

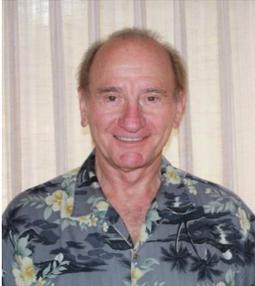
# Western Plastics Pioneers

[www.pioneers.socalspe.org](http://www.pioneers.socalspe.org)

2013 Q1



*The objectives of the Plastics Pioneers Association shall be to recognize achievement in the field of plastics/polymer science, engineering, technology and management; to support industry-wide educational programs; and to promote the study and improvement of plastics, science engineering and technology.*



## President's Message

Dear Western Plastics Pioneers,

Welcome to the new year, 2013. It seems like just days ago we were experiencing the nation's presidential election. What a relief that is done - immediately followed by Thanksgiving, Christmas and then Bang 2013. I am happy to be here in this great country of ours, enjoying life with all of the challenges that it brings.

Speaking of challenges and switching gears, it has been interesting to follow the events pertaining to the Boeing 787 aircraft. The design and construction of the 787 is a tremendous example of what can be done with plastic materials. The Boeing 777 is 9% composites by weight compared to 50% for the Boeing 787. The 787 contains approximately 35 short tons (70,400 pounds) of carbon fiber reinforced plastics including 23 tons of carbon fiber. Composites are used on fuselage, wings, tail, doors and interior components. The use of composites in aircraft is nothing new. However, the extensive use in the 787 certainly is testimony to the outstanding properties these materials offer.

The advantages of using composite plastics are many. The 787 weighs 40,000 pounds less than a similar sized Airbus A330 and as a result, the 787 uses 20% less fuel. The aircraft CO2 emissions are 20% less. The high strength to weight ratio of the composites allows for the largest windows of any airliner. The 787's ceiling height was increased to a full 8 feet. The one-piece fuselage eliminates more than 40,000 fasteners compared to the conventional aircraft. Fewer assembly steps are required, 787 requiring 10,000 holes drilled into the fuselage compared to 8 million in the 747 jumbo. And last but not least no corrosion.

I have not flown the 787 Dreamliner. I am looking forward to the company solving its recent problems so that I can enjoy the experience of flying in a plastic plane.

Best wishes, and a happy, healthy, prosperous new year.

*Richard Luciano - President - Western Plastics Pioneers*

**DON'T FORGET TO CAST YOUR VOTE (See ballot insert)**  
**Western Plastics Pioneer Election**

## Newsletter Ad's

Western Plastics Pioneers Newsletter has been an integral and vital part of the organization. Newsletter has played a key role in keeping all the Pioneers informed and involved in the industry. The articles, photographs, news, remembrance and more importantly whereabouts of the friends and what they have been up to made an interesting reading. Newsletter is published quarterly. We are requesting your help by asking your organization to advertise in the newsletter to help us defer the cost of publication and postage.

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\$ 200 per year  
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*Thanks for your support.*

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## Save the Date!

March 9, 2013

### **The Getty Center - Los Angeles**

lunch and tour. See flyer or email Dee Ketner or Rusty Miller  
DeeKetner@aol.com Rmiller@timesync.com

August 11, 2013

### **WPP Annual Luncheon**

Los Coyotes Country Club will once again provide a perfect setting for our annual luncheon with it's delightful setting and fine food. WPP will also award the prestigious Hall of Fame Award at the meeting. The reception will begin at 11:00 AM and the address is 8888 Los Coyotes Drive in Buena Park. So mark you calendar to enjoy a memorable gathering of industries friends.

From Mammoth, John Hoven 760-924-2822

## Membership News

We wish to welcome our newest member, Dennis Mitchell, to the Western Plastics Pioneers. His short bio and that of Pamela Strong are listed in another section of this newsletter.

I want to acknowledge Dee Ketner, top winner of a gift card to Staples, for bringing in two new members for our fourth quarter 2012 membership drive. This membership drive will continue for the first and second quarters of 2013.

We presently have 87 members. Roger France calculated that the current membership distribution is: 33% LA County, 27% Orange County, 8% other parts of California, and 10% other Western States.

