

Spiral Wrap For Casting Rods

by Ralph O'Quinn

 a new take on a very old twist

I had just completed a job that was very aberrant to me. It literally ran against my grain and irritated me to no end. At the same time I had to smirk a little and confess to a feeling of smug satisfaction – sort of an “I told you so” feeling. The job entailed removing some factory installed guides and placing them in a different area. Actually I removed 4 guides and replaced only three of them. I made a “Roberts Wrap” in reverse. The factory rod was produced as a “Roberts Wrap” rod except you have to use the term Roberts Wrap very loosely in this case. It was one of the most pitiful examples of mutilation I have ever seen. And this from one of the premium rod makers in the Northwest, a manufacturer who has added many valued innovations to the art and science of rod building both factory and custom. The customer who originally bought the rod had high hopes for it but those hopes were soon vanquished and he had me make the rod into a normal guides-on-top run of the mill mooching rod. I offered to revise the guide placement so that the Roberts Wrap would do as intended but he was so fed up with the performance that he just wanted it to be fittin’ and proper with all the guides in line and on top.

How many times have you found yourself discussing rod building with compatriots and peers and a subject becomes controversial and somebody pipes up with “let’s do what the factory does, they know best”. Believe me, the factory doesn’t always know best and this is an example of a factory GOOF!

Robert’s Wrap

The Roberts Wrap, also known as Spiral Guide Placement or Wrap-Around, has been used and abused for several decades. Actually the idea was patented in 1909 by John S. Scanlan of Chicago, IL. So where does the name “Roberts Wrap” come from?

Why not call it a “Scanlan Wrap”? The only reference to the name that I have ever seen was from an article in the July/August 1992 RodCrafters Journal. The author, Cam Clark, wrote an article titled “The Roberts Wrap: a summary”, wherein he indicated that Joy Dunlap learned the technique from Chuck Roberts, a rod builder from Kansas City. In deference to Chuck, Joy always marked his rods which used that wrap as “Roberts Wrap by Joy Dunlap”. Therefore the honor of naming the wrap may very well be attributed to Joy Dunlap. I have never met Joy, but recognize the name as one of the giants of our rod building world.

Torsion Problems

The purpose of the Roberts Wrap is to prevent line chaffing the blank when the rod is under excessive flexure, such as when fighting a heavy fish or during normal downrigger operation. Apparently very little credit has been given to the design feature of the wrap which should be considered primary or at least have equal credence to the line chaffing considerations. With the guides on the top of a rod, fighting a fish or in any way loading the rod results in a twisting force on the rod. The higher the guides, the more the force. This twisting force (torsion) is the cause of a great many mysterious rod breakages.

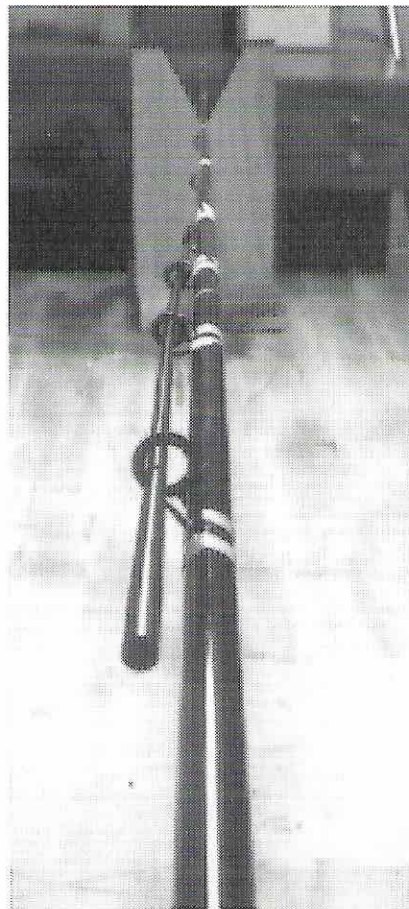
I have seen many casting rods where the rod had failed about 6 inches from the tip. The usual breakage scenario occurs when fighting a big fish or heaving and jerking too hard during a strike or a hang-up. I believe these breakages are not due to rod flexure but rather due to a severe sudden twist in the rod because of the leverage of the guides on the top of the rod and the line attempting to seek the lowest point. With the guides on top there is always a torsion effect whenever the rod is flexed under load. The torsion is there

regardless of the spine location in reference to the guides. Torsion will always overcome the spine. The effect of torsion is more severe at the tip than the butt simply because the tip is so much smaller and cannot resist the force so a severe twist is the result. This twist can easily reach 180 degrees and the tip snapping off can be the result. Graphite has much poorer resistance to the damaging effects of torsion fracture than does fiberglass.

