

THE GROB 115 MINDELHEIM DIRECT BLUFFTON

Clean lines and superior finishing make this the ultimate in a two-seat lightplane

BY THOMAS A. HORNE

AOPA Pilot has been covering the developments at the Burkhart Grob Flugzeugbau in Mindelheim, West Germany, ever since the company came out with its first motorglider, the G109. Its newest model, the G115 two-seater, reflects the steepness of Grob's learning curve in the general aviation manufacturing business and marks a significant departure from the company's traditional approach to the marketing of its products. Where once it concerned itself with exotica, it has narrowed its focus to meet the growing need for more conventional lightplanes—in this case,



two-seat training, cross-country, or glider-tug airplanes.

While the thought of a two-seater usually conjures up a plain-Jane image, the G115 proves that style does not have to be sacrificed for utility. The G115 is every bit as sleek and well conceived as its predecessor designs, thanks to Grob's skill and familiarity with composite construction. Like all of Grob's sailplanes and motorgliders (see "Grob G109," October 1982 *Pilot*, p. 36; and "Euroreport: Grob G109 and G112," September 1984 *Pilot*, p. 34), the G115 is constructed mainly of fiberglass (including spars), with portions of the airframe reinforced with carbon fiber. A strip of carbon fiber in the G115's belly serves as a ground plane for the airplane's antennas. The external surfaces are treated with a transparent protectant that helps prevent them from being damaged by the sun's ultraviolet rays—a paramount concern in all fiberglass designs.

The airframe is as strong as it is graceful. The West German equivalent of our Federal Aviation Administration assigned a life limit of 9,000 hours to the G115 airframe. Grob fully anticipates that as the G115 fleet (more than 60

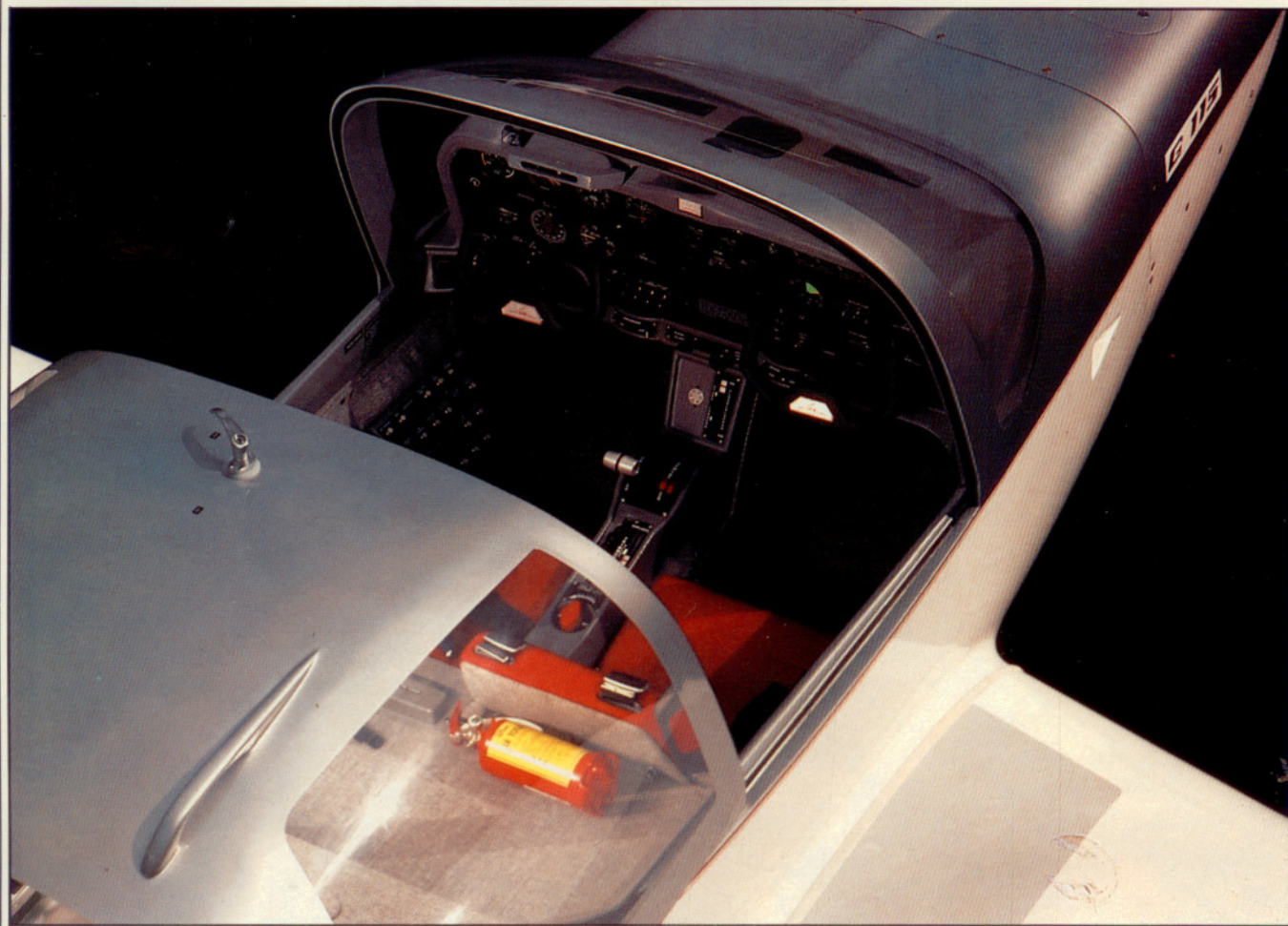
have been sold in Europe) builds more time, the life limit will be extended. The airplane will be certified in the Normal and Utility categories under Federal Aviation Regulation Part 23. Officials at Grob's North American headquarters in Bluffton, Ohio, expect U.S. certification by the time you read this article, pending revalidation of certain stress tests. German authorities allow universities to perform certification tests; the FAA wants Grob to confirm the results. The ultimate goal is for the G115 to be certified in the Aerobatic category.