Please help us increase our membership by introducing our Western Plastics Pioneers organization to people you know who have 25 years in the plastics industry and forward their contact information to me by email at [westernpioneers@aol.com](mailto:westernpioneers@aol.com). Your assistance in this membership drive is very appreciated.

John Szary

## New Member Announcement

Please welcome Dennis Mitchell to the Western Plastics Pioneers. Dennis is a 53-year plastics industry veteran. Early in his career, while a student in college, Dennis worked with thermosets. From 1959 to 1964, he worked with thermoset polyesters fabricating playground equipment, hand laid up boats, cast tabletops and vanities. He realized then that there was little room for mistakes because they became costly waste and landfill.

In 1964, Dennis went to work for Ellay Rubber. Ellay calendared PVC film and rigid sheet that were sent to another plant where they were laminated into various thicknesses. Uses included clear PVC for the rear windows on convertibles and a variety of vacuum formed PVC products. Ellay's film products were used in medical, inflatables, furniture, bookbinding, automotive, etc.

Dennis worked in sales from 1966 thru 1973 for several companies that supplied the electronics, aircraft and aerospace industries. In 1970, he decided on a career change. Dennis wanted to sell machinery and to gain experience; he joined Coast Craft Industries in Glendale in their injection-molding department.

In 1973, he purchased a Boy molding machine and had it in his garage for a year. Then, along with John Rosko, an excellent mold maker, and his brother, Jay Mitchell, who worked for Plastiglide, they formed Plasticorp to serve the electronics industry.

As a company, Plasticorp targeted thermoset electronic components because of slow delivery, high piece part cost, and scrap or waste. Their startup was a struggle because his vision to replace thermosets in common electronic components with thermoplastics met with some industry resistance because of

tooling costs. Because their customers did not want to pay the high price for multi-cavity tooling they devised a unique tooling system that featured quick core and cavity changes utilizing a common mold base. This became the Plasticorp trademark.

"Over the 38 years that Plasticorp flourished, we built a broad product line that supplied the electronics, computer, communications, and a variety of other related industries. Our vision and expertise eventually led us to capitalize on specific custom projects that fit our molding niche and tooling capabilities."

"There were constant challenges and exciting new products, all of which made my 53 years in plastics an experience to treasure." Dennis is now retired and enjoying his family and hobbies.

## Member Biography

Pamela Kay Strong is internationally recognized for her world-class exemplary leadership skills and expertise in composites and nonmetallic materials and processes, provided technical advice both inside and outside work. Pam is considered an expert in composites, adhesives, and sealants. She has provided corporate-wide support as a technical expert/team leader in identifying and implementing composites and composite/adhesive materials for metal replacements and obsolete materials utilizing the latest manufacturing techniques for both the Atlas and Delta Programs. Developed the use, application and/or cures for numerous non-metallic materials such as PMR-15, a high temperature polyimide used with Low, Mid, and High Temperature Composites (Epoxy, Bis-Maleimide, Phenolic, Polyimide, PMR-15); Rocket High Temperature Ablative Insulation; High Temperature Insulation; Laminates; Polymers; Polymer Adhesives; Sealants; Top Coats, Multi-Layer Blankets, Thin Film Coatings; Tooling (Composite, Graphite, Plaster, Traditional), Robotics; Semiconductor Analysis; Integrated Circuit Coatings; Laminates; Circuit Board Structural Chemical Analysis; Circuit Board Impregnation and Coatings. Resolved new analytical methods for chemical specialties, surfactants products and polymers, as well as being familiar with the lab equipment and time needed to analyze the materials.

Pam has been a driving force in promoting the use of composite parts in aerospace vehicles. She led projects from the design phase through manufacturing completion. She also developed drawings, wrote procedures and specifications (over 200), led manufacturing activities, and developed cost-saving redesigns and retrofits. The extent of her knowledge is demonstrated by the variety of programs she has been involved: Sergeant York Tank, missiles (GMD, HEDI, THAAD), satellites (GSTS), military aircraft (C-17, C-130, KC-10, B-1, B-2, F-15, F-16, F-18), helicopter (MMS), commercial aircraft (DC-9, DC-10, MD-80, MD-90, MD-11, 777, 787), and space vehicles (Space Station, Shuttle, Delta, Delta II, Delta III, Delta IV, Delta Stars, Delta Stars II, Delta Clipper, X-37, Titan II, Titan IV and Atlas V). She was instrumental in converting the Delta II reinforced aluminum fairing, to composites by reducing the weight by one-third. This increased payload capacity, eliminated over 100 piece-parts, saving \$114,000 to \$380,000/launch of fabrication cost savings.

