

Let's Go for A Spin

*An exploration of woodturning, taught through a series of
skill and technique exercises, followed by
a variety of fun and challenging projects*

*Developed by Alan N. Leland
Of
Leland Studios*



*Printed April 2017
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Alan Leland is an internationally known woodturning instructor and demonstrator. He has won accolades from his students and his fellow woodturners for his exceptional handouts and his ability to share his skills and techniques. Alan is able to explain the various skills and techniques required to truly enjoy woodturning with a patient and thorough teaching style. In all of his demonstrations and workshops, Alan emphasizes and explains the techniques he is using and explains the light touch and finesse required to produce his delicate turnings.

Alan has been working with wood since 1976 when he began working for This End Up Furniture Company. After 19 years making crate style furniture, he started his own woodworking business in 1996. At first Alan's main focus was on making custom furniture and doing some woodturning for craft shows. Eventually his interest and enjoyment of woodturning took over as he began to do more architectural turning and his interest in turning for craft shows grew. Alan's work is primarily functional in nature due to his furniture background, but with an artistic flair due to his keen eye for shape and form.

Alan's six session plus woodturning curriculum with its companion woodturning lab manual titled "*Let's Go For A Spin*," which was developed to complement his weeklong turning classes at the John C. Campbell Folk school and elsewhere, has received high praise from his students and his fellow woodturners. His manual is full of fun and interesting projects and chock full of helpful suggestions for teaching woodturning. An early version of his manual is available online free to members of the American Association of Woodturners on their web site at www.woodturner.org. He has since rewritten many of the handouts and added more photos to aid in understanding the processes described in the handouts.

Alan has been a member of the American Association of Woodturners since 1994. He is an active member in several of his local woodturning chapters including the Woodturners Guild of North Carolina, the Carolina Mountain Woodturners and the Chapel Hill Woodturners. He is also an active member in the Triangle Woodworkers Association. Alan has demonstrated at many national and regional woodturning symposia. He has demonstrated and taught workshops for many woodturning clubs across the United States and Canada. He enjoys teaching classes

ALAN N. LELAND'S CRAFTSMAN'S STATEMENT

I strive to make items both functional and beautiful. I feel I have succeeded when people feel and touch my work and desire to both use it and to display it.

Function takes top priority in my work followed closely by form. I take pride in taking the extra time to finish my pieces not only to enhance the beauty of the wood, but to increase its tactile feel and sensuality. I tend to use joinery not only for the beauty of the joint, but also to insure the life and structure of the piece.

For the most part, to the untrained eye, my work may look simple or easy to replicate, but to those who have some knowledge of woodworking, they see that the lines and form of my work flow together. This has come about through long hours of practice and a well developed artistic sense. Everyone notices the depth and natural shine that radiates from my pieces. This has been achieved by spending the extra time to properly finish my work.

Woodworking and woodturning are a solitary business for the most part, as much of your time is spent in the studio working alone. One of the ways that I bring new ideas and social interaction into my life and work is by teaching and sharing what I have learned. Through teaching, my techniques are questioned and I have to rethink why it is I do things the way I do. Occasionally this analytical look causes me not only to rethink my processes but to make improvements in them. Once in a while it leads me off in a new direction due to new found inspiration. I also believe that woodworking is a wonderful activity and stress reliever and I want to share it with as many people as I can.

One of the things that I love most about my work is that I am continually learning and achieving new levels of skill and design. There is so much to explore, learn and create in woodworking and woodturning that I feel I will always be learning and exploring and most of all, advancing my work and techniques.

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Safety Guidelines & Procedures

It doesn't matter how experienced you are or how safety conscious you think you are, all woodturners should carefully study and observe the safety guidelines provided by The American Association of Woodturners. The American Association of Woodturners Safety Guidelines can be found in their annual resource guide provided to its members or on their website at www.woodturner.org. Below I have listed some other safety tips in addition to the AAW guidelines. Please obey and read all safety instructions that come with your equipment and that are presented by your instructor. Feel free to share your own safety tips with the class, as safety is of the utmost importance to our health and future enjoyment of woodturning

Pay close attention to your surroundings and environment.

- If something sounds or feels wrong or your inner voice is giving you warning signals, stop what you are doing immediately and check your equipment and/or procedures, as something may be amiss or unsafe..
- Pay close attention to your inner voice and above all stay alert.
- Do not under any circumstances operate a lathe or any other powered equipment when under the influence of alcohol, drugs or any medications that may impair your abilities

Stick with projects within your skill level.

