all his chickens. I think I prefer Leo Fender. It takes a tender soul to make a tough guitar.

Clarence Leo Fender died at the age of 82 in 1991. He still detested rock. Freddy Tavares' pedal steel vamp that starts the unforgettable "Looney Tunes" theme is probably the most recognized unrecognized three seconds in musical history. George Fullerton, the last of the crew who designed the Stratocaster, is still alive and well in Fullerton California. Dick Dale is still rocking away on his Strat. So am I.

Stratocaster

Jimi's lady, Peter's girl,
A Strat to howl, a Strat to whirl,
Holly, Valens, Springsteen too,
There's a Strat made just for you
Hold her tight, this ain't no jive,
Cause when you're cookin' she's alive!
Slide guitar, be Bonnie Raitt,
Flail like Green Day in a state,
Power chords are lots of fun,
Funky, chunky, Walk don't Run
Good for Country-Western licks,
Knopfler uses finger picks!
Made from boards and paint and cable,
Birthed upon a routing table,
Gleaming, steaming, always right,
Stratocasters own the night!

Demon child, of a tender
Engineer named Leo Fender