



ACM

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ACM UPDATE

June 30, 2011

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The ACM Update & Calendar (and previous issues) are also available for viewing on the ACM website.

Welcome New ACM Member

Atlantic Fasteners

49 Heywood Avenue

West Springfield, MA 01090

www.atlanticfasteners.com

Tony Peterson, President

Future WorkForce Opportunities Fair

8:30am-Noon

and

Tradeshow

1:00pm-7:00pm

Wednesday, October 19, 2011

Hartford/Windsor Airport MARRIOTT Hotel

I-91 Exit 38 - Day Hill Road, Windsor

See Website for Registration Information!

Guest Speaker, to be Announced

Business Development

- The Business Development Team meeting held at Trumpf Inc. (Farmington) on June 28th featured two special speakers, Al Altieri, Vice President, Supply Management, Sikorsky Aircraft and Connecticut's Governor Dannel Malloy. Attendance at this meeting surpassed expectations with 68 persons representing 39 ACM member firms participating! Bruce Fiedorowicz (Volvo Aero CT), Business Team Leader, thanked our hosts at Trumpf for supporting a meeting of this size and introduced our guests.



Mr. Altieri, a Sikorsky Aircraft employee for more than 30 years presented the Team with a business overview of Sikorsky and its Supply Chain Management. Highlights of Mr. Altieri's comments:

- Sikorsky Aircraft is a \$7B business, having grown \$5B in annual sales over the past six years. During this period, Sikorsky has grown its market share and is now the largest helicopter company in the world. Other global helicopter companies have also grown during this time, but none to the size and profitability of Sikorsky.
- Sikorsky's goals include increasing their U.S. Government business, winning new Dept. of Defense (DOD) competitions, increasing productivity and lowering costs thru the UTC Gold Gold program and developing new and differentiating aircraft technologies.
- Since 2006, the DOD has cancelled three major new helicopter programs; only Sikorsky's CH53-K heavy lift helicopter program has performed and survived this period.
- The global marketplace represents an opportunity for over \$70billion in sales over the next ten years, split equally between international military and civilian aircraft.
- Relatively new to the global market are Russian-built helicopters, representing ~\$2.5B in annual sales.
- Future U.S. DOD competitions:

“Presidential Helicopter” – Sikorsky has teamed with Lockheed-Martin, who will provide the aircraft's specialized mission systems. Competition is not expected to take place until after next year's Presidential election, with source selection expected in 2013.

“Armed Aerial Scout” will procure ~900 aircraft with development beginning in 2015 and production in ~2022. Sikorsky likely will offer an aircraft based on the X-2 concept, providing benefit in speed and hot & high operating capability.

-Sikorsky's X-2 helicopter, featuring counter-rotating main rotors and an aft pusher prop, was fully developed and flight demonstrated using internal funds; the demo aircraft recently set the world speed record of >250 knots, winning for Sikorsky the 100th annual Collier Trophy.

-Advanced engineering development will continue in improving aircraft speed, automated health monitoring and autonomous and remote piloted systems.

-Supply Chain Management: Sikorsky spends ~\$3.4 billion annually. Of the current 600 suppliers, 150 companies receive 80% of this spend. Connecticut and Massachusetts have ~130 suppliers who receive over \$400 million of the \$3.4 billion annual spend. The Make-Buy ratio has changed from 60%-40% in 1990 to 20%-80% today.

-UTC Supplier Gold status should be a major goal for suppliers. Currently, 14 global Sikorsky suppliers have reached Gold status with Aero Gear (Windsor) the only ACM firm attaining this



Al P. Altieri
Vice President
Supply Management



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level. Suppliers reaching the Gold level are often rewarded with added business; when looking for new sources, Sikorsky seeks those suppliers having already attained UTC Gold status (with other divisions). The key to business opportunities is for suppliers to achieve UTC Gold status; *“Gold is the differentiator”*.

Following his presentation, Mr. Altieri took questions and the Team thanked Mr. Altieri for his highly informative and candid presentation.

A number of ACM firms attended the Paris Airshow during the week of June 20th; some participated as part of Connecticut’s State booth and others, independently. Members attending reported: “a lot of positive energy”; “the Show was above the upside of what people expected”; “a great way to meet with European customers in a concentrated amount of time, it’s important for them to have us come over”; “Tier One customers are very excited about the market prospects, which bodes well for all of us”; “hoping to change the psychology from a part-buyer’s market to part-seller’s market, as manufacturing capacity becomes the issue”; “pricing pressure isn’t going away”.

