



## ZLIN Z-242L FUN CZECH

*Take the Zlin for a spin.*

BY MARK R. TWOMBLY

One of the benefits that is emerging from the dissolution of the former Iron Curtain is the appearance in western countries of some nifty eastern-bloc airplanes. The Russian-built Sukhoi Su-26M and Su-29, single- and two-seat radial-engine aerobatic thoroughbreds are perhaps the leading examples of airplanes that are changing western minds about the quality and capability of aircraft from those previously off-limits countries. ■ Now there is another top-notch eastern European design being launched in the North American market. The Zlin Z-242L two-seat sport trainer exudes strength and quality of construction. It's also a gas to fly—right-side up or upside down. ■ The Z-242L is built by the Zlin Aircraft Moravan Aeronautical Works Limited (proper name: Moravan Akciova Spolecnost, commonly

PHOTOGRAPHY BY MIKE FIZER





called Moravan Limited) in the Czech Republic city of Otrokovice—which is a few miles from the city of Zlin. A 50-year-old company, Zlin builds piston-powered trainers and aerobatic aircraft and a turboprop ag sprayer. The Zlin Z-50 is well-known in international aerobatic circles as a three-time winner of the world aerobatic championships.

The Z-242L is an updated version of the 142, which has been in production since 1981. The 142 is powered by a Czech-built Avia 210-horsepower inverted inline supercharged six-cylinder engine. The 242L has a normally aspirated 200-hp Lycoming AEIO-360 engine and other changes intended to make the airplane palatable to western tastes.

I judge it palatable in the extreme. There simply is not another sport trainer on the ramp that can match the 242's combination of rugged quality, nifty features, and terrific flying qualities.

The Z-242L is just getting its start in this country. The North American distributor, Zlin Aerospace, is in Barrie, Ontario, north of Toronto. Four dealers have been named in the United States, and airplanes are beginning to make the rounds. We met up with Jay Gathmann, president of Zlin USA in Jarrettsville, Maryland, which handles Zlin sales in the eastern United States except for the Gulf region. Gathmann's demonstrator was still under Czech registry (which begins with the letters "OK") when we flew it, but according to Gathmann, it soon would receive a U.S. registration and N number.

To give it some perspective, think of the Z-242L as faintly reminiscent of a Piper Tomahawk in that it has a two-place side-by-side seating configuration; a big, bulbous canopy; and a constant-chord wing planform perched atop a tricycle landing gear. The resemblance pretty much ends there. The Zlin is physically larger, weighs more (the Tomahawk's 1,670-pound gross weight is only a few pounds more than the 242's empty weight), has a three-blade constant-speed MT propeller and nearly 80 percent more horsepower, can fly upside down, and has sticks instead of yokes.

Take a closer look, and you'll find many more distinguishing characteristics of the Zlin. This is an airplane that was bred not for the long, smooth runways and well-attended airports we enjoy in the United States, but for the rough-and-tumble, no-facilities strips that are more typical in less developed countries, or at least countries with tepid general aviation activity and support. Ease of maintenance and brute strength are two hallmarks of the 242; so is

common-sense design.

The fuel tanks, for example: Each of the two main wing tank filler caps incorporates a dipstick for more precise measurement of fuel quantity than simply peering into the tank. There are plenty of other examples of "why doesn't every manufacturer do that?" thinking on the 242: The nosewheel oleo strut is sheathed in a flexible, protective boot. There are four tiedown rings, including one on the underside of the nose. Small red blotches on the fuselage and horizontal stabilizer identify the location of leveling screws. The battery and emergency locator transmitter are easily serviced by opening large access doors immediately below the rear side windows. The same goes for the engine: A half turn on three fasteners on each side and the huge cowl panels pop open to expose the entire engine. A cloth hood can be pulled across the canopy to



shield the inside from the sun. Headsets are hung on hooks above and behind the seats when not in use. Control sticks can be secured after flight using a sturdy panel-mounted locking device. And when you buy a 242, you get two or three boxes of spares including brake pads, strut cover, nuts, bolts, screws, and canopy and cowl covers, among other goodies.

