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Aerospace supplier buys company that prints 3D parts

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- A Connecticut aerospace manufacturer is adding 3D printing capabilities to its portfolio.

The Whitcraft Group, based in Eastford, paid an undisclosed sum for Dover, New Hampshire-based Form 3D Solutions, a move Whitcraft CEO Douglas Folsom said will give the combined company an advantage as the building technology — once a novelty but now viewed as the future of manufacturing — revolutionizes the way aircraft are designed and built.

“For us, the opportunity is a way to leapfrog rather than just buy 3D printing equipment,” Folsom said Wednesday. “With Form 3D, we can move quicker than we could have on our own.”

Form 3D’s founder, Joe Gabriel, has more than eight years of experience in the emerging 3D printing field, Folsom noted, making him one of few people acknowledged as an expert in the industry. With that expertise, he added, Whitcraft can begin using 3D metal printing for in-house tools like welding fixtures, and perhaps down the road, for customers like Collins Aerospace, Pratt & Whitney, General Electric Aviation, Rolls Royce, and Sikorsky Aircraft.

3D printing was once considered a cost-prohibitive curiosity, suitable only for producing certain prototypes for further development. Over the last two decades, however, the process has emerged as one of the most promising and transformational technologies across multiple industrial platforms, freeing designers from the traditional constraints of machining and welding.

And because printed products are built layer by layer, there's no limit to the level of complexity suppliers can introduce.

Three-dimensional fabrication, also known as additive manufacturing, boasts two major advantages over conventional "subtractive" manufacturing in the airplane-parts business, Folsom said. The first is the savings in money and product afforded by the layer-by-layer approach, which generates less waste than cutting and machining.

The second and more significant benefit, Folsom said, is the way manufacturers can build and put together airplane parts. The specificity offered by 3D production lets engineers toy with every variable and bypass longstanding construction limitations, which could open the door to more capable and efficient aircraft.

Even for industry insiders who have closely followed the recent 3D printing boom, however, printing with any material besides plastic is something of a rarity, limited mainly to the highly specialized companies that can afford industrial-scale printing machines.

Folsom said 3D metal printing works by putting down a layer of metal powder and melting it with a laser. That process is repeated again and again, with selective melting shaping the design, until the product is completed.

"It's like building a sandcastle at the beach," he said.

Folsom said additive manufacturing is already beginning to revolutionize the way major conglomerates look at airplane construction, including GE, which is investing heavily in

additive equipment. The approach could eventually come to shape the way GE and Pratt supply and build their signature engines, the CFM International Leap and the Geared Turbofan, respectively.

“We’re in a great industry right now,” Folsom said, noting that the growing interest in additive manufacturing comes as many of Whitcraft’s customers lay the foundations of their next-generation engines.

Aside from newly acquired Form 3D, the Whitcraft Group also includes Eastford-based Whitcraft LLC; Connecticut Tool & Manufacturing in Plainville; AcuCut in Southington; and Berkshire Manufactured Products in Newburyport, Massachusetts.