



CACT

Centers for Applied Competitive Technologies
Making It In California

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California Community Colleges
Economic & Workforce Development

Getting It* Done

With

CACT

Centers for
Applied
Competitive
Technologies

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Inside:

- Aerospace Training..... 1**
- From Invention to Market..... 2**
- Training Classes Boost Market Share..... 2**
- Designers Use New Technology 3**
- Leveraging A Bad Economy 3**
- Solar Industry Collaboration..... 4**
- CACT Centers Listings..... 4**



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Aerospace Fastener Training Program High Workforce Demands Call for Innovative Solutions in Aerospace

The aerospace fastener manufacturing industry is a global market that generates \$6.5 billion in global sales. Southern California is home to dozens of small-to-medium sized manufacturers, including three of the world's largest global companies in this field. In fact, over \$4.5 billion in global sales are generated from Southern California-based manufacturers and distributors. That's nearly 70 percent of the global market!

But, the industry faces significant challenges in keeping up with the demand. Over 10,000 Southern Californians are employed by local aerospace fastener manufacturers and distributors, but many these veteran workers holding 16–20 years of experience are due to retire in the next five to 10 years. How will the aerospace fastener industry find

“...will allow people with virtually no manufacturing skills to achieve good paying jobs...”

MARSHALL GARTENLAUB, PHD.

and train the next 200–400 workers it will need over the next five years quickly, in a time when the demand is so high for skill and experience?

The Centers for Applied Competitive Technologies (CACT) @ El Camino College, Cerritos College, North Orange Community College District, Los Angeles Community College District, along with the Statewide Initiative CACT Director

joined forces to assist California-based aerospace fastener manufactures in finding solutions to the skilled worker shortage.

The CACTs teamed with industry by forming an alliance with representatives from the Industrial Fastener Institute (IFI), Alcoa Fastening Systems (AFS), Bristol Industries, B&B Specialties, Click Bond, California Screw Products, LISI Aerospace, Monogram Aerospace Fasteners, Phillips Screw Company, PB Fasteners, SPS Technologies/Cherry Aerospace, and The Young Engineers. The alliance developed curriculum and received equipment donations from industry participants for a for-credit eight week training program that includes 96 hours of industry paid internship at a local aerospace fastener manufacturer. “This

Continued on back.



HIGH DEMAND For Job Skill & Experience



PARTNERSHIP WITH AWFI SUPPORTS WOOD-FINISHING BUSINESSES

Training Classes Boost Market Share of Small Manufacturers

California Environment Protection Agency (CAL-EPA) regulations and Air Quality Management Department (AQMD) compliance standards make it difficult for many small manufacturing companies to remain competitive. All furniture, cabinet, and other wood finishing businesses in California, must switch to compliant low emission, solvent or water-based finishes, or run the risk heavy fines and closures.

To support businesses in understanding these regulations and making the necessary changes, the CACT @ San Bernardino Community College District partnered with the American Wood Finishing Institute (AWFI), a company with a national reputation for training and technical expertise in the finishing industries. The CACT supported the AWFI through the Responsive Training Fund to teach their certificated spray-operators program to

members a 24/7 ability to get answers to typical questions and insights to the everyday “grind of woodworking”. It can be accessed by logging onto <http://www.awfi.proboards83.com>

For information about the AWFI classes, contact Marshall Gartenlaub, CACT Initiative Director at (909) 382-4038 or marshallg@cccwcd.net, or go to www.MakingItInCalifornia.com

RAPID PROTOTYPE AIDS POLICE From Invention to Market

Police officers, Allen Perez and Jeff Solomon, have invented Tact-Pad, a multi-functional pocket-sized product that incorporates six functions that officers need on the job. It includes a Pupilometer for drug and alcohol recognition, tactical mirror, license clip, accident reconstruction outlines and card holder on a metal backing that offers additional protection for officers.

Perez worked with the CACT @ Sierra College and the Manufacturers Assistance Program (MAP) to refine the design and produce rapid prototypes to show to prospective customers.

Perez had studied at Sierra College and thought of the college as a resource when he became an inventor. “MAP turned my drawing into functional design and produced the prototype,” said Perez. “The prototype made it possible to effectively demonstrate how Tact-Pad works and is a product that clients can see, touch, feel and manipulate.”

Through the assistance of the MAP and Sierra College faculty member Steve Jung, Perez and Soloman were able to launch Tact-Pad and generate immediate enthusiasm from potential customers in the public safety market. Perez gives glowing reviews to the support received and encouraged any inventors who need help to contact the college for more information.

