A Short Common Sense

Treatise on Fly Rod

Construction

POINTERS

For the

ANGLER

This treatise was written by my father, E.C. Powell & printed in 1935. It is still the basis of construction for all "Walton Powell" fly rods today. I am sending it to you, my fellow angler, as my Dad did 40 years ago, because I think it will help you understand fly rods better.

Walton Powell, angler

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FLY RODS

A fly rod is a compound machine using three types of power application in its work of fly casting. Muscular power furnished by the angler is applied by leverage to the rod, which converts most of this into spring power and power by momentum.

Power applied by leverage has mostly to do with the length of the rod. The longer the rod the more leverage there is against the angler; and the shorter, the less possibilities of converting power applied by leverage into power application by spring and momentum. Power applied by leverage is not applicable to any extent in casting a fly line, so a rod must be built to convert leverage into spring and momentum.

These three methods of applying power — leverage, spring and momentum — form the basis of all correct calculations in fly rod construction. Leverage holds the same relative position in a rod in which spring power is the main objective, as in one that uses momentum as exclusively as possible for fly casting. Power applied by spring or momentum is the power application on which the rod maker must base his calculations when working out tapers for rods.

A fly rod built to apply power by spring as exclusive as possible of momentum, must taper from fineness at the tip to a comparatively heavy butt. A rod built to apply power by momentum, as far as is consistent with fly casting, would be heavier at the upper part of the second joint and lower part of the tip than the above mentioned rod, but smaller at the butt.

The first mentioned taper I call “Spring,” the second “Momentum” and to make classification easy, I will use the letter “A” for Spring and the letter “C” for Momentum.
I make three distinct types of rods that I will now describe, viz: "A" "B" and "C." "A" type rods are built in three different ratios of taper. When the idea involved in "A" rod construction is pronounced, it means tip action and butt resistance. The change of taper in an "A" rod, to obtain extreme difference of flexibility in the tip and resistance in the butt, is applied in such small amounts at any one time, and in such a uniform manner that it allows a most perfect unity of action. In obtaining this change, in my mildest form of type "A" rod, I split one-thousandths of an inch into sixths, to arrive at the proper mathematical taper that will give what I want. The difference between the mildest type "A" rod that I make, and the most severe one is the difference obtained by changing from one-sixth of one one-thousandths of an inch to one-fourth of one one-thousandths of an inch, used in a progressive manner. In reality, there is a great difference in the amount of muscular force it takes to put the same amount of bend in either.

Type "A" rods are the keenest and most sensitive in their action as well as affording the finest balance, but are perhaps, the least "fool proof." "A" rods apply the muscular power furnished by the caster, more readily to the line, than other types. If the caster is not careful he is apt to apply more power than is necessary. This also means that these rods take less exertion on the part of the caster. "A" type rods are inclined to throw a narrow loop in the line on the forward and back cast. When the line is unfurling either on the forward or back cast it goes out in a narrow instead of a wide sweeping curve. This means that "A" type rods are inclined to produce a driving cast. It is possible for the caster to force a narrow curve, by wrist action, or a wide curve, by arm action. In forcing a wide curve in a line, you must use butt action in the rod and in forcing a narrow curve in the line you are using tip action. "A" rods are tip action rods and should not be used in a manner to force extra tip action or the loop thrown in the line on the cast will be so narrow the fly
and leader may tangle with the line when the loop is in the act of unfurling.

The most severe type of "A" rod that I make is often used by tournament casters for that event known as "Dry Fly Unknown." The tip flexibility is made use of for the delicate part of the cast and the butt strength is used to reach the farthest target with the most perfect control offered by any other rod that could be used for this event.

The reason that an "A" rod is less "fool proof" is on account of its inclination to take on bend at the tip more readily than other types. This can be easily overcome by not allowing strain to come on the rod when it is held at too great an angle with the point of contact, the hook. By watching the rod when under strain, the caster can note when the strain is centering at the tip, then by lowering the rod or pointing it more nearly at the point of resistance, the strain will be forced to the butt where there is great strength.

When properly handled, "A" type rods become the most rugged of all rods, for they have a stronger butt to withstand heavy strain.

On account of an embankment, the writer has lifted bodily from the water, black bass weighing three pounds with an "A" type rod. He has also stopped a strong swimmer weighing one hundred sixty-five pounds inside of one hundred and twenty feet. In both cases the rod was held at the proper angle to force the strain to the butt.

The "C" type rod is the opposite of the "A" type and is the most "fool proof" of any type. This type of rod construction will stand more awkwardness, more holding of the rod out of correct position and more yanking when fastened to a limb, or fish, without injury to the rod, than can be had with any other type. It has the most awkward power application, the poorest balance and is the most tiresome to cast with of any type of rod; never-the-less, it is a good rod for
spinner fishing or for any light bass lure that can be handled with a fly rod.

Both the "A" and "C" rods are extremes and have extreme virtues peculiar to themselves. The developing of an extreme virtue in a fly rod likewise develops a fault. An angler to get the best use of an extreme type of fly rod must learn to make use of its virtues and overcome its faults.

The "B" type rod is not an extreme, but a uniform taper throughout its entire length. "B" type rods may have a fast, medium or slow taper but their taper is of the same ratio throughout their length. These rods have become quite popular and are somewhat more "fool proof" than the "A" type rods and a more pleasant casting rod than the "C" type. Although "B" type rods do not develop an extreme virtue, neither do they develop an extreme fault. The "B" type rods are inclined to throw a wider loop in the line on the back or forward cast than the "A" rods. This gives a "softer" lighting fly.

The "A" type rods, except in its mildest form, is not liked by some "Dry Fly" anglers, for actual stream fishing on account of its being too fast in its action for drying the fly by false casting.

For certain reasons I build combination tapers that are combinations of the true types such as my tournament distance rod and "Waldron" steelhead fly rods, these are both combination of true type rods.

I make it my business to thoroughly understand rod construction in its every detail, from basic truths on up so as to enable me to build what the tournament caster and the discriminating angler might want. I do this very thing and guarantee my efforts to satisfy. The angler can order what he wants and if the rod, by trying a line on it, proves not to be just what he wishes, it can be returned with instructions as to the difference wished and I will build that difference into another rod. I do, however, draw the line
at building that which is contrary to the basic truths underlying rod construction.

The word "type," as I use it, does not mean length or weight, but type of power application that the rod makes use of. Of course, the actual types of power application remain the same, but the amount of each can be varied as well as combined in different ways.

Most "Powell" rods are made in solid construction of six split out strips of bamboo. I also make semi-hollow rods which gives greater circumference, which also means greater strength according to weight. Nature builds bamboo hollow to give great strength according to weight alternating nodes to protect a hollow tube from collapsing. Semi-hollow rods are copied from nature.

"A" rods are fast, keen, sensitive and least "fool proof."

"C" rods are slow and awkward in their action but most "fool proof."

"B" rods have no extreme virtues or faults but make an all-around rod for the average angler.

I build rods of the best bamboo that I can buy. I treat or temper my bamboo by a process that I have developed over a period of twenty-five years and I am satisfied with it. I make this statement only because I have read many statements considering the treatment of bamboo that were both ridiculous and false.

E. C. POWELL, Angler