

Grain Entrapment

THIRD ANNUAL GRAIN ENTRAPMENT SYMPOSIUM HELD MARCH 12-14 IN LINCOLN, NE

The Third Grain Entrapment Prevention Symposium was held March 12-14, 2013 in Lincoln, NE.

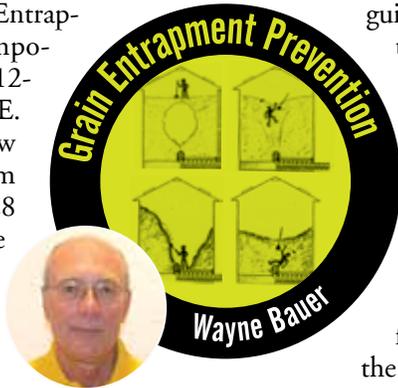
The Symposium drew around 80 attendees from 15 states, including 28 representatives from the principal steel bin manufacturing firms, including: Behlen Mfg. Inc., Brock Grain Systems, Chief Agri/Industrial Division, Global Industries, The GSI Group, SCAFCO Grain Systems Co., Sioux Steel Co., Sukup Mfg. Co., and WESTEEL. The Steel Bin Manufacturing Council had a very productive meeting the evening of March 12 to review and discuss the original (x624) Bin Entry – Design Parameters shared by ASABE, which initially was written in the summer of 2012.

Global Industries sponsored a very nice and informative bus tour to its manufacturing and R&D facilities in Grand Island, NE the morning of March 13.

Steel Bin Design Standard

A good deal of time was dedicated the afternoon and evening of March 13 to focus on the second draft of the proposed ASABE standard for Steel Bin Design Parameters, which were proposed initially by ASABE as (x624) – Grain Bin Entry. This proposed consensus standard was drafted initially in the summer of 2012 to share a number of ideas and issues with steel bin manufactures, in hope of identifying anchorage points in bins that will allow users to attach bin-entry lifelines to prevent them from falling through crusted grain or being pulled down into flowing grain, if they ignore other safety instructions and best management practices.

As a result of comments received in January 2013, during the voting process, the group involved likely will present these ideas in the form of a simple



guidance document and treat the other issues in completely separate documents in the future. The following areas will be dealt with separately and on their own merits:

1. Design parameters or specifications for steel bin storage. In the future, these will focus more narrowly on only anchor points and access doors.

2. Operating procedures or best management practices

3. Anything relative to rescue procedures or emergency response.

Dr. Carol Jones with Oklahoma State University will share additional thoughts and details on the revised draft for this proposed guidance document in a future article.

The group reviewed the Grain Entrapment Prevention website: www.grainentrapmentprevention.com. Suggestions and thoughts were shared on how to make this website even more informative and how to encourage more people to take advantage of all the information, Power Points, etc. that are available at no charge on this site. We thank *Grain Journal* for developing and maintaining it.

A good deal of time was spent discussing anchor points. The fact is that OSHA has been referencing 29CFR 1910.272(g) (2) for years: "The lifeline shall be so positioned, and of sufficient length, to prevent the employee from sinking further than waist-deep in the grain."

The fact is that there is no practical way currently to address 1910.272(g) (2) without an inside anchor point, which should be installed when the bin is erected. There are a number of ways to provide a simple and cost-effective anchor point at both the top access point on the roof, as well as at the side entry door. It is the joint responsibility of the steel bin

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manufacturer, contractor, and employer purchasing the bin to decide what type of anchor point should be furnished during construction of the bin.

Once the anchor point is installed, it is the employer's responsibility to furnish a bin-entry system and train the employees in how to use and maintain the system. It is the employee's responsibility to follow the training guidelines and safety policy established by the employer. Any short cuts taken should result in a very prompt and clear disciplinary action.

The group discussed training programs and various formats that may be considered depending upon the audience you are trying to address and level of training desired. The attendees at the Symposium talked about a variety of training scenarios that may involve anything from 2-, 4-, 8-, 24-, to 32-hour classes.

Training Minimums

It is sad that a number of grain handling firms still do not offer real hands-on training for bin entry and /or tech rescue to their employees and local emergency response groups.

As a minimum, the following was suggested:

1. Anyone being asked to enter grain bins with enough grain in them potentially to engulf someone should be offered a real hands-on class. This likely will be an initial 6-8-hour class, with an opportunity to use the equipment involved.

2. A simple 2-6-hour awareness level class for local emergency responders should be offered to acquaint them with the classification and types of confined spaces at your site, along with the type of rescue equipment that is available at your site should they ever be asked



Proposed ASABE standard would call for safety features of grain bins to be decided prior to the start of construction.

to get involved and respond to a call for help.

3. A short refresher class should be offered every two or three years thereafter.

4. Any regional emergency response team that has any intentions of getting more involved than simply using a cofferdam needs much more training. We are finding that this may involve only 8-12% of all firefighters who are offered a simple 4-8-hour awareness level class. It was suggested that those wishing to get involved in a true high-angle rescue scenario or incident should be looking at 60 hours of initial training during the first two years by a very competent group that actually performs rescues on a regular basis followed by regular refresher-type training.

A discussion was held between those people involved in the Grain Entrapment Prevention Initiative for the past ten years and the Grain Handling Safety Coalition (GHSC) working out of Illinois. Plans are being made for both groups to complement each other more effectively in the future.

Bottom line, everyone involved agreed that we must do more to reduce the number of entrapments and fatalities that keep happening. Bill Field and Purdue University have a great deal of data on incidents in this area.

Numbers Must Improve

Unfortunately, looking at the five years between 2006 and 2010, the industry has seen the following:

- Average of 36 reported entrapments per year.
- Average of 16.8 fatalities per year due to grain engulfments.
- Average 46.4% level of fatalities as a percentage of entrapments reported.

I am optimistic that we can reduce the above numbers to the following projected levels by 2016-20, if we work more effectively together:

- Average of 15 or less reported



entrapments per year, 42% of the 2006-10 level.

- Average of five or fewer fatalities per year due to grain engulfments, 30% of the 2006-10 level.

- 33% or less average level of fatalities as a percent of entrapments reported, a 13% improvement.

We thank everyone who took time to attend and participate in the Third Symposium. The Fourth Grain Entrapment Prevention Symposium will be held in Bloomington, IL March 18-19, 2014.

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No practical way exists to address OSHA's bin entry standards without anchor points installed inside grain storage bins.