



# ASME International Akron Section September, 2008 Newsletter

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Scott Lindner	2009
(open)	2010
Steve Nuspl, P.E.	2010
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David Houser, P.E.	2011
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Josh Wong, Ph.D.	2011

University of Akron student section  
Jerry Drummond, Ph.D. – Advisor

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## Chair's Corner

Hello! Welcome back from the Summer Break. I hope everyone had a good summer. I look forward continuing our Akron Section, ASME history of good activities, with meetings, tours, and seminars that interest you, our members.

Your suggestions are needed, as we go forward, planning activities for the 2008-2009 year ahead.

Our next activity will be Thur., Sept. 4th, Akron/CAM ASME Sopwith Triplane MAPS mtg. It should be a really interesting program!

In October, we will have a dinner / tour, at Great Lakes Brewing Co. in Cleveland, Thurs. Oct. 16th. It should be an enjoyable evening, with discussions on Veggie Powered Vehicles, Recycling, Energy Designs for buildings and how GLBC has put those "Green" ideas into practice.

My aim is to make your membership in ASME, and Akron Section in particular, as rewarding as possible, with these goals in mind:

- Activities & Tours that are FUN & INTERESTING.
- Opportunities to meet other Engineers & like minded folks, for networking, and building relationships.
- Strengthening the links between the Akron Univ. Student Section ASME with our Senior Section ASME.
- A place to get CPD hours, for maintaining your PE license.

( as a reminder, to maintain your Ohio PE license, each year, you need to complete 15 hours of Continuing Professional Development [CPD] hours relevant to the practice of engineering & include technical, ethical or managerial material. )

Please call or e-mail me, or others on our board, with YOUR ideas, for meetings, tours, and topics for training.

Thanks!

Mark Burrows, Incoming Chair, Akron Section, ASME  
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# Akron and CAM (Canton-Alliance-Massillon) ASME Fall Kick-off Meeting: Sopwith Triplane Exhibit and Presentation at MAPS

Date: Thursday, September 4, 2008

Time: 5:30 PM social hour, 6:30 PM dinner, 7:30 PM Sopwith Triplane presentation

Where: Military Aircraft Preservation Society (MAPS) Air Museum, 2260 International Parkway, North Canton, Ohio (adjacent to Akron-Canton Airport). Enter through the CAK International Business Park, off Massillon Road (Ohio Route 241) (south from the I-77 Massillon Road interchange). Visit [www.mapsairmuseum.org](http://www.mapsairmuseum.org) to preview what you will be seeing (one section covers the Sopwith Triplane).

Menu: 8 oz New York strip steak, red skin potatoes, green beans, pasta salad, rolls, butter, beer, and pop

Price: \$20 for adults, \$10 for students and retirees. Pay at the door.

Reservations: REQUIRED!! Deadline: Thursday, August 28, 2008. Reservations can be made at either [akronasme@mail.com](mailto:akronasme@mail.com) or 330/864-7555, stating names of all attendees, ASME/AIAA/SAE section affiliation, and contact info to let us get back to you to confirm. Anyone is welcome, i.e., you need not be a member of one of these technical societies. Please come if you reserve: we must pay for "no shows"!

Summary: The Sopwith Triplane was a World War I fighter plane built by the Sopwith (later Hawker Siddeley) Aviation Company in England, beginning in 1916. Only about 150 of these planes were built originally.

Sopwith was a contractor for the (English) Royal Naval Air Service (as distinct from the Royal Flying Corps). With its wings split into three parts, visibility for the pilot was excellent, and it immediately became a favorite of the Navy pilots. The plane was used as a trainer after WWI and in the 1930's in Russia.

Bath resident Bill Woodall built a full-size flying replica of this plane over a period of 20 years, starting in 1973. He started in his basement, moved on to his garage, later to a Wadsworth barn, and finally to a Medina County hangar to complete the project. By 1993, the plane was complete, with roughly \$18,000 invested. He flew it a few times, and you will hear him tell those stories at his presentation.

His Sopwith Triplane now resides at the MAPS Air Museum, available for all attendees to see.

See Mr. Woodall's website, [www.triplanebuilder.com](http://www.triplanebuilder.com), for more information on the plane.

He is a graduate of Kenmore High School and Ohio Wesleyan University, where he majored in mathematics and physics. He worked for the Firestone Tire & Rubber Company for 46 years as a tire engineer. However, he has had a passion for flight and planes from a very early age, learned to fly in the Navy from 1944 to 1946, and continued after the war by participating in a local flying club.

The gathering will be in the hangar housing the museum displays. Tour guides will be available to answer questions.

