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# The Loop

THE JOURNAL OF FLY CASTING PROFESSIONALS



In this issue:

• Casting Masters Then and Now :

**Gary A. Borger**

by Bruce Morrison

• **The Paradox of Loop**

by Bill Keister

• The Wave and the Shoal

by Chris O'Byrne

and more...

*Cover photo: John Bilotta swinging fly in  
Rio Galegos, Patagonia, Argentina*



# Wanted: Articulate Articles, Interesting Photos, Evocative Drawings

*The Loop* needs articulate, insightful writers, photographers and artist to contribute to our effort to create an indispensable resource for fly fishing and casting instructors.

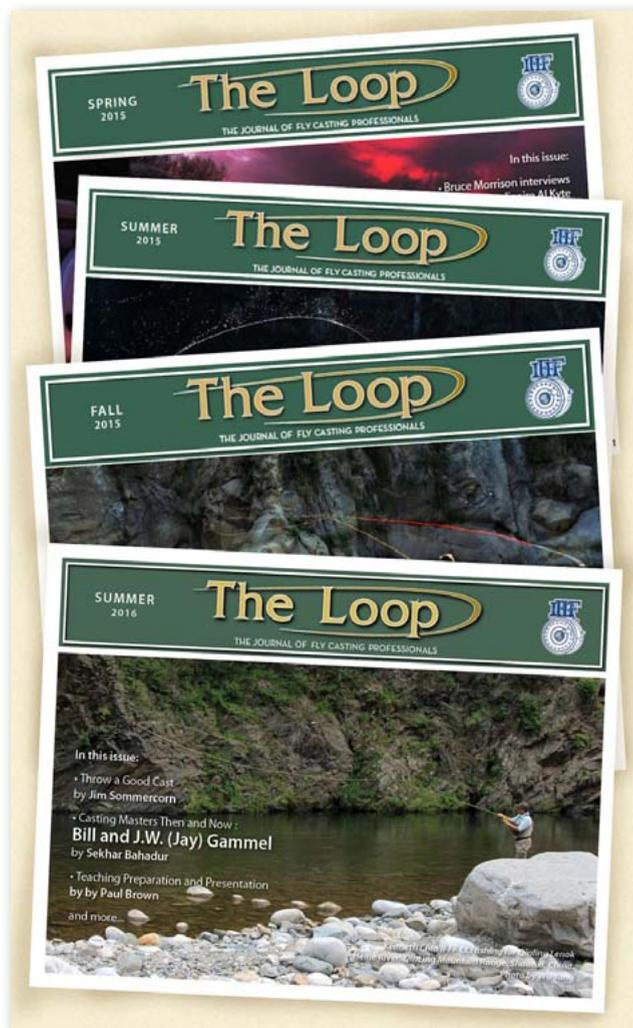
Do you have a casting concept that's been banging around in your head for a few months? Or a dramatic photo of some remote water where you've fished or taught?

As the IFFF Casting Program grows, gains more members worldwide, our audience grows. The Editors want to print concepts and ideas from many points of view and from many of the countries in which we have members.

Each quarter the editors of *The Loop* volunteer 100s hours to edit and produce a journal for fly fishing instructors which is not only interesting and informative but professionally produced and visually engaging. We use hi-resolution photos each issue to illustrate articles and for our cover.

To do this, we need your help. We're calling for article ideas from all CICIP members, all casting instructors, and all fly fishing photographers worldwide.

Please contact John Bilotta with your ideas and photos – [jbilotta@georgetownflyfishing.com](mailto:jbilotta@georgetownflyfishing.com).



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# THE PARADOX OF THE LOOP

by Bill Keister, Connecticut, USA

We love our loops. We practice our loops. Even our internal publication is called 'The Loop.' We talk about the line going around the loop. But does the line really go around the loop?

If we put a dot on the fly line and trace its path as it passes through the loop, it would trace a figure which is completely different



from a loop. The dot starts in the fly leg moving forward toward the loop. As it enters the loop it dives down and comes to rest in the fly leg. The path is one-half of one cycle of a cycloid. It looks like the figure at the right.

How could this be? We have pictures that show loops and they do not look like this. The fly line does unroll during the cast but how do individual elements of the line actually move? Figure 1 shows an idealized loop. Five positions have been marked on that loop to the left and the wheel to its right. These positions indicate where a dot that starts at the top (enters the loop from the fly leg) will be positioned as the wheel is rotated counter clockwise one-eighth of a turn at a time.

But the wheel is rolling, not standing still. So let us take the wheel in Figure 1 and roll it from right to left counter clockwise through one half rotation. And let's take a dot which starts at position "1" and

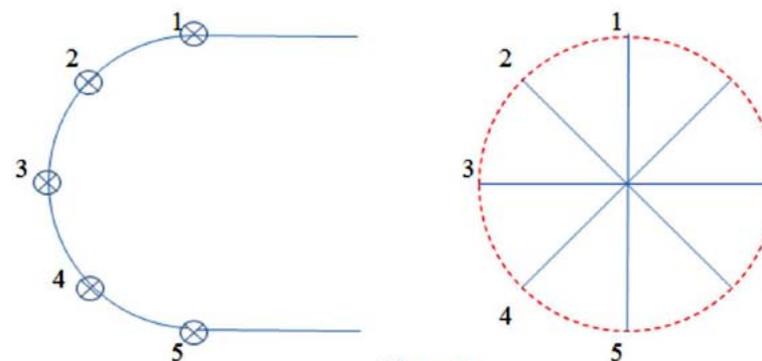


Figure 1

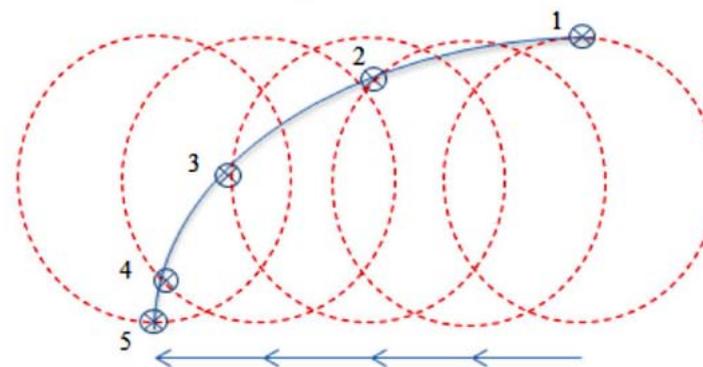


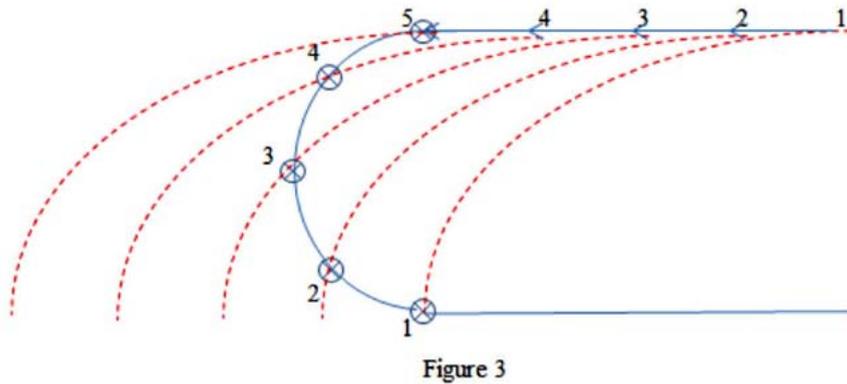
Figure 2

follow its path as it moves from the top of the wheel to the bottom of the wheel in Figure 2. The arrows underneath the five wheel positions show the distance travelled by wheel as it makes each one-eighth of a rotation.

