

DAVE TIMMS FLYS To 30,370 Ft.!

Altitude Record Broken By Long-EZ

By Jack McDonough

A Camarillo, Calif. pilot flew his Long-EZ to 30,500 feet Dec. 5 to set a new high-altitude record for aircraft in the 300 to 500 kg class.

In a flight lasting one hour and thirty-one minutes, David W. Timms, 54, took off from Camarillo Airport at 1615Z and climbed steadily to 29,300 feet. There he leveled off momentarily to set a new record.

Then, after a brief descent, he resumed climbing to level flight at a calibrated 30,370'.

Timms broke the record set by Robert L. "Hoot" Gibson, the astronaut and space shuttle commander, who flew to 27,040 feet on January 31, 1991 from Clover Field, Texas. Gibson flew a modified Cassutt IIM powered by a 100-horsepower Continental O-200 engine.

The record is expected to be certified soon by the National Aeronautic Association and the Federation Aeronautique Internationale.

Flight preparations were observed by Dick Freeborg of the Contest and Records Board of the NAA.

Ken Clunis, also a Long-EZ pilot/owner, acted as crew

The rules of the (FAI) state that the altitude achieved "shall be the true altitude measured from sea level as defined in the relevant country by the national survey."

The rules also state that "the achieved altitude, within a tolerance of plus or minus 50 meters (164 feet), shall be maintained over a distance of not less than 15 kilometers (8.1 n.m.) or during a period of at least 90 seconds."

The rules also hold that the speed at the end of the 90-second run must equal or exceed the speed at the start.

Timms first test-flew his Long-EZ at Camarillo airport in 1988. He built it over an 8-1/2-year period. Powered by a Lycoming O-290-D2 engine developing 145 horsepower at

sea level, the Long-EZ does 176 knots TAS at 2750 rpm at 8000 feet.

Timms weighs 175 pounds. He realized that a 130-pound pilot could fly for the record with the Long-EZ just as it sat, without modification, and still be within the weight limits. But at 175 pounds, Timms' body-weight put the Long-EZ about 35 pounds over the weight limit for the class.

He set to work reducing weight, increasing power and dealing with temperature. He decided to strip the airplane of any nonessential items, change the propeller to one more suited to an altitude climb, and substitute electronic ignition for the right magneto.

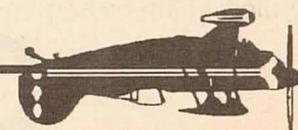
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DAVID W. TIMMS of Simi Valley, Calif. pre-flights his Long-EZ. He later flew it to 30,370' and set a new altitude record.

Jack McDonough Photo.

AWRISE



that the barograph was turned and the video gear was in operation. Gas tank and canopy were sealed by Freeborg,

The barograph is used to record the altitude throughout the flight, while the video camera, mounted to look over Timms' shoulder, recorded the instrument panel.

The aircraft with pilot and fuel weighed 1,098 pounds on the electronic scales.

The flight went smoothly with only minor hitches.

Twice after engine start-up (by hand propping), the engine died — once while taxiing to the runway. Larry Webb, general manager of Camarillo Flight Center (which provided technical support), caught up to the Long-EZ in an electric go-cart and hand-propped the engine back to life.

During climb out, prior to reaching 15,000 feet, the engine surged momentarily, Timms reported by radio, but smoothed out when he readjusted the mixture.

At 1629Z, he leveled momentarily at 17,500' until he was further off-shore to be clear of the Continental Control Area before going above 18,000 feet. One minute later, he resumed normal climb.

Timms' hands and feet got very cold, he said. Outside temperature was recorded was -40 degrees C.

The record was for Altitude in Horizontal Flight, Class C-1.A, Group I, Light Airplane, Piston Engine, in the 300- to 500-kg (661- to 1,102-pound) class.

Long-EZ Joins Jets And Airliners ...

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SLIMMING DOWN

The major problem was weight. Timms calculated that the airplane (with oil), pilot, barograph, video camera to record the altimeter, oxygen system, and fuel would weigh 1,138 pounds — 36 pounds over the weight limit for the class.

