

**Up Front**



Footgolf adds revenue stream at Van Nuys course. **PAGE 3**

**News & Analysis**



Promenade 2035 aims to remake Warner Center. **PAGE 6**

**The List**

Banks, ranked by Valley deposits; Valley credit unions by assets. **PAGE 11**

MAIL TO:



**Skilled Labor:** Forklift operator pulls pallet at AMS Fulfillment in Valencia.

PHOTO BY DAVID SPRAGUE

## TOO-TALL ORDER?

Warehouses face shrinking pool of workers

By **HELEN FLOERSH** Staff Reporter

**C**arlos Giron, director of human resources and security at **AMS Fulfillment Inc.** in Valencia, faced a conundrum this year as he prepared to hire temporary workers for the holiday season. Despite an increase in the number of people seeking employment at the multi-channel distribution and fulfillment center, the pool of qualified applicants seemed to be dwindling.

“There has been a noticeable spike in the number of walk-ins (seeking jobs),” Giron said. “But there’s a difference in the candidates who

are willing to work versus those who are qualified to work.”

AMS management may have found a solution – but it isn’t the only distribution company grappling with a constricted labor market, especially as e-commerce grows for the looming holiday shopping season.

While unemployment figures are near historic lows, retail spending is predicted to reach post-recession highs in November and December. Sales are expected to grow almost 4 percent year-over-

*Please see DISTRIBUTION page 36*

## Long Friendship Leads to Law Firm



PHOTO BY DAVID SPRAGUE

**Memories:** Pomerance, Roxborough reminisce.

**PROFILE:** Buddies built the team at Roxborough Pomerance.

By **STEPHANIE HENKEL** Staff Reporter

After more than 40 years of friendship, **Nicholas Roxborough** and **Drew Pomerance** continue to win cases at their Woodland Hills law firm **Roxborough Pomerance Nye & Adreani LLP**. They founded the firm in 1996 and specialize in employment, insurance and workers’ compensation litigation.

The pair met as 19-year-old students on the campus of the University of California at Berkeley. During their time there, they studied and played softball together — as well as suffered when their apartment burned down. The friendship formed in those years still provides the structure of the firm’s culture today.

*Please see PROFILE page 9*

## Voters Maxed On Measures

**POLITICS:** From transit funding to pot, ballot to affect business.

By **MARK R. MADLER** Staff Reporter

When voters go to the polls on Nov. 8, they will face issues worthy of a Hollywood blockbuster – sex, drugs, the death penalty and big money.

Ballot measures on legalizing marijuana and requiring condoms in adult films are statewide, while Los Angeles County voters will decide on raising the sales tax by a half cent to fund future transportation projects. In Burbank, residents will give the thumbs up or down to a new terminal proposed for Hollywood Burbank Airport.

These initiatives and others on issues such as

*Please see POLITICS page 34*

## Power Failures Prove Perilous

**MEDICAL DEVICES:** St. Jude warning latest battery issue.

By **STEPHANIE HENKEL** Staff Reporter

Medical device manufacturer **St. Jude Medical Inc.** issued an advisory earlier this month, warning patients and doctors of a rare battery defect in some of its cardiac implants.

It wasn’t an isolated incident.

In recent years, other medical device companies with Valley-region operations, including **Medtronic Inc.** and **Boston Scientific Corp.**, have had similar issues with batteries in their heart devices, which resulted in recalls, litigation and even death.

*Please see MEDICAL DEVICES page 35*

### SPECIAL REPORT REAL ESTATE QUARTERLY



As prices of industrial properties go up, Tejon Ranch, just past the northern border of Los Angeles County, has emerged as a low-cost option. Ranch executives Cory Restad and Hugh McMahon, above, have attracted some big companies to the development, but will others make the long haul to Tejon?

**BEGINNING ON PAGE 15**

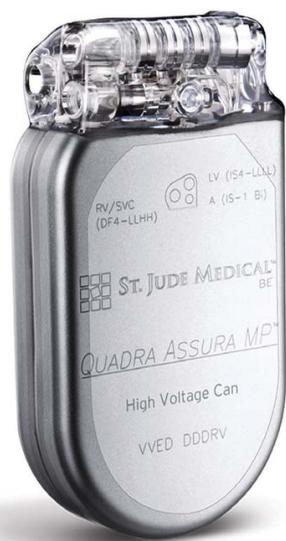
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# Medical Devices: Market Wants Better Batteries



Continued from page 1

Power problems have afflicted the consumer market as well. Earlier this month, **Samsung Electronics Co. Ltd.** issued a worldwide recall of its Galaxy Note 7 cellphone, and over the summer, U.S. regulators recalled more than half a million self-balancing hoverboards – both due to problems with batteries overheating, igniting or exploding.

In the case of St. Jude – which has a heart device manufacturing plant in Sylmar – some of its implantable cardiac defibrillators and cardiac resynchronization therapy defibrillators were affected. These devices, which are used to treat arrhythmia that can cause heart failure, contained batteries that could potentially form lithium clusters, leading to premature battery depletion.

“While the risk of premature battery depletion is low, 0.21 percent, we have partnered with regulatory agencies, leading experts and our medical advisory board to ensure physicians have the information they need to best care for their patients,” said St. Jude Chief Executive **Michael Rousseau** during the company’s third-quarter earnings conference call, which took place Oct. 19.