## Dinner & Tour - Great Lakes Brewery Co. Cleveland, OH

### Great Lakes Brewing Co

2516 Market Ave  
Cleveland, OH 44113  
(216) 771-4404

October 16th - Thursday  
Social hour @ 6pm / dinner @ 7pm / GLB tour & talk @ 8:30pm

Note: 30 is the MAXIMUM number of people for the tour, so get your reservation in early if you want to join us for the talk / tour.

Contact: Mark Burrows, Akron ASME Chair, 2008-2009  
by e-mail at [burrowsml@aol.com](mailto:burrowsml@aol.com)  
for reservations by Oct. 9<sup>th</sup>.

To see more go to : <http://www.greatlakesbrewing.com/companyEnvironmentZW.php>

#### **GLBC -Current Projects**

##### **Alternative Fuels:**

Learn about "The Fatty Wagon" that runs on straight restaurant vegetable oil.

##### **Organic Foods / Waste Recycling:**

Organic Mushrooms - uses brewery grains & sawdust as a substrate for growing organic shitake and oyster mushrooms.

##### **Urban Gardens:**

Starting Spring 2008, GLBC will farm one third of an acre of vegetables and herbs for use in Brewpub dishes, compost and vermicompost spent grain and kitchen scraps and experiment with **growing crops year-round in Hale Farm's greenhouse.**

##### **Recycling:**

GLBC recycles cardboard, glass, plastic, steel/aluminum, paper and brewer's barley to reduce trash removal fees by over 50%.

##### **Vermicomposting:**

GLBC uses vermicomposting to produce natural fertilizer (worms), which then produce castings - top-of-the-line organic fertilizer - used to fertilize the herbs and vegetables found on the menu.

##### **Energy Efficiency:**

GLBC has a cooling system in the Brewery cooler that brings in cold air during winter months to cool the beer. Skylights and light sensors have been installed in the Tank Farm and Brewery cooler to allow in natural light and minimize the use of electricity. An "air curtain" is in place in the Brewpub to keep warm air from escaping when patrons enter and exit.

##### **Energy Saving Building Designs:**

GLBC renovated its outdoor area to include a retractable "Roman Curtain" roof and other eco-friendly components.



61<sup>st</sup> Annual ACCESS

# HONORS & AWARDS BANQUET

THURSDAY, NOVEMBER 6, 2008  
Guy's Party Center, 500 E Waterloo Rd, Akron



Eric "CyToG" Beavers  
*Computer Gamer*



**"Modern Computer Gaming"**

### Honorary Banquet Chair

**Robert W Handlos**  
*Vice President, Product Development  
Bridgestone Firestone*



### Distinguished Award of Council

**Dr Nick Triantafillopoulos**  
*Director, Akron Technology Center  
OMNOVA Solutions, Inc*

## Recognition of the Best Science/Math Students in Summit County

Cash Bar: 5:30 PM  
Dinner: 6:30 PM  
Tickets: \$25.00  
Students: \$15.00

Please reserve and prepay!  
Purchase tickets by October 23, 2008  
Make checks payable to: ACCESS  
Contact ACCESS at (330)535-8835 or  
[Anoop.Krishen@ACCESSinc.org](mailto:Anoop.Krishen@ACCESSinc.org)

ACCESS, PO Box 2993, Akron, OH 44309-2993

## **Akron ASME newsletter by email – make sure you get one!**

As you probably know by now, due to cost considerations, Akron ASME has had to stop mailing hardcopy newsletters. So, it becomes increasingly important that we have a correct email address for you.

If we have an incorrect email address for you and you have not received an email notice regarding our newsletter, please email Matt Pruszynski at [matt@americashobbyhouse.com](mailto:matt@americashobbyhouse.com) with your correct email address. You will get periodic notices from him announcing: 1) upcoming events; 2) updating of our Akron ASME website (<http://www.ecgf.uakron.edu/~asme/akron/>); and, 3) posting of our updated newsletter to that website as an Adobe Acrobat \*.pdf for your viewing, printing, and/or download.

Please let me (Brent Sisler, 330/836-9238 or [marybrentsisler@cs.com](mailto:marybrentsisler@cs.com)) know if this does not “work” for you. Thanks for your patience and understanding as we move to this new “paperless” regime.

## **Thanks to Akron ASME members for donations to our Section**

Thank you to the following Akron ASME members who donated to our Section by selecting the “Local Section” suggested (voluntary) contribution when renewing their 2007-2008 ASME membership. These donations are very much appreciated!!

