

The frisky Fascination

Chances are that most American pilots have never heard of Wolfgang Dallach and especially his company, WD Flugzeugleichtbau (that's German for *Light Aircraft Construction*). Dallach is an expert aerobatic pilot and aircraft designer who broke into manufacturing by offering the Fascination D4 as a kit. Now, the two-place retractable-gear aircraft is headed for the United States and is seeking FAA certification. It is already offered as a factory-built aircraft in Germany.

The D4 cruises at 130 knots on less expensive automotive gas and oil. The aircraft comes standard with a Ballistic Recovery Systems Inc. (BRS) aircraft recovery parachute in case you run out of options.

A decision is under review by the FAA on whether to certify the Fascination in the FAA Primary category, the category often used by kitplane manufacturers to enter the certificated market. The Primary category allows greater owner participation in maintenance and inspections, further reducing operating costs. An FAA official said the certification determination is a complicated one, since German air sport associations that operate under German government supervision certified the D4. Had the aircraft been directly certified by the LBA, Germany's equivalent of the FAA, the decision would have been less difficult. FAA officials must now determine that the airplane has the backing of the German government.

The \$100,000 aircraft is certified only in Germany and is

A spirited sportplane arrives from Germany



Fascination D4

classified there as a German ultralight. Although first sold as a kitplane, it was designed from the start to win certification approval. The factory now completes nearly half of all Fascination aircraft sold.

Meet Wolfgang Dallach

By way of introduction, let's start with Dallach himself. He is well known in Europe as an aerobatic champion and represented Germany on its national aerobatic team. He has designed and delivered 90 of the fiberglass Fascination D4 aircraft in Europe and Brazil. The first Fascination sold in the United States was delivered on March 6.

Dallach may be motivated by competition with a friend

to make the aircraft a success, according to the U.S. distributor, Jack Harper. Dallach is a longtime friend of Walter Extra. Extra manufactures a line of aerobatic aircraft and the Extra 400 business aircraft (see "Classy Business," June 2000 *Pilot*). Both Extra and Dallach were on the German aerobatic team. Harper, an accomplished pilot and mechanic, is based at Herlong Airport near Jacksonville, Florida.

