



Photo by: Jeremy Saley



## A LOOK BACK AT SCREEN MAKING

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## A LOOK BACK AT SCREEN MAKING

BY: STEVE STENBERG and AMY BETTIS

Our screen making department received a few upgrades since 1960. In 1989-1990, screen making moved to its central location when its old home was demolished. Over the years, upgrades to stretchers, frames, and equipment were made. In 2007, our first direct-to-screen unit was purchased. In 2008, we designed and built the automatic screen coater. Prior to that, all screens were coated by hand and left to air dry with the help of several box fans. By 2011, all screens became digitally exposed and film positives became obsolete.

This year, screen making updated the department with a new screen washing area. For a brief time, employees had to revert to improvised solutions during the upgrades.



(Continued on page 10)



## HEARING CONSERVATION BY: AMY BETTIS

A noise exposure survey in hard tooling is being scheduled with the help of M3 Insurance. The safety committee is confirming employee noise exposure is within acceptable limits with the new Preco press. The National Institute for Occupational Safety and Health (NIOSH) and Occupational Safety and Health Administration (OSHA) prescribe the following limits.

The NIOSH relative exposure limit for noise is 85 decibels, using the A-weighting frequency response (often written as dBA) over an 8-hour average, usually referred to as time-weighted average (TWA). Exposures at or above this level are considered hazardous.

OSHA sets legal limits on noise exposure in the workplace. These limits are based on a worker's time weighted average over an 8-hour day. With noise, OSHA's permissible exposure limit (PEL) is 90 dBA for all workers for an 8-hour day.

The following table illustrates the relationship between sound exposure levels and durations for both BIOSH and OSHA.

Time to reach 100% noise dose	Exposure level per NIOSH PEL	Exposure level per OSHA PEL
8 hours	85 dBA	90 dBA
4 hours	88 dBA	95 dBA
2 hours	91 dBA	100 dBA
1 hour	94 dBA	105 dBA
30 minutes	97 dBA	110 dBA
15 minutes	100 dBA	115 dBA



## SAFETY COMMITTEE

### SAFETY COORDINATOR

Keith Cook.....R&D

### COMMITTEE MEMBERS

Kathy Vaughan.....Human Resources  
 Amy Bettis.....Human Resources / Marketing  
 Nancy Gilbertson.....Customer Service  
 Curtis Johnson.....I.T.  
 Tom Donaldson.....Digital Manager  
 Theresa Antony.....Small Value Stream Operator  
 Shane Hulburt.....Doming Supervisor  
 Bob Fischer.....Small Value Stream Operator



## CPR TRAINING BY: AMY BETTIS

Many thanks to the following people at Empire who volunteered to become certified in first aid/CPR/AED in August:

- Rebecca Burg - Art Department
- Emily Syring - Small Value Stream
- Penny Segura - Auto Emp
- Becci Bosworth - Auto Emp
- Rhonda Peterson - Quality Assurance
- Melissa Oldenburg - Telesales
- Shane Hulburt - Doming
- Nancy Gilbertson - Expediting
- Kathy Vaughan - HR

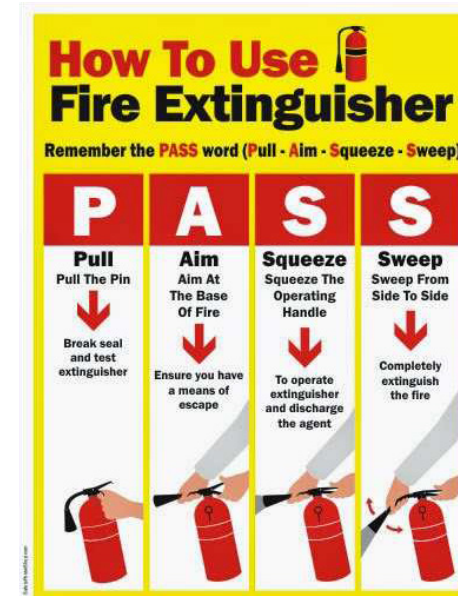


## FIRE EXTINGUISHER TRAINING BY: AMY BETTIS

Employee reminder: extinguishers are placed so that they are three to five feet high at strategic intervals, as dictated by OSHA standards. All extinguishers in production should be A-B-C Halotron extinguishers. There should not be any cry chemical (i.e. powder) fire extinguishers in production areas. The only areas that have A-B-C dry chemical extinguishers should be office areas—customer service, tele-sales, HR, reception, and accounting.

