

YOUR KILN CLUB AT 50 - ANOTHER RENEWABLE RESOURCE

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Hi! My name is Clark Hofmann and in case there is any follow-up to today's session, my lawyer's name and phone are... well, never mind, you can get it later. I am truly proud to be here and share some history, findings and thoughts with you. I suspect I am here for the same reason as many of you. We have sawdust in our blood and we are here to rejuvenate the sawdust with a transfusion of fresh information and renewing fellowship.

I have been with the association for about 25 years but always in the background, so this is a chance to, hopefully, contribute to the continuance of our organization. Oh, by the way, there will be a sign-up list available afterwards for those of us with similar guilt and a willingness to volunteer or with facilities to share. We also would like to visit your mill so we can see how you and your company play this game of lumberman's roulette where the stakes can be either too high, too low, too dry, too green, or any combination thereof within the same darn load.

We are probably here for the same reasons members and guests gathered 50 years ago at the first annual meeting in Portland in 1948. Envision the setting - three years after World War II the Northwest corner of the continent was still considered a "fur" piece from where both of our countries' major decisions were made and Canadian and U.S. citizens were anxious to get on with a lifestyle far superior to the one experienced during the war. Our countries' planned for rebuilding and clamored for wood as it was a primary construction material. The club conducted periodic mill-site meetings throughout each year and culminated most of the years with a late Spring annual meeting either on its own or with other groups.

The origin of the Club, I believe, was based on the three reasons we're here today: knowledge, which reflects a positive attitude for improvement; fellowship, which reflects a joy and pride of association; and the continuance of what we believe to be a good cause.

If you don't mind, I'd like to share a few words of prayer with you.

"Give me good lumber to dry.

Grant me full knowledge of my art and teach me to think that I may not be confounded and confused by sly and artful men seeking to lead me into the pitfalls of false knowledge. Teach me, also, to bear with fortitude and patience - foremen, whose knowledge of all things transcends that of all men but whose mouthings are like the braying of a donkey; superintendents who give insufficient time for this servant to perform his duties; engineers, whose zeal in preserving steam causes anguish and consternation within my breast; management which maintains not the tools of my work, allowing the elements to wreak havoc amongst my charges.

Grant me a full measure of peace and quietude, that I may meditate more fully on the problems of this transitory life. Grant me, also, perfect helpers that disturb not my reflections nor question my knowledge; for a perfect helper is a jewel beyond price."

Folks, that was edited from a meditation entitled, "A Kiln Operator's Prayer," shared at one of our earlier meetings. It was uttered by F.W. Guernsey with apologies to everybody and was published in "Timber of Canada" 40 years ago. Gosh, the contents are so touching and meaningful today that I am tempted right now to ask our Club officers to come forward to pass an offering plate.

In preparing for today's audience, I had to guesstimate our range of interests and use an approach that stayed close to the industrial kiln drying of lumber in our neck of the woods for about fifty years. For those of us who may be under total duress or allergic to wool, I would like to share the following gem from Garrison Keillor. It is good for about 20 thought-provoking minutes and you'll be able to enjoy at least half of this session by mentally flipping words with double meanings.

A fellow asked the bartender for a Double Entendre, and the bartender gave him...won. Meanwhile, back at the dry kilns... . Some of us may only be familiar with a small segment of the total drying process and would naturally think a discussion of trucks and bunks would be about a rumbling convoy of eighteen-wheelers with sleeper cabs, or that a discussion about end checking would pertain to defensive tactics of our football team. And the truly inquisitive mind would wonder why anyone with dryers the size of ours would put up with wet socks for 24 hours a day.

Some of us are managers who came to make sure their kiln operators attended class. Oh, are there any managers here? Well, there goes that outline! Seriously, we are all managers. Just consider your family concerns, the safety of your work crew, the pressure to reduce drying time, and the value of the load inside your "spendy-to-replace" dry kiln. If you are handling any one or all of these, you are a manager!

Probably half of us are experienced lumber dry kiln operators who came here to get refreshed on the basics, get tuned to current process innovations and to get away from the phone. Some are O.S.U. drying short course grads and from Charley Kozlik's school of hard knots; grads who are still trying to get the case-hardening out of our mortar boards.

