



Straightline Precision Industries

By Nick Healey

Life on Vancouver Island is pretty laid back. With a population of under a million scattered across the temperate island it's not exactly a hot bed of activity – particularly when it comes to manufacturing.

But then again, there are also those who go against the stereotype. Case in point, Straightline Precision Industries.

The 6,000 square foot, 10-person shop in Victoria is run by brothers, DJ and Dennis Paulson, where they busily manufacture everything from bike components to aerospace parts. Founded in 1996, along with their father, Mike, the shop grew from a couple of manual lathes into one with over 10 CNC machines who are starting to branch out into the aerospace sector.

The company is split into two divisions: Straitline Components, and Straightline Precision Industries.

The components division, which they also refer to as their “internal brands” division, is home to their bicycle products. These primarily consist of pedals, stems, and other small components for downhill mountain biking – which makes sense, considering the island's North Shore is known as one of the Meccas of the sport.

But, never ones to be satisfied with their place in the game, the brothers began looking for more. Over the last year and a half they've made a conscious effort to

focus on doing more work for the aerospace industry.

“We seem to be fairly good at doing complicated, tight tolerance-type parts, and it seemed like a natural fit for us,” says Dennis Paulson.

“We like that kind of work. It just seems to be the type of work that works well in our environment.”

Not to mention, there's the added bonus of having a genuine interest in the field.

“Growing up my brother and I always had a profound interest in airplanes. I don't know, Top Gun probably started it,” DJ Paulson says with a laugh.

But the brothers realized that if they wanted to do more work in aerospace they would need to make some changes – specifically upgrading their equipment.

So they found themselves at IMTS in Chicago this past fall to shop for a new machine that would help them in their quest for tight tolerances and increased productivity. They found one they liked, at the price they liked and bought it on the spot.

However, after getting back to Victoria, orders started to roll in, but the machine hadn't arrived. As it turned out, delivery time for the machine had backed up to the point where it wasn't going to arrive in time for Straightline to get their orders filled.



DJ Paulson (left) and Dennis Paulson pose in their shop with their new 5-axis mill.

So, the brothers needed an alternative. Lindsay Harris, a regional sales manager for Elliott Matsuura Canada happened upon the shop in their time of need, and suggested a Matsuura MX520.

"I basically did a needs analysis and (it) was, what do you want this 5-axis machine for? Is it for jobbing, or is it for something specific? And that's when all the conversation started to come out about the aircraft industry," said Harris.

The Paulsons had been considering a Matsuura machine. They'd seen them at IMTS in Chicago and were impressed with the product, but the sticking point had been the price. As a smaller shop, and still looking to grow, they were worried about devoting a lot of money to a machine that was outside their price range.

"We probably couldn't afford it ... but the work we

MATSUURA MX520

The Matsuura Machinery Corporation has developed a new 5-axis vertical machining centre using "user friendly" and "safe" concepts.

The machine allows for ergonomic operation, because it possesses a front door opening of 805 mm (31.69 in.) and a distance from the operator to the table centre of 385 mm (15.15 in.), thus ensuring an easy facilitation of work setting. The ceiling cover can be quickly opened

for the loading of large-sized parts with a crane.

The MX520 has been designed with a RAM type structure, giving it a compact & highly rigid machining platform. Design advances have afforded the MX520 a large machining enclosure, within its class.

The headstock & trunnion configuration has been designed in such a way as to minimize the possibility of

collision, whilst maximizing tool access and reach.

The machine can hold workpieces with sizes up to 20.47" in diameter and 13.77" in height. 12,000 RPM spindle speed is standard and available as an option is the 20,000 RPM spindle.

The machines functions are controlled by the user friendly Fanuc GTech 31i CNC.



were looking at was really better suited towards that machine," says Dennis.

"There's a couple customers interested in Straightline doing a lot of work, but it requires a five axis machine... they were sold on the productivity side and also the machine quality side. Plus, we had one in stock, which did help," Harris adds.

It was a particular part – a component for the

– a component for the pilot's seat on a Twin Otter plane – that required a lot of complicated milling, and undercuts, which was going to make the process labourious enough to begin with.

"The particular part we were shooting for had a lot of full five axis milling on it. With the machine – and with 20,000 rpm – it's going to make the part in a lot less time than (another) would," said Dennis.

"We (thought) that's what we do really need if we are going to be serious about this, so we decided to just go that extra bit further and just buy the more expensive machine, and so far it's been amazing for us."

So with their machine concerns now out of the way, the Paulsons can focus on other aspects of their business to help them grow.

One of the areas Straightline hopes to get squared away now is their certifications. They are currently a controlled goods certified company, but are striving to get their AS9100 certification – a vital accreditation for any aerospace supplier.

"We need that AS9100 because it's a higher lever of certification and it's more recognized in the aerospace industry," says DJ Paulson.

"We can approach larger aerospace companies once we have it. It would just give us a broader range, a broader customer base that we could potentially go after."

The brother's machining processes won't necessarily change, but this way they'll be able to sub contract certain processes before giving the part to the customer, then they'll be able to "just bolt it on the plane and go".

Plus with B.C.'s growing aerospace sector, and companies like Boeing and Avcorp practically in their backyard, mastering the art of aerospace parts means the sky is the limit for the little shop on the island.

"We want to be able to say we're at the top level of manufacturing in this country," DJ Paulson says.

"That's what we're pushing for and we're going to push real hard to do it." **CM**