

Dust in the Home Workshop

What's it all about??

Some topics to consider under the umbrella of “Your Health and Your Hobby”:

These comments, observations and experiences are purely my own. Some content is derived from Bill Pentz and Bruce Campbell both of whom I am grateful to. My intent is to share my experiences and hopefully peak your interest in your Hobby and Health as they fit together.

- 1: Toxic Potential of Wood Dust**
- 2: Fine Dust Particles**
- 3: Sawdust/Chips/Shavings**
- 4: Your Workshop and Dust Control**
- 5: Personal Experiences**

1: Toxic Potential of Wood Dust :

Bruce Campbell, president of the Greater Vancouver Wood Turners Guild edited an article on wood dust toxicity, which nicely covers this topic. www.gvwg.ca

“Any dust including wood dust mildly irritates the sensitive mucous membranes of your nose and eyes making you sneeze and tear” as a working chef, I have a sneezing session when I ma exposed to fine flour in an enclosed space like a large pot. Is there a connection? I don't know but suspect yes!

“In addition to actual wood dust, molds frequently trigger reactions too One that actually grows in wood happens to be extremely potent “Cryptostroma Corticale”. This mold lives happily under the bark and sapwood of many hardwood trees, especially favoring Birch and Maple. It is responsible for that spalting which wood turners prize for and for maple bark strippers lung, a condition with all the symptoms of a severe respiratory allergy”. I use a lot of twice turned bowls made from green birch and maple. The blanks are rough turned in the shop then coated and stored in my basement for a year to dry. Is there a connection here? Quite possibly in my opinion.

2: Fine Dust Particles .. one of the the real culprits here as noted by Bill Pentz

“Most Woodworkers put fine dust collection off as one of their last priorities when it should be their first” I was one of those guys by the way!!

“to get good fine dust collection we need to fix our tools to keep the fine dust from blowing away before collection, move ample air to collect fine dust,and then get rid of that dust!” A comment about suction power vs volume.

“Fine wood dust is defined as the airborne dust from woodworking that does not immediately drop out of the air”. Try a flash lite in a dark shop after working to see the suspended particles..

3: Sawdust Chip and Shavings ...I see no real issues except the mess of cleanup and possibly mold spores depending on the wood species. A comment about mold. Recently I had the opportunity to acquire some large green bowl blanks from a local source. The wood was called Butternut or White Walnut. I brought the rounds home and proceeded to chain saw them into rough bowl blanks. This is where it gets interesting. After turning several into blanks for drying ... to be returned and finished later, I noticed a growth of “fur” starting on all the blanks especially those I had stored in large plastic bags until I could get to them for turning. This fur was fast growing to say the least and even limited exposure to it caused a major attack of the sneezes. I suspect there is a real potential here for some breathing issues. One solution , as offered by a colleague, was to spray the blanks with a water and bleach solution, more recently I was informed a borax and water solution will work better. My gratitude to Dave Rawson who kindly stored the butternut bowl blanks in his root cellar during this time.

4: Your Workshop and Dust Control. Bill Pentz once again discusses this topic in great detail with very specific comments. He provides solid direction for those who will listen. **And this is the key !! Listening!!**Typically most of us and I include myself in the same category are complacent and think we have adequate ventilation and dust extraction. Clearly if you read and comprehend what Mr. Pentz is saying like me, you will probably discover you do not have proper dust control in your workshop Pentz makes numerous direct comments regarding the current dust collection typically found in home workshops. He suggests very strongly these bag type units are very good dust pumps and rather than remove the fine particles they actually pump them back into the workshop!! His discussions include air flow, CFM requirements, equipment issues ,dust collectors,piping, and a host of other related “need to know” stuff. Visit the web site and enjoy the read. It is well worth it.

www.billpentz.com/woodworking

My Personal Experiences:

I began active turning sometime between 1983 and 1985. I have always had a workshop but never really made it my top priority until about this time. Living in Calgary at the time I had a basement

workshop with a dust collection system in the same room. It was in it's own cupboard but vented back into the shop. In my mind it seemed to work ok. There was a layer of dust on most things in the shop but it sort of seems normal, after all it is a workshop right?

I played in this shop for 10 years then we moved to a new house on an acreage south of the city. I built a shop attached to the parking garage and installed a dust collection system in a small shed outside. To my way of thinking it worked just fine. It extracted dust and all my heat in the winter but gas was cheap in those days. Oh yes, I still had a layer of dust on most things in the shop. During this time, the mid 80's, I always had a sinus drip and cough especially in the fall and winter months but passed it off as a winter cold deal because I worked in a high school with all those germs the kids bring to school.

