

DAVE MARTIN: STAY HEALTHY – DUST COLLECTION FOR WOOD-TURNERS

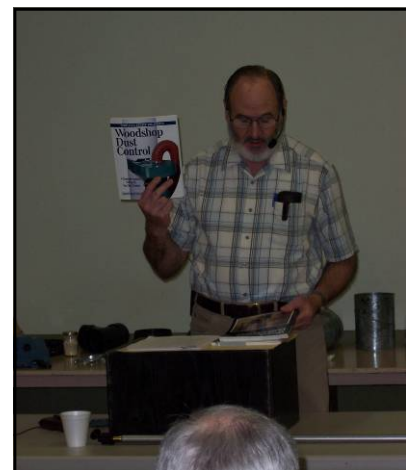
Kerry Deane-Cloutier

Dave normally teaches a four hour class on dust collection, but he attempted to squeeze the main points into a shorter presentation for the Guild. Dave knows what he is talking about here – his doctor told him that if he did not do something about dust control, he would not be woodworking much longer. Long term exposure to dust can be harmful, or even deadly. Dust can cause eye and skin irritation, dermatitis, respiratory problems and nasal cancer. Too much dust impairs the lung’s ability to exchange carbon dioxide for oxygen in the blood. The main concern is dust 1 to 10 microns in size.

Some woods, like redwood, mahogany and boxwood, have chemicals in them that repel insects. Common hazardous woods include beech, birch, cocobolo, ebony, purpleheart, rosewood, teak, black walnut, satinwood and iroko. Some of these are sensitizers, others are irritants. For more information, try Googling the words “toxic wood”.

The key points are:

- Keep tools sharp and make clean cuts. This means less sanding later.
- Keep the shop clean. Use a built in vacuum to take the dust out of the shop.
- Don’t use compressed air to blow the dust around.
- Leave your smock in the shop.
- Collect dust before it gets airborne. Dust stays in the air about 6 hours.
- Use closed rather than open shelves to make it easier to keep it clean.



There are six main ways of controlling dust. The table below lists them in order of priority.

Method	Advantages	Disadvantages
Central Dust Collectors	The most effective way to collect dust and chips from stationary machines. Will protect other people in your home. Cyclone (2 stage) styles are best.	Expensive. Duct work may have to be custom built, requires installation. Some are loud. 1 stage collectors become less efficient as the bag fills. If the top bag is a 30-50 micron bag, it is useless.
Shop vacuums	Compact, easily moved, excellent for use with portable power tools.	Not powerful enough for stationary tools. Noisy. Hoses clog easily, filters must be cleaned regularly.
Air-powered respirators	Essential for beards, room for glasses, do not fog up, continuous flow of fresh air is refreshing. Make sure the unit filters down to 1 micron.	Expensive, can be awkward to wear. Communication with others is a problem.
Disposable dust masks or reusable respirators	Inexpensive. Widely available. A good one is Dust Bee Gone (available online) but it is un-rated.	Must be well sealed to the face. Not effective with facial hair. May be uncomfortable for long wear.
Air cleaners	Removes fine dust with electrostatic filters. Easy to install – hang 1/3 of the way down the room, 12-18” from the wall. Can be built in.	Expensive to buy (2 are better than 1 – they create circular flow). Noisy. A secondary system – it is much better to collect dust at source.

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Kerry Deane-Cloutier

Bibliography

Books

Woodshop Dust Control: A Complete Guide to Setting Up Your Own System, (2nd Ed.) Sandor Nagyszalanczy, Taunton Press, 2002

Controlling Dust in the Workshop, Rick Peters, Sterling Publishing, 2000

Magazines

American Woodworker, October 2005, Issue #117, “How To Choose the Right Vacuum for Your Shop”, pp 64-69

American Woodworker, October 2005, Issue #117, “Soup Up Your Shop Vacuum”, pp 74-75

American Woodworker, January 2006, Issue #119, “Cyclone Dust Collectors”, pp 85-91 – Note: this article is well worth reading before you buy a cyclone

Index to Fine Woodworking – <http://www.taunton.com/cgi-bin/artresult-fw.cgi>

Search for articles using the keyword “dust”

Useful websites

Air Handling Systems – <http://www.airhand.com> - Click on “design info” then download “Air Handling Design Guide”

Oneida Air Systems: <http://www.oneida-air.com>

Woodweb Dust Collection Forum: <http://www.woodweb.com/cgi-bin/forums/dust.pl>

Wood Magazine’s Dust Collection Forum: <http://dgroups.woddmagazine.com/n/pfx/forum.aspx?webtag=airfiltration>

Products

Shop vacuums – Fein Turbo vacuum, Model 0-55-13 - Received “Editor’s Choice” award in June 2000 issue of American Woodworker. Be sure to add the one micron filter kit.

Ultra Electrostatic Air Cleaner – Air Cleaners Inc (ACI): <http://www.airclean.com/home/about.htm> - ph 800-727-1817

PRESIDENT’S COLUMN (cont)

Bruce Campbell

What if I cover the outside in glue and rolled it in sand?

What if I pressure cooked the blank in aniline dye?

What if You get the idea.

Have fun.