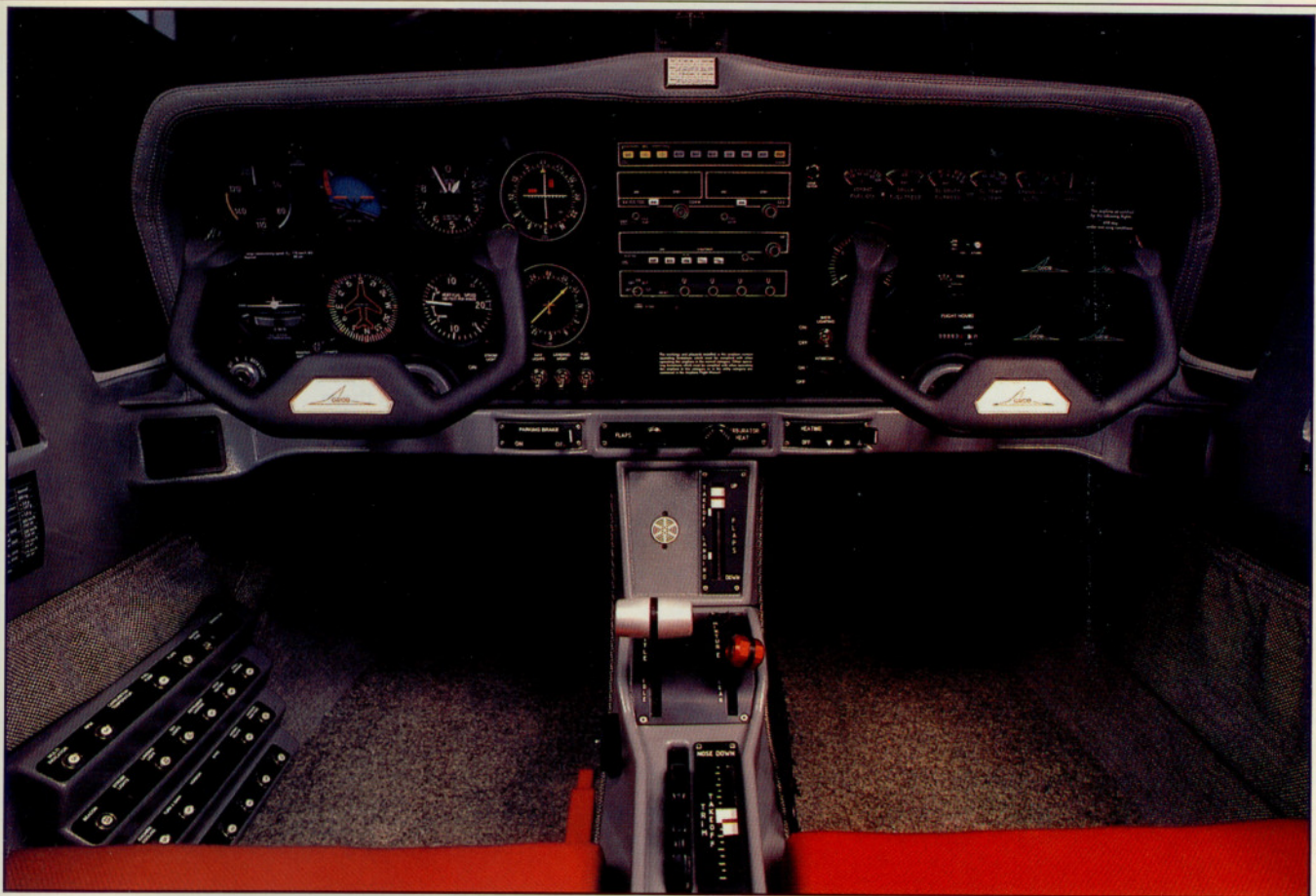
The airplane featured here, D-EANP, is one of the first two G115s shipped to