Typically, these implantable devices issue a vibrating alert to notify the patient that he or she has three months to surgically replace the battery. However, the batteries in the susceptible devices, which include certain models of its Fortify, Quadra and Unify defibrillators, have the potential to fail within 24 hours of the alert. Two patient deaths have been linked to the problem thus far.

## Thermal meltdown

As devices become smaller, lighter and more advanced, more technical demands are being placed on batteries. This creates a challenge for battery manufacturers, which are tasked with producing more power from smaller batteries.

According to **Jeff Ortega**, director of research for silver-zinc battery manufacturer **ZPower Inc.** of Camarillo, this is where the problem lies.

“If you want more energy, you need a bigger battery,” he said. “Requiring batteries to do more and faster with less material, that’s where it’s getting dangerous.”

Batteries come in two general types. There are primary, single-use batteries that come charged and are discarded once depleted. In contrast, rechargeable batteries can be charged hundreds to thousands of times.

**Steven Risser**, research leader of advanced materials for the nonprofit research and development organization **Battelle** of Columbus, Ohio, said a lot of the problems that arise with batteries oc-



PHOTO BY DAVID SPRAGUE

**Charged: Left, St. Jude defibrillator subject to power-depletion notice; right, ZPower’s Jeff Ortega with hearing aid batteries.**

cur while charging.

“Primary batteries are inherently safer,” he said. “A large majority of the failures you can see in batteries occur during the charge cycle. If you think of the Samsung example and some of the other well-known examples, the failure is typically occurring when you charge the battery.”

Lithium batteries have become the industry standard as they are lighter, more powerful and longer lasting than other battery types. However, because they heat during recharging, it’s possible a runaway temperature could melt the battery and the device it powers. Apparently that’s what happened with Samsung’s Galaxy Note 7 phones, leading to the recall.

“They (lithium batteries) did help the battery industry quite a bit, but fundamentally, they are not as safe as older more reliable battery chemistry,” said ZPower’s Ortega.

Implantable cardiac devices use primary batteries, since the devices are surgically embedded in the body and cannot be recharged. In the St. Jude example, the problem was with lithium deposits forming after delivering electricity to the heart, causing premature battery depletion.

Other manufacturers have had battery failures as well.

Last November, Medtronic recalled three models of its InSync III Cardiac Resynchronization Therapy Pacemaker after a glitch was discovered in a fraction of the devices that limited power flow from the battery, preventing the device from receiving the power necessary to function properly.

In 2007, Boston Scientific recalled approximately 73,000 defective implantable cardiac defibrillators due to faulty capacitors that could lead to premature battery depletion and device failure.

In response to the growing number of battery issues, medical device manufacturers and the U.S. Food and Drug Administration have implemented stricter testing regulations, according to **David Hankin**, chief executive of the **Alfred Mann Foundation** in Valencia, a nonprofit research organization that develops medical devices and technologies.

“The testing has become more stringent over the last several years,” Hankin said. “Primarily in response to the hoverboard and Samsung issues, we have been asked to test batteries that previously weren’t tested to the same degree. The regulatory burden has become significantly greater as battery technology has evolved and become more sophisticated.”

But even with more rigorous testing, Battelle’s Risser said there are still concerns.

“One of the challenges here is typically when you see these failures, it’s a very low frequency occurrence. So, you’re always trying to understand, how did those outliers get produced in manufacturing?” he said. “I think it’s very hard as a designer and manufacturer to really do all the testing in the numbers you would need to show you don’t have a one-in-a-million failure.”

**Angela Stark**, a communications officer for the Food and Drug Administration, affirmed that safety in battery-powered medical devices is a high priority at the agency, which is proactively looking for solutions.

“In recent years, the FDA launched a pilot that established a collaborative framework for determining specific operations, design considerations and controls that impact the quality and safety of implantable devices that use batteries,” Stark wrote in an email to the Business Journal. “The FDA is developing an inspectional approach that focuses on those

specific operations, design considerations and controls.”

As for medical device developers, they are incorporating safeguards of their own to mitigate risk. For example, St. Jude’s devices have the vibratory alert as well as a remote monitoring system, which notifies the patient and doctor when there is a problem with the device, including battery issues.

## Alternate electricity

The Mann Foundation’s Hankin, Battelle’s Risser and ZPower’s Ortega all believe the market for smaller, higher-powered batteries is not going away anytime soon.

As companies create more sophisticated devices, the need for safer, more sophisticated batteries will grow. For that reason, Ortega said alternative solutions need to be explored.

His company, ZPower, develops and manufactures rechargeable silver-zinc micro-batteries, which are currently used in hearing aids, medical devices and portable electronics. The company has pioneered silver-zinc battery technology over the years and hopes to continue to grow its applications.

“If you are going to miniaturize, you are going to have to use a different battery or more expensive battery,” he said. “Silver-zinc has higher energy than lithium and is much safer.”

However, moving to a different battery type does present challenges, including adaptation costs and market acceptance. For example, to implement a silver-zinc battery in a device that formerly used a lithium-ion battery requires an adapter or converter as the voltages are different, according to Ortega.

He said the problem should really be addressed during the design phase of the device. Manufacturers should begin by determining the amount of wattage and build the electronics around it.

“We want the device to fit in a small space with all these functions, but the battery is the last thing they design,” Ortega said. “We need to start with the battery and design the product around it, but they do the opposite.”

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DAVID HANKIN, Alfred Mann Foundation