

Fishing (Bait, Spin, Fly Casting and Safety)

INTRODUCTION

Fishing is one of the most popular sports in America. Most sections of our country have many streams, lakes, and ponds with a variety of fish, so some “fishing hole” is probably somewhere nearby. There are few people who don’t get a thrill from the feel of a fish on the end of their line. So let’s go fishing!

When you fish, you can practice conservation just by enjoying your sport. It takes a great deal of fishing to keep fish from being wasted. Many waters are not fished enough. Some species, like bluegill, crappie, and bullheads, reproduce so fast that they overcrowd the water. Fishermen must remove large numbers of these fish so that the fish left in the water will have enough food and space for good growth.

Fish like bass, pike and catfish help control the number of prey species – bluegill, crappie, bullheads, minnows and other species. They are called *predators* because they feed on smaller prey fish. If fishermen remove too many predator fish, there will almost surely be too many prey fish left to grow and multiply. When there are too many fish for the available food supply, the fish grow to very small sizes. This is why limits are often placed on the number of bass or pike that you can legally catch.

The conservationist will learn how to catch and use all kinds of fish. Don’t throw back those small bluegill or crappie. There are probably enough of them, or too many, in the lake or pond already; so use them. Even very small fish are good to eat. Several different methods are used to catch fish, and this booklet is intended to offer some basic instruction on three fishing methods – bait-casting, spin-casting, and fly-casting. If you are a “serious” fisherman, you will surely want to read other books

and magazines on fishing and share ideas with older, more experienced fishermen. Perhaps you simply enjoy the beauty, peace and feeling of oneness with nature that fishing a quiet spot can afford. If so, this leaflet was written for you, too.

BAIT CASTING

Bait casting is primarily a method used for catching larger fish such as largemouth bass and catfish. In this method, a lure or bait is cast into the water, and its weight pulls the line from the reel. The bait is retrieved by rewinding the line on the reel with a moving spool. Bait-casting rods are usually stiffer than spinning rods and may use line with a 12- to 15-pound breaking test. This allows the fisherman to “horse” larger fish out of brush, thick grasses, stumps, or fallen trees which may be submerged.

Selecting Your Tackle

Selecting your tackle properly is a very important part of fishing. Bait casting equipment consists of four pieces – rod, reel, line, and lure.

The *rod*, made of tubular or solid glass or bamboo, is from 5 to 6 feet long. It is classified by “action” (weight) as heavy, medium, light or very light.

The *reel* has a moving spool operated with a right-hand crank which turns the spool, winding the line. The reel’s capacity for holding line varies by brand, size and price.

Your bait casting reel will have a level-wind mechanism on it to spool the line evenly. It may have an anti-backlash device to stop the spool after the lure hits the water. If you do not stop the spool in some manner, ordinarily with your thumb, the line will tangle into what is called a “bird’s nest,” a time-consuming and troublesome problem.



Most reels have a “drag.” When a fish pulls with greater force than your line can stand, the drag allows the fish to take more line. This helps you tire the fish with constant pressure without breaking your line.

The *line* may be either silk, cotton, nylon or monofilament; and it is available in a variety of breaking-strengths from two to more than 20 pounds.

Casting *lures* are classified by the way they behave. They are called floating, diving or sinking baits. Made of wood, plastic, metal, rubber or hair, lures are also known as “plugs,” spoons or spinners. They vary in weight from one-fourth to five-eighths ounce.

For the beginner and for general fishing, the most suitable outfit is one in the light-action, medium-price range. The components of such an outfit are a light-action rod five or five and one-half feet long, a reel with standard-width spool, a 12- to 15-pound breaking-weight-test line, and a lure weighing about five-eighths of an ounce.

After you have developed experience and skill in using bait-casting tackle, you may wish to purchase a very light outfit for getting greater accuracy and distance in your casts. The lighter the breaking-weight of a line, the farther and more accurately the lure can be cast.

A very light-action outfit consists of the following: A six to six-and-one-half foot very light-action rod of tubular glass or bamboo; a small, narrow spool reel; a six- to 10-pound test line; one-fourth to three-eighth ounce lures. Very light-action outfits are usually the best, but they are also expensive.

Bait-casting Directions

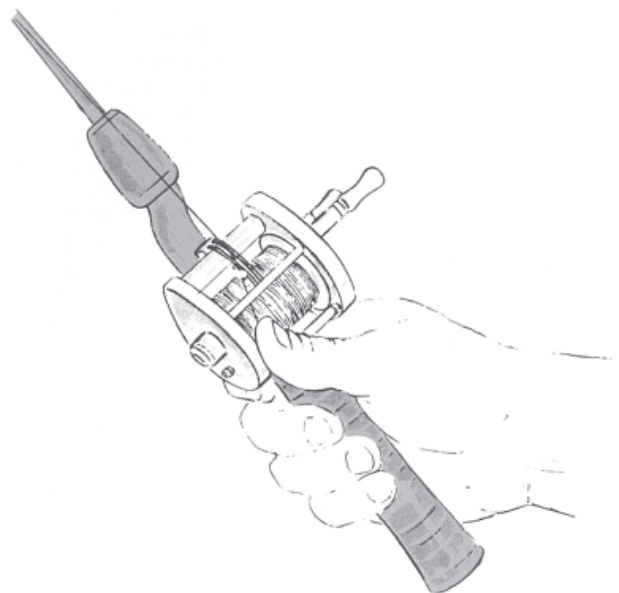
Before you begin, make sure the reel spool is filled almost to the edge with line. A spool one-half to three-quarters full will not perform as accurately as a full spool. If you don't have enough line to fill up the spool, use a cork arbor on the inner half, or fill it with old line.

