



Working Since 1881

Welcome to Our Newsletter, The Frog Rocks...

the quarterly newsletter of the Frog, Switch and Manufacturing Company. We feature articles on our dealers, share our success stories, and keep you informed of our new products, new patterns, and what's new in our industry.

If you have any article suggestions, or would like to submit a question to our Q&A section, please contact Lynn Hofer: lhofer@frogswitch.com.

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Making A Mark in Minnesota

H&L Mesabi Company – Hibbing, MN

A third generation mining veteran, Bernie Carey has deep roots in the Michigan and Minnesota Iron Range. His father was a mine superintendent in Michigan several years before transferring to Minnesota in 1960. "Grandpa" worked in mining as well.



Bernie joined by Dale Kaskisko of Frog Switch inspect a Frog manganese bowl and mantle at a local mine.

Just out of school, young Bernie saw new opportunities on the supply side of the industry. In 1973 he started selling mining equipment supplies, including off-the-road mining trucks, rough terrain crains, pumps, and other products. In 1985 he founded H&L Mesabi Company with the late Carl D'Aquila. Some careful tweaking of the product line and company focus resulted in immediate growth just a few years later.

Headquartered in Hibbing, Minnesota, H&L Mesabi has grown to three facilities and 15 employees blanketing Minnesota, Michigan and the Upper Midwest with a diverse line of wear products, construction and aggregate supply items.

What fuels Bernie's passion for the business? "It's a people game – one built totally on relationships with suppliers and customers. I really

enjoy the personal end of it", he says".

Bernie's alliance with Frog Switch dates back two decades, forging a twenty-year friendship with VP of Sales/Marketing Bill Walters and mutual acquaintances in the business. Through that time he has remained a valuable

back up, helping to service accounts with Frog's regional sales representatives.

H&L currently sells Frog's manganese jaw dies, cone mantles and bowl liners across Minnesota and in the upper peninsula area of Michigan.

"I have such appreciation for being able to work with a company like Frog, the late Bob DeJarlais, now Dale Kaskisto – to bring this all to fruition. Folks like Bill, Tony, Alf and the Beth Diehls of the world are the mark of a good organization" says Bernie. "Bill isn't a typical vice president who knows "a little bit" – he's a strong asset to H&L, Frog, and the customer base.

Bernie has likewise earned the admiration of his colleagues at Frog, who respect his tireless efforts to make relationships click. Bill Walters sums it up best, "Bernie has the right relationships

with the right people in the right places. We've remained flexible over the years and know how to work together".

That "dogged" determination extends to Bernie's avocation as well, his work with retrieving breeds widely respected in dog circles. The past president of the Minnesota Iron Range Retriever Club and current board member of the Duluth Retriever Club has been training and running field trials for Labrador Retrievers since the late seventies. His two Labs "Mildred" and "Maddie" compete in field trials at a national level year round.

Bernie and wife Jodie reside in Duluth, Minnesota. Thus far their four children Bernie III, Elizabeth, Nick and Karl are pursuing careers outside the business, but Bernie remains optimistic for the future.

"Mining will continue to be strong and H & L Mesabi fully intends to be a part of it. Unlike conglomerates, we enjoy slow steady growth, enabling us to give customers the personal attention they need" he vows.



Bernie (center) with father B.W. and son Bernie III at their duck hunting camp with Labrador retrievers Mildred & Maddie.

Tech Q&A with Tony

by Tony Baldwin, Director of Product Engineering

Q. What are the variables that affect Jaw Crusher performance? (Part II)

A. The tooth design and profile of the jaw plate affect both crusher performance and the wear life of the liners. The profile of the jaw plate has greater effect than the tooth profile. Several standard jaw profiles are commonly used, depending on the product being crushed and the desired finished product. A straight jaw profile, a straight jaw with curved ends, and a jaw with a fully curved profile from end to end, are the offerings in today's marketplace.

When high production is a priority, jaw plates with a straight profile are the best choice. This allows the crusher to have a high reduction ratio because of the large feed opening generated by the straight jaw plates. Thus, a large feed opening with straight jaws equals high production.

But there are some disadvantages to straight jaw plates. Using a straight movable and stationary jaw plate in combination creates a "V" shaped crushing chamber, which is prone to wedging material in the chamber and possibly plugging the crusher. Plus, the majority of the liner wear is at the discharge end of the jaw, especially if the crusher is set to a small discharge opening. When the end of the jaw wears away, the plate must be removed, leav-



ing a lot of unused metal in the remaining portion of the casting to be thrown away.

A crushing chamber using two curved jaw plates is the liner combination for best wear results. The curved jaw design allows the crushing to be distributed over a larger area of the plate and also results in crushing higher in the chamber. By crushing higher in the chamber, the ends of the jaws are not worn as heavily as on the straight jaws. Drawbacks of curved jaw plates include lower production tonnages and a reduction in the feed size because of the curvature of the plates.

Straight jaws with curved ends are a good compromise between the straight and curved jaw profiles. The curved jaw ends help to reduce the end effect wear, as well as the possibility of material wedging and choking the crusher. When choosing a jaw profile, evaluate the pros and cons of each to determine which is best suited for the type of crushing being done. (Crusher performance **Part III** in the next newsletter.)



Straight movable jaw with curved ends used with curved stationary jaw.

Employee News Meet Larry Barnes – Midwest Regional Sales Manager

Involved in the aggregate and heavy equipment industry since 1993, Larry joined Frog's sales force in November of 2007. He previously held a sales position with PowerMotive, Frog's dealer in Colorado. Larry's new territory includes Colorado, New Mexico, Nebraska, Wyoming, South Dakota and Utah.

A native of Colorado, Larry his wife Carolynn and son Ryan reside in Canon City, Colorado. He enjoys golf and outdoor activities with his family



2008 Show Schedule

Feb. 24–27 SME (Society of Mining, Metallurgy & Exploration, Inc.) Salt Lake City (Booth 1930)

March 11–15 Con Expo/ConAgg, Las Vegas (Booth C-7555)

Sept. 22–24, MinExpo International, Las Vegas



Foundry Processes Recorded

Local Carlisle High School senior Jimmy Craine is shooting, producing, and editing a training video showing the no-bake mold process at Frog Switch. Craine, at far right above, stands beside Process Engineer Jeff Kauffman during taping.