

By the fall of 1903, the Wright Brothers had constructed a powered airplane with wings 40.5 feet long and weighing about 750 pounds with pilot. They also designed and built their own lightweight gasoline engine, a marvel of innovation. On December 17, 1903, near Kitty Hawk, NC, they made the world's first powered heavier-than-air flight. The flight lasted 12 seconds, and covered 120 feet with Orville Wright at the controls.

To commemorate the 100<sup>th</sup> anniversary of this flight, four separate groups (including NASA) are attempting to build working replicas of the original aircraft. One group, The Wright Redux Association of Glen Ellyn, IL has joined forces with Packer Engineering to build a replica of the original gasoline engine to power their machine. The "Spirit of Glen Ellyn" is scheduled to fly over the lawn at the Museum of Science and Industry in Chicago, December, 2003, where the plane will be hung after its flight.

Utilizing totally volunteer labor and donation financing, an inexpensive source for this replica engine needed to be found. Dr. Packer felt the project was a great cause and would be a perfect learning experience for our staff, interns, and STEP Program students. Dr. Packer calls the Flyer undertaking an example of grass roots "Midwestern Volunteerism". The number of companies who have donated their time and services is up to about 20\*. The developed spirit of synergy among the companies involved is truly creating both an aircraft and an ideal, much greater than any one group could have managed on their own.

There were no accurate engineering drawings of the original engine, so the talented staff of Packer Technologies International converted the existing drawings into 3-D computer models for the construction of a foam engine block model that was used in a process called "lost foam" casting. The main aluminum engine casting was poured using an



alloy similar to the original. The rest of the parts have been hand constructed from appropriate materials. The engine is taking shape and is about 95% done.



Wright Redux has moved the plane to the Packer hangar at Clow Airport. Initial testing is going to be done without an engine in the plane. The plan is to mount the structure onto a trailer and then drive down the runway to test the airframe. Testing of the plane with the engine will only be undertaken after the pilots are familiar with the flight characteristics of the plane in un-powered flight. It will certainly not be easy to fly.



The media recently interviewed Dr. Packer at the Glen Ellyn woodworking shop where the aircraft is being built. The interview aired on several Chicago TV news programs. Representatives from National Geographic, who are one of the financial donors for this effort, have been filming the construction process for future use. Local authors are undertaking the writing of a book about aviation and Chicago, which will include material and photographs of this project.

\* Bison Gear of St. Charles, IL, Insight Automated, Inc. of Glendale Heights, IL, Peterson Spring of Southfield, MI, American Foundry Society of Des Plaines, IL, Wheatland Machine of Naperville, IL, Beery Heating and Cooling of Oswego, IL, Jerry's Welding of West Chicago, IL, NAPCO Steel, Inc. of West Chicago, IL, Ed Meyers of Bolingbrook, IL, MTI Inc. of Rockford, IL, The Arnold Engineering Co. of Marengo, IL, The Austin Group of Quincy, IL, Willard Industries of Cincinnati, OH, Arrow Gear of Downers Grove, IL, Craftsman Tool & Mold of Aurora, IL, Bison Electric of Elgin, IL, TRW of Danville, PA, Phoenix Electric Mfg. Of Chicago, IL, Scot Inc. of Downers Grove, IL, Auto Machine Inc. of St. Charles, IL, and Packer Technologies International of Warrenville, IL.