We moved to the Shuswap to retire, I built my shop c/w in floor 4" dust collection pipes and a 2 hp collector in the next room . Life is good, wood working is happening and this is what retirement is all about. Right? I still have a layer of dust in most areas of the shop. With my dust contact frequency increasing many times because I spend a lot more time in the shop my cough increased and so did my post nasal drip or sinus drip ... I still have not grasped the situation ... for some people apparently it takes longer than others ... (keep in mind I do have and wear a Dust B Gone mask when sanding on the lathe and later on I purchased a power respirator and used it for the same purpose)) so a little more work in wood and one day after cranking out a bunch of birch salad bowls for a customer I hit the wall. Two days of constant heavy cough and very little sleep I ended up in my Dr's office which led to a breath test which led to an inhaler which led to some very serious discussions, some intense research and a major decision to see if the situation can be salvaged and here we are. This led to an immediate temporary shop closure. The mask and power respirator work well but when the fine dust remains suspended in the air as a result of improper collection and disposal, as soon as the mask is removed it gets inhaled. Sort of a self defeating prophecy.

What have I done so far

Following a discussion with Bruce Campbell his suggestion was to gut the shop, clean and sanitize it then replace the cleaned tools and come up with a dust extraction system which will remove the fine dust or at least scare it a bunch. He suggested I get one of those cartridge type filters for the collector and lose the bag as a place to start but I thought I would go a little further. I am currently in the middle of that process. I gutted the shop even the wall cabinets, sanitized and repainted. Installed 6" overhead dust pipe runs, new dust collector, a 5 hp cyclone specifically designed to do this job, I built a shed outside for the cyclone, re wired for the motor (21 amp load on start up) and have acquired a set of giant filters to scrub the air before returning it to the workshop. The cyclone manufacturer www.clearvuecyclones.com assures me, as do numerous testimonials, the unit is so efficient the filters should require cleaning once a year at best provided the unit is properly installed and all seals are tight. I am in the process of building new dust pickups for the various tools and a downdraft table for the sander. Keep in mind any wood machining required must be completed in a shop other than mine until I can extract the dust. Kind of a catch 22 isn't it?

The big question ... how much did it all cost? In 2006 Canadian dollars Since this was a gamble with unknown outcomes for my future in wood working I really did not care about the cost. I don't believe you can put a price on your health. I had to try just to be sure I have covered the bases before I cash it all in just go fishing instead. I like wood turning more than fishing but fishing will do if required.

In actual dollars the Cyclone unit and filters delivered at just under \$2000 CDN. The piping runs and fittings for my shop with 10 blast gate ports, 100 feet of pipe and numerous fittings just around the \$1000 mark. A new table for the saw and an overarm dust extractor (Excalibur) which hangs over the blade and hopefully catches the up flow dust, the paint, shop supplies like silicone, screws copper ground wire, the new electrical conduit, wire, breakers and so on .. oh yes the shed outside c/w metal insulated door, concrete base, insulation and interior light, plug, switch and the mesh to cover the insulation instead of drywall ... a few tanks of gas running around collecting all the bits I am sure I have forgotten some things but all in all probably somewhere between a good Panama Canal Cruise and a 3 week all inclusive beach front on the Mexican Riviera for two.

So does it work ? You bet it does. Once the machine dust pickups were redesigned, constructed and connected, my dust issues all but disappeared.. I am very pleased and in my mind, convinced I have made a more than reasonable effort to effect some change. Fingers crossed. Away from the dust for almost two months during the rebuild and now operational for almost 3 months in the new environment , my cough and drip have all but gone. I still uses a prescribed medication and will need to do so according to my Doctor. A minor inconvenience in my opinion. Currently I need only to get into someones shop where the air contains some suspended dust and without my respirator I can feel it almost within an hour. Over time with exposure to fine wood dust a process of “sensitization” occurs and eventually the body can no longer absorb the overload and reacts. The healing process and desensitization will take time .. a lot of time indeed!

I am pleased to share my thoughts. Perhaps your perspective of fine dust in your hobby environment and how it might effect your future will be enriched ... possibly changed!.

Any questions or comments to wasinc@telus.net

WA(Bill) Sucking
Blind Bay BC.