

## Consolidated Vultee Aircraft Corporation's Fleet House

Peter Lobner, 15 June 2020

In 1946, California aircraft manufacturer Consolidated Vultee (later known as Convair) considered mass-producing prefabricated, single-family houses for the post-WW II housing market. With funding from the federal government's Guaranteed Market Program, which was intended to provide housing and employment for people making the transition from a wartime to peacetime economy, the aircraft manufacturer commissioned industrial designer Henry Dreyfuss and architect Edward Larrabee to design a prefabricated house that could be manufactured in a surplus Vultee factory and assembled on site.

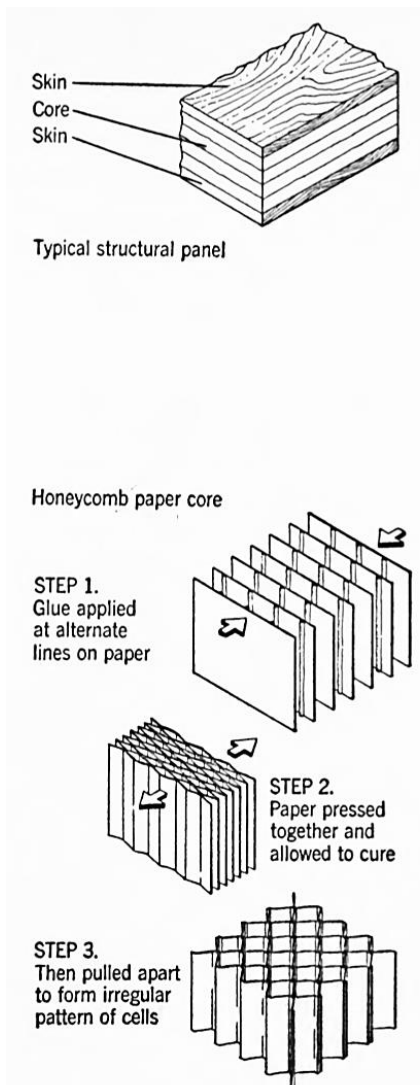
The product of this collaboration was a modest 810 square foot (75 square meter), two-bedroom house constructed largely of lightweight, high-strength aluminum composite panels with a cardboard honeycomb core. Vultee had experience using this type of composite material in its WW II aircraft bulkheads and could produce three inch thick aluminum composite panels measuring up to 8 x 18 feet (2.4 x 5.5 meters). These aluminum composite panels formed the walls and flat roof of Vultee's prefabricated house. All wiring was run in a conduit behind baseboard molding along the floor.



*The prototype Vultee House (Fleet House) in the factory.*

Source: J. Paul Getty Trust via [www.thefleethouse.com](http://www.thefleethouse.com)

In his 1951 book "The Prefabrication of Houses," (pp. 233 – 235), author Burnham Kelly reported that development work on aluminum clad, plastic-impregnated, honeycomb paper-core materials was carried out primarily by Lincoln Houses Corporation, Chrysler, Douglas Aircraft, and Consolidated Vultee. Kelly described these honeycomb panels as follows:



"The Southern California Homes (successor of Vultee) system included a semi-honeycomb paper core, impregnated with phenolic resin, and faced with aluminum skins (3S, 0.020" thick, 3/4 hard) in room-size panels. Panel edges and openings were formed by channels of aluminum 0.064" thick, the flanges of which were bonded between skin and core materials. The bottom edge of the panel was bonded to a 2" box section of aluminum, which served as a wiring conduit and also provided access every 4' for bolting the panels to the foundation slab. On the inside, this was covered by a simple baseboard.

"Aluminum rolled strip door and window stops were screwed to the channels, and served to locate steel casement sash and paper-core wood-veneer flush doors. On the outside, the bottom edge of the panel had a lip to cover the exterior joint at the edge of the foundation. From the top edge of wall panels, bolts passed through to roof panels and held them in place.

Paint over zinc chromate primer was the finish. This wall, complete, averaged only 1 lb. per sq. ft."

"Architecturally, the house was of unconventional design and reflected an appreciation of the possibilities of the new material. It would require a few changes, however, particularly to avoid through-metal in the walls, for use in northern climates."

Consolidated Vultee Aircraft Company sold its prefab house project in Downey, CA, to Southern California Homes, then a marketing division of Consolidated Vultee. The Southern California Homes president, Reginald Fleet, moved the prototype house from the factory to its present location on a 17,220 square foot lot at 325 Monterey Road, South Pasadena, CA.

The prototype house was first occupied by Fleet and his family, hence the current name "Fleet House." He intended to use the house as a showcase to promote the ease and comfort of living in a modern prefabricated house that his firm hoped to manufacture and sell in large quantities.



