

Fort Erie Underwater

Recovery Unit

Journal

August, 2013

Back by popular demand, the FEURU Newsletter is back and better than ever! After a brief hiatus and much deliberation, your humble editor has agreed to a new contract as generously extended by the executive branch of our prestigious organization.

Working now for *twice* nothing, the previous editor (me) is pleased to re-institute our venerable newsletter which had been heretofore published monthly, then bi-monthly for twelve years, for a mere *nothing*.

In this returning new *August Collector's Edition*, you will notice a refreshingly new approach to our newsletter. Formerly known as the '*Log*,' the new and revised FEURU '*Journal*' is taking an entirely different tact.

As we have many new members of varying underwater abilities within our guardedly swelling ranks, and as we already have several vehicles in place for Unit news dissemination, the focus of the *Journal* is going to be predominantly advanced diving tips and techniques from various cutting edge sources, designed to make our members the best possible divers.

In addition, there will be articles and reviews of the latest and best equipment as they become available, charter boat etiquette geared to keep you from looking and diving like a rookie, as well as interest pieces (hopefully) by you, the readership, who wish to better the FEURU in every way possible, and 'do us proud' when diving in remote and exotic locations.

I would admonish you to save each *Journal* issue as they become available, both as a reference, and as a help to others wishing to improve their diving skills and thus become more competent buddies.

To those outside our rather elite circle, please feel free to download any information you think will be of benefit to you and your buddies. The scuba diving fraternity has always been a friendly and sharing group, and by disseminating that which we know to others will not only make the diving community that much stronger, but hopefully will prevent unfortunate and tragic incidents that directly impact all of us as scuba divers.

This valuable *Collector's Edition* of the *FEURU Journal* begins with an article that is very close to our local divers. It concerns interesting and specialized search techniques for River Diving, more appropriately known as *Drift Diving*.

Living as we do at Fort Erie on the mighty Niagara River, where the current runs well over five knots or more in several areas as it winds its way 22 miles north before roaring over Niagara Falls, our divers by necessity must develop specialized skills before they can safely navigate the river underwater. Additional skills are necessary to search for and successfully recover objects at depth in this swift moving water.

The techniques demonstrated in this journal have been successfully used in fast flowing rivers throughout North America. The equipment used with these techniques is inexpensive and easy to use.

Our newsletter has been visited by dozens, if not hundreds of divers worldwide, for which we are flattered. Thus it behooves the FEURU to share the information we glean both from within our own ranks as well as those of others to assist divers everywhere to dive more confidently, professionally and safely.

It is the hope of the Journal writer/editor that these 10 pages of unique information are used and shared among divers everywhere, and that safety is exercised to the utmost under the conditions these techniques and equipment were designed for...

Drift Diving Skills

River Drift diving can place exceptional physical demands on a diver. Thus, river divers should be in good, if not superb, physical condition. Crawling around a river bottom will require upper body strength. Divers should pace themselves and be cognizant of the stamina of the smallest person of the buddy team. Moving against the current can be fatiguing and can rapidly deplete one's air supply. Divers may inadvertently place themselves in a position requiring heavy workloads. Excellent cardiovascular conditioning and a reserve exercise tolerance is a requirement for swift water diving.

Divers should always have a *separated-diver plan*. This is not a major problem while drift diving with both divers on a line connected to a float. However, in some intense current situations, towing a float is both unsafe and impractical.

"Stick and Glide"

The essence of all diving is to move in harmony with the environment. In all confrontations between Mother Nature and humans, the human will lose. Thus, the secret to successful drift diving is to "go with the flow" and to do so with control. The cardinal rule of drift diving is "**keep your fins lower than your ass.**" When moving in intense current near the bottom of a river, move with legs spread (like a "spider") and drag your fins along the bottom. (Remember fins should NOT have large openings, as these holes are potential places for objects on the river bottom to impale the diver's fins. This has resulted in the loss of diver's fins and has the potential worst-case scenario of pinning a diver to the bottom.) If your fins get higher than your butt, then you are more likely to lose control and tumble. If you find your legs rising, kick hard and drive downward at a slight angle. Once velocity is established raise the head and allow the legs to get below your butt.

