

1554 5TH STREET  
(Waldo Waterman Auto Dealership)  
417 Colorado Avenue, 1554-1558 5th Street, and 1550 5th Street  
Santa Monica  
Los Angeles County  
California

HABS CA-438  
*HABS CA-438*

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

FIELD RECORDS

HISTORIC AMERICAN BUILDINGS SURVEY  
National Park Service  
U.S. Department of the Interior  
1849 C Street NW  
Washington, DC 20240-0001

**HISTORIC AMERICAN BUILDINGS SURVEY  
1554 5<sup>TH</sup> STREET**

**HABS CA-438**

**Location:** 417 Colorado Avenue, 1554-1558 5th Street, and 1550 5th Street, Santa Monica, Los Angeles County, California. Latitude and longitude are 34.014661 and -118.491655.<sup>1</sup>

**Present Owner:** OTO Development

**Present Use:** Vacant

**Significance:** The property is important as an early automobile dealership in the City of Santa Monica and as the workshop of aviator and inventor, Waldo Waterman. The Spanish Colonial Revival building was commissioned by the business partnership of Goodrum and Vincent, Inc., for a Buick dealership and designed and constructed in 1928 by designers, H. Vernon George and P. Whitehall, and contractor, H. M. Roth Construction. The three spaces of the original building were organized by use with 1554-1558 5th Street as the primary showroom, 417 Colorado Avenue as the used car showroom, and 1550 5th Street as the repair shop, offering customers fully integrated service under the same roof. Waldo Waterman, an inventor and aviation pioneer, occupied the building from 1935 to 1938, during which period he designed and manufactured six prototype roadable aircraft, called Arrowbiles. Waterman subsequently purchased the subject property in 1941 and owned it until his death in 1976.

**Historians:** Marissa Moshier and Erika Trevis, Chattel, Inc.

**Project Information:** An Environmental Impact Report (EIR) to satisfy requirements of the California Environmental Quality Act (CEQA) was prepared for a proposed project at 1554 5<sup>th</sup> Street, Santa Monica, California in May 2013. The EIR found that the building at 1554 5<sup>th</sup> Street does not retain sufficient integrity to be considered individually eligible as a historical resource at the federal, state or local level; however, the EIR also found that 1554 5<sup>th</sup> Street may be eligible as a contributor to potential local historic district in downtown Santa Monica (Central Business District Historic District). The EIR included a Cultural Resources Mitigation Measure requiring Historic American Buildings Survey (HABS) documentation of 1554 5<sup>th</sup> Street prior to demolition. The language requiring HABS documentation is as follows:

**MM CUL-1a Historic American Buildings Survey (HABS).** A HABS Level II recordation document of the existing historic building on the project site shall be prepared. The HABS document shall be prepared by a qualified architectural historian, historic architect, or historic preservation professional who satisfies the Secretary of the Interior's Professional Qualification Standards for History, Architectural History, or Architecture, pursuant to 36 Code of Federal Regulations 61. This document shall include a historical narrative on the architecture and history of the building, its architect, its occupants and their activities during the time of occupancy, and shall record the existing appearance of the building in professional large format HABS photographs. In addition,

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<sup>1</sup> Obtained from Google Earth, 2014. Measured approximately from center of 1554 5th Street building.

any existing and available historic photographs as well as design and/ or as-built drawings shall be compiled, reproduced, and incorporated into the recordation document. The building exterior, representative interior spaces, character-defining features, as well as the property setting and contextual views shall be documented. All documentation components shall be completed in accordance with the Guidelines for Architectural and Engineering Documentation (HABS standards). Original archivally-sound copies of the report shall be submitted to the National Park Service, Library of Congress, and the Santa Monica Historical Society. Non-archival copies shall be distributed to the City of Santa Monica Planning Division, and the Santa Monica Museum of Flying.<sup>2</sup>

This documentation has been prepared in fulfillment of the Cultural Resources Mitigation Measure described above. The report was prepared by Marissa Moshier and Erika Trevis of Chattel, Inc. (Chattel), using the sources listed above. The black and white photographic documentation prepared to accompany this report was completed in March 2014 by Stephen Schafer of Schaf Photo.

