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Fred H. Rohr:  
A Man and His Corporation

**Rohr Aircraft Corporation**  
Chula Vista

**Frederick Hilmer Rohr** was born May 10, 1896, in Hoboken, N.J., the son of Henry Gustav Rohr, a German immigrant. His father, who had been a sheet metal worker in Germany, had come to the United States in 1888 to make his way in the new world. In 1898 the family moved to San Francisco, where Henry Rohr established a sheet metal shop in a booming city that still had all the aspects of the frontier west.

Young Rohr attended school in San Francisco and became an apprentice in the sheet metal trade working in his father's shop. He continued his education while working, by attending night school, and by taking correspondence courses in mathematics and layout. Self-education was important to Fred Rohr throughout his life. He was keen, perceptive, handy with his hands, inventive, learned from others, and inspired both colleagues and employees.

During World War I he served in the U.S. Navy aboard a tanker as a quartermaster 3/c(G) and later he was in the Reserves. It amused him years later when he was approached by ranking officers to join a select veterans group of officers. Proud to be a self educated man, he responded by saying, "Shoot, I wasn't even eligible!"

After World War I, his father moved his shop to Fresno. Here Fred Rohr made his first contact with aviation and aircraft. He and some of his friends pooled their savings, bought World War I Jennies, TM's, De Haviland's and other aircraft, which they repaired, remodeled, flew - and occasionally wrecked. Much of their working capital went to an unsympathetic farmer with an orchard adjoining their landing strip. They had to pay \$50 for every time they overshot the field and knocked down one of his trees.

Fred Rohr married his wife Shirley in 1920 and temporarily gave up flying. But six years later he was flying again and got his private license and soaring license.



### Frederick Hilmer Rohr

*While working at Solar Turbines, Inc., Fred Rohr designed and introduced the drop hammer to the aircraft industry. This parts-forming method eliminated the practice of hammering out each sheet metal part by hand.*

In 1924 he and his family moved to San Diego where he established the Standard Sheet Metal Works. As stated in the November 18, 1965 issue of Rohr News, Rohr was, "looking around for possible business, when he learned a local airplane factory, Ryan, needed fuel tanks for a plane it was building. He chatted casually with the foreman one Sunday morning and obtained the specifications for the tanks, returned to his shop and made the tanks that afternoon and evening, and had them ready for delivery the next morning. Ryan was so impressed with the speed and quality of his work that he was asked to move his shop into the Ryan plant and became the sheet metal foreman."

Later Frank Mahoney acquired the Ryan Aeronautical Company and formed Mahoney Aircraft on the plant site presently occupied by Solar Turbines Inc. There, Charles Lindbergh, his eye on a \$25,000 prize offered by a St. Louis newspaper to fly to Paris, contracted to have the "Spirit of St. Louis" built. Fred Rohr was a member of the famous "Night Hawk" team that completed the airplane on schedule. He designed and built the fuel tanks, using Terne plate instead of aluminum--he figured correctly that lead-coated sheet steel would hold up better than welded aluminum under the rough vibration they'd sustain on the long over-water flight. He also did the sheet metal work on the plane. Lindbergh continually inspected the progress on the plane; for example he watched the wing being lowered out a door on the top of a freight car, unto a truck and finally to the ground - all without an adequate hoist. The "Night Hawks" became a select group after "Lindy" became famous. The group treasured souvenirs of Lindbergh's flight/travels.

Later when Mahoney sold the company back to Claude Ryan and moved to St. Louis, Fred Rohr joined Solar Aircraft Company as Factory Manager in 1928. Impatient with the time-consuming practice of hammering out each sheet metal part by hand, he designed the first drop hammers used in the aircraft

