

# ENDING THE BEGINNING

*A new era opens,  
courtesy of regulation, politics  
and a sales slowdown.*

BY THOMAS A. HORNE

A year ago, we presented a summary of all the significant goings-on in the world of ultralight aviation. That report covered 1981, and we characterized that year as a time when ultralights entered an adolescent phase and first confronted the sobering specter of government control.

On October 4, 1982, that specter materialized. The Federal Aviation Administration finally issued its long-awaited ultralight rules in an addition to the Federal Aviation Regulations—Part 103. It was 1982's most significant news development affecting ultralights.

As federal regulations go, Part 103 is a simple, fairly unrestrictive set of rules.

First, it sets down the official definition of an ultralight aircraft. Actually, the FAA prefers to call them ultralight "vehicles," a curious choice of semantics that suggests the creation of a new category of aircraft. At any rate, Part 103 applies to those aircraft with the following attributes:

- Single occupancy, for both powered and unpowered (hang gliders) aircraft.
- For powered ultralights, an empty weight of no more than 254 pounds. This figure does not include the weight of floats, parachutes or any other safety devices.
- For unpowered ultralight vehicles, an empty weight of no more than 155 pounds.
- A fuel capacity no greater than five gallons. This means total fuel capacity. Putting five gallons into a 10-gallon container is not allowed.
- A full-power, level-flight cruise speed of no more than 55 knots (63.25 mph) calibrated airspeed.
- A power-off stall speed no higher than 24 knots (27.6 mph) calibrated airspeed.
- Use limited to sport and recreational purposes.

Any airplane that exceeds these guidelines falls under the Experimental category. This means that it must meet the rules that homebuilders have had to follow for years. Under this arrangement, the owner/builder must register his airplane with an N-number, and a representative of a General Aviation District Office must inspect the con-

struction work. Also, the owner must do no less than 49 percent of the work on the kit. And, to fly an Experimental aircraft legally, the pilot must have an FAA-issued pilot certificate.

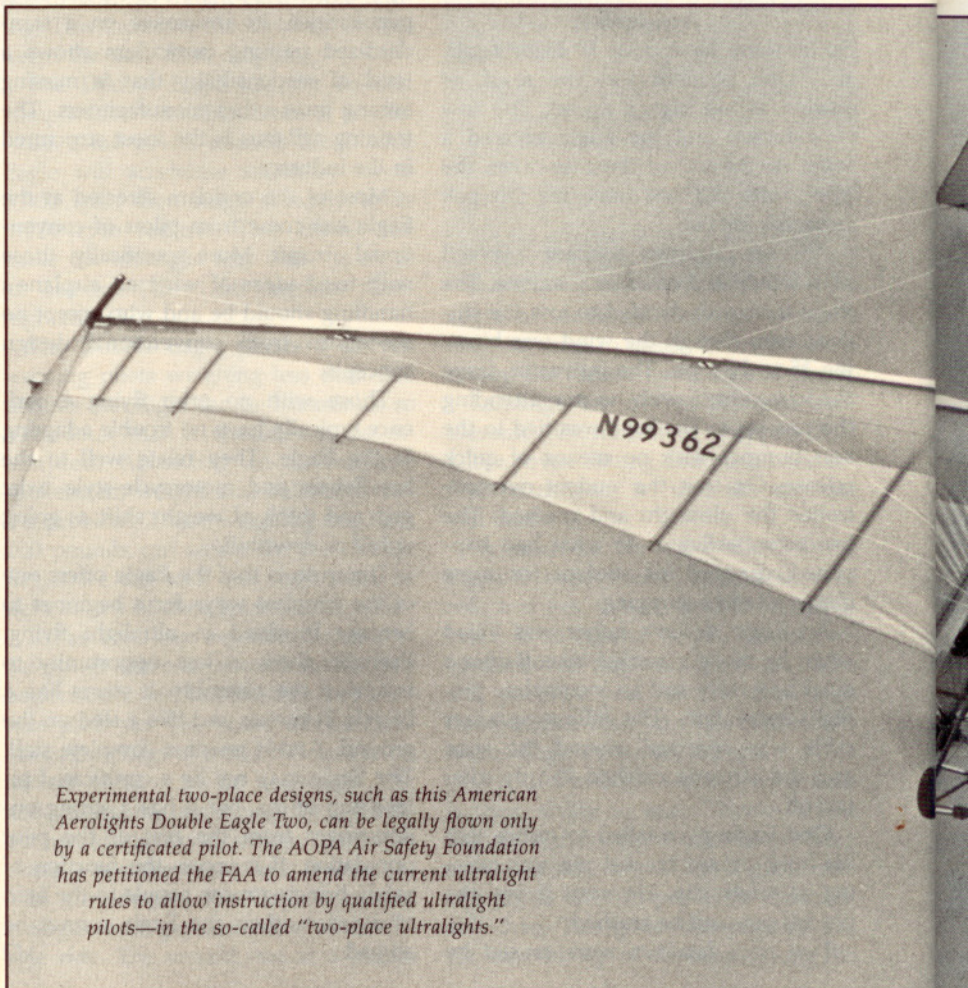
To make sure there is no cheating, Part 103 requires that anyone operating an ultralight either provide proof that the aircraft meets the FAA's guidelines or allow an FAA official to inspect it personally.