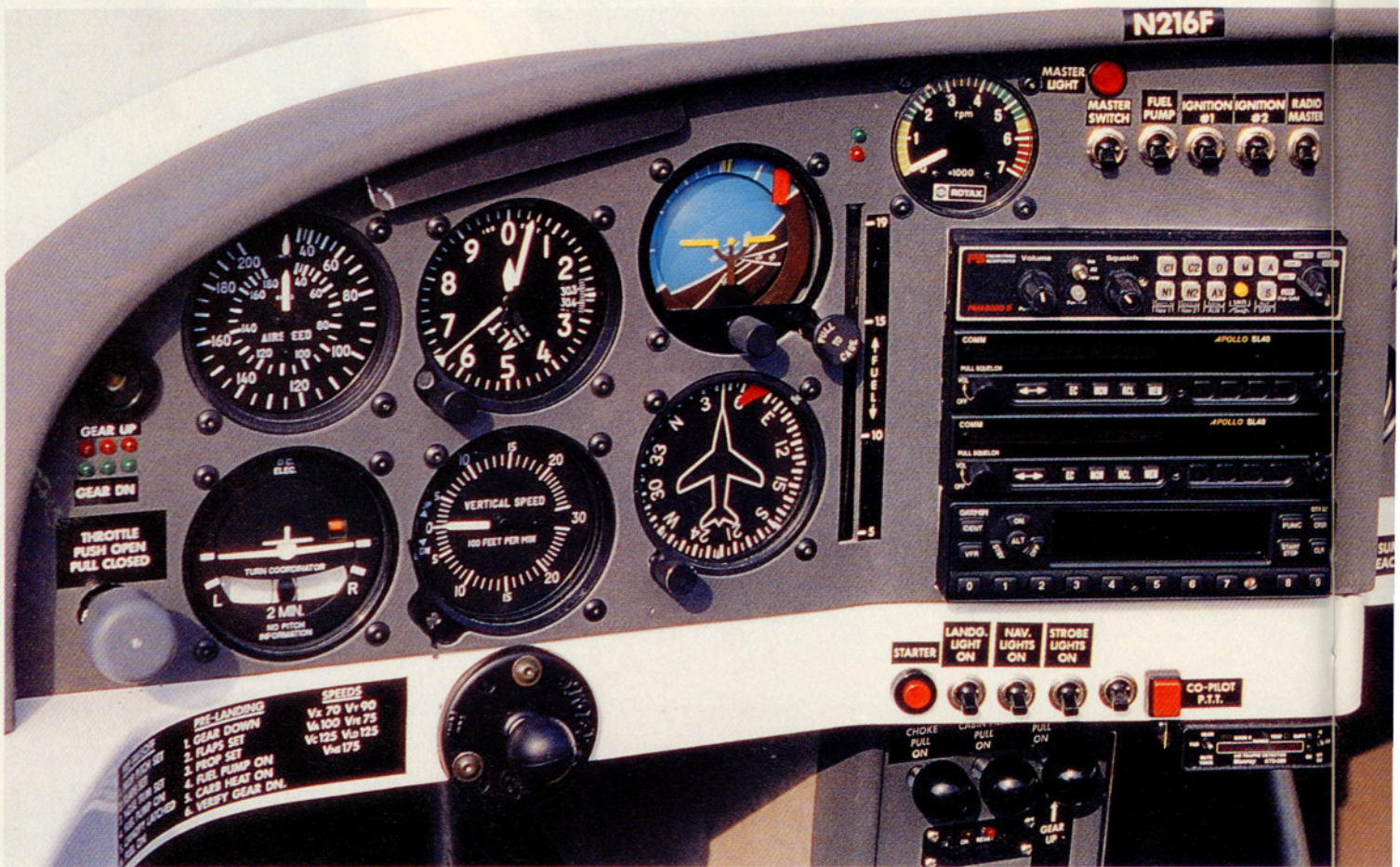
An aerobatic airplane?

Since Dallach is an aerobatic champion, does that mean the Fascination is aerobatic? While it looks like an aerobatic airplane and flies like an aerobatic airplane, it isn't. The Fascination is intended for VFR straight-and-level flight—a hamburger

BY ALTON K. MARSH

PHOTOGRAPHY BY WINSTON LUZIER







getter that guarantees fast delivery. There are no plans for IFR certification.

While the aircraft is stressed for six Gs both positive and negative (four Gs at the never-exceed speed), the pilot operating handbook forbids aerobatics. The D4 is so aerodynamically clean that a mistake by an inexperienced pilot while doing aerobatics could result in acceleration past V_{NE} , company manager and investor Thomas Scherlinzky said in a telephone interview from Germany. The company doesn't want that sort of liability worry.

The Fascination's aerobatic heritage is unmistakable, however. The aircraft is flown with a stick, like most aerobatic aircraft, and the controls are sensitive—another characteristic shared with highly maneuverable aircraft. A quarter-inch of stick travel results in a large change in pitch or bank angle.

Scherlinzky gives as many as four demonstration flights a day in Germany and said most pilots have little difficulty adjusting to the more sensitive controls. He cautioned, however, that pilots unfamiliar with responsive controls might need as many as 25 landings before over-

The D4 flies near Jacksonville, Florida. An aerodynamically clean design means pilots must plan ahead to slow down.

coming the tendency to overcontrol. More experienced pilots get the feel of the Fascination in only five landings, he said.