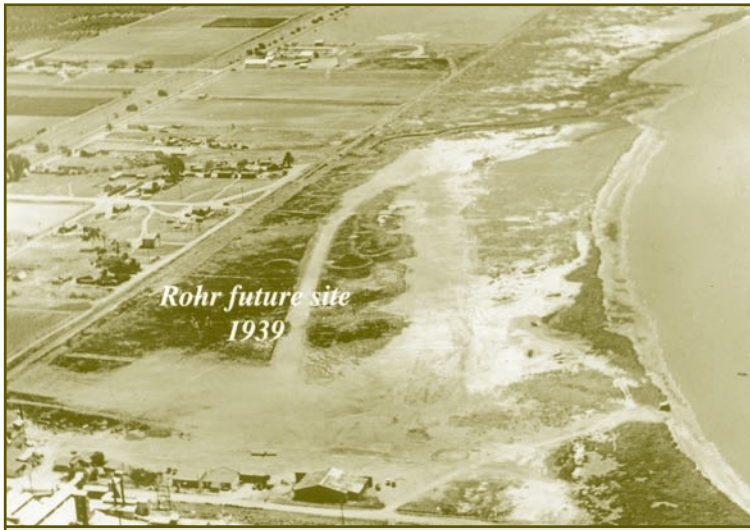
production. It was at Solar that he gave his first demonstration, before the board of directors, using a die fashioned from a bathroom fixture seat as a model. Success of the new forming method came to the attention of the Boeing Airplane Company of Seattle (now The Boeing Company). Bill Boeing invited him to set up a line of hammers at the Seattle plant. He left Solar in 1933 to become a consulting engineer at Boeing. He remained with Boeing through 1935, when he returned to San Diego to become Factory Manager at Ryan Aeronautical Company.

The Rohr News of November 16, 1965 states, "the early leaders in the aerospace industry were not just shrewd businessmen looking for a profit; they were a special breed who had a steadfast dedication and love for flying, as well as a strong faith in the future of aviation." Fred Rohr was one of those people, and his dream grew into one of the largest subcontractors in the aerospace industry and a leader in its field. The idea of a "feeder" plant to support the prime aircraft producers had been with him for many years. However until his company received the B-24 contract, no aircraft manufacturer had ever subcontracted the critical engine work to another company. Rohr's job was to receive the bare engine from the manufacturer and convert it to an aerodynamic structure and other systems. The process required from 1,500 to 3,500 Rohr made parts.



**Super Charger Assembly Line** *Round-the-clock assembly lines at Rohr during World War II, kept power packages for the Consolidated B-24 moving toward completion.*





### Future Rohr site 1939

*This site of the future home of Rohr Aircraft Corporation was at the foot of H Street in Chula Vista along San Diego Bay. The Tyce School of Aviation and the Chula Vista Airport are in the foreground.*

Rohr Industries began with a nucleus of five men--Fred Rohr, J.E. Rheim, E.M. Lacey and attorneys F.H. Nottbusch and his son Frank Jr. In 1940 they formed the Rohr Aircraft Company, with the Nottbusches working out the incorporation details while Rohr, Rheim and Lacey set up drawing tables and began designing tools in Rohr's garage. The basis for these beginnings was promises of contracts from Consolidated Aircraft Corporation (Convair and then General Dynamics) and Lockheed.

When the company was ready to start making parts, Rohr leased an old building in downtown San Diego. He spent his first day fixing the toilets and scraping varnish off the floor. The original employees got off to a good start with the Western Metals Company, whose president helped the young company by giving it unlimited credit. By October 1940 there were 64 employees at the company and they received their first big contract, making Sperry bomb sights for Consolidated and the British government. The military aircraft market looked promising because, while the U.S.

was not yet in World War II, it was supplying planes to England and its allies.

Seldom do companies rise to the top of their industry overnight. For Rohr the rise was sudden. Four years after its founding Rohr Aircraft was the world's largest producer of aircraft power plant assemblies, a distinction held by the company throughout its 57 year history.

With war clouds looming in 1940, President Franklin D. Roosevelt called for the production of 60,000 military planes a year. Many in the industry thought it was an impossible goal. Fewer than 7,000 airplanes had been built the year before. However the industry was to surprise itself - and America's enemies - with the speed with which it responded to the president's

call. And Rohr Aircraft was to play a vital role. Late in 1941 Rohr officials convinced the management of Consolidated-Vultee (which was to become Convair and then General Dynamics) that Rohr Aircraft could build power plant assemblies (the cowling that encases the engines) faster and at less cost than Consolidated could. Rohr was given a contract on Consolidated's B-24 bomber program. That same month, anticipating a need for greater space the company bought 10 acres of land that now make up part of the Chula Vista bayfront, the site of the new development program.

