

SUKHOI Su-29

RUSSIAN RUSH

An unlimited aerobat built for two

BY WILLIAM L. GRUBER

It's impossible to sound objective when you talk about the Sukhoi Su-29. Nimble, powerful, a joy to fly, and just plain sharp to look at, it's about the sexiest new-production piston airplane on the planet. The things it can do seem limited only by the abilities of the pilot, and in the best of all possible worlds,

PHOTOGRAPHY BY MIKE FIZER



dards in its Pitts Specials, is well qualified to do so.

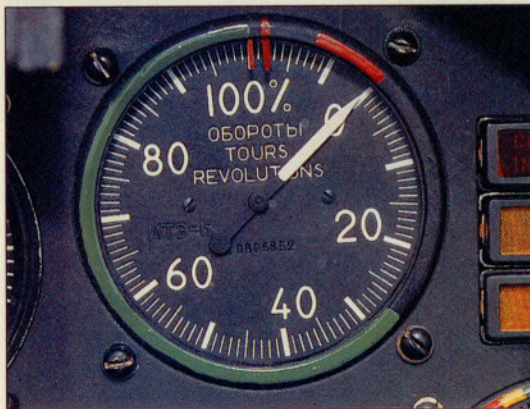
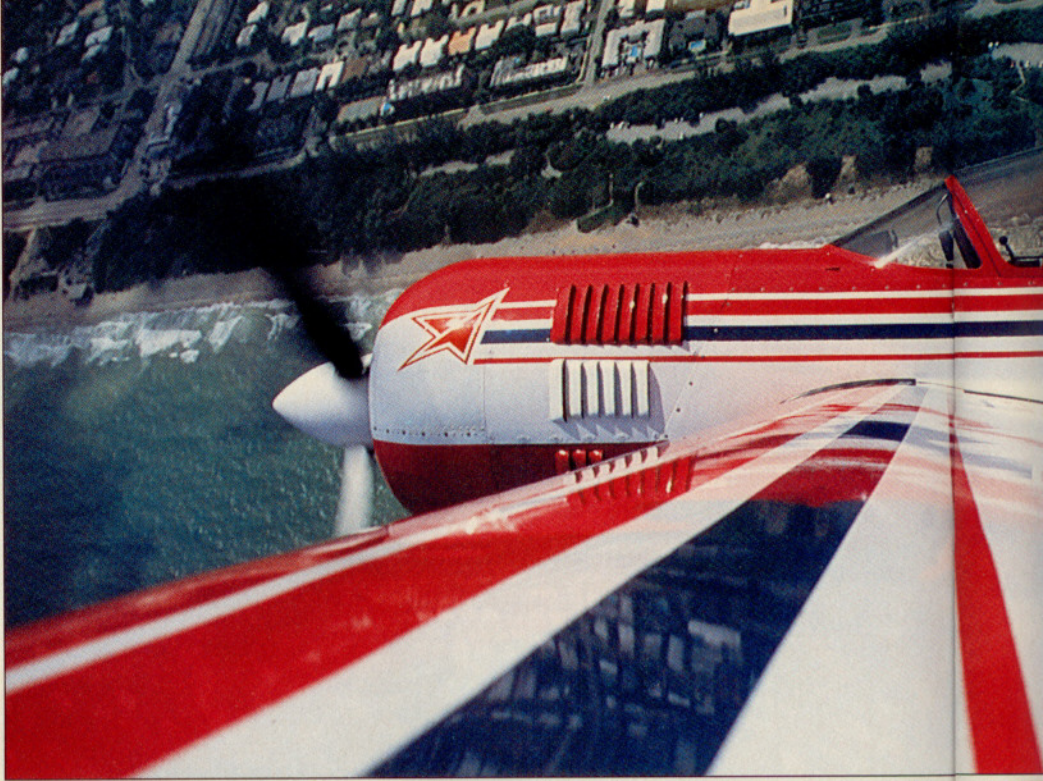
My check-out in the Su-29 was with Jim Stanton, a 15,000-hour instructor fairly new to PAC. A former airline and corporate pilot, Stanton now teaches aerobatics full-time at PAC (he also flew the T-34 Mentor camera platform for the photos that accompany this story). He introduces new Sukhoi owners to the joys of multiple snaps on top of a loop and other such fun stuff.

"It's an easy airplane to fly, but you're going to find that it takes a long time to learn to fly it accurately," he advises as we stroll toward the hangar where N29SU awaits us. "The airplane is really amazing in what it will do at a relatively high altitude, two people, on a hot day."