Now meet the factory

The company, WD Flugzeugleichtbau (WD stands for *Wolfgang Dallach*), is located in two plants—one near the city of Heubach in southern Germany and a main production plant in the Czech Republic. The Heubach plant, located 50 miles east of Stuttgart and 75 miles west of Munich, employs 15 people and serves as a completion center. There, aircraft are finished, avionics are added, and new products are researched. The production plant is little more than an hour away by Fascination, and employs 50 workers. Dallach, Scherlinzky, and two Czech citizens own the Czech plant.

Aircraft is evolving

Pilots in the United States generally expect that once an airplane is certified the design is frozen, but the German-certified Fascination is continuing to evolve. For example, a pilot-operated electric motor is used to adjust the pitch of the two-blade composite propeller while in flight. The prototype flown by *Pilot* last

fall had that switch on the instrument panel. Since the switch must be adjusted to reduce rpm during climbout, the pilot had to either take a hand off the throttle or the stick shortly after takeoff—neither option seemed like a good idea. The production aircraft delivered in March had the switch on top of the stick where it could be more easily operated. For future Fascinations, however, the factory has developed an electronic propeller control allowing the pilot to “dial in” the desired rpm setting, eliminating the need to make any adjustments and thus reducing pilot workload.

Other systems on the aircraft are evolving as well. Both the prototype and the aircraft delivered in March by Harper Aircraft had hydraulically operated landing gear. All subsequent aircraft will have electrically operated gear, saving weight and simplifying the mechanics and maintenance requirements of the system.

Finally, improvements were made to the air-cooling system for the Rotax 912S engine, thanks to suggestions by Harper, who owns Harper Aircraft.

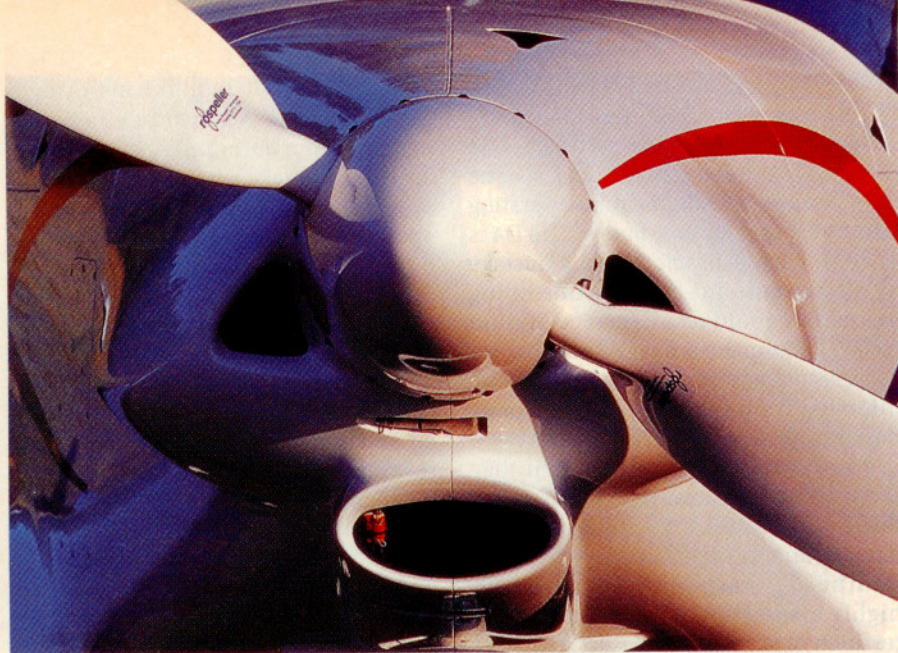
The aircraft comes equipped with the BRS parachute, basic flight instruments, engine instruments, an electric starter, a variable-pitch propeller, and retractable landing gear. A navigation, strobe, and instrument light package is available for \$1,200. The company will install radios, an attitude indicator, a directional gyro, and a turn coordinator if requested by the customer.

