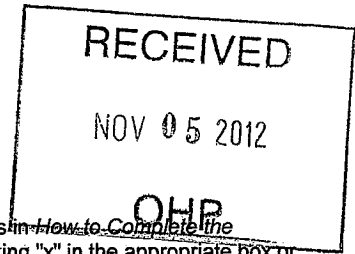


**United States Department of the Interior
National Park Service**

**National Register of Historic Places
Registration Form**



This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in How to Complete the National Register of Historic Places Registration Form (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box or by entering the information requested. If any item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900a). Use a typewriter, word processor, or computer, to complete all items.

1. Name of Property



historic name **Fender's Radio Service**

other names/site number **Leo Fender's Radio Service; K&F Manufacturing Company; Fender Manufacturing Company; Fender Electric Instrument Company**

2. Location

street & number **107 South Harbor Boulevard** N/A not for publication

city or town **Fullerton** N/A vicinity

state **California** code **CA** county **Orange** code **059** zip code **92832**

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1986, as amended, I hereby certify that this nomination request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property meets does not meet the National Register Criteria. I recommend that this property be considered significant nationally statewide locally. (See continuation sheet for additional comments.)

Signature of certifying official/Title Date

California Office of Historic Preservation
State or Federal agency and bureau

In my opinion, the property meets does not meet the National Register criteria. (See continuation sheet for additional comments.)

Signature of commenting or other official Date

State or Federal agency and bureau

4. National Park Service Certification

I hereby certify that this property is:

<input type="checkbox"/> entered in the National Register <input type="checkbox"/> See continuation sheet.	_____ Signature of the Keeper	_____ Date of Action
<input type="checkbox"/> determined eligible for the National Register <input type="checkbox"/> See continuation sheet.	_____	_____
<input type="checkbox"/> determined not eligible for the National Register	_____	_____
<input type="checkbox"/> removed from the National Register	_____	_____
<input type="checkbox"/> other (explain): _____	_____	_____

5. Classification

Ownership of Property
(Check as many boxes as apply)

- private
- public-local
- public-State
- public-Federal

Category of Property
(Check only one box)

- building(s)
- district
- site
- structure
- object

Number of Resources within Property
(Do not include previously listed resources in the count.)

Contributing	Noncontributing	
1	0	buildings
0	0	sites
0	0	structures
0	0	objects
1	0	Total

Name of related multiple property listing
(Enter "N/A" if property is not part of a multiple property listing.)

N/A

Number of contributing resources previously listed in the National Register

0

6. Function or Use

Historic Functions
(Enter categories from instructions)

Commerce/Trade _____ Specialty Store _____
 Industry _____ Manufacturing Facility _____

Current Functions
(Enter categories from instructions)

Commerce/Trade _____ Business _____

7. Description

Architectural Classification
(Enter categories from instructions)

20th Century Commercial _____

Materials
(Enter categories from instructions)

Foundation concrete _____
 Roof asphalt _____
 walls brick _____

 other plate glass, aluminum, granite and ceramic tile _____

Narrative Description

(Describe the historic and current condition of the property on one or more continuation sheets.)

8. Statement of Significance

Applicable National Register Criteria

(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing)

- A Property is associated with events that have made a significant contribution to the broad patterns of our history.
- B Property is associated with the lives of persons significant in our past.
- C Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- D Property has yielded, or is likely to yield information important in prehistory or history.

Criteria Considerations

(Mark "X" in all the boxes that apply.)

Property is:

- A owned by a religious institution or used for religious purposes.
- B removed from its original location.
- C a birthplace or a grave.
- D a cemetery.
- E a reconstructed building, object, or structure.
- F a commemorative property.
- G less than 50 years of age or achieved significance within the past 50 years.

Narrative Statement of Significance

(Explain the significance of the property on one or more continuation sheets.)

9. Major Bibliographical References

(Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets.)

Previous documentation on file (NPS):

- preliminary determination of individual listing (36 CFR 67) has been requested.
- previously listed in the National Register
- previously determined eligible by the National Register
- designated a National Historic Landmark
- recorded by Historic American Buildings Survey # _____
- recorded by Historic American Engineering Record # _____

Areas of Significance

(Enter categories from instructions)

Performing Arts _____

Entertainment/Recreation _____

Period of Significance

1944-1951

Significant Dates

Significant Person

(Complete if Criterion B is marked above)

Fender, Clarence Leonidas (Leo)

Cultural Affiliation

NA

Architect/Builder

Unknown

Primary Location of Additional Data

- State Historic Preservation Office
- Other State agency
- Federal agency
- Local government
- University
- Other

Name of repository:

Anaheim and Fullerton Public Libraries; Fullerton Museum Center

10. Geographical Data

Acreage of Property .05 acres

UTM References

(Place additional UTM references on a continuation sheet)

	Zone	Easting	Northing	Zone	Easting	Northing
1	—	_____	_____	3	—	_____
2	—	_____	_____	4	—	_____

See continuation sheet.

Verbal Boundary Description

(Describe the boundaries of the property on a continuation sheet.)

Boundary Justification

(Explain why the boundaries were selected on a continuation sheet.)

11. Form Prepared By

name/title Debora Richey drichey@fullerton.edu
organization Fullerton Heritage date October 30, 2012
street & number 1233 Luanne Avenue telephone (714) 525-6411(H); (657) 278-3094 (O)
city or town Fullerton state CA zip code 92831

Additional Documentation

Submit the following items with the completed form:

Continuation Sheets

Maps

- A **USGS map** (7.5 or 15 minute series) indicating the property's location.
- A **Sketch map** for historic districts and properties having large acreage or numerous resources.

Photographs

Representative **black and white photographs** of the property.

Additional items

(Check with the SHPO or FPO for any additional items)

Property Owner

(Complete this item at the request of the SHPO or FPO.)

Name Steve Ellingson
street & number 119 West Santa Fe Avenue telephone (714) 773-1923
city or town Fullerton state CA zip code 92832

Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C. 470 *et seq.*).

Estimated Burden Statement: Public reporting burden for this form is estimated to average 18.1 hours per response including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Chief, Administrative Services Division, National Park Service, P.O. Box 37127, Washington, DC 20013-7127; and the Office of Management and Budget, Paperwork Reductions Project (1024-0018), Washington, DC 20503.

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section number 7_ Page 1 __

NARRATIVE DESCRIPTION

Summary

Constructed circa 1911, the building is a modest single-story brick structure with stucco exterior. Sandwiched between two other commercial establishments, the building's exterior matches other simple business facades that dot Fullerton's historic downtown core. The building, which has had multiple tenants, served as the location for Fender's Radio Service and his variously named early manufacturing companies from 1944 to 1951, the period of significance. Clarence "Leo" Fender used the front of the store as retail space, selling phonograph records, sheet music, songbooks, radios, television sets, and musical instruments, and the rear for the development and manufacture of his first guitars and amplifiers. Currently, the building serves as office space for Ellingson, Inc., a company that produces parts for the aerospace industry. The exterior features a recessed entryway, large storefront plate glass display windows, and a wainscot with 12-inch square black tiles. The building's flat asphalt roof is hidden by a low, stepped, parapet with coping. The interior is simple, but functional, and Fender's original interior layout remains intact, including the four separate workrooms he added for various manufacturing tasks. Changes were made to the building in 2007, but the owner's intent was to maintain the general composition of the interior and exterior that defines the building's character. The building retains much of its historic integrity of location, setting, materials, workmanship, feeling, and association. Overall, the building is in excellent condition. Fender had businesses in eight separate locations in Fullerton, and the Harbor Boulevard store, while modest, marked the only time he worked in a building with defined architectural features. As a general rule, he preferred stark, windowless, factory-like structures that were only utilitarian in nature.

On October 19, 2010, the Fullerton City Council designated the building a Local Historic Landmark for its historic association with Clarence Leo Fender.

Setting/Parking

Fender's Radio Service is located at 107 South Harbor (formerly Spadra) Boulevard in the original central core of the city laid out by town founders George Henry (1855-1942) and Edward Russell Amerige (1857-1915) in 1887. The building is situated on the same spot where the Amerige Brothers located the town's first commercial building, the Amerige Brothers Realty Office, used to sell the first lots in Fullerton and to provide notary public and insurance services.² The small commercial building is located at the southwest corner of Commonwealth Avenue and Harbor Boulevard, main thoroughfares running through Fullerton. Commercial, residential, and institutional structures of both historical and cultural significance built between 1899 and 1930 surround the building, including the Masonic Temple (201 North Harbor Blvd.), the Odd Fellows Hall (114 East Commonwealth), the Dean Block (111-113 North Harbor Blvd.), Fullerton's oldest surviving commercial block, and the historic train station and depots. A public alley, lined with commercial establishments, runs along the west (rear) side of the building. A small parking area of 33 spaces (three reserved for Ellingson, Inc.), accessible from Commonwealth and Santa Fe Avenues, is situated at the rear of the property. During the period of significance, angled parking was available on Harbor Boulevard in front of the store, but that is no longer allowed due to increased traffic, but adjacent street parking is allowed.

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Section number 7_ Page 2 __

Description of Present and Historic Physical Appearance

Situated on a 25- by 130-foot lot, the building is a rectangular-shaped single-story (2,250 square foot) commercial structure constructed circa 1911. Of brick construction, the building's smooth exterior stucco is painted light grey. At the time of construction, there was a brickyard on Commonwealth Avenue, and the bricks for the building most likely came from that location. Seismically retrofitted in 1992, the building faces east, currently serving as office space for Ellingson, Inc., a company that produces housing and bodies for flight control actuators, filtration manifolds, and air/fuel receptacles. The manufacturing unit of Ellingson, Inc. is located nearby at 119 West Santa Fe Avenue. During the mid-1940s and early 1950s, company founder Thomas C. Ellingson developed prototypes for Leo Fender's first manufacturing companies.³

Public access to the building is through two black glass and aluminum double doors. The recessed entryway doors are flanked by two large black aluminum and glass shop windows. Two rows of 12-inch square black granite tiles run along the base of the display windows. The tiles match similarly styled ones in the historic downtown area. A ten-light transom runs above the display windows and entry doors. The building's flat asphalt roof is hidden by a low, stepped parapet with coping. "Ellingson, Inc. Est. 1946" is painted on the parapet. A concrete public sidewalk runs in front of the building.

The rear of the building is nondescript and is mostly screened by a slump block patio wall that has been adorned with a ceramic tile mural. The rear wall of the patio contains a 6- by 19-foot mural ("Red Strat") depicting a red Stratocaster guitar, with the hand of a musician, on a black and white checkered background. Created by Katherine England, the mural was installed in 2008 as a public art project.⁴ Entrance into the rear of the building is through a single metal door. A 5½-foot-wide chain link fence is used to block off the rear entrance. "Ellingson, Inc." is painted on the wall above the rear entrance.

The interior is simple, but functional. The front part of the building is used for office and meeting space; the rear section for storage, restrooms, and small activities. The two sections are divided by a wall, with a single wooden door providing access to each side. Effort has been made to make the front of the building attractive to visitors, while the back section remains plain and untouched by cosmetic changes. The front office space consists of a small reception area near the entrance, and small sections for meetings and desk space. The north and south walls are of exposed brick. The concrete floor is covered in different sections by carpet and hardwood flooring. Three sets of fluorescent strip lights, mostly likely added in the 1950s, run across the ceiling. The rear section of the building contains four small workrooms, each with a separate wooden door, and two restrooms (male and female) along the south side. Each of the original workroom doors contains a glass window and nickel hardware. The walls are painted white. The concrete floor is painted light grey; the restroom floors are covered with slate flooring. This back portion of the building is lit by three fluorescent lights, original to the period of significance.