The Paradox of the Loop *continued...*

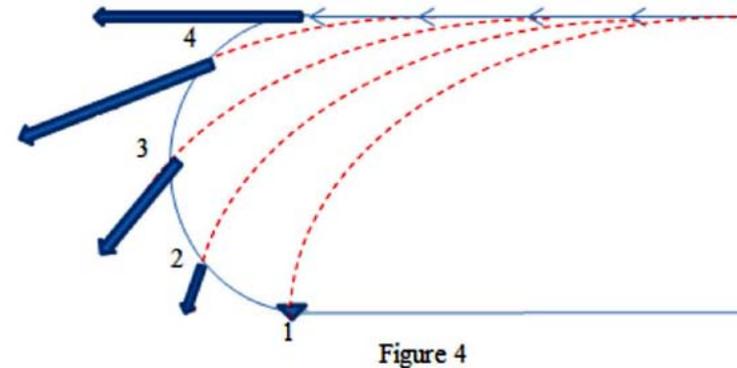
So the dot does not roll around the loop as it moves from the fly leg to the rod leg. It travels forward, dives downward, slows until it come to rest in the fly leg. Its last motion is at right angles to the fly leg as it becomes part of the fly leg.

**Figure 2** just showed us one dot on the fly line and its position as the wheel rolled. **Figure 3** shows us the paths of five separate dots, 1 to 5. Each dot starts in the fly leg and rolls on five separate circles (which are not shown) as they follow their own separate paths to the fly leg indicated by the dashed red lines. The location of each dot along its individual path is shown at the moment that dot number 1 reaches the fly leg. The blue line shows what it would look like if there were a very large number of dots each following its own path when dot number 1 reaches the rod leg.



So the blue line in **Figure 3** is what we see when we watch a loop or look at a picture of a loop.

**Figure 4** shows the portions of the paths the dots have traveled. The projected paths that the dots will follow to reach the fly leg have been removed. What has been added is an arrow showing the speed and direction of each dot at its position in its own flight path when dot number 1 reaches the fly leg.



So the individual elements of the line are moving quite differently from how our eyes and photographs tell us they are. The loop can be thought of as a large number of individual elements all following the same trajectory, one after another, as they traverse the 'process' of the loop. The elements are connected together by tension. So the dots show the movement of the line and the tension between them is the loop.

I have always thought of the nose of a bullet loop as forging straight forward through the air at one-half the speed it had in the fly leg. When in reality the line at the nose is moving downward at a 45 degree angle at about 70 percent of the speed of the fly leg.

## The Paradox of the Loop *continued...*

It is not going straight forward. I figured that if the speed of advance of the hub of the wheel (and therefore the whole wheel) was 1. And the speed of rotation of the rim of the wheel was 1. This made the speed at the top of the wheel 1 for speed of advance and 1 for speed of rotation or  $1 + 1 = 2$ . The speed at the bottom of the wheel was 1 for advance and -1 for rotation or  $1 - 1 = 0$ . Then the speed at the leading edge of the wheel had to be 1 forward for advance and 1 down for rotation. That made the speed the square root of 1 squared plus 1 squared. Which equals 1.4, and 1.4 divided by the speed at the top of the wheel which was 2 equals 0.7.

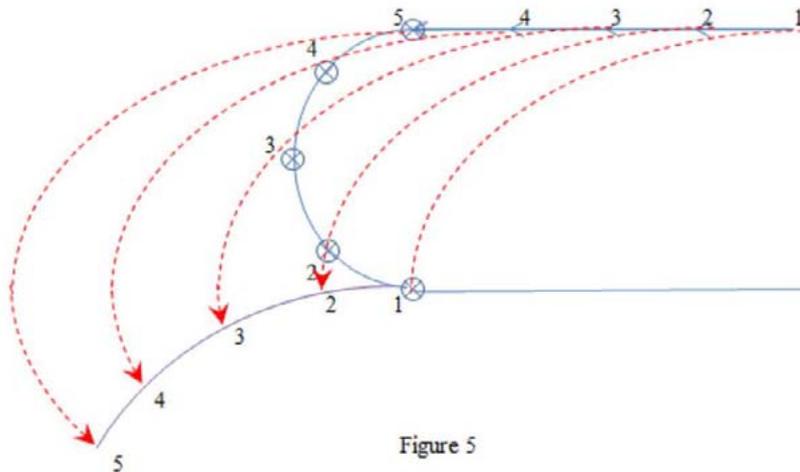


Figure 5

This view also helps to illustrate why a fly line cast without a leader or fly tends to kick. There is tension in the fly line generated by the conversion of kinetic energy to force in the loop. The tension is felt by the caster in the rod leg. It is what allows shooting of the fly line. The same tension is present in the fly leg.

This force is resisted by air friction and the actual acceleration of the fly leg. As the end of the fly line nears the loop there is less and less line to be accelerated and for air friction to act upon. Without the retarding effect the end of the fly line can reach the loop with too much energy. Instead of laying out straight as part of the rod leg it just keeps going and curves around below the rod leg. **Figure 5** illustrates this process.



*About the Author: **Bill Keister** fly fished frantically through high school and college then quit until his retirement in 1999, when he resumed fly tying, rod building, and earned his CI and MCI certifications. Keister has fished in Chile, Argentina, Alaska and Russia.*

*By his own admission, he is a true casting geek (who spends) a lot of time casting and postulating about the mechanics of fly casting.*



## Casting Masters, Then and Now:

# GARY BORGER

An interview by Bruce Morrison

Most people are satisfied with one very successful career. But Dr. Gary Borger is not most people. Borger has had two very distinct and productive careers, one in the academic world of natural sciences, and a second in the world of fly fishing.

Borger is Professor (Emeritus) at the University of Wisconsin (Wausau) where he has taught natural sciences – botany, biology, and zoology. His list of academic accomplishments is long, including his being named Who's Who among America's Teacher's, Outstanding People of the 20th Century, and Outstanding People of the Millennium.

## Casting Masters, Then and Now: Gary Borger *continued...*



Running concurrent with his academic career is Borger's lifelong love for fly-fishing, a field in which he's also highly accomplished. Borger started fly-fishing in 1955. His love of the sport and his natural curiosity led to examine virtually all aspects of fly fishing – he's a world-class fly casting instructor, a top selling fly fishing author, line designer, filmmaker, and an innovative fly tyer. He was also a founding member of the IFFF Casting Board of Governors and his book, *Presentation*, is one of the most sought-after, costly out of print books in the world. Copies routinely sell for \$100+

Not surprisingly, Gary Borger's two careers are intertwined. Gary's writing and filmmaking reflect his knowledge and perspective as a natural scientist. Not only has he written and made films about fly



casting, but he has made a film about nymphing (see his book of the same title). The books *Naturals*, *The Borger Color System* and the *Fisherman as Predator* also reflect his scientific background. His classic book *Presentations* weaves it all together, casting and information on the natural world that is relevant to fly fishing. *Reading the Waters* and *Fishing the Dry Fly* are additional examples of his extensive writing on fly fishing techniques. Gary has also written about fly tying and fly design.

In addition, Gary has designed industry standard equipment including rods, feels lines and the Ultimate Wading Shoe for Weinbrenner. For a comprehensive list of his videos, books, flies and fishing equipment check his website: [www.garyborger.com](http://www.garyborger.com)

## Casting Masters, Then and Now: Gary Borger *continued...*

In 2001 Gary was inducted into The Outdoors Best VFS Fly Fisherman's Readers Poll Hall of Fame. The IFFF has presented him with numerous awards. In 2006 they gave him the Buz Buszek Memorial Fly tying Award. In 1979 he was presented with the first Lew Jewett Memorial Life Membership. Gary received the Lifetime Achievement in fly Casting Instruction Award in 2011. He has also received awards for his conservation efforts.