On November 5, 1940, the Chula Vista City Council held a special election and approved a bond issue of \$15,000 to purchase the bayfront site for Rohr Aircraft. Construction began on the first factory, which was 37,500 square feet of space. The company's board of directors worried whether the company would ever be able to fill that huge building. But by January of 1941, it became evident that more room would be needed, and the company received an Emergency Plant Facilities Contract, and made plans to build an additional factory and

office building. Also that month, Rohr won a contract to make cowling for Lockheed's Hudson bomber, and the payroll rose to 422 employees. The first contract for power packages, the product which established Rohr's place in the aerospace industry, was for 800 units for Consolidated's PB2Y3. This was the first time an airplane builder had ever subcontracted the production of engine nacelles (Aerodynamic structures which surround the engines.). The company geared up for this production, and before the first power package was delivered, Consolidated contracted with Rohr to build the power packages for the B-24 bomber. The new buildings were completed in June of 1941 at the end of the first year of business Rohr Aircraft had 865 employees and reported total sales of \$1,493,488. Following the attack on Pearl Harbor in December 1941, Rohr Aircraft was producing B-24 power packages at a record rate.

In October 1941, Rohr Aircraft Corporation and the International Association of Machinist and Aerospace Workers, Lodge 755, entered into their first company and union agreement. The union agreement covered all hourly paid production and maintenance employees and continued to represent the employees throughout the 57 years the company was in operation and continues to represent B.F. Goodrich employees.

As in other aircraft plants, men departing for military service were replaced by women entering the work force for the first time. Women became a very important part of the work force during the war. The first women at Rohr started in the office areas, but as the war took more of the men overseas, they moved into the factory and kept Rohr products moving out of the plant on schedule.

By January 1945, 38,000 of the power packages had been built by the company. But with the ending of the war, Rohr along with the other aircraft companies, was to feel the effects of a severe cutback in military spending. When the war ended, Rohr found itself in a tough situation; military orders began dropping off even before the Japanese surrendered, and the company had to find a way to stay in business. Wartime demands had pushed

employment to nearly 10,000. However only 1,400 military planes were built in 1946 and employment at Rohr Aircraft plummeted to 675.

According to The Story of a Corporation, "Fred Rohr and other directors decided that a merger with the International Detrola Company (IDC) would be the best way to ensure the company's fiscal health". So in July of 1945 Rohr Aircraft became a subsidiary of IDC, and began working on designs for commercial products such as radios, refrigerators and washing machines. The company also began to manufacture toy boats. But the merger proved to be frustrating for both the executives of the company and the employees; and they knew they had to regain control of Rohr Aircraft when IDC announced plans to sell the subsidiary to finance the purchase of a steel operation.



### "Rosie the Riveter"

*As men departed for military service, they were replaced by women to fill factory jobs. They kept Rohr products moving out of the plant on schedule.*



Early in 1949 Boeing in Seattle requested help from Fred Rohr on some drop hammers the company had bought many years before. He agreed to go to Boeing and solve the drop hammer problem. While at Boeing he invited them to Chula Vista to tour the Rohr facility. Boeing officials were impressed with Rohr Aircraft's operations, and as a result agreed to place a contract for the cowling on the Stratocruiser followed by a contract for the power packages. Faced with IDC's pending sale of the company, Fred Rohr and the board went to Boeing and other contractors for help in raising money to buy back the company.

Boeing helped tremendously by making large advance payments on their contracts, giving the board the needed capital to buy out IDC. Rohr was once again a separate and independent corporate entity. No other company owned controlling interest in Rohr as long as the company was in operation.

The decade of the 1950s was a period of physical expansion. Between 1952 and 1956 Rohr Aircraft built three new facilities. A plant in Riverside, CA. was established in 1952 to help meet defense orders during the Korean conflict. The first job to ready the site for production was to harvest the wheat crop that grew on part of the property - it brought \$90. Old buildings were then converted and new buildings built. The first power plant, destined to power a Boeing K-97 tanker, was shipped in January 1953 - just six months after the new plant was opened. The second plant was built in Winder, GA. in 1954, followed by the Auburn, WA. plant in 1956. The new plants in Georgia and Washington served as final assembly facilities to provide Boeing, Lockheed and Grumman customers with rapid, near-at-hand service. Additional service to these customers and the Lockheed Company in Burbank was provided by the Chula Vista and Riverside plants.