- Obtain instruction by taking a class or seeking out good advice before tackling a technique or skill that is beyond your current skill level.
- Work on projects that are at your skill level using equipment that you are familiar with and are comfortable using.
- Actions and techniques that are safe for an experienced woodworker/woodturner may not be safe for the novice or intermediate turner/woodworker. There is that built up background of skill and knowledge of the tools and techniques that help make certain techniques less dangerous for experienced artisans.
- By no means is this suggestion of staying within your skill level meant to keep you from growing and challenging yourself, it is merely a suggestion that you seek out knowledgeable instruction to help aid you in your growth in a safe manner. Power tools are inherently dangerous and it is advisable to learn the tools and how to use them from someone that is familiar with them.

Pay attention to and use the proper lathe speed.

- Before turning on the lathe, always double check the speed setting. Also be sure to check that the drive belt is on the proper pulley for what you are turning.
- Turn at a speed that is comfortable for you and is appropriate for the work that you are turning. A good rule of thumb for proper lathe speed taken from Craft Supplies Woodturning catalog is that the result of the multiplication of the diameter of the

piece times the lathe speed in rpm's should fall somewhere between 6,000 and 9,000. For example a 10" diameter turning times a lathe speed of 800 rpm's equals 8,000 which would be a safe speed as 8,000 falls between 6,000 and 9,000 and therefore that would be a safe speed to turn.

- Larger more off balanced items should be turned at slower speeds.
- Absolutely no cell phones or I-Pads on or around to distract you while are turning!

Keep your fingers and body parts out of harm's way.

- When using a bandsaw to prepare pieces, stabilize your fingers out of reach of the blade to insure that they do not follow the wood into the blade.
- The tool rest on the lathe should be as close to the work as possible so that your fingers will not get caught between the tool rest and your work. (1/8" to 1/4" would be safe)
- Get in the habit of blowing the dust and shavings off the tool rest instead of wiping it off with your fingers. Using your fingers to clean off the tool rest might cause your fingers to get caught between the work and the tool rest.
- Always turn the lathe off before moving the tool rest. This prevents harm not only to your work but also to your body parts.
- Do not wrap sand paper or buffing/polishing rags around your fingers or hand. If the cloth gets caught in the spinning parts of the lathe, your fingers will be pulled into the lathe.

Wear Proper attire and keep the work area clean.

- Most importantly always and I can't emphasize this enough wear eye protection. A **FACESHIELD** is the best protection and a requirement in class.
- Tie long hair back and be careful when turning your back to the lathe when it is running as hair may get caught in the spinning parts.
- Be aware of the dangers of breathing wood dust.
- Most finishes are not safe to breath and precautions should be taken to avoid inhaling the fumes from finishes. A good respirator rated for finish type chemicals would be a good investment in your health and future mental capacity. Be aware that chemical respirators have a limited functional shelf life so the filters should be changed when necessary.
- Loose clothing and or hair is dangerous because they can get caught in the spinning lathe.
- Remove jewelry and including watches as they can get caught up in moving parts. Rings can be especially dangerous in woodworking/woodturning. Rings can get caught on equipment or various other things in the shop or can be crushed on your finger if a heavy object lands or wedges your hand.
- The floor can be slippery or dangerous when shavings build up, so clean up often!
- A clean shop is a safer shop!

Be safe, have fun and create beautiful objects!

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Gouge Safety

Woodturning Safety Rules

- Wear a full-face shield at all times for protection.
- Make sure the tool is on the tool rest before starting a cut.
- Always keep tool support as close to the work as possible.
- Make sure the lathe is set at a safe speed before starting the lathe.
- Always sharpen a new tool prior to use to ensure it performs properly.

WARNING: Failure to follow these basic rules can result in serious injury or death.

Guidelines for Using Gouges

Today's gouges feature long shafts and extended flutes for longer wear. However, this does not mean these gouges are designed to reach a significant distance beyond the tool rest! Reaching too far beyond the tool rest results in vibration, increases the likelihood of a serious "catch" and in some cases may result in the tool shaft or handle breaking causing serious injury. The chart below lists gouge sizes and the recommended distance that a gouge can safely reach beyond the tool rest. Not working within these recommended distances can result in serious injury or death.

Max Reach

"Max. Reach" indicates the maximum distance that the tool can safely reach beyond the tool rest.

