Fly Rod Building Course

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July 1, 2011

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Estimated total time required is 25 hours.

Module 1

Introduction: Course overview

Time required: 1 hour

Instructor's notes:

This is an open discussion session with a few visual aids.

Instructor's teaching aids:

- One or more custom-built fly rods

Recognition should be given to the Club members who designed and developed the modules for this fly rod building course: Albert Wood, Cliff Daniel, Ed Casteel, John Tindall, and Tommy Shropshire.

The instructors and students should be introduced and each should share their reasons and expectations for taking or teaching this course. We also encourage students to work together in small teams so that supplies may be shared and therefore everyone will not have to bring all their supplies to each session.

The schedule (including locations) for teaching each module should be discussed and finalized.

Everyone needs to understand that all steps to building a fly rod will have multiple options to consider. There's no "one way" to do anything. As instructors, we can only share our own personal experiences about the way we have learned to build fly rods. Therefore, we each have our own way of doing things.

Please note that this rod building course is designed primarily for students purchasing kits with preformed cork grips. If there is enough demand, we may add a module for building and turning cork grips in the future.

- Module 1: Introduction
    a. We will address the introduction when the other modules are drafted.
    b. This will be an overview of the entire course and will establish the expectations of/for instructors and students.
- Module 2: Prerequisites
    a. Website references
    b. Required books for everyone to bring to each module session:
        i. Mud Hole supply catalog
        ii. "Rod-Building Guide" by Tom Kirkman, 2001, Frank Amato Publications, Inc.
- Module 3: Developing a plan to build your rod
    a. Rod selection
    b. Reel seat selection
    c. Grip selection
    d. Guide selection
    e. Thread selection
    f. Line selection
    g. Components – a checklist
    h. What equipment do you have? What equipment do you need?
    i. Materials – a checklist
        i. Epoxy
        ii. Chemicals
        iii. Tools

    j. Preparation – a checklist
        i. Clean working space
        ii. Effects of oil
- Module 4: Reel seat assembly and guide preparation
    a. Epoxy – this needs special instruction
    b. Types of reel seats
    c. Options to consider in selecting a reel seat
    d. Preparing guides for installation
- Module 5: Reel seat installation
    a. Find the spine and align reel seat to spine
    b. Fitting the reel seat to the blank
    c. Installing the reel seat
- Module 6: Guide placement
    a. Inspect the blank
    b. Make sure spine is clearly marked
    c. Mark the blank for guide placement
    d. Temporarily attaching the guides and tip top to the blank
    e. Inspecting the guides for proper placement
- Module 7: Grip installation
- Module 8: Guide and tip top installation
    a. Installing guides
    b. Installing a tip top
    c. Installing a hook keeper
    d. Wrapping guides
- Module 9: Flex Coating
    a. Writing name, date, rod data, alignment dots on your blank
    b. Flex coating the wraps and writings
    c. Final touch – applying butt cap
- Module 10: Lessons learned
    a. Course evaluation
    b. Comments from instructors and students

This session should end with a reminder about when and where the next session will be. And, a discussion should be had about preparation, tools, materials, and any class assignments to be completed before going to the next session.

Module 2:

Prerequisites: Preparations for beginning the course

Time required: 1 1/2 hour

Instructor's notes:

This is an open discussion with visual aids section. The outline represents talking points that should be discussed thoroughly. It is important that students know the basics of fly rod building and the terminology before beginning the course.

Instructor's teaching aids:

- "Rod-Building Guide" by Tom Kirkman, 2001, Frank Amato Publications, Inc.
- RodMaker Magazine
- Mud Hole Catalog
- H&H Catalog

Get ready for the course by reviewing this material:

- Internet
  - Mud Hole Rod Building Resources (http://www.mudhole.com/Rod-Building-101) - Articles, videos and links to rod building information.
  - Hook & Hackle (http://www.hookhack.com) – Look under rod building on the main page for instructions and check lists. We consider this an overview that will give you basic steps and get you acclimated with terminology. We expect beginners will need more instruction than just this but it is a good overview.
  - Rodbuiliding.Org (http://rodbuilding.org) – a popular web forum where rod builders can ask questions of others. Use the search function to find past treads on topics in which you may be interested. The "Library" has some useful articles including one on how to wrap single foot guides.
  - Rod Building Forum (http://www.rodbuildingforum.com/) – another popular web forum for rod builders to interact and assist each other. Use the search function to find past treads on topics in which you may be interested.
  - Google the Internet with a search of "Fly Rod Building". You can search under just "Rod Building" but you will get lots of references for "hot rods".
  - YouTube – search under "Rod Building". Several good demonstrations on how to perform various rod building steps. Some of the videos are guide helpful especially as you try to improve upon your skills. You will undoubtedly pick up some of the Mud Hole videos that can also be accessed through the Mud Hole website.
- Print material
  - RodMaker Magazine – same people as Rodbuilding.org (i.e. Tom Kirkman). This is more for perfecting your rod building skills over time.
  - Rod-Building Guide by Tom Kirkman – this is a good beginner's book and covers all rods, not just fly rods.
  - Fly Rod Building Made Easy by Art Scheck– this is a more in depth book for beginners to intermediate builders.
  - Handcrafting a Graphite Fly Rod by L.A. Garcia. Another beginners book authored by a well know rod builder.
  - Mud Hole Catalog – The front of their catalog on page 4 has Rod Building 101. I would consider this an overview that will give you basic steps and get you acclimated with terminology. We would expect beginners will need more instruction than just this but it is a good overview.

- Suppliers
  - Mud Hole: www.mudhole.com
  - Hook & Hackle: www.hookhack.com
  - J. Stockard: www.sjflyfishing.com
  - Shoff Tackle Co.: www.shofftackle.com
  - RodBuilder.Org: Go to web site and there is a list of rod building vendors and resources down the left side of the screen.

This session should end with a reminder about when and where the next session will be. And, a discussion should be had about preparation, tools, materials, and any class assignments to be completed before going to the next session.

Homework:

- Read "Rod-Building Guide" by Tom Kirkman, 2001, Frank Amato Publications, Inc
- Review and become familiar with Mud Hole supply catalog
  - Be ready to complete an order form at the end of Module 3's session
- Review the Materials/supplies and tools necessary for rod building section of Module 3
  - Make a list of items you have and don't have

Module 3:

Developing a plan to build your fly rod

Time required: 6 hours

The purpose of this session is for each student to select his/her fly rod components. The final hour of the session will be used to complete a detailed order form for all components for all students. The Club is eligible for a considerable discount through Mud Hole. To make it easy for everyone, we need to make one big order and not several small orders.

Students are expected to take notes during this session and be ready to complete an order form immediately. You will need to be prepared to pay for your order at the end of this session.

Rod (graphite blank) selection: (1 hr.)

Instructor's notes:

This is an open discussion session with visual aids. The outline represents talking points that should be discussed thoroughly.

During the final 15 minutes, each student should tell us what type of rod/blank he has chosen and explain why.

Instructor's teaching aids:

- "Rod-Building Guide" by Tom Kirkman, 2001, Frank Amato Publications, Inc.
- Fly rods 1 wt. to 9 wt.
- Fly rods slow, medium and fast action fly rods
- Mud Hole supply catalog – rod blank section showing options and costs
- Flip chart, easel, markers, masking tape for illustrating points as needed
- Order sheet

Student's materials list for this module:

- Paper and pen for taking notes
- Mud Hole supply catalog
- "Rod-Building Guide" by Tom Kirkman, 2001, Frank Amato Publications, Inc.