With the guides on the bottom of the rod (where they belong) there simply is no torsion, no twist, regardless of the design of the guides. Any rod constructed via the Roberts Wrap principle will never experience line chaffing and it will never experience a torsional force. Makes you wonder why anyone would put a guide on the TOP of a rod!

Line Chaffing

Several years ago I was fishing for salmon with a friend who fished with a single action rod and reel of the type that is standard with our Canadian friends. The single action reel is on the bottom of the rod and, of course, single action rods have the guides on the bottom also. We were trolling with downriggers, I was using a very fancy custom made (guess who made it) 7 $\frac{1}{2}$ ft., limber-tip downrigger rod while he trolled with his 10ft single action mooching rod. I hit into a good fish and had him on just long enough to feel him make one good shake - about 2 $\frac{1}{2}$ seconds - and SNAP! My line broke just a few feet from my rod tip. Now 12 lb. monofilament doesn't break without reason and close investigation showed a good reason for this line to break. It was frayed very badly for about another 50 feet or so above the break. Why was it frayed so badly in this area and why didn't I notice this before? The answer to the first question became obvious; the answer to the second question, well, some people call it stupidity but I prefer to think of it as a phenomenal capacity for resisting enlightenment. I had designed and built this rod especially as a downrigger rod. I cut off some two feet of the tip section of a heavy/stiff blank and spliced on a limber section from a blank with a thick wall and a rough-out finish. It made an ideal downrigger rod. Heavy butt for handling heavy fish and limber tip for the jostling that a rod receives from the downrigger. Then I screwed it up by installing the guides on the top. Downrigger action puts a severe flex in the tip of the rod and with the guides on the top the line rubs against the rod tip with a sawing action. Combine this with a "rough out" surface and



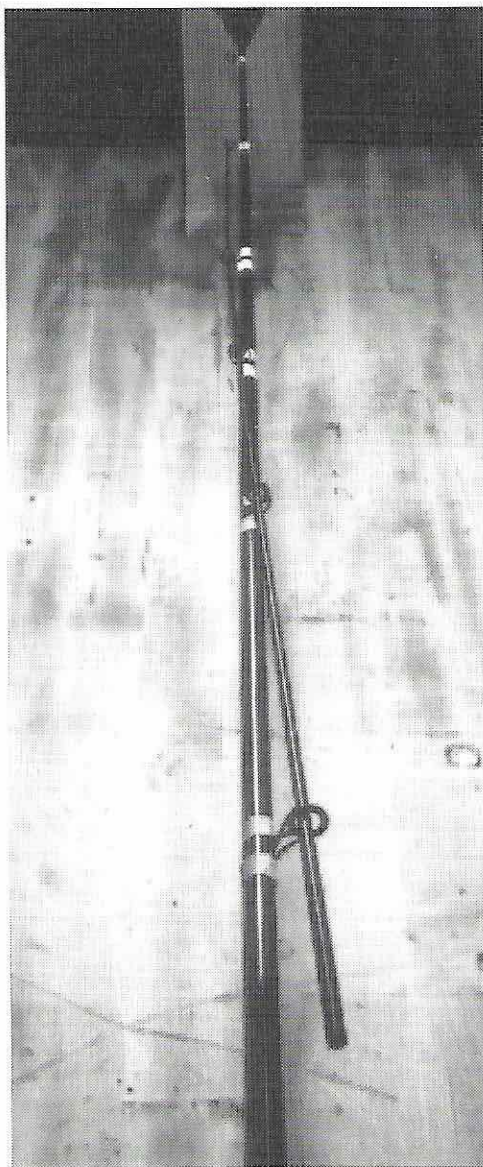
Here a spare fly rod blank tip section has been inserted through the first 5 guides of the Author's spiral guide placement system. Notice that it follows a very straight path, devoid of the sharp turns of most spiral wrap systems. The line will likewise follow this path and result in less friction and better casting qualities than in those systems where it must make sharp turns on its way to the underside of the rod.