Fred Rohr always encouraged employees to participate in community affairs. Generous contributions were made to the city's Red Cross,

Community Chest, hospitals and other charity campaigns. All school bond issues were enthusiastically supported by the company and many of them were headed by Fred Rohr himself.

Chula Vista grew rapidly, from a population of about 4,000 in 1940 to 30,000 in 1955, much of which was attributable to Rohr Aircraft's growth. Of the municipality's total tax revenues, Rohr Aircraft contributed about 27 percent. Company executives served on several boards and commissions. One executive, Jim Hobel, Vice President of Industrial Relations, even served as mayor of Chula Vista.

The owner of a small research and development company, who had for two years contracted to make some machine tools for Rohr, became disgruntled with Rohr. He ran for a seat on the City Council, but was defeated. According to *The Story of a Corporation*, "the machinist then started a recall movement to unseat three of the council members who were Rohr employees, and formed a so-called Citizens' League for Better Government. He conducted a fiery campaign, based on the charge that Rohr is running this town."

The recall movement, which came to a climax in a special election, succeeded in unseating the three council members, largely because of general voter apathy. The company had remained aloof from the fight, regarding the charges and statements of the machinist as silly. But the day after the election, Fred Rohr broke his silence and issued a statement, which in part, said, according to *The Story of a Corporation*:

"During the recent recall election campaign we were surprised to find that Rohr Aircraft Corporation had become one of the major issues. Ordinarily, we would ignore such charges or remarks as being too ridiculous to be taken seriously, but...the election results indicate that a majority of those who voted apparently have taken them seriously. All through the years we have been in Chula Vista, we as a corporation and our employees as individuals have participated heavily in all community activities.



**Counting Silver Dollars** To demonstrate the company's impact on Chula Vista, in December 1954 Rohr employees were paid in silver dollars--totaling \$360,000 and weighing 12 tons.



This participation has consisted of financial support and personal services by our people. Now, much to our surprise, it appears that many persons interpret these efforts as a desire on our part to run the city. We never had any such desire, so to clear the atmosphere and relieve those who have so regarded our efforts with anxiety, we are withdrawing from such activities.”

Within the next few days--without further word from either Rohr or any other company executive-- all employees serving on civic boards, commissions, or committees, resigned. According to the Story of a Corporation “the community reaction was

prompt. Business leaders, who apparently had been indifferent to the recall movement, and who, in their own minds, had regarded the campaign as a nuisance which, if ignored, would go away, were embarrassed. They ran a full page signature ad in the weekly Chula Vista Star, expressing their appreciation of all the things the company and its employees had done for the community. A delegation of civic leaders presented Fred Rohr with a framed copy of the ad, and the Citizens' League for Better Government quietly folded and its promoters faded from the community picture. Although the conflict of opinion on the Company's worth to the community of Chula Vista was over, there still could be heard an occasional comment that the Rohr company doesn't mean much to this town.” It wasn't a widespread comment, but it could be heard, now and then.

In order to prove the company's role in the economic and civic life of Chula Vista, a plan was devised to pay all employees in silver dollars. After considerable negotiation, the company obtained \$360,000 in silver dollars from the San Francisco mint.

The silver was transported from San Francisco by armored cars. The Rohr and bank employees who were selected to count and stack the silver



**Rohr Agreement** Tom Hurd and C.L. Williams, IAM union officials in the 1990s.

dollars were pledged to secrecy. The silver dollars were put into individual canvas bags for distribution on Dec. 12, 1954, a regular payday. On that afternoon, trackless - trains small low wheeled flat trucks, hitched together and drawn by an electric tractor - wound through the plant, unhitching a truck in each department, from which the payroll was distributed in the form of bags of silver in lieu of paychecks. Employees were delighted and, rattling their coins, headed for home, or, as it appeared later for the Chula Vista shopping areas.