Speaking of evolution, it's time to talk about one of the new models. The fuselage for a prototype named Evolution popped from the molds in Heubach on March 6. The Evolution will cost slightly more than the Fascination because it has a carbon-fiber fuselage. Construction of the D4 is fiberglass with carbon-fiber main wing spars. The Evolution will use the wings, ailerons, and rudder of the Fascination. While speeds will be comparable with the Fascination, the Evolution offers additional roominess in the two-place cabin. Harper said it won't replace the Fascination.

Some quirks

The Fascination requires a minimum crew weight of 154 pounds to meet weight-and-balance requirements. Smaller pilots will either need to load extra weight in the baggage compartment or pork up. Customers choosing the latter course may want to ask WD Flugzeugleichtbau to toss in some good





German pork dishes, such as several pounds of *schweinebraten mit klößen* or *schweinshaxe mit erbspürree*. The latter dish is a pork rump that reaches the table covered with a half-inch of fat.

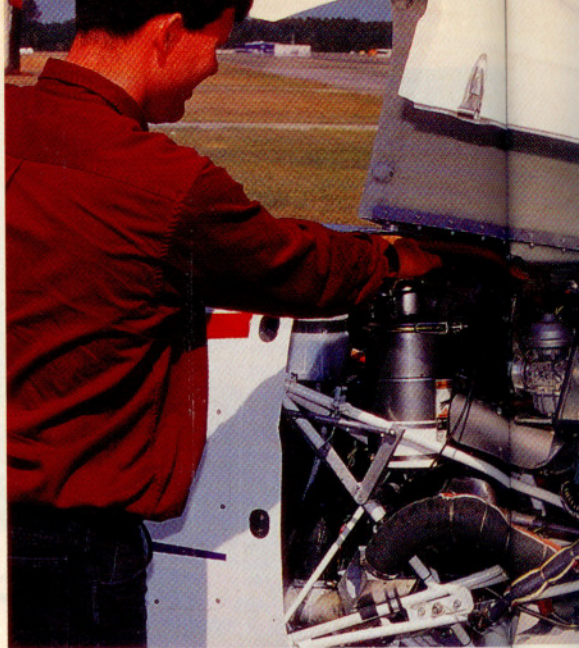
Some kudos

The fit and finish of the production Fascination flown by *Pilot* is excellent, good enough to keep the term *German engineering* synonymous with *quality*.

Other nice touches include an engine cowling that opens on the half-shell, so to speak, affording excellent access to the engine. Unlike some U.S.-built cowlings with peek-a-boo openings, the pilot of a Fascination can inspect everything in the engine compartment.

There's also an inflatable canopy seal. Once the canopy has been latched, a

The propeller has a foam core covered by fiberglass. The engine cowling opens to expose half of the engine, making preflights easy.

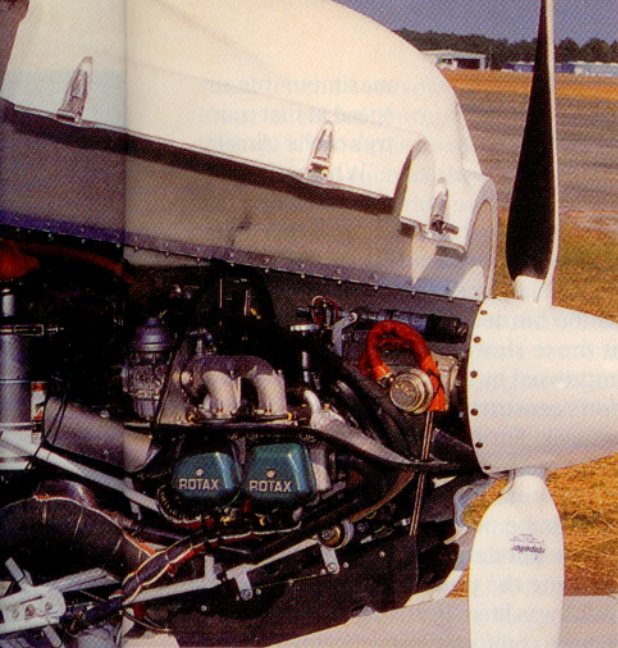


squeeze-bulb mounted on the right side of the canopy is used to

inflate the seal to lock out wind and engine noise. The cockpit seemed quiet without it during *Pilot's* demonstration flights.