**BM:** *I understand you taught yourself to cast. It's a steep learning curve to go from a novice caster to a master, how did you do it?*

**GB:** When I began fly fishing in 1955, there were few, if any, really good books on fly casting. Of course, there were no videos, DVDs, schools, or even clubs where I could learn. There were occasional magazine articles that helped. Then I got my hands on a few casting books by Joe Brooks, and others that explained the basic principles of casting. Very early on, I realized that casting was not only essential, but was the key to really doing what I needed to do and wanted to do in fly fishing.

I would take the casting books outside and read and practice, read and practice. I also fished a great deal, and this helped me to get my casting focused on the practice of fishing. As a student at Penn State, when I had just turned 20, I had an opportunity to watch George Harvey cast, and I decided that I wasn't as good as I thought I was. By that time, there were more books available on casting, and so I read and practiced, read and practiced, and fished.

Nancy and I were married in 1966, and she had fly fished as long as I had. We fished together many, many hours, and still do.



Casting Masters, Then and Now: Gary Borger *continued...*



When Fenwick started their fly fishing schools in 1973, I was asked to become the Midwest Director. This happened through my acquaintance with Jack Sokol, who was the Midwest rep for Fenwick. That brought me in touch with Jim Green, Mel Krieger, Frank Gray, Jim Gilford, and all the notables in the industry, and we all learned from one another.

I worked continually, reading extensively and analyzing the casting of everyone in the industry. And, of course, our son, Jason, became

an exceptional caster. We have spent many hours analyzing all aspects of casting, from the physics of it to the teaching of it, but mostly the use of it, especially from the practical side of fishing, and we continue to do so.

**BM:** *What did you learn about teaching casting when you worked for the Fenwick Fly Fishing schools?*

**GB:** Every year, the four Fenwick Directors (Mel Krieger, Frank Gray, Jim Gilford and I) would get together with Jim Green at the Federation of Fly Fisher's annual conclave and discuss techniques for teaching people how to cast. This was all ground-breaking work, and much came out of it.

When we met we would discuss words that helped the students to better visualize casting. We talked of casting methods, terminology, which casts to teach first, second, third, etc., and on and on.

At that time I was also a college professor, teaching at the University of Wisconsin campus in Wausau, WI. I lectured without notes. I also had to boil down rather complex scientific information into a form that allowed undergrads to quickly and effectively grasp the basic concepts of the biological sciences. I carried these experiences into the Fenwick Schools.

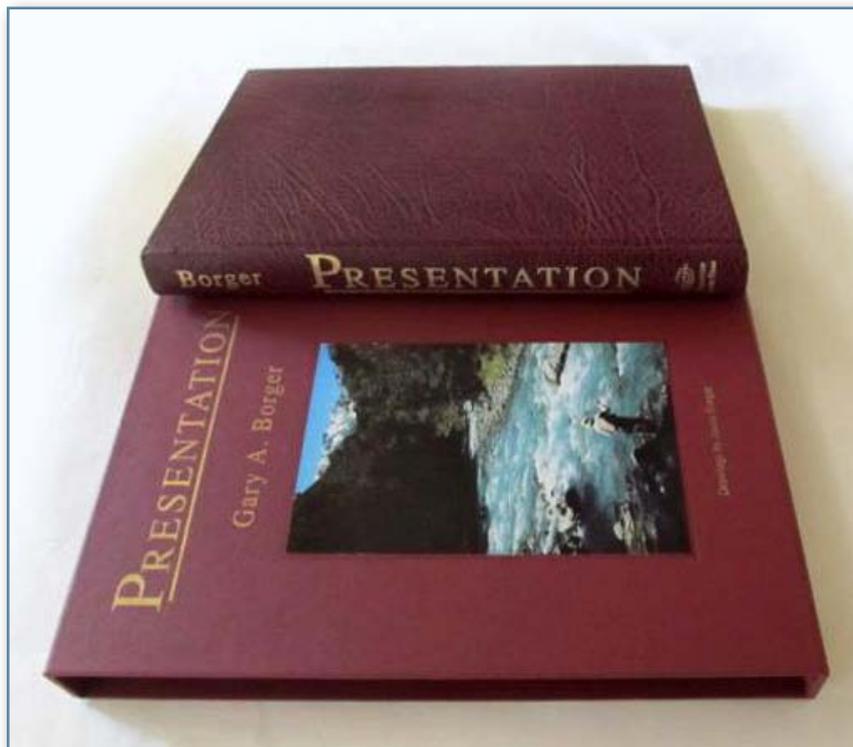
## Casting Masters, Then and Now: Gary Borger *continued...*

**BM:** *In your book **Presentation** you write that casters can learn more by practicing without a fly rod than with one. You also say that even advanced casters can benefit from this method. Can you briefly describe it for us?*

**GB:** This came from Mel Krieger's original pantomime method for teaching the Double Haul. In 1975 we all met at the Federation Conclave in West Yellowstone. One of the topics that quickly came up was the teaching of the Double Haul. It came up quickly because Mel came in and immediately claimed to have a way to teach the Double Haul to anyone in 15 minutes. We were more that sceptical and challenged him to prove it.

So, he went around the conclave and selected a group of people—some of whom had never fly cast. We took them to the ponds at the Fenwick facility just outside West Yellowstone, and darned if he didn't do it. We were stunned.

As soon as I saw him teaching the pantomime method, I knew that it was the way to teach all casting, not just the Double Haul. The main problem in teaching casting is the line. One has to cast up to speed from the very first moment if the line is to be cast. This, of course, is basically impossible for the beginner. Teaching the correct arm movements without the rod in hand allows the student to gradually



build the correct movements, getting them up to speed, and then trying it with rod and line. It's also the way to correct bad habits and develop new casting skills easily. I continue to teach casting this way, and find it very effective.

**BM:** *In a 1997 article in **The Loop** you wrote about correcting bad casting habits, by correcting muscle memory. How does that work?*

**GB:** This again, is the pantomime method. One cannot correct bad muscle memory by casting with the rod and line. The caster simply falls back into the old way of doing things—muscle memory takes over. Reworking muscle memory by Pantomime Casting is highly effective, if the caster will stick with

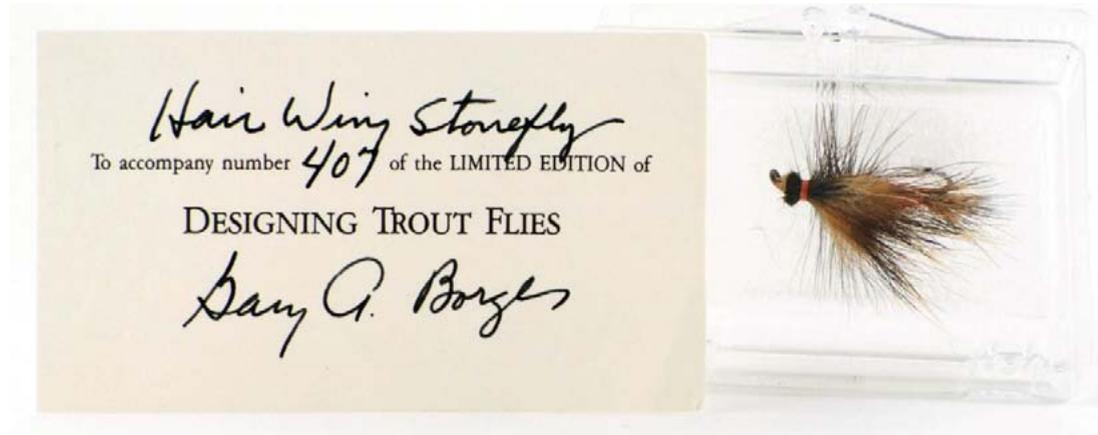
it until the new pathways are well established—that is, until one no longer has to think about them. I've used it effectively with many, many students

**BM:** *You were one of the original members of the casting board of governors who designed the certification program. Looking back, what do you think have been some of the most important developments in the program?*

**GB:** The program itself is the most important development. No one else ever established a program that certifies fly fishing instructors.