Alterations/Fender Buildings

The building today does not reflect the original 1911 design. Originally, the south 100 block of Harbor Boulevard featured plain brick or wooden storefronts representative of early twentieth-century commercial architecture. Starting in the 1930s, the downtown area business facades were gradually replaced with large plate glass display windows, thought to be more modern in appearance. The exterior and interior of the building were renovated in 2007 by the current owner, but the owner's intent was to maintain the basic composition that defines the building's retail character. In 1945, Fender added a metal shed at the rear of the building for additional manufacturing space, but the tin unit was removed in the 1970s. Fender's original interior layout remains intact, including the four separate workrooms added for various manufacturing tasks. When the plaster on the front interior south and north walls needed replacement in 2007, the decision was made to retain the exposed brick. The concrete floor in the front section has been covered by hardwood and carpet flooring. Overall, the building is in excellent condition.

Fender's Radio Service
Name of Property

Orange County, CA
County and State

NPS Form 10-900-a
(8-86)

OMB Approval No. 1024-0018

United States Department of the Interior
National Park Service

National Register of Historic Places

Continuation Sheet

Section number 7_ Page 3 __

Over the decades, Leo Fender had businesses at eight different locations in Fullerton, and despite its modest appearance, the store at 107 South Harbor Boulevard is the only one with a defined architectural style and features. Because Fender needed the retail income to fund his new manufacturing venture, he remodeled the front part of the radio store to make it more attractive to customers. Fender, however, cared little about the appearance of his businesses, preferring cheap, stark, factory-like structures, which frequently were windowless. Many would be illegal by today's standards. He would often lease buildings and preferred to purchase prefabricated metal buildings which he would quickly assemble on his properties. When the Columbia Broadcasting Company (CBS) purchased the Fender business in 1965, the Company's first move was to construct a \$1.3 million, 20,000 square foot corporate headquarters and a 178,000 square foot factory (1300 Valencia Blvd., razed) more befitting of a multinational business.⁵

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Section number 8_ Page 1 ___

STATEMENT OF SIGNIFICANCE

Summary

Fender's Radio Service is being nominated to the National Register of Historic Places under Criteria A and B for its local and national significance in the areas of performing arts and entertainment/recreation. Under Criterion B, the radio store is closely associated with guitar legend Clarence Leo Fender, and under Criterion A, it is associated with the revolutionary basses, guitars, and amplifiers that he designed and manufactured. Aside from President Richard M. Nixon, no other individual from Orange County, California, has had so profound an effect on the world as Fender.⁶ While there has always been disagreement over who invented the first solid-body guitar, there has never been any question that it was Fender, with his designs for affordable, easily mass-produced guitars, who facilitated the transition in popular music from big bands to small, guitar-driven groups. The instruments that he invented dominated and shaped popular music of the latter half of the twentieth century, music that was often at the forefront of social and political change, and more recently, has gone on to revolutionize the sound of African style and other world music. His amplifiers set the gold standard for reliability against which all amps are judged to this day. From the humble beginning at this radio store in downtown Fullerton in the mid-1940s, Fender was able to become one of the most radical guitar makers of the 1950s and 1960s. He shook up an industry with his boldly styled amplifiers and instruments that changed the way in which guitars were produced and marketed, subsequently altering the way the world heard, played, and composed music. It was at this location that Fender designed his first solid-body electric guitars, and started the laboratory, manufacturing, and marketing processes and strategies that would serve him throughout the rest of his career. This early work done by Fender forged a new path for the inventor, and his innovations during this pioneering period—ridiculed by industry insiders—improved the range, durability, and affordability of amplifiers and guitars forever, while also allowing his company in the 1960s to set the standard for quality in the industry. Beginning in 1945, Fender started proudly putting "Fullerton, California" on every product produced by his then small manufacturing company, and that decision put the still small town of Fullerton on the map. Guitar aficionados still come to Fullerton looking for Fender's guitar business.

Historical Background of 107 South Harbor Boulevard

The small commercial building at 107 South Harbor Boulevard was constructed circa 1911 by newspaper owner/editor Edgar Johnson (1868-1935), who had come to Orange County with his parents in 1886. Before settling in Fullerton, Johnson had learned to set type at the *Santa Ana Standard*, worked as a reporter in Santa Ana and Los Angeles, and then opened a print shop in Santa Ana. In 1890, he started the *Westminster Tribune*, but was persuaded by Edward Amerige and other influential town pioneers to move his newspaper to the fledgling Fullerton townsite. Enticed by the promise of 300 paid subscribers at \$1.50 a year, Johnson moved to Fullerton to start what would become the *Fullerton News Tribune*, Fullerton's first and longest running newspaper.⁷ Johnson launched his newspaper, which would go through several name changes, in the Chadbourne Building, located at the northwest corner of Spadra (now Harbor) Boulevard and Commonwealth Avenue. By 1911, he needed more space and moved the newspaper to 107 South Harbor Boulevard where it remained until 1931.⁸ At the time of the building's construction in 1911, Fullerton had only been a town for fourteen years, and the building was sandwiched between an eclectic mix of businesses—a grocery store, real estate office, pool parlor, and ice cream shop—all with wood or brick facades.

After the *Fullerton News Tribune* moved to new quarters in 1931, Edgar Johnson hired general contractor Merle Ramsey (1101 West 17th Street, Santa Ana) and spent \$2,500 to remodel the building, adding large storefront display windows to the facade, making it more modern in appearance. Johnson and his family leased out the building to a wide variety of small businesses (or it lay vacant) from 1931 to 1944, when Fender leased the building. Fender actually switched places with the owners of the Kappahn Restaurant (later the Melody Inn), whose owners wanted to expand, leasing Fender's old

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section number 8_ Page 2 ___

repair service building and the adjacent building in 1944 (110-112 South Harbor Boulevard). Fender hired local contractor William A. Wolfe (324 North Balcom) and spent \$3,000 to turn the building into a radio store and factory.⁹ He retained the wall that partitioned the building into two rooms and added four small separate workrooms in the manufacturing section. He situated his workbench just inside the rear door. At the time the business opened in 1945, Fender's Radio Service was sandwiched between a restaurant, sporting goods store, and automobile dealership. In late 1949, Fender sold the business to his longtime friend and employee Dale Hyatt,¹⁰ but Fender continued to develop products, hold meetings, sell instruments and amplifiers, and bootleg newly manufactured products at the store. Hyatt sold the business in 1951, and the building thereafter was variously occupied by a number of businesses and storefront churches (Beneficial Finance, New Life Crusade, Apostolic Church, Freeman's Art and Frame), until it was purchased by the Ellingson Family in the 1970s.

Aside from the *Fullerton News Tribune*, none of the buildings in the 100 block of South Harbor has served as the location of a thriving, long-lived business. Owners changed on a fairly regular basis. The only other significant building in this block appears to be 109 South Harbor, constructed by town founder George Amerige to house a new Piggly Wiggly (1925), the first self-service grocery store in Fullerton.¹¹

CLARENCE LEO FENDER CONTEXT

Clarence Leonidas (Leo) Fender was born August 10, 1909 in a barn on a farm that his parents, Clarence Monte Fender (1878-1960) and Harriet Wood Fender (1888-1958), owned in an unincorporated area located between Anaheim and Fullerton. The Fenders did not build their first home until the following year. The couple ran a truck farm, growing fruits and vegetables for the wholesale market. Although the property (10361 La Palma Avenue) would eventually become part of Anaheim, Fender always considered Fullerton his hometown.¹² He went to a local grammar school, graduated from Fullerton Union High School in 1928, and attended Fullerton Junior College where he studied bookkeeping and accounting while performing repair services for fellow students' electrical equipment.¹³ He received no formal training in electrical engineering. At the age of eight, he developed a tumor, necessitating the removal of his left eye.¹⁴ As a young child, Fender became intrigued by the emerging world of radios and electronics, and by the age of 13, he had built his first crystal radio sets, listening to shore-to-shore communications and becoming a ham radio operator. He had musical interests, taking piano lessons as a teenager and playing the saxophone in his high school band, but never learned to play or tune a guitar, the instrument that would make him a legend. While his electric guitars would become signatures of rock and roll music, Fender, who was socially and politically conservative, favored country and western tunes, disliking the loud sounds made by his instruments.

Fender, who had passed the California Civil Service Examination, married Esther May Klosky (1914-1979) on August 1, 1934,¹⁵ and the couple moved to San Luis Obispo in 1935, where he sought stable work as an accountant for the California Highway Department, then later was employed by the privately-owned U.S. Tire Company, the only time he lived and worked outside of Orange County. After losing his job in 1938, Fender returned to Fullerton where he would establish businesses at eight different locations throughout the city. He would also live in a variety of residences around Fullerton (309 North Marwood, 120 North Harvard, 321 East Amerige, 221 North Lincoln, 2212 East Revere Drive).¹⁶

Using his Ford Model A as collateral, Fender opened his first business, a radio repair service, in 1938, renting shared space at the Golden Eagle Service Station located on the northwest corner of Spadra (now Harbor) Boulevard and Santa Fe Avenue in downtown Fullerton. Initially, he went house to house looking for work, but after building a reputation for reliable, quality workmanship, his business soon picked up, and he moved a few doors away in 1940 to 112 South Harbor Boulevard, where he installed car radios and designed, repaired, and rebuilt radios, record changers, and public address systems.¹⁷ He built three public address systems which he rented out to dance bands, orchestras, political rallies, fashion

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section number 8_ Page 3__

shows, baseball games, and other social events, including the opening of Fullerton's new City Hall (1941) and the annual Easter Sunrise Services held in Hillcrest Park (1200 North Harbor Boulevard).¹⁸ To make extra income, he would also drive around town in a specially equipped truck with large speakers mounted on the top, using his mobile PA systems to announce store openings, major events, and exhort citizens to vote for local candidates in upcoming elections.¹⁹ He slowly gained a reputation for repairing guitars and amplifiers for professional musicians. During this period, he met Clayton Orr "Doc" Kauffman (1901-1990), a musician/inventor who owned a small music shop and had worked in the 1930s with Adolf Rickenbacker and George B. Beauchamp, principals in the formation of the Electro String Instrument Corporation, builders of the Rickenbacker (later "Rickenbacker") instruments and amplifiers.²⁰ Kauffman would be the first of a series of longtime employees or collaborators with whom Fender would work closely over his lifetime, although Fender always had the final say on any project. Fender and Kauffman experimented with magnetic pickups and built and patented one crude solid-body guitar (Patent 2,455,575), designed as a test guitar for a new pickup, that was rented out to local musicians.²¹ Before anything could develop, however, World War II started, Kauffman began work with the Douglas Aircraft plant in Long Beach, and there was a continuous shortage of materials due to wartime restrictions. World War II effectively halted all musical instrument research and development.

By the end of World War II, civilian manufacturing was again encouraged, and Fender began to plan for the production of a new line of guitars made by the K&F (Kauffman and Fender) Manufacturing Corporation. In October 1944, Fender leased 107 South Harbor Boulevard, remodeled the interior, then in 1945, opened Fender's Radio Service, with manufacturing at the rear of the shop. It was these first few years, from 1944 to 1951, that laid the foundation upon which much of his manufacturing company's success was built. At the back of the retail/service outlet on Harbor Boulevard, Fender and Kauffman designed and built their first product line: K&F electric Hawaiian guitars and amplifiers. The K&F guitars and amplifiers were commercially successful, and with government war restrictions on materials lifted, Fender wanted to shift to more manufacturing, but Kauffman did not. The two men had a loose agreement—Kauffman worked for a wage and Fender considered himself the owner—and the two men parted amicably in February 1946, with Fender then forming the Fender Manufacturing Company and producing the first guitars and amplifiers bearing only the Fender name.