The preferred orientation is moving headfirst or sideways down the river. By moving sideways, the silt from your dragging fins will not cloud your visibility. Moving sideways allows two divers to stay together by moving down stream facing each other. In some areas, particularly in a clay bottom, the visibility can deteriorate rapidly. If that occurs, stop, and allow the silt to move downstream. Once the clay cloud has moved past the divers, downstream progress can be resumed.

The real key to control in a river however, is the use of the "river stick." This device is used to help pull the diver upstream, to hold position to recover those valuable river bottom finds and to control velocity during the drift downstream. The basic technique is called "*stick and glide*."

The force of the current will keep the diver moving downstream. The "stick" acts as a brake to control velocity and orientation. The stick will be used throughout the dive. The idea is not to stop, (unless something is spotted that the diver wishes to pick-up), but to give the diver better control moving down river. The "river stick" is continually moved ahead of the diver and impaled into the bottom. As the diver drifts by, the stick is lifted and replaced. The hand not containing the "stick" moves along the bottom to help hold position.

This "stick-glide-recover-re-stick" cycle is repeated as the dive team moves downstream. This allows buddy contact to be maintained in low visibility water. So, if one diver finds something worth recovering, the stick, impaled into the bottom holds position. When one diver stops, the other diver will be aware of the halt and either waits or assists in the recovery. (A common separation point is when one diver stops to recover an object and the other buddy, unaware, continues drifting beyond visibility range. Facing each other allows both divers to recover objects without fear of separation.) With practice divers can move at will along the bottom (as long as the river bottom allows the 6" spike to penetrate.)



"Stick & Glide"

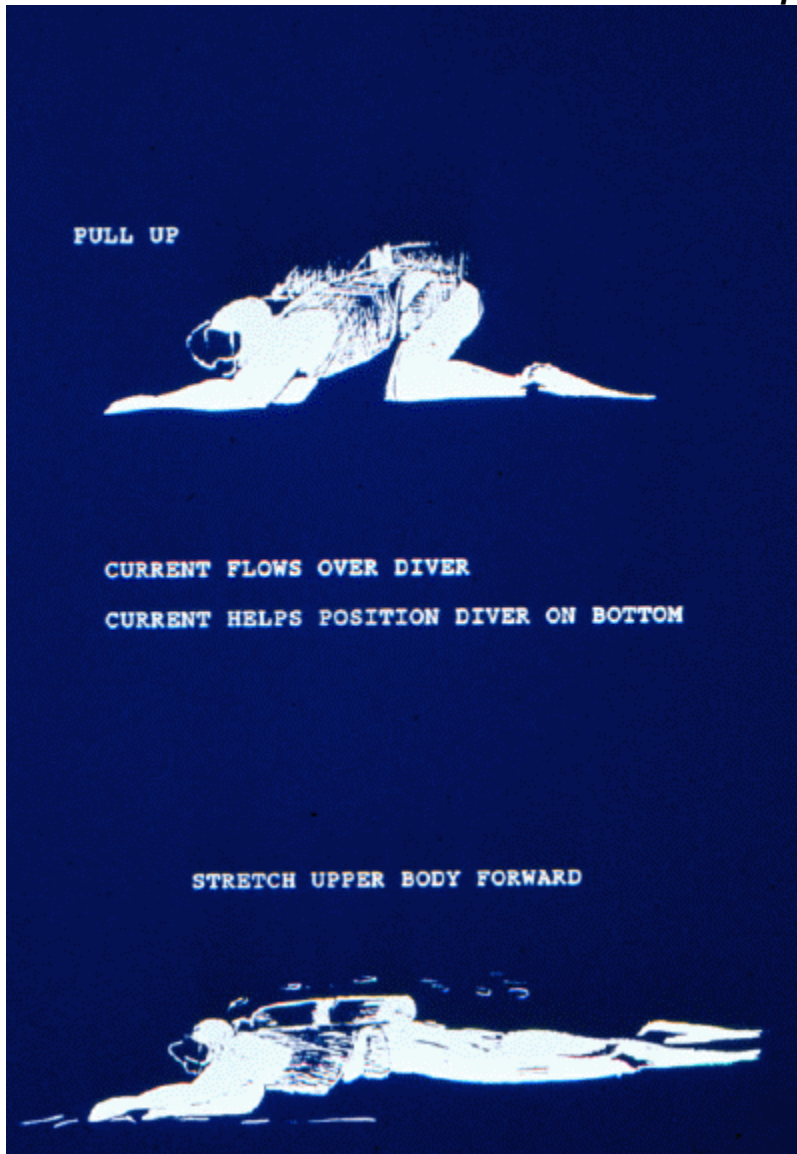
***Stick holds orientation and controls downstream speed.
Freehand stabilizes position and moves ahead of diver.***

The “stick” also allows a diver, with physical exertion, to move *upstream*. This is done by extending the “stick” ahead of the diver to either hook an object, (large rock, tree branch, or debris), on the bottom or, if the bottom allows, drive the stick into the bottom.