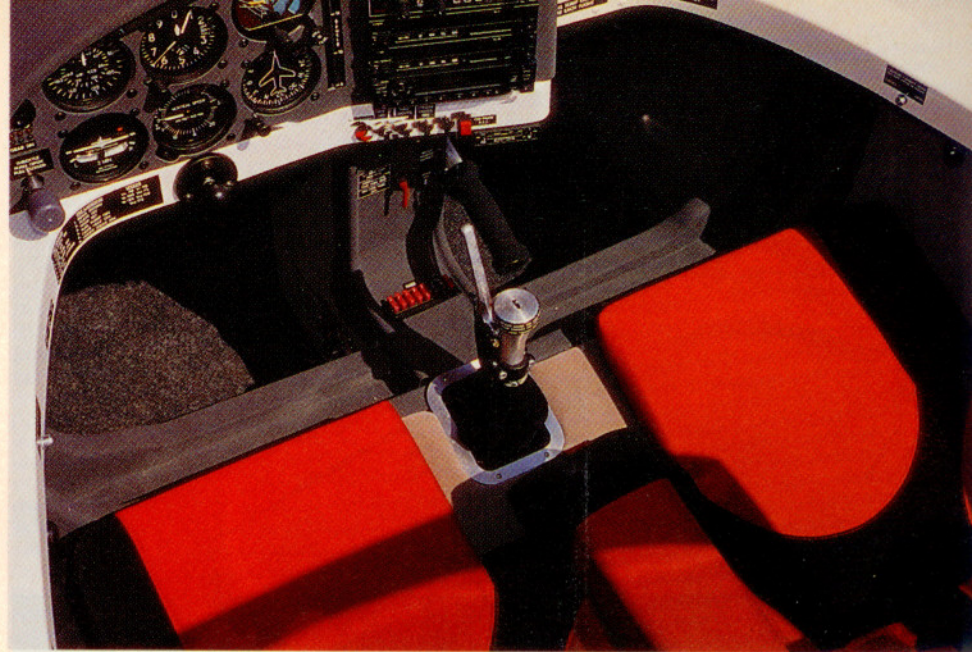
Performance

So how does it fly? Like an F-16. During my test flights, the Fascination climbed



after takeoff at more than 1,000 feet per minute, even though Harper and I brought the aircraft close to gross weight. It accelerated rapidly in the pattern to 120 kt (gear up) before I realized that I was using way too much throttle: It hates to slow down.

My demonstration flight was limited, since the aircraft had arrived from Germany in a crate only two weeks earlier, and speed tests were not flown. Stall



A bicycle-type brake handle is mounted on the stick. The throttle is positioned high on the left side.

practice revealed the airplane's frisky nature. Since the Fascination is slow to decelerate, I raised the nose to an extremely high attitude to initiate a stall, an attitude that could have contributed to a brisk wing snapdown at the stall. Had I decelerated more slowly, a factory

official said, using less extreme pitch attitudes, I would have seen a more soporific event.

A few minor problems were noted, such as a small leak in the gas tank filler port and a gear uplock that allowed the left gear to drop during a high-G turn. The tank is located ahead of the cockpit, like that of a Piper Cub. There wasn't time for a true airspeed check until the following day, but I was skeptical of 150 kt indi-



cated readings that I saw on my first flight. I thought that could be another item that needed predelivery tweaking.