After the Hawaiian steel guitars, Fender began work on designing a marketable solid-body guitar, developing the Esquire, the precursor to the Fender Broadcaster, later renamed the Telecaster (Design Patent 164,227), which remains one of the world's most popular guitars, staying in production in one form or another since its inception. The Telecaster's design was "so fully realized that it remains virtually unchanged" more than six decades later.²² While the question of who designed the first solid-body guitar is still being debated, Fender was unquestionably the first to streamline and successfully design and market such an instrument with the introduction of the Esquire/Broadcaster/Telecaster, and the Telecaster, with its unique twang, became a mainstay of country, blues, and punk musicians, including James Burton, Albert Lee, Muddy Waters, Roy Buchanan, Mike Bloomfield, and Joe Strummer. Although the guitar went on to play an important part in the evolution of country, electric blues, funk, rock and roll, and other forms of popular music,²³ it initially caused music industry insiders to think that Fender was slightly unhinged. One music store owner scoffed at Dale Hyatt's attempt to sell Telecasters, asking "Where's the boat you're going to row with that thing?"²⁴

In 1951, Fender introduced another innovation, the electric bass guitar, considered by many to be the most important and revolutionary contribution to music ever made by Fender. The Precision Bass, which used the same body shape of the Telecaster, "started the entire bass industry."²⁵ Until the invention of the Precision Bass (Design Patent 169,062), the bass was an upright acoustic instrument that was difficult to hear and cumbersome to transport. Fender's new electric bass allowed "musicians to hold their own instruments like a guitar, opening the bass world to curious guitar players, and allowing bass players a level of freedom they had not yet encountered."²⁶ The portability of the new bass, which embodied a new class of musical instrument, changed the way rhythm sections worked and altered the sound and contours of

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Section number 8_ Page 4__

popular music. It gave bass players a new, assertive identity in jazz and rock and roll, providing them with a more prominent role in the music and use of different bass patterns. It remains the most widely used electric bass in the world, played by a number of notable musicians, including Wes Montgomery, John Paul Jones, James Jamerson, Bill Wyman, Bill Black, Jack Casady, Jack Bruce, Rick Danko, Roger Waters, Adam Clayton, John Cale, John Entwistle, Dee Dee Ramone, Sid Vicious, and Jaco Pastorius.²⁷ Because the Precision Bass was so revolutionary, Fender had to struggle to get across the idea that his strange new instrument was actually a useful musical tool.

In 1954, the Precision Bass was followed by Fender's masterpiece, the sleekly contoured Stratocaster, rock and roll's most acclaimed instrument, and "the most influential solid-body guitar ever made."²⁸ The fusion of electronics, ergonomics, and technology made the Stratocaster the "most popular, the most copied, and the most desired" electric guitar ever.²⁹ With its unique three pickup design, revolutionary vibrato bridge, bar and bridge, allowing guitarists to bend strings with the right hand without knocking the instrument out of tune, it revolutionized the guitar industry. It was the "first guitar body designed with both the player's comfort and playing ease in mind" and allowed guitarists to step out of the background and become a lead instrument.³⁰ Like the Telecaster and Precision Bass, the Stratocaster had a unique sound unattainable from other instruments, and it was adopted as the guitar of choice by music legends Buddy Guy, Stevie Ray Vaughn, Dick Dale, Jeff Beck, Eddie Van Halen, Ry Cooder, George Harrison, Bonnie Raitt, Richie Valens, Eric Clapton, Carl Perkins, Dave Gilmour, Mark Knopfler, Jimi Hendrix, and Buddy Holly, the first major figure to be seen playing a Stratocaster.³¹ Like the Telecaster, the Stratocaster's name was designed to reflect a new post-war electronic "Jet Age."

Although often overshadowed by Fender's electric guitars and basses, his amplifiers were equally innovative, and it was his early amplifiers that actually led to his interest in electric guitars. Local musicians began bringing their amplifiers to him to repair, and, not pleased with what he saw, Fender began to build his own. At the time that the K&F line was designed and produced in 1944/45, guitars were built and sold with a matching amplifier and considered one item. After Kauffman left the business, Fender quickly began experimenting with his own amplifiers, trying out various sizes and materials (wood, tweed, linen, leather), changing the control panel arrangement, and was one of the first to employ a top-mounted chassis and control panel that allowed musicians to easily adjust their amplifiers while performing. His early amplifiers sold well, setting standards that are still followed by the industry, and he also developed piggy-back amps, the forerunner of the stacks.³² Fender's new electric guitars needed amplification to match, and he gradually developed a formidable amplifier line that was eventually considered the best in the industry. New models during this early period (1945-1951) included the Deluxe Model 26, Deluxe TV front, and the Dual Professional V-front, which came in various sizes.³³ Like his guitars, the amplifiers became cultural icons, and the styles that Fender developed in the 1940s and 1950s are still being used, "a tribute to their original design."³⁴

The success of these amplifiers and solid-body guitars—Telecaster, Precision Bass, Stratocaster—would later fuel the rapid growth of Fender's company, but initially he received great resistance from the music industry, finding it difficult to market and sell his revolutionary instruments. At the time, guitar makers and musicians did not understand or appreciate the potential for electric guitars, which were still in their infancy, and the appearance of Fender's guitars presented a fundamentally radical approach to established brands. Unique in every way, the design and sound of Fender's instruments were so completely different from anything produced before that many in the industry had difficulty accepting them as anything other than novelties. Fender's instruments are so well-known today that it is often forgotten that before him there were no fiesta red guitars, gold-plated hardware, or white plastic knobs. Fender was aware that music store owners and executives of other instrument companies were laughing at him, but he persisted despite severe economic difficulties.³⁵

**United States Department of the Interior
National Park Service****National Register of Historic Places
Continuation Sheet**

Section number 8_ Page 5__

Space and zoning restrictions prohibited the full production of guitars and amplifiers at the Harbor Boulevard shop, and in late 1946, Fender erected two sheet metal buildings at the northeast corner of Pomona and Santa Fe Avenues (120 South Pomona, razed) to manufacture new product lines. Fender continued to work at the back of the Harbor Boulevard store, developing and improving his instruments, but also began to move between the Harbor Boulevard shop to the makeshift manufacturing facility, which initially employed only a handful of workers in unsafe conditions.³⁶ In May 1950, a new brick building for expanded production was constructed in front of the original metal buildings on Pomona Avenue. The first "Fender Fine Line Electric Instruments" were manufactured at the new factory, but production was sporadic, and it wasn't until 1951/1952 that there was sufficient demand to keep the business open full-time.

In 1953, Fender purchased three-and-half acres, the site of a former orange ranch, at the junction of South Raymond Avenue and Valencia Drive in east Fullerton.³⁷ The Raymond location (500 South Raymond Avenue) was the start of Fender's company becoming a large, professional organization, as the messy and noisy process involved in guitar and amplifier manufacturing was transferred in March 1953 from the old sheet metal buildings to this new location. Concerned the business would still not be a success, Fender started with three temporary factory buildings and a small staff, but the company continued to grow, and the manufacturing facility eventually employed over 600 employees in 27 buildings. At the time of the move in 1953, the company was manufacturing two electric guitars, the Telecaster and Esquire, seven amplifiers (Bandmaster, Bassman, Champ, Deluxe, Princeton, Super, and Twin Amp), five electric steel guitars (Custom, Deluxe, Dual, Stringmaster, and the Student), and the Precision Bass. Helped by the rise of rock and roll, the Fender guitars, with their versatile sound, ease of playing, and reasonable cost, quickly became the instrument of choice for a broad spectrum of artists, and the Fender company became the largest and fastest growing musical instruments company in the world.³⁸ Endlessly innovative in this period, Fender continued to improve the guitars he invented in the 1940s and early 1950s, added new guitar models (Jazzmaster, Jaguar, Mustang, etc.), electrified more instruments, including the mandolin, piano,³⁹ violin, and pedal steel guitar, and even introduced an acoustic line.⁴⁰

In January 1965, Fender, who was ill with strep throat and increasingly overwhelmed by the day-to-day operation of the factory, sold his company to the Columbia Broadcasting System (CBS), and it became the Fender Musical Instruments Division of the Columbia Records Distribution Corporation.⁴¹ CBS paid \$13 million for the Fender company, the same amount it had paid for the New York Yankees a few months before, making it the largest cash transaction for any manufacturer in music industry history at the time.⁴² The sale made Fender one of the first people to get rich on rock and roll. Fender was given a five-year consulting contract (\$250,000 a year) with CBS, and he moved his office and laboratory several blocks away to East Raymond Way in Anaheim, where he found his ideas and concepts largely ignored by the new owners.⁴³ CBS poured millions of dollars more into the Fender Musical Instrument Division, building a new 20,000 square foot office and 187,000 square foot factory adjacent to the Raymond facility (1300 Valencia Drive), but the product quality declined in the 1970s. The amplifiers, in particular, suffered a severe decline in quality, and by the 1970s, the leadership that Fender had held in the market was lost.⁴⁴ CBS management cut back on the existing Fender product line, even proposing at one point to discontinue the Telecaster, and offered few new models. The original team of members who had built up the Fender business—Dale Hyatt, Donald Randall (1917-2008), George Fullerton (1923-1990), Forrest White (1920-1994), etc.—grew disenchanting, and one by one left the new organization. Many of the engineering and design people were replaced, and long-term employees found their simple but efficient procedures under close scrutiny by a horde of system analysts, resulting in confusion and resentment. When Fender's patents ran out, other companies began producing generic Fender-style guitars. CBS eventually sold Fender to a group of investors headed by Fender executive William Schultz in March 1985 for \$12.5 million, and the Fullerton plant was closed.⁴⁵ Today, the Fender Musical Instruments Corporation, which is located in Scottsdale, Arizona, still produces Fender products, with much of the production moved to Mexico. The company had a resurgence, and by 1999, was producing 1,000 guitars a day at its factories in Mexico and Corona, California.⁴⁶ Over time, however, Fender's pre-CBS guitars and amplifiers have become valued by musicians and collectors, and vintage Fender guitars and amplifiers are now highly collectible, with early Telecasters and Stratocasters now fetching premium prices.⁴⁷

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section number 8_ Page 6__

Fender never publicly criticized CBS or admitted there had been a collapse in quality, but when his contract ran out, he quickly disassociated himself from the Company. In 1970, he started over with a new manufacturing company, CLF Research, Inc. (Clarence Leo Fender Research) at 1013 East Elm Street, then moved the company to an 18-acre industrial park he owned east of State College Boulevard on East Fender Avenue (2548 East Fender Avenue, Unit C).⁴⁸ When CBS purchased his company, Fender signed a contract with a ten year non-competitive clause that expired in 1975. To get around the competitive restrictions, Fender designed and built electric guitars and basses for CLF Research, which were then sold and distributed by Music Man, Inc. (2548 East Fender Avenue, Unit B).⁴⁹ His most notable instrument during this period was the StingRay, considered to be the first production bass with active electronics. In 1978, the controlling interest in Music Man offered to buy the factory from CLF Research and operate it, but Fender refused to sell. After a lengthy dispute, Fender dissolved CLF Research and formed G&L (George and Leo) Musical Products and G&L Musical Sales (2548 East Fender Avenue, Unit G) with George Fullerton and Dale Hyatt in 1979.⁵⁰ As he had done at 107 South Harbor Boulevard, Fender built a guitar factory from the ground up, using the manufacturing processes and procedures he had developed earlier. At G&L, Fender continued to produce guitars that relied heavily upon the looks of his original guitars, but did design new models (Cavalier, Comanche, Skyhawk, etc.) and was granted two dozen more patents.⁵¹ He also produced new archetypal designs throughout the 1980s, including a non-vibrato bridge, finely tunable vibratos, and new neck designs.⁵² After Fender's death, G&L was sold in November 1991 to BBE Sound, Inc. of Huntington Beach, California for \$2 million.⁵³ Fender died in his north Fullerton home on March 21, 1991 at the age of 81 from complications of Parkinson's disease. A workaholic to the end, Fender had spent the day before he died anchored as usual to his workbench. The last instrument he built, the baritone bass guitar, was assembled the day he died. As a tribute to Fender, G&L has kept Fender's office and workbench the same as they were the day he died. Fender is buried at Fairhaven Memorial Park in Santa Ana next to his first wife.