Regarding the State of Connecticut’s booth, members indicated “other States commented, ‘*look at the traffic at the CT State booth*’”; “the multi-company approach at CT’s booth drives the traffic”; “CT is the only State having manufacturing companies present, not just economic development people”.

ACM’s Tradeshow is scheduled for Wednesday, October 19th at the Marriott Hotel in Windsor; information regarding the Show, for both ACM members and Customers, is posted on the ACM website. Bruce and Al Samuel briefed on the status of planning for the Show and requested members volunteer to contact their customers to solicit their intent to attend. Additionally, members were asked to contact their State & Federal representatives.

Connecticut Governor Dannel Malloy (*photo, right*) was introduced to ACM members by Trumpf’s President, Rolf Biekert. Making ACM the first manufacturing organization he met as part of his “*Jobs Tour*”, Governor Malloy addressed the group and answered questions for thirty minutes. He indicated his understanding of the importance of aerospace to the State, calling it one of our ‘growth industries’ and looked forward to building a better and stronger relationship between our industry and the State. In commenting on electrical energy rates, Governor Malloy advised of his desire to get CT’s electric costs in-line with the rest of New England, saying “we *will* lower electric rates!” Team members thanked the Governor for the State’s support of international airshows. A video of Governor Malloy’s meeting is available on the ACM website “ACM News” page (<http://www.aerospacecomponents.org/pr.html>) .



Following the Governor, Dept. of Economic & Community Development Commissioner Catherine Smith (*photo, right*) addressed the Team and advised her office welcomed direct contact regarding issues and/or suggestions to improve the economic environment for small business.



- The next meeting of the Business Development Team will take place on Wednesday, August 24th at CERC, Rocky Hill.

Good news from our Customers.....



Boeing Aims at Smooth Ramp-up

By Jon Ostrower – Jun 14, 2011

SOURCE: Flight International

If all goes according to plan, when 2014 dawns Boeing will move to a production rate under which it completes one commercial aircraft every 12 hours. The estimated annual total of around 720 commercial aircraft would be a record for the airframer, at more than 40% higher than the 485-500 deliveries forecast for 2011 and 154% above the output from 2004.

Production rates are being pushed up as a consequence of the Airbus-Boeing duopoly's desire to thwart new entrants, combined with a general aerospace market upswing. "We're sold out on the 737 through 2015; we're sold out on the 787 through 2019. And one of the biggest challenges that we have is having the slots for our customers, and that's why we're going up in rate," says Jim Albaugh, chief executive of Boeing Commercial Airplanes.

Bloomberg

GE Sees Record 2012 Jet-Engine Output on Efficiency Demand

By Rachel Layne - Jun 15, 2011

SOURCE: Bloomberg ANYWHERE

General Electric Co. (GE)'s aviation unit expects record jet-engine production in the next 18 months as demand rises for more fuel-efficient aircraft.

Crude oil hovering around \$100 a barrel is spurring purchases of the newest, most economical engines even as it crimps airlines' finances, GE Aviation Chief Executive Officer David Joyce said in a telephone interview.

"In this kind of environment it's almost Darwinian --the best equipment will survive," said Joyce, whose Evendale, Ohio- based division is the world's biggest jet-engine maker.

GE engine production for commercial planes will rise about 13 percent to 2,480 in 2012, according to the company, and output including military models will climb 5 percent to a record 3,370. GE Aviation's order book is "very strong" across all regions, Joyce said.

By 2015, GE and its partners will have 30,000 engines installed on planes, 62 percent more than a decade earlier, the company estimated. Parts and service sales, which produce more of engine-makers' profits than the turbines themselves, will rise as the equipment ages and requires maintenance. About 40 percent of GE Aviation engines now in use have yet to undergo their first overhaul.



Pratt & Whitney and International Lease Finance Corporation Finalize Agreement for PurePower® PW1100G Engines on Airbus A320neo Order

PARIS AIR SHOW – June 20, 2011 – Pratt & Whitney and International Lease Finance Corporation signed a definitive agreement concerning engines for up to 100 Airbus A320neo family aircraft ordered by International Lease Finance Corporation (ILFC) as part of an order announced in early March. The agreement includes 120 firm PurePower PW1100G engines for 60 aircraft with deliveries which may occur as early as 2015.