This "reach-and-pull" can also be used with a technique called the "*inchworm*." This involves anchoring the "river stick" and then lifting the back into an arched position. The current moving over the arched back assists in holding the diver on the river bottom.

Once an arched position is achieved, then the arm holding the "stick" is extended and the cycle is repeated. This successive reach and collapse (like the movement of an inchworm) is physically demanding and used primarily only for short excursions in moderate current. In some cases, it is possible to use this technique without a stick.

The "Inchworm" Technique



The “Creeper”

A device known as the *creeper* facilitates moving *upstream*. The creeper is typically homemade from $\frac{1}{2}$ " steel bar stock). Basically, the creeper is a three-legged device; with the back leg a central anchor point. The diver alternatively pivots on each of the forward legs and moves it forward to a new anchor point. The diver thus “zigzags” a course upstream. Using a creeper can be strenuous, especially when significant distances must be covered. To assist the diver, a large (3 inch) snap shackle on a short (18 inch) line is attached to the chest harness of the diver. The other end of this short line has an eye-splice loop. A non-locking carabineer connects the short line to a 4" steel ring that is attached to the creeper.

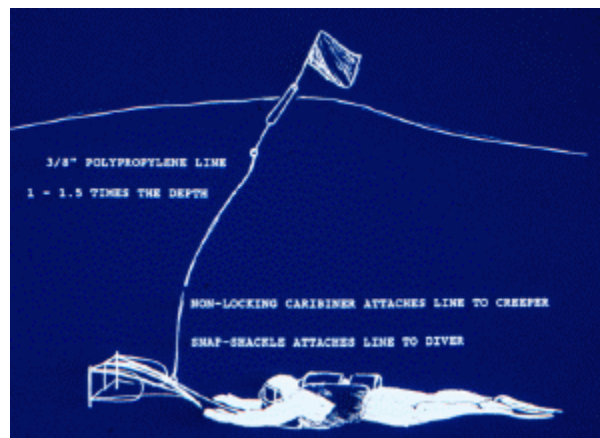
When the diver is tired, the diver can release the hand grip and allow the line between harness and creeper to hold position without physical exertion. Once rested, the diver can once again grab the creeper and move forward. The large snap shackle allows the diver easy access to the connection should the diver need to release from the creeper.

The large ring also serves as an anchor point for a dive flag (so surface support can monitor progress/position), a "Y-yoke" for two divers using the creeper in search mode, and as a place to secure a line for raising and lowering the "creeper between the water and the surface support platform.