Selecting your fly rod blank:

- Three categories of rods according to Lefty Kerh
  - For presentation of the light/medium weight flies (delicate delivery of the fly)
    - 1 wt. to 6 wt.
    - 7 wt. is caught between too much rod for delicate presentation and not enough rod for handling really heavy flies
  - For transportation of heavy flies (not-so delicate delivery of the fly)
    - 8 wt. to 11 wt.
  - For lifting (not needed for distance casting, for bringing fish to the boat, for primarily saltwater fish)
    - 12 wt. and up
- Species of fish targeted
  - Bluegill

        - 0 to 5 wt., medium rod length, personal preference for action type
    - Trout (Rocky Mountains 4 to 10 in. with occasional 12+)
        - 2 to 5 wt., short rod, personal preference for action type
    - Trout (Arkansas average 6 to 18 in. with occasional 20+)
        - 2 to 5 wt., medium to long rod length, medium to fast action
    - Trout (West US average 12 to 24 in. with occasional 26+)
        - 3 to 7 wt., medium to long rod length, medium to fast action
    - Trout (Alaska average 24 to 29 in. with occasional 30+)
        - 8 to 10 wt., medium to long rod length, fast action
    - Black bass
        - 5 to 9 wt., medium to long rod length, fast action
    - Redfish and other marsh fish
        - 5 to 9 wt., medium to long rod length, fast action
- Fishing conditions
    - Windy conditions
        - Heavier rods are needed for windy conditions
    - Fly size and weight
        - Heavier rods are needed for large/heavy flies
    - Where will you be fishing?
        - Mississippi – primarily bluegill and bass
        - Arkansas – primarily small to medium trout
        - Rocky Mountains – primarily small trout
        - Western US – primarily medium to large trout
        - Alaska – primarily large trout & salmon
        - Other?
    - Boat fishing
        - Sitting low on the water requires a longer rod in order to pick the line & fly off the water and to make a back cast without hitting the water.
    - Wade fishing
        - Longer rods aid in better mends and reaching around boulders
        - Shorter rods may be easier to cast in smaller/narrow streams
    - Deep water or large, fast streams/rivers
        - Heavier rods are preferred for casting sinking lines
- Personal preference for rod action type
    - Slow (very limber rod, little backbone)
        - Generally for surface flies. Set hook by sight not by feel. Rod is not very sensitive to strikes.
    - Medium (good backbone with flexible tip section)
        - Generally for either surface or subsurface flies. Recommend using a strike indicator for subsurface flies because rod is not as sensitive to the strike as in a fast action rod.
    - Fast (stiff rod, lots of backbone)
        - Generally for subsurface flies. Set hook by feel. Rod is very sensitive to strikes.
        - Also very effective in quickly pulling fish out of structure when using surface flies.
        - Sinking lines
- Rod length
    - Short – 5 to 7 ft range
    - Medium – 8 to 9 ft range
    - Long – 9.5 to 11+ ft range
- Pros and cons for number of rod pieces

- 1 piece
- 2 piece
- 3 piece
- 4 piece
- Other?

- Financial
  - Kits vs. selecting your own components
  - Inexpensive – $100 to $200
    - Cabela's kits = blank, flex-coat, guides, grip, reel seat, thread, etc.
  - Moderate cost – $200 to $400
    - High-end kits
    - Compare prices for inexpensive blanks and components
  - Expensive – $400 to $600+
    - Sage, Winston, etc.
    - High-end reel-seats
    - Generally speaking, a high-end rod can be custom built for about $100 less than the retail price of the rod.
- Other things to consider:
    - Rod warranties
      - Varies with manufacturer
      - Most blanks are covered
      - Most companies require you send them the entire rod and $50 to $75 to replace/repair the damaged section.
      - You may request that they return either the damaged section or the components (e.g., guides) so you can rebuild the damaged section.
    - Rod bag
    - Rod tube
  - Student assignment:
    Select your fly rod blank and tell us why you made that decision.

Reel seat selection: (1 hr.)

Instructor's notes:

This is an open discussion session with visual aids. The outline represents talking points that should be discussed thoroughly.

During the final 15 minutes, each student should tell us what type of reel seat he has chosen and explain why.

Instructor's teaching aids:

- Fly rod reels
  - Spring and pawl drag
  - Disc drag
- Fly rod reels small and large arbor
- Fly rods with different reel seats
  - Fighting butts
  - Rod rests

- An unassembled reel seat (different types)
- Mud Hole supply catalog – rod blank section showing options and costs
- "Rod-Building Guide" by Tom Kirkman, 2001, Frank Amato Publications, Inc.

Student's materials list for this module:

- Paper and pen for taking notes
- Mud Hole supply catalog
- "Rod-Building Guide" by Tom Kirkman, 2001, Frank Amato Publications, Inc.

Selecting your reel seat:

- Match your fly rod and type reel you'll be using *(note: this section on matching rod & reel is optional)*
    - General philosophy about fly reels = just something to hold your fly line while you are fishing
    - Rod size and reel capacity
    - Freshwater or Saltwater
    - Arbor size
    - Drag systems
        - Spring and pawl drag
        - Disc drag
            - Closed systems
    - Weight
    - Financial
    - What is a reel really worth?
- Match your fly rod, reel *(optional)* and reel seat
    - Types of reel seats
        - Nickel silver
        - Aluminum
        - Anodized aluminum
        - Titanium
        - Cork
        - Up locking vs. down locking
    - Reel seat colors
        - Nickel silver
        - Black
        - Pewter
        - Titanium smoke
        - Other?
    - Parts of reel seats and an introduction to how to assemble them
        - Butt plug (threaded and unthreaded)
            - Fighting butt
            - Fighting butt extension
            - Rod rest
        - Threaded body
        - Lock nut
        - Retainer hood
        - Wood insert
        - Sliding bands (typical on a cork reel seat)
        - Hood

- Contoured cork ring

- Student assignment:

  Select your reel seat and tell us why you made that decision.

Grip selection: (30 min.)

Instructor's notes:

This is an open discussion session with visual aids. The outline represents talking points that should be discussed thoroughly.

During the final 20 minutes, each student should tell us what type of grip he has chosen and explain why.

For the purpose of this basic training course, we will use only the pre-shaped grips. But the students should be aware of how a cork grip is constructed so they may pursue that option if they continue building fly rods.

Instructor's teaching aids:

- Samples of pre-shaped grips
- Components for a custom made cork ring grip
- Cork ring press
- Cork ring reamer
- Winding checks
- Hook keepers
- Calipers
- "Rod-Building Guide" by Tom Kirkman, 2001, Frank Amato Publications, Inc.

Student's materials list for this module:

- Paper and pen for taking notes
- Mud Hole supply catalog
- "Rod-Building Guide" by Tom Kirkman, 2001, Frank Amato Publications, Inc.

Selecting your grip:

- Types of cork grips and purpose of each
  - Reverse half wells
  - Cigar
  - Half wells
  - Full wells
  - Big game full wells
  - Fighting grip
- Pre-shaped grips or custom made
  - Pre-shaped grips
  - Custom made cork ring grips
- Grip composition options
  - Standard cork – listed in poorest to highest quality
    - Select grade, A grade
    - Better grade, super grade
    - AAAA grade, Flor grade
  - Decorative cork

        - Burnt cork
        - Spotted rubber cork
        - Checkerboard accent with wood
        - Burl composite
    - Other
        - Rubberized cork
        - Birch bark inlay sheets
        - Wood
- Winding checks
    - Plastic
    - Nickel silver
    - Aluminum
    - Anodized aluminum
    - Titanium
- Hook keepers
    - Standard
    - Folding
    - Recoil
- Student assignment:

    Select your fly rod grip and tell us why you made that decision.

<u>Guide and tip top selection:</u> (1 hr.)

<u>Instructor's notes:</u>

This is an open discussion session with visual aids. The outline represents talking points that should be discussed thoroughly.