BOWL GOUGES:

Gouge	Shaft Dia.	Max. Reach
1/4"	3/8"	1 1/2"
3/8"	1/2"	2 1/2"
1/2"	5/8"	3 1/2"
5/8" 3/4" or larger	4"	

SPINDLE/DETAIL GOUGES:

Gouge	Shaft Dia.	Max. Reach
1/4"	1/4"	3/4"
3/8"	3/8"	1"
1/2" 1/2"	1 3/4"	
9/16" 9/16"	1 3/4"	

ROUGHING GOUGES:

Gouge Size	Max. Reach
3/4"	1 3/4"
1 1/4" or larger	1 3/4"

Roughing Gouges are for spindle use only, NEVER use for bowl turning as the tool may break resulting in serious injury!

Handle Size

Tool handle length should be at least 5 times the maximum distance you intend to reach beyond the tool rest in order to provide the needed leverage for proper tool control. Example: For a maximum reach of 3" over the tool rest; your handle must be a minimum of 15" in length.

Lathe Safety

Safety Information

Do's

- Follow manufacturers safety guidelines.
- Always wear eye protection.
- Follow recommended turning speeds.

Don'ts

- Turn at excessive speeds.
- Use inadequate stock holding methods.
- Use wood with knots, splits or rot.

Safe Lathe Speeds

Refer to the speed chart for recommended turning speeds.

Do Not Exceed Recommendations

RECOMMENDED TURNING SPEEDS (RPM)

STOCK DIAMETER	ROUGHING OUT	GENERAL TURNING
2 inches	Up to 1500	Up to 2500
4 inches	Up to 800	Up to 1600
6 inches	Up to 500	Up to 1200
8 inches	Up to 400	Up to 800
10 inches	Up to 325	Up to 650
12 inches	Up to 250	Up to 500
14 inches	Up to 225	Up to 450
16 inches	Up to 200	Up to 400

Safety Sheets Courtesy Of

Suggested Tool List

** STARRED ITEMS ARE OPTIONAL*

FACE SHIELD Required at all times while things are spinning on the lathe!

SPINDLE ROUGHING GOUGE 1 $\frac{1}{4}$ " OR 1"

3/8" SPINDLE GOUGE

3/4" SKEW

1/4" X 1/2" BEADING & PARTING TOOL or Regular Parting Tool

* 1/16" X 2" THIN PARTING TOOL

3/8" SIDE GROUND BOWL GOUGE (with U shaped flute) Robert Sorby or Packard

* 3/8" TRADITIONAL GROUND BOWL GOUGE (with U shaped flute not V shape)

3/4" ROUND NOSE SCRAPER

HOLLOWING TOOLS FOR SMALL PROJECTS such as small 8" hollow forms or 2" globes:

Dale Nish Formed Scrapers Style C part # 247-0098 or D part # 247-0099 available from the Woodturners Catalog Crafts Supply USA highly recommended for small hollowing

* If you purchase the SET OF THREE PACKARD SMALL HOLLOWING TOOLS cat. # 103389 from Packard Woodworks you will need to grind close to 3/8" or more off of the two bent tools before using, as they will grab and cause a horrific catch as the cutting edge is to far out from the support and the amount of torque created is just too much for most of us to handle.

This list was complied for my beginning students that ask me what tools they should buy to get started turning. It is also good as a list for the tools that would be used in my week long fundamentals and techniques classes. Craft Supplies in Provo Utah is another good supplier (www.woodturnerscatalog.com) and of course your local Woodcraft or Klingspor's Woodworking Shops

BOOKS: Keith Rowley's "Woodturning a Foundation Course"

Michael O'Donnell's "Turning Greenwood"

Richard Raffan "The Art of Turned Bowls" and any of Richard Raffan's books

Ray Key's books are excellent

Allan Batty's "Woodturning Notes" available through Crafts Supplies USA

Dale Nish's "Woodturning Christmas Ornaments" Fox Chapel Publishing

Alan Leland's "Let's Go For A Spin" a woodturning lab manual complete with seven session curriculum and a large number of project handouts.

VIDEOS: Jimmy Clewes, Allan Batty, Mike Mahoney, Del Stubs, Trent Bosch, Alan Lacer and Glen Lucas

Packard Woodworks Inc. 800-683-8876 www.packardwoodworks.com

Craft Supplies USA the Woodturners Catalog 800-551-8876 www.woodturnerscatalog.com

Acknowledgements

I would like to acknowledge and thank the following folks for their part in my advancement as a woodturner/woodworker/teacher. They have shared their knowledge and skills with me, encouraged me, and well, just plain inspired me to share my new found skills with others as well as sharing their teaching methods.