Even with all the documented theory, reported applications and rumored results from others, the task of drying wood still involves a degree of luck. Your presence at this annual meeting to learn more about the drying game means that you are about to become luckier regardless of your level of expertise. Although your lumber load and kiln doors won't get any lighter and the climb into the fork lift won't get shorter because of your attendance, hopefully your involvement with the drying process will at least feel lighter and the climb will appear shorter.

Although some may call us competitors because we are from different valleys and our products do vie for similar spots in the marketplace, we are also united as we recognize that over the years mutual long-term and daily challenges are from non-wood products, political and social concerns, non user-friendly weather, and wood and equipment glitches that can direct any responsible dry-hard in this room to a form of support-group therapy.

So, regardless of your niche or our range of interests, we are here as a group wanting to make our chosen or assigned responsibilities more, if you will, palatable, meaningful, and enjoyable.

Before we get into the learning part, I would like to ask three questions. Then, if I lose you, or you lose me, you can ponder the answers. That way you can still exit as a value-added listener even if you miss, or don't need, 50 years of drying experience. Just apply the prediction, safety and improvement concerns to the process that is important in your life.

- 1) After evaluating a green load and your kiln equipment, and barring operational difficulties, can you confidently predict the drying results?
- 2) What concerns do you have for personnel safety and property damage with regards to your drying operation?
- 3) What is the third way you would improve your drying operation?

Learning is somewhat like seasoning lumber - it can be a dry process but, like drying good lumber, learning can also be meaningful and enjoyable. I suspect we have good wood in our audience. Now let's check the processor. We should be able to finish this session in about 30 minutes if you don't laugh too long. If you don't laugh at all, I'll be chased out of here in about eight minutes and then we'll all be able to leave early. However, I have to admit putting 50 years into 30 minutes will be a challenge so I hope you are well fed and our next session will be shorter. It has been said that a review the past should prevent the reoccurrence of mistakes and to that goal let us proceed.

Some of us have been around long enough to recall some of the earlier meetings and perhaps even the first one. Some of us have been with the group long enough to recall your first meeting in late March of this year, a meeting that will be held in memory for a long time. Keeping an organization like ours going requires tenacity, dedication, and sacrifice - characteristics of some very special people like Lief Espansas, Arnie Knaus, Ed Knight, Charley Kozlik, Art Motay, Shorty Nelson and Heber Radcliffe, to name a few. I am sure these folks and fellow contributors would not have wanted us to dwell on well-earned accolades, but it is difficult to review an organization's past without gratitude by those of us today who will try to keep the club's ideals and benefits fresh and meaningful, as we continue the core activity of producing, with all things considered, the best KD wood we can.

Also contributing to the longevity of the Association were sponsoring mills and suppliers providing us with "hands-on" experiences, usually at the leading edge of progress and institutions providing us with examples of why some of the "stuff" that happens in our kilns happens, and with research and answers that often a lone operator could not resolve.

Over the years, the list of active mills and suppliers has changed and institutional involvement has thinned, but the ingredients for the sustenance of the Club remains. The combination of personal involvement, industrial support and educational assistance are, in a sense, like the essentials for drying: the energy, the structure and the controls. We cannot dry without the essentials, and the Association could not have existed for fifty years without these same essentials. To those who contributed so much in the past fifty years we say, "Thank You."

One of the long-term benefits of our organization is that almost all of the meetings and technical references have been documented throughout the Club's records. We have a tremendous resource of fifty years of drying in our neck of the woods, as well as insights into how it is done elsewhere and occasional views from a global perspective. I suspect if we published a "Best Of Our Reports" book, we could lay light rail or charter airplanes to a future meeting place!

We remember a Spring meeting at Klickitat, the stormy day at Tillamook's kiln and blimp hanger, the drying variables at Oregon-Canadian, the lousy downpours and visibility on I-5 which plagued us regardless of our direction or the time of day, the log flume from Willard, the session at Boring that wasn't boring and the bananas hanging in an apple tree at Broughton. Also, the inspiring and thought-provoking annual meeting sessions which sometimes led to tense out-of-class discussions and near fisticuffs. Each of us has our memories of Saturday sessions and annual meetings.

I have skipped through the first 25 years via an index and walked through the past 25 years of annual reports and I'd like to state, "There's gold in them thar years!" Some of it is funny gold at first glance but, all of it is pure gold for learning about the varying aspects of the art and science of drying wood. We have had some great titles for topics in our past, very much reflecting the mystery and gaming involved with drying lumber:

"Taking the Crooks out of the Stud Game" (1983). See, I told you we were gamblers at heart-wood. Now we know why Reno was a frequent meeting town.