During the final 10 minutes, each student should tell us what type of guides and tip top they plan to use on their rod.

<u>Instructor's teaching aids:</u>

- A selection of various sizes of guides and tip tops
- A selection of different types of guides and tip tops
- Guides and tip tops for different purposes (fresh & saltwater)
- "Rod-Building Guide" by Tom Kirkman, 2001, Frank Amato Publications, Inc.

<u>Student's materials list for this module:</u>

- Paper and pen for taking notes
- Mud Hole supply catalog
- "Rod-Building Guide" by Tom Kirkman, 2001, Frank Amato Publications, Inc.

<u>Selecting your guides and tip top:</u>

- Types of guides
    - Stripping guides
        - Type
            - Casting
            - Spinning
        - Composition

        - Stainless steel
        - Aluminum oxide
        - Silicon carbide
        - Titanium
    - Guides
        - Snake guides (double foot)
        - Single foot guides
- Things to consider when selecting guides and tip top
    - Size
    - Color
    - Weight
    - Smoothness
    - What they are made of
        - Stainless steel with special coatings
        - Titanium
    - Durability
    - Costs

Thread selection: (30 min.)

Instructor's notes:

This is an open discussion session with visual aids. The outline represents talking points that should be discussed thoroughly.

During the final 10 minutes, each student should tell us what type & color of thread they plan to use and why.

Instructor's teaching aids:

- Both types of threads (color preserver vs. no color preserver)
- Assortment of thread colors
- Examples of thread with flex coat applied (if available)
- "Rod-Building Guide" by Tom Kirkman, 2001, Frank Amato Publications, Inc.

Student's materials list for this module:

- Paper and pen for taking notes
- Mud Hole supply catalog
- "Rod-Building Guide" by Tom Kirkman, 2001, Frank Amato Publications, Inc.

Selecting your thread:

- Types of threads
    - Color preserver required
    - No color preserver required
- Thread diameter
    - A - thin
    - D - thick
- Other things to consider when selecting thread
    - Color (rod, reel seat, guides, thread, etc.)
    - What it will look like after flex coat has been applied

Materials/supplies and tools necessary for rod building: (1 hour)

Instructor's notes:

This is an open discussion session with visual aids. It is important for students to know when, why and how materials are used.

Instructor's teaching aids:

Instructor should have all (or the most important) tools, supplies, and materials he/she uses during the rod building process.

Recommended materials/supplies:

- Denatured alcohol (caution: do not use isopropyl alcohol)
  - Read warning label on container prior to use!
    - Warning: Must be used in a well-ventilated area!
    - DANGER! FLAMABLE!
    - VAPOR IS HARMFUL!
    - Avoid long term contact with skin as it can be absorbed through the pores in your skin!
    - Use Nitrile rubber gloves during use and minimize contact
  - Used to clean a variety of surfaces and tools
    - Clean aluminum foil if mixing epoxy on foil
    - Clean stainless steel measuring spoon prior to mixing epoxy
    - Clean thread wraps prior to epoxy application
    - Clean components such as the "reel seat" prior to epoxy application and assembly
    - Clean X-Acto razor knife blade prior to use
    - Clean single edge razor blades prior to use
    - Clean artist's pallet knife before and after stirring or applying epoxy or equivalent
  - Used for fuel in the Alcohol Torch
    - For the removal of air bubbles in flex coat
    - To smooth-out epoxy and flex coat
  - Damages surfaces if spilled
    - Softens and ruins finishes of wood surfaces (tables and reel seats)
    - DO NOT USE ON FINISHED SURFACES OF THE ROD BLANK!
    - Only clean parts of the blank that have been sanded
    - Use regular "rubbing" alcohol to clean finished surfaces of the rod blank
- Acetone
  - Read warning label on container prior to use!
    - Warning: Must be used in a well-ventilated area!
    - DANGER! FLAMABLE!
    - VAPOR IS HARMFUL!

        - Avoid long term contact with skin as it absorbs through the pores of your skin and carries any dissolved chemicals with it. Such chemicals could be poisonous.
        - Use Nitrile rubber latex gloves during use and minimize contact
    - Used to clean-up during and after epoxy application
        - Clean brushes after epoxy application
        - Clean stainless steel spoon after epoxy application
        - Use heavy bottom glass or ceramic "egg holder" or glass to help prevent spilling
    - Clean-up immediately if spilled
        - Keep from table surfaces as it will remove all finishes from wood
        - Melts plastic when contact made with acetone
        - Softens and ruins finishes of wood surfaces (tables and reel seats)
        - DO NOT USE ON FINISHED SURFACES OF THE ROD BLANK!
    - Make sure artist brushes or disposable brushes are approved for use with "thinners"
    - Used as a "thinner" for epoxy
- 30-minute epoxy
    - Used for assembly of most all hardware and components
        - Reel seat
        - Cork grips and rings since it allows you plenty for of time for assembly before the epoxy sets up or "cures"
    - Purchase "clear" epoxy with the highest pound rating such as 1500, 2000, 2500 lb.
    - Always place a sampling of the epoxy being used on a small piece of aluminum foil with a toothpick
        - This will allow you to keep up with the curing or "tackiness" of the epoxy.
    - 2-part epoxies are made up of the "hardener" and "resin"
        - Make sure you use equal parts of the hardener and mix well
    - Clean your hands and application surfaces prior to mixing and application.
    - MIX THOROUGHLY BEFORE APPLYING!
- 5-minute epoxy
    - Used for assembly of the tip top and reel seat "butt cap" since these items do not need as much time to install before the epoxy sets up or "cures"
        - Also used to attached "inletted" cork ring to reel seat hood – not applicable with preformed grip.
    - Purchase "clear" epoxy with the highest pound rating such as 1500, 2000, 2500 lbs.
    - Always place a sample of the epoxy being used on a small piece of aluminum foil with a toothpick
        - This will allow you to keep up with the curing or "tackiness" of the epoxy
    - 2-part epoxies are made up of the "hardener" and "resin"
        - Make sure you use equal parts of the hardener and mix well
    - Clean your hands and application surfaces prior to application
    - MIX THOROUGHLY BEFORE APPLYING!
- Rod builders epoxy glue

- Often referred to as “Flex Coat” which is a brand name
- Flex Coat Rod Builders Epoxy glue is available in 4oz., 8 oz. and larger containers.
  - You can build a couple of rods with 1 – 4 oz. bottle
- Keep lids on hardener and resin bottles when not in use
  - Clean tip of bottle with denatured alcohol after use
- Mix equal amounts of the hardener and resin in a stainless steel measuring spoon or mixing cup for each application
  - Clean-up immediately after application and before the epoxy cures with acetone
- MIX THOROUGHLY BEFORE APPLYING!
- With your brush or spatula, place a “sample” amount of the epoxy being used on a small piece of aluminum foil and put a toothpick into the mixture
  - This will allow you to keep up with the curing or “tackiness” of the epoxy.
  - Make sure the aluminum foil piece has been cleaned first with denatured alcohol
- Used to coat the thread wraps at guides, tip top, etc.
- Will become tacky in approximately 12 to 17 minutes
- Turn off all fans and close windows before applying rod builders epoxy glue including while turning the blank with the drying motor after application of epoxy to the thread wraps
  - This will help to prevent fibers, dust, hair, etc. from sticking to the epoxy until it cures