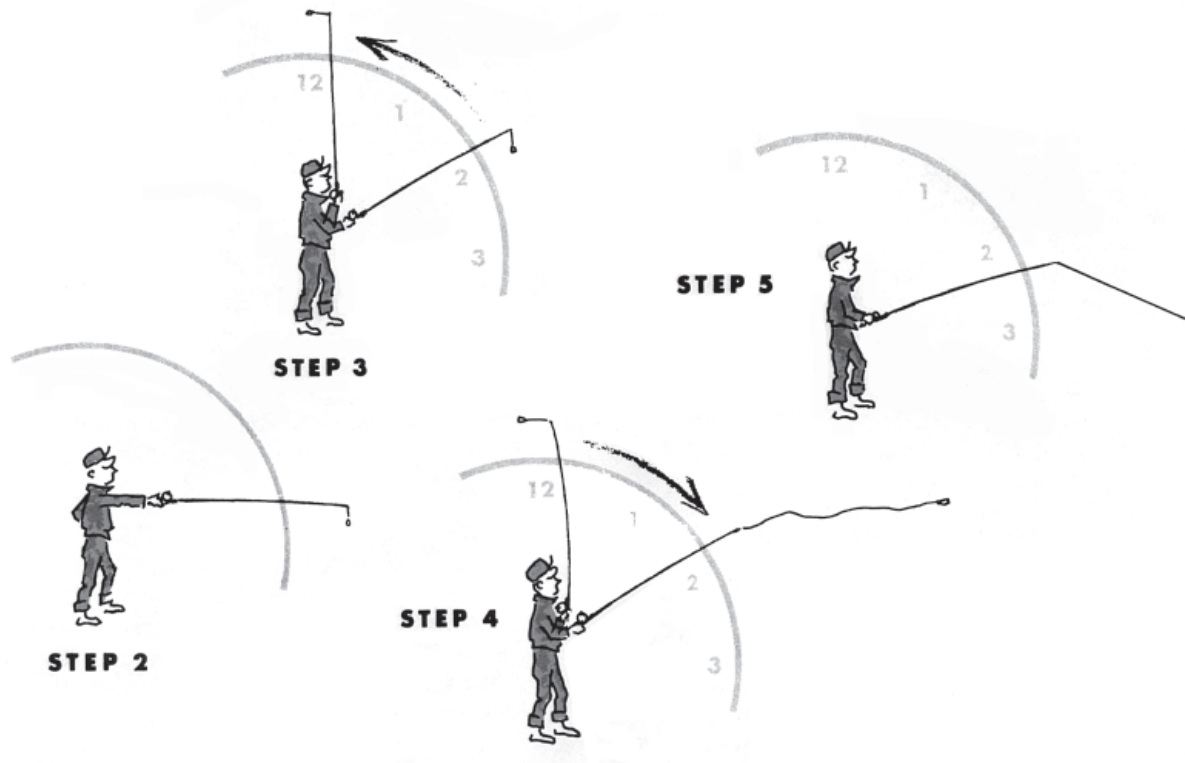
For practice casts, use an old lure with the hooks removed or a regular tournament plug. A grassy lawn or a pond are good places to practice. To increase your accuracy, aim inside an old 26-inch inflated

bicycle inner tube placed on the ground or anchored by string and weights in a pond.

1. Hold the rod handle in your right hand with thumb on the left rim of the spool stopping the line. Make sure the reel handle is UP.
2. Aim the plug, which should hang two or three inches from the rod tip, toward the spot where you want the lure to land.
3. Imagine that you are standing with your shoulder against a huge clock face. Begin with the rod held at the 2 o'clock position. Then swing it quickly upward until the tip is pointed skyward, at the 12 o'clock position.
4. As the rod tip bends backward, reverse the movement, bringing the rod quickly forward and downward. At the same moment, release your thumb slightly to let the spool unwind and the lure go out. NEVER REMOVE THE THUMB ENTIRELY FROM THE REEL SPOOL WHEN CASTING. If you do, the spool will unwind, and you'll have a line snarl or “bird's nest.”
5. Just before the plug strikes the ground or water, stop the spinning spool with your thumb, quickly change the rod handle to the left hand, and crank the plug in with your right hand.

It is important to keep the rod at a 1 to 2 o'clock position while fishing. With it in this position, a fish striking the lure will have the spring of the rod to pull against. If the rod tip points at the plug while you are reeling in the fish, he will pull directly against the line. Result: A lost fish or a broken line.