## **PART I. HISTORICAL INFORMATION**

### **A. Physical History:**

- 1. Date of Erection:** 1928
- 2. Architect:** H. Vernon George and P. Whitehall
- 3. Original and Subsequent Owners, Occupants, Uses:** The partnership of Goodrum & Vincent, Inc. acquired the parcel in 1926 and constructed the building as a Buick automobile dealership in 1928. By 1936, the building had reverted to bank ownership and Goodrum & Vincent, Inc. moved to another location. After several years of bank ownership, Waldo and Carol Waterman purchased the building in 1941. The Watermans leased space to other tenants during their ownership from 1941-1975 and sold the building to A & C Enterprise in 1975, which held the property until 1996. Beginning in 1996, the property passed through heirs of the Goode family, before being transferred to 1550 5th St, LLC, in 2008, and subsequently to OTO Development.

Santa Monica City Directory research over a forty-five year period, in addition to research in local newspapers and secondary sources, indicates that tenants occupying the building were primarily associated with aviation, aerospace, and automobiles. The Buick dealership of Goodrum & Vincent, Inc. occupied the building from 1928 to 1935. According to Waterman's autobiography, he "traded leases" with Goodrum & Vincent when the car dealers could no longer afford the building at 1554 5<sup>th</sup> St. Waterman moved to the subject property and Goodrum &

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<sup>2</sup> AMEC Environmental & Infrastructure, Inc., "1554 5<sup>th</sup> Street and 501 Colorado Avenue Hotel Projects Environmental Impact Report," May 6, 2013, <<http://www.smgov.net/Departments/PCD/Environmental-Reports/1554-5th-Street-and-501-Colorado-Avenue-Hotel-Projects-EIR/>>. Accessed March 28, 2014.

Vincent moved to Waterman's previous workshop at 1501 Santa Monica Blvd.<sup>3</sup> Between 1935 and 1940, additional tenants occupying the building included automobile upholsterer Anderson Sanfred, newspaper publisher Santa Monica Topics Publishing Co., and the State Department of Employment. The Waterman Arrowplane Corp. is listed as a tenant in 1940; however, according to Waterman's autobiography, the company was active in the building from 1935 to 1938. Waterman was using his unit for storage by 1940.<sup>4</sup> Waterman's autobiography and building permits reveal that Douglas Aircraft was using tenant space at 1552 5<sup>th</sup> St for storage in 1944.<sup>5</sup>

There were several vacancies in the late 1940s and early 1950s. Between 1947 and 1953, the Associated Telephone Company, Ltd., briefly occupied the space at 410 Colorado Ave. In 1954, Aerophysics Development Corp. became a brief tenant. The company was a small producer of defense weapons, including guided missiles. In 1955, Aerophysics Development Corp. was purchased by Studebaker-Packard Corp. and moved to a newly constructed research plant in Santa Barbara.<sup>6</sup> It appears that Aerophysics Development Corp. operated at 1550 5<sup>th</sup> St for a short period of time and the majority of the company's large military contracts came after the move to Santa Barbara. Additional tenants in the late 1950s and 1960s include the Freight Salvage Depot, Brentwood Motor Co. Paint and Body Shop, Speedway Motors, Prestige Autobody, and Midas Muffler. Seagull Aircraft and Self-Soar Association occupied 1554 5th Street for only one year between 1973 and 1974. Waterman leased the space to Michael Riggs of Seagull Aircraft and Self-Soar Association for the construction of a replica of a biplane hang glider from his childhood.<sup>7</sup>

4. **Builder, Contractor, Suppliers:** H. M. Roth Construction
  
5. **Original Plans and Construction:** No original plans have been located. When the building opened as a Buick automobile dealership in 1928, the *Santa Monica Evening Outlook* included an advertising section with photographs of the building. It was designed and constructed as one building; however, the south and east elevations are differentiated with ornamentation to create the appearance of three separate buildings. As a result, the building is associated with three addresses corresponding to separate units: 417 Colorado Avenue (originally the

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<sup>3</sup> Waldo Dean Waterman and Jack Carpenter, *Waldo: Pioneer Aviator, A Personal History of American Aviation, 1910-1944* (Carlisle, MA: Arsdalen, Bosch, & Co., 1988), 357.

<sup>4</sup> Waterman and Carpenter, 395.

<sup>5</sup> Waterman and Carpenter, 416.

<sup>6</sup> Aerophysics Development Corp. (ADC) was founded in 1951 by William Bolla. According to the 1954 *Santa Monica City Directory*, the company operated a manufacturing shop at 1550 5<sup>th</sup> St and a research facility and office at 1452 4<sup>th</sup> St. After being purchased by Studebaker-Packard Corp. in 1955, the company consolidated research and manufacturing operations into a single new facility constructed near the municipal airport in Santa Barbara, California. In 1957, ADC began working on research for vehicles capable of traveling to space, in addition to defense systems and guided missiles. "Aerophysics Objectives Told," *Los Angeles Times*, Jun. 15, 1957; and "'\$1,000,000 Research Plant Near Santa Barbara Slated,'" *Los Angeles Times*, Dec. 11, 1955.