- Aluminum foil
  - Used for sampling of epoxies and to keep up with the curing of each batch. Remember to put a toothpick in the epoxy sample. This will allow you to keep up with the curing
  - Can also be used to protect table surfaces during rod building activities.
- Paper towels
  - Uses for various tasks in the rod building process
    - For cleaning surfaces, tools, and hardware with denatured alcohol
    - For cleaning up messes that will happen
    - You can never have too many paper towels on hand!
    - Cut full size sheets in quarters or cut the half size sheets in half
    - For final cleaning of brushes following clean-up with acetone
    - Wiping the blank with rubbing alcohol
- Wooden tooth picks
  - Round type is preferred over flat type
  - Used to place in epoxy mixtures on aluminum foil to gauge curing of epoxy
- Small glass or egg holder
  - Preferably with a “rounded bottom” glass to hold acetone for brush cleaning
    - Similar to a tall, heavy bottom shot glass
  - Egg holders in glass or ceramic are perfect
    - Have a rounded bottom and a 1 tablespoon measuring spoon can be dipped easily when cleaning up after epoxy application
  - Preferably with slightly weighted bottom, not top heavy,

        - To help prevent spilling of the acetone used to clean brushes
    - Masking tape and painters tape
        - For various tasks during rod building
            - Taping guides and tip top temporarily to the blank before thread wrapping the guides
            - To tape a reel onto the blank while installing and spacing the guides
            - Used to shim extra space between the blank and the reel seat while attaching the reel seat and cork grip
            - Used to mark the spine of the blank and other reference points while lining up and attaching the guides, reel seat and cork grip
    - Glass panes
        - Two (2) small glass panes similar to picture frame glass
        - Used to cut strips of masking or painters tape
        - Clean glass surface with denatured alcohol prior to placing tape on glass for cutting
        - Make sure at least one edge of the glass is a straight edge
    - Monofilament fishing line
        - Used to pull the "tag end" back underneath the thread wraps
        - Must be 4 lb. test for best results
    - Sandpaper
        - Various grit ratings – 80 to 400
        - Used to lightly rough-up the blank for epoxy application and assembly of the reel seat and cork grip
        - Used to lightly rough-up the inside of the reel seat metal pieces during assembly with epoxy
        - Used to form and polish cork grips on a lathe when gluing cork rings together to make the grip
    - 3M Scotch scouring pad
        - For roughing up finished blank surface prior to applying epoxy for the installation of tip top, cork grip and reel seat
    - Wide, flat tip pencil or marker
        - Used to mark on masking tape for various steps in the rod building process
            - For thin line marking on masking tape for identification of the spine
        - Prismatic Marker found at www.mudhole.com

<u>Recommended tools:</u>

- Hand rod wrapper
    - Can also be made by hand
        - Wood with Velcro material for softener and strap
        - Cardboard box cut-out with "V"
    - Drying / finishing motor
        - Available for purchase in a variety of RPM ratings
        - 6, 9, 11 or 18 RPM for epoxy drying and/or epoxy application
        - Can use BBQ rotisserie motor (4 to 6 RPM)

        - Available with self-adjusting chuck or adjustable chuck
        - Self-adjusting chuck requires use of masking tape applied to end of blank section
        - Self-adjusting chuck will allow installed reel seat to slip into the chuck for turning
        - Adjustable chuck has three (3) jaws that adjust to blank or reel seat diameter
    - Thread tensioning device
        - Used to apply appropriate pressure or tension to thread wraps
        - Can be purchased separately
        - Two (2) are provided with the Flex Coat WH-1 Hand Rod Wrapper
        - Can use a coffee cup or glass to hold thread and book(s) over thread to set tension
        - Too tight thread wraps can cause rod breakage
        - Too loose thread wraps will come apart
    - Alcohol torch
        - Uses denatured alcohol for fuel
        - Burns clean
        - Used to remove air bubbles from epoxy
        - Used to provide heat that will liquefy (thin) epoxy
        - Used to give finish appearance of epoxied thread wraps
        - Available at dental supply businesses or websites
        - Be careful while using since the flame can appear to be invisible
    - Burnishing tool
        - A must have tool to provide finish of thread wraps
        - Very inexpensive
        - Pushes threads side-by-side and flattens for finish prior to epoxy application
        - Made of plastic
        - Available at Mud Hole, Jann's Netcraft, and Hook & Hackle
        - Can also use the backside of a plastic spoon. This is not as effective as a burnishing tool
    - Scissors
        - Like those used for fly tying
        - Will need for a variety of tasks
        - Nippers can be used in lieu of scissors
        - Sharper the point the better
    - Thread pick
        - Can be purchased from several rod building websites
        - Mud Hole, Jann's Netcraft, Hook & Hackle
        - Could use dental tools (picks)
        - Available at Harbor Freight
        - Could use a bodkin
    - Craft utility razor knife (clean blades with denatured alcohol before using)
        - X-Acto craft razor
        - Size #11 blade replacements are a good size to have
        - Does not have to be X-Acto brand
        - Available at Hobby Lobby, Michael's, Office Depot, and Walmart

        - Off brand available at Harbor Freight
- Single edge razor blades
    - Available at Walmart, Fred's, Mud Hole, Harbor Freight
- China marker – white
    - Used to mark the blank for guide layout and placement
    - Wipes off with a piece of paper towel after guide wrapping and prior to epoxy application
    - Available at Mud Hole, Jann's Netcraft, or Hook & Hackle
    - Similar to "grease" pencil
- Stainless steel measuring spoon or mixing cups
    - Used for mixing epoxy
    - 1 Tablespoon is perfect size
    - Re-usable
    - Easy to clean-up
    - Mixing cups are available from Mud Hole, Jann's Netcraft, or Hook & Hackle
    - Disposable
- Small 6 inch ruler (see Harbor Freight for about $2)
    - Stainless steel preferred
    - Thin edge for more accurate measurements
    - Used to measure length of threads applied to guides
- Artist's brushes
    - Size #12, #10, #8, #6 and #4 are good size to have on hand
    - Need wide and narrow for epoxy application
    - Can be purchased in sets at Hobby Lobby or Michael's
    - Must be approved for use with thinners and cleaners
        - Acetone
        - Denatured alcohol
        - Should be identified on packaging
    - Made from Ox hair or Sable preferred
    - Can use disposable brushes if so desired
    - Will get a better finish with artist's brushes
- Artist's pallet knife (clean blades with denatured alcohol before using)
    - Has a stainless steel "flat blade" surface
    - Cleans up easily with acetone or denatured alcohol
    - Used for stirring and mixing epoxy
    - Used to apply epoxy to rod blank during cork grip/cork ring and reel seat application
    - Available at Hobby Lobby or Michael's
- Head magnifier
    - Adjustable band
    - Some models have replaceable, different strength magnifying lenses
    - Available at Hobby Lobby, Harbor Freight, Mud Hole, Jann's Netcraft, or Hook & Hackle

        - A must have tool for close-up inspection
    - Swivel head pin vice
        - Used to hold guides while prepping with file or grinder
        - Available at Hobby Lobby
        - Could also use Mud Hole's "Guide Grinder Holder"
        - Swivel head pin vice is less expensive and works just as good
        - Guide grinder holder is a must have tool for prepping single foot guides
    - Cork reamer
        - Used to ream cork grips to proper inside diameter
        - Round or rat-tail file can also be used
        - Tapered
    - A good light source
        - You must have a good light source for rod building!
    - Flat and round (rat-tail) files
        - For reaming cork for grips
        - For prepping guides
    - Safety glasses
        - To protect eyes during grinding for guide preparation
        - If using grinding wheel or Dremel tool
    - Calipers
        - Measurements in millimeters
        - For verification of blank diameter
        - Used to determine "winding check" size
        - Available in plastic, brass or stainless steel
        - Plastic will not scratch or mar the blank surface
    - Cork ring clamp
        - Used for gluing cork rings together to make the cork grip
        - Can be easily made with ¼" all-thread rod, wood pieces, hex nuts, flat washers and wing nuts
        - Available at Mud Hole, Jann's Netcraft, and Hook & Hackle
    - Tip top gauge
        - Used to verify tip top size
        - Available at Mud Hole, Jann's Netcraft, and Hook & Hackle
    - Epoxy spatula
        - Used to apply epoxy to thread wraps in lieu of brushes
        - Can be purchased in a variety of sizes and shapes
        - Available at Mud Hole, Jann's Netcraft, and Hook & Hackle
    - Dremel tool
        - Used to grind guides during prepping
        - Used with a sanding wheel bit to prep the cork ring that the reel seat attaches to
        - Helps to shape the cork grip for proper I.D. requirements
- Suppliers
    - Mud Hole: www.mudhole.com

- Hook & Hackle: www.hookhack.com
- Jann's Netcraft: www.jannsnetcraft.com
- Harbor Freight
- Pearson Dental Supply
- Hobby Lobby
- Michael's
- Auto Zone
- Walmart

Order form: Completing an order form for fly rod components: (1 hr.)