If an extinguisher is used, please do not hang back up on the bracket. Used extinguishers should be given to Keith Cook or taken to the maintenance department for recharging. A properly charged extinguisher will be put in its place.

Fire extinguisher training took place for all employees to review fire safety and P.A.S.S. on September 26.







**EMPIRE RECEIVES RECOGNITION FROM LADCO AND WMC** PRESS RELEASE

Empire Screen Printing was awarded for its innovation in sustainable screen printing technology. Empire is changing the screen print industry and just recently, they were recognized by the La Crosse Area Development Association (LADCO) and Wisconsin Manufacturers & Commerce (WMC) for their innovations in UV LED ink curing technology.

LADCO honored Empire with the Diamond Recognition - Manufacturer of the Year Award on July 31, 2019. This award is presented to a company that has demonstrated leadership, quality, innovation, expansion, export focus, and job creation.

"The City of Onalaska is proud that a major, homegrown company such as Empire Screen Printing has decided to maintain and grow its operations here over the decades while demonstrating its commitment to environmental stewardship."  
 - Jorge Beltran, Executive Director, LADCO

"Having expanded production and diversified its goods to cutting edge high-quality products for many industries, Empire has demonstrated a superior level of innovation, industry leadership, and job creation, without compromising its promise to its employees and community. LADCO and the Coulee region are truly fortunate to have this company in our backyard, and it was LADCO's honor and an easy choice to recognize Empire with its Manufacturer of the Year Award at the 23rd Annual Industry Appreciation event," adds Jorge Beltran.

On August 13, 2019, in Madison, Wisconsin, WMC announced Empire Screen Printing as the recipient of the 2019 Wisconsin Business Friend of the Environment in recognition of environmental innovation efforts. Empire has gone above regulatory requirements to better support their employees, customers, and the environment.

"It is with great pride that our company has been chosen to receive these awards. Being recognized in our city, as well as the state only validates the accomplishments of our people. We truly believe our innovations will change the landscape of printing, and we're honored these associations are acknowledging our achievements."  
 - Jennifer Schloesser, Creative Director, Empire Screen Printing

In 1998, Empire made the bold commitment to reduce employee exposure to harmful solvents. They started converting from industry-standard solvent-based inks to UV inks. With solvent inks, 40 to 60 percent of what is printed evaporates, exposing Empire's people and the planet to harmful pollutants. The difference with UV ink technology is the ink stays on the material, with no evaporation.



**GREEN COMMITTEE**

- Jennifer Schloesser.....Creative Director
- Amy Bettis.....Human Resources / Marketing
- Cathy Buttell.....Project Manager
- Keith Cook.....R&D
- Jeff Gierok.....Electrical Technician



Empire took UV to the next level. In 2008 they started testing UV LED ink curing technology. This was a game changer, as UV LED is 98% more energy efficient than traditional UV mercury curing. The combination of UV and LED in the manufacturing process doesn't produce ozone emissions or harmful volatile organic compounds (VOCs), eliminating the need for ventilation systems. This curing process uses light without heat, allowing them to print on thinner substrates and eliminating material distortion.

Since their initial steps towards sustainability, 75% of Empire Screen Printing's manufacturing process is using UV LED ink curing technology, while 25% is using traditional UV mercury curing. Empire's innovative technology provides a safe and healthy workplace, greatly improving screen printing's impact on the environment while providing a quality product for their customers.

Empire has committed to share UV LED curing technology with its competitors to help change the way screen printed products are brought to market.

"This isn't something we felt we could keep to ourselves. UV LED is the future of screen printing. It has allowed us to increase our productivity, improve our quality, empower our employees, and it provides a safe working environment for our people and our planet. If that's our secret, than we're doing a disservice to the advancements of our industry."