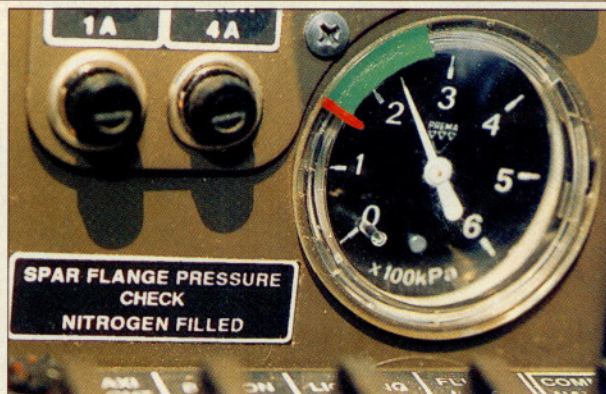
A Zlin equipped with IFR avionics similar to Gathmann's demonstrator, which is the subject of the photos that accompany this article, lists for about \$142,000. Base price of the 242L is \$121,500. The airplanes are built by Moravan, then shipped in containers to Zlin Aerospace in Canada for assembly.

Climb up on either wing, slide the canopy forward, and slide down into the cockpit using a metal seat frame as a step. Seat cushions can be removed for those attitude-adjustment flights that require the wearing of parachutes.

The cockpit has an unmistakable mil-



Zlinware includes an airspeed indicator that makes two trips around the dial, two mag compasses, and a gauge that tells of spar cracks.



itary bearing beginning with the five-point harnesses, large metal control sticks, and massive dual push/pull throttles jutting from the gray metal panel. The cockpit is wide and, as you might expect, offers a great view of things in almost any direction.

A good place to begin the cockpit check is the functional console between the two seats. At the rear is the tow-hook release handle—one of the many roles the 242 performs is glider tug. Next is the rudder trim knob, then pitch trim and flap handle. The mechanically actuated flaps extend to two positions.

The fuel selector has detents for Left tank, Right tank, and Both. Each 13-gallon auxiliary tank gravity feeds into a 16-gallon main wing tank. Each tank has a quantity gauge on the panel.

All of the electrical switches are clustered at the head of the console. Each toggle switch is flanked by raised metal tabs to protect against inadvertently flipping the switch on or off.

At the base of the center pedestal is an unusual gauge that shows the pressure of the nitrogen gas in the sealed main wing spar. The thinking is that if a round of excessively enthusiastic aerobatic contortions results in a spar crack, the nitrogen will escape, and the gauge will alert the pilot or mechanic to the problem before

#### Zlin Z-242L

Base price: \$121,500

#### Specifications

Powerplant	Lycoming AEIO-360 A1B6
	200 hp at 2,700 rpm
Recommended TBO	2,000 hr
Propeller	MT 3-blade constant-speed
Seats	2
Cabin width	3 ft 8 in
Empty weight	1,610 lb
Gross weight	2,400 lb (2,140 lb aerobatic)
Useful load	795 lb (530 lb aerobatic)
Payload w/full fuel	387 lb (338 lb aerobatic)
Fuel capacity, std	68 gal/408 lb
Baggage capacity	45 lb

#### Performance

Takeoff distance, ground roll	794 ft
Takeoff distance over 50-ft obstacle	1,837 ft
Rate of climb, sea level	1,080 fpm
Cruise speed/endurance w/45-min rsv,	
std fuel (fuel consumption)	
75% power, best economy	113 kt/5.5 hr
	(74 pph/12.3 gph)
Service ceiling	15,750 ft
Landing distance over 50-ft obstacle	1,837 ft
Landing distance, ground roll	794 ft

For more information, contact Zlin Aerospace at 113 Dunlop Street, East, Suite 1512, Barrier, Ontario, Canada L4M 6J5; telephone 705/721-7311; fax 705/721-9923. Jay Gathmann can be reached at Zlin USA, Post Office Box 349, Jarrettsville, Maryland 21804; telephone 800/293-0123; fax 410/557-6002.