Chula Vista merchants soon felt the full impact of 12 tons of silver dollars. The Story of a Corporation states, “their cash registers became so heavily laden that the drawers would not open as usual and the overflow was put into buckets. Even the churches did not escape the silver avalanche. The long handles of the collection baskets were bent and reached the breaking point. But, like a moving storm, the silver passed quickly and within a few days the silver dollar was again a rarity.” The money found its way back to the banks and presumably from there it was returned to the mint. By now, everyone was happy. Rohr employees were invited again to serve on the various boards, commissions and committees. They accepted the invitations and resumed their participation in community affairs. The great rebellion was over.

As jet engines began replacing piston engines, whole new technological frontiers opened up to the industry and to Rohr. The newer engines required entirely new concepts of power plant design, engineering and manufacturing techniques. Titanium was first used in the production process as early as 1952 in the Boeing B52 program. And new methods of bonding together such materials as magnesium, aluminum, stainless steel, fiberglass and titanium had been developed by the mid 1960s.

Rohr took its first step outside the aircraft industry with the construction of a 60-foot tracking antenna in Alaska in 1961. At the same time the company's name was shortened to Rohr Corporation to reflect its broader range of capabilities. The company had made important breakthroughs in metals technology as a result of the jet engine contracts.

The San Diego Union of November 9, 1965, stated “Fred H. Rohr whose techniques revolutionized the airframe aerospace industry during the 41 years he devoted to it, died at Mercy Hospital on Nov. 8, 1965. He was 69. He had suffered a mild stroke on Friday evening while shopping, was hospitalized and then released. He suffered a second stroke on Monday morning and died at 4:15 p.m. that afternoon.

“Throughout his career he took an active role in the community, serving on scores of boards and committees for charitable organizations and civic improvement. He was named “Man of the Year” in San Diego by the Grant Club. Later he received similar honors from the Uplifters Club. The day he died, he was to dedicate a new elementary school, the City of Chula Vista had named in his honor. Rohr Elementary is still a part of the Chula Vista elementary district.

“He was a member of the Lay Advisory Board and Mercy Hospital and served on the board of Directors of the Scripps Clinic and Research Foundation. He was a member of the board of Directors of the Security-First National Bank of Los Angeles, and held memberships in such professional organizations as the American Institute of Aeronautics and Astronautics, Society of Automotive Engineers, American Society of Tool Engineers, National

Aeronautical Association, and the Manufacturing Council of the Aerospace Industries Association. Rohr was an avid golfer, yachtsman and deep-sea fisherman. He was an endless admirer of flying, fliers, and old time planes - all from personal experience. He was survived by his wife Shirley and their two children, Fred Rohr Jr. and daughter Shirley.”

As for much of the aircraft industry, the 1960s were a period of diversification for the company. In the early years of the decade, the product line expanded to include large steerable antennas. An Antenna Division and Space Products Division were established in 1964 to supply a growing demand for steerable antennas and rocket motor components. Of these, only the rocket motor work continued into the 1980s. In the later years of the 1960s Rohr management, concerned over the cyclical nature of the aircraft industry, selected ground transportation as an area for new opportunities for growth.



### BART Cars

Rohr assembled cars for the Bay Area Rapid Transit (BART) in San Francisco in October 1971. BART is an electric train system that connects many parts of the San Francisco Bay area.



In 1969, Rohr was the successful bidder on 250 rapid transit cars for San Francisco's Bay Area Rapid Transit District (BART). During 1971 the company acquired the Flxible Company, an Ohio based manufacturer of city transit buses. Two years later, Rohr received a contract to build 300 transit cars for Washington, D.C. During this period the company also was working on the development of people-movers, high speed intercity trains, MAG/LEV air-cushioned vehicles, and automated material handling systems, pre-stressed concrete and other ventures.

As far back as 1970, Rohr was involved in marine technology. The U.S. Navy awarded Rohr a \$9.5 million development contract to build, outfit and test 61 LCM8 landing craft. Marine technology became a major Rohr activity with the incorporation of Rohr Marine, Inc. in 1976. In late 1976 Rohr Marine was awarded a Navy contract for design of a 3,000-ton proto-type. The wholly owned subsidiary also tested the 100-ton model of the surface effect ship in Maryland.