- John Freismuth, President, Empire Screen Printing



**GREEN MASTERS PROGRAM**

"The Green Masters Program is a recognition and assessment program for Wisconsin businesses interested in improving and being recognized for their sustainability initiatives. The objective of the Green Masters Program is to provide companies with a benchmark for themselves and the ability to compare their sustainability performance to other companies in their sector. In addition, we seek to recognize businesses and help them to distinguish themselves from their peers."

- [www.wisconsinsustainability.com/greenmasters](http://www.wisconsinsustainability.com/greenmasters)



Empire is recognized as a Green Masters Professional.



## HOW DO YOU DRIVE INNOVATION BY: ALEXIS MARSH

How do you drive innovation, lead your industry, and continuously improve for future growth? At Empire Screen Printing we use our most important resource: our people!

In a market full of competition and shrinking labor forces, it is imperative for us to stay flexible while striving to become more efficient. The way we do this is by listening to our customers and employees. Over the past 59 years, Empire has stayed on the leading edge through understanding customer needs and using employee creativity and drive to meet these expectations.

In 2008, Empire set out to change the way they brought print to market using a multitude of different methods. First was a simple article about advances in UV LED ink curing being used in digital processes. Empire was determined to make environmental changes that protected its people. Second was the book *The Toyota Way*, a vision to value every employee. To have 300 people improving Empire, and the need to eliminate waste in our manufacturing process based on the voice of the customers who request faster turn around at the same high-level quality they were accustomed to, these concepts started an evolution in which Empire has progressively grown. Empire encourages its partners to adapt to create sustainability in the screen print industry.

Historically, screen printing uses solvent-based inks. The ink is designed to cure through the evaporation of solvent. More than 50 percent of the printed ink evaporates into the air. In 1977, Empire started looking at UV mercury curing technology. UV is cured through ultra violet light with a mercury bulb. This technology was a better choice for our people and the environment. 100% of what we print ends up on the product. However, mercury UV curing is not without issues. High cost of electricity, ozone emissions, and disposal of the mercury vapor bulb make it less than ideal.

After several years of research and testing, Empire was the first company to successfully implement UV LED curing into the screen printing process. UV LED cures without introducing heat into the process. Over the years, UV LED technology has been mainstreamed into the production process in projects like building three UV LED multi-colored presses and retro fitting a 12-color and six color press, a conversion of a six-color press, and the creation of a portable UV LED curing unit. The purchase of a five-color roll-to-roll press has resulted in a complete transformation of how we bring our product to market and have over 90% energy savings.

Since 2008, Empire has converted 75% of its printing to UV LED, providing a healthier work environment for its employees. The benefits did not end with our employees—using UV LED also reduces landfill waste and external air emissions, benefiting the surrounding community. To further the sense of community, Empire brings in its partners, vendors, and competitors to educate them on how to change and the benefits of making this change to manufacturing. Solvent and UV mercury vapor are still considered the standard in screen print industry, but Empire is poised to change the industry by sharing these technological advancements. According to Empire president, John Freismuth, "It's important for the entire industry to reduce its carbon footprint."

In conjunction with the changes to UV LED, Empire wanted to reduce waste during the manufacturing process. Following a trade organization presentation from a former Toyota employee who spoke on the founding philosophies and how they are used, Empire focused on lean manufacturing. In 2008, Empire put in its first cell,

consisting of a printing press, laminator, splitter, die-cutter, and packing table. Cellular manufacturing has the advantage of running a job from raw material to finish good in flow, reducing steps for employees and shortening customer lead times, with high quality built in.

Every two years, Empire hosts a tradeshow, bringing our vendors, customers, and competitors into our facility. During their visit, attendees get the chance to meet with our employees, engage in training, and tour the plant to see the latest projects and processes in action. We take a great amount of pride in creating networking opportunities that will benefit both suppliers and customers businesses. As always, we look to the feedback given to enhance the next bi-annual event. Testimonials received following the show are a strong motivator to keep pushing for industry change.

2016 attendee Willington Nameplate president, Brett Greene, stated, "I just wanted to drop you a note to thank you again for your invitation to visit your facility. We appreciated your hospitality. You should be proud of what you have cultivated at Empire. The people are engaged in the business, and you have some unique approaches to running things. We were impressed with the cellular layouts and the level of innovation blew us away. Your team was great as well. They were easy to speak with and provided us with loads of information. There were plenty of takeaways for us during this visit. If you ever find the time to come out east, we would be happy to host you and any members of your team to return the favor."