In 1965, the County Music Association (CMA) presented the President's Award to Fender, and in 1981, awarded him the prestigious Pioneer Award, inducting him into the County Music Hall of Fame. In 1992, Fender was posthumously inducted into the Rock and Roll Hall of Fame in Cleveland, Ohio. In 2009, the Recording Academy honored Fender with a Technical Grammy.⁵⁴ Fender and his instruments have been the topic of thousands of articles and dozens of books, including Ken Archard's *The Fender Guitar*, Tony Bacon's *The Fender Electric Guitar Book: A Complete History of Fender Instruments*, J. W. Black's *The Fender Bass: An Illustrated History*, Al Di Perna's *Fender Classic Moments: Fifty Years of Modern Music*, Martin Kelly's *The Golden Age of Fender: 1946-1970*, John Morrish's *The Fender Amp Book*, Jim Roberts' *How the Fender Bass Changed the World*, Richard R. Smith's *Fender: the Sound Heard 'Round the World*, etc. Memoirs have been written by a number of Fender's longtime employees, including Forrest White's *Fender: The Inside Story*, Bill Carson's *My Life and Times with Fender Musical Instruments*, and George Fullerton's *Guitars from George & Leo: How Leo Fender and I Built G&L Guitars*. There are also hundreds of guitar history books which feature Fender and his guitars: Ken Archard's *The History and Development of the American Guitar*, Tony Bacon's *The History of the American Guitar from 1833 to the Present*, Tom and Mary Anne Evans' *Guitars: Music, History, Construction and Players*, George Gruhn's *Electric Guitars and Basses: A Photographic History*, Darcy Kuronen's *Dangerous Curves: The Art of the Guitar*, Andrew Millard's *The Electric Guitar: A History of an American Icon*, Paul Trynka's *Rock Hardware: 40 Years of Rock Instrumentation*, Andy Volk's *Lap Steel Guitar*, Steve Waksman's *Instruments of Desire: The Electric Guitar and the Shaping of Musical Experience*, Ed Ward's *Rock of Ages: The Rolling Stone History of Rock*, etc.

It is difficult to overstate Fender's impact on the music and recording industries. One of the greatest and most prolific industrial designers of the twentieth century, he "helped to alter the look, the sound, and the personality of American music."⁵⁵ He claims a spot not only in the history of technology and industrial design, but also popular culture in the twentieth century. Various racial, ethnic, and cultural groups have used Fender's instruments to create and shape new musical sounds that influenced American society, culture, and politics. His electric instruments with their modern sounds

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Section number 8_ Page 7 ___

influenced musical compositions, creating a new style of playing, new types of musicians, and a new category of soloists. A large portion of the great recordings since the 1940s, crossing all musical genres, feature Fender's inventions: the western swing tunes of Bob Wills and His Texas Playboys; Freddy Tavares swooping steel guitar introductions over the titles of *Looney Tunes* cartoons; Dick Dale's sonic surf music; Bill Black's pounding Precision Bass on Elvis Presley's "Jailhouse Rock"; Johnny Cash's "Folsom Prison Blues"; James Jamerson's melodic and rhythmic Motown basslines of the 1960s; James Burton's solo on Ricky Nelson's "Hello Mary Lou"; Eric Clapton's first Stratocaster (named Brownie) on "Layla"; Buddy Holly's "Not Fade Away"; Jimmy Page's iconic Telecaster solo on "Stairway to Heaven"; the twin Stratocasters of the Beatles' "Nowhere Man"; Bruce Springsteen's customized Esquire on his landmark *Born to Run* album; and the eerie sound of Noel Boggs' steel guitar in the classic science fiction film *War of the Worlds* (1953). With an inventor's vision, he revolutionized the music industry, transformed popular music, and created a legacy. The instruments he introduced in the 1940s and 1950s became standards in the music industry, and the commercial success of his early amplifiers and guitars—the Telecaster, Precision Bass, and Stratocaster—made the electric guitar the most popular instrument in the world today. Today, musicians play Fender designed instruments in every country of the world, and it is nearly impossible to listen to a song, turn on the radio, or watch a movie or television show without hearing the sounds of an electric guitar.

Fender's Radio Service Context

Although Leo Fender never stopped working and had businesses both before and after establishing Fender's Radio Service (1944-1951) at 107 South Harbor Boulevard, it was at this location that he designed and manufactured his first commercial line of amplifiers and guitars, developed his first solid-body electric guitars, and started the laboratory, manufacturing, and marketing processes and strategies that would serve him throughout the rest of his career. He developed not only his durable designs, but the mass-production techniques that revolutionized the manufacture of professional quality instruments that made the affordable solid-body a possibility. The early work done by Fender at this small store forged a new path for the inventor, and his innovations during this early stage—ridiculed by industry insiders—improved the range, durability, and affordability of amplifiers and guitars forever, while also allowing his company in the 1960s to set the standard of quality for the industry.

From the time of the town's founding, Fullerton residents loved to dance, using any opportunity to hold a public or private dance, even going so far as to add a dance floor to the new City Hall (1941). While setting up a sound system for a Fullerton war bond dance, Fender noticed that guitar players were being drowned out by their fellow musicians. After talking to the musicians, who complained that their guitars were not getting the recognition due to them, he decided to develop an electric guitar that would put guitar players on an equal footing.⁵⁶ Fender began to look into the potential for electric guitar designs, play around with pickup designs, and with "Doc" Kauffman in 1943, produced one crude guitar to test early pickups. Before he could really get started, World War II began, and the War Production Board (1942-45) halted the manufacture of many consumer goods, making new products such as radios, phonographs, and guitars nearly impossible to find.

Realizing that government war restrictions on materials would soon be lifted, Fender decided to make his first foray into manufacturing amplifiers and guitars in 1944. Fender, who hoped to make his interest in sound amplification into a solid business, saw his chance to jump ahead of guitar companies put out of business by the government (it would take months before they would receive the go-ahead to restart). Needing more space to do his work and expand his business, he leased 107 South Harbor Boulevard in October 1944, remodeled the interior, and moved into his newly refurbished store, naming it Fender's Radio Service. The front part of the store was to be used for "radio sales, service and rental, electric appliances, photograph records, musical instruments and repairs, public address systems, and sheet music."⁵⁷ The back

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section number 8_ Page 8 ___

of the store was to be used to invent, manufacture, and refine guitars and amplifiers. "Doc" Kauffman and Fender, who had formed the K&F Manufacturing Corporation, funded their venture with \$5,000 received from selling a license for a phonograph record changer they designed for Voice of America in Benton Harbor, Michigan. Fender, who considered himself the owner of K&F, also relied on store income to fund his inventions and manufacturing. To increase store profits and fund his new manufacturing venture, he expanded into the growing market for musical recordings, advertising his "complete line of records" and "hit parade numbers" in the *Fullerton Daily News Tribune* and the *Weekly Torch*, the Fullerton Junior College student newspaper, to attract high school and college students.⁵⁸ Fender's Radio Service was also the first and only place in Fullerton that sold television sets. To advertise the new product, he mounted a TV in the front window of the store and placed a speaker outside. Because most people did not have television sets in their homes, there was usually a crowd each night standing outside the store to see available shows.⁵⁹ Despite his best efforts, Fender was consistently short of cash during this initial period and often relied on his wife's salary from a telephone company. To break into the instrument manufacturing business, Fender eventually "sold everything" he had and "got into it, little by little."⁶⁰

Hoping to capitalize on the growing popularity of western swing and Hawaiian music,⁶¹ the first line of guitars introduced by K&F were lap steel guitars, each accompanied by an amplifier and canvas guitar case. The new sound of the steel guitar had captured America's imagination, and despite the war, the steel guitar was at the height of its popularity. The steel guitars also had one major advantage: they were easy to learn and play. Unlike the standard guitar, which required often complicated fingering, the steel guitar relied on a slide bar, a technique that could easily be learned in one lesson. The easy-to-use instrument had also proved enormously popular with professional musicians, especially those in Hawaiian and country and western bands. The Fender tube amplifiers that accompanied the steel K&F guitars were also highly compatible with Hawaiian guitars, and are still prized today for "giving the richest, most mellow tone."⁶² Fender and Kauffman made a few K&F guitars and amplifiers before the end of World War II, then went into full production at the back of the radio shop. Fender placed an advertisement for his first guitar—the "new electric Hawaiian guitar"—in the April 19, 1945 issue of the *Fullerton Daily News Tribune*, the first advertisement for a Fender product, declaring the instrument "the most modern of its type embodying many features not found in any other Hawaiian guitar."⁶³

The initial lap guitars were amateurish looking and played out of tune, but the two men gradually refined and improved them by trial and error. Neither Kauffman nor Fender were wood finishers and the first guitars and amplifiers were covered in a distinctive grey crackle paint, but hardwood models in maple, mahogany, and walnut followed. The set (guitar, amplifier, carrying case) sold for a reasonable \$150, a distinctly low price compared to other guitars. Fender decided with these first guitars to make affordable "working-class instruments" that anyone could purchase regardless of their income, a pricing policy he was to follow for the rest of his career, always insisting that his guitars be both easy to build and low-priced. By designing equipment that could be built easily and cheaply, Fender's products "matched or exceeded the quality of his competitors at much lower prices."⁶⁴ Their affordability added to their appeal, and their inexpensiveness made them among the first instruments purchased by musicians such as Buddy Holly, Eric Clapton, and Jeff Beck as teenagers.⁶⁵ While the first K&F guitars needed refinement, the pioneering amplifiers, each with a top-mount chassis, and the first built with hanging tubes, would become the standard for the industry: The early amplifiers quickly "gained the reputation of being nearly indestructible on the road, as well as being the most powerful on the market."⁶⁶ The success of these first amplifiers encouraged Fender to design and manufacture larger and more powerful amplifiers, including the landmark Dual Professional, in a variety of sizes and materials. Even after the successful introduction of the Telecaster, Fender was known more for his amplifiers than his guitars. Over the next few years, cosmetic changes—coverings, knobs, handles, logos, control panels, etc.—would be made, but the basic style of the amplifier line remained the same, and they would go on to become cultural icons.

