

Business Soars for Pacific Northwest Finisher

From its vantage point in the Pacific Northwest, this progressive finisher—now celebrating its 40th year in business—has specialized in serving the aerospace industry. To avoid limiting its options to one industry, however, the company has aggressively marketed and carefully planned its expansion in other areas to give it a competitive edge and a solid future. While more than half of its business is devoted to serving aerospace customers, it also operates as a commercial jobshop, with the remainder of its efforts dedicated to the electronics and recreational industries.



Designed for Efficiency: Overview of Hytek's state-of-the-art facility that was opened for production in January, 1989. Excellent attention to housekeeping and regular equipment maintenance help keep the plant humming on its three shifts/day, seven-days/week schedule. For the safety and comfort of employees, the ventilation system circulates the air at 650,000 cfm. All processes are hard-piped; waste streams are segregated; process areas are fully bermed; and floors are coated with a chemical-resistant finish.

H ytek Finishes Co., Aerospace and Defense Group, Esterline Technologies, is the largest independent supplier of specialized metal finishing, anodizing and organic coating services in the Pacific Northwest. For more than 40 years, it has provided

a full range of surface finishing services on most types of steel, aluminum, titanium, magnesium and plastics.

Located in Kent, WA, Hytek is one of two jobshops in the U.S. that conforms to Boeing's D1-9000 Quality Standard. It is the largest aerospace supplier of

aerospace giant Boeing's direct outside metal finishing.

But that's not all. While Boeing is an excellent client, Hytek has broadened its customer base and insured its staying power by serving more than 600 regular customers worldwide. Company managers estimate that Hytek provides more than 80 finishing services and

ships approximately 175 individual orders per day.

"Our mission, regardless of the finishing involved," says Pat McShane, sales manager, "is to simply give customers what they want—rapid turnaround and unquestioned quality. Most jobs running through our plant are completed in four days or less."

Pat confirms that through its employees the company nurtures an understanding of its customers' needs, and that it has the resources, production systems and technical depth to back up its commitment to deliver a quality product, within specifications and on time.

Catering to the Aerospace Market

Since its establishment, Hytek has concentrated on the aerospace market, and routinely processes a wide variety of parts, such as landing gear parts, flap assemblies, decorative interior trim, hydraulic cylinders, carriages, skins, struts and bolts. There are a number of processes that are in high demand, and Hytek offers those specialized services to its aerospace customers (and others who request them): TiCad plating; hard

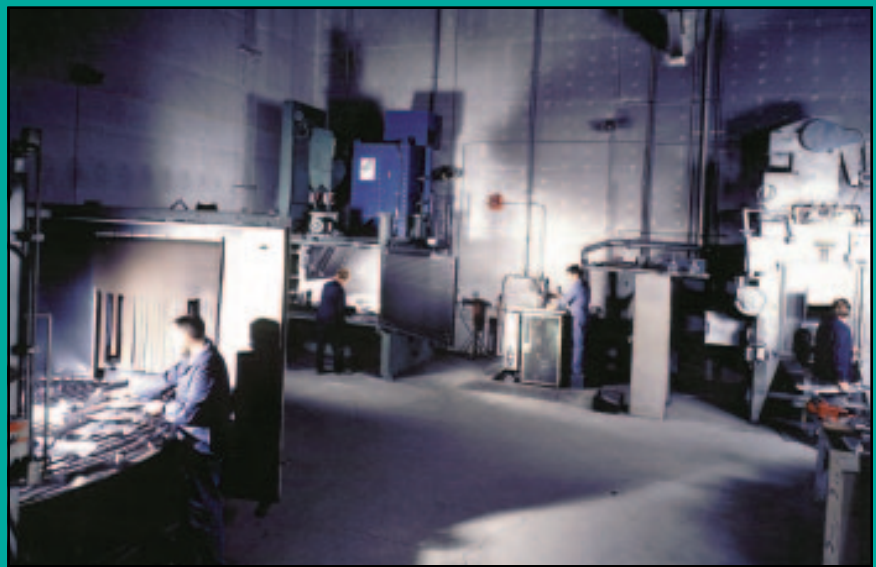


More than 60 percent of the company's finishing services are currently devoted to the aerospace industry, through its anodizing lines, plating, painting and powder coating operations. (Shown in photo: Close-up of a large part being processed on the sulfuric acid anodizing line.)