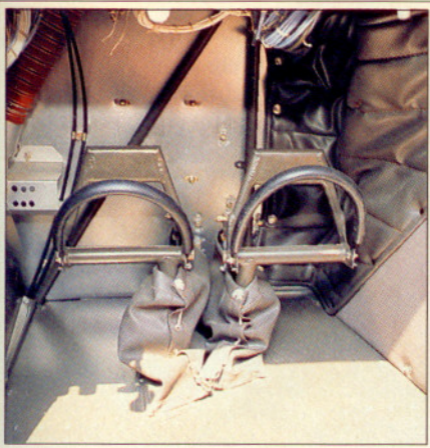
All specifications are based on manufacturer's calculations. All performance figures are based on standard day, standard atmosphere, sea level, gross weight conditions unless otherwise noted.

it becomes catastrophic.

The panel holds a few other surprises for American pilots: The cowl flap and mixture controls have spring-loaded locking mechanisms and must be twisted a quarter-turn counterclockwise before adjusting. Release them, and they automatically lock in position again. The airspeed indicator has a dual dial: Once around is 100 knots, then it starts around again for anything above that. The stall warning is based on indicated airspeed; a squat switch prevents it from going off on the ground, but it still is not a very desirable system. Ours needed adjusting—it began blaring at around 70 knots indicated.

The 242L weighs in at about 1,600 pounds empty, depending on avionics. The 13-gallon auxiliary tanks must be empty for aerobatic and utility operations. Gross weight is restricted to 2,138 pounds for aerobatic flight (with load limits of plus 6/minus 3.6 Gs), and with Gathmann and me aboard, we were near that figure for our flight. Gross weight increases for utility operations to 2,249 pounds (load limits are plus 5/minus 3 Gs) and 2,403 pounds for Normal-category flight and load limits.

The 242L has a steerable nosewheel and conventional brakes, so taxiing is simple, although there is a feeling of heaviness. The big rudder pedals are fitted with straps, presumably to keep your



*Rudder stirrups keep you from losing your footing during those inverted maneuvers.*

feet from slipping off the pedals during those negative-G maneuvers.

I rotated the Zlin at 60 KIAS and climbed at 75, averaging about 600 feet per minute in the hot June afternoon air. S-turning on the way up, it was immediately apparent that the airplane is wonderfully balanced, with a light feel to it despite its weight. Because the ailerons, elevator, and rudder are so aerodynamically balanced, it takes relatively little force to move any of the controls in flight at any airspeed. The 242 rewards precise flying and exposes sloppiness, especially in use of rudder.

At 3,500 feet and recommended cruise power of 2,450 rpm and 24.5 inches, the 242 soldiered along at 115 KIAS, or about 1 and 1/8 turns around the airspeed indicator. That 124-KTAS cruise is hardly a blistering pace for a 200-hp airplane, but it's supposed to be a gymnast, not a cross-country sprinter.

The gymnastics are fun, too. Zlin says the 242 rolls at a rate of 180 degrees per second, or two seconds to do a complete roll to the left (opposite prop rotation) and one and one-half seconds to the right. That sounds quick, and it feels even quicker when you're the one making it happen. In fact, roll performance is the 242's strong suit. Its vertical climb capabilities are limited because of the modest horsepower and relatively high weight, especially with two aboard. Also, inverted flight is restricted to one minute. (The upturned wing tips are said to increase stability and reduce nose-up attitude when flying inverted.) Even so, the 242 is capable of most basic aerobatic maneuvers including snap rolls.

Landings are a lot of fun because of the visibility and instant, positive control response. The only apparent concern is to avoid a full-flap, power-off approach, which could lead to a rapid sink rate.