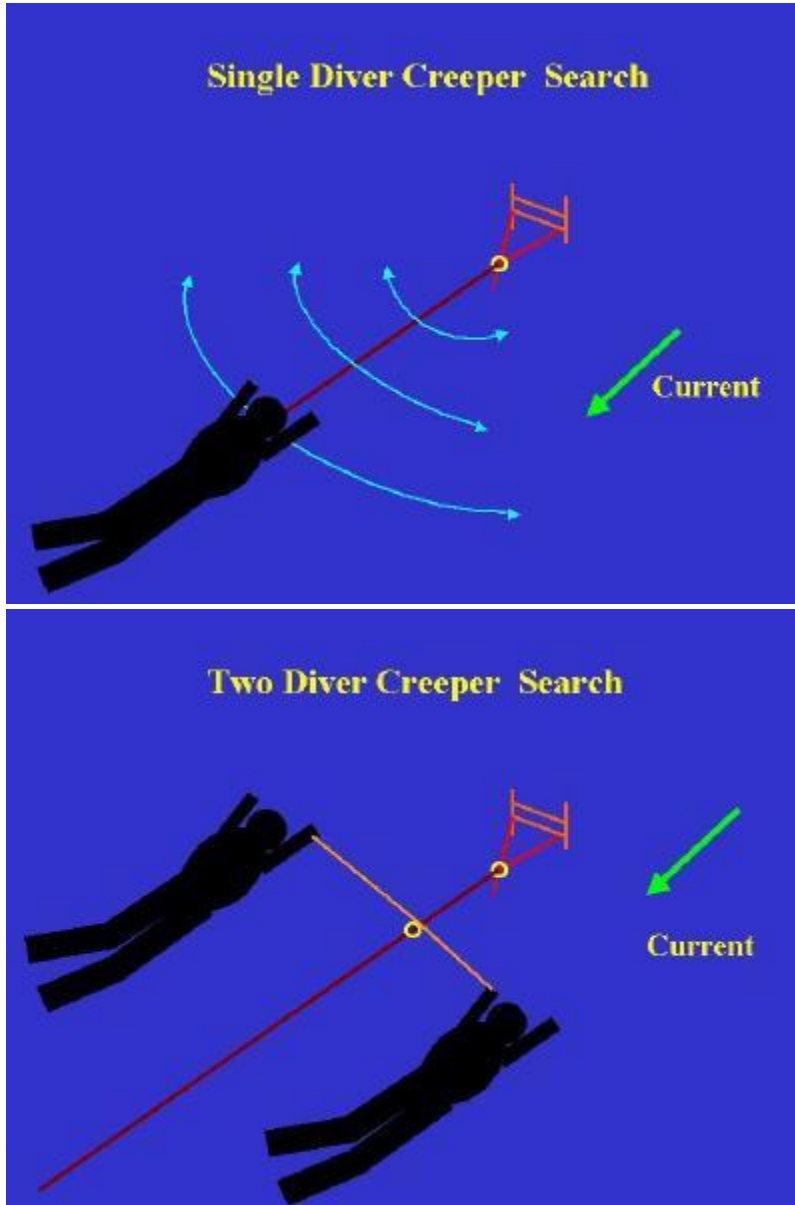
Using the Creeper

The creeper can be a convenient anchor point/search platform for probing or excavating the bottom of swift water areas. For this application, the creeper is secured to the bottom and one or two divers work behind the creeper. The dive flag is secured to a large steel ring on the creeper using a non-locking carabineer. This allows the creeper, rather than the divers, to bear the burden of holding the flag in place against a strong current. In addition, the flag gives surface support staff a method of documenting position searched by the divers. Divers can use the same "Y" yoke used in drift diving. In this case, the "Y" yoke (see below) is hooked to the ring on the creeper. This allows divers to stay together and communicate (via rope tugs), even in extremely low visibility. One advantage working in a current is that the rapidly moving water quickly clears the area of debris as it is lifted out of the hole being dug.



The Creeper Used as Stationery Anchor for Search Operations

The creeper can be used either as a single or 2-diver per device mode. In single diver mode during excavations, the diver works in the immediate vicinity of the creeper. In a search mode (see below), the diver, using the creeper as an anchor, can run repetitive, increasing distance pendulum arcs away from the creeper.



With two divers per creeper, both divers, each on a different side of the stationary "creeper" can work on excavation. In search mode, a line can be deployed directly behind the creeper. A double buddy line is secured to the search line and then both divers can run a search pattern parallel to the baseline.

"Flying"

One special thrill of intense (> 4 knot) current diving is to "fly" 6-10 feet off the bottom and let the current hurl you downstream. As long as visibility gives the diver enough time to avoid objects, this can be an exceptionally challenging and invigorating activity, such a flying through the twelve feet of water under the Peace Bridge in the Niagara River. This activity should *only* be undertaken by divers with sufficient swift water experience to be comfortable in such intense current.

Conclusion

River Drift diving, like all specialty environments, has its own unique set of requirements with respect to diving equipment and techniques. The unforgiving nature of extreme current flow has cost many divers their lives. This is one specialty area that most definitely requires techniques and equipment different from typical open water recreational training.

Some of the experienced veteran divers in the Fort Erie Underwater Recovery Unit are familiar with these techniques, diving as they have in these swiftest of currents for decades.

It cannot be overemphasized that swift water diving is not something one can safely engage in without proper guidance and instruction.

As always...

...THINK DEEP!