"What's New in the Stud Game?" And "A New Way to Deal in the Stud Game" Erickson (1989). Actually the same article with two titles.

A Griping Story of Load Strapping" (1989).

"Some things I Wish I knew" Dallas Dedrick (1978) - really thought provoking.

"Be Your Own Detective" (1974) R.F. Hiller - must reading for pneumatic controllers.

"A Solution to the Lindberg Kidnapping Case" (1958) - Sounds like something out the Forest Bureau of Investigation files.

Here's a spicy one: "Some Details of an Affair with South Seas Species" (1974) Can you feel the first waves of major imports upon our shore?

This morning's topic on self-improvement: "Keep your Trap Shut or Get the Condensate Out!" (1999)

And the sobering one with reoccurring impact: "These are Not Easy Times" (1971)

Over the 50 years, we have had some very appropriate names: Don DeForrest, an Elwood, a Sherwood and "Woody" Woods who was smart when he chose Canby and not Woodburn. Rosie Noble and Frank Douglas, hopefully, did not come from the same family tree and Jess Oakley and Olin Bircher were almost true hardwoods. Even Charley Kozlik's last name is meaningful because spelled backward it is "Kilz OK". We

have been a colorful group with the Greens, the Whites and the Browns represented. None of whom, I am sure, were named after a stain. And we've been blessed with Popes, Fryrs and good Cooks, one of whom was not named Cook but, Dennis Tracy was sure a good cook at Stimsons. The name that relates best with our 50 years of dealing with degrading characteristics and crooks has to be Robin Banks. I considered highlighting Doyle Van DeVenter's name but, I knew Lyle Carter and Mike Sprague would probably beat me to a pulp after class with rolled-up psychrometric charts if I related Doyle's fine last name with kiln venting.

We are also well-represented geographically with stops at Sherwood, Underwood and Woodland. Since our fellowship extends to kiln clubs and kiln operators everywhere, you can impress your friends and neighbors by saying you have contacts in Washington and you can visit friends and associates in Moscow, Belgrade, Lebanon, Samoa, and nearby Tripoli without crossing an ocean, which currently is probably good in the case of Belgrade. Actually, our outreach is better than AAA or a Visa card because there are kiln associations and fellow operators in most of the places you would want to visit and probably, like yourself, they would be happy to help or talk lumber drying with you.

For the more serious and educational side of this presentation, I would like to share groups of specific topics covered in the first fifty years. It is the "meat and potatoes" of this entire class and we should be able to cover it in about eight minutes and get enough credibility and education to allow you to come back next year. Remember, this not history, it is like reading from someone's diary.

We have had almost 600 reports from annual gatherings plus minutes with tech details from about 250 periodic site visits in our 50 years. In regards to the 600 annual meeting reports, there is enough data here to aid you in almost any concern from the forest to finger-jointing, from a look at a singular wood cell to wrapping 100,000 BDFT for shipment. Here is an approximate break down with the number of articles grouped in the subheading and a typical article title with its date of presentation:

Organizational and Market Reference: our administrative and market issues (42), sample: "The 2x4 Goes Japanese" (1975).

Physical Properties of Wood Relative to Drying: re: structure, stresses, shrinkage, specific species, moisture content and M.C. determination and lumber standards (158), sample: "Structure of Wood As It Relates to Drying" (1951). Basic reading, good stuff.

Preseasoning and Air Drying (41), samples: "Air Drying of Ponderosa Pine" (1955), "Typical Sample of End Checking Prevention Methods" (1959)

Kiln Equipment, including kiln design, construction and maintenance, storage and handling of loads, air and water vapor circulation and removal including venting, air velocities and stickers, heat energy including steam and direct-fired systems and instrumentation and controls (188), samples: "Air Circulation in Lumber Dry Kilns" (1952), "Insulation, What It Is, and What It Is Not" (1978) James Adams, - must reading.

Drying Schedule and related specific reference from Red Oak to Redwood, Cottonwood to imported Radiata (67), sample: "Drying Sinker Heartwood from Young Growth Western Hemlock" (1975)

Specialty Drying: high temp, dehumidification, electrical, solar, vapor (50), sample: "Dehumidification Drying of Spruce Studs" (1977)

Kiln Performance: testing, economics, energy audits (64), sample: "The Value of Kiln Drying in Today's Lumber Market" (1993)

Safety and Environment (22), samples: " Our Changing Times with Environment, Ecology and Pollution" (1971), " Overview of Regulations for Air and Water Emissions" (1998).