the United States. Grob's facilities at the Bluffton Airport are a mirror image of the parent headquarters in Bavaria—right down to the spanking-clean, painted hangar floors and the executive office building, topped with a tower cab. Of the 11 Grob employees in Bluffton, three work in the airplane division. The rest support Grob's machine tool business, the unglamorous but very profitable arm that made the venture into lightplanes possible in the first place.

Most evident in all Grobs is a positively Teutonic sense of order and attention to detail. The G115's lines seem unbroken by seams, rivets, or unsightly drag-producing appendages. The sliding canopy adds to the flow of the lines and provides easy access to the cockpit—which was somewhat of a contortionist act in the motorgliders. Inside, the cockpit is well arranged, and the copiously padded seats are very comfortable. Then there are the details that underscore the company's commitment to quality: Four-point restraint systems are standard equipment, as is a side-wall-mounted circuit breaker panel, an avionics master switch, an intercom, and an abundance of well-designed map pock-

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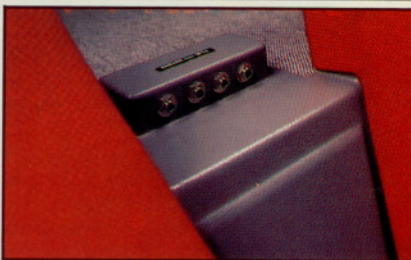
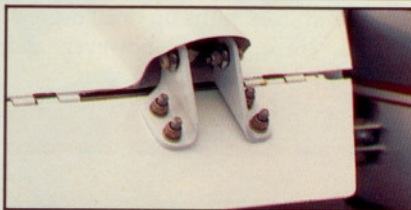


ets and nets for stashing small, bulky objects. There is also a fire extinguisher and—what is this next to the pilot's right knee?—a combination crash ax and seat belt cutter, just in case.

The G115 has a 115-horsepower Lycoming O-235 engine that drives a Hoffmann fixed-pitch propeller made of wood and covered by a layer of fiberglass. Its leading edge is protected by a steel insert. There is an important bit of history behind Grob's choice of the Lycoming engine. Previous Grobs used either 80-hp Limbach L2000 (G109) or 90-hp Grob G2500 (G109B and G112) engines. Both relied heavily on the Volkswagen Type I (also known as Beetle) engine design but lacked sufficient power and cost too much. The dollar's weakness makes the Lycoming a real bargain in terms of Deutsche marks and provides extra margins of power and reliability to boot.

Technically speaking, D-EANP is a G115A. The G115B is designed for use as a glider tug and has a 150-hp Lycoming O-320 engine with a fixed-pitch propeller. West German certification of the G115B is expected in the fall of 1988.