Two of the woodturners that have been most influential in my career and from whom I have learned the most and that have given me some of my best teaching ideas are Allan Batty and Stuart Batty. Their teaching techniques have been very influential in the methods that I use in my own classes and written material.

I would especially like to thank Bob & Melissa Gunther for their part in encouraging me and aiding me in my development as an instructor and their support when things seemed to be stuck in idle.

I must not forget to thank Roger Austin for his help and encouragement when I was just starting out and his aid in my pursuit of a woodturning career. I will never forget his sage advice to me when he advised me that the more that I write and speak in public the easier it will become. Not his exact words but I have found them to be quite true. I now find it to be much less stressful preparing for a class or demonstration or even when asked to write an article for our chapter newsletter or a major publication. Writing handouts seems to be less and less of a chore.

Then there is my friend and teaching partner Frank Penta who has provided his constant critique of my teaching style and pointed out my many faux pas in the early days of my teaching career. (Yes, even now I have a tendency to put my foot in my mouth when I am speaking. I do not always say what I mean to say, as my words are sometimes a bit off the mark). Frank encouraged me in the development of my class curriculum and helped set the format for my many handouts. He also is one of my best supporters and promoters, as he is always praising my expertise and teaching skills to anyone who is interested in learning to turn.

My many thanks go out to Bill Johnston and Phil Pratt whom I met through the Triangle Woodturners of North Carolina (now known as the Woodturners Guild of North Carolina). Phil and Bill were very encouraging and taught me a great deal about woodturning but most of all they encouraged me to take an active roll in the club, which opened up a world of creativity and opportunities for good friendships.

I would also like to thank all those demonstrators and professional turners whom I have come in contact with through my association with the American Association of Woodturners and the Triangle Woodturners Association. The list is large and I know that I will leave out some of my favorite demonstrators as my memory may be a bit off at times, but here goes; I would like to thank Keith Tompkins and Jacques Vessery for their willingness to share their handouts on shape and form with my students and their sage advice on teaching shape and form. Soren Berger for his excellent workshops held in my studio, Trent Bosh for his patience and his fun and inspirational workshops, Myron Curtis for his many critiques of my demonstrations and teaching methods and his

encouragement that I write more articles on basic woodturning, my friend and personal go to guy Terry Brown for all his help and advice over the years, George Hatfield for his charm and sharing of his knowledge of Architectural Woodturning (one of my specialties), and, of course the aforementioned Allan Batty and Stuart Batty. I mustn't forget Mike Mahoney who was and still is very encouraging and helpful by providing many opportunities to share my skills and knowledge. Nick Cook for his aid in getting my name out to craft schools and other venues and for his good humor and, lest I forget, his wonderful Southern hospitality. Dale Nish for all he has done to promote woodturning and his kind words of encouragement. I must also thank Dale for accepting my stool and table into the Gregg Museum of Art and Design's exhibit entitled "With Lathe and Chisel". Dale has been very helpful and encouraging by introducing me to influential people in the woodturning world. Thanks Dale!

I mustn't forget to acknowledge Doug Barnes, former resident turner at the John C. Campbell Folk School for his help in providing me the opportunity to teach at the Folk School and consequently aiding me in finding my way as an instructor. Teaching at the Folk School and my subsequent contact with Doug with his easy going personality and encouragement helped to set me on a more focused career path, which in turn led to my making teaching, demonstrating and writing instruction materials a larger part of my life. I just can't thank Doug enough for all he did to change my life. I would also like to thank Marsha Barnes for all the work she does to keep the Folk School woodturning program running smoothly, also for all the work she has done for the Brasstown Woodturners and the Southern States Woodturning Symposium. Then there is the magic of the John C. Campbell Folk School that not only provided me with a place to develop my teaching skills but also had a very positive effect on my life overall. The Folk School is a very special place and I am glad that I discovered the magic that is the John C. Campbell Folk School.

I would also like to thank Kip Christensen for his kind words during my time on the American Association of Woodturners Educational Committee and his efforts to promote woodturning education. Michael Mocho for his help in providing me with some much needed and appreciated feedback on my woodturning curriculum.