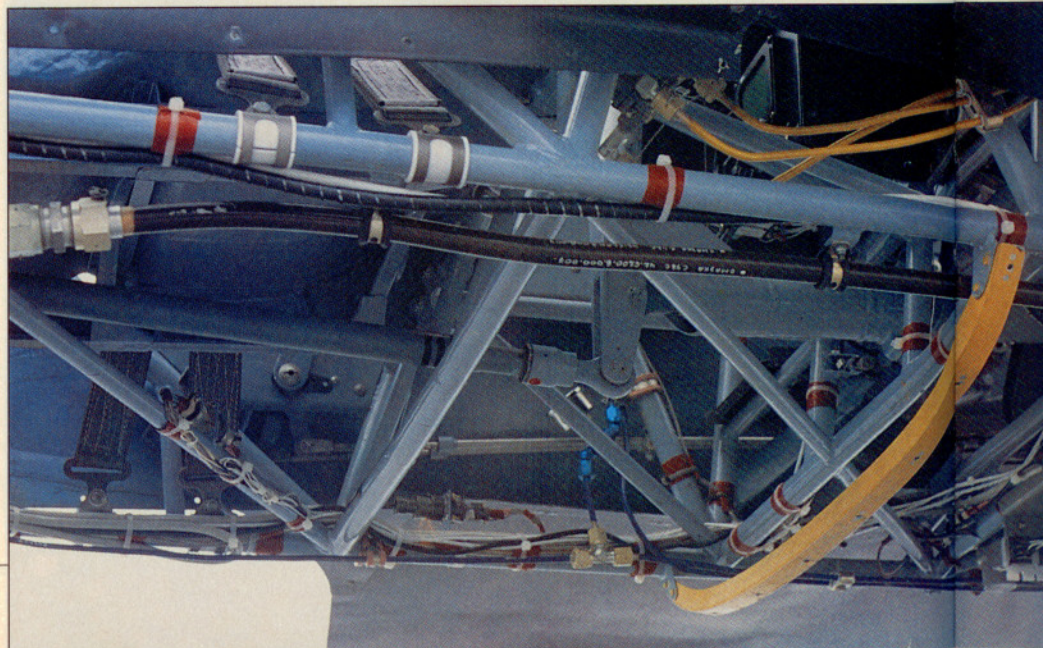
Stanton was easily smitten by the Sukhoi. So much so, in fact, that he claims he no longer enjoys flying the Pitts—painful words to a pilot whose pipe dream is to own an S-2B. "This airplane does everything you want it to do," he says. "There is nothing that compares with this airplane. It has the capability of doing just about any kind of multiple snap you want to do. We've been doing things like triple snaps on top of a loop, and the students are catching on very quickly." And this guy isn't even a salesman.

Most Sukhoi students are transitioning from a Pitts, although one recent initiate was a Decathlon pilot. Stanton says he had them all flying unlimited aerobatic maneuvers in the Su-29 (albeit not to competition standards) in five hours of dual. "Nobody's going to go over 10 hours if they're any kind of pilot at all," says Stanton, adding, "All of these people are going to have tailwheel experience. We're not going to be selling these to anybody without any tailwheel experience."

After a standard walkaround, we have a look inside the cockpit. Solo flight is from the rear, where the starter and magneto switches, tailwheel lock, fuel selectors, and other essentials are located. I climb into the back, and Stanton goes over things with me. I find the cockpit surprisingly roomy and comfortable. The seat, which is semi-reclined but less so than the one in the Su-26, has a three-position adjustment to accommodate different pilot sizes and seating desires. The rudder pedals, too, have three positions and are equipped with stirrups to help keep your feet where they need to be in neg-



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ative-G maneuvers. The pedals have more range of motion than a stair-climber, but you really need full deflection only for taxiing. With the seat in the middle position, I could barely reach the pedals in the full-forward position (I stand just under 6 feet).

Parachutes are worn for all flights, and the Sukhoi has a unique Russian version of the five-point harness in which belts are linked together with pins; it's awkward at first but quite serviceable once you get the knack. The thick, metal joystick curves in toward the pilot and has a relatively high grip, although you don't have to reach up for it the way you do in the -26.