<sup>7</sup> James Bacon, "Hang Gliding Wins Followers," *Boca Raton News*, Oct. 16, 1973.

used car showroom), 1554-1558 5<sup>th</sup> Street (corner unit, new car showroom), and 1550 5<sup>th</sup> Street (repair shop).<sup>8</sup>

**6. Alterations and Additions:** The following is a timeline of major alterations, based on review of building permits.

Exterior alterations:

- 1959: Removal of two storefronts in 1554 5<sup>th</sup> St unit and replacement with drive-in entrances<sup>9</sup>
- 1980: Exterior sandblasting.<sup>10</sup>
- 1982: Removal of two storefronts and entrance in 417 Colorado Ave unit. Replacement with three new entrance doors on Colorado Ave to create three retail stores.<sup>11</sup>
- 1983: Removal of drive-in entrance in 1550 5<sup>th</sup> St unit and replacement with door and window.<sup>12</sup>
- 1994: Application of gunite to exterior walls of 1554 5<sup>th</sup> St unit to correct damage from Northridge Earthquake. Projecting ornamentation was retained though it is now recessed due to thickness of gunite application.<sup>13</sup> Clay tile roof replaced. It appears that additional alterations to the exterior occurred at this time. All remaining storefronts in the 1554 5<sup>th</sup> St and 417 Colorado Ave units were replaced with a variety of window types and materials. One storefront was infilled, another was partially infilled, and three windows on the street-facing elevations were infilled. Additional projecting ornamentation at the roofline was removed from the 1554 5<sup>th</sup> St unit.

Interior alterations:

- 1968: Addition of office in southeast corner of 1554 5<sup>th</sup> St unit.<sup>14</sup>
- 1970: 417 Colorado Ave unit damaged by fire and rebuilt.<sup>15</sup>
- 1976: Construction of office on first floor of 1550 5<sup>th</sup> St unit in existing auto body shop.<sup>16</sup>
- 1986: Installation of drop ceilings and office partitions in 417 Colorado Ave unit.<sup>17</sup>

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<sup>8</sup> For the purpose of this report, "building" will refer to the building as a whole, while the individual units will be referred to by address.

<sup>9</sup> The building permit states, "Remove non-structural structure from two large windows for installations of driveways and overhead doors." Sketch map accompanying permit indicates removal of two storefronts in 1554 5<sup>th</sup> St unit and replacement with drive-in entrances. City of Santa Monica, Department of Building and Safety, Building permit no. B25309, Jan 27, 1959.

<sup>10</sup> Building permit no. A2440, Oct. 8, 1980.

<sup>11</sup> Building permit no. 54861, Jan. 19, 1982.

<sup>12</sup> Building permit no. B55672, Feb. 3, 1983.

<sup>13</sup> Building permit no. EQR0175, August 23, 1994.

<sup>14</sup> Building permit no. B40512, July 16, 1968.

<sup>15</sup> Building permit no. B42443, April 23, 1970.

<sup>16</sup> Building permit no B49207, November 30, 1976.

<sup>17</sup> Building permit no. 58165, Feb. 18, 1986.

- Date unknown: Removal of decoratively painted ceiling and walls and chandelier in 1554 5<sup>th</sup> St unit. Removal of fireplace and creation of opening in west wall of unit, accessing former used car showroom. Removal of stair to second floor and replacement with wood stair in new location.<sup>18</sup>

## **B. Historical Context:**

### **Automobile Dealership**

At the beginning of the twentieth century, manufacturers experimented with different systems for selling automobiles to consumers. These ranged from direct sales through factory stores and mail-orders to indirect sales through retail stores, traveling salesmen, and wholesale distributors. As automobiles were in essence novelty recreational vehicles, dealers had little reason to provide showrooms or service and repair facilities. They provided little financing or product promotion and carried limited inventories of vehicles and parts.

