



Illinois Historical Boiler Association

Newsletter

February 2010

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Illinois Historical Boiler Association

General Meeting
Saturday, March 20, 2010
1:00 PM

At the

Illinois Agricultural Association Building
(Illinois State Farm Bureau Headquarters)
1701 Towanda Avenue
Bloomington, IL

(see attached map)

On the Agenda:

- Direction-setting for the Association
- Election of Directors

About this meeting...

This general meeting of the IHBA will take some time to set new goals that will drive the activities of the Association for the next few years. Any discussion of short- and long-term goals should begin with a review of the progress so far. The Illinois Historical Boiler Association was formed in 2007 as a pre-emptive measure following experiences in Wisconsin and Michigan with potential regulation changes for historic boilers on traction engines. During the first organizational meetings, By-laws were developed and adopted which stated the purpose of the organization and created the organizational structure. The IHBA was also registered as a Not-For-Profit Corporation with the State of Illinois, to protect the officers and members of the organization. The original purpose of the IHBA were stated as:

- to foster and perpetuate interest in steam engines and other historical boilers, and
- their safe and responsible operation.

To this end, the three original goals of the Association were set as:

1. Foster education on safe use of historical boilers and steam equipment.
2. Consistent inspection procedures used throughout the State
3. Work for reciprocity with neighboring states.

Education

The IHBA continues to support steam schools throughout the state. Specifically, the IHBA assisted in the purchase of a digital projector for use at the Pontiac Steam School in 2009. A Scholarship Program is being developed as well.

Inspection Routine

Previously in Illinois there were only loose guidelines for inspectors regarding historic boilers and the inspection routine. Among other things, these guidelines used formulas intended for evaluating the soundness of the barrel and applied them to the entire boiler. Often the evaluation of a boiler depended solely on the judgment (and prejudices) of the individual inspector, and there were wide variances in procedures and standards in the geographic areas of the state.

In 2008, the State Boiler Inspector adopted the National Board Inspection Code as the guideline for the inspection of historic boilers. Two teams of two inspectors each were designated to handle these inspections, one team for the north of the State and one team for the South. The first-year inspection for each boiler consists of a complete grid of ultrasound readings inside and out. Tables of executed formulas indexed for sheet thickness readings are used to determine maximum allowable working pressure (MAWP) for each area of the boiler:

- Barrels, by type of seam (efficiency of the joint)
- Flat stayed surfaces, by the pitch of the staybolts
- Diameter of staybolts, if worn away

If desired, the owner can perform the grid ahead of the inspection, and then the inspector team will check and verify during the inspection. Subsequent inspections will include a hydrostatic test on the second inspection (year three), followed by an internal inspection on the third inspection (year 5). At each inspection, the inspector may spot-check thicknesses via ultrasound as required.

A third inspection team was added by the State Chief Boiler Inspector in 2009.

Much discussion has ensued since the implementation of this routine. On the positive side:

- There is now general consistency state-wide
- Each boiler is thoroughly examined and evaluated on its own merits
- The formulas and tables are specific to each area of the boiler, as developed by the ASME
- Lap seam barrels are no longer arbitrarily limited to 100 p.s.i, but are judged according to the efficiency of the lap joint and the thickness remaining in the metal
- Individual owners can now evaluate their own boiler (and potential purchases) and know ahead of time what to expect and/or what needs to be repaired

However, there have been negatives as well:

- Flat stayed surface tables have had the greatest negative effect on MAWP. Not coincidentally, these plates have the greatest erosion of material due to stresses of fire and electrolysis
- Minor variations in the application of the inspection routine have been observed
- Some boilers under repair or recently repaired have been caught in the change. Repairs that previously might have resulted in higher pressures do not measure up to the new standard

Reciprocity

Wisconsin has been using the NBIC standard for several years. The Illinois implementation actually exceeds the Wisconsin interpretation (grid on the barrel, for instance), and Illinois has indicated they will use a Wisconsin grid with only spot-checking required (in practice, however, we have seen entire grids measured).

Indiana currently has no inspection, but is developing a model closely based on the NBIC standard to be implemented sometime in the future. The barrel grid as proposed will be 10-inch squares, but hopefully they will be able to accept the Illinois 12-inch grid.

Michigan and Ohio have state inspections, but do not use the NBIC standard. Iowa has no state inspection.

New Goals

The discussion on March 20 will center on where we go from here. Possible alternatives include:

1. Stay the course, but work on clarifying the interpretation of the NBIC Code regarding several items. These include the procedure for determining staybolt pitch (one measurement vs. an average over several stays) and taking readings in a 3-inch circle around a low thickness reading, to determine if there is general thinness or just a pit.
2. Go back to the old inspection methods. The toothpaste may be out of the tube here, and those who show engines in Wisconsin and (eventually) Indiana would be subject to the NBIC inspection when they go out of state.
3. Attempt to alter the standard for stayed surface thicknesses. The current formulas have been developed by the ASME, which is the gold standard for mechanical engineers. To go up against those formulas would require indemnification by an engineer willing to put his reputation on the line, plus then to get the State to buy into a less-stringent standard.
4. Work to take the State out of the process, exempting historical boilers from their jurisdiction. Instead, a trained team of inspectors would cover boilers in certain geographic areas of the state. They would work with the clubs to ensure the boilers in operation at the shows were up to standard. Adequate training is, of course, a must, along with the establishment of a routine and a standard under which these teams would operate. Enforcement would be up to the club.

Details of these and any other options will be worked out during the discussion and beyond. The discussion should lead us to a direction for the Association to work toward, knowing that some of the above options will take longer to develop than others.

Directions to the Meeting on March 20, 2010:

From I-55 take Veterans Parkway around the east side of Bloomington. At Vernon Avenue (Ge. Electric Road) turn west. Go to Towanda Avenue (second intersection) and turn left (south). Enter into the Illinois Agriculture Association/ Illinois Farm Bureau building. Do not park in the Visitor's lot, but go around to the back of the building and find Entrance 4—this will be the only entrance open for us. The guard will let you in and give you a pass.

The IHBA will provide soft drinks available at the meeting. Dues for 2010 can be paid also.

Election of Directors

Following the directional discussion will be the Election of Directors for 2010. There are three current Directors up for re-election, plus a two-year position due to a resignation. The Nominating Committee has forwarded five names for these four positions, so we will have an election. Below is a sample ballot. Each member will vote for four of the candidates. The three candidates receiving the highest vote totals will fill the 3-year terms, and the fourth-highest vote total will fill the 2-year term.

<p style="text-align: center;">Sample Ballot Vote for Four (4)</p> <p style="text-align: center;">Jeff Broadhead (I)</p> <p style="text-align: center;">Kim Graham</p> <p style="text-align: center;">Jesse Jansen</p> <p style="text-align: center;">Chuck Malsch (I)</p> <p style="text-align: center;">Tom Runty (I)</p> <p style="text-align: center;">(I) indicates Incumbent</p>