Each student should now be ready to order everything he/she needs to build a fly rod. Please complete a detailed order form (provided by the instructors) for all components your components, materials/supplies, and tools. The Club is eligible for a considerable discount through Mud Hole. To make it easy for everyone, we need to make one big order and not several small orders.

Checklist of items that can not be purchased locally:

- Blank
- Reel seat
- Cork
- Grip
- Guides
- Tip top
- Options:
  - Rod sock
  - Rod tube
  - Winding check
  - Hook keeper
  - Thread size C or D for larger "weight" (saltwater) rods.
  - Fighting butt or extension for grip
- Materials/supplies and tools
  - Flex coat
  - Alcohol torch
  - Drying motor
  - Rod wrapper
  - Cork reamer
  - Cork ring clamp
  - Tip top gauge

This session should end with a reminder about when and where the next session will be. And, a discussion should be had about preparation, tools, materials, and any class assignments to be completed before going to the next session.

Homework:

- Double check to make sure you have all your rod-building components (pieces-parts)
- Double check to make sure you have all your materials/supplies and tools necessary for rod building
- Prepare for Module 4 by reading the appropriate chapter (pp. 22-24 Seat Selection and Installation and p. 31 Guide Prep) in "Rod-Building Guide" by Tom Kirkman.
- Collect all of the materials (a small box will do) listed under Student's materials list in Module 4 and bring them to the next session

Module 4:

Reel seat assembly and guide preparation

Time required: 4 hours

Instructor's notes:

This is a "hands-on" session where each student will assemble all components of a reel seat and get the guides ready to be installed. Detailed instructions will be provided by the instructor. Students should prepare for this module by reading the appropriate chapter (pp. 22-24 Seat Selection and Installation and pp. 31 Guide Prep) in "Rod-Building Guide" by Tom Kirkman.

Instructor's teaching aids:

- Instructor should use student's materials as teaching aids

Student's materials list:

- Note paper, pen/pencil
- Copy of the rod-building course (available on-line for printing). Hard copies will not be distributed by instructors, so bring your own.
- "Rod-Building Guide" by Tom Kirkman
- Mud Hole supply catalog (http://www.mudhole.com/Shop-Our-Catalog/Blanks)
- Blank
- Reel seat (all parts)
- Required tools and supplies
    - Brushes for application of epoxy
    - Toothpicks (round type)
    - China marker (white)
    - Wide, flat tip pencil or marker
    - X-Acto razor knife (clean blades with denatured alcohol before using) with spare blades – several new single edge razor blades will substitute
    - Masking tape (1/2 inch wide or less) and/or fiberglass drywall tape
    - 5 minute epoxy
    - 30 minute epoxy
    - 100/120 grit sand paper
    - Aluminum foil and/or mixing cups for mixing epoxy
    - Denatured alcohol
    - Acetone
    - Nitrile rubber gloves
        - Paper towels
- All guides
- One or more tools for shaping guide feet
        - File
        - Dremel tool (with appropriate grinding-sanding attachments) and safety goggles
        - Sandpaper
        - Knife sharpening stone
- Swivel head pin vice or equivalent tool to hold guide while shaping the guide's feet
- Head magnifier (if you think you need it)

Assembling the reel seat:

- Locate all components of the reel seat
- Dry (no epoxy) fit all components
- Sand and clean components that will be epoxied
- Assemble (epoxy)the reel seat (caution: do not install the butt cap at this stage)

Tips for assembling the reel seat:

- Don't get epoxy inside the hood where the reel foot fits
- Remove unwanted epoxy immediately
- Leave some epoxy where you mixed it, place a toothpick in it, and test it for curing rather than guessing
- Make sure the lock nut and threaded body are pointed in the correct direction (caution: some lock nuts cannot be installed on the treaded body once the treaded body has been installation)
- Leave adequate space between the butt end of the rod blank and the butt end of the threaded body to install the butt cap
- Make sure your reel fits your reel seat

This session should end with a reminder about when and where the next session will be. And, a discussion should be had about preparation, tools, materials, and any class assignments to be completed before going to the next session.

Homework:

- Prepare for Module 5 by reading the appropriate chapter (pp. 25-31 Guide Placement and Guide Prep and pp. 16-18 Understanding Rod Spine) in "Rod-Building Guide" by Tom Kirkman
- Web search your blank's manufacturer for recommendation for guide spacing
- Collect all of the materials (a small box will do) listed under Student's materials list in Module 5 and bring them to the next session

Module 5:

Reel seat installation

Time required: 2 hours

Instructor's notes:

This is a "hands-on" session where each student will properly fit and install a reel seat on a blank. Detailed instructions will be provided by the instructor. Students should prepare for this module by reading the appropriate chapter (pp. 22-24 Seat Selection and Installation and pp. 16-18 Understanding Rod Spine) in "Rod-Building Guide" by Tom Kirkman.

Instructor's teaching aids:

- Instructor should use student's materials as teaching aids

Student's materials list:

- Note paper, pen/pencil
- Copy of the rod-building course (available on-line for printing). Hard copies will not be distributed by instructors, so bring your own.
- "Rod-Building Guide" by Tom Kirkman
- Mud Hole supply catalog (http://www.mudhole.com/Shop-Our-Catalog/Blanks)
- Blank
- Reel seat (assembled)
- Required tools and supplies
  - Brushes for application of epoxy
  - Toothpicks (round type)
  - China marker (white)
  - Wide, flat tip pencil or marker
  - X-Acto razor knife (clean blades with denatured alcohol before using) with spare blades – several new single edge razor blades will substitute
  - Masking tape (1/2 inch wide or less) and/or fiberglass drywall tape
  - 30 minute epoxy
  - 100/120 grit sand paper
  - Aluminum foil and/or mixing cups for mixing epoxy
  - Denatured alcohol
  - Acetone
  - Nitrile rubber gloves
    - Paper towels
- A fly reel (preferably the one you will use with this fly rod)

Installing the reel seat to the rod blank:

- Locate and mark the spine on your blank
- Align and mark the placement of the reel seat on the blank (mark the reel seat and blank for proper alignment with the spine)
- Test fit the reel seat to the blank (install bushings if necessary)
- Prep the blank with sand paper and denatured alcohol
- Install reel seat (align with spine)

Tips for assembling and installing the reel seat:

- Don’t get epoxy inside the hood where the reel foot fits
- Remove unwanted epoxy immediately
- Leave some epoxy where you mixed it, place a toothpick in it, and test it for curing rather than guessing
- Make sure the lock nut and threaded body are pointed in the correct direction (caution: some lock nuts cannot be installed on the treaded body once the treaded body has been installation)
- Leave adequate space between the butt end of the rod blank and the butt end of the threaded body to install the butt cap
- Align the reel with the guides

Module 6:

Guide placement

Time required: 2 hours

Instructor's notes:

This is an open discussion with visual aids section. The outline represents talking points that should be discussed thoroughly. Students will mark their blank for proper placement of guides. Students should prepare for this module by reading the appropriate chapter (pp. 25-30 Guide Placement) in "Rod-Building Guide" by Tom Kirkman.