As the automobile industry evolved through the 1920s and 1930s, a new system of retail dealerships emerged. By the 1930s, automobile production had been consolidated from more than 600 manufacturers to a limited number of large, nationwide manufacturers. The majority of consumers had also shifted from first-time buyers to replacement buyers, creating a secondary market for used cars. For the first time, production capacity began to exceed demand. As the automobile became a primary means of transportation rather than a purely recreational vehicle, consumers also began to demand better vehicle performance, comfort and reliability. With pressure from manufacturers to sell high volumes and demands from consumers for increased dependability, dealers made greater investments in facilities, service equipment and inventories to increase their sales. Dealerships emphasized a specialized sales experience that incorporated product promotion, trade-in opportunities, financing, warranties, and in-house service and repairs.<sup>19</sup> As a result, the automobile dealership became a specialized property type, frequently a free-standing building, preferably situated in a prominent location, incorporating several automobile-related functions, including showrooms and service facilities. Popular architectural styles, including Art Deco, Streamline Moderne, and Spanish Colonial Revival, were combined with well-appointed interiors to create a luxury sales experience for consumers. Signage featuring the type of automobile available was also key to establishing a brand presence in local communities.

Automobile dealerships were particularly prevalent in southern California in the 1920s and 1930s, given that Los Angeles County was rapidly becoming the largest manufacturing center for automobiles on the West Coast, second only to Detroit in the country. Between 1919 and 1929, the population of Los Angeles County doubled, while the number of registered vehicles on the road jumped from 141,000 to 777,000, an

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<sup>18</sup>Based on review of historic photographs and site visit.

<sup>19</sup>Robert Genat, *The American Car Dealership* (Osceola, WI: MBI Publishing Co., 1999), 43-45.

increase of more than fivefold.<sup>20</sup> This large consumer market resulted in a rapid increase in automobile dealerships across southern California.

When the Goodrum & Vincent Buick dealership opened in Santa Monica in 1928, it offered full service, luxury experience to consumers. Both the interior and exterior surfaces of the main show room had a high level of decorative Spanish Colonial Revival detailing. The primary showroom featured balconies with iron railings, ceiling painted by Stefan Horbaczek, fireplace, chandelier, furnishings, and tile floor. The exterior neon Buick sign was one of the largest of its type in California. The dealership also offered repairs and maintenance service, along with used car sales under the same roof. As advertised in a 1928 three-page spread in the *Santa Monica Evening Outlook*, the Goodrum & Vincent Buick dealership was an excellent example of the early automobile dealership property type:

Like an old Spanish castle where the dashing caballero serenaded his dark-eyed seniorita in the days of the sixteenth century Renaissance is the interior of the new showroom of Goodrum and Vincent, Buick dealers, where the 1928 Romeo wins the favor of this “girl friend” in the modern way – with a new Buick... From the outside the building is a landmark at the corner. Proclaimed by a Neon Buick sign, the largest in Santa Monica, and the largest sign for that make of car in California outside Los Angeles, the large proportions of the structure attract visitor and resident alike. Darkened stones, re-touched to represent the old Spanish age given the exterior a distinctive twinge. Huge plate glass windows offer a clear view to the shiny automobiles in the beautiful show room.<sup>21</sup>

### **Waldo Waterman and Roadable Aircraft**

Beginning in the 1910s and 1920s, well-publicized flights and innovations in aircraft technology spurred public interest in aviation. Like the automobile, the airplane was promoted as the next great democratizing force, a mass-produced personal vehicle which would allow people to escape congested cities for the countryside. By the late 1920s, however, personal aircraft seemed out of reach for the average American as the majority of airplanes were produced by large manufacturers for military and commercial uses or as recreational vehicles for the very wealthy. The majority of American pilots were professionals, flying for military service or commercial airlines, rather than amateur sport or recreation. Aircraft designs were intended to increase range, speed, and power, placing them beyond the skill and price range of amateur pilots. Waldo D. Waterman (1894-1976) was one of a group of aviators and airplane designers beginning in the 1930s who created innovative aircraft designs intended to improve access for amateur pilots.

Waterman was the grandson of California Governor Robert Whitney Waterman (1826-1891) and grew up in San Diego. He constructed his first aircraft, a biplane glider, and

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<sup>20</sup> Mark S. Foster, “The Model-T, the Hard Sell, and Los Angeles’ Urban Growth: Decentralization of Los Angeles during the 1920s,” *Pacific Historical Review*, Vol. 44, No. 4 (Nov. 1975): 464.

<sup>21</sup> Russell Brines, “New Buick Building to Open Saturday with New Buick Cars,” *Santa Monica Evening Outlook*, July 26, 1928.

completed his first solo flight in 1909. In January 1910, he attended the first United States air meet at Dominguez Field, Los Angeles, where he met aviator Glenn Curtiss. He attended the University of California, Berkeley, and headed the university's Department of Flight Theory and Military Aeronautics during World War I. After serving as general manager and chief engineer of U.S. Aircraft Corp., he established his own aircraft manufacturing company, Waterman Aircraft Co. in 1919. Based in the Venice area of Los Angeles, the company designed and built custom planes for military and airmail uses.