“We’re encouraged by the market traction of the PurePower geared turbofan engine as a result of its many economic and environmental benefits,” said Henri Courpron, ILFC chief executive officer. “We are confident our customers will seek out this competitive advantage offered with the lower operating costs of the PW1100G engine.”

CIT Selects Pratt & Whitney PurePower® PW1100G Engines to Power Up to 50 Airbus A320neo Aircraft Family

NEW YORK & PARIS – June 21, 2011 – CIT Group Inc. (NYSE: CIT), a global leader in transportation finance, today announced from the 49th International Paris Air Show that CIT Aerospace has selected Pratt & Whitney PurePower PW1100G engines for its order of the Airbus A320neo family aircraft. The deal includes 60 PW1100G engines and options for up to 40 additional engines installed on aircraft. Deliveries are scheduled to start in 2016.

Pratt & Whitney to Provide PurePower® PW1500G Engines on up to 30 Bombardier CSeries Aircraft for Korean Air

PARIS AIR SHOW, June 21, 2011 – Pratt & Whitney will power up to 30 Bombardier CSeries®* aircraft based on a Letter of Intent (LOI) signed by Korean Air. The LOI covers 10 firm and 10 option aircraft, as well as purchase rights for an additional 10. Up to 60 PW1500G series engines and two spare engines would power the aircraft.

Each Bombardier CSeries aircraft is powered by two PurePower PW1500G series engines. The PurePower PW1500G series engines use an advanced gear system allowing the engine’s fan to operate at a different speed than the low-pressure compressor and turbine. The combination of the gear system and an all-new advanced core deliver double-digit improvements in fuel efficiency, environmental emissions and noise.



CFM enregistre 11 milliards de dollars de commandes de moteurs LEAP

LE BOURGET – 23 June 2011– CFM International has booked firm orders for 910 LEAP-X1A engines to power 455 Airbus A320neo aircraft. The engine orders are valued at more than \$11 billion U.S. at list price. In addition to powering the A320neo, CFM also provides the exclusive Western powerplant for China’s COMAC 150-seater C919 aircraft. The LEAP-X1C has been ordered to power 100 C919 aircraft to date.

- AirAsia placed the single largest order in aviation history, selecting the advanced LEAP engine to power 200 Airbus A320neo aircraft ;
- CIT Aerospace placed an order for LEAP engines to power 15 A320neos ;
- GE Capital Aviation Services (GECAS) ordered engines to power 60 A320neos ;
- ILFC selected the LEAP engine to power 40 A320s ;
- Republic Airways Holdings, the parent company of U.S.-based Frontier Airlines, selected the LEAP-X1A to power 40 A319neo and 40 A320neo aircraft ;
- SAS chose the LEAP engine to power 30 A320neos ;
- Virgin America officially launched the LEAP engine on 15 June with an order for engines to power 30 A320neo aircraft.

Progressive Manufacturing

• The Progressive Manufacturing Team met at Aerospace Techniques (Middletown) on June 11th with “Energy Management” as the main topic of discussion. Judy Wlodarczyk and Robert Krovontka, both of Connstep Inc., led the presentation and discussion addressing broad issues regarding how energy is measured, electric energy cost, billing and the effect of peak demand, and conservation vs. efficiency. In discussing energy conservation and efficiency, Robert noted that the best method of conservation is control of ON/OFF of equipment, while ‘right-sizing’ electrical motors is one of the best methods to assure efficient use of energy. Robert provided examples of cost savings (or increases) related to the simple change of the room thermostat, per degree up or down. He also demonstrated some waste detection tools, a “kill-a watt” meter to measure electric usage from simple plug in devices, a digital light meter to show the effect of subdued lighting and properly designed lighting systems, and an ‘ultra probe’ sound detection device to sense leaking air or gas lines from a great distance.

Judy and Robert conduct an energy saving program, “*Training the Green Collar Champion*”, a three day lean event available on a cost-shared basis under a grant from the State of Connecticut (CT Green Jobs Partnership Grant). Included in this program is energy management and machine excellence, development of a conservation action plan and training in how to look for green opportunities and making changes. Attendees are certified following completion of the program which also includes a follow-on visit 45 days after the actual event.

