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# Overflow crowds at Harris Corporation meeting

Special guest speakers, Dave Hillman and Kurt Kessel were in the area for a 2 day, NASA sponsored consortium on the topic of Pb-free, Wednesday & Thursday, and both agreed to present elements of their work on the subject at the December Space Coast Chapter lunch meeting, held one day earlier, at the same venue, the Harris Customer Briefing Center (CBC) in Melbourne, FL. The Chapter meeting on Tuesday was very well attended. More than 40 people overflowed the seating capacity of the room, prompting more chairs to accommodate the big crowd. As usual, some of the RSVP's didn't show, but 'walk-ups' outnumbered those who dropped off the RSVP list.

Everyone enjoyed lively & insightful perspective on this ongoing transition in electronics assembly from two recognized industry experts, a delicious lunch catered by the Harris cafeteria staff, and the chance to tour the Harris Technology Center after the meeting. Use of Harris facilities by SMTA is limited to once a year, so this meeting represented our 2011 opportunity, and as expected, it was very well received. Many engineers from Rockwell Collins locally attended the lunch meeting and technology tour that followed.

Others from Lockheed Martin and Harris were there, some of whom were also involved in



*Kurt Kessel & Dave Hillman discuss Pb-free in high reliability applications a day before a NASA-sponsored consortium on the same topic.*



*Front from left - speakers, Kurt Kessler & Dave Hillman next to chapter officers, Joan Carroll and Scott Nelson; Rear - Chapter officers, Eileen Hibbler, Todd Barham and Brian Wright.*

the NASA consortium that followed on Wed/Thurs, also at the CBC. Others came from Virginia and Georgia.

Several new individual members signed up in the wake of

this meeting, as well as a new corporate member, Mercury Marine, who will be sponsoring the next chapter activity, a tour of their facilities in St Cloud, FL next month.



Jay Gorajia  
Mentor Graphics

Mark  
Your  
Calendar

# Dynamic Production Planning

Thursday, March 15<sup>th</sup>, 2012 11:00 AM  
The Knowledge Exchange

5151 Babcock St., Palm Bay, FL 32905

Speaker: Jay Gorajia, Mentor Graphics

Production planners face many challenges in today's manufacturing. As more and more global regions move to high-mix with increasing volume production, the planning task of running multiple products effectively through existing assets and resources poses a significant scheduling challenge.

In many factories an Enterprise Resource Planning system (ERP) creates an initial production schedule. However, a tactical shop-floor schedule is needed to compensate for the real-

time changes of machine availability, material availability, feeder availability and material in the right supply-form. In addition, planners also ensure those products with similar materials can be put together to minimize changeovers and optimize production flow. Having real-time production planning implemented in a factory can achieve the following:

- \* Identify material availability risk, BEFORE committing a product to a production plan.
- \* Minimize changeovers by

grouping products based on materials needed, machine capacity, feeder inventory in a dynamic manner.

\* Easily see the affects of adding "hot" jobs or Engineering Changes into current production schedules on due dates of currently running jobs in the factory.

\* Use "real-time" machine performance as a basis for production planning, not just estimates.

\* Lower inventory and Work-in-process material levels, thereby improving inventory turns.

## Problem Solving Techniques

by Manny Laveria  
Technical Operations Mgr., Mack Technologies  
Six Sigma Master Black Belt

When we are about to solve a problem we act as fast as we can. Unconsciously, we follow a thorough process for problem solving.

If a glass of water falls and makes a mess, immediately we are thinking of ways to pick the parts up, dry the floor, alert others of the broken glass on the floor, and of how to dispose of the glass and water. We also think, in a matter of seconds, about the implications that accident might have, maybe we were taking that water to somebody.

Deming said the thought process for problem solving has four steps: **plan – do – check – act**. And without knowing this, we all do follow these four steps i.e. the glass of water broke.

**Plan:** pick up the water and glass pieces.

**Do:** perform the actual action.

**Check:** verify that all pieces have been picked up and that the floor is dry.

**Act:** Perform the next step and try to prevent another glass from breaking up.

ITT developed years ago a problem solving tool called QI Story. This process, while it follows the **PDCA** cycle, it details the steps as:

- 1) Develop a theme;
- 2) Schedule;
- 3) Assess Current Situation;
- 4) Perform cause-effect analysis;
- 5) Verify root cause;
- 6) Formulate countermeasures;
- 7) Assess countermeasure effectiveness;
- 8) Consider total evaluation;
- 9) Standardize;
- 10) Recommend future actions.