In 1924, Waldo Waterman established Ontario Aircraft Corp., intending to carry passengers and mail between Ontario and Big Bear Lake. Waterman anticipated using this route to bid on the federal contract for airmail delivery between Salt Lake City and Los Angeles. On the airline's second flight, the airplane piloted by Waterman crashed, killing one passenger. The airline soon went out of business, and Waterman became an engineer and test pilot for Bach Aircraft.

Beginning in 1928, Waterman became general manager of Metropolitan Airport (Van Nuys Airport) and collaborated on design of the hangars and runways. Waterman Avenue adjacent to the airport is named for him. In July 1929, Waterman set a new altitude record of 20,820 feet for a multi-engine aircraft with 1,000 kilogram (approximately 2,200 pounds) payload. His flight was sponsored by Bach Aircraft and Union Oil and launched from Metropolitan Airport.<sup>22</sup>

From 1932-38, Waterman designed three original aircraft, the Whatsit, Arrowplane, and Arrowbile. Waterman experimented with airplane design throughout his life, starting with his first glider based on plans from *Popular Mechanics* in 1909. Like most aviators of the period, he used a combination of parts for automobiles and airplanes, and borrowed and expanded on comparable designs from other aviators. Each of the three airplanes built on the design of previous aircraft. Waterman had a particular interest in developing roadable aircraft ("flying cars") that would be sold to the average consumer. The Whatsit and the Arrowbile were both fully roadable aircraft. Although Waterman envisioned that these airplanes would be mass-produced, they were all constructed as custom prototypes and never achieved large scale production.

### Whatsit

Designed and constructed in 1932-3, the Whatsit was a prototype roadable aircraft, evolved from numerous sources including a 1909 design patent by John William Dunne. According to Waterman, creating a roadable aircraft required modification of two areas of airplane design: the tail and wing. Typical airplanes of the period required a long tail section and fuselage to provide sufficient lift. Waterman was able to use developments in airfoil<sup>23</sup> technology to create large wings that provided enough lift to remove the tail.

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<sup>22</sup> Waterman and Carpenter, 272.

<sup>23</sup> An airfoil is the shape of a wing in cross section. Different thicknesses and shapes of airfoils affect the lift and drag of an airplane.

Although the tailless<sup>24</sup> design reduced the overall weight of the plane, the large wings required for lift hampered the road-worthiness of airplane. Waterman determined that in order to create a roadable aircraft, the wings would need to be stowed or folded when traveling on ground. He designed removable wings which could be left at the airport when converting the airplane to an automobile. The plane also had steerable tricycle landing gear,<sup>25</sup> allowing for maneuverability on the ground and increased stability for landing, and elevon control, a type of tail surface which combined horizontal (roll) and vertical (pitch) controls of the airplane.<sup>26</sup>

Design and test flights of the plane took place at Metropolitan Field and are described as follows by the Smithsonian National Air and Space Museum (NASM):

Upon completion in May 1932, the Whatsit was taxi tested at various speeds on the ground and several abortive attempts were made to fly it during May and June, with some resulting damage. After repairs, Waterman made the first test flight in July 1932. It was immediately apparent that the pitch stability of the airplane was somewhat limited because of the short coupling relationship of the engine thrust line to the aerodynamic center of pressure location that was inherent in the low-mounted swept-wing tailless configuration. Some flights were made with an adjustable horizontal stabilizer in front for trim purposes, but elevons provided lateral and longitudinal controls. In October, the Whatsit was nearly destroyed in a landing accident with another test pilot, and a serious reevaluation of the project indicated that major configuration changes would be required to make the aircraft safe for the intended customer, the novice pilot. These considerations, along with the chronic shortage of funding, led to the decision to place the airplane in storage. Waterman began flying for Transcontinental and Western Airlines (TWA).<sup>27</sup>

Waterman restored and donated the Whatsit to NASM in 1950.

