The year was 1941. Newlyweds Charles and Ray Eames left the famed Cranbrook Academy of Art, in Michigan, and moved to Southern California, where they launched a furniture design studio. They began to experiment with molded plywood, using heat and pressure to create curved plywood elements on a homemade contraption they dubbed the Kazam! Machine (see photo, center right).

World War II advanced their plywood work. The duo developed production techniques to fashion some 150,000 molded-plywood splints for the Navy. They also began producing plywood airplane parts—including a contoured pilot’s seat (see photo, top right). This important manufacturing work gave the couple insights they applied to their furniture designs.

In 1946, New York’s Museum of Modern Art staged an exhibition titled “New Furniture by Charles Eames,” which featured an all-plywood lounge chair like nothing seen before. The design featured four pieces of curved plywood (seat, back, and two U-shaped legs) screwed to a sinuous plywood spine. Rosewood face veneers conveyed elegance, but the chair’s exposed plywood edges were meant to honestly express the innovative fabrication process. It was the designers’ intention to “let the results of the mass production technique show through” in the finished piece of furniture.

The comfort and unabashed modernity of the molded plywood chair had a game-changing effect on furniture design. Eliot Noyes, the museum’s curator of industrial design, called the chair “a compound of aesthetic brilliance and technical inventiveness.” One design critic gushed that it was “the chair of the century.”

In the years following that museum exhibition, the Eames studio became extremely influential and successful in the world of product design. Their work helped define the look we now call Mid-century Modern. In 1956, they delivered another blockbuster—their cushioned lounge chair and ottoman. It debuted during a segment on a daytime television show aimed at women.

Like the plywood chair, the lounger uses separate pieces of curved plywood, but they’re connected by metal brackets or plates and rubber shock absorbers. The bracket connecting the seat to the base allows the seat to swivel and rock slightly. The Eameses said they wanted their lounge chair to have the “warm receptive look of a well-used first baseman’s mitt.” An article in Playboy magazine said the chair “sank the sitter into a voluptuous luxury that few mortals since Nero have known.”

Charles Eames died in 1978; Ray, ten years later. But their furniture is still going strong. Both the 1946 chair (officially the LCW, short for lounge chair wood) and the 1956 lounge chair and ottoman have always been in continuous production. Herman Miller makes them in the U.S.; a company called Vitra makes them in Europe.

At Herman Miller, industrial-size presses use heat and pressure to create curved plywood parts, using much the same techniques the Eameses developed 75 years earlier with
Furniture may have made them famous, but Charles and Ray Eames put their creative talents to use across a dazzling array of disciplines. For more than 40 years, the Eames office worked extensively in graphic design while also creating toys, textiles, furniture, and houses. They also wrote books and produced films. To learn more about this unique couple, visit eamesoffice.com.

One of the goals the Eames tried to achieve in their design and manufacturing work is also a tribute to their success: “The best for the most for the least amount of money.”

Photo: Pilot seat, Kazam! Machine, and Eames at work © 2019 Eames Office, LLC (eamesoffice.com)

More than chair designers

Early work. Experiments in bending plywood caught the attention of the U.S. Defense Dept. during World War II. The pilot seats designed and produced by Charles and Ray Eames represented a breakthrough in compound-curve plywood construction. Their forming device, dubbed the Kazam! Machine, relied on toaster-like wires to heat wood plies, and an inflatable balloon to apply pressure.

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