Some of the so-called high-performance ultralights were hurt by this rule. Several manufacturers will have to change their designs if they want to continue selling ultralights. Some have said that they will offer two versions of an "ultralight"—one that meets Part

103 rules and one in the Experimental category for those who want more speed or a stronger ship.

Subpart B of Part 103 describes an ultralight's operating rules. There are eight limitations:

- *No hazardous operations* that can jeopardize the safety of persons or property on the ground or in the air.
- *Daylight flying only*, except that with an anticollision lighting system visible for three statute miles, an ultralight pilot legally may fly in uncontrolled airspace from 30 minutes before sunrise to 30 minutes after sunset.
- *Ultralights must yield the right of way to all other aircraft.*
- *Flight over congested areas is prohibited*, regardless of altitude, unless the pilot obtains a waiver from the FAA for some specific, limited operation.
- *Flight in airport traffic areas, control*



*Experimental two-place designs, such as this American Aerolights Double Eagle Two, can be legally flown only by a certificated pilot. The AOPA Air Safety Foundation has petitioned the FAA to amend the current ultralight rules to allow instruction by qualified ultralight pilots—in the so-called "two-place ultralights."*

zones, terminal control areas and positive control airspace can be conducted *only with prior authorization from air traffic control.*

- *Flight in prohibited or restricted areas is prohibited.*
- *Ultralight pilots always must conduct their flights maintaining visual reference to the surface. No flights on top of cloud layers are permitted.*
- *Finally, ultralight pilots must adhere to the same basic VFR cloud separation minimums as certificated pilots.*

Notice that the rules make no mention of pilot certification, aircraft/vehicle certification or aircraft registration. The FAA is leaving these essential safety programs up to the ultralight community.

In Part 103's preamble, there is a threat. Unless the ultralight community takes positive, timely action on these

programs, and if the programs do not meet the FAA's safety objectives, the FAA states that "further regulatory actions may be necessary."

In other words, take care of these programs on your own, or face the prospect of more extensive government regulation.

#### **AOPA Responds**

The other significant development in 1982 was that the ultralight community grew by one more organization. AOPA, after years of studying the problems and challenges facing ultralight aviation, announced the formation of an Ultralight Division in April 1982. Internal debate and discussions held with prominent figures in the world of hang gliding and ultralight aviation, led us to the conclusion that AOPA is best qualified not just to represent and serve the interests of

ultralight pilots, but also to manage the orderly pursuit of the self-regulatory initiatives as outlined in Part 103.

The AOPA Air Safety Foundation committed itself to developing an ultralight pilot and examiner competency program. Then test forms and an administrative team for the registration of ultralight pilots and examiners were established. Then an ultralight aircraft registration system was conceived. Then an accident reporting capability was set up.

The AOPA Ultralight Division also began publishing a new bimonthly magazine, *Ultralight Pilot*, to address more completely the interests of our new constituency. *Ultralight Pilot* features articles on flying technique, safety, micrometeorology and mechanics, as well as other ultralight articles.

The magazine presents the only unapologetic ultralight aircraft evaluations available in any magazine today. This is its most important value to readers. *Ultralight Pilot* is mailed to all members of the AOPA Ultralight Division, and single copies are sold at ultralight dealerships across the United States.