Pam Strong has broad-based experience in the development and application of non-metallic materials, coatings, low observables and RAM (stealth technology), adhesives, and composites in the aerospace industry, with additional experience in the chemical engineering and pharmaceutical fields. She is recognized as an expert in non-metallic composites, presently retired from working at United Launch Alliance (a 5-year old company joining both Boeing and Lockheed Rockets) where she helped launch 13 to 28 stories tall rockets (Delta II, all the various Delta IV's and Atlas V) at least one per month. Just prior to this she



assisted both individual organizations as the Aerospace Corporation representative. Prior to this, she was the Material and Process Engineer focal for the B-1 and B-2 at Boeing for several years. She was the focal for the manufacture of liquid and solid rockets for the Delta, Titan, and Space Shuttle programs, MD-80/MD-90 sealants and provided composite training to the 787 commercial aircraft personnel at Boeing/McDonnell Douglas. Prior to coming to the Boeing Company, she developed tooling, planning, analytical techniques, quality plans and specifications for composites products, including jet engine blades and vanes as an advanced composites senior engineer at Hughes, General Electric, and Northrop. Outside of aerospace, Pam began her career in organic and pharmaceutical chemistry and developed several new pharmaceutical products (thirty-three marketed drugs), analytical methods for the oil field and water treatment. She is recognized by technical organizations to be an authority on composites non-metallic materials and processes as she has been presented with 7 Technical International Fellowships and has won 6 top awards in the aerospace industry. She is a Fellow of the Society for the Advancement of Material and Process Engineering (SAMPE), Fellow of the Society of Automotive Engineers (SAE), Fellow of American Institute of Chemists (AIC), Fellow of Royal Australian Chemical Institute (RACI), and Fellow of the Society of Women Engineers (SWE). Within industry, she was made a Boeing Associate Technical Fellow and United Launch Alliance (ULA) Technical Fellow. She was awarded the Society of Women Engineers (SWE) Achievement Award, WEC / J. Cordell Breed Woman of Leadership Award by the Society of Automotive Engineers (SAE), and the Woman of Achievement Award from the Amelia Earhart Society of the Boeing Company, then was awarded the Boeing Chief Technology Officer Professional Excellence Award twice and the General Electric Manufacturing Technology Excellence Award.

Pamela Kay Strong, FSAMPE, FSAE, FSWE, FAIC, FRACI, Assoc.F Boeing (Retired), FULA (Retired)

## Plastics Hall of Fame is part of UMass Lowell's push to raise plastic's profile

Bob Malloy knows more about plastic than you ever will – than most people ever will, for that matter – but he admits that plastic has an image problem even among the people who make it.

"Nobody knows what a plastics engineer is; they don't even know it exists," said Malloy, chairman of the nation's oldest university department devoted to plastic engineering, at the University of Massachusetts Lowell. "They know chemical engineers, mechanical engineers, but plastic – no."

Somehow, working with plastics, even at the level of cutting-edge science and industry, just seems less serious or admirable than working with metals or liquids or gases. This may be part of the reason that the UMass Lowell program remains virtually unique in the country, half-century after it opened.

"Plastic seems cheap," said Malloy, whose career has been spent researching and developing methods of making and improving types of plastic, producing a myriad of technical papers, books and patents. UMass Lowell would like to change that image, and hopes to do so with its gleaming new \$80 million Saab Emerging Technologies and Innovations Center, which includes facilities and machinery for research into sexier topics like nanotechnology but is dominated by plastics engineering. (The Saab name comes from alumnus Mark Saab and his wife, Elisia, not from the car company.)

This impressive structure on the banks of the Merrimack River is the biggest new academic/research building in a half-dozen decades at this school of 14,000 students, the closest research university to Greater Nashua. It opened in October.

The building's facilities will be the topic of a later GraniteGeek column; for

the moment, however, let's consider one unusual component that Malloy introduced there to help spread the word of plastics: the Plastics Hall of Fame and a still-developing collection of historical items related to plastic.