The next day a suitable airspeed test emerged as I flew in formation with a Cessna 182RG for the photo flight. Returning to Herlong Airport from Jacksonville's

Atlantic Coast beaches after the shoot, I needed full throttle at 5,400 rpm to keep up (the Rotax is a geared engine). Later I learned from Herlong-based aircraft dealer Tommy Stone, the pilot of the Cessna 182RG, that he was indicating 130 kt. Officials in Germany said they see 136 kt as a

The huge canopy rotates backward, allowing easy access to the cockpit.

maximum true airspeed in that country's cooler climate.

While pictures were taken, the formation flew at 100 mph, a speed that required only one-third of the throttle travel. Harper estimated that the Fascination burned only 2.5 gallons per hour at those slower speeds. Overall, I was impressed by the quality of the Fascination's construction and had only a minor squawk. Formation flight requires constant readjustment of the throttle. On the Fascination, the throttle is a push-tube that emerges from the panel—one for the pilot and one for the copilot. By the time the photography session was over I was literally aching for an armrest. A more comfortable arrangement would include, in addition to the armrest, a military-style throttle on the sidewall.

It's worth noting that since the aircraft is very light, it is more susceptible to turbulence. Photographer Winston Luzier, riding in the 182, noted that whenever the Skylane hit a slight updraft, the Fascination was tossed more noticeably by the same disturbance.

While some potential buyers, especially those with limited stick time, may

consider the controls too sensitive, I found their feel comparable to other high-performance aerobatic aircraft I have flown, such as the Extra 300L. I had no difficulty during my test flights.

No Johnny One-Note

Speaking of high-performance aerobatic aircraft, WD Flugzeugleichtbau is branching out from its kitplane roots. In addition to the Evolution, engineers are hard at work on the Revolution. The company has provided few details of its newest project, slated to fly by the end of the year, other than to say it employs "trick aerodynamics." A moving leading edge will be coordinated with movement of the ailerons, elevator, and rudder to enable the Revolution to perform feats "never seen before," Scherlinzky promised. If the promise is delivered, the company name may become more familiar, even to Americans. AOPA

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Links to additional information about the Fascination D4 may be found on AOPA Online (www.aopa.org/pilot/links.shtml).

SPECSHEET

WD Flugzeugleichtbau Fascination D4-BK

Base price: \$98,500

Price as tested: \$105,000

Specifications

Powerplant	Rotax 912S, 100 hp
Recommended TBO	1,200 hr
Propeller	Rospeller, 2-blade, 67-in dia, variable-pitch
Length	20 ft 4 in
Height	5 ft 8 in
Wingspan	29 ft 2 in
Wing area	114 sq ft
Wing loading	11.6 lb/sq ft
Power loading	13.3 lb/hp
Seats	2
Cabin width	3 ft 8 in
Max gross weight	1,300 lb
Min crew weight for proper balance	154 lb
Useful load, as tested	639 lb
Payload w/full fuel, as tested	549 lb
Fuel capacity, std	23 gal (22.7 gal usable)
Max baggage	50 lb

Performance

Takeoff distance, ground roll	400 ft
Landing distance, ground roll	400 ft
Cruise speed/endurance w/45-min rsv, std fuel (fuel consumption) @ 75% power, best economy 4,500 ft	122 kt/3.5 hr (30 pph/5 gph)

Takeoff distance over 50-ft obstacle	800 ft
Landing distance over 50-ft obstacle	1,000 ft
Rate of climb, sea level	1,000 fpm

Limiting and Recommended Airspeeds

V_Y (best rate of climb)	78 kt
V_X (best angle of climb)	61 kt
V_A (design maneuvering)	87 kt
V_{FE} (max flap extended)	65 kt
V_{LE} (max gear extended)	109 kt
V_{LO} (max gear operating)	109 kt
V_{NE} (never exceed)	152 kt
V_{S1} (stall, clean)	43 kt
V_{SO} (stall, in landing configuration)	35 kt

For more information, contact Harper Aircraft, 6580 Anvers Boulevard, Jacksonville, Florida 32210; telephone 904/778-0021; fax 904/778-0021; or visit the Web site (www.fascinationD4.com).

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.