

the NEWS

OF THE **RAPID PROTOTYPING & RAPID TOOLING** INDUSTRY

3D-CAM Review • Fall 1999 • Volume 2, Issue 2

WHY ALL SLA PROVIDERS ARE NOT CREATED EQUAL

Plenty of intense competition has caused the Rapid Prototyping business to morph into A, B, and even C classes of facilities, where prices are generally a direct reflection of the quality and accuracy provided.

So customers who want to reap the benefits of the SLA technique should use caution when shopping for a rapid prototyping resource.

"It really takes a good bit of time, energy and money to keep an SLA facility maintained at a first class level," says Gary Vassighi, President of 3D-CAM, "For us, it starts with our service contract with 3D Systems, the manufacturer of our SLA hardware. 3D Systems' techs make regular visits to maintain and calibrate our tanks and lasers to optimum levels of performance."

"Our staff also routinely builds test parts," explains Vassighi, "to assure continuous accurate calibration. On the human end, our staff technicians

have what I like to call the 3D-CAM consciousness. That means they not only know SLA, but they also respect a customer's designs, and pay special attention to critical features like rounds and fillets that other facilities might overlook through inexperience or sheer carelessness."

Vassighi adds "We have a separate quality assurance department, where we measure and inspect every part, and generate a detailed QC report before anything is ever shipped to the customer. This final part of the process is the most painstaking part in the chain because it involves an exact checking of finished dimensions against the original files and flagging of any discrepancies. It's our final chance to make those crucial tweaks or report any flaws in the .STL files to the customers. In such a detail oriented



One of 3 SLA tanks at 3D-CAM's Chatsworth, California headquarters.

environment, and even with computer generated files, there are bound to be errors. But at 3D-CAM, our ultimate goal is to make sure our clients get exactly what they want."

tales from the field

ASTRO FINDS SLA STAR IN 3D-CAM

Astro Design is a Palo Alto, California based industrial design firm specializing in creative niche products and creative novelties for a wide variety of clients. Recent designs include products for *Star Wars* and the Nike Corporation.

Astro teamed up with 3D-CAM only 6 months ago, but they've already completed 5 projects together.

According to Kyle Swen, Studio Manager at Astro, the scenario goes like this: "A typical design project starts off with a sketch, which we then input into our 3D CAD

program. As the design begins to mature, it's always smart to verify the design against a physical model. So we send the CAD file out to 3D-CAM and they produce the actual part."

"We used other SLA resources before 3D-CAM," Swen says, "but when we got the parts back

we had to do a lot more work with them here. The quality of SLA parts we get from 3D-CAM is much higher. Also their paint and finishing shops give us the kind of parts we can use as finished models."

"Schedule-wise, 3D-CAM has helped us out in a lot of tight situations," Swen concludes, "most of our work with them has had 3-5 day turnaround. But a couple of times we needed parts in a rush, and 3D-CAM turned them around for us in under 2 days."



ASTRO SHREDS! This golf course inspired paper shredder is one of the innovative designs created by Astro Design utilizing stereolithography and casting by 3D-CAM.

BUZZWORDS

TANK TIME—the increment of time needed to perform an SLA job.

QUICKCAST—A method of building SLA parts that produces hollow patterns very quickly. These patterns are used in place of wax in the investment casting process to produce metal castings.

DUROMETER—instrument used to test hardness and durability of a metal or substance. Measurement in low numbers usually denote softer matter, with high numbers indicating harder material. Two scales, A & D, describe the material's hardness. i.e. SHORE A 25 is very soft, SHORE A 90 is medium soft, SHORE D 90 is very hard.

TEST BLOCK—an SLA part of known dimensions and features built specifically to test accuracy of an SLA machine.

ABS—(acrylonitrile butadiene styrene) A high impact plastic whose strength, rigidity, and exceptional electrical properties have made it one of most used materials in plastic injection molding for computers and many other modern electronic devices.

UL TESTING—Safety standards testing done by Underwriter Laboratories, a non-profit, independent agency that tests, certifies and writes standards for the safety of products for consumer, office and industrial machines and devices.