For additional information on energy management and the grant, please contact Judy Wlodarczyk at jwladarczyk@connstep.org or Robert Kravontka at rkravontka@connstep.org or 203-510-8375 (cel). Slides of Robert and Judy’s presentation are available to ACM members on the website; please go to Members Only, Progressive Manufacturing and see: [Energy Mgmt Present to Lean Team 6-16-11.pdf](#).

• The Progressive Manufacturing Team will hold its next meeting on Monday, August 22nd at 8:00am at Fuss & O’Neill Manufacturing Solutions in Manchester. At this meeting, John Kravontka, President of F&ON, will discuss “**Preventative Maintenance and Profit\$**”. Preventive Maintenance (PM) sounds easy and very simple. But PM, if deferred, ignored or performed incorrectly, will lead to catastrophic failure of equipment. A typical failure results in a 10X cost as compared to performing the PM. The world news is full of articles supporting this, such as oil leaks in the Gulf of Mexico, explosions in chemical plants and refineries, OSHA fines, food product recalls for salmonella or contamination, etc. Typical issues when deferring, ignoring or performing poor PM are:

- Not enough Maintenance personnel to complete PM
- Not enough time - stuck in the breakdown mode of operation
- Senior Management viewing Maintenance as a cost to be minimized
- Performing calendar PM – majority of equipment does not fail based on time.
- PM being very generic
- Typical PM is 50% waste (adds no value) 25% causes damage to equipment
- Not measuring the effectiveness of PM
- Knowledge/Skills of Maintenance personnel not current

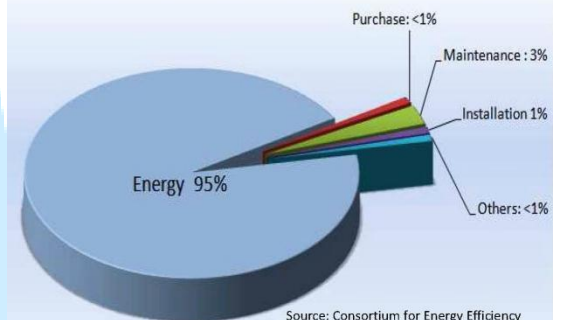
This presentation will cover the points listed above and how to effectively counteract them.

Energy Reduction Checklist

- Gas (Air) Systems
 - Leaks
 - Can it be turned off? For how long?
- Building Systems
 - Hot spots/cool spots = inefficient HVAC systems
 - i.e. Dust collectors running when not needed
- Process Equipment
 - Motor alignment, size, temperature range, connections
 - Can it be shut down? For how long?
 - Oils/greases/metal working fluids
- Office
 - Lighting
 - Office equipment
 - Space heaters

CONNSTEP

Motor Management Costs



Benefits for participants of this session are:

- Understanding what happens when PM is deferred
- Understanding what happens when PM is not done properly
- Understanding that a PM performed correctly will lead to improved equipment performance and reduced maintenance costs
- Develop a strategy to overcome the issues surrounding poor performing PM

The audience for this presentation, in addition to all of our Progressive Manufacturing Team members is the VP of Manufacturing, Facility Managers, Maintenance Managers, Production and Maintenance supervisors, Safety and Quality professionals. This audience will come away from this presentation with some tools and techniques that will help them to perform improved and more consistent Preventive Maintenance. Examples of tools are; Maintenance Mapping (find and eliminate waste in the maintenance process), Maintenance Measures, PM Optimization techniques, and an understanding of Condition Based PM. PLEASE PLAN TO ATTEND!!

**A Message from John Shook of the Lean Enterprise Institute
commenting on
"How to Go to the Gemba: Go See, Ask Why, Show Respect"**

Everyone who has caught the lean bug shares at least one symptom: we love to observe work. We love to go to the gemba and watch the value creating work, the real work of the business.

Since joining LEI less than a year ago, I have accepted invitations to visit your gemba on five (whew!) continents. Concluding a recent gemba walk, the question came up, "What do you look for ... ?" Here are some guidelines I use when doing a gemba walk as an outside advisor.