MICHAEL	J	ASKEW	RICHARD	C	HOUCK
WILLIAM	J	BEES	WARD	M	JUDSON
VIORÉL		BERLOVAN	JOHN	H	KERR
ELIZABETH	M	BEUTLER	PAUL	C	LAM
LYNN	R	BINGHAM	AWALD	J	LANGENFELD
GEORGE	B	BRECHUN	STEVEN		LEVAN
WERNER	R	BRITSCH	MARK	A	MENGON
DAVID	R	BROWN	ANDREW	W	ORAVETZ
ANDREW	J	BRUGGER	SANTO	A	PADULA
SCOTT	T	BURROWBRIDGE	ROGER	S	PECK
HARVEY	M	BYRNES	ROBERT	F	PHILLIPS
DAVID	J	DELACROIX	JOHN	T	POPE
WILLARD	B	DONOHO	RICHARD	A	PROESCHEL
HANS	R	DORFI	BRENT	C	SISLER
THOMAS	R	FAGAN	RAYMOND	J	SLEZAK
GARY	W	FOSTER	WILLIAM	T	SOUTHARDS
MICHAEL	J	GINTERT	JAMES	E	STEPHENS
RICHARD	R	GRIGG	CHRISTIAN	R	STUMPF
RICHARD		GROSS	ROBERT	H	SVENSON
JOHN	W	HARLEY	TERRY	G	TAYLOR
WILLIAM	E	HERR	GEORGE	B	WATSON
MICHAEL	J	HOGAN	LELAND	C	WESTFALL
			EDWARD	G	ZEITZ

## **Akron ASME “speakers” needed in high schools**

The Akron Section of ASME is about to begin a project to put engineers in contact with area high school students. A need that has been made known to us is that the amount of graduating high-school students going on to study science and engineering is down in the Akron area.

Akron ASME is attempting to develop a pool of engineers that would be willing and able to go to a school for anywhere from a half hour to a couple of hours, based on their schedule, and speak to high school classes. The format is anything from an informal talk with a science classroom to a PowerPoint presentation to a group of students enrolled in science classes.

We have a new “What is a Mechanical Engineer?” brochure from national ASME that makes such a visit very easy for someone willing to go into the schools. We have hundreds of copies on hand, ready to give to you. We have it as a \*.pdf, too, if you’d like to take a look.

If you would be interested in getting involved with this program and helping educate students about science and engineering fields, please contact Cara Adams at caraadams302@yahoo.com.

Thanks for considering it!

### **2008-2009 Akron Section Schedule**

<b>Date</b>	<b>Program</b>	<b>Location</b>
Thur., 9/4/08	Sopwith Triplane Exhibit and Presentation	MAPS, North Canton, OH
Thur., 10/16/08	Great Lakes Brewing Company Tour	Great Lakes Brewing Company, Cleveland, OH
Thur., 11/6/08	ACCESS Honors and Awards Banquet	Guy’s Party Center, Akron
Thur., 11/13/08 (tentative)	Joint Meeting with CAM ASME	Not yet set
Wed., 1/21/09 (tentative)	Joint Meeting with Akron ASM	Not yet set
Thur., 2/19/09	EWeek Banquet	Emidio & Sons Banquet Center, Cuyahoga Falls
Sat., 3/7/09 (tentative)	Ohio Professional Engineer (PE) Continuing Professional Development (CPD) Seminar (tentative)	Not yet set
Thur., 3/12/09	Student Papers Night	Martin University Center, The University of Akron
Thur., 4/9/09	Industry Expo	Sons of Herman, Akron
April, 2009	ACCESS Joint Societies Meeting	Not yet set
May, 2009	Not yet set	



### **Teams Announced for 2008 ASME I•Show**

Applications jumped a whopping 40% from student teams eager to compete in the second annual ASME Innovation Showcase (I•Show), scheduled for Oct. 31<sup>st</sup> in conjunction with the International Mechanical Engineering Congress & Exposition in Boston, MA.

After reviewing thirty-two submissions, a judging panel selected the top ten collegiate teams to move forward and compete in the 2008 ASME I•Show. Striving to produce the next “big idea,” these students have developed technologies and innovations with enthusiasm and commitment. They’re eagerly ready for the next step: product assessment and commercialization.

At the ASME I•Show on Oct. 31, the following teams will “pitch” their product to a judging panel of industry experts, media, successful entrepreneurs, and Intellectual Property specialists to gain industry recognition and access to over \$20K in seed funds.

Baylor University – *Converting Coconuts Into Value Added Products*

Johns Hopkins University – *Head Impulse Test Device*

Johns Hopkins University – *SurgyPack*

Massachusetts Institute of Technology – *Robopsy: Inexpensive Medical Robotics*

Pennsylvania State University – *Mashavu*

Rensselaer Polytechnic Institute – *Automated Landmine Removal*

University of California, Berkeley – *Advanced Affordable Solar Water Heater*

University of California, Berkeley – *Berkeley Electro-Coagulation Arsenic Remediation (BEAR)*

University of California, San Francisco – *Titan Medical*

Virginia Military Institute – *The Extremely Low Frequency Seismic Detector*

Go to [www.asme.org/events/ishow](http://www.asme.org/events/ishow) for team details and further information on the ASME I•Show.