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section number 8 Page 9

In 1945, Fender attempted to start a separate line of radios, produced a few, then dropped the idea.⁶⁷ Fender and Kauffmann also patented a design for a magnetic pickup for guitars,⁶⁸ and invented a record changer, completed in February 1945. Fender placed an advertisement for the new "automatic record changer" in the local newspaper and put the device on display in his shop window on April 2, 1945, where it ran continuously around the clock all spring and summer.⁶⁹ Convinced that guitars held a brighter future than records, Fender ignored a \$30 invoice from the Patent Office and let the patent for the record changer lapse, a decision that was to cost him millions when RCA later used elements of the design in a highly successful 45-rpm changer, which became popular when sales of "singles" picked up in the early 1950s. Like other mistakes made during this period, Fender learned from this one, and never failed again to patent anything he had invented.

While Fender had aspirations of breaking into the musical instruments industry, he had no manufacturing experience, and no assurance that the instruments he built would be successful. After World War II, American businesses began to exploit mass production, and Fender's particular application of this technique to guitar manufacturing would be his masterstroke, but in these early days he still needed to learn the mass-production of parts. Prior to the move to 107 South Harbor Boulevard, Fender had only designed and hand-built a few guitars, and the switch from a service outlet to a retail/manufacturing facility marked a major shift in his career. Fender and Kauffman initially worked at the back of the shop, but when more space was needed, a metal shed was added to the back of the building. Kauffman referred to the metal building as the "guitar department," but it was a tin shed hastily and cheaply assembled.⁷⁰ The two men worked tirelessly seven days a week to get K&F Manufacturing up and running, and when their first products sold, added a handful of workers. Fender would always say that "manufacturing is problem solving."⁷¹ He was not an engineer and had only a working knowledge of electronics, but he was meticulous and persistent, and intuitively developed a simple but effective manufacturing process that he would use the rest of his career, with historians often referring to him as "The Henry Ford of Guitars," the man who ushered in guitar mass production. When Fender started over in 1970, and again in 1980, with new manufacturing firms, he used the same mass-production techniques learned and implemented in the 1940s in the Harbor Boulevard store.

Typically working until midnight, Kauffman and Fender brought equipment from their homes, learned how to weld in order to make sturdy work benches, built their own saws and belt sanders, and looked for shortcuts.⁷² One of Fender's strengths would turn out to be his ability to design and find production parts for his products. Sometimes the parts would be adapted from existing household machines, such as a sewing machine motor to wind his first guitar pickups.⁷³ Other times, Fender designed and custom built new tools and dies, because there was nothing suitable to the work he planned to do, relying on the expertise of Lymon E. Race (1912-1972) and Karl A. Olmsted (1920-2011) of Race & Olmsted Tool and Die (616 South Harbor Boulevard), a local company he would do business with for the next thirty years.⁷⁴ Much of the initial processing at K&F was based on trial and error. To achieve the distinctive grey crackle finish on the K&F guitars and amplifiers, Kauffman baked them in his home oven, stinking up his house, before the two men discovered that a small industrial oven would provide the same effect.⁷⁵ Because these early guitars were all made by hand, it is unusual to find two K&F lap steels exactly alike. To test for any flaws, Kauffman's final act was to play a song, such as "Coquette" or "Paradise Isle."⁷⁶ By 1946, the partners were making thirty to forty guitars and amplifiers per week, which were then sold through Coast Wholesale or Pacific Music Supply, a Los Angeles-based music wholesale house, or directly at the Harbor Boulevard store. Dealers would come directly to the shop and fill their cars to the brim with guitars each week.⁷⁷ It was estimated that the two men sold 1,000 guitar sets the first year (today they are rare finds). Products that needed repairing were also returned to Fender's Radio Service from 1945 to 1951. As Kauffman and Fender learned the manufacturing process, the first Fender amplifiers and guitars were issued with design defects, and many were returned to the counter in front of the store for repairs and replacements.⁷⁸ Fender had a policy of continual improvement, and the returned instruments and amplifiers gave him the opportunity to find out what was working or not working. There was always attention to detail, and the next few years would see improvement in tuners, pickups, bridges, woods, paint colors, and hardware.

United States Department of the Interior
National Park ServiceNational Register of Historic Places
Continuation Sheet

Section number 8_ Page 10__

In these early years, Fender had no research and development or marketing department, and no money for advertising or endorsements, and relied solely on the occasional announcement in the local newspaper. While at Fender's Radio Service, he established a promotional policy based on musician use of his instruments that he relied on for the rest of his career. While repairing instruments, he had developed cordial relationships with musicians, and after producing his K&F electric steel guitars, struck on the idea of having musicians play his instruments as a promotional tool. Facing skepticism, and in some cases, outright hostility from the music industry, Fender turned to the musicians themselves, a marketing strategy that sparked interest in his products. Fender estimated that in these early years he spent twenty-five percent of his time "visiting with musicians, trying to figure out what would suit their needs."⁷⁹ In September 1946, he hired Buzz Bazzell and His Cowboys, a western swing band, to demonstrate "our new electrical musical instruments" at a Saturday night event.⁸⁰ The band's performance at the Harbor Boulevard shop on the evening of September 26, 1945, which extended on to the sidewalk, attracted great attention and immediately increased sales of K&F products. After the success of that night, Fender made a concerted effort to seek out musicians, providing them with free instruments. He followed the Bazzell demonstration by building a custom steel guitar in 1947 for Noel Boggs, providing him also with free amplifiers. Boggs then convinced his bandmates, Bob Wills and His Texas Playboys, to use Fender's new amplifiers. After that, Wills would not allow any other make of amplifier on stage with him. Similarly, when bass players balked at using his weird concoction, the Precision Bass, Fender presented one to Roy Johnson of the Lionel Hampton Band in 1951. Hampton quickly embraced the sound of the new instrument, and a supportive article by critic Leonard Feather in the July 30, 1952 issue of *Down Beat* ("Hamp-lified Fiddle May Lighten Bassists' Burdens") helped skyrocket sales.⁸¹ Starting in 1945, Fender would also take his newly manufactured guitars and amplifiers to dance halls, clubs, honky tonks, and roadhouses—the Riverside Rancho, 97th St. Corral, Painted Post, Del Rio Club, Hideout, Harmony Park Ballroom, etc.—where he would induce musicians to try out his new products.⁸² While reserved, Fender was not shy about introducing himself to musicians and asking them if they wanted to try his guitars and amplifiers for the night. Fender noted that "It's when we actually began hitting the bandstands and getting the guitars into players' hands that they began to be quite acceptable as a musician's instrument."⁸³ The musicians, in turn, would field test the guitars and amplifiers, and then suggest changes to Fender, contributing to the betterment of his musical line. Throughout the years that followed, Fender's popularity among professionals was a huge promotional asset. Publicity stills or album covers with musicians posing with Fender products sold thousands of Fender guitars and amplifiers, but nothing worked better than a concert, personal appearance, television show, or film featuring a musician playing a Fender guitar to boost sales. These images soon made playing an electric guitar an accepted rite of passage for teenagers.

In late 1945, a separation agreement was made between Kauffman and Fender, although Kauffman did not leave until February 1946. Kauffman had financial misgivings about Fender's plans to further expand into manufacturing, but was equally alarmed by the long hours Fender required. Fender was working seven days a week often from the early morning until 2:00 or 3:00 a.m., and Kauffman wanted to spend time with his growing family.⁸⁴ The two men parted amicably, with Fender always acknowledging that he never would have entered the musical instrument business if it had not been for Kauffman's partnership. Kauffman's departure left Fender with four employees, a somewhat established business, and high hopes, with Fender still convinced that he could cash in on the Hawaiian and western swing still popular in America. After Kauffman left, Fender quickly renamed K&F Manufacturing the Fender Manufacturing Company, and in 1947, the Fender Electric Instrument Company.⁸⁵ From then on, all products bore the Fender name, although he kept the distinctive K&F logo, a treble clef with a lightning bolt through it. The first K&F guitars showed a gradual evolution in design from 1945 to 1949, "with all featuring variations of the Direct String Pickup" that Fender and Kauffman developed in 1943, but after Kauffman left, Fender continued to evolve the lap steels, developing a more efficient body design with "curved sides and a chrome metal finger bond with black-painted position markers." This final model became the first Fender lap steel, the De Luxe, which debuted in the late summer of 1946.⁸⁶ He also continued to make amplifiers as he had with Kauffman, but quickly developed a formidable amplifier line that included the Pro Amp, a new line of amplifiers all in hardwood

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Section number 8 Page 11__

cabinets, and the Dual Professional amplifier, which would remain the basis of all amplifiers through 1959. Although Fender's electric solid-body guitars would later overshadow Fender's initial lap steel guitars, it was these early instruments and amplifiers that provided the bread and butter of his business as it slowly grew in the 1940s. Fender's interest in these small, basic instruments, and the amplifiers that accompanied them, would later unlock the doors to all his future creations. Many of the features on his electric solid-bodies and bass guitars were pioneered on his lap steels.

Realizing he needed more manufacturing space, Fender purchased a lot at the northeast corner of Pomona and Santa Fe Avenues and installed two 30- by 60-foot fabricated steel buildings, which passed final inspection in December 1946. Illegal by today's standards, the metal buildings had no heat, air-conditioning, or restrooms, forcing employees to use facilities at the nearby train station. Workers, wearing no masks, worked in poorly ventilated spaces, often with unsafe materials, including asbestos. The use of open vats of toxic and inflammable chemicals also forced fire inspectors to periodically shut down the plant. Fender, who was still running the repair/retail side of the Harbor shop, began moving between the Harbor Boulevard and Pomona Avenue buildings, but still continued to develop new instruments and amplifiers at the back of the downtown radio store while using the metal buildings for product manufacturing.

By the end of 1946, Fender was also facing a financial crisis. His fledgling company was barely surviving off the radio shop, as well as his wife's income. Despite later spectacular successes, during these early years, the Fender company came perilously close to failing. He fell behind with his creditors, employee paychecks bounced, and a lien was placed on his property for failing to pay workers' compensation taxes to the State of California. Over-extended, he was forced to mortgage the property and manufacturing buildings on Pomona Avenue. The factory experienced several starts and stops as there were few orders to fill. He "wasted days, weeks, and months tinkering with ideas (such as an electric piano) he eventually discarded."⁸⁸ Fender did not produce a full-size catalog for customers until 1949, and the factory did not run steadily until 1951/52. As Fender noted later: "Those years were absolute hell. I think I worked from six in the morning 'til midnight every day of the week. A new trademark is a hard thing to get accepted. With no advertising, no one knew who we were and there was nothing to pep up sales. It took every penny I could get my hands on to keep things together."⁸⁹ He would often use the Harbor Boulevard store to hide out from his creditors, bankers, and tax collectors, especially in the evenings and on week-ends when the radio store was closed to the public. To free up time for the development of new instruments, Fender, in late 1947 or early 1948, placed Dale Hyatt, who had been hired a year earlier, in charge of the radio service store.