Drying Results : degrade, quality control, machining, end use (105), sample: "The Causes of Warp in Lumber Seasoning " (1961).

The numbers are approximate and total 737, which is more than the 600 I promised earlier because there was some necessary overlapping in the subjects covered.

I have made a separate overview of our past 100 "Saturday Sessions," and though there are plenty of choice topics and questions covered, some time will be required to bring the morsels into a quick reference format, though some are presently reachable with a phone call.

Changes in the 50 years? You bet!. Let's take a look at our part of the forest products industry with some glimpses at our club at fifty, and then close in on some specific kiln equipment items.

Growth? A tough question. The surviving mills have become leaner as have research and educational resources, but we have grown in maturity and, hopefully, stability due to the challenges. Our club attendance still fluctuates with nature's wet bulb, but we still can gather a large crowd as we did at our last meeting.

Adjustments? The industry had to do some belt-tightening which we adjusted to with more silicon chips in our diets, and fewer wood chips have decreased our waste. Clubwise, the reduced number of potential mill sites has affected the frequency our once quarterly meetings.

Improvements? Some, but other than the sophistication of kiln controls, specialized kiln changes, and the advancement of variable speed fan drives, we are still fundamentally drying the same way. A way which is apparently OK because it's relatively inexpensive. It works, and timber is still growing the same way though more may be controlled and log sizes are smaller. With regards to improvements in the kiln club, it's hard to improve on greatness, but we have taken advantage of word processing and printing gains in our duty of dissemination of information.

Quality? We have lost in initial wood quality, but regained some finished product quality with nominally improved process controls. The basics still apply as uniformity of load and internal kiln conditions contribute more to consistent, predictable, and controllable results for a given load, than higher temperatures, faster drying rates or greater velocities beyond reasonable norms. With regards to our club's quality, it's hard to improve on greatness, but you already know that. Now all we need to do is work on our humility which may be difficult because I have been led to believe that our club's W.C.D.K.A. initials stood for We Can Dry Kiln Anything!

Quantity? In the mill, optimization has contributed, as has SDR (Saw, Dry, Rip), with both having an impact on kiln drying. Drying schedules for hemlock, hem-fir and pine have been appreciably shortened due to kiln design and material changes, as well as response time and sensitivities of electronic controls. Generally though, market conditions and log supply still dictate overall quantity demands and many of us could be busier. It is almost like we took one step forward and two steps back. With regards to quantity concerns, the West Coast Dry Kiln Association is still one club, but it could use an increase in its active member base.

Safety? There was no strong feedback on this concern, although implosion incidents appear to have been reduced, fan blade integrity may have improved with better maintenance and familiarization, and personal injury reference was seldom addressed in our first 50 years. An affiliation with our Club has been a relatively safe arrangement if we don't take our or another person's opinions too seriously. It's been a while (1972) since we have had a visit by the folks from OSHA. Perhaps we should plan a Saturday session to that little town in Wisconsin some time.

Let's take a look at some of the specific kiln related changes where we had more control of our fate.

Housings and Doors: We have gone from primarily wood and masonry kilns which in some cases were built like a brick house should be, to sheet aluminum clad housings with less insulation than you probably have in your house. The new housings and structures are relocatable, reasonably corrosion resistant, unless you're trying to broil hemlock and don't have the darkened interiors of our earlier drying caves. Have you noticed that although aluminum is not magnetic, the newest aluminum door always has the greatest affinity for the steel of a fork lift? Speaking of kiln doors, I wonder why our industry has not funded research for vitamin supplements specifically intended for kiln operators who have to muscle the awkward 1500 lb. doors. Today there are pills for everybody else's needs. Oh, and why do we have to line up a 20ft door within a 1/4? I guess it's because we buy them that way. Doesn't anyone else realize that door fronts have their own climatic zones? It's either sunny and too bright, dark and too shadowy, or it's raining and a look up to check the door bracket engagement would cast doubts about our ability to get out of the rain. I guess that is just part of being super heroes though. Fly specks in the pepper? Maybe, but when was the last time the responsible buyer or seller closed a kiln door on a stormy night in December?