Instructor's teaching aids:

- Guide Spacing Charts
- Other methods – Overview Only
- Finished rod to display static distribution test
- "Rod-Building Guide" by Tom Kirkman
- Measuring tape

Student's materials list:

- Note paper, pen/pencil
- Copy of the rod-building course (available on-line for printing). Hard copies will not be distributed by instructors, so bring your own.
- "Rod-Building Guide" by Tom Kirkman
- Mud Hole supply catalog (http://www.mudhole.com/Shop-Our-Catalog/Blanks)
- Blank (with reel seat installed and spine marked)
- All guides (prepped for placement)
- Required tools and supplies
  - China marker (white)
  - X-Acto razor knife (clean blades with denatured alcohol before using) with spare blades – several new single edge razor blades will substitute
  - Masking tape (1/2 inch wide or less)
  - Measuring tape (as long as or longer than your blank)

Guide placement:

- Spacing
  - Tables
  - Manufacturer, Distributor
  - Marking, Attaching
  - Static Distribution Test
  - Test Casting
- Prepare all guides for installing and have the guide placements marked on their blank in preparation for Module 7.

This session should end with a reminder about when and where the next session will be. And, a discussion should be had about preparation, tools, materials, and any class assignments to be completed before going to the next session.

Homework:

- Student must prepare all guides for installing and have the guide placements marked on their blank in preparation for Module 7.
- Prepare for Module 6 by reading the appropriate chapter (pp. 19-22 Grip, Handle and Seat Assembly) in "Rod-Building Guide" by Tom Kirkman
- Collect all of the materials (a small box will do) listed under Student's materials list in Module 6 and bring them to the next session

Module 7:

Grip Installation

Time required: 2 hours

Instructor's notes:

This is a "hands-on" session where each student will install the grip on their blank. Detailed instructions will be provided by the instructor. Students should prepare for this module by reading the appropriate chapter (pp. 19-22 Grip, Handle and Seat Assembly) in "Rod-Building Guide" by Tom Kirkman.

Instructor's teaching aids:

- Instructor should use student's materials as teaching aids

Student's materials list:

- Note paper, pen/pencil
- Copy of the rod-building course (available on-line for printing). Hard copies will not be distributed by instructors, so bring your own.
- "Rod-Building Guide" by Tom Kirkman
- Mud Hole supply catalog (http://www.mudhole.com/Shop-Our-Catalog/Blanks)
- Blank (with reel seat installed and spine marked)
- Cork grip
- Ring keeper (optional)
- Required tools and supplies
  - Brushes for application of epoxy
  - Toothpicks (round type)
  - China marker (white)
  - X-Acto razor knife (clean blades with denatured alcohol before using) with spare blades – several new single edge razor blades will substitute
  - Masking tape (1/2 inch wide or less) and/or fiberglass drywall tape
  - 5 minute epoxy
  - 30 minute epoxy
  - 100/120 grit sand paper
  - Aluminum foil and/or mixing cups for mixing epoxy
  - Denatured alcohol
  - Acetone
  - Nitrile rubber gloves
  - Paper towels

Installing a preformed grip to the rod blank:

- Test fit the grip to the blank (install bushings if necessary) and use a reamer to open up the center of the grip if necessary
- Align the grip along rod blank, to mark the blank at the tip end of the grip
- Prep the blank (below your mark) with sand paper and denatured alcohol
- Apply epoxy starting below the mark on the rod blank and work toward the reel seat
- Work the grip down the blank and align the grip with the reel seat hood
- DOUBLE CHECK, DOUBLE CHECK to make sure no epoxy flowed into the hood of the reel seat. Do not let epoxy get into the open space where the reel foot fits.
- Set aside and let dry

- Now is the time to install a ring keeper (optional)

This session should end with a reminder about when and where the next session will be. And, a discussion should be had about preparation, tools, materials, and any class assignments to be completed before going to the next session.

Homework:

- Student must prepare all guides for installing and have the guide placements marked on their blank in preparation for Module 7.
- Prepare for Module 7 by reading the appropriate chapter (pp. 31-38 Guide Prep and Wrapping) in "Rod-Building Guide" by Tom Kirkman
- Collect all of the materials (a small box will do) listed under Student's materials list in Module 7 and bring them to the next session

Module 8:

Guide and Tip Top Installation

Time required: 2 hours

Instructor's notes:

Each student will install guides, tip top, and hook keeper to a blank. Each student will wrap threads at guides, tip top and hook keeper. Prepare for this session by reading the appropriate chapter (pp. 31-38 Guide Prep and Wrapping) in "Rod-Building Guide" by Tom Kirkman.

The object of this lesson is to provide adequate hands-on instruction so that each will feel secure in installing guides, tip top and hook keeper to their own rod in their own home or workshop.

Instructor's teaching aids:

- Rod blank (test blank for demo purposes) – bring extras (broken pieces will do)
- Thread
- 4 lb. test monofilament
- X-Acto razor knife (clean blades with denatured alcohol before using) with spare blades – several new single edge razor blades will substitute
- Burnishing tool
- Small 6 inch ruler
- Masking tape strips
- Rod rest options:
  - Cardboard box
  - Hand rod wrapper with motor (if available)
  - Home make rod rest/wrapper
  - A borrowed rod rest/wrapper

Student's materials list:

- Note paper, pen/pencil
- Copy of the rod-building course (available on-line for printing). Hard copies will not be distributed by instructors, so bring your own.
- "Rod-Building Guide" by Tom Kirkman
- Mud Hole supply catalog (http://www.mudhole.com/Shop-Our-Catalog/Blanks)
- Blank (with reel seat & grip installed, spine marked, and guide placements marked)
- Guides and tip top (all guides must be already prepped for installing)
- Required tools and supplies
- 4 lb. test monofilament
- X-Acto razor knife (clean blades with denatured alcohol before using) with spare blades – several new single edge razor blades will substitute
- Burnishing tool
- Small 6 inch ruler
- Masking tape strips
- A couple of heavy books if you don't have a thread tension device (rod wrapper)
- Rod rest options:

- Cardboard box
- Hand rod wrapper with motor (if available)
- Home make rod rest/wrapper
- A borrowed rod rest/wrapper

Installing your guides, tip top, and hook keeper:

- Prep blank
  - Clean with denatured alcohol
    - Warning: Do not use isopropyl alcohol!
- Tape guides to the blank
  - Check alignment of the guides
- Tape tip top to the blank
  - Check alignment of the tip top
- Tape hook keeper to the blank
  - Check alignment of the hook keeper
- Double check alignment of the guides, tip top and hook keeper
- Wrap components
  - Demonstration by instructor
    - How to wrap threads
    - How to tuck thread ends
    - How to clean-cut threads
    - Burnishing techniques
- Student exercises
  - Perform instructed tasks
    - Wrap threads on guides and hook keeper
    - Tuck tread ends
    - Clean-cut threads
    - Burnish thread wraps

This session should end with a reminder about when and where the next session will be. And, a discussion should be had about preparation, tools, materials, and any class assignments to be completed before going to the next session.

Homework:

- Student must install all guides and tip top in preparation for Module 8
- Prepare for Module 8 by reading the appropriate chapter (pp. 39-42 Finishing) in "Rod-Building Guide" by Tom Kirkman
- Collect all of the materials (a small box will do) listed under Student's materials list in Module 8 and bring them to the next session

Module 9:

Flex Coating

Time required: 4 hours

Instructor's notes:

Each student will apply flex coat to wrappings on a test (disposable) blank. The object of this lesson is to provide adequate hands-on instruction so that each will feel secure in applying flex coat to their own rod in their own home or workshop.