Retrieving a fishing lure is a matter of technique. You will get best results with most floating lures by letting them lie still for several moments, then reel them in with a slow, jerky, “popping” movement. Sinking lures must be reeled in immediately, or they will catch onto underwater trash.

It is important that you learn to use your lures effectively. The bait caster who knows his lures is the one who brings home the most fish.

Here’s a good tip that may save you a fish. Break off about three feet of the line before each fishing trip. This line has been worn thin by constant friction through the rod tip guide and is weaker than the spooled line.

Try to master correct form; it is important for fishing enjoyment as well as for safety. Use only your wrist and hand in casting. Do not let the forearm move more than the slightest bit. Never cast “sidewise” (with the rod switched parallel to the ground or water) until you become more experienced.

To become a good caster you need plenty of practice.

SPIN FISHING

Spinning is a method of fishing in which you cast a weighted lure with a line that unwinds from a spool that does not turn. A “bail” that turns around the

stationary spool as you crank the reel handle rewinds the line.

Spinning bridges the gap between fly fishing and bait casting. With spinning tackle, you can cast a fly, a tiny lure or live bait just by adding a small weighted object to the line. In fact, with special floats, you can cast live bait three or four times as far as you can with fly rod or cane pole; and you’re less likely to lose live bait off the hook when using spinning tackle.

You can also cast smaller lures with spinning tackle and cast farther with it than you can with average bait-casting tackle.

One disadvantage, however, is that you often may not land a big fish from water filled with fallen trees, stumps or bushes. The average freshwater spinning line ranges between 4- and 8-pound breaking test.

Spinning reels have a drag brake which can be set so a fish can pull line from the spool although you are turning the reel handle. This is the only time the spool turns. When you retrieve the lure, the spool merely moves in and out to wind the line evenly.

The drag on the spinning reel is probably one of the most important reasons why spinning has been received so favorably. The ease with which long casts can be made and the elimination of backlashes in the line have helped make the spinning reel popular.

Selecting Your Tackle

Get a spinning rod six and one-half to seven feet long with light action. You have a choice of two types of reels: open-face and closed-face. On the open-face reel, the line and spool are in full view. The closed-face reel has a cone covering the spool and line; the line feeds through a small hole in the center of the cone. Probably the advantage of the open-face reel is that you can see and correct line troubles quickly.

If you are right-handed, get a reel with a left-hand crank; if left-handed, get a reel with a right-hand crank.

Be sure to use monofilaments or braided line especially made for spin fishing.

As a beginner, you should not buy the cheapest tackle nor the most expensive. Pick out name-brand equipment in the medium-price range.

Putting Tackle Together

Place the reel on the rod handle in line with the rod guides. Move the reel forward and backward on the handle until the equipment feels balanced to you. Draw the line through the guides and attach a practice plug to it. Grasp the rod in the right hand with the reel beneath the handle and with the lure six to twelve inches from the rod tip. Slip the "leg" of the reel between the first and second or second and third fingers of the right hand. With the forefinger holding the line almost against the rod, trip the

winding bail or "finger" with the left hand if you are using an open-face reel. If using a closed-face "spin-casting" or "spin bait casting" reel, follow manufacturer's directions.

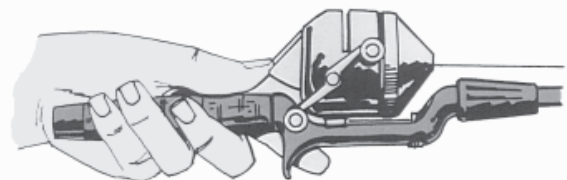
Spin-Casting Directions

Good casting comes with understanding your particular type of equipment and with practice. You can practice casting on your lawn, using a rubber practice plug or a lure without hooks.

Overhead Cast

There are several ways to cast, but the overhead cast is the most popular and the safest of all. Again, imagine you are standing with your left shoulder against a large clock face. Hold the rod at 2 o'clock and aim at the spot you want the lure to hit. Bring the rod up sharply to 12 o'clock. As the lure bends the rod backward, snap the rod forward and release your forefinger when the rod returns to the 2 o'clock position. The lure will sail out, pulling your line from the spool. To stop the lure, merely touch the line or reel face again with your forefinger and turn the reel crank with your left hand to bring in the lure.

If using a spin bait casting reel that is placed on top of the handle, crank with your right hand, the same as you would a bait-casting reel. The line on this type of reel is controlled with a thumb device.

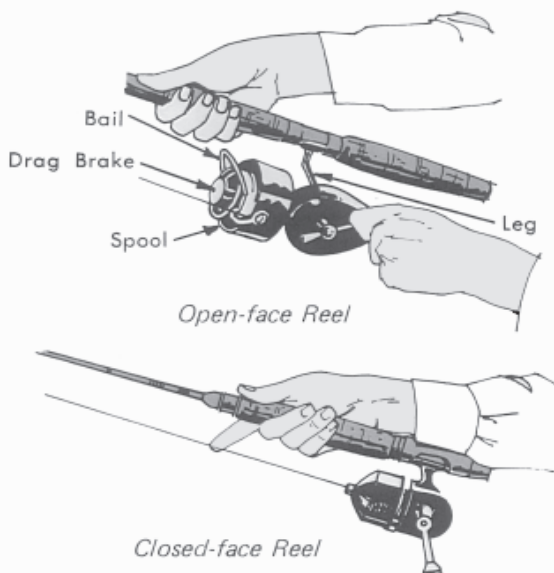


Top Mounted Closed-Face Reel

NOTE: With all top-mounted spin bait casting reels, you can use the regular bait casting rod instead of a spinning rod.