Go See, Ask Why, Show Respect

The words of Toyota Chairman Fujio Cho, "Go see, ask why, show respect" are now famous as basic lean principles. I first heard the words from Mr. Cho himself when I was deputy general manager during the early 1990s start-up of the Toyota Supplier Support Center in the USA. Each week began with a meeting with Mr. Cho, who was acting as advisor, to discuss activities, progress, problems, and plans.

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Consolidated Purchasing

- The Purchasing Team met on June 2nd at Adchem Manufacturing Technologies, Manchester. Team members addressed procurement concerns and continued their discussion on the value of having a local 'milk run' delivery service to provide quicker and less costly movement of material and parts around the Connecticut area. Michael Polo has taken the action regarding a small transport firm he has recommended, suggesting this firm make initial contact with about six ACM firms who provide manufacturing support services, to solicit interest in setting up a pilot program. Should the idea take root with these firms, additional ACM companies would likely join in the service.
- The next meeting of the Purchasing Team will take place on Thursday, August 18th at 8:00am at Barnes Aerospace Windsor Division, Windsor.
- Suppliers having Agreements with ACM are:

	<u>Supplier:</u>	<u>Key Contact:</u>	<u>Telephone:</u>
Shop Supplies, Abrasives, Cutting Tools, etc	Turtle & Hughes	Dave Howard	203-497-1555
Raw Materials: Nickel, Cobalt, Titanium – Sheet, Plate & Bar Stock	Aerodyne Alloys	Kirk Smallidge	860-508-1271

Workforce Development

● The WorkForce Development Team met on June 14th at Sterling Engineering (Barkhamsted). As our upcoming “*Future WorkForce Opportunities*” Fair nears on October 19th, the Team is spending most of its efforts on planning and encouraging schools systems to put the event on their Fall calendar. Information has already been sent to all schools in the CT Technical High School system, as well as local schools in each town in which an ACM firm has a facility. Early responses indicate 250-300 students will attend, which conveys the likelihood of 300-400 students, exceeding the attendance at last year’s successful event. Each Team member has volunteered to personally contact school systems. Redundancy in this case is good and members not having attended this Team meeting are also asked to contact local high schools and provide information to encourage attendance. The ACM website provides information about this year’s Fair, as well as photos of the October 2010 event. Members participating at the Fair are requested to bring along handouts for the students.....materials about their company, souvenir give-aways, etc....and it’s not too early to order these materials! And ACM will again be handing out our popular Tee shirts to the students.

The WorkForce Development Team has requested three courses be scheduled to begin in late September, 2011. **ACM is soliciting member firms to host these courses**. The requirement to host is to provide a quiet room seating approx. 15-18 students in a suitable environment for training. The following courses are planned:

--**BluePrint Reading** – first session on Tuesday, September 20th, 3:00pm-5:00pm, ten consecutive Tuesday’s (20 hours, total)

--**First Line Supervisor’s Training** – first session on Wednesday, September 21st, 3:00pm-5:00pm, twelve consecutive Wednesday’s (24 hours, total)

--**Shop Math Level One** – first session on Thursday, September 22nd, 3:00pm-5:00pm, nine consecutive Thursday’s (18 hours, total)

The syllabus for each course is available on the ACM website; go to Members Only, Workforce Development folder and [WFD Course Syllabus.pdf](#).

Please respond with your interest in hosting one of these courses and advise of the approx. number of your employees likely to register for the course. A subsequent email will formally announce each course, provide the location, cost and request registration reservations.

● The next meeting of the WorkForce Development Team will take place on Tuesday, August 16th at 8:00am at Aero Gear, Windsor. Please plan to attend and help in the final planning of our Fall course schedule and the “*Future WorkForce Opportunities*” Fair.

News from ACM Members

Please forward significant company news and announcements to Allen Samuel at alsamuel@acm-ct.org for posting on the ACM website and publication in the UPDATE

Volvo Aero Participates in the new PurePower® PW1100G Engine for the Airbus A320neo Family

6/22/2011 Corporate Communications, Volvo Aero

Volvo Aero has signed an agreement with the aircraft engine manufacturer Pratt & Whitney regarding its participation in Pratt & Whitney's PurePower PW1100G engine. Volvo Aero will develop and manufacture two important components for the new PW1100G engine designed for the A320neo family, an updated version of the Airbus A320.