I know that there are many more folks that I would like to acknowledge but the list could go on forever as so many people from all walks of life have had a positive effect on my life and career. Golly gee I almost forgot to thank all my past, present and future students for their support, constructive feedback and all that they have taught and will teach me. I must not forget to thank all those woodturners and their families that have hosted me when I was teaching or demonstrating for their local Woodturning group. A special thanks goes out to Paul Coppinger and Mike DeLong for setting up and hosting a series of classes for the East Texas Woodturners Association that were held in Paul's shop in Mineola. Lastly I would like to thank all those who have shown their appreciation for my work by complimenting it, but most importantly, by purchasing it and thereby encouraging and enabling me to hang in and grow as a teacher and craftsman/artist.

Introduction:

This manual was created to provide Alan's students with written material to go along with the many classes that he teaches in his studio and at schools such as The John C. Campbell Folk School, The North Carolina State University Craft Center, Arrowmont School of Arts & Crafts, Klingspor's Woodworking Shop, at Woodcraft stores and at many Woodturning Associations across the country. The following manual contains his curriculum for teaching a series of classes that are designed to provide beginning and intermediate students with a good solid foundation in the skills and techniques that will help them enjoy and become successful in the field of woodturning. Alan's approach to teaching woodturning is through a project based skills oriented hands on learning experience. The classes are designed to be highly informative and fun. Included in the manual are a variety of project handouts that will aid and build upon the skills and techniques being taught.

This six session series of preferably daylong or possibly 3 hour per evening workshops is designed to provide beginning and intermediate students with a well rounded set of turning skills. The intent is to provide a turning experience that will start students on their long and enjoyable journey into woodturning. The workshops start with the bead and cove stick followed by one of several possible simple projects designed to provide students with a sense of accomplishment. The workshop will then move on through a variety of skill building exercises each followed by a project that builds on these newfound skills. The skills and techniques that Alan Leland is teaching are those that he has found to make his turning easier and more pleasurable. The techniques that Alan has adopted require less work and effort on his part and with the added benefit of less sanding. As the students progress through the course they will be exposed to a wide range of turning styles and techniques, from the more functional and ornamental spindle work to bowls and platters. They will also be exposed to end grain hollowing and try their hands at using simple hollowing tools to hollow a birdhouse or the slightly more complicated hollow globe with icicle ornament. The series has been adapted from a five-day workshop that Alan Leland developed for his techniques classes at The John C. Campbell Folk School and for classes in his own studio. The one-week technique workshops that Alan teaches at the Folk School have produced rave reviews from his many students, from beginning students to his more advanced students. To insure that these workshops provide something of interest to students at all levels, after completing the skill building exercises, students can choose from a variety of projects of varying difficulty. This series can be taught on the small midi lathes that many woodturning chapters are now purchasing. The goal here is not to produce professional turners but rather enhance the enjoyment of woodturning by providing lessons in the many skills used in woodturning. Have fun and be sure that you and your students are experiencing an enjoyable and fun time at the lathe.

Alan's goal is not to train professional woodturners but to provide students with a good basic set of turning skills that will help to make their time at the lathe more enjoyable. This curriculum is designed for beginner to intermediate woodturners and even more experienced turners that would like to hone their skills and possibly pick up a few helpful techniques in the process. Some of the skills and teaching techniques that Alan has incorporated into his curriculum have been adapted from the many workshops

and demonstrations that he has have attended over the years. Alan has borrowed some of the best ideas and exercises to aid in teaching his classes.

The class schedule and class descriptions that follow are meant as a guideline. Please feel free to add to or adjust the classes to meet your or your students' goals and objectives. If you are a student in this class, be sure to communicate to the instructor any goals or objectives you may have and where your interests lie. Be sure to make use of the many resources and references available such as Keith Rowley's book titled "*Woodturning A Foundation Course*" and Allan Batty's "*Woodturning Notes*" available at Craft Supplies in Provo Utah. There are many articles, videos and books available on the subject that may be of help. Be sure to check out the many project oriented handouts found in the manual and add your own where appropriate. At some point during the course it would be a good idea to discuss some sharpening techniques. I have found that it is a good idea to go over sharpening during Sunday evening's introductory session. As folks have spent the day traveling and the session is only two hours long, it seems like a good time to deal with sharpening. Through out the course of the week, I show how each tool is sharpened as I use them and then do a bit of one on one, as each individual's tool requires sharpening. There is a lot of information to cover in a short period of time, as some students may be overwhelmed with the amount of material covered, try to be sensitive to their needs.