### **ASME PeerLink<sup>SM</sup> Expands Networking and Collaboration Opportunities for Engineers**

Responding to the growing need of engineers and other technical professionals to connect and exchange information, ASME has launched its new communities of practice ASME PeerLink.

ASME PeerLink now offers new features designed to enhance your experience connecting, collaborating and networking with your peers. ASME PeerLink helps broaden communication capabilities through blogging, interactive whiteboards, document collaboration and real time chat.

To learn more and register, go to <http://peerlink.asme.org>.

## Inspiring Engineering Diversity

Engineer Your Life (EYL) and the National Association for College Admissions Counseling (NACAC) are teaming up with ASME at dozens of college fairs for high school students throughout the United States. The EYL campaign has developed, tested and is now providing messages and materials to promote engineering to college-bound high school girls. Volunteers are encouraged to become part of the campaign by participating in the fairs. EYL fair exhibits are designed to break down commonly held perceptions about engineering and encourage girls to consider it as a college and career option. Interested in helping out? Contact Marina Stenos at [stenosm@asme.org](mailto:stenosm@asme.org) for more information.

### **Become A Mentor Today! EMentoring Opportunities for Early Career Engineers.**

Mentors are a great way to gain knowledge and learn from the experiences of experts in your field. ASME offers an e-mentoring service right at your fingers!

To learn more and sign up for mentors, log onto [http://www.asme.org/jobs/mentoring/Ementoring\\_Early\\_Career.cfm](http://www.asme.org/jobs/mentoring/Ementoring_Early_Career.cfm) or contact Noel Netel at [neteln@asme.org](mailto:neteln@asme.org)

### **Thinking about your career? Visit ASME's Career Center!**

Are you thinking about making some major career changes? Perhaps you are looking for a new job, finding out what you are worth, raising your profile at work or networking with other engineers to expand your career opportunities? ASME can help you energize your career this year with a variety of member benefits.

Find a job, build your resume or get advice at ASME's Online Career Center, the only job board dedicated exclusively to Mechanical Engineers. Find out what you're worth by taking the ASME Salary Survey, and get a basic report on how your salary compares to other engineers in your region, field or experience level.

Visit the ASME Career Center at <http://www.asme.org/Jobs/> for more information.

### **Expand Your Horizons Volunteer with ASME Using the Volunteer Opportunities Bulletin Board (VOBB)**

Have you thought about volunteering at ASME, but don't know where to start? Try the VOBB. If you are an experienced ASME volunteer and would like to find a new project, the VOBB is the place for you. As a tool designed to help volunteer leaders promote local Section and Society-wide positions, it opens the door to new opportunities. The opportunities for involvement include pre-college and educational activities, standards development, government relations, honors and awards selection, the development of new programs and more.

To learn more about the VOBB and the volunteer positions available, go to <http://volunteer.asme.org/vobb/>.

The Akron Section thanks all the companies who supported our section throughout the past, and is happy to present the following companies as participants in our Akron ASME Industry Expo.

**MACHINE DESIGN CONCEPTS, 330.714.2835, <http://www.machinedesignconcepts.com>**

Machine Design Concepts is headquartered in Barberton, Ohio and specializes in servicing the Conveyor and Material Handling Industry. MDC designs and manufactures state of the art material handling equipment and conveyors: both standard and custom design. The systems are built to your drawings and specifications as well as Turn Key projects of our design and scope. Please be advised that Machine Design Concepts also rebuilds and remanufactures your used or existing conveyors.

**HEPA ENVIRONMENTAL SERVICES, INC, 330.818.0188**

HEPA Environmental Services is dedicated to providing complete asbestos abatement, mold remediation, industrial cleaning, facility closures, HAZMAT, and other environmental remediation issues. Our management and supervisory staff possess years of experience and our list of satisfied customers is impressive.

**PC CONSULTANTS OF WADSWORTH, INC, 330.336.2380**

PC Consultants offers a wide range of computer consulting services designed to meet the needs of any business. We can design a custom application in Microsoft Access, Sql Server, VB and Embedded VB for the Pocket PC. PCCW can also design a Edata driven website that can do more for you than any static website. Find out more about PC Consultants at <http://www.pccw.net/> or call 330.336.2380.

**NATIONAL INSTRUMENTS, 330.877.8910**

National Instruments is a technology pioneer and leader in virtual instrumentation. Leveraging the PC and its related technologies, virtual instrumentation increases productivity and lowers costs for customers worldwide through easy-to-integrate software, such as the NI LabVIEW graphical development environment, and modular hardware, such as PXI modules for data acquisition, instrument control and machine vision. NI customers include engineers, scientists, and technical professionals around the world.

