

## THE MUSEUM OF MODERN ART

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NEW FURNITURE DESIGNS AND TECHNIQUES HAVE INITIAL SHOWINGAT MUSEUM OF MODERN ART

The chair is king in the exhibition New Furniture Designed by Charles Eames opening at the Museum of Modern Art Wednesday, March 13. But not the ordinary chair. The exhibition will present the greatest innovation in chair design since Marcel Breuer startled the furniture world with his metal chair and Alvar Aalto introduced the technique of laminated wood furniture.

Basically, the new Eames chair is a development for mass production of the molded-chair idea invented by Eames and Saarinen, which won first prize in the Museum's Organic Design Competition in 1940-41. But something has been added--in fact, several things. Although the chairs still employ the molded back and seat construction sculptured to fit body contours, many new techniques and esthetic innovations are presented. The most important of these is "shock-mounting," whereby seats and backs are joined to chair frames by rubber mounts which absorb shocks and distribute stresses, a technique long used in mounting engines. This provides resilience and flexibility, permitting the chair to yield to changes of sitting position.

But it is the chair with the scrambled legs that probably will provide the most general interest. It has been designed to safeguard that deep masculine urge to balance precariously on the two rear legs of a chair. The Eames tilt-back chair rearranges the conventional four chair legs so that one leg extends to the rear and another to the front, only three touching the floor at any time. This makes it possible for one to tilt back in the chair without the risk of tumbling over. The chair is made in two versions; one tilts on a pair of legs, the other rocks on a horizontal bar.

A huge revolving barrel, open-ended, will be included in the exhibition. By pressing a button the visitor can start the rotation of the barrel and watch an Eames chair being bounced about to demonstrate its durability and strength.

The exhibition, however, is not entirely confined to chairs.

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Additional strong, light pieces for dining room, living room and outdoors are included. New principles of construction in furniture are incorporated as a result of new techniques developed for mass production. The furniture is not currently available, these being merely the first models, developed and made under mass-production conditions by the Evans Products Company of Detroit, which is arranging for large-scale production. These pieces will be available for purchase later in the year in most of the large cities of the country.

Eames' first venture into furniture was in collaboration with Eero Saarinen, when they won two first prizes in the Organic Design Competition which the Museum of Modern Art conducted in 1940 and 1941. Their prize designs established and presented many principles used in the present furniture. The present group is an entirely new set of designs, however, and is significant because completely adapted for real production line manufacture, which will enable them to be offered at low cost when they become available. The following points, some of which are innovations, are significant:

1. The plywood seats and backs of the chairs have been molded three-dimensionally to conform to the human body.
2. Seats and backs are joined to chair frames by rubber mounts which absorb shocks and distribute stresses, a technique long used in mounting engines. This provides resilience and flexibility, permitting the chair to yield to changes of sitting position.
3. Parts of various materials are joined, as in many wartime industries, by means of a special electronic instrument which transmits heat by radio wave directly to the synthetic resin bonds without injuriously heating the wood. The speed and precision of radio frequency bonding make it an important technique of mass production. This technique also solves for the first time the difficult problem of a trim connection between upholstery material and wood.
4. Table legs are detachable and are bolted to the top by metal fittings electronically bonded to the wood leg. The entire joint is precision-engineered, as in the aircraft industry.
5. Standardization of parts on similar pieces has been accomplished to the point of complete interchangeability. For shipping or storing, similar parts nest conveniently.
6. On the outdoor pieces, the wood parts have been treated with a resinous impregnation that makes them impervious to weather. Metal parts are also weather-proof. The outdoor furniture may be left out twelve months of the year and can, of course, be hosed down.
7. The tilt-back chair is a completely new type. It answers the universal impulse to lean back in a chair. A leg has been extended to the rear, making it possible to tilt back in the chair without the risk of tumbling over.
8. In some cases a new method of coloring wood has been applied which stains brilliant hues deeply and permanently into the plys without covering or blurring the natural surface and markings.

9. Unit cases permit the flexible combination of storage spaces that has long been a main feature of modern furniture design. An economical and decorative box joint is used. A drawer is molded in one piece, except for the front and back, thus eliminating the old familiar troubles of drawer construction and use.

The present pieces represent a gradual development and enlargement of the ideas presented five years ago by Saarinen and Eames in the Organic Design Competition furniture. Under the terms of the Competition, as set up by the Museum, these prize designs were manufactured and marketed. During this process, valuable experience was gained about manufacture, pricing and consumer usage. Beside presenting a new concept of furniture, it produced for the first time actual molded wood shells adapted to the human form. Continued work on this project was entirely blocked by the war, so far as factory production went.

Eames, however, continued on his own to explore the unsolved problems, succeeding in developing an economical method for the three-dimensional molding of plywood in mass production. This he applied to the design of splints for the armed forces, which led to his connection with the Evans Products Company. The Company then formed a Molded Plywood Division. This Division and its experimental laboratory also developed airplane parts in great quantity.

Much further valuable experience was gained at this time, and the original potentialities of the Organic Design furniture finally became technically possible. The main points were to make reasonably priced, strong, light chairs which followed the natural contours of comfortable postures, and yet would flex with the sitter's movements. The furniture, now shown to the public for the first time, achieves these ends, and has found solutions for the many technical difficulties involved, thanks to the resourcefulness of long production experiments. The exhibition will close March 31.