## Casting Masters, Then and Now: Gary Borger *continued...*

Its original intent was to bring fly fishing instruction up to at least a base level of proficiency. It was Mel Krieger's original idea, and it is still a very good one. It has stirred up controversy and discussion and these are good, if not taken too personally, because they help us focus on the skills necessary to teach fly casting and fishing well.



as possible teaching casting under someone who has an established school. I also advise them to learn more than one way to explain the different casts and mends, and understand how and why to use them. This is critical in fishing, and something the students must understand.

Out of the program has come a rather good set of criteria for testing the instructive capabilities of the candidates. The Board is constantly reviewing these, and refining what good teaching should be. This is a great benefit to the fly fishing community.

**BM:** *If a candidate for certification came to you for advice on how to prepare what would you tell him/her? Would you give different advice to CI candidates and MCI candidates?*

**GB:** I tell all candidates, CI or Masters that the test is, or should be, more about teaching than casting. True, a Certified Instructor or Master must be able to cast, and cast well if, in fact, they are to know anything about the teaching of casting. Precisely what CI and Master should be able to do with the fly rod has been, and continues to be, a matter of some challenge to the Board. There is nothing wrong with that because it keeps the program in review.

So, I tell candidates to not only learn the fundamentals of casting to the point that they are automatic, but to also get as much experience

**BM:** *Have you found that candidates for certification have similar problems or are the problems of each candidate?*

**GB:** Every single area of both casting and teaching can be a problem for any or all candidates. Having said that. Let me say that teaching is the area where most fall short, and is the reason for their denial of certification. Most of the candidates treat the certification process as if it were "casting certification." Nothing could be further from the truth. In is "Instructor Certification" and they need to understand that they should already be a good caster—how else could they teach casting if they did not understand it intimately?

**BM:** *Do you think it makes a difference what rod, line or leader a CI or MCI candidate uses, other than the requirements not to use a rod heavier than 7-wt or rod longer than 9-foot?*

**GB:** I don't have any preference for rod or line; by that I mean that I would not disallow a slow action or fast action or medium action, or any line design. But, and this is an important but, the candidates must be able to cast well with their choice of gear.

## Casting Masters, Then and Now: Gary Borger *continued...*

Furthermore, I might well ask why they chose their particular rig, and how would they assist someone using a very different setup. Knowledge of casting is not just understanding how to throw a line, it has to be all encompassing.

When candidates ask me about rod and line choice, I tell them that a medium-action rod, or medium-fast action will perform the best, and that a long-head, weight-forward line or “wind cutter” design will perform best in the test. Then, I tell them to practice with the gear they choose so they are smooth and efficient with it.

**BM:** *Why do you think it is important for candidates for certification to learn about fly fishing history? Do you recommend that both CI and MCI become knowledgeable about fly fishing history or just MCI candidates?*

**GB:** Too many casters have the idea that “modern” casting is really recent. It is not. It started in about 1850 when three things happened: (1) the development of six-strip cane rods that allowed manufacturers to make rods of various actions, lengths, and strengths, and then be able to duplicate those, rod after rod. (2) Manufacturers went from flopping rings to fixed rings (guides), and (3) the development of braided silk lines without knots. This led to the need to cast well so that the angler could readily and easily adjust line length while fishing. This ability to change line length (partly by stripping in line, partly by shooting line) is what makes modern fly fishing modern fly fishing.

So, modern casting began in the early 1850s. Looking back, we can see writers of that era and only a few years on, already describing all the parameters of casting well. Furthermore, we can see the development of lines, rod actions, reels, and other gear and get a



real appreciation of the way the sport has evolved and why. This is very useful in teaching the fundamentals of fly casting and fishing—students find it fascinating.

## Casting Masters, Then and Now: Gary Borger *continued...*

Perhaps it's a bit like genealogy—knowing where you come from may not change your personality, but it does show one's place in the grand scheme of things.

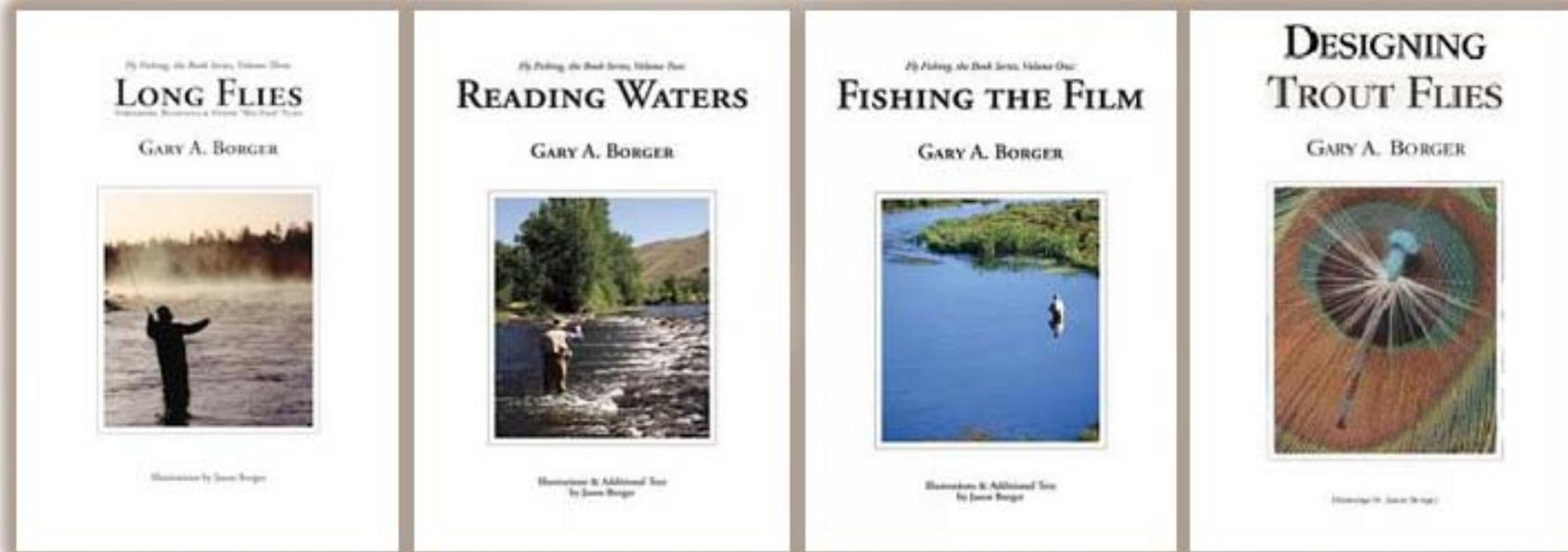
**BM:** *In Presentation you talk about working with Lefty Kreh on a film (Fishing with Lefty) (Fly Casting with Lefty Kreh) and being introduced to a very effective wind cast, later to be called the "thrust cast." It was similar to a cast advocated by Charles Ritz. Can you tell us about that cast and why it is so effective?*

**GB:** Charles Ritz was a great devotee of fly casting. He made it a point of meeting all the great tournament casters of his day and hobnobbing with them about their casting stroke, grip, stance, etc. They all chanted the mantra that to make a good forward cast, one had to make a really good back cast. And so, Ritz devoted himself to evolving the perfect back cast. He called it High Speed, High Line (HS/HL). Since the line follows the rod tip, and since arcing the rod only produces an arc in the line, Ritz deduced that on the back cast, the rod tip should be thrust back and up at the same time as the wrist was flicking the rod tip in an arc at the end of the casting stroke. This movement greatly tightens the line loop and aims the back cast back and up rather than just back or back and down.