UL 94 VO—Standard for material flammability, denoting UL test results for flame retardancy.

RTV—Room temperature vulcanized rubber, the material used to make soft tooling or molds for polyurethane castings.

FINDING THE DELICATE BALANCE BETWEEN WORK & LIFE

$$\frac{80/20}{24/7} = Y2K?$$

At the dawn of the 20th century, an Italian political economics professor named Vilfredo Pareto made the canny observation that the last 20% of any project takes 80% of the effort.

Now known as Pareto's Principle, this revolutionary 80/20 theory has become one of the givens of modern business.

Yet in the Golden Age of Technology, we seem to be forgetting Pareto's lesson.

Another numeric buzz term has made the scene.

24/7. Verbal shorthand for extremely attentive, round the clock service.

24/7. The infinite attention span, 24 hours a day, seven days a week.

It's now a selling point, a positive, the ultimate in customer service.

"Claptrap," Pareto might thunder, "Completely unrealistic and totally unnecessary. Only a machine or mindless drone could be so preoccupied with work that they never eat, sleep, or spend time with their families!"

And Pareto would be right.

24 hours a day, seven days a week. Nothing else matters

Can you recall the last time anyone gave you service like that?

24/7 is a hollow promise. You know it

and they know it. In our drive to compete, succeed and build wealth, we are emphasizing the window dressing, and it's taking the place of really good work.

Paying serious professional attention to the client and the project (order, shipment or design) is *not* a 24 hours a day, seven days a week proposition.

It *does* take a high level of professional expertise, and sometimes, yes, even your passion.

But it doesn't take every minute of anyone's Life—yours' or mine.

Perhaps we should make a pact for the 21st century.

Let us conduct ourselves and our business endeavors with integrity, intelligence, professionalism and enthusiasm.

But let us *not* lose sight of the fact that business is part of Life, a crucial part perhaps, but a part just the same.

That's why it is preposterous to use 24/7 as a selling point.

Even if, by some miracle, you could accomplish it, according to Pareto's Principle only the final 20% of your work results would make the difference between just acceptable and real excellence.

Each of us should strive to achieve the extra attention to detail and quality that produces great results in our professions.

But let us also never forget that the most vital element in Life is living it.

24/7, to the fullest of your being.

3D-CAM CONTACTS

Headquarters, Chatsworth, CA

Kamran Harsini, Technical Sales
(818) 773.8777 x120 • fax: (818) 773.9582
kamran@3d-cam.com

Independent Sales Representatives

Veer Marketing, San Jose, CA
(408) 453-2600 • fax: (408) 453-8817
jmallory@veer-mkt.com

Mane Representatives, Washington State
Scott Schmeiser, Seattle, WA
(206) 361-7092 • fax: (206) 367-4838

Northwest Region, Santa Cruz, CA

Kevin Kingston, Director, Sales & Marketing NW Region
(831) 462-0280 • fax: (831) 476-5626
kevink@ricochet.net

Arizona / New Mexico Area

Larry Lonson, Joe Adams & Assoc, Phoenix, AZ
(623) 878-6271 • fax: (623) 878-0924
larrylonson@netscape.net

MidWest Area

Schmidt & Associates, Carrollton, TX
John Schmidt, (972) 394-6055 • fax: (972) 394-6056

SERVICES

Solid Imaging (Stereolithography) • RTV Molding • Polyurethane Castings • Epoxy Tooling
Rapid Tooling (ZAP™ Tool) • Quick-Turn Injection Molding • QuickCast Patterns
CNC Tooling & Machining (ProE/ProMold) • Limited Run Production (Rapid Mfg.) • Wax Patterns
Metal Castings • Full-Service Paint, Finishing & Graphics • Complete CAD/CAM Services



INC • 9139 LURLINE AVENUE • CHATSWORTH, CA 91311 • 818.773.8777 • fax 818.773.9582

production e-mail: production@3d-cam.com • sales e-mail: sales@3d-cam.com • engineering e-mail: eng@3d-cam.com