**RUSSELL PRODUCTS CO., INC., 216.267.0880 / FALHOLT DIVISION, 330.434.9163 / DEVALERA DIVISION, 330.633.5252 / AKRON ANODIZING & COATING, 330.535.3391**

Russell Products Co., Inc. was established in 1950 to provide surface treatments to local industries. Russell Products has grown to include six plants in northeast Ohio with over 200 associates, and a southwestern sales office. The services Russell Products provides vary from treatments applied on products with automated systems processing parts up to 24 hours a day to specialty treatments on one or two parts.

**FISHER/UNITECH, INC, 440.838.1844**

Fisher/Unitech is a full service engineering technologies firm specializing in process improvement for the product development, engineering, design and manufacturing industries. As an integrator of technology-based software and hardware solutions, we sell and support product lifecycle management, product data management, computer-aided design, manufacturing and analysis software, rapid prototyping 3D printers and scanners, reverse engineering products and knowledge-based engineering solutions. We also provide technical support and training on all our products and solutions. The Fisher/Unitech Representatives attending the ASME Industry Expo will be Mike Hudack (Account Manager) and Courtney Rice (Sales and Marketing). For more information on Fisher/Unitech products and services please visit [www.funtech.com](http://www.funtech.com).

**KARMAN RUBBER COMPANY, 330.864.2181**

Karman Rubber Company is celebrating its 50th plus year in business. The company serves the molded rubber, rubber bonded to metal, and noise and vibration control market place. The product line Vibro-Insulations is used by thousands of companies all over the world.

**METAL-MAX, 330.673.9926**

Metal-Max is a metal fabricating business specializing in C.N.C. punching, shearing, forming and welding. Our products are "build to order" and are primarily fabricated of mild carbon steel, aluminum and stainless steel. We have the flexibility to do prototype work as well as production build orders.

**AKRON VALVE & FITTING CO., 800.352.5577**

Akron Valve & Fitting Company is an authorized stocking distributor for Swagelok products. We stock and service the following products: Swagelok Tube Fittings, Brass, Carbon Steel, Stainless Steel, 1/16" to 2", large inventory available for immediate delivery. Whitey Valves, Ball Valves up to 2", Air Actuated Valves, Electric Actuators, 2 & 3 Way. Needle Valves, Nupro Valves, Check & Relief, Metering Valves, Packless Valves, Filters, Cajon Precision Pipe & Adaptor Fittings. Swagelok Quick-Connect & Hose Products. We have been supplying valves and fittings to industry in the Akron, Canton, Youngstown area since 1963.

**R.K. FROMM INC., 330.666.6737**

R.K. Fromm, Inc. is a family owned wholesale distributor of industrial, electronic and electrical motor controls. Providing quality technical support has been a hallmark of the company's 25 years of business in northeastern Ohio. Charles V. Koester and Brian M. Lay have represented R.K. Fromm, Inc at past years' Industry Nights.

**OHIO BRAKE AND CLUTCH CORPORATION, 330.239.2345**

OBC Corporation has served industry since 1969 as a distributor of motion control and per train products. They service Northeast Ohio through a network of direct application specialists, contract agents and authorized systems integrators. OBC Corporation is an authorized distributor for 27 major manufacturers of: AC and DC, Step, Servo and variable speed motors and controls, brakes, clutches, industrial computers, linear actuators, motion control software components, sensors, speed reducers and ball screws. OBC Corporation continues to search for improved product quality and performance. This results in improved service for their customers.

**KELLER RIGGING AND CONSTRUCTION, 330.633.6160**

Keller Rigging and Construction has been an industry leader in machinery installation, millwright service, steel fabrication and erection, trucking and crane rental service since 1974. They have completed projects for a wide variety of clients and industries in nearly every state and many countries around the world.

**PTAC-PROCUREMENT TECHNICAL ASSISTANCE CENTER, 330.672.9448**

Our mission is to provide effective education, training and consultation services to small and mid-size owners at no charge. Our goal is to enhance your knowledge, to help reduce your cost, and to increase your business opportunities. The procurement technical Assistance center offers assistance in all areas of government contracting and is designed to increase Ohio's share of the government market place. All services are free of charge.

**J.M.PARISH ENTERPRISES, LLC, 330.321.5090**

J.M.Parish Enterprises will assist companies supplying practical engineering services or by manufacturing engineered products as required. Products are taken from concept, through prototyping, testing, and qualification and then into production, or through any phase for your company. Assistance with production problems in your plant, or serving as a vendor liaison may make the difference in meeting your customer's schedule. J.M.Parish utilizes or can recommend a host of vendors who supply services including rubber and plastic molding, machining, metal fabrication, polishing, metal treating and finishing processes. If you don't have that one missing piece required for success, J.M.Parish will provide it.