For information about the Sierra College MAP, contact Carol Pepper-Kittredge, Director, CACT @ Sierra College at (916) 781-6288 or cpepper-kittredge@sierracollege.edu, or go to www.MakingItInCalifornia.com

“This class made me more knowledgeable and competent in the field of high end water-based finishing and has made me a more confident business owner. There has been a 20% improvement in transfer efficiency and a 15% reduction in reworks. We’ve hired and trained an additional staff member, due to our sales growth.”

GREG SAUNDERS, ANNEX PAINT

“Since the training, my reworks have seen a reduction of 15% and I’ve been able to hire and train three new staff. My market share and sales have increased by 20%.”

**PAUL LINDEN
ACCENT PAINTING**

37 employees and owners of small businesses. The trainees, in turn, had the skills to go back to their companies and train others. Overall more than 60 persons learned how to comply with California regulations, while enhancing their finishing businesses. The classes were held at Cerritos College, and were so successful that additional training programs with AWFI are planned for the coming year.

A chat room and networking site has been established for all AWFI graduates; the site provides a virtual forum to communicate, share knowledge and join discussions around today’s issues and solutions facing the wood-finishing industry. The site gives its some 60



“The class has given my small company a wonderful leg up, and I have become more efficient with less reworks and less experimentation. With this new found knowledge I have better command of the process and that makes the finishing process a matter of technical know how and less of a guess.”

JON RICE, VETERAN CONSTRUCTION

PRESTIGIOUS AWARD AT INTERNATIONAL SHOW

High-profile Designers Benefit from New Technology

Location never seemed important to Peter Stathis, an accomplished industrial designer currently living and working in San Francisco. After all, they can ply their trade anywhere. But Peter changed his mind when he collaborated with Pablo Designs, located in the City's Bayview district, to create the Link LED Task Lamp. "It used to not matter where I worked, but here the confluence of engineers, designers and investment capital makes everything so easy. It was a San Francisco-based designer, a San Francisco-based manufacturer/producer, with a very close working process."

Part of the development process for the Link Lamp was creating prototypes for design evaluation. When the time came to have them made, the CACT @ City College of San Francisco (SF CACT) provided access to rapid prototyping technology, specifically

3D printing services. The SF CACT is housed at the Evans Campus of City College of San Francisco (CCSF), also in the Bayview. Instead of having the work done in Asia, the SF CACT produced the prototypes locally.

This saved Stathis and Pablo Designs time and money, and allowed for more experimentation within their budget. "The designs can mature, and the refinement is due to keeping that prototyping service here, instead of shipping it to Asia, where typically I won't hear anything for three weeks. Here I was able to verify designs in a matter of hours and days. The turnaround time is phenomenal for my practice."

The Link Lamp received the Editors

Award for Best Lighting at the International Contemporary Furniture Fair in New York, and has been featured in the August 2008 issue of "California Home + Design" magazine.

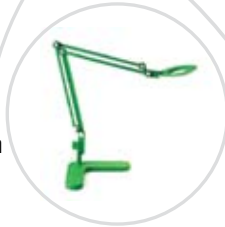
Since fall 2007, the SF CACT has been offering both 3D printing services and training in SolidWorks CAD design software. The services go hand in hand, as a 3D model from a CAD program is necessary to create an object on the 3D printer. The SF CACT offers these particular technologies and training, in order to assist the large design community located in the greater Bay Area. Attendees learn technological skills necessary for working in industrial and product design, and make connections with others in the field.

Jon Oxford, a manufacturing engineer for Pablo Designs who taught the first SolidWorks Essentials work-

shop at the SF CACT agrees with the customization features and also had a very positive experience with the 3D printing services provided by the CACT. "The price was competitive, and the turnaround time was usually one or two days as opposed to three to five for typical web-based services," said Oxford. "Even the resolution [quality] of the parts was higher than the typical services, which was unexpected, but great!"

The SF CACT is expanding its SolidWorks training workshop offerings in fall 2008 with the addition of an advanced workshop. The CACT's 3D printing and rapid prototyping services have helped numerous small businesses to locally develop new products and still remain competitive.

For information about the CACT @ City College of San Francisco, contact Wendy Miller, Director, at (415) 550-4424 or wlmiller@ccsf.edu, or go to www.MakingItInCalifornia.com



Leveraging Economic Downturns: Investments in Training Show Positive Returns

What do you do when a major customer puts you on hold? Do you lay off people and hope that you can get them back when the customer resumes accepting deliveries? Do you let your people sit around and have their skills atrophy? What strategy does an organization follow?