As you can see, very detailed steps. The format  
*See Problem Solving Page 3*

Technical  
Article



# SAVE THE DATE! February 10, 2012



## SMTA Space Coast Chapter 2012 Winter Golf Classic

### Problem Solving

*From Page 2*

did not suggest the tools to be used, only the steps to be followed.

Ford Motor Corporation developed another tool, called 8D. As its name implies, it uses 8 steps. This tool became the standard for automotive industry problem solving method. Other companies have also adopted this method. 8D is part of the ISO 14644 standard.

The 8 steps are:

- 1) Form a team;
- 2) Define the problem;
- 3) Develop a containment plan;
- 4) Determine root causes;
- 5) Select corrective actions;
- 6) Implement and validate the corrective actions;
- 7) Prevent reoccurrence;
- 8) Congratulate the team.

Again, these are very concrete steps and they are also based on the PDCA cycle.

About the same time, GE and Motorola

were working in another problem solving technique, but this one was much more complex and involved because it was not only designed to correct and prevent a defect, but it was also a new mind set.

Six Sigma appeared as a problem solving tool, a philosophy, a state of mind, a cultural change.

Six Sigma described the process as DMAIC for Define, Measure, Analyze, Improve, and Control. These five steps were much shorter than the 10 steps and the 8 steps, but it was much more comprehensive in its structure.

The DMAIC methodology for prob-

lem solving is considered both a tool, and a collection of tools, for problem solving. But the Six Sigma methodology goes beyond solving problems. From the Design for Six Sigma (DFSS) thru the use of Monte Carlo simulation to the heavy statistics involved in the Six Sigma projects, this methodology set itself apart from the other approaches.

While QI Story and 8D are good problem solving techniques, the structure of Six Sigma is much more complete as it defined specific deliverables for each one of the DMAIC steps.

For example the Define phase has this structure:

<b>D - Define Phase: Define the project goals and customer (internal and external) deliverables.</b>	
Define Customers and Requirements (CTQs)	Project Charter
Develop Problem Statement, Goals and Benefits	Process Flowchart
Identify Champion, Process Owner and Team	SIPOC Diagram
Define Resources	Stakeholder Analysis
Evaluate Key Organizational Support	DMAIC Work Breakdown Structure
Develop Project Plan and Milestones	CTQ Definitions
Develop High Level Process Map	Voice of the Customer Gathering

*The deliverables are in the left column, the tools to make this happen are in the right column. Any and all of these can be used, as long as they are very well defined by the team in the project. Six Sigma did not add any new tools. It only collected, organized, grouped existing tools in an optimal fashion. Time and numerous examples, have proven this tool to be a good one to use.*

## Meet an Officer



**Todd Barham**  
Vice President  
Membership

Actually Electronics wasn't supposed to be my career. I hoped to be a rock star! To fund this dream I began my working career building swimming pools and spas during the day. An opportunity to be a major partner in pool construction company came up so I jumped at the chance to be my own boss. Well...me, and the customer, and my creditors, and the county planning office, and my wife. But other than them, I was a free man! All this freedom soon cut into my Rock and Roll Dream, and then I was just a pool man. It was the 80's and the economy was booming. We specialized in the most exotic and elaborate pools that could pass the Dade County Code Enforcement Office. We were successful but differences between me and my partners made me decide to sell my stake and return to college.

To pay for my college I answered an ad in the local paper for a Potting Lab Technician. I did not know what that was exactly, but it sounded like a clean high tech environment. Well it was high tech all right but not very clean. I ruined more shoes, pants and shirts while developing processes and procedures to encapsulate or coat electronics going into harsh environments. Nevertheless, the investment of time and ruined clothes paid off.

When I started at Leterle Manufacturing, there were three owners and I was the only employee. A few years later, we had expanded beyond potting into Electronic Assembly. There were many more changes to come as we expanded into our second factory in Sarasota. Two of the original three partners left the business, the name changed to Engineered Materials, and then finally it became Protek Electronics. We now had several Inc. 500 fastest growing business awards on the wall and a third factory in Costa Rica. Through the mentoring of Jeff Moler, the owner, and Mike Alexy, the VP, I had worked my way through almost every position in the company and settled in as a Program Manager. I enjoyed this position and

stayed there for several years. The one remaining owner decided to sell the business to an investment group to fund other opportunities. After the sale and changes that ensued, I realized the rarity and value of the chemistry that separates a good team from a great team. It was not the same place anymore. This left me anxious and looking for new opportunities.