Fan Drives: We have seen the transition from the zig-zag line shaft fan systems to the currently popular cross-shaft fan with variable speed drives, and for good reason in most cases. Some have even gone to the superduper, magna-powered fan systems which, with the proper simulator software and a long enough extension cord, should allow fellow club members to fly to our next meeting in their own dry kilns. Fans and velocities were very frequent topics in the first fifty years probably because where the air meets the lumber is like where the rubber meets the road. That's where the drying action is - where the air and water vapor media clash at near terminal speeds with evaporation and diffusion rates. It will be fun to see where the next fifty years lead with regards to medium speeds and drying rates. Nature did not intend for trees to give up their moisture easily. We can only guess what's next in this on-going saga between man and Nature. Be sure to continue your dry kiln club membership to find out!

Heat Systems: If we are evaporating water from wood and evaporation is, as we learned in school, a cooling process, why do kilns get so hot? It takes energy to answer that question, but it should not have taken as much energy as we have been

using for fifty years! Just because there is a law that says we cannot destroy energy, that doesn't give us a mandate to waste it. The U.S. Government and the State of Oregon have acknowledged an energy-saving method that when appropriately applied has an attractive ROI and cost-effective side benefits that include everything but a bud vase. When we see billowing steam from our vents, we are not just drying lumber, we are creating detrimental conditions within our kilns, keeping the owls warm, consuming an excessive amount of steam, which regardless of cost can decrease the effectiveness of other kilns and the boiler, and we are also exhibiting before-textbook examples for Econ 101 and Thermo 101.

The concept of heat recovery from our vent streams is not new nor native to our part of the world. The high energy drying processes using steam that have developed in the last fifty years have probably brought to the front the greatest benefits of heat recovery in primarily the softwoods and colder climate applications. Just like properly applied process control and fan system innovations of the last twenty years, vent stream heat recovery systems have made significant improvements in lumber drying operations across the continent.

Kiln Process Controls: We have gone from reasonably dependable, passive pneumatic kiln controllers with cams and other variations, to modern equipped computers that forward after-shift problems to your house faster than you can get home from the mill. We had an article pertaining to computers in 1976 and the increase of related articles is obvious. Although Steve Jobs did not develop an Apple wood dryer controller, many, like Coe's Charley Newton, recognized the gravity of the situation and we can now play the stud game electronically just like a casino with wooden nickels. Still on the topic of controls and looking at the wet bulb, I can't believe that after 50 years we cannot get free designer sox with logos from the suppliers and kiln manufacturers. It is also hard to believe that so many of us are still putting water onto the kiln in a effort to take water out the kiln and paying for the wet bulb's inherent weaknesses. The boys at Sandia, Vaisalia, and Salton have answers and others have tried, but hopefully we will see the continuance of this fine old tradition because in some cases it brings our only source of drinking water to the control room. I suspect we will see more conversions to a dry wet bulb in the future. I wonder what we will call them then.

In closing, lets go back to the 600 reports and imagine you won the WCDKA info lottery and could chose 10% of the articles, or about 60 reports, which would be the equivalent of about 5 years of reports. Your club has the potential resources to help you and your drying team with tech references related to our part of the forest and written, usually, by someone from our neck of the woods. Chances are that club resources can help solve problems or provide a background so that your drying group can make decisions or at least cut the lead time on reaching your goal. Since we, in a sense, update the data base at least annually, West Coast operators have a renewable information resource that is of value to all, and that meets the criteria of our organization's constitution for information dissemination. Woody Woods calls his collection of past annual reports his "goodies" collection and often enjoys reaching for a "goody" whether he needs one or not. There is an index available from 1948 thru 1979 and I am trying to put one together for the later years with some overlap into the seventies.

In honoring and acknowledging those who have dried before us and set the prologue for where we are today, let us also say, "thanks" for also establishing a drying database and resource that is just right for our neck of the woods. Since we would like

to add to our accessible data base, if anyone has past or duplicate club-related literature or drying memorabilia and is planning to thin them out, please contact a club officer.

Folks, thank you for your attendance and continued interest in keeping this "hands on" legacy going. In some industries, KD means knocked down. In our industry, KD can only mean KILN DRIED. When you return to your kilns and drying equipment, dry as well as you can or are allowed to dry, but move it up a notch. You have the potential of 50 years of related drying expertise and history on which to build.

Cheers!