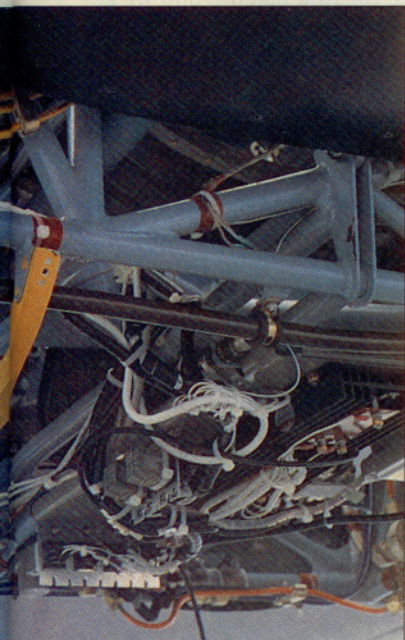
On the left side is the throttle/prop quadrant, with intercom, transmit, and smoke buttons on the throttle. There's no mixture control—mixture is automatic on the Sukhoi. An elevator trim lever also is on the left side

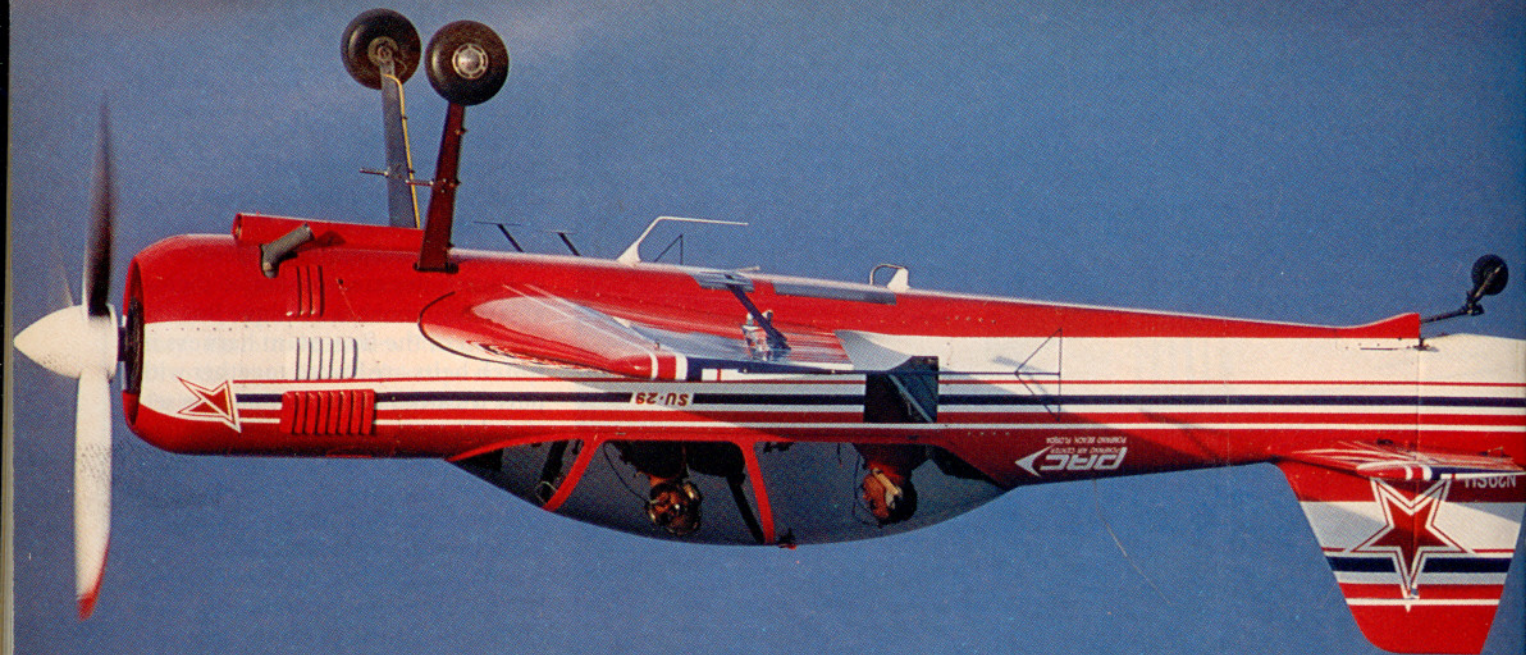


Clockwise from above: John and Brian Becker with their pride and joy; a squadron of Sukhois at PAC; the Sukhoi Su-26 and Su-29 both are built like box-girder bridges; rpm is given in percent on the Russian tachometer; the engine "gills," open and shut.

and in the rear cockpit only (early Su-26s had no trim). A starter switch and lock is on the left, below the main panel. The M-14 is started using a bottled, compressed air system that is recharged by an engine-driven compressor. A gauge indicates the air pressure, which may be increased before start with an auxiliary pump.