Rohr found ground transportation and public transit an extremely difficult marketplace. Following a period of severe losses, the company divested itself of those businesses and refocused total emphasis on the company's basic aerospace business. The commercial aircraft industry was in a period of strong growth from 1978 through 1980 but, due in large measure to the heavy debt resulting from the previous diversification ventures, Rohr did not benefit from this improved business.

In 1980, the board of directors installed Carl L. Sadler, former Sundstrand Corporation president and a 10 year member of the Rohr board, as Rohr's chairman, president and chief executive officer. He was able to overcome the heavy debt over a period of time. In August 1980, Harry W. Todd joined the company as president and subsequently became chairman and chief executive officer upon Sadler's retirement. Rohr's performance improved steadily. These improvements continued after Todd's retirement and through Robert

Goldsmith's and Robert Rau's leadership as chief executive officers.

Rohr core products--which constituted the majority of sales--were nacelle systems, the aerodynamic structures which surround jet engines, and pylons, the structures which are attached to the full propulsion system of the aircraft. Part of the nacelle system is the thrust reverser, which deflects engine thrust forward to slow the aircraft on landing, and noise suppression systems. The inlet another component of the nacelle system contains the anti-icing system and frequently Rohr's proprietary Dyna Rohr noise suppression technology was installed on the products. The fan cowl is the aerodynamic casing for the engines fan stage, this component opens for engine maintenance. The exhaust nozzle and cone control engine exhaust flow and must withstand extreme temperatures.

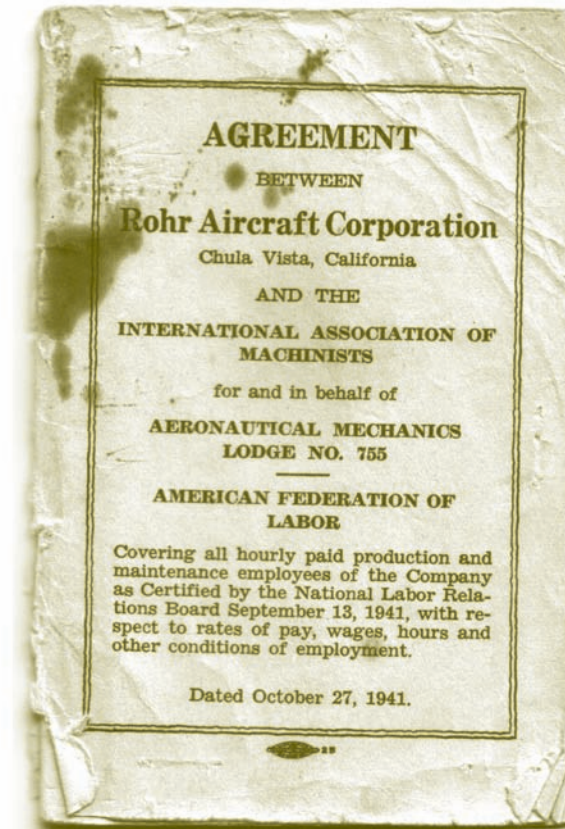
Rohr continued with success to manufacture these core products until the company was sold in its entirety to BF Goodrich in December of 1997.

The buildings south of H Street began to be demolished in 2005 after being sold by BF Goodrich to the Port District in order to make way for a new bayfront development that has the potential to be the envy of San Diego County.

The thousands of men and women, who worked at Rohr Industries throughout the 57 years, made Rohr Industries a profitable company and a good place to work. Rohr's impact on the City of Chula Vista from its inception was as no other business had been to the community. Rohr stimulated the growth of the city from 4,000 to the 250,000 plus today. Fred Rohr has been called the most important man in the development of Chula Vista's economic history, from the 1940s through the 1990s. His legacy includes Rohr Manor, Rohr Park, Rohr Elementary school and Rohr Federal Credit Union (now Pacific Trust Bank).



**BF Goodrich** Rohr was sold to BF Goodrich in 1997. The company continues to produce engine build-up packages for numerous aircraft corporations and airlines.



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