The PW1100G engine is a part of Pratt & Whitney's Next Generation Product Family of engines which contain geared turbofan technology.

Volvo Aero has previously participated in a technology and development project with Pratt & Whitney on the Geared Turbofan (GTF) engine concept, which enables better optimization of engine components. The GTF development and testing thus far supports the expected results in significant reductions in fuel consumption, emissions, noise and operating costs. Volvo Aero has developed advanced light-weight technologies for its components that will be applied in this new engine.

The agreement was signed at the Paris International Air Show in Le Bourget, and Volvo Aero becomes a partner in the new PW1100G engine program. Volvo Aero will be responsible for the design and manufacture of TEC (Turbine Exhaust Case) and IMC (Intermediate Case).

The PW1100G engine will be installed in an upgraded version of the Airbus A320. For Volvo Aero, the deal is expected to generate sales of around 40 billion SEK over a 50 year period. Sales are expected to ramp up in the second half of this decade.

"We are very pleased to have reached this agreement with Pratt & Whitney because the single aisle segment is a strategically important segment for Volvo Aero. Furthermore, we know that this engine will contribute to a better environment through lower fuel consumption and less noise," comments Staffan Zackrisson, President and CEO at Volvo Aero.

An engine with a geared turbofan architecture means that the fan runs at a different speed to the low pressure turbine which results in considerably improved fuel efficiency and reduced noise levels. The GTF engine is expected to reduce fuel consumption, carbon dioxide and nitric oxide emissions, and noise, as well as lowering running and operating costs significantly.

The Turbine Exhaust Case (TEC) will be manufactured by Volvo Aero in Trollhättan, while the Intermediate Case (IMC) will be manufactured by VACT in Newington.

The agreement also includes manufacture of fan case mountings for the Bombardier CSeries and MRJ, Mitsubishi Regional Jet, which will be manufactured by VACT in Newington. This is yet another step in the strategy of expanding within the fan case segment. "I am pleased to welcome Volvo Aero to participate in another PurePower engine variant. Potential sales of the PW1100G engine are very promising indeed," says Todd Kallman, President Commercial Engines & Global Services at Pratt & Whitney.

Exponential growth for Volvo Aero CT (VACT) Fan Case Business

6/19/2011 Corporate Communications, Volvo Aero

In the span of just five years, VACT has grown its large Fan Case business segment from virtually zero to being one of the market's dominant players. "We continue to add to our growing portfolio" states Joakim Andersson, President, VACT.

"We have signed a number of significant agreements over the past couple of years that have given us 'critical mass' in this market sector".

The latest addition to VACT's Fan Case business is the GP7000, the power plant for the world's largest commercial aircraft, the Airbus A380. VACT also manufactures the Trent 900 Fan Case giving

them an enviable position of having responsibility for both engine variants on the A380.

Similarly, Fan Case agreements are also in place for both engine alternatives on the new Boeing 787 Dreamliner, the Rolls-Royce Trent 1000 and the GENx 1B engine model. Additionally, the company is also under contract to manufacture Fan Cases for the GENx 2B powering the new Boeing 747-8. Among other Fan Cases currently within the VACT portfolio are the GE90 Fan Case for the Boeing 777 and the V2500 Fan Case for the single isle Airbus family.

“We are both pleased and proud to have secured agreements with all the major OEM engine manufacturers on Fan Cases for each of their new engine platforms. This is exactly what we have worked towards achieving in our expansion plans,” explains Andersson.

VACT is actively pursuing additional Fan Case opportunities and expects new agreements executed in the near future.

In just these few years, Fan Case manufacturing has become the most important piece of VACT’s business and currently accounts for approximately 40% of sales. This figure is expected to rise to 75% by 2015. **According to Joakim Andersson, it is vitally important for VACT’s growth that they work closely with numerous other aerospace companies in the region to make up their supply base.**

“We are fortunate to have a large network of component and process suppliers locally. This was one of the driving factors in Volvo Aero locating in Connecticut”.

The local aerospace cluster is Aerospace Components Manufacturers, www.aerospacecomponents.org, was established officially in 1999 and currently boasts over 68 members all within miles of VACT’s Newington campus.

“It’s an excellent business model where we can rely on other companies’ core competencies to supplement our capabilities and capacity. I believe that this is the future, but it demands that you have a good grasp on supply chain management,” says Joakim Andersson.