The Z-242L doesn't exude the athleticism of, say, a Sukhoi or Pitts. Nor does it look as fragile as a Tomahawk. It looks like

industrial quality machinery, and indeed it is. Everything metal is anodized for corrosion protection, all electrical connections are executed with military hardware, most everything is within easy reach of a

mechanic, and the airframe bristles with enough rivets to construct a small bridge. But beneath that solid, stolid exterior, there beats a playful and if not athletic, then aerobic, heart. □



*International Jets of Gadsden, Alabama, (telephone 205/442-8099) sells an East Bloc trainer that the average 1,000-hour piston pilot can conquer with as few as 10 hours of transition training. The price is right, the two-year-old firm promises, at \$130,000 plus avionics and paint.*

*So far, they have sold four of the Polish single-engine TS-11 Iskras and claim to have another 15 airplanes available, ready to join the eight or 10 Iskras currently flying in the United States. Here's what it's like to fly one.*

My first concern as Sid Snedeker, a former Marine fighter pilot, talks me through the engine start is that the engine sounds so close. Real close. In fact, I am almost sitting on the OKL SO-3 turbojet. Everything is compact on the Iskra, an airplane about the size and performance of a T-37.

I was interested in the Iskra not from the standpoint of how fast and how high, but how safe the airplane would be for a low-time pilot. Straight-wing trainer jets are designed to be flown by relatively low-time pilots.

Taxiing the Iskra (*spark* in Polish) is a challenge at first; it has the same stick-mounted air brakes as a MiG 15. You sit lower to the ground in the Iskra than in the MiG, giving you a greater sensation of speed. So low, in fact, that on one landing I glanced for the green gear lights twice during the flare just to be sure.

The 2,205-pound-thrust turbojet doesn't exactly snap your neck into the headrest as the takeoff roll begins. But it's only meant to lift the 8,380-pound Iskra, student, and instructor around the pattern and into the lower altitudes. Initial climb after takeoff is a rather flat affair at first, but like many early jets, performance begins when the airspeed climbs past the 200-knot mark.

The Iskra is a nice airplane to fly; the hydraulically boosted ailerons are light without being touchy. Lateral stability is nearly dead neutral: When the stick is moved, the airplane tends to stay put, not return to level flight or increase bank. Pitch feel is light and easily trimmed for pressure

with the full-trimming tail.

Hydraulically operated speed brakes located above and below the wing are modestly effective for slowing the jet or increasing the descent rate when ATC asks for the moon.

The Iskra's stall characteristics are honest, with plenty of aerodynamic rumbling as a warning. In the stall, a slight relaxation of pressure immediately restores the wing to flying status. On one loop, I pulled a little too enthusiastically at the bottom, and was chastised for my error by a rumbling on the initial pull and a lightening of the stick as the wing began to let go. Again, slight relaxation of pressure stopped the stall. For a jet aircraft, these very desirable characteristics are not common. But good manners made me feel better about International Jet's claim to transition most 1,000-hour private pilots with no jet time to the Iskra in about 10 hours.

The airplane needs to be flown like a jet, though, not like a Cessna. As long as I flew a jet approach profile, using specific speeds and attitudes, the airplane did just what was asked. One caution about these airplanes, though: Remember the old problem of slow spool times on the earliest jets? Well, this is an earlier jet (early 1960s technology), and spool time from flight idle to usable thrust is about eight seconds, according to Snedeker. As in any turbine aircraft, the key to staying alive is never being unspooled close to the ground. That long lag in engine response is the reason International Jets trains pilots to fly procedurally "by the numbers."

With a fixed leading-edge slat and slotted flaps, approach speeds are a comfortable 105 knots. Snedeker recommends a 5,000-foot runway until the pilot gains experience; after that, runway requirements may decrease to 4,000 to 4,500 feet. On our landings, I felt Gadsden's 6,800-foot runway was more than enough.

Though the airplane is capable of speeds of 405 knots, most owners flight-plan 275 knots at 26,000 feet and about 120 gph. Range at this power setting is 500 to 600 miles with a 45-minute reserve.

—Michael Maya Charles