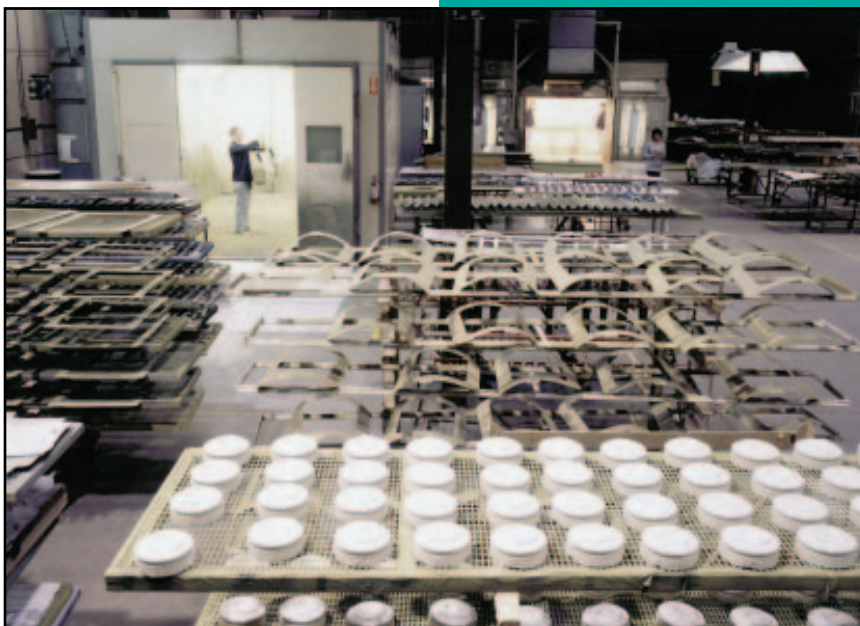
anodizing, including 2000-series alloys; hard chromium plating; boric-sulfuric acid anodizing; chem-treat; electroless nickel plating and non-destructive testing.

In addition, the company offers the aerospace industry some other specialized capabilities:

- Expertise in finishing highly technical and heat-treated parts;
- The ability to handle multi-step finishing and take control of the total job to speed up delivery;
- The assurance that the finished product will meet precise specifications. Hytek is able to fulfill all prime contractor certifications and MIL specs. Hytek's current facility—a 93,000-



Above: Hytek's variety of shot peen equipment, which includes lance and localized peening, ensures complete cover and intensity on all parts surfaces.



Left: In the background of this overview of the 16,000 ft² paint shop are the two "downdraft" paint booths that dramatically reduce direct and overspray problems over more traditional installations. Versatility and flexibility are built into the overall plant design. Ample floor space in this department provides room for future expansion.

Below: Hytek's self-contained penetrant inspection work station is only part of a complete array of inspection procedures.

ft² state-of-the-art building, occupied since 1989—is located one mile south of its original plant. As customer service needs have changed, the company has made many improvements in its flexible facility. For example, it upgraded and greatly expanded its hard chrome plating line in May this year, and has also increased its cadmium plating and painting services.

Anodizing All Kinds of Parts—From Aerospace to Sports

The company's anodizing department is sizeable, with two lines of processing tanks in 12-ft lengths. One line is used for boric-sulfuric acid anodizing (required primarily by aerospace clients); the other is a sulfuric acid anodizing line. As many as seven different colors are available on the sulfuric line.





The powder coating area features a five-stage pretreatment line and semi-automatic conveyor. Powder is being sprayed with an electrostatic gun.

Many years ago, Hytek began cleaning and priming aluminum water-ski tops for ski manufacturers, who follow up with application of bold and colorful graphics after the tops are bonded to a fiberglass substrate. Hytek's relationship with the ski manufacturers has remained solid, and approximately 100,000 ski tops are prepared annually.

"There's a unique mix of parts processed in this department," says Chuck Babb, laboratory supervisor. "We get everything from airplane wingstruts to recreational items, such as exercise, camping, boating and archery equipment."

Now, Hytek's business managers look for unusual jobs—those that other finishers might find a bit too unusual or difficult. Along with the other services the company offers in addition to anodizing (preparation for metal bonding, polishing and buffing, painting, silk-screening and powder coating), they created an enviable niche for themselves in the recreational industry market. Diversification and concentration on their main processes have been keys to success.

Powder Coating—Going for the Unusual

Hytek's powder coating operations, established in 1995, add to the company's flexibility. Its business team believes that

more aerospace components will soon utilize this finish, so the company is looking forward to increased growth in this area.

"We actually seek out customers who have the more demanding applications for powder-coating," reports Pat. "We like to tackle parts that provide a challenge. This helps us maintain our visibility as a high-tech finisher."

Meeting the Demands Of the Electronics Market

Approximately 15 percent of Hytek's business services the highly competitive electronics industry. The company has the only non-captive, fully automatic, tin-lead plating machine in the U.S., a high-speed MECO 1800 EPL. The equipment incorporates air knives and spray rinsing, and is capable of precise and reproducible plating accuracy on integrated circuit packages. In full production, more than 1800 strips per hour can be plated with tin-lead. Typically, plating deposits are 400 microinches thick and are evenly distributed on the leads with a CpK of >4.

As the largest finishing company in the region, Hytek offers considerable experience in handling large-volume jobs efficiently, and plays on

its high-tech reputation for transferring innovative solutions from finishing technologies outside the electronics field to that area. Conversely, special techniques employed in the electronics industry have been applied successfully to other market areas.