The first guide out from the reel seat is mounted offset the rod's 0 degree axis and is placed at about 45 degrees instead. Detractors have long held that this will cause line to pile heavy to one side of the casting reel spool, but during actual use this has proven not to be the case.

it's just no contest, the line doesn't have any chance.

That was the only fish that we got into all day. Nevertheless it was a very profitable day for me. I look back at that occasion and remember it as a hallmark in time because that experience got me to thinking about why we put guides on the top of rods? Fly rods have guides on the bottom, spinning rods have guides on the bottom, Canadian Mooching rods have guides on the bottom, those neat little Alvey reels from Australia (which I dearly love to use for surf fishing) use rods with guides on the bottom. Only the revolving spool reels are matched with rods with the guides on the top. Revolving spool reels take in a lot of territory. It's my guess - and only a guess - that there are more revolving spool reels out there than all the rest of the reels put together. And since these reels MUST be positioned on top of a rod, it follows that the guides also must be on top! Or must they? I had heard of the Roberts Wrap but had never seen one except in pictures and sketches. Since I was toying with the idea of designing a downrigger rod for a heavy spinning reel the thought occurred that we might accomplish the same goal with that (Roberts) approach.

Another view of the author's system taken from the 90 degree axis which better shows the relatively straight path taken by the line on its way to the bottom of the rod.



Experimentation

I proceeded to cut off all the guides on my fancy downrigger rod with the spliced tip and began experimenting with guide placement on how a spiral wrap should be. I had heard that it's important to get the line around to the bottom in as short a space as possible but couldn't come up with anything that seemed practical. Everything I did seemed out of place and Mickey Mouse. Finally I merely placed the guides where I had them in the first place, rotated the four uppermost guides 180 degrees, then rotated the next two guides until the second guide was 90 degrees and the third guide was about 135 degrees. I left the first guide at the 0 degree axis. So after several days of

monkey doodle I finally had something that looked practical and workable. Each guide was in exactly the same location where I had them when I built the rod except they were rotated on the rod axis. I tied the same guides back on in exactly the same location except this time they were at 0 degrees, 90 degrees (to the right) and 135 degrees and four guides at 180 degrees. Went for a spin with the downrigger and the rod performed beautifully – no chaffing of any kind. The line had no contact with the rod under any conditions.

This experience completely enamored me of the concept. I reasoned that if it works so good on a downrigger rod then why not other rods as well? So I proceeded to tie up a 9 foot mooching rod and a 7 foot jigging rod using the same concept, except I spiraled one to the left and one to the right to see if that made any difference. Both rods performed magnificently. It seemed at this point that with the reel handle on the right side of the reel the spiral should go to the left and with a left hand reel the spiral should go to the right. So being right-handed I settled for a left side spiral in my mind for all future tests. The beautiful handling characteristics of this jigging rod soon got me to thinking why not fresh water casting rods?

Fresh water rods means casting - plunking type rods, bass rods, walleye rods and steelhead rods. At this period in time my favorite casting reels were an ABU 5000 and an ABU 2000 without the star drag feature. This "no drag" type reel is still favored by many of the Northwest Steelheaders as it allows complete control with the thumb. (I simply do not understand why reel manufacturers don't offer this type of reel anymore.)

I scrounged through my shop looking for a suitable blank for this test and couldn't find one that I was willing to sacrifice. No big deal I figured, this is just a test, so I pulled out a Lamiglas fiberglass blank that I acquired at a cut-rate price. They were seconds and were pretty crooked. Some were 5 footers, some 5&1/2 footers but all had a very flexible tip. They are the classic Lamiglas gold and I was merely using them to cut up for repair and ferrules and such things. I picked a 5 footer and selected a piece of scrap graphite and jammed it into the butt end with copious amounts of RodBond and lo, I had a neat 6'8" blank. A 10 inch cork handle, a Fuji reel seat #16, a 3 inch foregrip and copious amount of thread buttwrap forward of the foregrip and nobody could tell it wasn't a single blank.