Most of the main business in the early years remained in amplifiers and electric steel guitars, but Fender began to develop at the back of the Harbor Boulevard store his most famous instruments: his solid-body guitars. Urged on by sales representative Charles R. Hayes and Don Randall, who were eager to supply customers with different products, Fender decided to go further. The transition from the lap steel to the solid-body guitar was not done in a single step. Fender began by tinkering with ways to install his lap steel pickups on existing guitars, and some of the components of the lap steels were incorporated into the design of his first solid-body instruments. Like the early K&F guitars, his early solid-body guitars were crude, but he methodically refined them. He slowly evolved his own idea as to what an ideal electric guitar might be, moving from the Esquire/Broadcast/Telecaster to the Precision Bass to the Stratocaster, each one evolving from previous designs. The goal in each case was to design an easy-to-make solid-body that was functional and ultimately affordable. As Hawaiian and western swing music declined and was replaced by rock and roll, it was the success of these early solid-body guitars that fueled the later rapid growth of Fender's product line.⁸⁹

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Section number 8_ Page 12 ___

In late 1949, still strapped for cash, Fender sold Fender's Radio Service to Dale Hyatt, who continued to do odd jobs for Fender. Fender, however, continued to develop products, hold meetings, and sell instruments and amplifiers at the radio store, especially when the factory on Pomona Avenue was closed. During these years, Fender's Radio Service also served as the "unofficial Fender factory outlet."⁹⁰ Fender had signed an exclusive distribution contract on March 1, 1946, for K&F products and had official sales representatives—F. C. Hall, Don Randall, and Dave Driver of the Radio & Television Equipment Company (Radio-Tel) in Santa Ana—but was upset by their lack of advertising and sales.⁹¹ Telling his sales representatives that he was getting rid of flawed seconds, Fender would deliver newly manufactured steel guitars, solid-body guitars, and amplifiers to Hyatt, who would sell them directly from the radio store, providing Fender with much needed cash. The two men would also pack up unsold instruments and amplifiers at the Harbor Boulevard store, and then frequent out-of-town honky-tonks, nightclubs, concerts, and dance halls where they would sell them on the stage or out of a truck in the parking lot. The bootlegging continued until the guitar boom of the 1950s increased sales and put Fender in a prime position in the market. The radio store stayed in business until 1951, when Hyatt became plant manager of the manufacturing plant on Pomona Avenue.

At the Harbor Boulevard shop, Fender hit upon the idea of putting "Fullerton, California" on every product produced by K&F Manufacturing and his later companies. Because of this decision, the then small town of Fullerton became known worldwide. Ironically, as Fender's guitars and amplifiers began to enjoy regional and increasingly national recognition, Fender remained largely unknown within the City of Fullerton. That anonymity changed somewhat with an article on the front page of the November 8, 1949 issue of the *Fullerton Daily News Tribune* that noted that while Fender was "well known throughout the country," he "remains almost anonymous" in his "home town."⁹²

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Section number 9_ Page 1 __

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¹*Planning Commission Staff Report, City of Fullerton, September 27, 2010.* On file in the Local History Room, Fullerton Public Library.

²The small, wood-frame Amerige Brothers Realty Office was constructed by two German carpenters in Anaheim and moved to 107 South Harbor (then Spadra) Boulevard where it served as the center of business for the Amerige Brothers. When the two men moved to larger quarters, the Realty Office was moved to the east side of the 100 block of North Harbor Boulevard, and later moved to the north side of the 100 block of East Commonwealth Avenue where it remained until 1920. The building is now located in Amerige Park (303 West Commonwealth Avenue). When the Realty Office opened to the public in 1887, Fullerton had only a few ranches and homes located within the town boundaries.

³Interview, Steve Ellingson, August 10, 2012. A former Marine Corp fighter pilot, Thomas Charles Ellingson started manufacturing precision parts for the growing California aerospace industry in 1946. The firm is currently owned by sons Rick and Steve Ellingson.

⁴*City of Fullerton: Art in Public Places.* Fullerton: City of Fullerton, 2008. On file in the Local History Room, Fullerton Public Library.

⁵"Fender Modernizes Its Manufacturing Complex." *This Is Your City: Fullerton Factbook & Buyers Guide, 1966.* Fullerton: Chamber of Commerce, 1966, p. 43. Includes a rendering of the CBS headquarters building. CBS retained the original nine buildings used by Fender, who always kept the "size of his buildings down for fear of one day having to sell them, possibly one at a time." Teagle, John. *Fender Amps: The First Fifty Years.* Milwaukee: Hal Leonard, 1995, p. 20.

⁶Although Orange County, California is often regarded as the State's capitol of conservatism, it has been the home to many well-known musicians and bands, including Dick Dale, The Righteous Brothers, The Chantays, Jackson Browne, Tim Buckley, The Offspring, Lit, No Doubt, Rage Against the Machine, Social Distortion, etc. Reza, H. G. "Orange County: Rock Roots on Display Loud 'n 'Clear; A Fullerton Museum Exhibit Pays Homage to the County's Influence on the Genre." *Los Angeles Times* December 19, 2004, p. B3; Weingarten, Marc. "Upon This Rock, a Scene Was Built; O.C. Was the Birthplace of Surf Music and the Fabled, Amped-up Fender Guitar, So Take that L.A." *Los Angeles Times* February 17, 2005, p. E4. During the 1960s, The Rhythm Room, a Fullerton club (218 West Commonwealth Avenue), served as a recording studio for a number of Chicano rock classics, including Cannibal & the Headhunters "Land of a Thousand Dances" (1965).

⁷Fogard, Warren P. "Edgar Johnson, Founder, *Fullerton News Tribune.*" Fullerton: California State University, Fullerton, 1964. Student report. On file in the Local History Room, Fullerton Public Library.

⁸"Pioneer of Fullerton and County Succumbs from Heart Disease at Age of 67." *Fullerton Daily News Tribune* May 16, 1935, p. 1. The *Fullerton News Tribune* went on to become Orange County's oldest continuously published daily newspaper. In 1985, the paper went weekly and was later absorbed by the *Orange County Register*.

⁹[107 South Harbor] Building Permits; Fullerton, George. *George & Leo: How Leo Fender and I Built G&L Guitars.* Milwaukee: Hal Leonard, 2005, p. 11.

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Section number 9 Page 2 ___

¹⁰A World War II veteran, Dale Hyatt began working on the K&F guitar assembly line in January 1946, and soon became a jack-of-all-trades, doing whatever work Fender required. Hyatt stayed with Fender until he sold his business to the Columbia Broadcasting Service (CBS) in 1965. He rejoined Fender and George Fullerton when the three founded G&L Musical Instruments. He retired in 1991, following the death of his close friend Leo Fender.

¹¹At its opening on April 15, 1925, an orchestra played and prizes were awarded to the 3,000 shoppers who showed up. "Piggly-Wiggly Store to Open Here Saturday." *Fullerton Daily News Tribune* April 23, 1925, p. 1. The store was the 49th Piggly-Wiggly to open in Southern California and number 1692 in the United States. The novelty of the format is clear in the instructions appearing in the paper at the time on how to use such an establishment.

¹²Harriet Wood Fender was from Covina, California; Clarence Monte Fender was born in Illinois. Leo Fender's father completed the third grade, then was sent to work in a creamery in Kansas City when he got older. He moved to Orange County in 1906. The Fender family home, Lone Oak Ranch, was razed by the City of Anaheim to make way for John Marshall Park. All that remains is the "Lone Oak."

¹³Gonzalez, Jon. "Leo Fender's Pop Culture Legacy." *Fullerton College Magazine* vol. 3, no. 2, Fall 1997, p. 14. Photographs of Fender as a student at Fullerton College (then Fullerton Junior College) are on file in the Fullerton College Library archives.

¹⁴The loss of his eye heightened Fender's sense of hearing but also made him camera shy. In selecting company photographs and advertisements, he would try to find ones that downplayed the appearance of his missing eye.

¹⁵"Esther Kltozly [sic] Weds C. L. Render [sic]." *Santa Ana Daily Register* August 3, 1934, p. 11. The couple had no children. Esther Klosky Fender died of lung cancer in 1979, and on September 20, 1980, Fender married his second wife, Phyllis Thomas, who still resides in Fullerton. Esther Fender was employed by the Southern California Telephone Company (120 North Harbor Blvd.) in downtown Fullerton. During this period, her wages were often used to keep Fender's business afloat.

¹⁶Photographs of Fender's residences are on file in the Local History Room of the Fullerton Public Library. Fender rented in Fullerton until 1960, when he custom-built a Ranch-styled residence on East Revere Drive. The dwelling was built by Grady Neal, who had also constructed buildings for the Fender plants on Pomona and Raymond Avenues. Fender later sold this home and moved to the Cedarhill Mobile Country Club (2851 Rolling Hills Drive) to care for his ailing wife before her death.

¹⁷Fender's store was the official warranty station for specific brands, including Motorola and Packard Bell. [Advertisement]. *Fullerton Daily News Tribune* April 28, 1941, p. 7.

¹⁸Photographs of Fender and his public address system at the Fullerton City Hall dedication, June 28, 1941, are on file in the Local History Room, Fullerton Public Library.

¹⁹Email, Warren Bowen, August 16, 2011.

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section number 9_ Page 3__

²⁰An only child, Clayton Orr "Doc" Kauffman was born in Cedar County, Missouri. He spent two years at Bethany College where he became very proficient at the violin. He married Elsie Schoock, and in 1922, the couple moved to California where he worked as a violinist. He later tuned pianos, repaired instruments, and took up the saxophone and guitar, playing various instruments in local bands around Orange County. Starting in September 1938, he opened Kauffman's Fix-It-Shop in shared space at 111 East Commonwealth Avenue. Like Fender, Kaufman was a relentless tinkerer. In 1928, he designed the first vibrato tailpiece for guitars (Vibrola, Patent 2,241,911), which varies the pitch of guitar notes to simulate the vibrato of a steel guitar or human voice. The piece was used by Chet Atkins, Eddie Peabody, and Les Paul. In the 1930s, he was a chief designer of guitars for Rickenbacker. He also made electric lap steels, and in the mid-1930s, built a handful of stand-mounted guitars with motorized vibrators. Fender heard Kauffman perform in the mid-1930s, but the two men did not connect until the early 1940s. Wheeler, Tom. "27th Annual Guitar Players Readers Poll: The 1996 Leo Award for Technical Innovation—Doc Kauffman." *Guitar Player* February 1997, p. 49-50; Lipsey, Therese. "Musician Clayton Orr "Doc" Kauffman, Co-inventor of Steel Guitar [Obituary]." *Orange County Register* June 30, 1990, p. B12.

²¹Dickerson, Deke. "Leo Fender's 1943 Prototype Guitar." *Guitar Player* April 2010, p. 4. Includes a photograph of the crude prototype.

²²In its first guise, Fender's first solid-body guitar was initially called the Esquire, which was then revamped and renamed the Broadcaster. When he found out that name was a trademark of the Fred Gretsch Manufacturing Company in Brooklyn, New York, the Broadcaster was renamed the Telecaster. For a brief time, the guitar was issued without a label, and those guitars have been labeled Nocasters by collectors. The first Esquire sold for \$139.95, and an additional \$39.95 for a case.

²³Smith, Richard R. "The Twang Heard Around the World: A History of Fender's Fabulous Telecaster." *Guitar Player* May 1998, p. 66-67, 69, 71-72.

²⁴Washburn, Jim. "Leo Fender: His Contribution Struck a Chord Around the World [Obituary]." *Los Angeles Times* March 23, 1991, p. F13.

²⁵Bacon, Tony, and Barry Moorhouse. *The Bass Book: A Complete Illustrated History of Bass Guitars*. San Francisco: GPI Books, 1995, p. 10. Includes color photographs of Fender's first Precision Bass.

²⁶Black, J. W., and Albert Molinaro. *The Fender Bass: An Illustrated History*. Milwaukee: Hal Leonard, 2001, p. 5. The early Precision Bases sold for \$199.50, and the amplifier developed exclusively for the Bass, the Bassman Amplifier, sold for \$203.50.

²⁷Roberts, Jim. *How the Fender Bass Changed the World*. San Francisco: Back Beat Books, 2001.