Special electronic processes offered by Hytek include matte tin and bright tin plating, electroless nickel plating, decorative aluminum front panel finishing, as well as plastic and composite component finishing. The company also performs metallographic cross-sectioning and solderability testing.

Employee Teams For Quality & Productivity

Although Hytek does have a non-destructive testing (NDT) and quality inspection area, the managers emphasize that the real inspectors are the workers. Their reject rate dropped significantly when there was a management philosophy shift from quality assessment to process quality improvement years ago.

"Our QA reps help support the production activity on the floor," says Clif Johnson, director of operations. "Our employee teams for quality and productivity meet regularly. Our safety committee is important to our workers—and their awareness helps our safety record."



Hytek's state-of-the-art chemistry lab, manned by degreed chemists, checks most of the solutions daily for the many plating and anodizing processes offered by the company—in addition to being responsible for monitoring the company's environmental requirements. (The company's waste treatment facility typically processes 40,000 gal/day of wastewater.)

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Employee empowerment and appreciation appear to be pluses for Hytek. Average tenure for employees is in the 10–12-year range.

Environmental Responsibilities: Answering to Many Agencies

Like all metal finishers, Hytek has many regulatory agencies (federal, state and local) to satisfy. It is regulated by the U.S. Environmental Protection Agency (EPA), the Washington State Department of Ecology, the Puget Sound Air Pollution Control Agency, and METRO (its local POTW).

As do most progressive finishers, Hytek accepts a heavy responsibility in meeting air and water quality requirements and in handling chemicals and hazardous wastes. This environmental stewardship is an important part of doing business. It means continually looking ahead to minimize environmental impact, and, when possible, to save company profits while doing so.

On the federal compliance level, for example, Hytek is avoiding having to concern itself with Title V requirements by reducing solvent emissions to acceptable levels. This has involved a huge reduction in the use of MEK by switching to waterborne paints and alternative solvents. Innovative wipers in dispensers have replaced towels formerly used to wipe down parts with solvent.

Hytek has employed a number of waste minimization/pollution prevention technologies:

- It provided leadership in the Puget Sound area by eliminating the last of its vapor degreasers in 1993. The company had been working with aqueous

immersion degreasers for some time. A spray washer with a dry cycle replaced the last of three vapor degreasers.

- In 1989, it became the first finishing shop in its area to install chromium scrubbers to limit air emissions.
- It has switched more than half of its process tanks that formerly used cyanide to alternate chemistries.
- The impact of the water rinses on the water treatment system is kept manageable

by countercurrent rinses employing conductivity controls. Spray rinsing is used wherever possible.

Hytek's well-equipped laboratory not only supports the finishing processes, but also helps monitor environmental compliance, and is a focal point for developing alternatives to the status quo. The company's "can do" attitude toward its environmental responsibilities has not gone unnoticed by local regulators and civic organizations. Hytek has received many awards recognizing its positive approach to pollution prevention, including the 1995 "Green Company of the Year" from the Kent Chamber of Commerce.



When clients are high-profile aerospace and electronic industry companies, exceptional quality assurance methods are expected. Hytek has used statistical process control (SPC) since 1982. The managers believe that SPC and a shift in philosophy from quality assessment to quality improvement in processing are the main reasons the company has been able to hold rejects well below the 1.3 percent level for more than 15 years. Its Inspection/NDT Departments are staffed by 10 employees—from planners to on-line inspectors. In addition to a full range of test equipment, such as photographic microscopes, cross-sectioning equipment and X-ray fluorescence, the company offers magnetic particle inspection, penetrant inspection and nitral etch.

a year. Through studying market conditions and attending conferences and trade shows, such as the recent AESF-sponsored Aerospace/Airline Plating and Metal Finishing Forum and Exhibit, they keep looking down the road to future business. That means keeping their options open on the addition or deletion of processes, and projecting expansion needs.

Company managers believe that Hytek processes more batches and smaller runs on most days than other jobshops. The mix of customers and types of parts processed keeps on growing. Their challenge is how to continue to efficiently handle this ever-growing mix.

What's Hytek's secret for finding new customers? "There's no more compelling way to sell your services than by word of mouth," states Pat. "When customers are pleased, they'll not only stay with you, they'll tell others about you. We invite potential clients to visit our plant. If they have any concerns about whether we can handle their particular job to their satisfaction, seeing is usually believing." **P&SF**

Getting New Business; Meeting New Challenges

Hytek's managers are undeniably pleased that business is good, and that they're able to run three shifts/day, seven days/week in most areas. As a result of having to operate continuously at peak performance, the company has increased its number of employees from about 125 to 185 in a little over



In addition to serving its clients well, Hytek concentrates on being a valuable, "good" neighbor in its community (a high-tech industrial area in Kent). The architecturally pleasing appearance of its office/production facility help make it an attractive neighbor as well—a company for which its 170+ employees are proud to work.

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