“How to Go to the Gemba: Go See, Ask Why, Show Respect”

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Go see, ask why, show respect is the way we turn the philosophy of scientific empiricism into actual behavior. We go observe what is really happening (at the gemba where the work takes place), while showing respect to the people involved, especially the people who do the real value-creating work of the business. So now let's do a job breakdown.

Go See

It starts with "go see," so how do you go see? What do you look for?

We want to understand every gemba from the standpoints of *Purpose, Process, and People*. Asked most simply and directly: is management working to align people and process to achieve purpose? Are processes designed to enable people to work toward achieving organizational purpose? Here are some questions to dig deeper into this:

1. What is the purpose of this gemba and of the broader organization? Are they aligned? Can you see that alignment in the process and the people?
2. Are processes designed consistently to achieve the purpose?
3. Are people engaged in working to achieve the purpose, and are they supported in this work by the processes?

Although purpose ostensibly comes first, I usually focus first on process when walking a gemba. I often begin by asking just a few simple, direct questions about purpose. What is the organization or individual trying to accomplish - objectives and problems - in general, and/or TODAY. After this we immediately begin our walk, observing and asking questions focusing on the process. Later, I always circle back to deeper questions of purpose, objectives, and problems.

Observing for process and people dimensions means seeking to understand the gemba (whether the specific gemba being visited or the broader organization) as a socio-technical system. I personally like to try to understand the technical side first. Though I observe both dimensions in parallel, if I can first understand what this gemba is trying to accomplish technically or mechanically - grasping the technical side of their problem - then I can easily conceive the best questions to ask to help them better understand where their real problems are what they need to do next.

So, based on the current situation of your gemba, I can begin to consider exactly what this gemba and these people need to learn. Then, I can think of how I can help them learn it.

Ask Why

Having gone to see, now standing at the gemba, how do we go about understanding or analyzing the technical or process side of understanding the gemba-as-system? First, a thought-question for you: *What did you look for last time you went to the gemba? What do you look for whenever you go to the gemba?*

Here are four ways people view work through very different "lean lenses":

1. Solution view

- a. Look for opportunities to use lean tools

-You must be careful here. Use of a tool for the tool's sake is one of the most common reasons for failure of lean initiatives large or small and once the pattern has been set is most difficult to overcome

-Remember that lean thinking is about never jumping to conclusions or solutions, so the solution view isn't really a lean view at all. But, it is a very common amongst well-intentioned and even highly experienced practitioners.

2. Waste view

- a. Look for waste

- The seven (or eight) types
- Especially overproduction
- Other types

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“How to Go to the Gemba: Go See, Ask Why, Show Respect”

--continued from Page 11--

3. Problem View

- a. Start with the worksite objectives.
 - Confirm: "What are you trying to achieve?"
 - Ask: "Why can't you?"
- b. Focus on system, quality, delivery, cost, morale
 - Problems: the presenting symptom or problem in performance
 - Causes: points of cause in the work

4. Kaizen view - seek patterns, forms, tools, routines, "kata"

- a. Apply at the system level - "system kaizen"
 - Value-stream mapping plus material and information flow for system design
- b. Apply at the system level - "point kaizen"
 - Standardized work and daily kaizen

Both the kaizen view and problem view are solidly founded on PDCA (plan, do, check, act). The problem view is flexible and requires no specific lean knowledge. But, it can take a long time to see results, and the path may be very uncertain. It is enabled by a robust problem-solving process that can take many specific forms. Toyota's eight-step (Toyota Business Process - TBP) process is a very good one. Seek it out and give it a try.

Like the problem view, the kaizen view embodies PDCA, but it also looks to establish specific (whether new or well-understood) patterns of behaviors. These patterns - *kata* - lead to learning, continuous improvement, and innovation of new patterns. The concept is to "enter through form" - to master the behavior patterns to make them habitual in order to learn the thinking.

To observe with a kaizen view, it is useful to start your gemba walk as close as possible to the customer and work your way back, considering "what would flow look like?" throughout. Think system as well as individual process. The patterns, routines, and tools of the Toyota Production System are designed to be structures for improvement and learning. They help us see clearly and understand and also help us teach and mentor. That is, they are just the things (solutions and means of deriving solutions) that we teach, the vehicles through which we can ask questions to teach and mentor.