I ignored the spine and tied the guides with a spiral to the left in such a manner as to eliminate the very crooked tip. I tied it the same way that I had tied the previous salt water rods. Then I compared the rod with a similar bait casting rod in my arsenal, looked down the guides from the butt end of both of them and all of a sudden a light came on. The guides on the conventional rod were all in a straight line, while on my Roberts, the guides had a break or sharp angle in the line at the first guide and also at the fourth guide. This sudden change in direction at the first guide was very pronounced while at the fourth guide it was very subtle and within acceptable limits. I took a graphite fly rod blank tip, passed it down through the guides and noted the irregular path from the reel face to the first 180 degree guide. I took the tip out of the guides, put the end in the first 180 degree guide and noted that the butt end in my hand will touch the reel without distortion. That settled it. I immediately stripped the first four guides and repositioned them along the straight line described by my new "alignment tool". The first guide, instead of being on the 0 axis, is now at about 45 degrees, the second guide is about 80 to 85 degrees, the third guide about 140 degrees and the fourth guide at about 175 degrees. The alignment tool will easily pass through all the guides all the way to the tip. It is a straight line all the way within the tolerance of a guide diameter. I took the rod outside with the ABU 5000 and tied on a plastic practice plug and was ecstatic with its performance. It outperformed the conventional rod in every department and I could hardly stand the wait to get it on the water with a genuine lure on the other end!

I took it to one of our Eastern Washington resort lakes famous for numerous species of fish. On this trip I found out a lot about my newly developed casting rod and a lot about my own short-sighted ignorance. After using it for 3 days I was ready to head home. The rod had completely impressed me with its performance and made me a dyed in the wool Roberts Wrap convert for life. I was standing on the resort dock casting a light deep diving plug at random, more for the hell of it than with any expectations to catch a fish when along came one of the local guides with whom I have a passing acquaintance. He watched me a few times and asked if he could try the rod; I gladly handed him the rod and told him to have at it. He proceeded to demonstrate what a real pro can do with a casting rod. I could tell he was impressed with the rod and was just about to explain

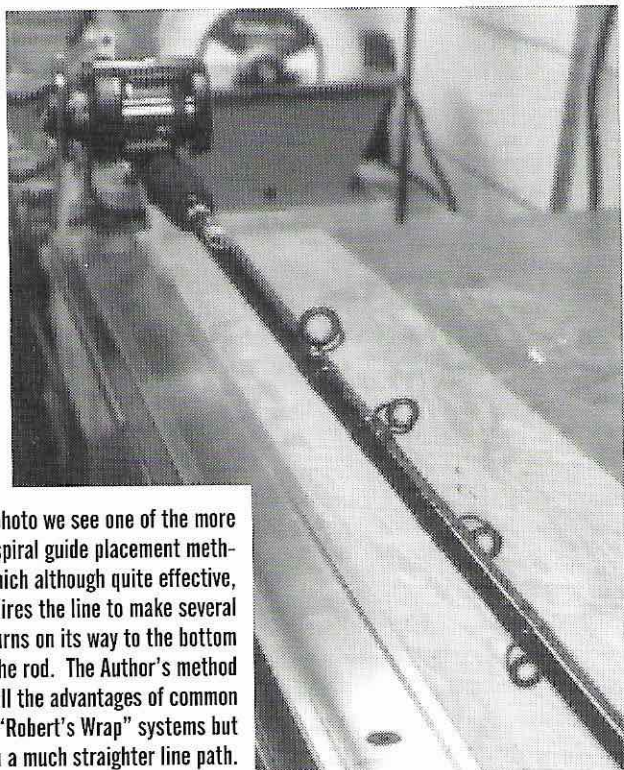
to him what a magnificent job of design I had accomplished when he beat me to the punch and gruffly asked me how much for the rod? I really wasn't in a selling mood and explained to him that it was an experimental model and not for sale. He was adamant and insisted that he would pay any reasonable price. So I took the opportunity to explain to him what I was doing with the guide placement and how it affected the... "I don't give a damn about the guide placement, it's the rod action I want", he said. "If I can't buy this one, how about one exactly like it?" That really took the wind out of my sails. Here was a guy who owned a whole armful of top-of-the-line rods from top of the line manufacturers and he was begging to buy a rod made from scrap seconds. I wondered what he would have offered if I had made that test rod out of top of the line Lamiglas stock instead of warped and rejected seconds!