### Arrowplane

In 1934, Waterman resumed modifications to the Whatsit design, in response to a Bureau of Air Commerce competition for personal, light aircraft in 1934-35. He altered the previous design to create the Arrowplane, a prototype non-roadable, tailless airplane. Working drawings of the aircraft were prepared in an office at Clover Field, Santa

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<sup>24</sup> The design of tailless airplanes is a specific branch of aircraft engineering, requiring specialized design components, including large wings to provide sufficient lift to compensate for loss of lift in the tail. Within the tailless airplane type, the best-known and most successful airplanes were "flying wings," airplanes with no separate fuselage, where the crew, payload and equipment are housed in the main wing structure. The Northrop-Grumman B-2 Spirit, "Stealth Bomber," is perhaps the best known of the flying wing type of tailless airplane.

<sup>25</sup> Tricycle landing gear is composed of three wheels, a center nose wheel in the front and two rear wheels slightly aft of the center of gravity.

<sup>26</sup> Waterman and Carpenter, 320-1.

<sup>27</sup> Smithsonian National Air and Space Museum, "Waterman Whatsit," <<http://www.nasm.si.edu/collections/artifact.cfm?id=A19500099000>>.

Monica, and the plane was constructed at 1501 Santa Monica Blvd, which Waterman began renting in 1934.<sup>28</sup>

NASM describes the Arrowplane as follows:

In response to the safe airplane competition, Mr. Waterman sought to adapt the "Whatsit" design to meet those [Bureau of Air Commerce] requirements. The resulting prototype "Arrowplane" was a much more stable two-place, high-wing tailless cabin monoplane equipped with a tricycle landing gear. Flight control was provided by wing mounted elevons and wing tip mounted multi function rudders. Outboard deflection of the rudders provided a speed brake function. To fulfill Vidal's easy-to-fly requirements, a two control system was installed. This essentially made the airplane stall and spin-proof. Pitch was controlled by the fore and aft movement of the control column and a turn of the control wheel resulted in a perfectly coordinated banked turn. The airplane was powered by a four-cylinder, 95 HP Menasco C-4 air-cooled inline engine mounted in a pusher configuration in the rear of the passenger/crew nacelle. Automobile style doors allowed entry into the side-by-side passenger cabin. While the Arrowplane was not roadable, it was a major advance toward achieving Waterman's ultimate goal of a roadable airplane.<sup>29</sup>

The Arrowplane was completed in summer 1935, and in July, John Geisse from the Bureau of Air Commerce flew it across the country to Washington, D.C. In a stroke of bad luck, Geisse crashed on landing and Waterman had to repair the plane before joining the competition. Amelia Earhart and Charles Lindbergh both flew the plane in 1935, while Waterman was on the East Coast attempting to raise funds to support construction of additional planes.<sup>30</sup> Although the Arrowplane was not successful in meeting all of the competition requirements, it was one of four planes purchased by the Bureau.<sup>31</sup> Buoyed by the initial support of the Bureau, Waterman returned to Santa Monica in 1935 to develop a roadable version of the Arrowplane.

### Arrowbile

After returning to Santa Monica from the Bureau competition, Waterman incorporated the Waterman Arrowplane Corporation to raise funds for construction of additional planes. He also moved from 1501 Santa Monica Blvd to 1554 5<sup>th</sup> St, trading leases with the Goodrum & Vincent Buick dealer. Waterman was determined to realize his vision of a roadable aircraft. Between 1935 and 1938, he worked on the Arrowbile, the roadable version of the Arrowplane, in the 1554 5<sup>th</sup> St property.

NASM describes development of the Arrowbile as follows:

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<sup>28</sup> Waterman and Carpenter, 347.

<sup>29</sup> Smithsonian National Air and Space Museum, "Waterman Aerobile," <<http://www.nasm.si.edu/collections/artifact.cfm?id=A19610156000>>.

<sup>30</sup> Waterman and Carpenter, 366.

<sup>31</sup> Waterman and Carpenter, 357.

The Bureau of Air Commerce's recognition of the Arrowplane prompted Waterman to form the Waterman Arrowplane Corporation in Santa Monica, California, and develop a roadable version of the aircraft known as the Arrowbile. This idea required the development of a transmission drive system that would operate the propeller for flight and the rear wheels for ground operation. The aircraft was required to meet the certification criteria for both the Bureau of Air Commerce and the state motor vehicle departments. Waterman used as many standard auto components as possible, including Studebaker radiator, interior knobs and parts, hood grill, starter, generator, battery, and engine, Ford radiator grill and gear reduction assembly, Austin steering wheel, and Willys headlight, internal differential gears, and wheel brakes. The only expensive aircraft quality instruments used were the magnetic compass, air speed indicator, and altimeter. The only device used for flight control was a wheel yoke that was suspended from the cabin ceiling in front of the pilot. This same wheel was also used to turn the nose wheel for steering during ground operation. The wheel brakes, ground accelerator pedal and a foot button starter switch were the only controls on the floor. To convert for ground operation, the two wings were separately detached by first removing the pins from the lower wing strut attach points and then swinging the struts outboard to be used as a stand. Operation of the safety release on the cabin ceiling extracted the tapered pins retaining the spars and controls connections. The propeller was then disengaged and the ground drive transmission engaged. You could then drive the vehicle to your destination and upon your return the procedure was reversed for it to fly again.