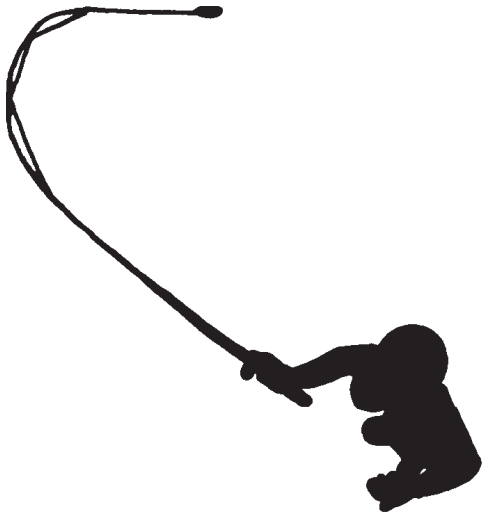
Side Switch Cast

To cast a lure low over the water, simply switch the rod tip slightly downward and to the right or left a few inches and release your forefinger from the line as the rod begins to straighten. Do not swing your rod completely to the right or left. You may hook another fisherman!



Open-face Reel

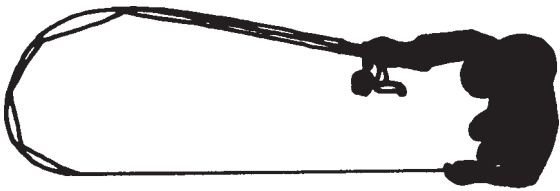
Closed-face Reel



Side Cast

Catapult Cast

If you are standing under overhanging bushes and wish to cast beneath low tree limbs, use a bow-and-arrow or catapult cast. To make this cast, point the rod tip toward the spot you wish to hit. Holding the lure in your left hand so that you will not get hooked, pull about three feet of line from the rod tip. Your right forefinger is holding the line. Then pull the lure to you. This will bend the rod tip. Release the lure and a split second later your forefinger.



Catapult Cast

FLY FISHING

Fly casting is the oldest way of catching fish with mechanical tackle. In bait casting and spin casting, you cast a lure and its weight pulls the line from the reel. With a fly rod, you cast the line. The lightweight fly or lure simply goes with the line, attached to six or eight feet of thin, transparent monofilament tied to the end of the fly line and called the *leader*. Thus fly casting equipment consists of five pieces: rod, reel, line, leader and lure.

The fly reel differs from the other types because it does not operate during the cast. It is just used as a

convenient place to store the line. When casting, the line is pulled by hand or “stripped” from the reel. The loose line, which is quite heavy, is then cast by the fly rod to carry the almost weightless “fly” to the water.

You can use a fly for all sorts of fishing. Trout are the primary targets of fly fishermen, and trout flies are designed to imitate immature or adult insects eaten by trout. You can also have lots of fun fly fishing for panfish and bass in farm ponds, lakes and streams. The length and limberness of a fly rod exaggerates fighting antics of even small bluegill, and you can use the fly rod to present bass and bluegill with smaller, more delicate baits and lures than those used with a bait- or spin-casting outfit.

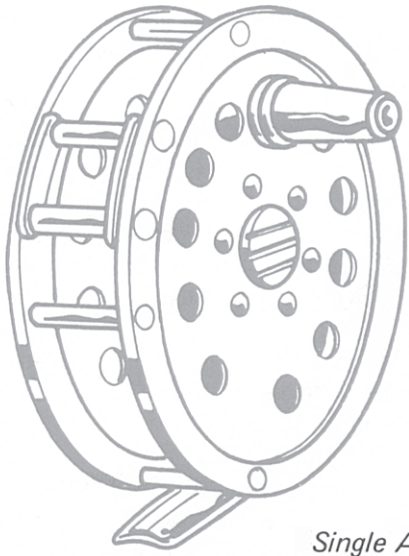
Crickets and grasshoppers are fine baits for panfish and can easily be handled with a fly rod. For bass, you may use streamer flies which imitate minnows or fly-rod-size bass bugs made to look and act like crickets, frogs, grasshoppers or mice squirming on the surface.

There are two major kinds of flies. Wet flies sink slowly when they strike the water and act like drowned or underwater insects. Dry flies float on the surface and look much like live insects laying eggs on the water surface. Mayflies, caddis flies and stone flies resemble insects dropping from overhanging foliage. Many fly fishermen observe what fish are eating and then tie a fly to look like the food.