**PERLANE SALES, INC, 330.928.4866**

Perlance Sales, Inc. is a distributor for bollhoff rivnut internally threaded blind fasteners rivset and rivclinch, hartwell commercial division latches hinges and latching plastic fasteners, ITW nexus plastic side release buckles and related hardware. ITW Waterbury metal buckles and hardware, Rip'n grip hook and loop materials, polypropylene webbing, and representative for Girard fastener company specialty cold headed parts. We have four salesmen calling on design and manufacturing engineering customers to help solve their attachment and fastening requirements.

**TORQUE INCORPORATED, 330.936.4124**

Torque Inc. is a leading supplier of Clutches and Brakes for your applications, and has been in business since 1949. Representing Wichita, Industrial Clutch, Mach III, Kobelt, and Formsprag, Torque has the right products for your needs. In addition, Torque backs these products with expert application support, parts, service and rebuilding.

**TRI-POWER MPT, INC., 330.773.3307**

Tri-Power MPT, Inc. is a local industrial distributor in Akron that specializes in 3 major areas: Power Transmission Equipment, Motion Control, and Machine Safety products. Tri-Power sells industrial motors, gears, bearings, sprockets, chain, couplings, sensors, safety light: screens, motor Controls, variable speed drives, and much more.

**MODEL ENGINEERING INC., 330.644.3450**

Model Engineering started in business in 1977 doing patterns for sand casting and prototype models for new products. We have 4 employees with about 2600 sq. ft. of work space. In the last five years most of our work is model work for new products and prototype molds for short runs. We also have a hobby business reproducing antique auto parts.

**THE PHILPOTT RUBBER COMPANY - JOE KOVACH, 330.733.6169**

Joe Kovach specializes in custom design and production of polyurethane thermoplastics and TPE industrial products. Joe will work with engineers to select materials, suggest improvements for manufacturing, and recommend vendors. Call Joe for assistance when designing with plastic, foam, or rubber and/or when adhesives are required.

**MANUFACTURING TECHNOLOGIES INTERNATIONAL CORP, 330.896.2322**

MTI was formed out of GenCorp's AMPE (Advanced Manufacturing Process Engineering), a group founded in 1990 on the principles of Lockheed's "Skunkworks." AMPE was a friendly fire casualty of corporate downsizing in 1996. MTI acquired AMPE's facility, equipment, and key people, who have been awarded over 40 patents. MTI has a 9,800 square foot facility with a 5500 square foot equipment development lab in the Akron Area. Over 250 rubber and silicone injection presses designed by MTI personnel are in service today. Along with MTI's PREDATOR line of presses, special injection and advanced assembly equipment are designed, animated, and built for the specific needs of the customers. MTI is a certified Adept robotic integrator, and has animating and video production facilities in house to produce video presentations of customer concepts and production equipment. MTI also designs and builds custom electrical panels for a variety of customers. MTI is a diverse process development group dedicated to giving our customers a competitive edge by applying and developing the right technology for their manufacturing needs.

IMAGINiT, 216.834.8300

IMAGINiT Technologies, a RAND Worldwide Company, is a globally diversified engineering group and the world's largest independent provider of enterprise solutions to the engineering industry. As a leading provider of design and engineering solutions to the building, architecture, manufacturing, civil engineering, geospatial, and media and entertainment industries, IMAGINiT is a CAD software and technology expert that understands your design process. Purchasing and executing the right technology tools for your projects are only the beginning. Our experience has shown us that successful companies increase their return on investment by understanding that the software purchase is just the first step in the process to make their company more productive and competitive.

REMCON, INCORPORATED, 330.929.8616

Remcon was formed in 1982 to serve various industrial enterprises. We have been providing waterjet cutting services since 1986. Our in house capabilities include Abrasive Jet cutting of metals, glass, stone and composites and pure Waterjet cutting of foams, plastics, rubber and composites. The major advantages of Waterjet cutting are the lack of heat in the cutting process, the quality of the cut itself, and the ease of applying modern CAD/CAM and shape generation methods. Give Remcon a chance to reduce your cutting costs. Remcon also offers equipment including turnkey systems and replacement components and technical services.

EVANS INDUSTRIES, INC., 330.453.1122

Evans Industries has been a contract manufacturer in the industrial safety and communications market for over 20 years. As a fabricator of over 75 custom film products, we have met the exacting standards of such diverse markets as military, automotive, medical, aviation, and industrial safety. We offer a wide range of component options from which to choose. From virgin vinyl to expanded vinyl to polyurethane film, we can process your skin choices in a variety of thicknesses and textures. From low durometer to high durometer gels, from low density to slow recovery, to specialty foams, from adhesive backings to hook and loop fasteners, or any combination you may require, Evans Industries will meet your exact specifications.