2018 attendee Steve Paskach from Allied-Graphics said, "It was my first time attending and I was impressed by your company. I will plan to make this a must attend in the future."

Every day, Empire challenges our employees to live our vision of who we are by listening to our internal and external customers to make improvements to our products, services, processes, and themselves. This challenge has been met over and over again as is evidence in our award-winning lean manufacturing and sustainability efforts. By living this vision, Empire is 300 people, all moving in one direction to change how we print in the future.

## LEE VIETH RETIRES

After 28 dedicated years, our director of manufacturing is retiring. Congratulations, Lee Vieth! Enjoy your free time!





**2019 COMPANY PICNIC** BY: ELLEN KLUG

Empire's annual company picnic was held on August 24 at the Town of Holland. Hamburgers and hot dogs were supplied by Empire and grilled by upper management employees. There was also macaroni salad, potato salad, coleslaw, fruit, chips, pop, and cupcakes.

Along with the food, there was also trivia and prizes. Trivia consisted of 15 questions that were sorted into three rounds. Teams of five (employees and guests) worked together to answer the questions. The winning team won \$25 Kwik Trip gift cards for each member of the team. We had 11 teams total this year! Congratulations to the winners: Jeff Gierok, Jeff Meyer, Russ Kuehn, Jeff Schweinefus, and Matthew Schweinefus.

All of the other prizes were donated to Empire by vendors. Thank you to all of the vendors who donated prizes for our picnic! The vendors were: KRS Plastics, Flexcon, NazDar, AChem, Freeman Manufacturing, Sun Chemical, MacTac, Minnesota Corrugated Box, Midwest Sign, Midland Paper, Polymershapes, Sefar, and Tekra.

**PRIZE WINNERS:**

- Sandy Loken - Midland canvas bag w/ bottle koozie, notepad, water bottle, and pen
- Shane Hulburt - Midland canvas bag w/ bottle koozie, notepad, water bottle, and pen
- Steve Stenberg - golf balls and Nike polo
- Jake Deschaine - golf balls and Reebok polo
- Isaiah Wakeen - golf balls and FootJoy polo
- Liam Murphy - golf balls and MacTac t-shirt
- Kathy Vaughan - Coleman backpack cooler and Thermos
- Brenda Hansen - Coleman backpack cooler and Thermos
- Rob Wellnitz - lunch box and Thermos
- Josh Leisgang - hunting blind
- Jenny Ledman - Kubb
- Lisa Prestwich - U-Line blanket
- Chase Penkalski - fold-out table
- Amy Bettis - golf balls and umbrella
- Aaron Jurjens - Tekra tumbler and \$25 Amazon gift card
- Sue Maule - coffee mug and \$20 Kwik Trip gift card
- Terri Sullivan - coffee mug and \$20 Kwik Trip gift card
- Robert Fischer - DC decals and \$25 gift card
- Petra Vogel - Transformers decals and \$25 gift card

**GIFT CARD WINNERS:**

- Sandy Loken - \$25 Grizzly's
- Britney Henkel - \$25 Grizzly's
- Jennifer Schloesser - \$25 Grizzly's
- Jeff Gierok - \$25 Grizzly's
- Jeremy Saley - \$25 Grizzly's
- Don Olson - \$25 Grizzly's
- Patty Wells - \$25 Grizzly's
- David Johnston - \$25 Grizzly's
- Kim Page - \$25 Grizzly's
- Rob Kranski - \$25 Grizzly's
- James Owsley - \$25 Grizzly's
- Desiree Mierow - \$25 Grizzly's
- Sharon Ronnie - \$25 Applebee's
- Mike Wolfe - \$25 Applebee's
- Deanna Murphy - \$25 Applebee's
- Megan Caacbay - \$25 Applebee's
- McKenzie Adank - \$25 Best Buy
- Emily Syring - \$25 Buffalo Wild Wings
- Curt Weir - \$25 Buffalo Wild Wings
- Theresa Antony - \$25 Buffalo Wild Wings
- Anita Valley - \$25 TGI Fridays
- Kathy Inglett - \$25 Starbucks
- Gigi Cundy-Lalande - \$25 Starbucks
- Steve Vinson - \$25 Walmart
- Amy Otteson - \$25 Outback
- Karen Conway - \$50 Home Depot
- Steve Limpert - \$50 Home Depot
- Tanya Hulburt - \$50 Home Depot
- Eileen Utsby - \$50 Home Depot
- Josh Walske - \$50 Home Depot
- Amie Miller - \$50 Red Pines
- Keith Cook - \$50 Red Pines
- Sherri Vinson - \$50 Netflix
- Anthony McDowell - \$50 Visa
- Ellen Klug - \$50 Visa
- Walt Staff - \$50 Visa
- Kaylynn McDowell - \$50 Visa