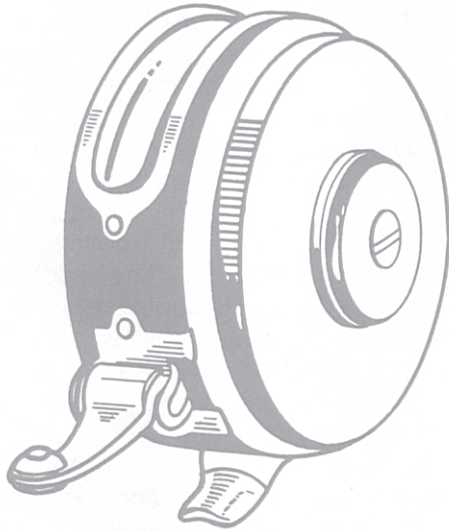
Fly-tying can become a very fascinating hobby. Thousands of different flies have been developed and new ones are dreamed up every season to fit a situation or suit a fancy. You can obtain fly-tying manuals, as well as the equipment and materials needed, from a local sporting-goods store or order them from a supply company.

Selecting Your Tackle

The Rod. For the beginner, a good choice is a two-piece, eight and one-half foot tubular glass rod in the medium price range. Most fly rods today are made of fiberglass, but more expensive bamboo rods are also available. When fly casting for bass or other warm-water panfish, you need a rod with “bass” action, that is, one heavy enough to cast bugs easily. Trout rods are generally too light for casting bugs.



Single Action Reel



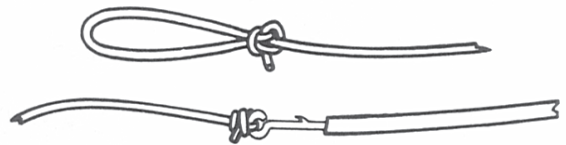
Automatic Reel

action reel is wound by hand, while the automatic reel rewinds the line by itself when a lever is pressed. Since the reel in fly-casting is nothing more than a mechanical spool for holding the section of line that you are not casting, many experts prefer the single action reel. Of course, automatic reels are good, but they are more expensive; and in fly fishing, they are not used for “playing” a fish. Further, some automatic reel models are heavy and tend to throw the rod out of balance.

The Leader. The leader is line of another type, usually transparent, and much thinner than the fly line. It permits the lure to fall lightly on the water. Usually a leader testing six, eight or ten pounds breaking-weight is sufficiently strong. Make your leader six to eight feet long.

There are several ways to attach leader to lure. You can use a barbed eyelet, which most sporting goods stores carry; push the barb into the end of the line and tie the leader through the eyelet. Or, tie a perfection loop knot in one end of the leader and attach the line through this loop by using a tucked sheet bend knot.

The Lure. Tie a bug or fly onto the other end of the leader, using a turtle knot.

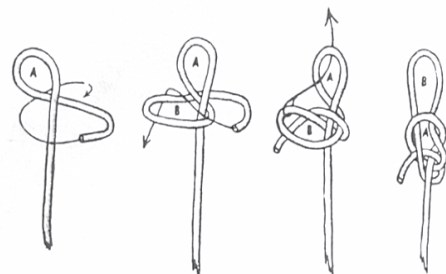


Barbed Eyelet

The Line. Buy a “level” line. This means one even in diameter throughout, not tapered. Make sure it is the right size for your rod. Most rod manufacturers specify the size of line that will best “balance” their rods. Line size is indicated by letter: B, C, D, etc. (B is thicker than C; C line is thicker than D.)

Fly lines will sink after a period of casting, if not cared for properly. Every hour or two while fishing you must grease or clean the line so that it will continue to float. When you purchase your equipment, be sure to include dressing or cleaner, depending on the type of line you have.

The Reel. There are two types of reels available: the single action and the automatic. The single



Perfection Loop Knot

In your assortment of lures, you should have some small popping bugs for bluegills and larger bugs for bass, plus a couple of underwater spinners.

Fly-Casting Directions

Learn to cast with proper form, either on lawn or water, before you try to catch a fish. This means you will use rod, reel, line and leader, but not a lure with a hook! If you begin by casting over water using a lure, you will concentrate on catching fish and never master the art of good casting. Practice an hour or so daily and you will become a fairly good fly caster within a week.

Before you begin, pull 15 to 20 feet of line through the rod guides, the metal eyelets through which the line is strung. Let the line lie in front of you on the lawn or water. Hold the rod in your right hand, with your thumb lying on top of the handle. The reel and guides will be on the underside of the rod. With your left hand, grasp the line near the reel.

It will be easier to understand the following directions for casting if you visualize yourself as standing with your left shoulder against the face of a large clock.

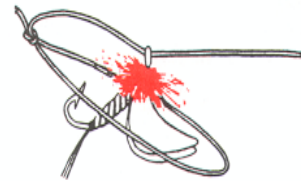
Step 1. Holding the rod almost horizontal to the ground, begin pulling in, with your left hand, the line lying on the lawn or water. You are now ready to begin the cast.

Step 2. Continue pulling with your left hand until the end of the line moves. Then swing the rod upward with a brisk motion until it is *straight up*, or at the 12 o'clock position.

