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laboratory of the month

Partial Framework Lab Goes Digital, Nearly Triples Caseload

Before Al Ranger went digital, he and his part-time technician were fabricating about 16 highly customized partial denture frameworks per week, mostly for other laboratories, and was turning work away. “I insist on quality over quantity and I was always conscious of not taking on more work than I could do correctly,” says Ranger, a veteran technician and Owner of Ranger Dental Lab in Manchester, NH.

In 2010, with an eye on boosting his internal production capacity, Ranger began researching scanners and software to digitize his partial frames. He spent three years talking to reps and other lab owners, taking online webinars, testing systems in his lab and outsourcing cases to evaluate quality.

After experimenting with about five different systems, he ultimately chose the Dental Wings scanner and software because it allowed him to create a highly customized product. “While some programs didn’t allow me to taper the clasps, vary the thickness of the major connector or add personal touches—features that are the norm in my frameworks—the Dental Wings software didn’t have those limitations,” says Ranger.

In 2013, he bought the \$30,000 system from Nobilem and, after several days of training, began scanning models, designing frames and sending the files to Nobilem and other labs for printing on the Stratasys Eden260VS; once he received the printed framework, he would cast, finish and polish as usual.

“Because we eliminated so many production steps and were saving so much benchtime, we immediately increased production by about 25%,” says Ranger. As his proficiency with the software increased, he began calling on the laboratory clients he had previously turned away and his part-time technician went full time to help keep up with demand.

Implementing the scanner was

ultimately a success but it wasn’t without its challenges. For instance, it took Ranger three months of experimenting with the software’s clasp offset parameters to get the fits exactly how he wanted them.

Also, as he began marketing the lab’s new digital capabilities, he found he needed to educate his clients because some were worried about getting “generic, cookie-cutter-style frameworks.” He visited clients with both traditional and printed frames so they could compare the quality. Using his laptop, he also remotely logged into his lab’s server and designed a case so they could see firsthand how he was able to customize the frame and even spin it around on the digital model to view it from every angle.

Another Investment

By the end of 2015, the lab was fabricating about 25 cases per week and Ranger decided to take another big step: to reduce his turnaround time and printing and shipping costs by leasing a Stratasys Objet30 Dental Prime desktop printer and printing his own frameworks in house in Stratasys’ MED610 material instead of outsourcing them.

Ranger says the hardware was essentially “plug and play” and the lab was up and running immediately. Today, the lab is reaping the benefits of having the equipment in house: it’s fabricating 42-plus cases per week, almost 100% of them digitally, and it’s offering its clients faster service.

“Instead of waiting a day and a half for prints to return, any case in the door by 10:00am can be done and shipped by the end of the next day,” he says. “My clients are 100% in favor of the digital frameworks because they’re benefiting from faster turnaround

time and better consistency.”

And, even with his monthly lease payment, he’s reduced his costs from \$19 per print to \$8, saving about \$1,500 per month.

So what’s next for the laboratory? Ranger has been working with Nobilem to help beta test

its metal printer, the EOSM270. “It’s very interesting technology and the way of the future,” says Ranger. “But you’ll always need partial technicians who know traditional design—they’ll just be applying that old school knowledge to the digital age.” **LMT**



By investing in a scanner and 3D printer, Al Ranger has nearly tripled his lab’s production. His only staffing changes were to hire his part-time technician full time and another person to handle scanning and data entry for two hours each day.



Ranger says his proficiency with the software comes from working with technical guru Matt Tait at Nobilem and playing with it. Pictured here are some of his test “cases”: a rabbit, .556 caliber bullets and monster head he designed and printed with his system.



Ranger has also learned a few tricks to further reduce his costs. For instance, he designs the support sprue bar larger than necessary, uses it as a sprue, then piggybacks cases and casts and invests multiple cases simultaneously, saving labor and material.