Some of this comes from the National Plastics Museum that previously existed in Leominster, Mass., where much of the nation's plastics industry got its birth. That center, which was mostly an education facility for schoolchildren, closed in 2008, and Malloy began a lobbying campaign to shift part of it to the school. Many of its papers are at Syracuse University in New York, but the hall of fame came to Lowell.

"The idea is to recognize people who have had a very significant role in the plastic industry ... which impacts our lives in any way you can think of," Malloy said.

He admits that few of the people in the hall, who are chosen by the Society of the Plastics Industry, will be familiar to us. Their brainchildren often are familiar, though.

There's Tom Brady – no, not that Tom Brady – who developed PET, the plastic that makes most soda bottles possible. There's John Wesley Hyatt, who in 1870 answered a \$10,000 challenge to find an alternative to ivory for billiard balls, creating the first manmade plastic. And there's Stephanie Kwolek, who developed what has become Kevlar, the super-material best known in bulletproof vests.

Kwolek's entry actually says she "developed the first liquid crystalline solutions of extended chain aromatic polyamides into high-tenacity and -modulus fibers," which shows the limits to public accessibility of a technical Hall of Fame. Its big appeal is likely to be for people in the industry, or prospective and current students, Malloy said.

More likely to interest the casual passerby is Malloy's still-developing idea of the history of plastic items, including very cool-looking art deco radios from the 1920s, when a type of plastic known as Bakelite first made it possible to create consumer products in various colors. Malloy has some equipment, including what may be the nation's oldest extruder – a machine that spits out long sections of an item, in this case rubber insulation that went around cabling, possibly including the first trans-Atlantic telegraph cable.

The machine dates to 1865 and was originally powered by a water wheel, which gives it a perfect connection to Lowell's embrace of its history with the water-powered textile industry. Malloy hopes to get it set up in the lobby of the new center.

More up-to-date methods of improving plastic's image include tackling its drawbacks, notably waste. Plastics are so varied in molecular makeup – and so hard to separate out, unlike metallic alloys – that recycling and disposal is difficult.

Among other things, UMass Lowell has a number of people doing research into bioplastics, holding out hope for a plastic that can be composted.

David Brooks, *Nasau Telegraph* - Jan 2013



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### Cerritos College & C. Brewer Company

Year after year Cerritos College conducts several Plastics related classes at their campus and in remote locations all over SoCal. Sadly and despite the fact that the classes go generally un-noticed by our industry, the program at Cerritos College remains very near and dear to the hearts of the WPP and the SoCal Society of Plastics Engineers - SPE. In what is hoped to be a shift in the tide for the marketing of their program, C. Brewer Co., teamed up with Cerritos College and invited them into the companies Anaheim facility to set up shop and present to the employees the available programs offered each semester. Luis Mendoza the lead injection molding instructor from Cerritos College said he felt like it was very worthwhile and would like to come back before the next semester. He said the "event was well worth it, we made some valuable contacts." He went on to say that he appreciated the hospitality and expressed an appreciation for the folks he spoke with.

C. Brewer Co., has three facilities in Southern California, Irvine, Ontario and Anaheim. In December, C. Brewer Co. announced that it has joined forces with Balda AG, a German molding technology company with facilities in Europe, Malaysia and as of December 31, 2012 the United States as well! C. Brewer Co. will be the Balda's flag ship in the US. said Chuck Brewer III, known as CBIII around the industry. "Michael (Michael Brewer) and I will remain at the helm and contribute to Balda's US growth strategy said Chuck.

Chris Mitchell a Program Manager at C. Brewer Co., organized the event with Terry Price, the Department Chair at Cerritos

College. "This kind of event needs to take place more often all over our country." said Mitchell, The need for more skilled employees will always be a problem for our industry. "Programs like the ones at Cerritos and CALPOLY Pomona will go away if we don't step up to the plate, this event is a very warm way of sharing in the sentiment of the professional trade groups."

*On Behalf of the  
Western Plastics  
Pioneer and the  
SoCal SPE  
we would like to say*

*"Thank you  
C. Brewer!"*



**Help Support  
SPE - EDUCATION NIGHT  
at Cerritos College –March 21  
See flyer inside!**