The cast that Lefty was demonstrating did the same thing on the forward stroke. That is, as the rod tip is being flipped forward at the end of the forward stroke, the caster simultaneously thrusts the tip of the rod forward, as if thrusting with a fencing foil. As with Ritz's HS/HL this movement tightens the loop and increases line speed dramatically. Lefty just called it his "Wind Cast," but Jason, who was the director of the video, suggested we call it the "Thrust Cast." And so it was named.



Casting Masters, Then and Now: Gary Borger *continued...*



I was filming the video, and I told Lefty to throw the cast right onto the camera—from about 50 feet away. He did, and the leader cut both my lips like a knife.

**BM:** *In your DVD *The Perfect Cast* you say that in fishing situations the elliptical cast is the one you use most often. Why is that?*

**GB:** The Elliptical Stroke was developed by the famous Austrian guide and casting teacher, Hans Gebetsroither, in the mid-1930s. The basic principle is very simple: make the back cast with the rod tipped slightly out to the side, then as the line extends rearward, bring the rod up and around so that it is more vertical, and make the forward stroke. It is also called the Constant Tension Cast because it keeps the

rod tip in constant tensive contact with the line.

Since the line planes of the back cast and forward cast are different, tailing loop are basically eliminated. In addition, the swinging movement of the rod allows the caster to swing shot through the air, rather than jerking it with a dry fly style cast. Thus, the Elliptical Stroke allows fly casters to throw many more styles of flies, sink tip lines, [split] shot, and other weighty items with never a chance of catching themselves or the rod with the fly.

In addition, the rod can be taken back on the casting arm side and then swept across the head and cast forward on the line hand side. It is great in wind and several other situations.

## Casting Masters, Then and Now: Gary Borger *continued...*

**BM:** *You've been involved in fly rod and reel design, what are the qualities that you seek to embody in a fly rod and a fly reel?*

**GB:** Every rod has three basic functions: (1) cast and otherwise manipulate the line, (2) fight the fish, (3) satisfy the angler's personal desire for a thing of beauty. So, when designing a rod, one looks at these three features simultaneously. The best rod for casting may not be the best for fighting the fish. For example, a rod for casting great distances would be quite stiff, but would not be very satisfactory for fighting fish in 7X. Likewise a rod delicate enough to protect a 7X tippet would not be a great stick for tossing line into the next zip code. Thus, the final use of the rod really determines blank action, butt strength, and so one.

Fittings are important, too. I prefer an up-locking reel seat because I hold the rod as far back on the handle as possible. A cork handle is best because it gives the best hold whether dry or wet. And, I prefer single-ring guides because they allow the line to flow more smoothly. Oversized guides are also preferred so that the line rarely, if ever, touches the rod blank during the shoot.

Reels used for trout fishing have been often described as "just a place to store the line." Obviously those who repeat this silliness have never caught a fish over 15 inches and/or never fished a big river like the Bow, the Bighorn, the White, and others. And what about fighting a tarpon? The reel is a very important component of the fish fighting system. The spool should be balanced and not wobble as it turns. It should turn easily. There should be a drag, and its start-up resistance should not be any greater than the drag setting.



I prefer medium/large-arbor reels because they hold more backing and line on an overall smaller reel than large arbor reels, and they control line better than a small-arbor reel.

**BM:** *You are a strong supporter of conservation. Why is it important to you? What groups get most of your attention?*

**GB:** Conservation is not preservation. Conservation is protecting the resource such that it is able to sustain itself in perpetuity. A trout stream, for instance can only support so much biomass, depending upon water chemistry, temperature, and oxygenation. If the

stream can support modest harvesting, then that can be allowed. If the fish population in a stream is sensitive to harvesting and/or the stream has such angling pressure that harvesting is not wise, then catch-and-release should be instituted.

This, of course, means more regulations, and often a hue and cry from the people who want to harvest everything they catch, but overall it would sustain our fish populations with very little outside input, expect law enforcement.

As a biologist, I see the need for resources that provide food and sport for humans, but at the same time, I see the need to sustain those resources so that future generations can benefit from them. Therefore I support organizations that protect and conserve our resources, with an eye to the future for all mankind.

*Bruce Morrison - The Loop Editorial Staff*

# The Wave and the Shoal

by Chris O'Byrne with illustrations by Marissa Rivers

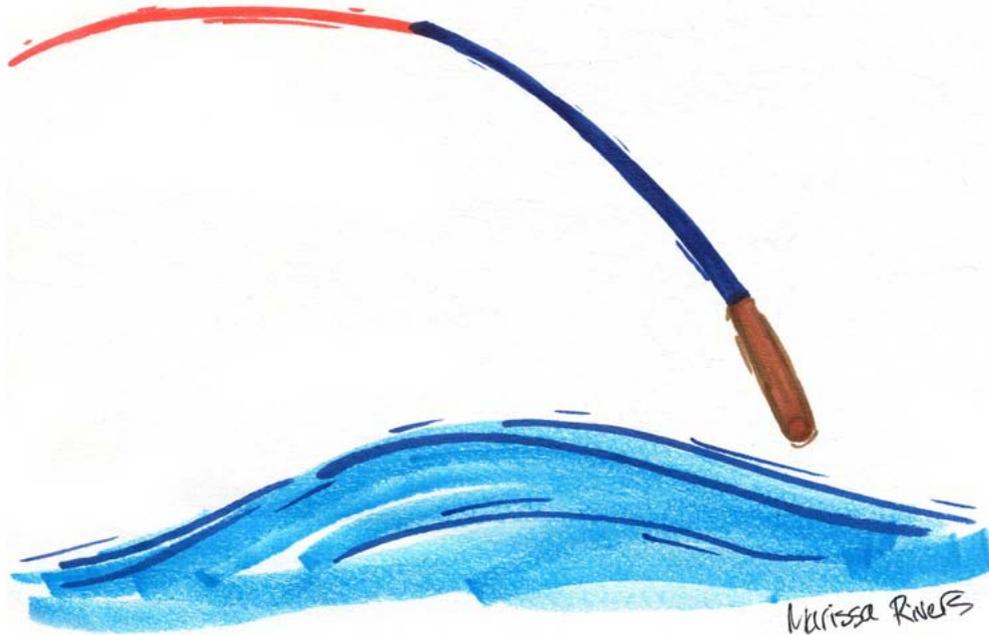
Rather than paddling out to the deep ocean, surfers ride waves at the beach. The shallows turn into moving swells of salt water into rolling, breaking waves. Fly fishers can improve their casts by considering the release of power in those waves.

A swell of water might be blown across the ocean forever unless a solid shoal turns it into a wave. Similarly, a fly caster can move his hand, bend his wrist and even take off running, but he will create only a flowing ribbon of fly line. It is the shoal-like action of the stopped

rod hand that converts the power in the bent rod into the rolling cast we all love. As fly casters, our rod hand is both the wave and the shoal.

