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**THE WORLD'S SMALLEST JET AIRCRAFT  
THE SMART-1 OWNED BY NALLS AVIATION**

**COVER STORY****NALLS AVIATION: PROUD OWNERS OF THE WORLD'S SMALLEST JET AIRCRAFT**

By Art Nalls

There's a new baby in the Nalls Aviation family. At 13 feet long and about 5 feet, 8 inches high, it fits neatly under the wing of the Sea Harrier and the L-39 already in the hangars. It looks more like a model airplane than the real thing, but real it is.

Nalls Aviation is the proud owner of the "World's Smallest Jet Aircraft," a BD-5J, Microjet, s/n BDA-01, officially recognized by Guinness World Records. Weighing in at a whopping 358 pounds, this particular jet holds the record for the class. However, this jet will remain on the ground for the foreseeable future. Jim Bede himself advised Nalls not to fly that jet, until a new engine could be fitted. "It will definitely quit on you," advised Jim before his death a few years ago. "And there's no way to restart it in flight. Get rid of it!"

Fast rewind back to the 1970's...

Jim Bede, with many superstars of aviation design on his team, including Bobby Bishop and Burt Rutan, was busy turning out kit airplanes from his company headquarters in Kansas. His first designs were mildly popular, but when



*Looking like a model airplane, Nalls Aviation is proud to own the BD-5J Microjet, "the world's smallest jet aircraft."*

*(Courtesy Art Nalls/Nalls Aviation)*

news of his BD-5 debuted at the Oshkosh airshow, he knew he had a hit on his hands. Designed as a single-seat, personal aircraft, with a pusher propeller, it was sleek, small and cool! Orders started pil-

ing in, with Bede accepting deposits toward the total kit prices.

But there were issues. Parts suppliers couldn't keep up with demand. Kits were shipped missing key parts. And to top it off,

his main engine supplier, Hirth Engines, went out of business. Hirth had been in business since before WWII, supplying engines for snowmobiles. The engines were simple, inexpensive, reliable and plentiful; absolutely perfect for a home-built airplane. Bede was left with major flaws in his design and business plan. No engines and not enough spare parts.

Advertised as buildable with simple, around-the-home tools, by an average person in a reasonable number of hours, didn't set well with builders who were quickly over their head, with a living room full of boxes and plans. Incomplete boxes, at that.

Then the lawsuits started. Unable to keep up and with most of the deposits spent on legal issues, the company folded, leaving hundreds of builders to fend for themselves...find new engines, make a few parts. The early accident rates reflected the power of innovation by the inexperienced.

But a few of the builders persisted. Burt Rutan married a small jet engine, intended for unmanned vehicles, to the aft fuselage. Bobby Bishop built one of the jets, did the flight test and knew he

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## World's Smallest Jet

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tant capability should not be allowed to simply evaporate. The jets are providing extremely valuable flight-testing and need to be preserved, flown, and employed.

So, as soon as Nalls recovered from a badly needed total knee replacement, and cleared by his flight surgeon to return to flying, he traveled to Tucson to revamp the business.

"I've always loved the BD-5's but never got a chance to fly one. The cockpit is extremely small, but it's a real airplane," said Nalls. "Since I'm physically at the upper end of pilot size, we are extremely careful about the airplane's weight and balance. Pilot fit is critically important."

In fact, one of the key factors is not just weight (230 lbs is about the limit without aft ballast), but shoe size. Ten and a half is the absolute limit. One hopeful, retired Marine Colonel was sadly disappointed that he couldn't fit in the cockpit because his feet were too big. Most of the current pilots wear NASCAR racing shoes because they are light and small. They even try to squeeze into size or two smaller, so they fit better on the rudder pedals. "After all, we're not going to run a marathon in them," said Nalls.

Nalls now has a Letter of Authorization to fly the microjets. A team of pilots, instructors, maintenance crew, some from the East coast Harrier operation, all convened at Tucson for a concentrated training class. When the Designated Pilot Examiner arrived, he noted the professionalism and precision that the whole team exhibited. The examiner now wants to fly the jets himself, and has volunteered to be on the list.

Plans are to expand the team with



Chris Rodger (L) and Eric Martin (R) assist Bob Bishop during the strap in and pre start procedures for the demo at St. Mary's.

(Lloyd Gill)

pilots and ground crew, and separate the assets into a West Coast Team and an East Coast Team. They will be outfitted with identical support trailers and simulators so all the parts are as interchangeable as possible. They also have a substantial stockpile of spares and parts, including 15 of the original BD-5 kits. More airplanes are not only possible but likely.

"We have submitted quotes to multiple agencies, looking for business," noted Nalls. "The biggest response we've received is 'we didn't know you guys were still in business.'" So lots of potential business could be just around the corner, hopefully in the new fiscal year.

Nalls intends to let everyone know, they are indeed back in business and ready to work.

## Aviation Industry Leaders

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inent training record they can take with them upon completion.

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