HOTTLE & ASSOCIATES, 330.928.1161

Hottle & Associates is a full-service, provider of engineering and design support services. Founded in 1950, Hottle has worked with clients that range from small, local machine shops, to some of the largest and most recognized multi-national manufacturers. Project experience ranges in size from single-operation machinery to multi-station automated production lines; one-of-a-kind specialty systems and proprietary mass-production systems. Areas of expertise include machine and tool design, electrical and machine controls design, mold design, reverse engineering, technical writing, drafting, patent drawings, and many others. The current staff of twenty engineers, designers, and CAD operators averages nearly twenty years of service with the firm, providing clients with the highest level of continuity, quality and value on every project. For more information, you may refer to <http://www.hottle.com>, or contact our offices at 330.928.1161. President - Kenneth W. Haver.

ARTHUR PRODUCTS CO. – Richard L. Rauckhorst – President, 800.537.0510 or 330.725.4905

The Arthur Products Company (APC) engineers quality vent tubes and accessories to meet the growing needs of today's bottling industry. Our complete lines of high-impact vent tubes are designed to prevent chipping, material inclusion and to protect the finish on glass and PET bottles. APC vent tubes also enhance filler performance, simplify maintenance and improve productivity. APC high pressure water blasting nozzles are specifically designed for the high demands of sewer and drain cleaning contractors. Whether you are an individual contractor or an OEM, Arthur Products has the engineering expertise to be your water blast solution. For 60 years, Arthur Products has listened to our customers needs and then set out to find ways to meet those needs. We do it all - from design to manufacturing. We are there for our customer every step of the way. If you have a specific need, please contact APC as "Specials Are Our Specialty". APC believes in QDV. **Quality** that is unsurpassed, **Delivery** which is unrivaled, and the **Value** to our customers is unmatched. Go to [www.arthurproducts.com](http://www.arthurproducts.com).

#### KOVATCH CASTINGS, INC, 330.896.9944

Precision Investment Caster, servicing both commercial & aerospace customers. Certified to NADCAP, AS 9100:2001 & ISO 9001:2000, our veteran-owned small business employs 150 offering 26 years of "World-Class" casting expertise in thin-walled, close-tolerance, high quality surface finish investment castings in over 150+ air-melt ferrous/non-ferrous metals (incl. Stainless & Aluminum) that meet or exceed military & aerospace standards needing little or no machining. Assigned account specialists provide customer service, and we feature rapid prototypes, in-house tool dept., CAD-capable engineering, automatic wax pattern injection, robotic ceramic shell for consistency, metallurgical lab-controlled induction furnaces, hot/cold straightening, coordinate measuring machines, non-destructive testing (X-ray, FPI & MPI), in-house machining, and offer engineering design assistance for your parts.

#### J.B. MANUFACTURING, INC, 330.676.9744

J.B. Manufacturing was established in 1977 to accommodate the ever increasing industry need for precision machined parts and fabrication. J.B. is ISO 9001 certified, and works on a daily basis to maintain that level of quality. J.B. has 26,000 sq ft of machine shop, 6,000 sq ft of office space, and 4,000 sq ft of weld shop. J.B. strives to be a leader in the machining industry, and continues to improve work quality and manufacturing processes. J.B. specializes in small prototype quantities to large volume production runs. Design reviews and engineering support are available to assist customers with optimizing product performance and manufacturing processes.

#### SUMMIT BUSINESS-CONSULTING, INC, 330.656.0495

Summit Business-Consulting of Hudson, Ohio specializes in strategic planning, project management, operational excellence and workforce solutions for profitable growth. Summit is the parent corporation of the OPMA, Operations and Plant Managers Association, a consortium of seventeen local area manufacturing and related operations/plant managers who learn from each other through benchmarking and sharing best practices.

#### RCF MANUFACTURING, LLC, 330.963.5854

Race Car Factory™ is a design, engineering and manufacturing company that markets to the high performance auto-racing sector. Race Car Factory™ fabricates numerous components for transmissions and drive trains, complete chassis production and other race equipment. Race Car Factory™ tests and races its products. The combined efforts of the in-house manufacturing capabilities of Race Car Factory™ and the resources of several local affiliate companies result in continual advancements of products offered at competitive pricing. Race Car Factory™ is proud to have been in business for 30 years, and will continue with the pursuit of customer satisfaction with technology and innovation for years to come.

#### AMERICAN ENGINEERING GROUP, 330.375.1975

American Engineering Group (ISO 9001:2000 certified) is a global supplier of custom manufactured engineering components (rubber, metal, plastic and composite) serving automotive, aerospace, rail, industrial, medical and defense applications, located in Akron, Ohio. AEG also specializes in engineering prototype & component development, engineering consulting & services such as design, development and analysis. Visit [www.engineering-group.com](http://www.engineering-group.com) for further information about our company, products and services.