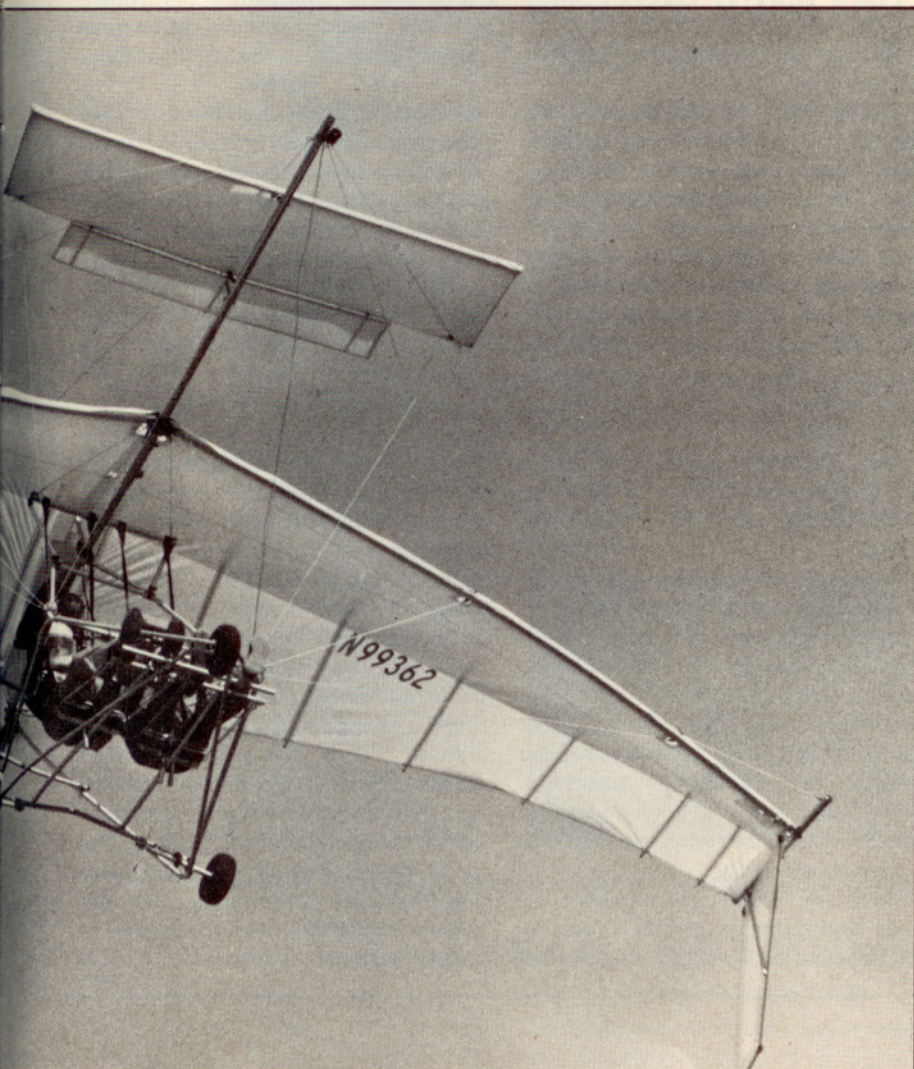
Also, the Air Safety Foundation has petitioned the FAA to change Part 103 so that the suddenly Experimental two-place "ultralights" can be used legally for dual instruction of ultralight pilots. Under this petition, a two-place design could be used for instruction under Part 103 if the instructor met certain requirements (this does not include an FAA-issued pilot certificate), and if the aircraft were used *only* for instruction.

Finally, ASF secured an insurance agreement with Avemco Insurance Company. If ultralight pilots are registered in ASF's programs, then they are eligible for liability and hull insurance.

#### **PUMA**

The Powered Ultralight Manufacturers Association (PUMA) has the task of developing a set of ultralight aircraft certification standards. These standards, together with the programs established by AOPA and ASF, will provide the FAA with the type of comprehensive standards they say will prevent them from issuing any more ultralight regulations.

In November 1982, PUMA drew up



# ULTRALIGHT UPDATE

a proposed set of certification standards. This stout document borrows heavily from the certification standards used for conventional lightplanes. Some critics argue that the standards are too complex or do not fully apply to ultralights, particularly the canard or flying-wing ultralights. But, after many fits and starts, PUMA finally has come up with a basis for future agreement.

PUMA's difficulty in arriving at a consensus is magnified by the fact that not all ultralight manufacturers are members of the organization. Members and nonmembers alike resented the efforts made by Lyle Byrum, PUMA's former president (who also happens to be president of Eipper-Formance, the largest manufacturer of ultralights), to achieve a unified policy on anything. His attempts were incorrectly perceived as a ploy to "Eipperize" the industry. With Byrum's resignation and the appointment of Roy Muth (a veteran at representing the snowmobile industry) as president, the political climate surrounding PUMA's infighting should lessen, clearing the way for progress.