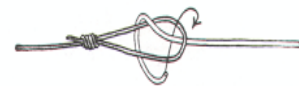
Step 3. Stop the rod at this position. The line will sail over your head and behind you and will bend the rod slightly backward.

Step 4. Just before the end of the line straightens out behind you, swing the rod quickly forward and stop for a split second at the 2 o'clock position to allow the line to sail over your head.

Step 5. As the leader nears the ground, lower the rod until it is horizontal to the water or ground. This will allow the line and bug to land smoothly.



Turtle Knot

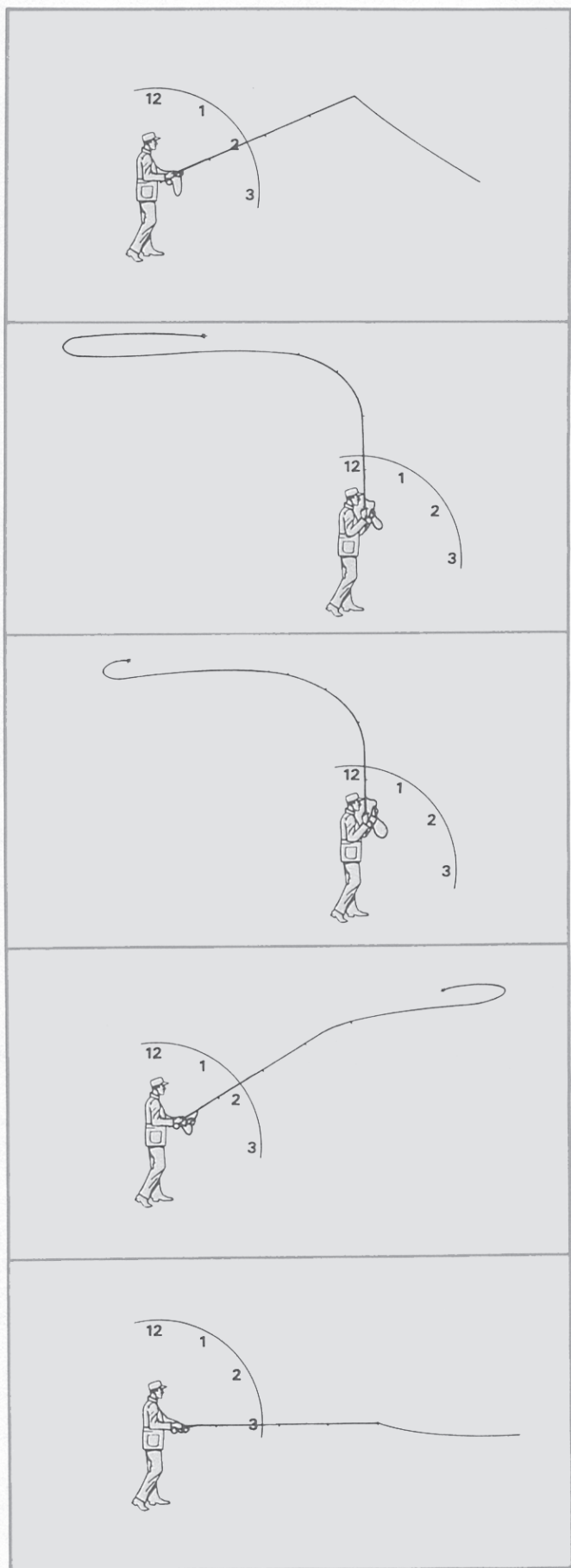


Tucked Sheet Bend Knot

Perfecting Your Technique

Since the greatest fault of the beginner is not giving the line *enough time to straighten out in the backcast* (Step 2), it may be helpful to rhythmically count “one-two-three” during the cast. Follow the directions for casting, counting “one” as you lift the rod upward in Step 2. The rod will get to the 12 o'clock position before you can say “two.” Count “two” then as you say “three,” whip the rod forward. By holding the rod up for the whole length of count “two,” you give the line time to almost straighten out behind you before you begin the forward cast.

Keep in mind that in casting, the wrist and forearm are used, not the upper arm. You can teach yourself this trick by placing a folded newspaper between the upper part of your arm and your side. If the newspaper falls, you are casting incorrectly – using your upper arm rather than wrist and forearm.



It pays to master skill in casting before you ever tie a lure to a leader.

False Casting

If you want to make a longer cast, you can lengthen your line by “false casting.” This means swinging the rod forward and backward several times without letting the line touch the water.

First, pull a few extra feet of line from the reel before beginning to haul in line through the tip guide (as in Step 1). Then, following the same procedure as in casting, as you bring the rod forward (Step 4), release the extra line from your left hand, and before the leader flying overhead touches the water, begin another backcast, at the same time pulling more extra line through the reel. You release this extra line with each forward motion of the rod, and pull more line from the reel as you make the next backcast.

To make a shorter cast, pull out less than 15 feet of line.

Fishing with a Fly Rod

After the line strikes the water, wait a moment, then begin moving the lure across the water toward you by slowly pulling in the line while twitching the rod tip slightly to make the lure look like a live insect. After you have moved in the lure three or four feet, make another cast.