Preflight procedures are conventional, with the exception of the pitot tube,

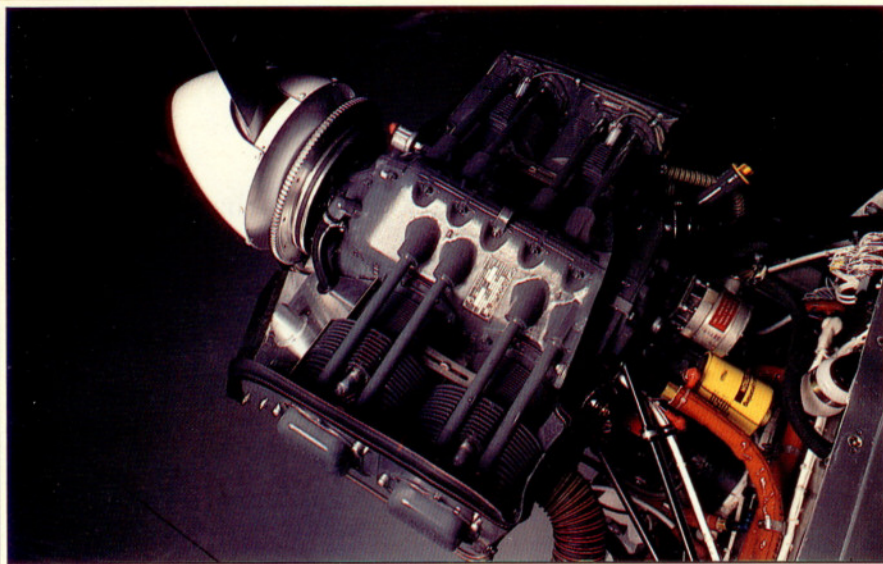


which is mounted high atop the vertical stabilizer and must be checked with the help of a ladder or by pushing the tail down. Engine start and run-up procedures will be familiar to anyone who has ever flown a two-seat single.

Taxiing turns are accomplished with the help of generous applications of differential brake pressure, *à la* Grumman singles. Grob says that nosewheel steering authority will be improved in short order, as soon as more powerful springs and bungees are thoroughly evaluated at the factory.

Takeoff procedures involve setting the electrically actuated flaps at a 12-degree setting, and running the engine up prior to brake release. Rotation is at 51 knots, and at the recommended climb speed of 70 KIAS, the G115 climbs in what seems like a very nose-high attitude—a perception aided in no small measure by the airplane's excellent visibility in nearly all directions. At near-gross weight, the airplane indicated an 800-fpm climb rate.

Control pressures are very light and very well harmonized. The airplane we flew was equipped with an anti-servo tab on the left aileron. A company spokesman said that its purpose was to boost aileron control pressures and that



future G115s will have what Grob calls "turbulators"—small ridges similar to stall strips—installed in front of each aileron's gap seal. The turbulators serve the same function as the anti-servo tabs and obviate the need for the anti-servo mechanisms.

Steep turns are nearly effortless, requiring very little aft stick pressure to maintain a healthy bank angle. At times like this the huge expanse of canopy affords a breathtaking view of the landscape, a feature that also is a great help in ground reference maneuvers. Power-off, approach to landing stalls are uncomplicated affairs, just a few bobs of

the nose accompanied by a vigorous sink rate. Departure stalls are different animals. The airplane claws away, nose to the sky, and takes its sweet time reaching the stall break. The laminar flow wings are reluctant to shed lift, but when it happens you had better have the rudder ball centered. The G115 will drop a wing in a stall, making it a good training airplane. Though the airplane is certified in the Utility category, spins are not approved—yet. Chandelles, lazy eights, and steep turns up to 60 degrees of bank are approved, however, and Grob expects spin approval soon.

The G115 has plenty of rudder and

aileron power to adequately deal with strong, gusty crosswinds. The 40-degree maximum flap deflection makes steep approaches a snap, and the flaps can be positioned to any deflection by blipping the flap switch to a desired setting.

