

## BE YOUR OWN DETECTIVE

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The kiln drying of various wood products today, is; we at Irvington-Moore feel, finally evolving from a "black art" to definite applied science. Higher production, lowering of waste, stricter size and grading rules, economics and more specific moisture content specifications are just some of the reasons for the changes that are taking place requiring much more precise kiln operation.

In and around dry kilns we find ourselves constantly reviewing the chart record from the recorder-controller in search of a clue that will help solve a particular problem.

With this in mind, I plan to speak about some of these clues and the possible problems they suggest.

- I. Wet bulb never seems to reach set point and shut off - it calls for spray continually.
  - a) Flow of water to water box too fast and is cooling bulb abnormally
  - b) Roof vents are stuck open
  - c) Crack or break inside wall and cold air is blowing across bulb
- II. Wet bulb pen rises to dry bulb setting
  - a) Wet bulb water box is dry
- III. Dry bulb pen slower than usual to reach set point
  - a) Low steam pressure
  - b) Steam traps not functioning properly - water logged system
  - c) Control valve or hand valve partially closed.
- IV. Dry bulb pen making a ragged line going above and below set point
  - a) Steam pressure reducer valve allowing higher than normal pressure which in effect creates over radiating
- V. Dry bulb pen indicates right at set point for one direction of kiln fan rotation then several degrees lower for the other direction
  - a) Indicates only one of the dual bulbs is controlling and that when the fans reverse we read the cross the load temperature drop below entering air set point.
- VI. Dry or wet bulb pen falls off setting almost to lowest point on chart and calls for heat or spray continually
  - a) Usually indicates a "shot" thermal system
- VII. Instrument Apparently calling for heat, spray or venting but unit pressure gauge shows a much lower air pressure than the instrument supply pressure gauge.
  - a) Usually a leaky air line, a perforated valve or air motor diaphragm
- VIII. As soon as the spray shuts off the vents come open or vice versa
  - a) Indicates not enough spread or lag between the two and the set point (spread needs readjusting)
- IX. Dry bulb pen never reaches set point but has shut off air to heat valve
  - a) Instrument should be recalibrated and matched for set point control.

I realize all too well these are only a few of the clues around a dry kiln but maybe the use of these ideas will stimulate our thoughts and help us to solve other problems.

It is my opinion that our dry kilns have advanced more in the last five years than in the previous twenty-five. If this is any indication of what we may expect in years to follow, we as kiln operators must not only maintain our equipment in the best condition possible; but also; school ourselves to work with and apply the new drying methods and equipment as becoming available.