²⁸Millard, Andre. "Solidbody Electric Guitars." In *The Electric Guitar: A History of an American Icon*. Baltimore: Johns Hopkins University Press, 2004, p. 96.

²⁹Bacon, Tony. *50 Years of Fender: Half a Century of the Greatest Electric Guitars*. London: Balaton, 2000, p. 18.

³⁰Smith, Richard R. *Five Decades of Fender: The Sound Heard Around the World*. Fullerton: Fullerton Museum Center, 1993. Catalog to accompany exhibition from December 10, 1993 to April 2, 1994.

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section number 9_ Page 4__

³¹"Strat-O-Masters: 23 Guitarists Who Define the Strat Sound." *Guitar Player* July 1999, p. 54-69, 71, 73, 73, 75-76. Stratocasters originally sold for \$249.50. Buddy Holly purchased a Fender Stratocaster for \$250 at Adair's Music Store in Lubbock, Texas, in 1956, and it emerged as the trademark sound of his music. As the sole guitarist in his group, Holly transformed the Stratocaster into a cool instrument emblematic of rock and roll music. Holly's performance on the *Ed Sullivan Show* in December 1957 was momentous for both the Stratocaster and rock music. His gravestone has a carved likeness of a Stratocaster.

³²Brown, Susan Windisch. "Fender, Leo." *Contemporary Musicians*. Ed. by Julia M. Rubiner. Vol. 10. Detroit: Gale Research, 1995, p. 85. The piggyback, or amp stack, has the amplifier chassis in one cabinet and the speaker(s) in another cabinet.

³³A complete list of Fender amplifiers will be found in John Morrish's *The Fender Amp Book*. San Francisco: GPI Books, 1995, p. 76-93 (Reference Section). Fender designed a number of amplifier models, but there were only four basic amplifier configurations, which he used time and time again. Brosnac, Donald. *The Amp Book: An Introductory Guide to Tube Amplifiers*. Westport, CT: Bold Strummer, 1983, p. 24.

³⁴Teagle, John, and John Sprung. *Fender Amps: The First Fifty Years*. Milwaukee: Hal Leonard, 1995, p. 24. Includes a "Chronology of the Earlier Fender Amps" on pp. 248-250.

³⁵Fender, Leo. "A Conversation with Leo Fender." In *American Guitars: An Illustrated History*. Rev. ed. By Tom Wheeler. New York: HarperPerennial, 1992, p. 67.

³⁶Fender hired Louis Lugar to do woodwork and spraying and finishing of guitars, and relied on low-paid Mexican American women—Lydia Sanchez, Maybelle Ortega, Lupe Lopez, etc.—for wiring and other detail work. Prior to erecting the two metal building on Pomona Avenue, Fender briefly had another metal shed erected one block north of the radio shop on the alley between Commonwealth and Amerige Avenues.

³⁷"Guitars, Amplifiers, Accessories Made in New Plant." *Fullerton News Tribune* August 25, 1954, p. 7B. Special industrial issue. Includes a black and white photograph of the plant; "Instrumental Firm to Build Five Units." *Los Angeles Times* October 12, 1956, p. G13. At the time of the purchase, the property was a ranch owned by Archibald M. Edwards (1894-1959), and there was a large two-story house, where the factory would be located, on the property, surrounded by an orange grove. The house was moved to another location. Photographs of construction of the Raymond plant are on file in the Local History Room, Fullerton Public Library.

³⁸By 1965, guitar sales in the United States were generating \$100 million a year, and better than one out of every three musical instruments sold was a guitar. Tiegel, Eliot. "Guitar Sales Pick a Pretty Tune—\$100 Million a Year." *Los Angeles Times* February 26, 1966, p. B8.

³⁹Fender formed Fender-Rhodes, Inc. (1225 East Ash Avenue) with Harold B. Rhodes (1910-2000), the inventor of the electric piano bass. Like the Precision Bass, the portable Fender-Rhodes piano was a revolutionary instrument which greatly benefitted musicians. Piano players, who previously were not always able to play with their bands because many venues did not have an in-house piano, could now play at any event with this new instrument. The Fender-Rhodes piano quickly became the most widely used electric piano, featured in many kinds of popular music (especially jazz-rock) and played by a number of notable musicians, including Chick Corea, Herbie Hancock, Ray Manzarek, Josef Zawinul, and many others. The first Fender-Rhodes pianos sold for \$895. Woo, Elaine. "Harold B. Rhodes; Inventor of Piano [Obituary]." *Los Angeles Times* January 1, 2001, p. B4; Milano, Dominic. "Harold Rhodes: Pioneer of the Electric Piano." *Contemporary Keyboard* November 1977, p. 8-10, 44; *The New Grove Dictionary of Music and Musicians*. 2nd ed. Edited by Stanley Sadie. New York: Macmillan, 2001, vol. 21, p. 275.

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section number 9_ Page 5 __

⁴⁰Fender Instruments Now a 'Complex' with Two New Plants, New Products." *Fullerton News Tribune* April 28, 1964, p. B12. The acoustic guitar plant was located at 1618 North Missile Way in Anaheim.

⁴¹"Fullerton-Based Guitar Company Sold to CBS for \$13-million." *Fullerton News Tribune* Jan. 6, 1965, p. 1, 3. The sale included Fender Sales, Inc. in Santa Ana and Tulsa, Oklahoma (912 West Skelly Drive), the acoustic guitar and electric piano plants, a small service center in New York City, and a fleet of trucks.

⁴²Fender Guitars Bought by CBS for \$13 Million; Largest Cash Transaction in Music History." *Music Trader* January 1965, p. 32, 34; Lewis, Randy. "How CBS Bought, Sold Out and Sold the Name." *Los Angeles Times* April 30, 1996, p. 2. At the time of the purchase, CBS was the number one network in the United States and cash rich from such popular television shows as *Mr. Ed*, *Petticoat Junction*, and *The Beverly Hillbillies*. In addition to purchasing the Fender Company, CBS bought a book publisher, Holt, Rinehart & Winston; a record company, Epic Records; a toy company; and *Field & Stream* magazine. Flagg, Michael. "Fender, the Man and the Guitar." *Los Angeles Times* July 22, 1990, p. 1.

⁴³Fullerton, George. *Guitar Legends: The Evolution of the Guitar from Fender to G&L*. Fullerton: Centerstream Publishing, 1993, p. 81. Includes a black and white photograph of Fender's workroom/laboratory in Anaheim.

⁴⁴Morrish, John. "CBS: The Nightmare Years." In *The Fender Amp Book*. San Francisco: GPI Books, 1995, p. 28-42.

⁴⁵Bergman, Leslie. "Guitar Firm May Plan Swan Song: Fate of CBS' Famed Fender Instruments in Doubt." *Los Angeles Times* January 7, 1985, p. G1-2.

⁴⁶Rushlo, Michele. "The Guitar from Fullerton Rules Again; The Fender, Favorite Guitar of Early Rockers, Has Regained Its Dominance." *Los Angeles Times* October 17, 1999, p. 18.

⁴⁷Zito, Tom. "Value Soars: Vintage Fenders—Strads of Rock." *Los Angeles Times* April 30, 1973, p. G15; Cobb, Nathan. "The Classic Electric: Fender's Stratocaster Is Just as Hot Now as It Was in the '50s." *Boston Globe* April 4, 1985, p. 65-66; Michael Albo. "A Nostalgic Chord; Guitar Collectors Find an Upside in a Down Economy: Vintage Fenders and Les Pauls at Bargain Prices." *Los Angeles Times* May 2, 2009, p. D1; Moseley, Willie G. *Classic Guitars U.S.A.: A Primer for the Vintage Guitar Collector*. Anaheim Hills, CA: Centerstream Publishing, 1992, p. 26-30.

⁴⁸The industrial park included space for 128 businesses, each with front office and warehouse space. Fender reserved two of the buildings for himself. Because Fender was the developer of the industrial area, the City of Fullerton named the avenue after him.

⁴⁹Music Man's main office was located at 1338 State College Parkway in Anaheim. The company was in business from 1978 to 1983. Fender was a silent partner in the company.

⁵⁰Fender's final years with these last companies are described in George Fullerton's *Guitars from George & Leo: How Leo Fender and I Built G&L Guitars* (Milwaukee: Hal Leonard, 2005) and Frank Green's *Music Man, 1978 to 1982 (and Then Some!!): The Other Side of the Story* (Anaheim Hills, CA: Centerstream Publishing, 2007). Also: Ferguson, Jim. "Leo Fender: How I Build Guitars—G&L Factory Tour." *Guitar Player* October 1982, p. 112-118; Flagg, Michael. "Leo Fender's Legacy: G&L Sales on Rise." *Los Angeles Times* August 11, 1993, p. 1.

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section number 9_ Page 6__

⁵¹Lewis, Randy. "For a Solid Body of Work, Fender Rates a Hall of Fame Niche." *Los Angeles Times* January 21, 1990, p. 55D; United States Patent and Trademark Office database. Over his lifetime, Fender was granted patents not only for his innovative products, but also for logos, shapes, and other designs.

⁵²"Leo Fender." *Contemporary Musicians* Vol. 10. Detroit: Gale Research, Inc., 1989, p. 86.

⁵³Crough, Gregory. "BBE Sound Acquires Two Fender Guitar Companies." *Los Angeles Times* November 14, 1991, p. 6; Flagg, Michael. "Leo Fender's Legacy: G&L Sales on Rise." *Los Angeles Times* August 11, 1993, p. 1.

⁵⁴"Leo Fender Honored with Technical Grammy; Recording Engineers Cite Electric Guitar Pioneer with a Technical Grammy." *Music Trader* April 2009, p. 25.

⁵⁵Wheeler, Tom. *American Guitars: An Illustrated History*. Rev. and updated ed. New York: HarperPerennial, 1992, p. 46.

⁵⁶Interview with Mrs. Phyllis Fender, August 15, 2012. Mrs. Fender may be contacted through G&L Guitars (2548 Fender Avenue, Unit G, Fullerton, 92831).

⁵⁷[Advertisements]. *North Orange County Directory*, 1945, front cover and p. 118.

⁵⁸[Advertisements]. *Fullerton Daily News Tribune*, May 8, 1945, p. 1; *Fullerton Junior College Weekly Torch*, January 11, 1946, p. 2, January 18, 1946, p. 2, February 15, 1946, p. 3, May 3, 1946, p. 2, etc. Fullerton Junior College and Fullerton Union High School are close to the downtown area, and Fender's shop, along with Fullerton Music Company (110 North Harbor Boulevard), were popular with students, along with the adjacent local hang-out, the Mission Malt Shop (115 North Harbor Boulevard).

⁵⁹Fullerton, George. *George & Leo: How Leo Fender and I Built G&L Guitars*. Milwaukee: Hall Leonard, 2005, p. 18.

⁶⁰Gans, David. "Electric Guitar Pioneers Leo Fender & George Fullerton: An Interview with Two Gentle Giants of the Music Industry." *BAM: The California Music Magazine* August 29, 1980, p. 35.

⁶¹The Big Band era waned toward the end of World War II and was replaced by small combos, rhythm and blues, boogie-woogie, western swing, and honky tonks. Fender recognized that there was a "vast potential" for electric instruments suited for these types of music, provided that the instruments were easy to hold, play, and tune. Smith, Richard R. "The Twang Heard Around the World: A History of Fender's Fabulous Telecaster." *Guitar Player* May 1998, p. 66-67.