**A LOOK BACK AT SCREEN MAKING (CONTINUED)**

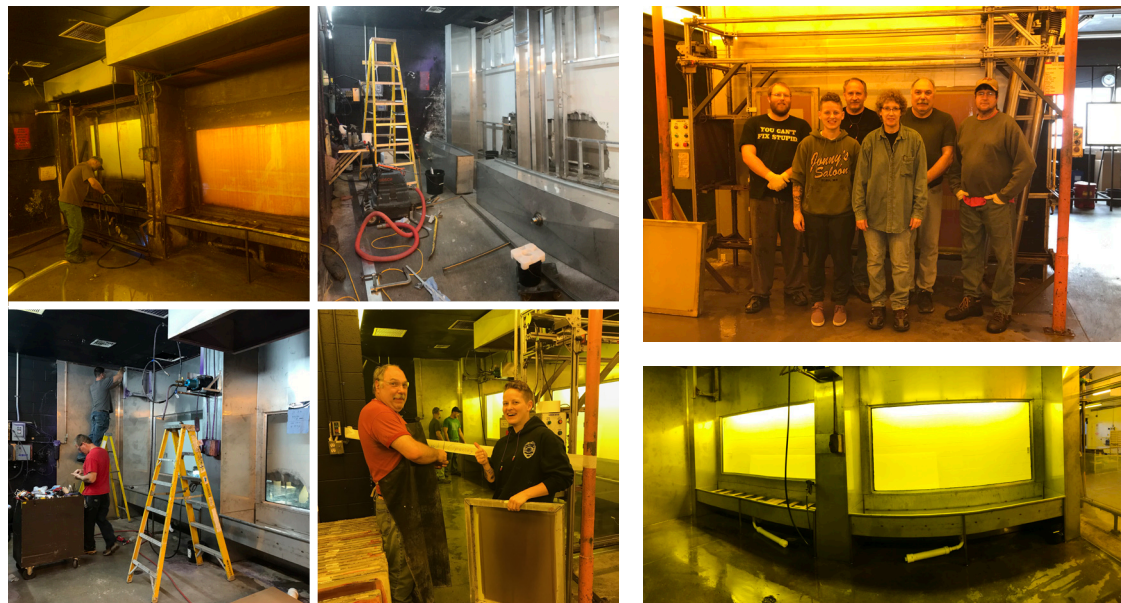
To appreciate where we are now in screen making, you have to know where we have been. How many of us at Empire can remember this department when its home was in the old barn? Most of us only know the barn from old photos.



Back in the day, screens were stretched by hand, taped, and stapled to the frames. Screen tension was determined "tight enough" by the screen maker and were not made to a specific tension measurement or newtons. If you asked anyone in screen making back then what a newton was, they'd probably think "fig," and that you were talking about cookies. Empire started measuring tension in the 80's and 90's with the advent of our first pneumatic stretchers. We transitioned from tape and staples to gluing the screens to the frames. In those early years, the tension standard was measure at 12 newtons. Tighter, more evenly tensioned screens improved quality. Today, our standard is 22 newtons.