Detailed instructions will be provided by the instructor. Students should prepare for this module by reading the appropriate chapter (pp. 39-42 Finishing) in "Rod-Building Guide" by Tom Kirkman.

Instructor's teaching aids:

- Test rod (a broken rod section will be adequate)
- Flex coat
- Brushes (sizes?)
- Metal cup
- Metal stirrer
- Aluminum foil
- Alcohol torch (denatured alcohol only)
- Denatured alcohol
- Acetone
- Paper towels
- Rod rest
    - Small cardboard box to use as rod rest or
    - Rod wrapper with motors
- A good light source
- Thread
- Burnishing tool
- Scissors
- Monofilament 4 lb. test
- Exacto knife with new blade (clean blades with denatured alcohol before using) with spare blades – several new single edge razor blades will substitute
- Masking tape
- Water-base ink
- Old fashion (dipping) ink pen or extra fine tip water base pen
- "Rod-Building Guide" by Tom Kirkman, 2001, Frank Amato Publications, Inc.

Student's materials list for this module:

- Paper and pen for taking notes
- Mud Hole supply catalog
- Test rod (a broken rod section will be adequate)
- Flex coat
- Brushes (sizes?)
- Metal cup
- Metal stirrer
- Aluminum foil
- Alcohol torch (denatured alcohol only)
- Denatured alcohol

- Acetone
- Paper towels
- Rod rest
    - Small cardboard box to use as rod rest or
    - Rod wrapper with motors
- Thread
- Burnishing tool
- Scissors
- Monofilament 4 lb. test
- Exacto knife with new blade (clean blades with denatured alcohol before using) with spare blades – several new single edge razor blades will substitute
- Masking tape
- Water-base ink
- Old fashion (dipping) ink pen or extra fine tip water base pen
- "Rod-Building Guide" by Tom Kirkman, 2001, Frank Amato Publications, Inc.

<u>Flex coating your wraps:</u>

- Working environment
    - Clean/degrease tools
    - Ventilation
    - Dust free
    - Bugs
    - Pets
- Writing on the blank
    - Water-base ink vs. oil-base ink
    - Writing instruments
    - What to write on your blank (including alignment dots)
    - Color
- Mixing flex coat
- Flex coating wraps and writings
    - Demonstration by instructor: mix and apply flex coat to wrappings on a test (disposable) rod
    - Student exercise: mix and apply flex coat to wrappings on a test (disposable) rod
    - Open discussion about problems encountered during student exercise
    - Assignment: each student is to return home and apply flex coat to their own fly rod blank
- Hints for working with flex coat
    - Read warning labels on all chemical containers.
    - Denatured alcohol works as well for most rod building tasks like degreasing, cleanup, surface prep, etc....safer for the rod (and you) and smells better too than acetone.
    - Caution: Acetone added to flex coat as a thinner may affect the flex coat's durability, adhesive characteristics, and may leaves a tacky/hazy finish. The best thing is not to use chemicals to thin the finish.
    - Heat also acts as a thinner but it actually accelerates the overall cure rate and shortens the working pot life.
    - The volume of finish mixed has a bearing on the pot life too. The larger the batch, the quicker it will reach critical mass, which generates heat, which in turn accelerates cure. Pouring the mixed finish out on a flat surface helps slightly by creating more surface area to dissipate heat.

- There is no substitute for speed! The quicker you get the finish onto the thread, the thinner it will be while you're working with it. If you can't apply a coat in less than 15 - 20 minutes, you may need to mix smaller batches and work in smaller sections.

Instructions from Flex Coat Company: "We always mix Flex Coat in a mixing cup with a small diameter round non-porous plastic or metal stirrer (approximately 3/32" to 1/8" in diameter). Never use wood Popsicle or craft sticks. Mix the finish thoroughly, the finish will first appear marbled, then cloudy, then marbled again, and finally it will appear clear when thoroughly mixed. It is important to scrape the sides and bottom of the mixing cup to insure all of the epoxy is completely mixed. Mix the Flex Coat until it is crystal clear. Some bubbles will form in mixing, and while a small amount is no cause for concern, avoid a frothy mixture. After the mixture is in its clear state it can now be thinned with acetone. The amount of acetone added should not exceed 1/15 of the total mixture volume. We use our graduated pipettes for these minute measurements of acetone (see tips on measuring acetone for primer coat). Again mix the thinned Flex Coat until it is crystal clear. Once mixed, we pour the finish onto a disposable plate covered with aluminum foil to release bubbles and extend the pot life. This primer coat with acetone should be applied in a thin coat, where once saturated, you can still see the thread texture. It is important that the primer coat with acetone is not too thick; otherwise it will not set properly. Make sure the finish soaks through the threads and fills the air pocket caused by the guide foot, the rod blank, and the threads. We allow 24 hours for the primer coat to dry (6 to 8 hours for un-thinned coats) before applying additional coats. We never thin any additional coats after the primer coat.

Homework:

- Student must finish flex coating their blanks.
- Bring your finished fly rod to the next Magnolia Fly Fishers club meeting
- Be prepared to answer the questions in Module 9

Module 10:

Lessons Learned

Time required: 30 minutes

Instructor's notes:

This final module will focus on obtaining feedback from the students so that future courses may be modified and improved.

Option 1: Each student complete the evaluation form (last page of the course material)

Option 2: Group exercise: Ask these questions: Please evaluate how well the rod building course met your expectations by giving us a number from 1 (low) to 10 (high). Also, list those things that helped meet your expectations and then list changes you would make to improve the course.

Parting Shots from the Instructors: We challenge everyone to build several rods and to be adventurous by trying different techniques and to even develop and experiment with new techniques. And then, become a part of this fly rod building course as an author and instructor.

Glossary

Action
: Where most of the initial flex in a rod blank takes place. Fast Action rods will flex mostly in the upper 1/3rd of their length. Moderate Action rods flex in the upper ½ of their length. Slow Action rods flex along their entire length.

Blank
: A naked rod shaft. The shaft upon which a handle and guides are added to create a fishing rod.

Butt cap
: Fits on or over the end of most fishing rods. Helps protect the rod blank and handle butt end.

Cigar (grip)
: Fly rod style grip. Shaped like a cigar. Slightly tapered and rounded on each end, larger in the middle.

Color preserver
: A type of sealer/filler normally used on regular nylon thread to keep the thread from turning translucent when the final wrap finish (Flex Coat epoxy) is applied. Types include nitrocellulose lacquer (clear), acrylic (white), and urethane/acrylic (cloudy).

Down locking
: Used to describe a reel seat that has been mounted with the hood to the rear (butt) and the movable hood to the front (tip).

Drying motor
: A slow RPM motor used to rotate a fishing rod to prevent slow curing thread finishes/coatings from dripping or sagging until they have set.

Fighting butt
: Normally used on fly reel seats. A short extension of cork or foam, either fixed or removable, on the rear of a fly reel seat. Usually associated with larger weight fly rods or saltwater rods.

5 minute epoxy
: A two-part epoxy adhesive with a very short (5 minute or so) working or pot life.

Full wells (grip)
: Fly rod style cork grip. Swelled on both ends and in the middle with depressed areas about ¼ length in from each end.

Hook keeper
: Small ring or hook wrapped near the cork grip on a fishing rod intended to hold the lure or fly when rod is not in use.

NCP thread

An opaque nylon thread which does not require color preserver (NCP) in order to keep it from turning translucent when a wrapping finish (epoxy) is applied.