Without industry-wide agreement on PUMA standards and the sport's acceptance of ASF's programs, there can be no FAA approval. There are no other competing alternatives that can satisfy the FAA's demands. Let us hope that in 1983 an agreement can be reached that will allow the sport to carry on, unhindered by internal disputes or further government intervention.

## Hula Hoops

All this is not to say that political matters totally dominated ultralights in 1982. Last March, at the Experimental Aircraft Association's Annual Sun 'n Fun Fly-in at Lakeland, Florida, approximately 500 ultralights were on hand. The publicity generated by the sight of so many ultralights in one place gave the impression that they were about to take over the skies.

Not true. Quite unlike the heady days of 1981, last year saw a moderation of ultralight sales. Those who once trumpeted the loudest are now heard to say that 1982's sales were roughly half what they were in 1981. If you can believe what the manufacturers say, this means approximately 10,000 ultralights were sold in 1982.

Though many would hope so, this does not indicate that ultralights are on their way to hula-hoop status. Rather, the general economic decline should be blamed, or perhaps a change in the

buyers' tastes. We soon may be faced with only a handful of manufacturers, each producing limited numbers of those designs they know will meet with a favorable reception.

## New Designs

There were few new ultralight designs introduced in 1982. Robertson Aircraft Company, the same people who make the STOL conversions, came out with what they call the B1-RD. American Aerolights, like many other manufacturers, offered a three-axis version (the Eagle XL) of its existing line of aircraft.

Flight Designs introduced a prototype called the P-38, but plans to offer it to the public were canceled after a structural failure killed the company's president, Marty Alameda. In the P-38's place it plans to offer what is claimed to be the most thoroughly

*We may soon have only a handful of manufacturers, each producing limited numbers of a design they know will sell best.*

tested ultralight to date, the FlightStar, beginning this year.

Greenwood Aircraft unveiled its new ultralight—the Witch—last summer. Greenwood brings with it the experience of once having been centrally involved in the production of the Bellanca series of lightplanes and also in the development and certification of the Bellanca T-250 Aries, a five-seat, 180-knot T-tail airplane. The Witch is a high-wing design with a pusher propeller and an enclosed cockpit, similar to that of the CGS Hawk.

Diehl Aeronautical brought out a new model—the XTC—that is a futuristic-looking amphibian made of fiberglass.

As if to signal boredom with the limited performance characteristics of ultralights, some manufacturers have come out with Experimental-category designs. Goldwing's Nexus looks like a primitive Cessna 152. Eipper's Super MX is a clipped-wing, 50-hp hot rod that has been stressed for aerobatics. There are many other such designs, some of which use composite materials in their construction.

There are several new ultralight engines that promise greater reliability and efficiency. Advanced Engine De-

sign introduced the liquid-cooled, two-stroke Spitfire 220 LC engine; Normalair-Garrett brought out the Ultra 275 (20 hp) and WAM 342C (30 hp) engines for ultralights. These are horizontally opposed, two-stroke engines, originally used to power remotely piloted vehicles. Electric starters are optional.

A German company, Konig, even brought out a three-cylinder, two-stroke radial engine, and Kirk Engines has announced a four-cylinder radial.

The Italian KFM 107 series of horizontally opposed two-strokes continues to meet with public acceptance. They have been used for the past year in Monnett Aircraft's Experimental aircraft, the Moni and the Monerai.

So far, no ultralight manufacturers are using the engines mentioned above as standard. There is, however, strong after-market interest, and we can expect to see more of them in use in 1983.

An Austrian engine company, Rotax, has begun to penetrate the American ultralight market. Available in a wide variety of displacements, they have established a reputation for reliability and quietness that threatens Cuyuna Development Company's (an American firm, based in Crosby, Minnesota) recent hegemony in the ultralight field.

## Safety

Accident trends, in the absence of any mandatory accident reporting system, are still invisible. However, the reports reviewed by the Air Safety Foundation and the Experimental Aircraft Association show three main accident types: inadequate preflight inspection, aerobatics and insufficient pilot experience. Many accidents were preceded by an engine failure.

For the first time, parachutes were gaining widespread acceptance in 1982. Now there are eight ultralight parachute manufacturers. Two designs are ballistically deployed; the rest are deployed by hand. One manufacturer claims that at least 12 pilots' lives were saved after their ultralights experienced in-flight airframe failures.

If 1981 was ultralight aviation's boom/adolescent phase, then 1982 signified a change to a more businesslike attitude. Slowly, the sport is heading for maturity, and 1982 marked a transition. Not just in the volume and variety of the products being offered, but in the energy level of the participants and the nature of the politics that ultimately propel this newest segment of general aviation. □