#### TOP OF THE LINE, LLC - ANDREW P. GROW, PE, 330.699.4378

Top of the Line is a young Engineering Consulting Company started by Andrew P. Grow, a 1991 University of Akron Graduate. The company specializes in mechanical design, project management and component innovations. Personal experience includes designing truck door lift gates, designing and redeploying equipment for different applications, preparing schedules for turbine/boiler outages and designing and supervising the installation of slurry transfer systems. Andrew was the 2001 recipient of the Nortech Innovation Award. Call Top of the Line when you need help.

TICO TITANIUM, INC., 800.521.4392 (in Michigan), 888.676.7575 (in Texas)

Tico Titanium, Inc. is a Full Service Center with 63,000 sq. ft. with locations in Michigan & Texas. We stock and maintain extensive CP (primarily) & Alloy inventories and have been supplying the Industrial, Chemical, Petrochemical, Oil & Gas, Refinery, Pulp & Paper, Utility, Heat Exchanger, Navy & Marine markets for over 48 years. Tico stocks a full line of Fasteners, Fittings, Flanges, Hinges and Mill Products - Bar, Billet, Rod, Weld Wire, Plate, Sheet, Seamless & Welded Pipe and Seamless & Welded Tube. Specialty Products and Services include Sputtering Targets (all metals, shapes & sizes), Rings, Standard & Specialty Forgings, Tanks, Standard & Custom/Specialty Fabrications, Fire/Rescue Tools, Hinges, Clamps, Plate for Armor, Water-Jet Cut/Shear Cut/Saw Cut Standard Products, Specialty & Prototype Parts and Custom Fabrications, Fittings, Flanges & Fasteners. Go to [www.ticotitanium.com](http://www.ticotitanium.com), or email [sales@ticotitanium.com](mailto:sales@ticotitanium.com).

METAL QUALITY PRODUCTS CO., INC., 440.942.0787

Metal Quality Products Co., Inc. began its history in 1978 when the doors first opened as Metal Quality Grinding. Servicing local companies that needed precision grinding work, Metal Quality Grinding grew from a humble one machine facility, to a multi-grinding establishment. As technology pushed forward, Metal Quality Grinding quickly grew into the field of CNC Machining by purchasing its first CNC machine in 1985. The company was now able to provide complete turning services in addition to its strong grinding base. The CNC business grew to be as successful, as the original grinding business, and as a result, Metal Quality Grinding changed its name to Metal Quality Products. Today, Metal Quality Products has over 10 CNC machines which can offer complete precision turning and milling services along with complete design services with a team of engineers. There are numerous grinding and manual machines to complete the array of equipment. A full inspection room that conducts rigorous testing ensures quality control so that customers receive the best products possible. Metal Quality Products is ISO 9000:9001 compliant and will receive their certification in September 2006. Prototyping to Production, Metal Quality Products can serve almost any industry and any needs in a cost effective and timely manner. Go to [www.metalqualityproducts.com](http://www.metalqualityproducts.com).

SEIFERT COMPANIES, INC., 330.833.2700

The Seifert Companies consists of three separate Divisions. The corporate office is located in Massillon, Ohio with satellite offices in Nashville, TN, and Aiken, SC.

**Seifert Technologies, Inc.** (STI) has been in business since 1985. Our main focus is Engineering and Information Technology. On the engineering side, our strength lies within plant automation. We specialize in custom automated machinery for a variety of industries. These machines range from simple jigs and fixtures to fully automated production lines. In addition, we also provide Product Development services to our clients utilizing the latest Solid Modeling (3D) software. Our Cad software capabilities include AutoCAD, Pro Engineer, Unigraphics, Microstation, Solid Works, Inventor, Cadem, Algor for FEA, and Compress for piping & pressure vessel. Our staff includes a range of experience from drafters up to licensed PE's and project managers. We also have a strong electrical engineering department with cradle to grave project management & controls experience. Our IT group is a full service computer and network service provider. We are Microsoft Software Advisors, Cisco Systems Certified, Dell Premiere Value Added Resellers and HP/Compaq Resellers. Our Network Engineers will evaluate, design, implement, and support business with expertise in the areas of Network Design & Implementation, Data Back-Up Programs, Security Solutions, and Hardware & Software: Purchase, Install, & Support.

**Seifert Engineering** performs turn-key design and build services related to automation equipment.

**Seifert Associates, Inc.** (SAI) specializes in Staffing/Recruiting Services related to management, engineering, and IT professionals. Our staffing division, Seifert & Associates has been placing top-notch talent for the past 10 years. We specialize in technical search and we can provide individuals for temporary contract assignments, temp-to-perm, or direct hire positions. SAI has served over (1,000) customers in seventeen (17) different states, Canada, China, Japan, and Mexico. We are "Technical people placing technical talent". Go to [www.seifert.com](http://www.seifert.com).