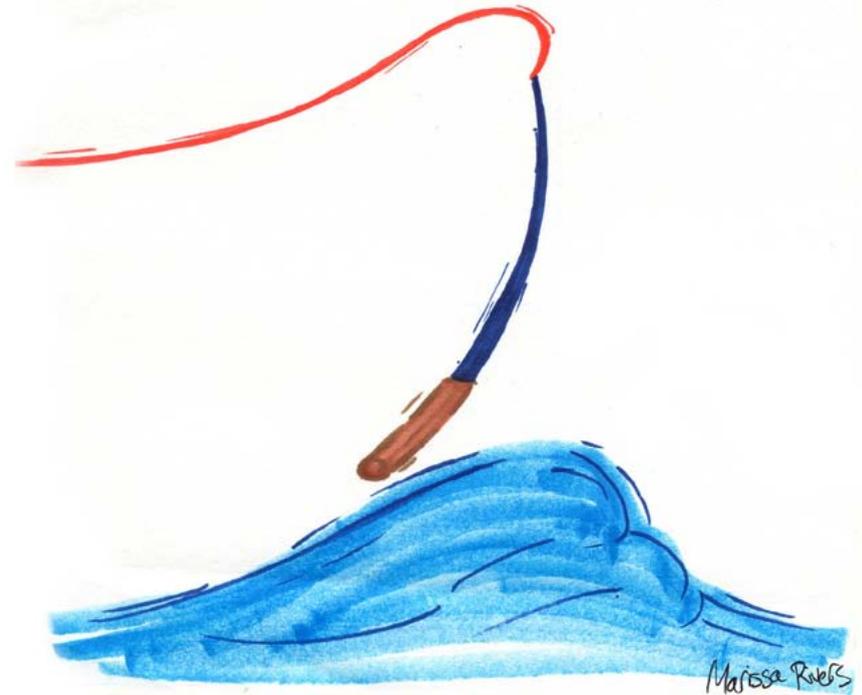
However, for a length of time during their development, anglers see the rod hand as moving in a backward and forward arch, like a never-ending, half-hearted punch. In the same way that the beach comber learns about the shoal under the breaking waves by bobbing into the surf, through instruction or long trial and error, the caster needs to realize that the rod hand must stop instantaneously, allowing the fly line to break over that stationary shoal.

## The Wave and the Shoal *continued ...*



The caster's rod hand and forearm change instantly from being the bottom of the ocean swell to being a stationary tripping point. The fly rod is the middle of the wave with a mass of moving saltwater and the fly line is the water at the top of the wave.

Over the long run, realizing that the stop is the final key to the basic fly cast empowers the caster by giving them the tool to release ever-increasing power. In the same way a swell of salt water that travels



further across the ocean has more time to build its power, a fly caster can reach behind their body, after stopping the back cast instantly, in order to accelerate the rod and fly line over a longer fetch. When properly released over a stationary rod hand, the resulting cast will release that increased power. In his 1959 text on casting, *A Fly Fisher's Life*, Charles Ritz explains that this extra power means not only extra length but also a softer landing of the fly when the fly line is allowed to slide out through the line hand.

The Wave and the Shoal *continued...*



Watching ocean swells break into waves on the shore, the angler can see an image of the rod hand and entire rod from butt to tip flowing then breaking as a connected whole. The angler's rod hand is both the bottom of their own swelling wave and the stopping shoal that creates a flowing wave. To end the wristy rainbow, fly casters would do well to spend time at the beach with those surfers.



About the author: **Chris O'Byrne** is a member of the Suncoast Fly Fishers in Tampa, FL, Chris O'Byrne, CCI, is a fulltime teacher in central Florida and the director of Florida's Andy Thornal Fly Fishing Schools. He makes public appearances and also teaches at IFFF events. His writing and photographs have appeared in **Flyfisher**, **Coastal Angler** and **Florida Sportsman** magazines among others.

Contact Chris at: [info@andythornal.com](mailto:info@andythornal.com)

# STROBOSCOPIC Fly Casting Study

John Field - Weston, Connecticut, USA

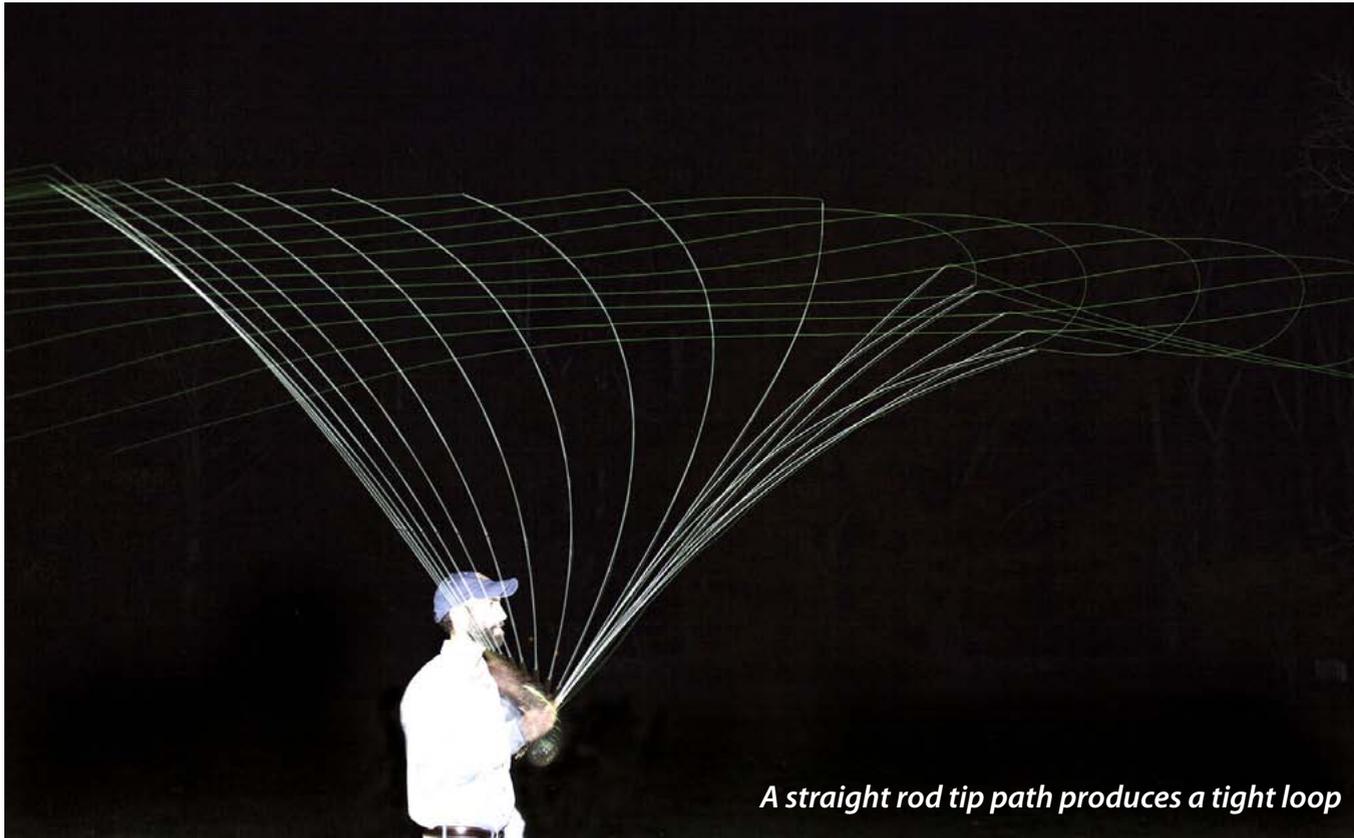
Casters, anglers and casting educators have worked for years to uncover the secrets of the loop and the stroke in order to improve casting and teaching techniques. Several individuals, working with educational and private labs, have performed motion-capture (or Mo-cap) video studies to freeze elements and relationships of the cast which are too fast or too complex to see in real time. In addition, modern computer software can be used to analyze and express physics data for scientific interpretation.

Other investigators, including myself, have taken a different approach, which uses still photography to capture the stroke,

rod-bend, and tip-position in relation to loop formation for graphical analysis. Photographing the cast or individual details in the dark with a stroboscopic flash produces sequential photos during the exposure.

Paraphrasing Ed Moser and William W. Buchman from their 1980 article in *Flyfisher* magazine, *The Dynamics of a Flycast*, there is a relationship between the space or distance and speed of the photographed rod-tip positions and other elements when the strobe is fired at a constant rate. This is a simple but revealing way to track the events and relationships in a cast.