Goodrich Aerostructures in Riverside, California has had to ask all of these tough questions over the past several months. The Goodrich plant in Riverside fabricates large structural components for both civilian and military aircraft. One of Goodrich's major customers is Boeing Aircraft.

Several years ago, Boeing awarded Goodrich large subcontracts to build components for the 787 Dreamliner program. The Dreamliner has been the most successful commercial aircraft launch in history with over 900 orders booked for the fuel-efficient plane.

Unfortunately, the program has been delayed due to technical, supplier and labor issues at Boeing. In order to avoid a build-up of inventory, Boeing has put a hold on the delivery of components to its Seattle factories where the Dreamliner is being built.

Goodrich management decided to invest in training during this "down" period. As usual, they turned to one of their primary training providers, Riverside Community College District (RCCD). The CACT @ RCCD in conjunction with RCCD's contract education department has designed a



customized course on-site at Goodrich's Riverside plant.

The course is directed towards maintenance technicians, and it covers topics such as advanced digital controllers, electrical safety, and mechanical drive

systems. Jim Sutton, CACT Grant Project Technician is delivering the training to Goodrich maintenance technicians and some of its manufacturing engineering staff. To date, they have finished the module of mechanical drive systems, and they are deep into advanced digital controllers.

The CACT @ RCCD and Goodrich continue exploring other technical courses that can be

offered during this down period.

For information about the CACT @ Riverside Community College District and their industrial maintenance technician programs, contact Hank Rogers, Director, at (951)372-7138 or hank.rogers@rcc.edu, or go to www.MakingItInCalifornia.com

TRAINING THE WORKFORCE OF TOMORROW

Silicon Valley Solar Industry-Driven Regional Collaborative

According to the California Community College's Centers of Excellence 2008 Solar Industry & Workforce Study Key Findings, the California's solar industry employs between 14,500 and 17,000 workers. In spite of layoff projections in the state, over 70 percent of solar-related surveyed employers plan to hire more employees over the next 12 months. Solar-related firms are expecting to increase employment by up to 29 percent or approximately 5,000 jobs.

However, employers are facing significant challenges finding qualified workers. Two out of three employers indicate difficulty finding entry-level employees. Three out of four employers indicate difficulty finding experienced employees in this industry.

SolarTech, the solar industry association that recently emerged from the San Francisco Bay area's Silicon Valley Leadership Group, identified workforce development as a major barrier to the growth and market penetration of

Solar Photovoltaic (PV) Installation. Simultaneously, regional Community Colleges identified the development of the "New Energy Workforce" as an important priority to address skills gaps and employment trends and needs in



the solar industry. These two groups, along with NOVA [the local workforce investment board] created the Silicon Valley Solar Industry-Driven Regional Collaborative (IDRC) as an effective regional response to create customized training curriculum, and design and broker resources to support this highly

specialized industry.

The CACT @ De Anza College leads a team of talented partners on this special initiative including the, the Workplace Learning Resource Center at Mission College, San Jose City College, Cabrillo College, West Valley College, Ohlone College, the Silicon Valley Leadership Group, SolarTech, and the NOVA WIB.

To support the project goals and build momentum and support for this initiative, the IDRC will be developing a resource-rich Web site that connects its collaborative partners, stakeholders and constituents.

For information about the IDRC, contact Rick Kuhn, Director, CACT @ De Anza College at (408) 864-8710 or kuhnrick@fhda.edu, or go to www.MakingItInCalifornia.com

Aerospace Fastener Training Program

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type of training allows the students to learn the skills necessary to get jobs in an industry that needs new workers as quickly as possible," said CACT Statewide Initiative Director Marshall Gartenlaub, PhD. "The training will allow people with virtually no manufacturing skills to achieve good paying jobs in the aerospace fastener industry."

The first cohort of participants is filled to capacity and scheduled to start training on November 5, 2008. The alliance will continue to work closely to expand the training program at the Compton Educational Center, and collaborate with other community colleges in Southern California to offer the training in communities that support this critical industry.

For information about the Aerospace Fastener Training Program, contact David Gonzales, Director, CACT @ El Camino College at (310) 973-3170, or dgonzales@elcamino.edu, or go to www.MakingItInCalifornia.com

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The Centers for Applied Competitive Technologies (CACT) are an initiative of the California Community College's Economic and Workforce Development (CCCEWD) program. Located across California, their mission is to advance the global competitiveness and innovation for advanced technology companies in California through responsive workforce training and technical consulting services.

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