The curriculum has been broken down into the following six sessions. The first session is the longest and most tiring as there is a lot of information being given to the students in a short amount of time. Therefore, I recommend that the first session be scheduled to last at least 4 hours preferably taught as an all day class. There needs to be ample time to do a simple project, so that the students leave with a completed project. The next 5 sessions can be taught in 3 to 4 hour sessions or as all day classes (preferred). This course was designed with the intent that each session builds upon the skills taught in the previous sessions. It is highly recommended that the sessions be taught in succession to reinforce the skills and techniques being presented. Not only does each session deal with teaching tool skills but each session adds other techniques to the students knowledge base in a carefully planned succession of projects. For instance in Session 2 external chucking methods (the chuck's jaws used to grip a tenon) are introduced then in Session 4 internal or expansion chucking techniques are used. (The chuck's jaws expanding into a recess to hold the work on the lathe). The sessions can be broken out and taught as separate classes but I feel that the student's learning curve is better if the classes are taught in the order presented in this manual.

Sessions

Session 1

Part 1: Bead and Cove Stick; The purpose of this session, is to practice tool techniques and to develop turning skills without the worry of damaging a project. Body positioning and movement through the various cuts can be developed. The three basic cuts in woodturning Bead (convex cut), Cove (concave cut) and the flat or filet (straight Cut) will be taught and practiced while turning a Bead and Cove Stick.

Part 2: Projects Using Beads and Coves; This session begins with a simple project such as a weed pot, mallet, candlestick, honey dipper, toy soldier/snowman/angel ornament, etc. For a 6 session series of classes, I like to have the students turn a tool handle and then, using a $\frac{1}{4}$ " piece of round HSS bar stock, grind a pyramid (point tool) on one end and a skew on the other end. I teach how this tool is used in sessions 4 and 5. This would also be a good time to briefly touch on sharpening techniques.

Session 2: Facing Cut, Convex Cut and Concave Curves Exercise; In this session we delve further into the use of the spindle gouge, as we explore its use in end grain hollowing and the very useful facing cut across end grain. This exercise makes use of the $\frac{3}{8}$ " spindle gouge and is followed by a project such as a goblet, a box, or a birdhouse ornament. In this session chucks are introduced by using a compression foot to hold the work in the lathe

Session 3: Hollowing Project; This session gives students some experience with the skills and techniques for turning and hollowing vessels. Possible projects are a hollow globe with an icicle ornament or a small hollow form. This session introduces a variety of hollowing tools and methods.

Session 4: Faceplate or Side Grain Turning using dry wood; Repeat facing cut, convex cut and concave cut exercise, using a $\frac{3}{8}$ " bowl gouge. To practice the concave and convex cuts and to practice shaping the ogees cuts, sometimes used in faceplate work. This exercise also provides a good review of some of the basic gouge techniques. This short exercise is followed by a project such as a platter or shallow bowl using dry wood. This might be a good time to discuss Band saw safety if you use a band saw to cut the platter/shallow blank into a circle. This session also introduces using a chuck to hold the work in an expansion foot. Bandsaw safety and use is explained while preparing a blank for turning.

Session 5: Turning Green Wood; It is now time for the students to experience the fun and pleasure found when turning green wood. Projects include turning a bowl or natural edge bowl from green wood. Before beginning this project try doing a couple of tool technique practice exercises. One of the best exercises for improving bowl gouge skills, is to mount a blank of wood on a screw chuck and just waste it away practicing shaping the outside of a bowl using both the push cut and the pull cut. Another good exercise is to mount a waste blank on the lathe and practice hollowing it with a bowl gouge with a side grind (David Ellsworth grind, Celtic

grind, Irish grind, etc.) and one with the traditional grind that has a small micro bevel to enable it to under cut the rim or to make tight curves on the inside of bowls. A discussion on finding and preparing green wood for turning should involve proper chain saw safety and how to prepare and preserve the green wood for turning.

Session 6: Discovering & Exploring Shape and Form; This session is intended for intermediate to advanced students. Short exercises will help the student to develop a sense for what makes a good shape and form. Basic principles of design will be discussed with student participation and feed back through class critiques of their work. If time allows surface ornamentation such as coloring and texturing may be added to the skills being taught. Student participation is a critical element of this session.

Session 7: Miscellaneous; This section is chock full of miscellaneous handouts including my thoughts on teaching turning with tips on teaching young turners and a handout on turning cabriole legs and one on turning miniatures and other small scale turnings.

Session 8: Sharpening For Woodturners; This session can be taught at anytime. I have placed it at the end of the manual to make it easily accessible for quick reference. I have also included my notes for doing a demonstration on Sharpening.