*Fleet House exterior view.*

*Source: Aviation News magazine, 4 November 1946*

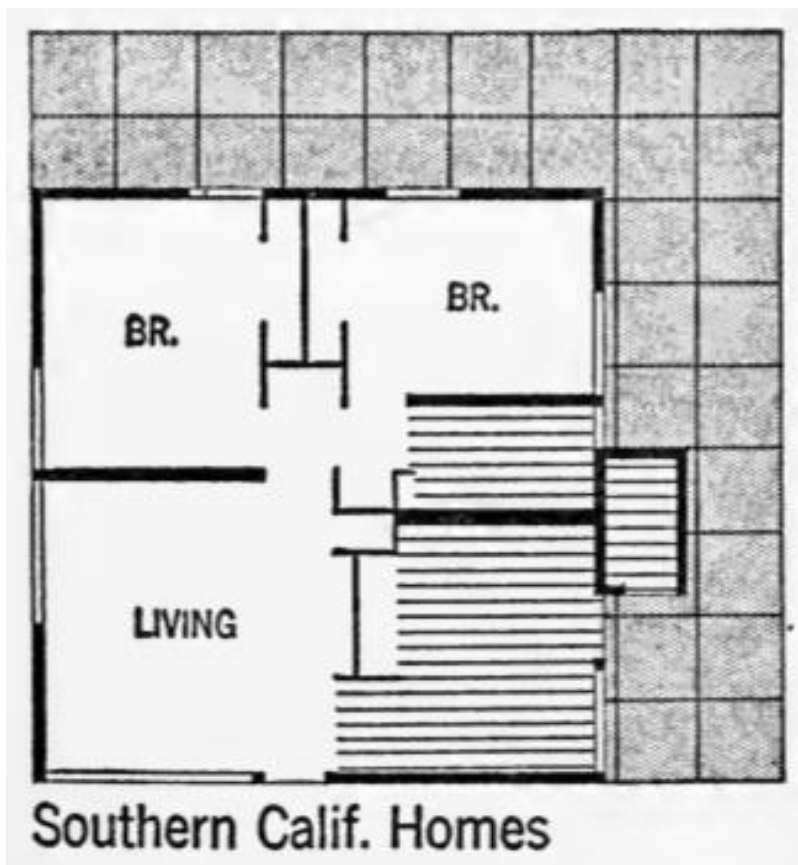


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Floor plan for Fleet House. The shaded areas are the kitchen, bathroom and utility area. Source: Burnham Kelly, p. 277

The home, with kitchen appliances, kitchen and bathroom fixtures, and heating, was expected to sell for \$7,000 to \$8,000, including the cost of the lot. Only one other similar house was manufactured by the factory.

A 2006 article by Jeffrey Head entitled "*Snatched from Oblivion*," reported on the "re-discovery" of the Fleet House.

"Comprising 28 parts, the two-bedroom, one-bath structure appears larger than its 810 square feet because 75 percent of the exterior walls are windows. The remaining interior, roof, and garage walls are constructed of "lumicomb," a lightweight material made of a cardboard-like honeycomb core bonded between sheets of high-strength aluminum, used at the time for airplane bulkheads. The lumicomb adds to the open feeling of the house by requiring less floor space than traditional wall and roof construction."

"Because the resulting design was so unorthodox, Reginald Fleet, president of Southern California Homes Incorporated, opted for a novel way of marketing it. Fleet resided in the prototype with his wife and daughter, leaving it open for prospective buyers to see what life was like in a modern prefabricated home."

"New owner Sergio Santino was about to close escrow and planned to raze the house until the South Pasadena Cultural Heritage Commission informed him of its significance."

At the time, the house was covered in a stucco wash and overgrown vegetation. As a historic house subject to the Mills Act, the property owner is granted a reduction of property taxes in exchange for the continued preservation of the structure. Because of the large lot size, Pasadena officials agreed that the property could be zoned to permit construction of a larger "estate house" in the back of the property, with the Fleet House being a guest house in the front of the property. With this concession, the sale of the property was concluded.

The Fleet House has since been restored and is recognized as South Pasadena Cultural Heritage Landmark #51. In addition, it is included in South Pasadena's Citywide Context Statement, which is a compilation of the most notable and historic structures in the city.





*Front exterior view of the Fleet House circa 2018.  
Source: Jessica Isaac, [www.apartmenttherapy.com](http://www.apartmenttherapy.com)*



*Front exterior view of the Fleet House, circa 2015.  
Source: [www.TakeSunset.com](http://www.TakeSunset.com)*



*Side exterior view into the kitchen area of the Fleet House.  
Source: Fernando Cerda via PasadenaMag.com*



*Kitchen. Source: [www.TakeSunset.com](http://www.TakeSunset.com)*





*Living room. Source: [www.TakeSunset.com](http://www.TakeSunset.com)*



*Restored aluminum exterior and roof overhang panels.  
Source: <http://www.thefleethouse.com>.*





*Original lumicomb honeycomb core section with the aluminum skin removed. Source, both photos: <http://www.thefleethouse.com>.*



*Engineered aluminum composite roof panels.*

More information on the house, its restoration and the property are available on the Fleet House website at the following link: <http://www.thefleethouse.com>. Numerous books that describe the Fleet House are identified on this website.

The location, condition and existence of the second manufactured house are not known. Therefore, the South Pasadena Fleet House may be the only US post-WW II home still remaining that was designed, built, and pre-assembled entirely in an aircraft factory.

**For more information, see the following resources:**

- Cuyler Gibbons, “Buried Treasure,” PasadenaMag.com: <https://pasadenamag.com/homesandrealstate/buried-treasure/>
- Jeffrey Head, “Snatched from Oblivion,” MetropolisMag.com, 1 October 2006: <http://www.metropolismag.com/October-2006/Snatched-from-Oblivion/>
- “325 Monterey Road in South Pasadena,” Take Sunset – Real Estate and Architecture in Los Angeles, 2 September 2015: <https://takesunset.com/2015/09/325-monterey-road-in-south-pasadena/>
- Jessica Isaac, “The Fleet House Is the Only Home Built in an Aircraft Factory in the Entire World,” ApartmentTherapy.com, 21 June 2018: <https://www.apartmenttherapy.com/the-fleet-house-consolidated-vultee-aircraft-factory-tour-259133>
- Burnham Kelly, “The Prefabrication of Houses - A Study by the Albert Farwell Bemis Foundation of the Prefabrication Industry in the United States,” pp. 233 – 235 & 277, Technology Press of MIT and John Wiley & Sons, 1951: [http://www.survivorlibrary.com/library/the\\_prefabrication\\_of\\_houses\\_1951.pdf](http://www.survivorlibrary.com/library/the_prefabrication_of_houses_1951.pdf)