Skylines is the company Newsletter for Goodrich Aerostructures of Chula Vista

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Aerostructures Group - Chula Vista

Aerostructures donates a "priceless" piece of company history to Chula Vista's *Heritage Museum*

Chula Vista's *Heritage Museum* already contains a wealth of historical photos, airplane parts and models, and other memorabilia tracing the evolution of the Rohr Aircraft Company of the 1940s into the Goodrich Aerostructures of today. But on Monday, Feb. 25, that collection got richer. Thanks to a donation by Aerostructures, the Heritage Museum now has its own drop hammer . . . an iconic metal forming device invented by company founder Fred Rohr in the 1920s.

The drop hammer now on display in front of the Heritage Museum on 360 Third Avenue in Chula Vista was built by Rohr in the 1950s. Before being taken out of service last year, it was used to form small nacelle system components (30" x 30" and smaller) for five decades at the Chula Vista facility. Now it has a new home at the Heritage Museum.

The catalyst for the donation was a museum request relayed to Aerostructures by Chula Vista City Councilmember John McCann. The drop hammer adds an authentic touch to the Heritage

Aerostructures donated this drop hammer – which was used to form small parts for 50 years at the Chula Vista facility – to the Heritage Museum last month. The device weighs almost 30,000 pounds and is capable of exerting 5,000 pounds of pressure. Aerostructures founder Fred Rohr developed the drop hammer concept in the 1920s and five of the machines are still in active operation on the Chula Vista shop floor. The Heritage Museum (visible at right) — which features an extensive Rohr exhibit – is located on 360 Third Avenue. The Rohr exhibit is open to the public every Tuesday and Thursday from 1:00 p.m. to 4:00 p.m. Admission is free. (Photo by Randy Stambook)

Courtesy of Goodrich Aerostructures

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Museum's "Rohr Exhibit" – which was publicly unveiled in February 2007.

"My mother worked for Rohr Industries for 28 years," said Councilmember McCann. "The drop hammer display will link all citizens to the great heritage of Rohr/Goodrich in Chula Vista."

Not only does the drop hammer have a fascinating history, it may be the reason Fred Rohr established the company known today as Goodrich Aerostructures.

Priceless

While working in his father's sheet metal shop — which purchased customized metal parts for ornamental building facades and then installed them on the exteriors of commercial and government office structures – in the 1920s, Fred Rohr discovered a supplier had shorted one order by several parts. Determined to form the missing metal parts himself, Rohr took one of the parts that *had* been supplied and used it as a mold to cast a zinc die in the desired part shape. Taking some of the molten lead he normally used to seal seams between various sheet metal parts, he then fashioned a heavy punch to the same configuration as the zinc die. After positioning a piece of sheet metal over the zinc die, he somehow raised and dropped the lead punch over the metal. The force of the descending punch formed the piece of sheet metal into the desired configuration represented by the zinc die.

The technique was considered quite revolutionary at a time when sheet metal parts were customarily formed painstakingly by hand — using wooden form blocks and various kinds of hammers.

Several years later, while Rohr was serving as plant manager for Solar Aircraft in San Diego, he refined his innovative punch and die concept. Always in search of more efficient ways of doing things, Rohr developed his first prototype drop hammer and demonstrated it before Solar's board of directors. Word of Fred Rohr's impressive new metal forming concept spread to the Boeing Airplane Company, which invited Fred to set up a drop hammer line. This led Boeing's chairman at the time to suggest that Rohr set up a "feeder" plant for the major aircraft manufacturers. And the rest, as they say, is history . . .

Today, most drop hammer work has been converted to hydroforming and superplastic forming due to the need to hold parts to tighter tolerances. Drop hammer-formed parts are also being replaced by composite parts. But there will likely always be a need for some type of drop hammer forming at Aerostructures. In fact, there are still five drop hammers in active operation at the Chula Vista facility.

While its footprint on the production floor may be considerably smaller than it was in the 1940s, the significance of the drop hammer to aviation industry history remains monumental. Asked to assess the value of the drop hammer donated to the Heritage Museum last month, Facilities Team Leader Robert Phillips – who helped oversee the efforts to restore the drop hammer to its original colors and transport it to its new home – used one word: *priceless*.

"I'd say its value is priceless given what it meant to the aviation era of the time," he said. "This drop hammer paid for itself 500 times over the years . . . easily."

Courtesy of Goodrich Aerostructures