turned, squeezing the tube and pushing one cc per turn, so 500 turns meant 500 cc.

Louis S. Moore, M.D.
NAPLES, FLA.

Oh, Brothers

I ENJOYED READING "GAS Stations in the Sky," the article about in-flight refueling by Mike May in the Spring 2004 issue, but it didn't mention that in 1930 the Hunter brothers, of Sparta, Illinois, broke the world aircraft endurance record by flying for more than 553 hours nonstop above Sky Harbor Airport in Northbrook. John and Kenneth Hunter flew the record-breaking plane, *City of Chicago*, and it was refueled by *Big Ben*, flown by Albert and Walter Hunter. Both planes were Stinson SM-1F's. The record-setting flight ended when the engine developed an oil leak.

Robert H. Hayes
SPARTA, ILL.

YOU MAY BE INTERESTED to know that the record for the longest U.S. flight in a single-engine aircraft was set in 1949. Woody Jongeward and Bob Woodhouse took off at 7:15 P.M. on August 24, 1949, in an Aeronca Sedan AC-15 named *City of Yuma* and didn't land until October 10. That was almost 47 days. The pilots received fuel and supplies not from another plane but from a Buick convertible, which drove along the Yuma airport's runway.

Elias J. Vujovich
SOUTHINGTON, OHIO

A Mighty Wind

STEPHEN BUDIANSKY DID AN outstanding job in his piece about the Skinner organ in Yale's Woolsey Hall ("Air Power," Spring 2004). It has been my observation over the years that most articles about pipe organs are cluttered with errors of fact and are heavy on breathless, exaggerated attempts to describe. Not so with Mr. Budiansky, and the organ he chose to write about stands apart as the stunning example of a lost period in musical-instrument design and construction.

Ernest Skinner was a remarkable man. While very strong fads were influencing almost every American organ builder during his career, he was steadfast and immovable, true to his New England Yankee heritage. He had a long life, dying at 94 in November 1960, and he spent most of it practicing his skill as an organ builder. But one of his lifelong failings was that he was not much of a businessman, and when it came to the balance sheet and profit-and-loss statement, he was seldom connected.

In 1919 Arthur Hudson Marks, a millionaire chemist from Ohio's tire industry, bought control of Skinner's business, and he steered the company through the Roaring Twenties with profitable results. To save the business in the devastating thirties, Marks went after the second patrician American organ firm, the Aeolian Company, the leading supplier of home organs for the rich and powerful. He formed Aeolian-Skinner in 1931, but by then he and Skinner weren't getting along, and Skinner had been ushered out of the firm completely by 1936. With his son, Skinner formed a competing business, the result of which was the first portions of the great organ in the Washington, D.C., Episcopal Cathedral in 1937. In the following years, meanwhile, it was Aeolian-Skinner more than any other company that ran roughshod over countless Skinner organs, revising them along organ reform-movement lines. That the Yale Skinner survived unscathed is truly a miracle.

Paul Sahlin
BURLINGAME, CALIF.

The record-setting *City of Yuma* refuels from a Buick.

Propeller Perplexity

"THE WRIGHT BROTHERS: How They Flew," by Richard P. Hallion (Fall 2003), is the best and most complete description of the *Flyer*'s story that I've yet read. However, the pitch of the propeller blades is described as varying "from eight and a half degrees at the tip to four degrees near the root." Yet the accompanying photos, as well as established propeller design, would suggest that the root pitch would be close to 90 degrees if the tip pitch were 8 1/2 degrees. You ran a letter to the editor about this in the Winter 2004 issue to which you replied that a change was made to the Wrights' propeller design between 1903 and 1905, but the accompanying photo still showed the hub angle of the 1903 prop to be very high. Can you explain this?

S. T. Griebling
AKRON, OHIO

The editors reply: We erred on the letters page. In fact, the blade angle of the 1903 propellers—the geometrical pitch of their blades, which the brothers shaped with woodworking tools—indeed diminished from hub to tip. It was 38.5 degrees two feet from the hub, 29.3 degrees at three feet, and 26 degrees at four feet. However, with the propellers rotating under power as part of an airplane in flight, what counted was the angle of attack. That was the angle between a blade and the local airflow, the flow having effective speed produced by the airspeed of the aircraft and by the propeller's rotation. That angle increased from the hub outward, as the article stated.

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