Cruise speeds up to 8,000 feet pressure altitude run between 105 and 109 KTAS at a 75-percent power setting, which makes the G115 more than adequate for the trip lengths most of us fly. While the cruise speeds are comparable to those of a Cessna 152, the similarity ends there.

To sum up, the G115 is a delight to fly, easy on the eyes, and a refreshing breath of air in an otherwise musty two-seat market. The only obstacle to its success in the United States is its price tag—approximately \$75,000 for the standard version. Thank the exchange rate for this. The G115 may be the least expensive two-seater in Europe, but in the United States, where a dollar is worth a mere 1.7 Deutsche marks, it is probably the most expensive.

Still, Grob has demonstrated that it will be a lasting player in general aviation. The G115 is a good example of this. Its first prototype, called the G110, entered an unrecoverable flat spin during flight tests. Its spin parachute failed to open, the pilot bailed out to safety, and the airplane was destroyed. Then it was back to the drawing board, and the creation of the G112. It turned out to be too expensive to manufacture, and the decision was made to scrap the design. (Rumor has it that company owner Burkhardt Grob, in his frustration, applied a chain saw to the airplane and demanded a completely new design.)

The G115 is not the end of the road, either. Flight tests of the G116, a four-seat design powered by a 200-hp Lycoming engine, are already under way. There are also plans for a G200, a spacy-looking five-seater with a 245-hp Porsche PFM engine and a pusher propeller. The Grob philosophy has always been to introduce new designs and continue product refinements in spite of the economic climate. As we have said before, lightplanes are not Burkhardt Grob's only business, just his favorite.

Price alone should not be a consideration in an airplane purchase. Value should, and Grob products are high-quality, advanced designs with proven ancestry and no shortage of pizzazz. They are guaranteed to turn heads at any ramp, and it is hard to put a value on that.

Grob G115A	
Base price: approximately \$75,000	
Note: Specifications and performance figures are given for Normal category weight and, in brackets, Utility category weight.	
Specifications	
Powerplant(s)	Textron Lycoming O-235-H2C 115 hp @ 2,800 rpm
Recommended TBO	2,400 hr
Propeller(s)	Hoffmann HO14-175120 two-blade fixed pitch, wood and fiberglass
Length	24 ft 2 in
Height	8 ft 6 in
Wingspan	32 ft 9 in
Wing area	131.43 sq ft
Wing loading	14.26 lb/sq ft
Power loading	16.3 lb/hp
Seats	2
Empty weight	1,190.5 lb
Gross weight	1,874 lb [1,763.7 lb]
Useful load	683.4 lb [573.2 lb]
Payload w/full fuel	538 lb [428 lb]
Max takeoff weight	1,874 lb
Fuel capacity, std	26.4 gal (24.2 gal usable) 158.4 lb (145.2 lb usable)
Oil capacity, ea engine	6 qt
Performance	
Takeoff distance, ground roll	689 ft
Takeoff distance over 50-ft obstacle	1,345 ft
Max demonstrated crosswind component	12 kt

Rate of climb, sea level	750 fpm
Max level speed, sea level	130 kt
Cruise speed/Range w/45-min rsv, std fuel (fuel consumption, ea engine)	
@ 75% power, best economy	
2,000 ft	108 kt/305 nm (40.2 pph/6.7 gph)
@ 65% power, best economy	
8,000 ft	107 kt/345 nm (34.8 pph/5.8 gph)
@ 55% power, best economy	
12,000 ft	98 kt/385 nm (29.4 pph/4.9 gph)
Service ceiling	14,800 ft
Landing distance over 50-ft obstacle	1,550 ft
Landing distance, ground roll	690 ft
Limiting and Recommended Airspeeds	
Vx (best angle of climb)	57 KIAS
Vy (best rate of climb)	60 KIAS
Va (design maneuvering)	95 KIAS [99 KIAS]
Vfe (max flap extended)	94 KIAS
Vno (max structural cruising)	135 KIAS
Vne (never exceed)	164 KIAS
Vr (rotation)	51 KIAS
Vs1 (stall, clean)	53 KIAS
Vso (stall, landing configuration)	48 KIAS

All specifications are based on manufacturer's calculations. All performance figures are based on standard day, standard atmosphere, sea level, gross weight conditions unless otherwise noted. □