⁶²Ruyman, Lorene. *The Hawaiian Steel Guitar and Its Great Hawaiian Musicians*. Anaheim Hills, CA: Centerstream Publishing, 1996, p. 131.

⁶³[Advertisement]. *Fullerton Daily News Tribune* April 19, 1945, p. 2.

⁶⁴Gonzalez, Jon. "Leo Fender's Pop Culture Legacy." *Fullerton College Magazine* vol. 3, no. 2, Fall 1997, p. 15.

⁶⁵Washburn, Jim. "Leo Fender: His Contribution Struck a Chord Around World Music: The Innovator, Who Died in Fullerton Thursday, Perfected the Electric Guitar, which Became Essential to the Development of Blues, R & B, Rock, and Country; His Gift Cannot Be Overestimated." *Los Angeles Times* March 23, 1991, p. 1.

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Section number 9_ Page 7__

⁶⁶Fullerton, George. *George & Leo: How Leo Fender and I Built G&L Guitars*. Milwaukee: Hal Leonard, 2005, p. 13; Teagle, John and John Sprung. *Fender Amps: The First Fifty Years*. Milwaukee: Hal Leonard, 1995, p. 18.

⁶⁷One of Fender's radios is housed at the Fullerton Museum Center (301 North Pomona Avenue), which maintains a permanent Leo Fender exhibit.

⁶⁸Patent 2,455, 575, Pickup United for Instruments, granted December 7, 1948.

⁶⁹"Automatic Record Changer [Advertisement]." *Fullerton Daily News Tribune* April 3, 1945, p. 4. The advertisement notes that the record changer is "another invention from Fender's Radio Shop."

⁷⁰Kauffman, Clayton Orr. "A Half-Century of Design Q/A: Doc Kauffmann, Inventor." Interview with Tom Wheeler. *Guitar Player* September 1982, p. 22.

⁷¹Smith, Richard R. "Leo Fender's Bass Revolution: The Origin of Precision Bass and Jazz Bass." *Bass Player* September 1996, p. 28.

⁷²Smith, Richard R. *Fender: The Sound Heard 'Round the World*. Fullerton: Garfish Publishing Company, 1995, p. 23-25. Includes color photograph of the first K&F products; Kauffmann, Clayton Orr. "A Half-Century of Design Q/A: Doc Kauffmann, Inventor." Interview with Tom Wheeler. *Guitar Player* September 1982, p. 21-25.

⁷³Carson, Bill. *My Life and Times with Fender Musical Instruments*. Bismarck, ND: Vintage Guitar Books, 1998, p. 34.

⁷⁴Karl A. Olmsted [Obituary]." *Fullerton Observer* Mid-March 2011. The company extended credit to Fender in the late 1940s in order to provide him with the dies for metal parts and pieces of tooling needed to make the guitars, basses, and amplifiers. The Race & Olmsted Tool & Die Company built a neck-ovaling machine, a dovetail amplifier cabinet cutter, a fret-insertion jig fixture, and many one-, two-, and three-stage dies for punch presses. Carson, Bill. *My Life and Times with Fender Musical Instruments*. Bismarck, ND: Vintage Guitar Books, 1998, p. 36.

⁷⁵Lipsey, Therese. "Musician Clayton Orr 'Doc' Kauffman, Co-inventor of Steel Guitar [Obituary]." *Orange County Register* June 30, 1990, p. B12; Kauffman, Clayton Orr. "A Half-Century of Design Q/A: Doc Kauffman, Inventor." Interview with Tom Wheeler. *Guitar Player* September 1982, p. 22.

⁷⁶Fender would keep this same musical procedure after Kauffman left, always having a professional musician check the final products he manufactured.

⁷⁷Kauffman, Clayton Orr. "A Half-Century of Design Q/A: Doc Kauffmann, Inventor." Interview with Tom Wheeler. *Guitar Player* September 1982, p. 20.

⁷⁸Smith, Richard R. *Fender: The Sound Heard 'Round the World*. Fullerton: Garfish Publishing Company, 1995, p. 29. Features an invoice from the Harbor Boulevard shop for returned instruments and amplifiers, July 14, 1947. Fender later set up a service center at 371 South Raymond Avenue.

⁷⁹Gans, David. "Electric Guitar Pioneers Leo Fender & George Fullerton: An Interview with Two Gentle Giants of the Music Industry." *BAM: The California Music Magazine* August 29, 1980, p. 35.

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section number 9_ Page 8__

⁸⁰"Free Entertainment" [Advertisement]. *Fullerton Daily News Tribune* September 26, 1945, p. 2.

⁸¹Feather, Leonard. "Hamp-lified Fiddle May Lighten Bassists' Burdens." *Down Beat* July 30, 1952, p. 22.

⁸²Richard R. Smith notes that Fender was so eager to get his guitars and amplifiers into the hands of musicians that they would often have no finish. He would test an instrument in the afternoon and have it on the bandstand that night. Smith, Richard R. *Fender: The Sound Heard 'Round the World*. Fullerton: Garfish Publishing Company, 1995, p. 47. Scores of Dust Bowl and southern migrants, coupled with an influx of soldiers, sailors, and war-industry workers, led to a vibrant Southern California country music scene from 1940 to 1960. Kasson, Elisabeth Greenbaum. "When Country was King: Before Nashville was Nashville, Southern California Served as Ground Zero for Good Old Honky-Tonk." *Los Angeles Times Magazine* June 2011. Available at <http://www.latimesmagazines.com/2011/06/when-country-was-king.html>; Haslam, Gerald W. *Workin' Man Blues: Country Music in California*. Berkeley: University of California Press, 1999. Later in life, Fender liked to visit the Palomino Club in North Hollywood and the Crazy Horse Saloon in Santa Ana. His first date with his second wife was at the Palomino. Interview, Phyllis Fender, August 15, 2012.

⁸³Washburn, Jim. "Electric Guitars." *Orange County Register* May 6, 1984, p. M6.

⁸⁴Fullerton, George. *Guitars from George and Leo: How Leo Fender and I Built G&L Guitars*. Milwaukee: Hal Leonard, 2005, p. 13, 15; Wheeler, Tom. *American Guitars: An Illustrated History*. New York: HarperPerennial, 1992, p. 49; Wheeler, Tom. "The Legacy of Leo Fender, Part One." *Guitar Player* August 1991, p. 88; "A Half-Century of Designs; Q/A: Doc Kauffman, Inventor." *Guitar Player* September 1982, p. 20. Interview with Tom Wheeler. Always frugal, Fender used up all the K&F nameplates before switching to Fender Manufacturing Company labels.

⁸⁵Fender did not incorporate his Fender Electric Instrument Company until 1959.

⁸⁶Kelly, Martin, Foster, Terry, and Paul Kelly. *The Golden Age of Fender, 1946-1970*. New York: Cassell, 2010, p. 17.

⁸⁷Smith, Richard R. *Fender: The Sound Heard 'Round the World*. Fullerton: Garfish Publishing Company, 1995, p. 56.

⁸⁸White, Forrest. *Fender: The Inside Story*. San Francisco: GPI Books, 1994, p. 15.

⁸⁹Fender worked with George Fullerton on the early solid-bodies, but later worked with others, including Bill Carson and Freddy Tavares, but the patents were always filed in his name. Various conjectures have been made on how Fender moved from the lap steel to the solid-body, but no one knows his original ideas or procedures. Fender did not see his guitars as separate entities, but rather in a state of continual refinement, and believed that his G&L guitars were superior to those invented during this early period. His guitars can be dated by when they were first made available for purchase, but it is difficult to date when each guitar was developed, as Fender worked on several designs at the same time, moving from one to another as an idea struck him. It was not unusual for him to stop the manufacturing process to make even further changes to an instrument. Fender kept no records of his experiments and destroyed any of the working prototype parts of instruments after they had served his needs. A perfectionist and a tinker, he trusted his memory most of the time. He would also get ahead of himself, advertising designs that would never be manufactured.

⁹⁰Per Richard R. Smith, Fender had a "lifelong aversion of taxes." *Fullerton's Fender Guitar Legacy*. Fullerton Public Library, October 19, 2011. Public lecture. Fender's first tax problems started in the early 1940s when he got into trouble for not withholding enough wages for his part-time workers while he was still just repairing radios at 112 South Harbor Boulevard. Smith, Richard R. *Fender: The Sound Heard 'Round the World*. Fullerton: Garfish Publishing Company, 1995, p. 81-82.

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section number 9_ Page 9_

⁹¹The Radio & Television Equipment Company was reorganized in 1953 into a new distribution company, Fender Sales, Inc. (207 Oak Street, 308 E. 5th Street in Santa Ana), initially a four-way partnership between Fender, Don Randall, F. C. Hall, and Charles R. Hayes. It was eventually owned only by Fender and Randall. "Fender Expands Production in New Plant—Company Renamed." *Music Trades* June 1953, p. 62. When CBS purchased the company in January 1965, the name was changed to Fender Musical Instruments, Inc., and the office moved to 1402 E. Chestnut in Santa Ana.

⁹²Smith, Bob. "Local Music Company is Well-known in Nation." *Fullerton Daily News Tribune* April 8, 1949, p. 1. Fender always preferred to use Fullerton companies whenever possible, including Ward and Harrington (201 East Santa Fe Avenue) for his wood. The paint used for guitars in the 1950s, including Fiesta Red (originally called Fullerton Red) was most likely from the Teigan Paint Store (113½ East Commonwealth Avenue).

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United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section number 9_ Page 10_

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Fender's Radio Service
Name of Property

Orange County, CA
County and State

NPS Form 10-900-a
(8-86)

OMB Approval No. 1024-0018

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Section number 10_ Page 1_

Verbal Boundary Description:

Fullerton Townsite Block 29, Lot 9 (Assessor's Parcel number 032-242-22).

Boundary Justification:

The boundary includes the property historically associated with the building.

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Section number __ Page __

NOMINATION PHOTOGRAPH LOG PAGE

Name of Property: Fender's Radio Service

City and County: Fullerton, Orange County

State: CA

Name of Photographer: Bob Linnell

Date of Photographs (colored): August, 2012

Location of Original Digital Files: 353 W. Commonwealth Ave., Fullerton, CA 92832

Number of Photographs: 10

Photo #1:
Front façade (east elevation), camera facing west

Photo #2:
Front façade (east elevation) as part of streetscape, camera facing west

Photo #3:
Front façade (east elevation), view from public sidewalk, camera facing southward

Photo #4:
Rear façade (west elevation), camera facing east

Photo #5:
View of interior from front entrance, camera facing west

Photo #6:
View of interior and exposed brick wall, camera facing northwest

Photo #7:
View of back portion of building having four rooms, camera facing southwest

Photo #8:
Front façade (east elevation) of building, circa 1948 (Dale Hyatt is pictured)
Source: Fullerton, George. *Guitar Legends: The Evolution of the Guitar from Fender to G&L*. Fullerton: Centerstream Publishing, 1993, p. 9.

Photo #9:
View of the front interior from the front entrance, circa 1948
Source: Smith, Richard. *Fender: The Sound Heard 'Round the World*. Fullerton: Garfish Publishing Company, 1995, p. 81.

Photo #10:
Leo Fender (right) with Clayton Orr Kauffman, with first K&F products, circa 1980s
Source: Wheeler, Tom. *American Guitars: An Illustrated History*. Rev. and updated ed. New York: HarperPerennial, 1992.

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Section number _ Page _ Sketch map

SCALE: 1" = 30'
← N

SOUTH HARBOR BOULEVARD

WEST COMMONWEALTH AVENUE