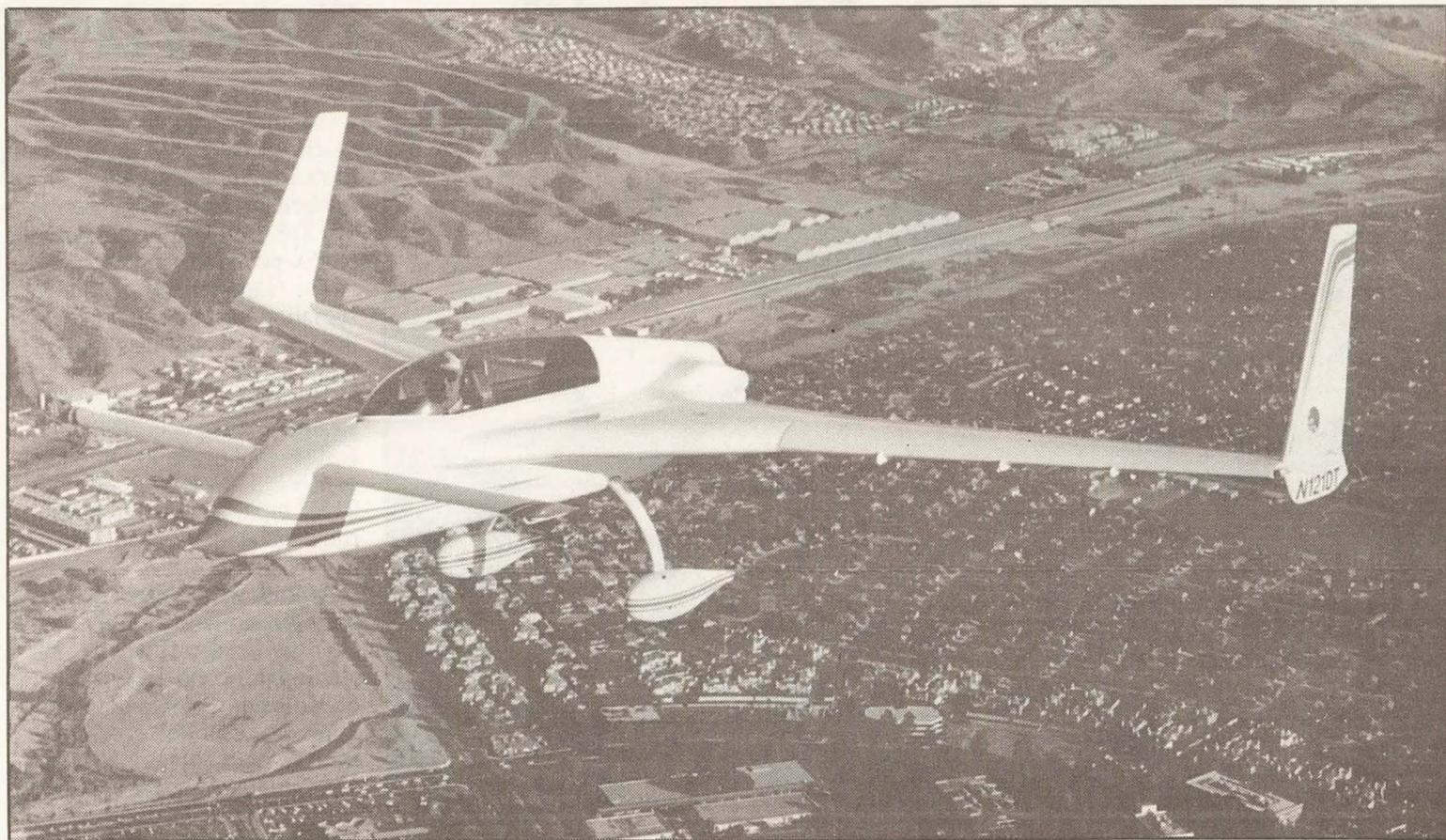
"I started listing all the things that I can remove and still be within my legal requirements," he said. A record is disallowed if any FAA regulation is infringed.

He decided to substitute a lighter battery. Also on the list was the ELT, fire extinguisher, panel-mounted nav/com, alternator, audio panel, loran set, back seat and belts, strobe system, transponder, autopilot and other nonessential electrical items. He could thus get rid of enough weight to have a 16-pound margin, if all calculations were correct.

Estimating that he would develop only about 30% power at 30,000 feet, Timms decided to replace his existing B&T 63x72 propeller with a 70x46 model built by Performance Propellers of Patagonia, Ariz. He hopes to gain more rpm and disk area.

ELECTRONIC IGNITION

Timms replaced the right



LONG-EZ 121DT, owned and flown by David Timms, beat Hoot Gibson's altitude record, flying to 30,370'.

magneto with electronic ignition built by Electroair of Chattanooga, Tenn. but kept the left magneto with the impulse couplers. The electronic ignition synchronizes to the crankshaft position and monitors manifold pressure to adjust timing.

As manifold pressure decreases with altitude, the electronic ignition advances the

SELECTING THE LONG-EZ

Timms built the plane in his garage in Simi Valley.

"After having built and flown it, I was surprised to discover that it actually performed as well as it was advertised or promised to perform," he said.

Impressed by the airplane's altitude capability, Timms added oxygen. He now rou-

"The airplane just never ceases to amaze me," he said, "how well it climbs and ... performs at altitude.

He added oxygen and began testing its abilities, recording such data as air speed, rate of climb and air temperature. At 25,000 feet the airplane still had get up and go. At 27,000 feet, rate of climb slowed to 150 feet/min. The climb had

Timms looked up Gibson's altitude record and saw that it was only 40 feet above his initial altitude test flight.

"Had I known that," Timms said, "I would have climbed for another couple of minutes to break the record unofficially, although I would have been about 50 pounds over the weight limit."

Now, he's done it in front of