## Stroboscopic Fly Casting Study *continued ...*



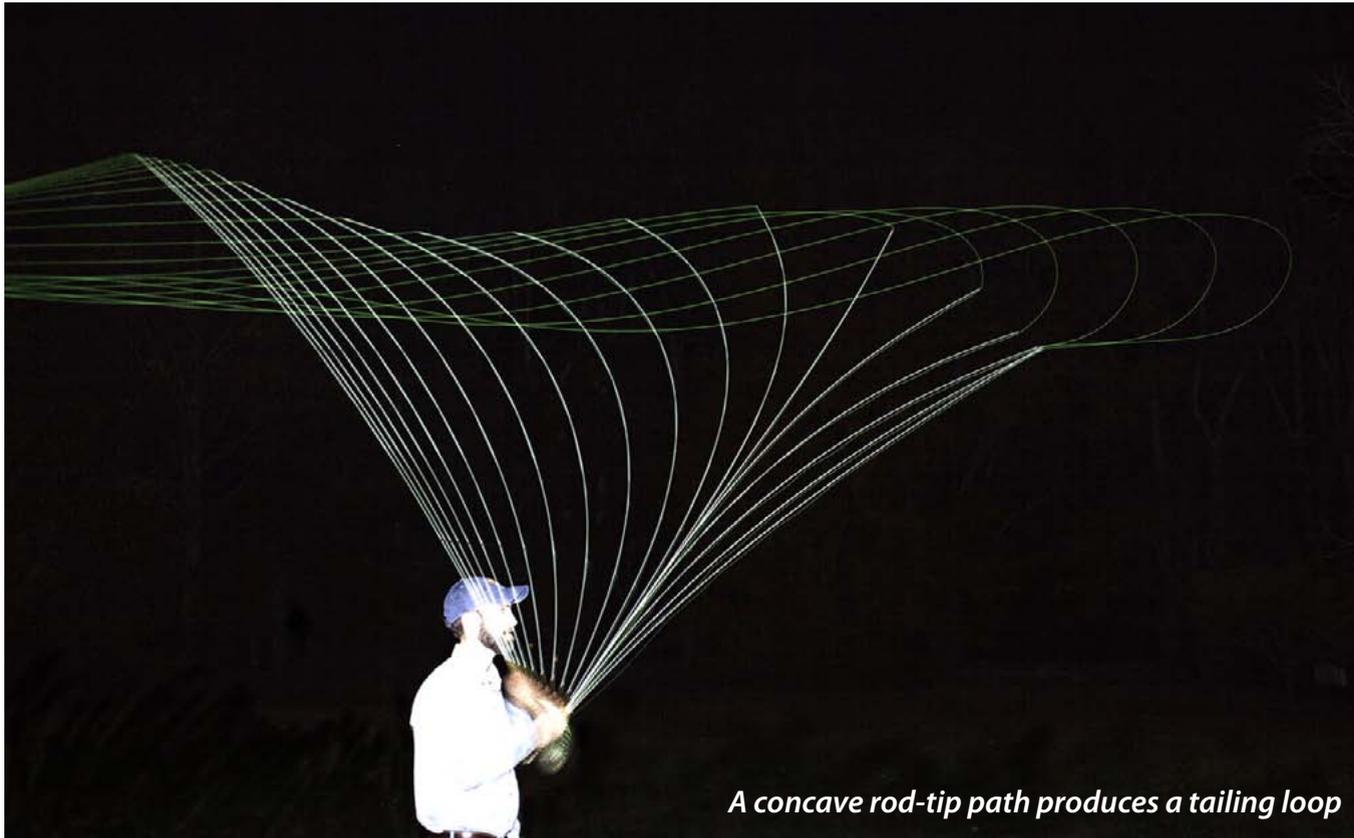
*A straight rod tip path produces a tight loop*

I performed an examination of casts using a multi-flash and digital camera for my book, *Fly-Casting Finesse*, published in 2015 by Skyhorse Publishing. In tests, I found a nine-foot rod too long to show the action close enough, so I chose a favorite rod under seven feet that Steve Rajeff gave me. I wrapped the rod with nearly weightless white Teflon tape, to preserve its finish instead of painting it. This white rod and Optic Green Scientific Anglers line showed up pretty well on camera.

The object was to capture a tight loop, a wide loop, and a tailing-loop cast with no hauling. I set up my equipment and asked my friend and CI Kevney Moses to perform the casts and trigger the camera with a release in his line hand. Though difficult, we captured sequences from the very beginning of the forward cast, through the rod-straight position when the loop forms, until the end of rebound.

I set the flash at different frequencies to produce a different number of flashes over different spans of time. In testing we also captured sequences of singular parts of the cast. The one I used in the book of the moment of loop formation was revealing. We spent four cold fall nights experimenting. The resulting images helped reinforce my earlier concepts of the cast, plus offered some new insights.

The shape of a tight-loop delivery cast is created by the combination of a straight rod-tip path, the timing and duration of the stop sequence and line release, and their relation to the oncoming line. Bill Gammel's foundational book, *The Essentials of Fly Casting*, is one of the truest and most enduring casting manuals. It taught us to make the rod tip travel in a "straight line" path to form an efficient loop. This concept can help in rudimentary learning, but we know it is not absolutely accurate.

Stroboscopic Fly Casting Study *continued...*

When making a tight-loop cast, the tip path is almost straight until the caster decelerates the rod and the rod-tip bends downward out of the way of the oncoming line. (See Fig. 1) If the path were straight throughout, the line would likely collide with itself and the rod tip. The cast is made above the rod tip and gravity pulls its flight earthward. The loop legs shown are almost parallel and the resulting loop is about sixteen inches in width.