The main panel has a large red canopy-release handle on the far left side, then magneto toggle switches, fuel selector switches, etc. Most of the gauges are marked in Russian, with air-speed indications in kilometers. The altimeter is the only American gauge. Stanton says he hardly ever pays attention to the manifold pressure gauge, which is marked in centimeters of mercury, but relies instead on the tachome-





ter. Rather than a fixed value, the tach indicates by percent of rpm: "Just use 100 percent for takeoff, 85 percent for climb, and just leave it there," Stanton instructs. After that, you use throttle as necessary to attain the desired airspeed; 140 kilometers per hour on approach, for example. Cylinder head temperature, fuel pressure, oil pressure, and other relatively familiar gauges make up the rest of the panel, with annunciators including a chip detector warning light and a fuel-low light for the main tank (the annunciators provide the only fuel information besides that on your wrist watch). Most instruction is done with the 16.5-gallon fuselage tank full and a few gallons in each wing. After a "wing tanks empty" warning light, you have two minutes to switch to the fuselage tank before things get quiet. There's a "smoke" light to let you know that system's on (you're good for eight to 10 minutes of smoke) and a "fuel use" light letting you know you're on the wing tanks. There's a generator (rather than alternator) light and a voltmeter instead of an ammeter. Fuses run along the bottom of the panel, with the Russian radio and American transponder in a center stack.

On the right side is the cowl flap or "engine gills" control, which can be used in flight or on descent to keep the CHT from getting too cool—the M-14 is a very cool-running engine—but the iris-like gills usually are kept wide

It becomes immediately apparent that this is a very sensitive airplane.



open in flight. A control for the oil-cooler shutter closes off cooling air, which is helpful for warm-up. A wobble-pump and engine primer arrangement is operated via a hand-pumped plunger situated low on the right and is used in start for an esoteric series of squirts that helps get the motor running. Also on the right side is the tailwheel lock, which is engaged once you're lined up on the runway, and which is a big help in keeping the Su-29 on the straight and narrow.

We roll the airplane out and strap in, and Stanton talks me through the

start. The M-14 catches without any trouble and soon is rumbling heartily, shaking the airframe in an exhilarating sort of way. Stanton warns that any radial engine will cause a fair amount of vibration in flight—which turns out to be true enough—but it's far from annoying. It's actually pretty satisfying to feel the engine's power that way.

Taxiing is easy, although with zippo forward visibility, S-turns are a necessity. Those long-reaching rudder pedals keep you doing constant knee lifts, and a touch of brake is helpful here and there. After a normal runup (only the gauges are different), we line up on the centerline, and I engage the tailwheel lock; you can wiggle the rudder pedals and feel it drop in. Stanton offers to make the first takeoff, and we go blasting down the runway with what seems like carrier-deck acceleration. We're off in very short order, and Stanton puts it into what would be a departure-stall attitude in most airplanes, except we have 20 knots or so to spare. "Okay," he says as the earth recedes beneath us, "you've got it."

It becomes immediately apparent upon taking the controls that this is a very sensitive airplane. The slightest control input is immediately delivered by push rods to the big ailerons, each of which is boosted by two spades, and the result is a back-and-forth bobble that afflicts just about everyone who flies the airplane for the first time.

I discover this while powering back and trying not to rocket through the pattern altitude.

Stanton has me try four or five touch and goes before we head out to the practice area. The controls are very light at slow airspeeds, and forward visibility remains nil, but I find the landings to be a lot less scary than the dance with death that I expected. Still, Stanton's earlier assurance that the airplane lands easier than a Decathlon is a bit of an exaggeration. My experience with big-bore taildraggers is pretty limited—

I'm more of a Champing, Cubbing kinda guy—so about the closest thing I can equate the Sukhoi's landing characteristics to is a Waco Classic biplane. You have to use slips and peripheral cues to line up on the runway, but once down, you pretty much stay down.

Cobbing the throttle for a touch and go, with the requisite *left* rudder instead of right (the M-14 turns the "wrong" way), is exhilarating. The Sukhoi leaps off the tarmac, which is okay by me because I'm not real certain we're headed down the middle of

the runway anyway. On one landing, we go screeching down the centerline, and I think I see a ground loop looming before me, but Stanton explains that I was unintentionally toeing the brakes.