When a fish strikes, quickly snap the rod upward at the same instant, or else you will not hook him. Once he has taken the hook, keep a bend in the rod tip while you pull in line and fish together by hauling the line in with your left hand. To keep the line from slipping when you reach upward to pull in more line, clasp it against the rod handle with the fingers of the right hand. Or, instead of pressing it against the rod, simply grasp the line between the right thumb and forefinger.

Care of Equipment

Care for your equipment so that it can provide dependable service. Keep the hooks sharp and the lures bright and shiny. Replace worn and weakened lines or leaders. Watch for rough guides on your rod. Rough spots in the guides will cause extra wear on your line. Be sure to follow the manufacturer’s di-

rection sheet for operation, care, and cleaning of your equipment.

Successful Fishing

The really skilled fisherman must know more than how to use his equipment. He certainly should have a good idea of where, when and how to fish. You must gain some understanding of the fish, their habitat, preferred food and feeding habits if you wish to become a really good fisherman.

Fish spend most of their lives doing five things: (1) locating water temperature that is comfortable, (2) feeding, (3) resting, (4) hiding from their enemies and (5) spawning.

The temperature of the water is very important to fish. They must move to various depths to locate the most comfortable temperature. Since the surface water is warmed by the sunshine, cooler temperatures are often found at lower depths.

Below is a suggested guide to surface water temperature preferred by fish.

- Walleye – 55 to 70 degrees Fahrenheit
- Trout – 58 to 68 degrees Fahrenheit
- Bass – 60 to 73 degrees Fahrenheit
- Catfish, pike and pan fish – 60 to 80 degrees Fahrenheit.

Fish seem to have favorite places they like to be during feeding, resting or hiding periods. As a general rule, most fish do the greatest amount of feeding at dawn and dusk. Riffles in shallow water make a good place to find large fish feeding, especially in the twilight hours and sometimes through the night. At

dusk many fish feed on insects at the top. This is a favorite time for the fisherman to use top-water lures.

Pan fish commonly hide in brush piles and weed beds, and larger predator fish often come to these spots for food.

On hot days, fish may be found where the cool water of a spring flows into a pond, lake or stream. Overhanging banks, where the water is shaded from the sun, also provide cool spots. Other resting spots for bigger fish are close to tree stumps or big boulders.

The catfish and carp are considered bottom feeders. They will be found hiding in deep holes, but they often move to the shallows to feed, especially when runoff from rainfall is carrying fresh food supplies into a stream.

FISHING AND BOATING SAFETY

Remember that accidents often happen on the water. It is the individual responsibility of each of us to see that an accident doesn't happen. A wise fisherman will never go fishing without first letting someone know where he is going and when he expects to return. Fish with a friend or in the company of others. If a hazardous situation arises, you will have help.

If you don't know how to swim really well, it is important that you learn. It could very well save your life. Your school or another local organization may offer a short course in rescue breathing techniques. If this type of course is available to you, take advantage of it. Many lives could be saved every year if more people knew how to use this simple technique.

One fishing tip worth mentioning now is the size hook to use when fishing with live bait. Many times people are bothered by "bait stealers" because they are using a hook too large for the fish's mouth.



Equip your tackle box with a simple first aid kit. A more complete first aid kit should be carried on a motor boat. Adhesive bandages, gauze bandage, an antiseptic and an ointment for insect stings are basic to a first aid kit.

No thinking person would ever push, shove or engage in other horseplay whether they were on the bank or in a boat. Most serious accidents are caused by thoughtlessness or carelessness. When boating, make sure that the boat is well-balanced and never overloaded. Everyone in the boat must have a life preserver. Sometimes even excellent swimmers can go under.

Always be considerate of other fishermen, swimmers or skiers, and keep a polite and safe distance away from them. There is a great deal more to being a true sportsman than just knowing how to fish.

THINGS TO DO

1. Demonstrate at least one of the three types of casting.
2. Have a target casting contest. There should be separate divisions for bait-, spin- and fly-casting. You will need an old bicycle or automobile tire or a piece of rope laid in a circle about three feet in diameter for a target. The target should be placed from 25 to 35 feet away. Remember, the goal is accuracy not distance.
3. Discuss or make a list of the advantages and disadvantages of each type of fishing equipment. State which type of equipment you feel is most suitable for various fish or fishing situations.
4. Discuss or make a list of the advantages and disadvantages of various line weights and of various rod weights or "action."
5. Tell how you would select your rods for different fishing situations. This should include a discussion of rod lengths, weights and size of line guides.
6. Make a display of several lures. Label each one and tell for what kind of fish they are used.
7. Mount and label a collection of flies. These could be flies that you have tied yourself or bought. You should state whether each is the wet or dry type and for what kind of fishing it would be used.