Pot life

Used to describe the working time of an epoxy adhesive or wrapping finish. NOT the time taken for cure, but the time period where the adhesive or finish remains workable or easy to apply.

Snake guide

Guide formed from single piece of steel or wire. Twisted to form an elongated coil, but not a loop. Generally found most often on fly rods.

Spine or “effective spine”

An effect created by several manufacturing anomalies. The result is that the rod blank will favor bending along a particular axis when load is applied.

Stripping guide

The butt guide on a fly rod. Guide closest to the reel on a fly rod.

Tip top

The line guide which fits on or over the tip end of the rod. Usually constructed along the lines of a tube supporting a ring, which can be slid over the end of the rod blank.

Up locking

Used to describe a reel seat that has been mounted with the hood to the front (tip) and the movable hood to the rear (butt).

Winding check

Washer shaped item used to finish off the forward edge of a rod grip.

"Space-age materials; almost impervious to breakage; improved line speed, accuracy, distance & hook-setting ------ this is fly fishing, an ever evolving sport"

A guide size and spacing chart

Also, check with your blank manufacturer for their recommended guide spacing.

Rod Length	Line Weight	Rod Pieces	Guide Size/Spacing	Guide 1	Guide 2	Guide 3	Guide 4	Guide 5	Guide 6	Guide 7	Guide 8	Guide 9	Guide 10	Guide 11
6'6"	2-4	2	Guide Spacing	4 1/2	9	15	21	28	35 1/2	45				
			Guide Size	1	1	1	1	2	3	8mm				
7'	2-4	2	Guide Spacing	5	10 1/4	16 1/2	23 3/4	30 1/4	37 1/2	45 3/4	55 1/2			
			Guide Size	1	1	1	1	2	2	3	8mm			
7'	2-4	3	Guide Spacing	4 1/4	9 3/4	15 1/2	22 1/2	30 1/2	38 1/4	47 3/8	58 3/8			
			Guide Size	1	1	1	1	2	2	3	8mm			
7'6"	2-4	2	Guide Spacing	4 1/2	9 5/8	15 5/8	21 5/8	28	34 7/8	42 1/2	51 1/4	61 1/4		
			Guide Size	1	1	1	1	2	2	3	4	10mm		
7'9"	2-4	2	Guide Spacing	4 5/8	9 5/8	15 3/8	22	29 1/8	38	46 7/8	56 1/4	65 3/4		
			Guide Size	1	1	1	1	2	2	3	4	10mm		
7'10"	00-3	3	Guide Spacing	4 5/8	9 3/4	15 3/4	23	30 5/8	39	48 1/4	58	69 1/4		
			Guide Size	1	1	1	1	1	1	2	3	8mm		
8'	2-5	2-3	Guide Spacing	4 1/2	9 3/8	15 1/2	22 1/4	30 1/4	38 1/2	47 3/4	56 1/2	66		
			Guide Size	1	1	1	1	2	2	3	4	10mm		
8'	3-5	4	Guide Spacing	4 1/2	9 3/8	15 1/2	22 1/4	30 1/4	38 1/2	47 3/4	56 1/2	66		
			Guide Size	1	1	1	1	2	2	3	4	10mm		
8'	14-16	4	Guide Spacing	4 1/2	9 3/8	15 1/2	22 1/4	30 1/4	38 1/2	47 3/4	56 1/2	66		
			Guide Size	5	5	5	5	5	6	6	16mm*	20mm*		
8'6"	3-5	2	Guide Spacing	5	10 1/2	17 1/2	25 1/2	33 1/2	42	50 3/4	60 5/8	71		
			Guide Size	1	1	2	2	3	3	4	5	12mm		
8' 6"	3-5	4	Guide Spacing	5	10 1/2	17 1/2	25 1/2	33 1/2	42	50 3/4	60 5/8	71		
			Guide Size	1	1	2	2	3	3	4	5	12mm		
8' 9"	3-5	5	Guide Spacing	4 1/2	9 5/8	15 1/8	21 1/8	27 3/4	35 3/8	43 5/8	52 3/4	62 1/2	73	
			Guide Size	1	1	1	2	2	2	3	3	4	10mm	
9'	2-4	2	Guide Spacing	5	10 1/4	16 1/4	22 1/2	29 3/4	37 1/8	45 3/8	53 3/4	65	77	
			Guide Size	1	1	1	1	2	2	3	3	4	10mm	
9'	5-6	2	Guide Spacing	5	10 1/4	16 1/4	22 1/2	29 3/4	37 1/8	45 3/8	53 3/4	65	77	
			Guide Size	1	1	2	2	3	3	4	4	5	12mm	
9'	7-9	2	Guide Spacing	5	10 1/4	16 1/4	22 1/2	29 3/4	37 1/8	45 3/8	53 3/4	65	77	
			Guide Size	3	3	3	4	4	4	5	5	12mm	16mm	
9'	10-13	2	Guide Spacing	5	10 1/4	16 1/4	22 1/2	29 3/4	37 1/8	45 3/8	53 3/4	65	77	
			Guide Size	4	4	4	5	5	5	6	6	16mm*	20mm*	
9'	3-5	3	Guide Spacing	4	9	15	21 1/4	28 7/8	36 1/4	44	53 1/2	63 1/2	75 1/4	
			Guide Size	1	1	1	2	2	3	3	4	5	12mm	
9'	6-9	3	Guide Spacing	4	9	15	21 1/4	28 7/8	36 1/4	44	53 1/2	63 1/2	75 1/4	
			Guide Size	3	3	3	4	4	4	5	5	12mm	16mm	
9'	3-6	4	Guide Spacing	4 1/2	9	14 1/8	20 3/16	27 3/8	34 7/8	43 7/8	53 3/4	64 5/8	76 1/2	
			Guide Size	1	1	2	2	3	3	4	4	5	12mm	
9'	7-9	4	Guide Spacing	4 1/2	9	14 1/8	20 3/16	27 3/8	34 7/8	43 7/8	53 3/4	64 5/8	76 1/2	
			Guide Size	3	3	3	4	4	4	5	5	12mm	16mm	
9'	10-13	4	Guide Spacing	4 1/2	9	14 1/8	20 3/16	27 3/8	34 7/8	43 7/8	53 3/4	64 5/8	76 1/2	
			Guide Size	4	4	4	5	5	5	6	6	16mm*	20mm*	
9' 6"	5-6	2	Guide Spacing	5	10 3/8	16 3/8	22 1/2	29	35 3/4	43	51	60 3/4	70 3/4	81 3/4
			Guide Size	1	1	1	2	2	3	3	4	4	5	12mm
9' 6"	5-6	4	Guide Spacing	4 1/2	9 1/4	15 1/8	21 1/4	28	35	42 1/2	51 1/2	60 3/4	70 1/2	81 1/4
			Guide Size	1	1	1	2	2	3	3	4	4	5	12mm
10'	4-6	4	Guide Spacing	5	11	17	23	29 7/8	37 1/4	46 3/8	55 5/8	65 1/2	75 1/2	86 5/8
			Guide Size	1	1	1	2	2	3	3	4	4	5	12mm
10'	7-9	4	Guide Spacing	5	11	17	23	29 7/8	37 1/4	46 3/8	55 5/8	65 1/2	75 1/2	86 5/8
			Guide Size	3	3	3	4	4	4	5	5	5	12mm	16mm

Mississippi Magnolia Fly Fishers
Fly Rod Building Course
Evaluation Form

Instructions:

Please evaluate how well the rod building course met your expectations by circling a number below from 1 (low) to 10 (high). Also, list those things that helped meet your expectations and then list changes you would make to improve the course.

(Not effective) (Very effective)

1 2 3 4 5 6 7 8 9 10

Things that helped meet your expectations:

Things you would change to improve the course: