Rule of thumb: minimum shaft diameters for hollowing

If you search the literature, you can find recommendations for the minimum shaft diameter for hollowing to various distances off the tool rest. After turning for a while, you get used to using certain tools just by feel, but what do you do before you have all the tools and experience? It's kind of frustrating to get a piece half hollowed only to find out that you have run out of tool. How do you know? Don't worry; the tool will tell you. It will start chattering -- that's that high-pitched squeal and vibration you hear and feel. It means the shaft diameter is too small for the depth. You can get a little more distance with very light cuts, but the real solution is a bigger tool.

If you're like me, you prefer to plan ahead and not start deep hollowing without a proper tool. But who can remember all those numbers? I have analyzed the recommendations I've seen for minimum shaft diameters vs. throw distance, added my own experience, and combined them all into a very simple and easy-to-remember formula. Here it is:

The tool shaft diameter should be *greater than* one-tenth of the length over the tool rest.

For you mathematicians, engineers, and physicists, that's **D > 0.1 * L** .
Now how's that for easy to remember?

Using this formula, you'll see that a 5/16" shaft quits at about 3"; a ½" shaft should be good to about 5"; a 5/8" shaft to a tad over 6"; and a ¾" shaft to maybe 8".

Can you do more with a light cut? Sure. Heavy handed? Get a bigger one. This is a "rule of thumb", not a law of nature. Use it as a rough guide. After all, YMMV.

If you think about it, the moral of the story is to plan ahead when you start your next hollowing job – that extra inch of log you have may mean you need a new tool. Now who's going to complain about that?

Always use common sense. Things that work in one situation may not work in another.
Follow all Safety Rules. If it feels wrong, it probably is; stop and rethink.
***Y**our **M**ileage **M**ay **V**ary*