Waterman flew the first test flight of the Arrowbile on February 21, 1937, and found the aircraft easy to fly and virtually spin and stall proof. However, its price of \$3,000 was considerably more than the \$700 airplane envisioned by Vidal. The craft was registered as a motorcycle in California. The Studebaker Company, looking to advertise its engines, bought the company and ordered the first five aircraft. Numbers 1, 2, and 3 were completed and given restricted certificates for flight from Santa Monica to Cleveland, Ohio, in September 1937 to attend the National Air Races. Although No. 1 was severely damaged during a forced landing in Arizona, No. 2 and No. 3 performed impressive daily demonstrations.<sup>32</sup>

By 1938, Waterman was seriously ill with a ruptured appendix and was unable to continue work on the Arrowbile. He closed the corporation, stating in his autobiography,

As I was so damn weak and had negligible prospects for selling any more Arrowbiles, I made the decision to wrap-up the corporation. We returned what inventory we could to suppliers and held an auction that disposed of most of the physical assets and equipment.<sup>33</sup>

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<sup>32</sup> Smithsonian National Air and Space Museum, "Waterman Aerobile,"  
<<http://www.nasm.si.edu/collections/artifact.cfm?id=A19610156000>>.

<sup>33</sup> Waterman and Carpenter, 395.

### Aerobile

The Aerobile was a later modification of the Arrowbile design, created after Waterman returned to health in the 1940s. In 1946, he incorporated Waterman Research Engineering Co. in the Ocean Park area of Santa Monica and continued to make custom aircraft. By this period, he was essentially semi-retired. NASM describes the Aerobile as follows:

In 1940, healthy again and working with the Civilian Pilot Training Program, Waterman purchased the number 4 aircraft and an engine from Studebaker and continued his research. William Stout, who built the Stout Sky Car and worked with Consolidated Vultee, showed interest in the project and brought the remaining aircraft to Detroit for more research, but Consolidated's interest waned after World War II ended.

In the late 1940s Waterman retrieved as many parts of the incomplete Arrowbile #6 as he could find and continued his work. His improved postwar version had a swept wing tailless pusher configuration with its tricycle landing gear. Now called Aerobile #6, the larger fuselage section carried a pilot forward and two passengers on a bench seat in the back and the aircraft had a postwar Franklin-built Tucker automobile engine. Waterman redesigned the wing assembly so that it could be removed as one assembly rather than the two separate wings of the Arrowbile. The conversion procedure was essentially the same as described for the Arrowbile, however the "Three Minute Conversion" claims of the sales brochures were optimistic at best. The fuselage was a welded steel tube structure covered with sheet aluminum panels. The wings were of metal construction with wooden spars and the wingtip mounted fins and rudders were of welded steel tubing. All wing surfaces were fabric-covered. The aircraft had a single right-side door, a standard instrument panel, and the control wheel yoke was mounted on the floor.<sup>34</sup>

In 1961, Waterman donated the Aerobile to NASM. For the remainder of his life, Waterman lived off his inheritance from his grandfather and continued to build custom airplanes, although none were as original in design as the Whatsit, Arrowplane, Arrowbile or Aerobile.

## **PART II. ARCHITECTURAL INFORMATION**

### **A. General Statement:**

- 1. Architectural Character:** The property is Spanish Colonial Revival style with Churrigueresque details. The two street-facing elevations (south and east) are differentiated through fenestration, entrances, and decorative details to create the

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<sup>34</sup> Smithsonian National Air and Space Museum, "Waterman Aerobile," <http://www.nasm.si.edu/collections/artifact.cfm?id=A19610156000>.

appearance of three separate buildings. The west, alley-facing elevation is utilitarian.

- 2. Condition of Fabric:** The property was damaged in the 1994 Northridge Earthquake and was substantially altered during repairs to the earthquake damage.