After a few more circuits, I satisfy Stanton that I can in fact take off and land, so we head over to a nearby practice area. Enroute, I feel out the controls with some Dutch rolls and steep, climbing turns. I had read about, but never flown, the kind of airplane in which you just think about a control input and the airplane responds. This is that kind of an airplane. The control inputs for something simple like a turn are so subtle as to be almost imperceptible—even to the pilot. It's a bit like a helicopter in that regard. Once you quit making unnecessary inputs, the bobbling stops, and you have a very comfortable ride. I've never flown an F-16, either, but now I think I have some idea what it must feel like.

Visibility out of that big canopy is excellent, which is a blessing in formation or when flying aerobatics. There are sighting devices on both wing tips for the latter. In level flight, even forward visibility is good.

But once we reach the practice area, we've had enough of level flight. Stanton commands me to try a few rolls. My first few rolls are sloppy—evidence that my aerobatic skills are both limited and rusty. Stanton explains that I'm overcontrolling; this is, after all, no Decathlon. "Try it with just two fingers on the stick," he says. I comply, and the airplane rolls smoothly and effortlessly, ending up right on heading. The roll rate in the Su-29 is a boggling 360 degrees per second.

Loops require only a modest pull. If you yank too hard, the pilot will get overstressed before the Sukhoi, which is stressed to plus 9 and minus 7 Gs with two aboard (plus 11/minus 9 solo). This is very comforting indeed in high-G maneuvers.

We try some spins—the Sukhoi recovers crisply and easily—and some hammerheads. I'm busy flying and forget to watch the altimeter spool-up during the hammerheads, but the vertical penetration is nonetheless quite impressive.

After nearly an hour, Stanton takes it and demonstrates some hair-raising snaps on top of loops. It all happens very fast, and it is an incredible blast. "Those were easy snaps," he says. "It'll

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snap a lot quicker than that."

We head back to the airport, and I pull off a landing that is actually close to graceful. We taxi back and park it, pulling the harness pins and undoing our chutes, then step down, grinning and proudly boasting the parachute-strap sweat stripes of genuine aerobatic pilots.

It's hard not to gush when talking about this airplane. Anyone who enjoys aerobatics and has a couple hundred grand to spare would be nuts not to get his hands on one. And after certification, the chance to fly some dual in an Su-29 should not be passed up by any pilot.

After our flight, I climbed into one of the Pitts S-2Bs in the Sukhoi's hangar. It really did seem pretty cramped and uncomfortable in there. Don't get me wrong—I'll take one—but it was a bit anticlimactic after the Sukhoi. Which was hard to imagine before my flight in the Su-29.

Crummy weather moved in, so I only got about an hour of hands-on Sukhoi flying (plus a few hop-along flights on photo missions), but it was enough to gain a great admiration for the airplane and to satisfy myself that even I could fly it without getting into too much trouble. Experienced aerobatics hands ought to have no problem at all transitioning into the Su-29's rear cockpit.

Both the Su-26 and Su-29 have earned a solid place of respect in American aviation, and Becker seems assured of steady business in the years to come.

Becker has made many trips to Russia since his first tentative efforts to gain access to what was then an economic Dark Continent. He also has a full-time business representative, Jeff Barrie, posted in Moscow. And as Becker has gained experience dealing with the ex-Soviets, they have continued to acquire increased capitalistic savvy, and the business relationship now is a fairly normal one.

Despite the success of the Sukhoi project, Russian general aviation is a vast resource that still remains relatively untapped. It still is awkward to do business in Russia, and the U.S. government's cold war holdover red tape doesn't make it any easier. There are possibilities that make it worth the trouble, however, not only for the exportation of other Russian airplanes, but to gain a toehold in the vast market for American goods and services that the former Soviet Union

should one day represent. Becker is on the front lines of this economic campaign, and the first businessmen to stake out their claims in the Russian marketplace will likely be the winners.

As the ex-Soviet market continues to open up and Becker gains more recognition as a Russian-business insider, he plans to expand his interests. Recently, for example, he imported eight Aviatika Light Aircraft airplanes from Moscow for evaluation and possible distribution in the United States. He also purchased a single-

engine Yakovlev for evaluation. He meets regularly with Russian business representatives both in Russia and in the United States. He has his eyes open and is considering an array of potential opportunities.

"The Sukhoi deal for us has really been a foot in the door for many very large projects," says Becker. Although he has a host of irons in the fire, it's too soon to discuss those plans in detail.

But as aviation's ambassador to the (former) Soviet Union, Becker already has accomplished a lot. □

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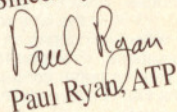
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