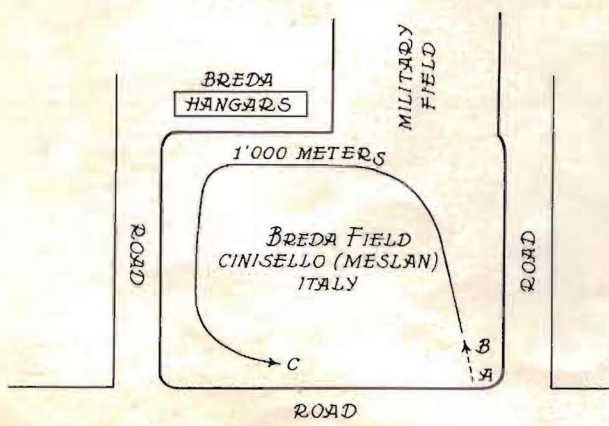


The Bossi "Aero-Cycle"

THOSE who have been following European Soaring activities probably know of the several prizes offered by some of the European Governments to stimulate development of "man-powered" or "human flight." German aeronautical publications have devoted many pages to this development, but we have relatively little information from the country where probably the greatest successes have been attained—Italy.

Recently, American newspapers carried the story of the first successful man-powered flight, and, incidentally, the designer and builder of the machine is an American citizen, Enea Bossi. Bossi is a foreign representative of the E. G. Budd Manufacturing Company, and his "Aero-Cycle" was built in Italy when Bossi was in charge of the Stainless Steel Department of the Budd International Corporation in Paris. He holds the second airplane pilot's license issued in Italy, and is an aeronautical engineer of wide experience, having built the first stainless steel amphibian, which is now on view in front of the Franklin Institute in Philadelphia.

Mr. Bossi says that his Aero-Cycle was built merely as a hobby. However, we feel that a \$5,000.00 prize offered by the Italian Government to the man who first succeeds in making a flight over a 2-kilometer closed-circuit course, and reaches an altitude of fifteen feet during the flight, may have added a little more incentive to the development. No official flights have as yet been attempted, although many unofficial ones have been made.



On December 23, 1936, the "Aero-cycle" was launched from point A to point B on the diagram, where the rubber cord was released. Through driving the propellers by foot power, the plane was kept in the air for a period of five minutes and flew a distance of 1,000 meters, or 1 kilometer, landing at point C. The altitude at which it commenced free flight was estimated at less than twenty-five feet. Absolutely no wind or thermal conditions existed on the day of the test.

At the present time some minor changes are being made in the Bossi "Aero-Cycle." A device for storing energy is being installed. By winding the pedals backwards for some four or five minutes, it is expected that energy may be stored, which will drive the propellers sufficiently fast to give the plane enough power to take off without further assistance.

The solution to the problem of the Human-powered flight was found by making the following partial tests, Mr. Bossi states:

"TEST ONE—Admitting that the bicycle is a very efficient mechanism for utilizing human power, a test was made in which a primary glider, resting on one wheel, was pulled by a bicycle attached to it with a rubber cord about 250 feet long.

Carrying out this experiment, I collected the following data:

Weight of bicycle rider	141 lbs.
Weight of bicycle	15 "
Weight of primary glider	308 "
Weight of pilot on glider	130 "
Weight of rubber cord	9 "
	<hr/>
	603 "

During the test we checked a wind velocity of twelve miles per hour.

The test was conducted on a concrete road, and seven consecutive tests were made for a distance of about 1400 feet.

The bicycle rider was helped to gain speed at the start by a man; and there was also a man at each wing tip to help pull the glider at the start. The plane took off and flew several times for distances between 150 and 300 feet at about 12 to 20 inches high. The conclusion I drew from this test was that, had the glider been of a better type, more streamlined, lighter, and probably having a little more surface, it could have remained in the air fairly easily.

"TEST TWO—I was interested in finding out how fast I, myself, could go on a normal type bicycle for a distance of one kilometer, and I was clocked at a rate of slightly less than 28 miles per hour. I then removed the chain from the bicycle and equipped it with a propeller of 6.6 ft. in diameter rotating by means of gear and chains through the usual pedaling system. After making seven different types of propellers, I obtained a speed, clocked for a distance of one kilometer, of 25½ miles