Not long after I had a chance to join Dennis Mitchell and the team at APM Associates in the Manufacturers Representation Business. I managed the Orlando Office. Dennis's son John Mitchell joined the business a year or so later as the heir apparent. John is a perceptive executive in his own right and we enjoyed the camaraderie and success. I learned a great deal about the global supply chain, and the forces that drive the packaging side of our industry. John and I remain friends to this day even though I decided to move on when he announced a pending merger with another Rep Firm.

I joined the team at MSI in Melbourne Florida as their Director of Business Development. The chemistry was great and we did really well. Over the next ten months, we tripled sales! The President of MSI called the owner and shared the great news. The owner was so thrilled he decided to sell the company. That is right, another Merger and Acquisition. Just my luck. We merged with Creonix LLC in Sarasota, and I joined that team as the Director of Business Development. My stay here would be short due to the opportunity I am currently enjoying. I was recruited to be the Business Development Manager for the Public Safety Division at Kimball Electronics Group for North America. Although I have only been at this position for a few months I am really enjoying the team I work with, as well as the rewards and challenges of covering such a large territory.

And that is how I failed to be a Rock Star!

### Upcoming SMTA EVENTS:

**February 10, 2012—SMTA Space Coast Winter Golf Classic—Duran Golf Club**

**March 15, 2012—11:00AM  
"Dynamic Production Planning" at  
The Knowledge Exchange,  
5151 Babcock St., Palm Bay, FL 32905**

### SMTA Mission Statement

**We are an international network of professionals who build skills, share practical experience and develop solutions in electronic assembly including micro-systems, emerging technologies, and related business operations.**

# Space Coast SMTA descends on Mercury Marine EPM

Recently enlisted, SMTA Corporate Member, Mercury Marine, provided a tour of their electronics and plastics man-

Plant 7. The name Mercury EPM was adopted in 2009 to better describe their product line. Now at over 110,000 square feet, the facility employs 65 permanent and 30 – 40 contract employees, generating sales of approximately \$15mm/yr, supplying components and coils for marine engines, drives, and control systems, all rugged enough to survive the punishing vibrations and harsh conditions of the saltwater environment.

-15 for plant tours. Nearly two dozen injection molding machines, on-site maintenance and machining capacity, an engineering & design department and rigorous operator training trademark this ISO 9001 certified, marine plastics and electronics manufacturing facility just south of Orlando, FL. For more information, go to [www.MercuryEPM.com](http://www.MercuryEPM.com). Deli trays from Publix were used to feed the many attendees both ahead of and then after the plant tours. Shrimp, chicken wings, finger sandwiches & wraps, fruit & cheese and vegetables filled the food bill, and our host graciously sprang for the soft drinks. We thank our newest corporate member for their hospitality and offered to return later this year for a more traditional chapter technical meeting, on a topic of their choice.



Over 50 people descended upon Mercury EPM for a tour of their facilities in St Cloud, FL on Jan 12th.

ufacturing (EPM) facility in St Cloud, FL for the Space Coast Chapter on Thursday, 1/12/12. Over 50 people jammed the facility that just celebrated their 50th anniversary in St Cloud. A big contingent from Harris was there, many shuttled over to St Cloud from their plants in Melbourne, Palm Bay and Malabar, in a company van. Established in 1960 as Mercury Marine Plant 9, they started making injection molded plastic engine parts and aluminum pontoons here, then expanded into electronics manufacturing in 1973 and renamed the facility Mercury Marine

at 3:00 PM, Chapter President, Scott Nelson introduced Mercury Engineer, Jeremy Hopfinger who played a short informational video summarizing their operations, and then he, Vonn Howard and several other plant staff accommodated the large SMTA crowd in groups of 10



Yes, that is a dining room table under power in the early days of Mercury Marine.

## Why join SMTA?

- To be affiliated with the leading industry organization for those involved in SMT and other advanced packaging technologies
- To gain access to the top technologists and experts in the industry
- To receive leading edge technical information
- To acquire information to help you stay competitive

### Membership Categories:

- Global - \$ 1495
- Corporate - \$ 450
- Individual - \$ 75
- Participating - \$ 50
- Associate (Student/Retiree) - \$ 5

For more information go to [www.smta.org](http://www.smta.org)

## ADVERTISING Space Available

One Issue:	Three issues:	Six issues:
Business Card: \$25	Business Card: \$50	Business Card: \$100
1/4 Page: \$50	1/4 Page: \$125	1/4 Page: \$200

Highlight your company by advertising in the SMTA Newsletter.

Six issues are planned for each year  
Contact Ken Lawrence for more information.

(321) 394-4143 - [klawrence@macktech.com](mailto:klawrence@macktech.com)