Screen making was affected by weather patterns, too. There wasn't direct access to production for large Patriot/Arrow screens. These large screens could not be transported up the narrow inside stairway to the metal halide exposure unit in the hayloft. They had to be transported via an exterior stairway to the exposure unit. Large screens with the light sensitive emulsion had to be completely wrapped in opaque paper to avoid accidental exposure from the sun before bringing the screen outside, then into the hayloft to be shot. After Patriot/Arrow screens were shot, they needed to be re-wrapped, carried outside again, and delivered to production through exterior door "C" by the old lunchroom. On rainy days, these screens could not be shot because screen makers did not want to risk the water-soluble emulsion ruining the screen. It is hard to imagine a rain delay for screens. We are grateful for our screen making's current location that is unaffected by changing weather patterns.

Screen making is a pivotal department. Without the dedicated employees producing a multitude of screens each day, the majority of work at Empire would grind to a halt. Thanks for keeping this place humming!

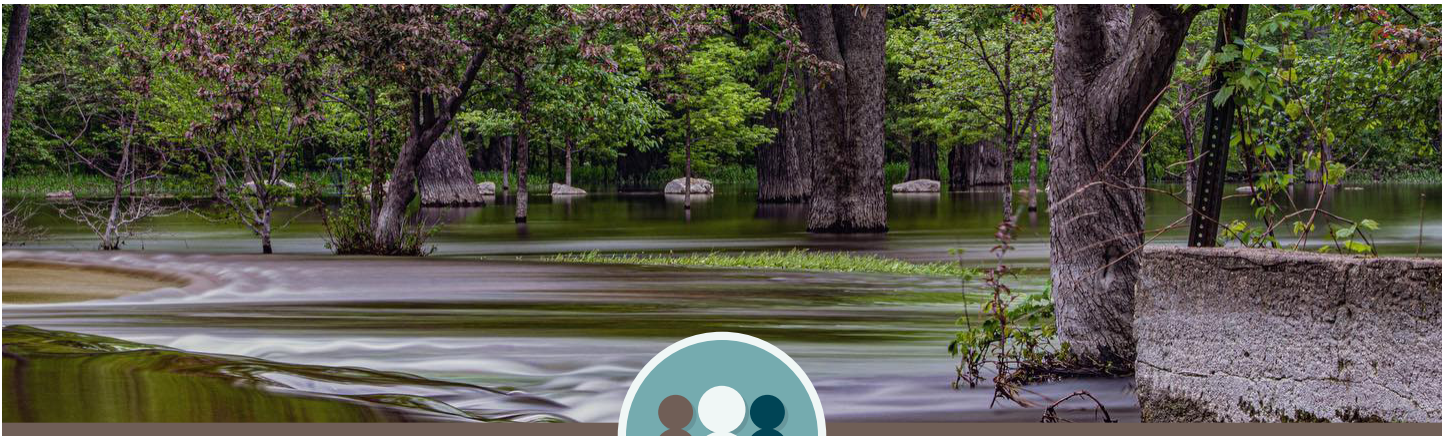


**COMPANY PICNIC TRIVIA**

1. In inches, what is the diameter of a basketball hoop?  
**18"**
  2. Wisconsin, the "Dairy State," banned the sale and use of what product from 1895-1967?  
**Margarine**
  3. Who is the most decorated Olympian of all time?  
**Michael Phelps**
  4. While Sherlock Holmes was a brilliant detective, he also had an arch enemy—a brilliant criminal mastermind. Who was this mastermind?  
**Professor James Moriarty**
  5. Who is the rocking wizard of Waukesha? What is he famous for?  
**Les Paul, solid-body electric guitar**
  6. This summer, Cori "Coco" Gauff became the youngest player to qualify for Wimbledon. How old is she?  
**15**
  7. What phobia does Indiana Jones have?  
**Snakes**
  8. For nearly 60 years, the 25' high Hiawatha sculpture has been standing in Riverside Park. Who created the statue? What is his/her connection to Empire?  
**Anthony Zimmerhagl, father of Lisa Slonka in the art department**
  9. In the Disney movie *The Beauty and the Beast*, how many eggs does Gaston claim to eat for breakfast?  
**5 dozen**
  10. The Wisconsin State Fair was established in what year? What city was it in? (Hint: It's not Milwaukee.)  
**1851, Janesville, WI**
  11. With 121.6 million viewers tuning in to watch this series finale, what show broke the record of most viewed television episode of all time?  
**M\*A\*S\*H**
  12. What current Milwaukee Brewers player use to play for the La Crosse Loggers?  
**Eric Thames**
  13. Freddie Mercury of Queen recorded the song *Delilah* for someone he loved. Who was Delilah?  
**His cat**
  14. What is the maximum number of clubs a player may carry in their bag during a round of golf?  
**14**
  15. La Crosse has seven sister cities. What are they?  
**Banatry, Ireland • Dubna, Russia • Epinal, France • Førde, Norway • Friedberg, Germany • Luoyang, China • Kumbo, West Africa**
- The tie-breaker question was: What Muppet characters has Frank Oz voiced?  
**Fozzie Bear, Miss Piggy, Cookie Monster, Bert, Grover, Animal, Sam the Eagle, and Grover...to name a few.**