**Tailing Loop Fault (Fig. 2)**

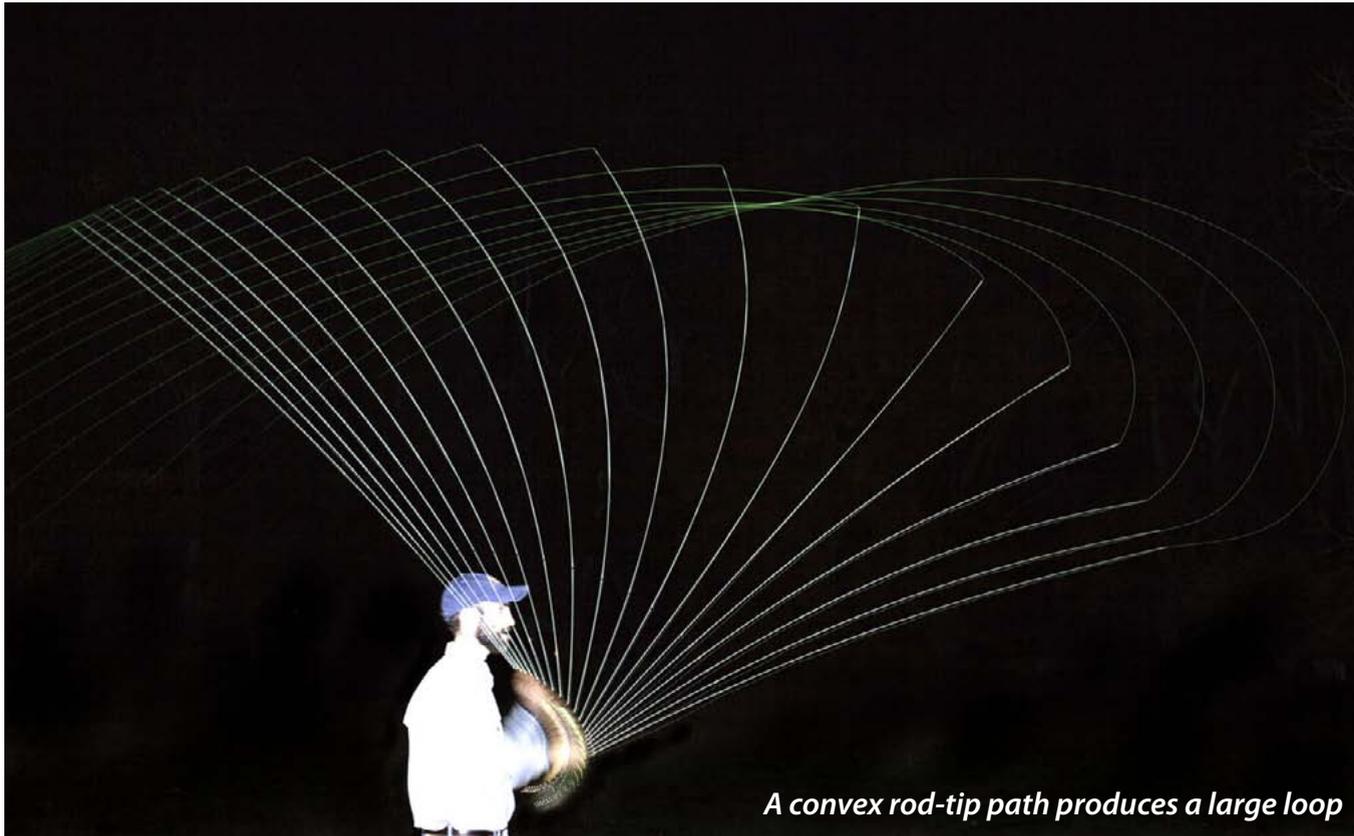
In my description of a tailing loop, the loop is closed and has an upward curve in the end of the fly leg and leader. The three most common ways to cast a tailing loop, when everything else is right, is (one) accelerating and loading the rod abruptly at the beginning of the stroke. Two, the cast is made a cast with insufficient rod arc. This occurs when the casting stroke is too short. The third cause is "creep."

This shortens the effective stroke length and leaves insufficient arc for a good cast. In the accompanying photo (Fig.2) of a cast with a concave rod-tip path, Kevney made an abrupt acceleration at the beginning of the cast with an adequate rod arc. It produced a concave rod-tip path. The line is immediately out of alignment with the direction of the cast, which makes a loop with parallel

legs impossible and a tailing loop inevitable. I didn't expect to see the downward trailing slope of the line before loop formation, which is a precursor of the tail.

**Wide Loop Fault (Fig. 3)**

There are three ways to cast a wide loop when making a forward cast and a back cast.

Stroboscopic Fly Casting Study *continued...*

The first is to cast with a convex rod tip path on both casts by using too much rod arc. The second is to use too much rod arc on one of the casts, either the back cast or forward cast. In this cast, Kevney intentionally used too much arc in his forward stroke. The loop is so big you could ride a bicycle through it. The cast appears to lack line speed since the stop is so late and the directional energy is being wasted as centrifugal force. The last way to cast a wide loop is to cast

a soft rod with excessive speed from the beginning to end.

Most wide loop faults are in the back cast. This is probably the most common casting fault, period. These are easy to make, since anglers are usually watching in front, not behind. In the words of Norman MacLean in his book, *A River Runs through It* (1976) p.4, "Well, until man is redeemed he will always take a fly rod too far back. . ."



*About the Author: **John Field** is an IFFF MCI, a past-president of the New York City Chapter of Trout Unlimited and the American Casting Association. His writing has been featured in Fly Fisherman Magazine and others. John's first book is titled, **Fly-Casting Finesse - A Complete Guide to Improving All Aspects of Your Casting**, Skyhorse Publishing, 2015. He is currently writing, **ACA's Beginner's Guide to Fly Casting**. Visit his website - [fieldflyfishing.com](http://fieldflyfishing.com).*

## NEW REGISTERED INSTRUCTORS AND TEST EVENTS

*Newly Certified Instructors listed according to test date.*

First Name	Last Name	City	Region	Certification	Test Date	Country
James (Bill)	Greensmith	Longford	TAS	CI	09/23/16	Australia
David	Bracks	Bilgola Plateau	NSW	CI	09/23/16	Australia
Brett	Goodman	Healesville	VIC	CI	09/23/16	Australia
Angus	Lapin	Royal Oak	Auckland	CI	09/29/16	Australia
John	Gummer	Palmerston North	Manawatu-Wanganui	CI	09/29/16	New Zealand
Adrian	Scott	Brighton	TAS	CI	09/30/16	Australia
Jack	Kos	Christchurch	Canterbury	CI	10/01/16	New Zealand
Masaru	Goto	Tokorozawa-shi	Saitama	CI	10/07/16	Japan
Ryo	Tamura	Kameoka	Kyoto	CI	10/08/16	Japan
Tomoo	Yoshida	Ashigarakamigun	Kanagawa	CI	10/08/16	Japan
Jeffrey	Perry	Narragansett	RI	CI	10/09/16	United States
Koji	Kato	Komaki	Aichi	CI	10/09/16	Japan
Yuri	Makino	Nagoya	Aichi	CI	10/09/16	Japan
Ryuhei	Ogura	Kobe si	Hyogo	CI	10/09/16	Japan
Alex	Zapata	Miami	FL	CI	11/03/16	United States
Roger	Elton	Brisbane	QLD	MCI	09/22/16	Australia
Yung Hong (Hank)	Wu	New Taipei City	TPE	MCI	10/08/16	Taiwan
Jeff	Ferguson	Lake Charles	LA	MCI	11/03/16	United States
Wayne	Stinnette	Forest	VA	MCI	11/03/16	United States

For incoming test date and other CICIP events information, please visit:  
<http://fedflyfishers.org/Casting/BecomeCertified/CalendarofEventsTestingDates/tabid/616/Default.aspx>

# The Editorial Team



**Eric Cook** is an MCI and a member of the CBOG. He is a degreed Mechanical Engineer from Atlanta GA, USA. Eric fishes for carp. Cook is the editorial director of *The Loop*.



**John Bilotta** is an MCI & THCI who lives in Connecticut. He is a former journalist. Bilotta is associate editor of *The Loop*.



**Paul Brown, MCI**, NW England, is a GAIA mentor and assessor, an APGAI member, and an instructor with The British Fly Casting Club (BFCC). Paul has 30 years media experience, much of it with some of the best ad agencies and design companies in England. He is an associate editor of *The Loop*.



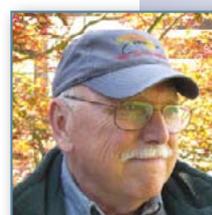
**Peter Morse MCI** is a professional Australian fly fisherman of many years who fishes in all waters for all species without prejudice. He is the author of countless magazine stories and 3 books, as well being a television presenter and script writer.



**David Lambert, MCI**, Florida, USA, is a journalist and editor who works in both print and digital media. He is managing editor of *The Loop*.



**Bruce Richards, MCI**, Montana, USA, designed many great lines for Scientific Anglers and wrote the seminal work, *Modern Fly Lines*. He is a former chair of CBOG and was instrumental in the development of the Casting Instructors' Certification Program (CICP). He is an associate editor of *The Loop*.



**Bruce Morrison** Bruce Morrison of Vancouver Island, BC, is a veteran casting instructor and a retired professor of anthropology. He has both authored and edited books. Bruce is an associate editor of *The Loop*.



**Bintoro Tedjosiswoyo** is a CI & THCI who lives in Melbourne, Australia. Bintoro is a commercial graphic designer and illustrator, he is *The Loop's* graphic design editor and illustrator.

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