Anyway I quoted him a price that was so obscene I figured he would go away. He blinked a few times, muttered something about that's pretty steep and remarked, "How soon can I get it?" Now I was stuck, so I told him I would be back in about two weeks and would make him one in the interim. I took a few notes as to personal preferences and a mental note to myself as to what the hell was going on there.

I was so engrossed with developing a design concept that I hadn't paid much attention to the blank that he was so enthralled with. We took a stroll over to his boat which was moored nearby so I could look at his rods. He had about 3 dozen, all expensive high end rods and all of them of graphite construction.

I handled most of them and did not find a single one that appealed to me and told him so. He heartily agreed and stated, "That's why I want that-a-one", pointing to my lowly little fiberglass makeshift orphan with the crazy guide pattern. Then I had an inspiration - I said as long as I'm going to build you a rod like this one, let me take one of your factory rods and change the guide pattern to a wrap around like the one I'm going to build for you and let's see if it makes any difference. He fumbled around in his bundle of rods, grabbed one and handed it to me with the comment, "This one isn't worth a damn, do whatever you want with it." It was a high end rod, in the \$200 category with SIC guides, premium cork and reel seat, flashy wraps and stiff as an axe handle, with the handling characteristics of a pitch-fork.

On the drive home I began wondering why are so many of the high end rods of this type made of



In this photo we see one of the more common spiral guide placement methods which although quite effective, requires the line to make several sharp turns on its way to the bottom of the rod. The Author's method offers all the advantages of common spiral or "Robert's Wrap" systems but with a much straighter line path.

graphite instead of fiberglass'? I think this is another marketing goof. I don't think casting/flipping rods should ever be graphite - they should always be fiberglass.

Construction

Back in the shop I took that bundle of Lamiglas rejects and transferred them to an area more befitting respectful first class blanks. Selecting what I figured was the best one in the bundle, I very carefully made a first class 7 foot blank with a graphite butt then built a first class rod along the identical parameters of my test rod using SIC guides, flor corks, good Fuji reel seat, etc. Then I took the rod the guide had given to me, stripped the guides and proceeded to re-tie them along the same Roberts Wrap pattern of my Lamiglas special. The first guide was a #16 at 45 degrees to the left and 15 inches from the reel face. The following guides were #12 then #10, followed by four #8s to the tip-top. In comparing the two rods side by side, it became very obvious that the stiffer graphite rod did not need as many guides as the limber tip fiberglass rod. I removed one of the #8s and redistributed the guide spacing.

I wasn't interested in a stress test at this time as I wanted the two blanks to have about the same Roberts Wrap for comparative purposes only.

Outside with the plastic practice plug and using the two rods side by side with the same reel it became obvious to me why my guide friend was so enamored with the Lamiglas'. The flexible yet springy tip cast a 1/4 ounce plug with good zip and accuracy while the graphite counterpart sputtered and caused backlash problems, even with 3/8 and 1/2 ounce plugs. The Roberts Wrap design on the Lamiglas is a natural for its flexible tip. If it were tied with the guides on top there would be line rub such as on my flex tip down-rigger. I earmarked the graphite rod as a trolling rod only, yet it was marketed as a casting rod.

Next I selected a lighter blank in the 6 foot range, quite flexible all the way, tied it with the same Roberts concept and destined it for a trout/bass size rod. It handled beautifully with a Garcia Sprint and a 6lb. line and here I learned my next lesson in the Robert's program. This rod is a one piece fiberglass, flexible all the way to the handle, which means when fighting a hefty fish - let's say something in the range of 5lbs. or more - the rod will arc all the way to the handle. That can put a pretty severe load on the #2 guide which is at about 90 degrees. The answer is merely to re-position guides #1, #2 and #3 laterally in order to minimize this line load and you will probably have to add an extra guide in this area. You can reposition the guides and still stay with the straight line concept. You can still use the straight line positioning tool for this purpose. While repositioning these guides I did some playing around with the distance from the face of the reel to the first guide and discovered that when that guide is about 8 inches from the reel the angle between the level wind feature and the offset guide is sufficient so that when there is a heavy tension on the reel it tends to pile up line on one side of the spool. Back the guide off to at least 10 inches, preferably 12 inches, and there is no problem. This held true with two different reels, one with a 6lb. line and one with a 10lb. line. Based on this, I put my minimum distance from reel face to first guide at 15 inches and this parameter has never let me down.