Unfortunately, I still find the kaizen view to be sorely missing in most gemba walks I observe. And yet I am pleased that more lean thinkers are moving beyond the "solutions lens" (which is not really lean thinking at all), past the simple waste lens (yes, we don't want waste, but we need to seek understanding of WHY the waste is there and WHAT we can do about the CAUSES of the waste), and many are working firmly within a problem-solving framework. This represents great progress for the lean community.

Asking Questions at the Gemba

Although it is the second element of "go see, ask why, show respect," "why?" is not actually the first question we want to ask at the gemba. First ask what, then why, then what if ... and, finally, why not.

The purpose and process of asking why:

Stand and observe. Your car has a GPS; you need a GTS - a Grasp The Situation process. We need to train our lean eyes to see and minds simply to ask what first. Asking why - to diagnose - comes later. As David Verble says, "Ask no "why?" before its time."

Show Respect

When going to see, lean thinking mandates (yes, mandates) that we show respect to all the people, especially the people who do the value-creating work of the business, the activities that create value for customers. When visiting any gemba, through showing respect for the workers we also show respect for customers and the company, analyzing for evidence of disconnects between stated objectives, perhaps expressed in the organization's "true north" visions statements, versus what we actually observed at the gemba.

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Always look for signs of disrespect toward:

1. Workers - especially muri or overburden
2. Customers - poor delivery or poor quality - especially from controllable mura or fluctuation and variation
3. The enterprise itself - found in problems and muda or waste, in all its forms

But, the worker is the first and best place to look. Think of this flow:

Respect People -> Rely on People -> Develop People -> Challenge People

We respect people because we believe it's the right thing to do *and* simply because it makes good business sense.

Think of building your operating system from the value-creating worker out. Observe the worker and steadily take away each and every bit of nonvalue-creating "work." Continue doing that, engaging the worker in the process, until nothing is left except value-creating work, until all the waste has been eliminated and nonvalue-creating work isolated and taken away, distributed to support operations.

To achieve that level of lean-ness, you will find that you will simply have to engage the hearts and minds of the people doing the work. You will have to rely on them, just as you have to rely on them to come to work and do their job so you can get paid by your customers.

Once we've recognized that we have no choice but to rely on our employees, it is easy to see the next step, which is that we *need* to develop them. As the lean saying goes, "Before we make product, we make people."

Which leads directly to the most characteristically lean dimension of respect for people: challenge. Respect for people is often mistaken for establishing the enlightened modern democratic workplace in which everyone is treated with great deference, politically correct politeness. Yet, respect demands that we challenge each other to be the best that we can be. The skill of setting challenging expectations is one of the most important skills of lean leadership.

Most of all, respect means doing what we can to make things better for workers, which starts by not making things worse. And we still find leaders doing more of their share of damage even as they try to help!

Which leads to the first rule of gemba walking: "Do no harm!"

A Note on Gemba-Based Leadership

Everywhere we go, we still find overwhelming evidence that the conventional view of leader as answerman (or woman) - the leader who always has a ready answer and whose answer always right - remains strong. And, certainly, the leader's role in providing vision, direction, showing the path to true north is foundational to lean success.

But, we also see overwhelming evidence of the damage done by the broadcast of executive answers that reverberate negatively throughout the organization. I should emphasize that the above guidelines were my own, based on doing gemba visits as an invited, outside observer. It's vital for each of us to consider first, depending on where you work in your organization, where is your real gemba? It's easy for leaders to cause more trouble than they alleviate - CEOs who try to directly eliminate waste often cause more waste than they prevent!

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Here are two simple sets of questions for you:

We already asked: "What did you look for the last time you went to the gemba?" "What *do* you look for (generally) when you go to the gemba?"

Then ask, "What did you *do*?"

And the subsequent set of questions:

"What will you look for next time you go to the gemba?" "What *will* you look for (generally) when you go to the gemba?" "What will you do?"

In other words, ask what will you do to help?

Whenever prescriptions are issued from afar, bad things are likely to happen. The best antidote we know? Confirm what is actually happening, as it is happening. Diagnose and prescribe as close in time and place as possible to the work. We think it's one of the most important principles and practices of lean management.

John Shook

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