## **B. Description of Exterior:**

- 1. Overall Dimensions:** The building is largely two stories in height with a one-story portion on the southwest corner (corresponds to address 417 Colorado Avenue). The southeast corner of the building has an octagonal tower rising several feet above the roofline and creating a clipped corner fronting the intersection of 5<sup>th</sup> Street and Colorado Avenue.
- 2. Walls:** Exterior street-facing walls are clad in a thick coating of gunite with a stucco overlayer. The alley-facing west elevation is painted brick.
- 3. Structural System, Framing:** The building was constructed as an unreinforced masonry structure. Alterations to the building include the application of gunite to the exterior walls to reinforce the building and repair damage from the 1994 Northridge Earthquake. The majority of the Churrigueresque cast stone ornamentation is now recessed, due to the thickness of the gunite and stucco overlayer.
- 4. Openings:**
  - a. Doorways and Doors:** The building has three drive-through entrances with metal roll-up doors, two on 5<sup>th</sup> Street and one on Colorado Avenue. Pedestrian entrances to the 1550 5<sup>th</sup> Street and 1554 5<sup>th</sup> Street units are glazed metal-frame doors with transoms. The 417 Colorado Avenue unit has one recessed double door entrance with wood panel door, surround and transom, and two additional recessed entrances of wood panel doors, surrounds and transoms and large wood frame, fixed windows.
  - b. Windows:** Windows in the 417 Colorado Avenue and 1554 5<sup>th</sup> Street units consist of a combination of fixed aluminum frame windows, and aluminum frame storefronts. One storefront in the 417 Colorado Avenue has been replaced with a combination of glass block and aluminum frame windows. The mezzanine level of 1554 5<sup>th</sup> Street has a row of small wood windows capped by projecting cast stone ornamentation. The 1550 5<sup>th</sup> Street unit has steel sash, multi-light windows on the first and second floors. The west elevation, fronting the alley, contains metal frame windows at first and second floors. One window opening has been in-filled.

## 5. Roof:

- a. **Shape, covering:** The building has three separate bow string truss roofs, corresponding to the three units, with rolled roofing. The 1554 5<sup>th</sup> Street unit at the corner has a parapet with clay tile cladding.
- b. **Dormers, cupolas, towers:** The southeast corner of the building is an octagonal tower, projecting slightly above the surrounding roof. Ornamentation on the second floor of the tower consists of three decorative cast stone shields. There is a lighted “Midas” sign on the roof.

## C. Description of Interior:

### 1. Floor Plans:

- a. **1554 5<sup>th</sup> Street unit:** The majority of the interior consists of an automobile repair shop, open the full height of the building. There is an exposed wood frame platform in the southeast corner of the unit, creating an office and reception space on the first level and storage space on the second level. The mezzanine on the north side of the unit is accessed through a wood stair on the north wall, leading to a balcony overlooking the repair floor and an office suite. The balcony is accessed through a series of decorative, arched openings. The original stair leading to the second floor has been reconfigured and replaced with the existing wood stair. When serving as an automobile dealership, the interior contained decoratively painted ceiling and walls, a fireplace, and chandelier.<sup>35</sup> These features have been removed. The tile floor appears to remain from the period of the automobile dealership. A new opening has been cut in the west wall of the repair shop, ramping down into the west portion of the unit. This new opening caused the removal of the fireplace in the original new car showroom.
- b. **417 Colorado Avenue unit:** The interior has been subdivided with a combination of full- and partial-height partitions to provide office space.
- c. **1550 5<sup>th</sup> Street unit:** The majority of the first floor interior consists of an open repair floor, providing room for car repairs, punctuated by concrete piers, supporting the second floor. There is a small, first floor office in the northeast corner of the unit. A ramp on the south side of the interior provides vehicular access to the second floor. A stair to

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<sup>35</sup> Based on description of Buick dealership from article in *Santa Monica Evening Outlook*, July 26, 1928.

the south provides pedestrian access. There appear to be two infilled windows on the interior south wall, connecting to the 1554 5<sup>th</sup> St unit. The second floor consists of another open space with small office in the southeast corner. The floor is lit by several skylights, and bow-string truss roof supports are visible.

**D. Site:** The property is located on the northwest corner of 5<sup>th</sup> Street and Colorado Avenue in Santa Monica, California. The building footprint occupies the entire parcel and is bounded on the west by an alley and on the north by an adjacent building.

### **PART 3. SOURCES OF INFORMATION**

#### **A. Architectural Drawings:**

None

#### **B. Early Views:**

Brines, Russell. "New Buick Building to Open Saturday with New Buick Cars." *Santa Monica Evening Outlook*. July 26, 1928.

#### **C. Interviews:**

None

#### **D. Selected Sources:**

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