Results

Back at the lake I looked up my guide friend and delivered his rod. Just the look on his face when he took possession was almost payment in itself. However I accepted his check as sort of a tip. He insisted that we go for a spin in his guide boat and check out the rod under realistic conditions. I love riding in those high powered bass boats but seldom

get the chance to fish in one so just to show him that my heart is in the right place I graciously accepted. It turned out that the events on this trip cast in concrete my Roberts Wrap approach which I adhere to even to this very day. Watching a real pro handle that rod was a special treat. It was made even more special when he would trade rods to compare one of his with the one I made him and then show his enthusiasm for the Roberts Wrap. He used the one that I stripped and re-tied into a Roberts Wrap configuration and enthusiastically insisted that it made a much better rod. Better accuracy, better distance, better over all feel, but not near so good as the fiberglass jewel that I made for him. It was a very entertaining and educational boat ride. Coming back into the dock, he pointed to a couple of guys on the pier and stated that they were looking for me. They were real gruff looking characters (seems as though all guides are gruff looking characters) and as they helped dock the boat they pumped my guide friend with all kinds of questions about THE rod. It turned out they just had to have one, as my friend had filled them full of tales from our first encounter. They both examined and handled the rod in question and both ordered one EXACTLY like this one. Same length, same flexible tip, same everything – so I quoted them the same price and they didn't even blink.

A few days later when I was hitching my rig for the trip home, one of the guides who ordered a rod approached me and increased his order to two of them. So I went home with orders for three rods – rods that were still very experimental and made up from reject fiberglass blanks and scrap pieces of graphite. A week later while working in my shop, a phone call from the lake added two more orders for those “phenomenal flipping rods” with the crazy guides. All of these orders were from fishing guides, each of whom already owned a bushel of rods.

Modifications

I still had some tinkering to do and in the process discovered that a high frame guide at the # 1 position improved things so I changed this guide to a #16 in a Fuji SVSG type while the balance of the guides remained NSG type. I permanently established that the first three guides will be #16, #12, #10, because of their transitional function and the fact that there is a lot of jockeying around to get them positioned correctly and these three guides MUST be double foot type. All the remaining guides are #8s, #7s, or #6s,

builders choice and can be single foot guides. Light rods should be all #6s, heavier rods need #7s or even #8s, but it is a structural choice – nothing to do with line function.

Factory Guide Placement

The question is still there concerning factory rods. If the Roberts concept is so good why don't the factories use it? I can only guess that there is no reason for them to bother – they already sell more rods than they can produce, so what's to gain from their perspective? Also from the experience that I have had with factory rods and this concept is not very flattering to the rod designer. Also I doubt if the general public would accept even the best of Robert's type rods. I have heard many negative remarks from self styled experts about those crazy mixed up rod builders who tinker with proven concepts.

Conclusions

So there you have it. The Roberts Wrap as I see it and as it pertains to the type of rods in my arsenal. There have been many approaches to this design, some of them carry a lot of merit, some of them are downright Kookie, but for whatever it's worth this is the way I see it and I attempted to give the “why I see it that way”. There may be something in the neighborhood of about a hundred or so types of this design out there, mostly as casting/flipping rods sprinkled with an ample supply of jigging and mooching. As the word got around, I have re-worked many factory rods to this concept by merely removing the guides and re-tying them. Without any exceptions ALL of the recipients of these rods have been wildly enthusiastic about their performance, so something must be right about them.

The most prevalent criticism I receive from all the rod building experts is that the offset first guide will cause all kinds of trouble. Everybody knows that first guide MUST be at 0 degrees and in line with the reel face otherwise the line will pile up on one side of the spool. I'm sorry to dispute the experts but it just ain't so! The original work was done about 12 years ago and I have not deviated from the concepts described herein. I make no claims to being any kind of an expert or authority on the Roberts Wrap, but I do claim that here is one neat way of doing it and can recommend it to those of you who may have had a hanker to give it a try. ☞