**UPCOMING EVENTS**

- HALLOWEEN**.....Thursday, October 31
- CHRISTMAS PARTY**  
La Crosse Center Banquet Hall..... Saturday, December 7



## ANNIVERSARIES

### JUNE

Dawn Gorniak.....	35 years
Debbie Michel.....	34 years
Russ Kuehn.....	24 years
Rebecca Stark.....	23 years
Sheila Fox.....	20 years
Robert Fischer.....	17 years
Matt Vanderloop.....	15 years
Rachael Gilkes.....	13 years
Carina Olson.....	13 years
Sarah Erickson.....	12 years
Jamin Bishofsky.....	10 years
Rebecca Burg.....	8 years
Mike Herold.....	7 years
Codi Jacobs.....	7 years
Teresa Johnson.....	5 years
Aaron Jurjens.....	5 years
Johanna Wanie.....	5 years
Justin Gierok.....	4 years
Britney Henkel.....	4 years
Darshon Lord.....	4 years
Kaylynn McDowell.....	4 years
Charles Beck.....	3 years
Audra Moline.....	3 years
Ronnie Tilson.....	3 years
Bradley Ames.....	2 years
Hannah Jarvin.....	2 years
Jordan Bott.....	1 year
Tanya Hulburt.....	1 year
Ashleigh Kidd.....	1 year
Arik Steele.....	1 year

### JULY

Steve Remen.....	47 years
Ralph Young.....	28 years
Debbie Gorniak.....	25 years
Laramie Schwier.....	25 years
Joann Anderson.....	22 years
Terri Sullivan.....	20 years
Curt Wier.....	20 years
Robert Kranski.....	15 years
Colleen McCann.....	10 years
Rob Wellnitz.....	9 years
Josh Leisgang.....	7 years
Moly Yang.....	5 years
Jarrold Olson.....	4 years
McKenzie Adank.....	3 years
Zach Johnson.....	3 years
David Clements.....	2 years
Jade Turnipseed.....	2 years
Ethan Walker.....	2 years

### AUGUST

Angie Burnett.....	36 years
Sue Maule.....	36 years
Mike Smith.....	32 years
Steve Johnson.....	29 years
Sharon Ronnie.....	29 years
Jeff Meyer.....	28 years
Lee Vieth.....	28 years
Trish Lastofka.....	20 years
Steve Lechnir.....	20 years
Levi Adank.....	14 years
Rose Chamoun.....	14 years
Doug Kuehn.....	14 years

Lance Reichgelt.....	9 years
Ava Grimslid.....	7 years
Ellen Klug.....	7 years
Karina Richards.....	7 years
Mike Wolfe.....	6 years
Mary Parris.....	5 years
Jeremy Saley.....	5 years
Troy Siverhus.....	5 years
Jesi Acord.....	3 years
Jory Thorson.....	3 years
Rebecca Bridges.....	2 years
Sarah Haskins.....	2 years
Richard Sweeny II.....	2 years
Rhonda Knobloch.....	1 year
Samantha Morehouse.....	1 year
Deanna Murphy.....	1 year
Sherri Schueler.....	1 year
Nick Sly.....	1 year
Amber Williams.....	1 year

### MISSED ANNIVERSARIES

Clark Martin.....	30 years
Tom Donaldson.....	22 years

### NEW EMPLOYEES

Pa Yang  
Harley Schlichenmeyer  
Michele Smith  
Laura Wright

Deadline for the next  
newsletter: 12/13/2019



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