8. Make a display of several fishing knots. Label each and tell its use.
9. Display your tackle box. Give an oral presentation naming each item in the box and stating its use.
10. Discuss or write a short paper on fish habits that fishermen should know.
11. Discuss or write a short paper on the topic of proper cleaning and storage of various kinds of fishing equipment: rods, reels, line, flies and lures.
12. Read and outline one article on fishing.
13. Display six natural baits in jars or other containers. Name each and tell where you found them. Tell how a hook would be baited with each. What kind of fish would you expect to catch with them? (You may want to consult an experienced fisherman about this.)
14. Demonstrate how to sharpen or remove hooks.
15. Obtain a copy of boating and water safety rules from your state wildlife agent or local sporting goods dealer. Discuss the value of these rules.
16. Obtain a copy of your state's fishing rules and regulations. Discuss.
17. Make a list of practices that have to do with safety on or around the water. Think in terms of preventing specific accidents.
18. Write a short paper or contribute to a discussion on what being a good sportsman means to you.
19. Write a short paper on why you feel that a good fisherman is practicing conservation.
20. Write a story about one of your fishing experiences. What kinds of fish did you catch? What baits or lures worked well for you? What kind of tackle did you use? What do you enjoy most about fishing?

WORDS TO KNOW

Backlash – Line tangled about the spool of a casting reel.

Braided line – Line that is intertwined with strands of cotton, silk, or nylon; it is sometimes heavier than monofilament line and is used mostly for bait casting; the cotton and silk lines are subject to rotting and should be washed and dried periodically.

Breaking test of the line – The strength of the line; an eight-pound test line may break when an eight-pound fish pulls on it.

Conservation – Preserving the environment by preventing loss or waste-the wise use of a resource.

Leader – A short piece of line that is usually relatively invisible to fish; it is attached to the end of your regular line; to catch fish that have large, sharp teeth you may need a strong wire leader; otherwise you may not need a leader for monofilament line.

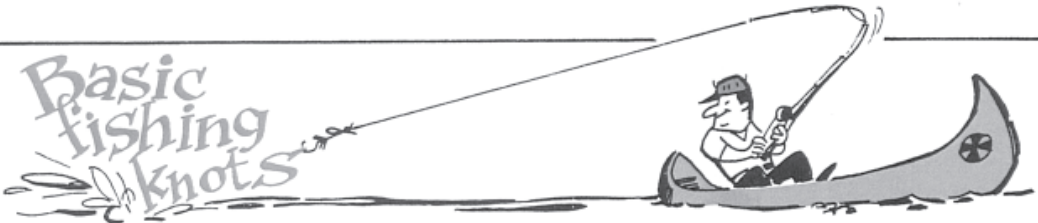
Monofilament line – A long, single strand of nylon available in test of two to 20 pounds or more. The

lighter the line, the easier and farther it will cast. Many monofilament lines will tend to dry out and become stiff or brittle; many fishermen recommend that you put new line on your reel every year.

Predator – An animal which kills and eats the flesh of other animals.


Prey – An animal which serves as food for another animal.

Rod line guides – The rings on the rod through which the line is placed



Basic fishing knots

IMPROVED CLINCH KNOT ... for joining line to lure




... double end back from eye of hook and take 5 turns around standing part of line

... thrust end between eye and first loop, then back through big loop as shown

... pull up slowly and tight as possible. Cut off end at one-eighth inch.

IMPROVED BLOOD KNOT ... for joining two lines

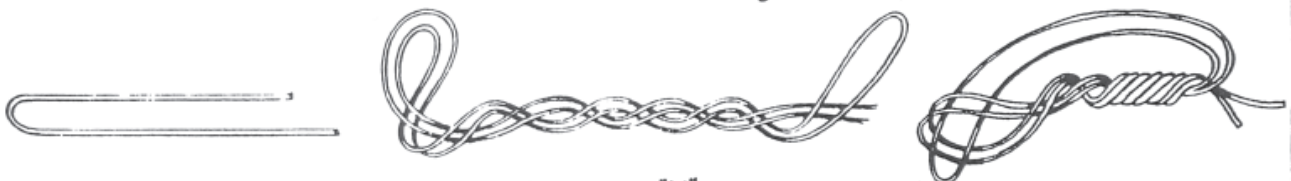


... lap ends, twist 5 times as shown, tuck end back and hold.

... Repeat at opposite end, taking 5 twists in same direction. Push end through center of lap.

... Pull up slowly and tight. Allow turns to gather as shown above.

IMPROVED END LOOP ... for forming a loop



... form a double strand 4 to 6 inches long

... fold the "U" shaped bend back and spiral around itself 5 times for maximum strength

... insert end through first loop as shown, Pull up as tight as possible.

*(Courtesy Wyoming Coop. Ext. Serv.)

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Some material in this guide was adapted from existing 4-H literature. Materials taken from: Leaflets YA-5, YA-12, YA-14, Extension Service, Auburn University, Auburn, Alabama; "Fish and Fishing," IV, V, VI. Cooperative Extension Service, South Dakota State University, Brookings, South Dakota; "Fishing," Cooperative Extension Service, University of Nebraska, Lincoln, Nebraska; "Let's Go Fishing," Cooperative Extension Service, Purdue University, Lafayette, Indiana, and "Fish and Fishing," Agricultural Extension Service, University of Tennessee, Knoxville, Tennessee.