LIFE-SAFER, INC.

1360 Rosecrans St. Ste. H
San Diego, CA 92106
(619) 222-3467 / (888) 222-0373

The RETRIEVER PROJECT

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Application /Standards

A growing number of public safety agencies have instituted mandates prohibiting their personnel from attempting rescues when responding to water emergencies. Typically, the department policy directs them to await the arrival of suitable resources. In some instances, properly trained rescuers may be as little as 7 minutes away. Unfortunately, most drowning victims only have 60 seconds or less of surface time. This is one of the main reasons why there are so many lives lost.

Even with prohibitions against water-entry-rescue attempts, we continue to lose "First-Responders". ***Though implemented with good intentions, attempting to solve this longstanding dilemma through mandates, will most likely lead to the continued loss of these victims and the "First-Responder" because many personnel responding to these emergencies discover that they are unable to stand idle and watch someone die.*** Nobody can predict with certainty how an individual will react when essentially, they are being directed to stand by as another human being's survival window closes right before their eyes, and it becomes evident that the proverbial "suitable resources" aren't likely to arrive in time. Experience has shown that mandates have not kept personnel from attempting these rescues. Over two decades of data clearly show that suitable resources rarely arrive within the 60-second survival window most victims face. A problem, understood, is said to be already half solved. *Using existing statistics, supervisors/policy makers must be persuaded that providing "First-Responders" a tool that allows them to perform a quick, effective, feet dry rescue is the only logical solution.*

OUR PRIMARY GOAL
Provide the "First-Responder" (*most often, NOT a lifeguard*) the ability to carry out the basic functions of the lifeguard, provide buoyancy, which creates stability and then effect recovery, *without having to enter the water* to make the rescue.

TWO POINTS WORTH NOTING
As case after case proves, most often a drowning is an observed event. While it does occur, from time to time, it is rare for a person to drown alone and unobserved. It is true that at a crowded water facility with excessive auditory and visual distractions, an individual showing the classical behavior exhibited by drowning victims, can be easily missed and can slip below the surface without notice.

However, all across this country each year, far too many of these drownings are spotted by on-lookers who without specific training instinctively recognize these universal signs of drowning distress but are ill equipped to do anything about it.

Classical Behavior Exhibited by Drowning Victims:

- Head tilted back and barely out of the water
- Gulping, coughing and spitting of water
- Flailing arms often barely breaking the surface
- Legs extended out straight and toes pointed down

BUOYANCY & REACH (*The 50 – Newton Rule*)
Research shows that many rescuers, who have employed traditional buoyant devices, found them difficult to stow on small rescue vehicles/vessels and due to size/bulk could not deploy them effectively. Many have shifted to non-buoyant devices to increase reach. *LIFE-SAFER, INC.* engineers succeeded in maintaining a standard of 100 feet of reach even into 15-knot winds through an aerodynamic shape capable of delivering 12 pounds of buoyancy. *12 pounds of buoyancy exceeds the buoyancy requirement for the Type 50 Buoyancy Aids currently being approved in the US/UK.*

***The Type 50 EN 393 Buoyancy Aid* – "Possess 11 pounds buoyancy, which has been identified as sufficient buoyancy for keeping a conscious person afloat". The Type 50 devices "are intended to protect a person against sinking and are intended for use in waters where help is readily available".** Our device is not a Personal Floatation Device, which requires 16.5 pounds of buoyancy, a standard set in the days of kapok floatation, which in part was set to allow for absorption during prolonged immersion. Our device is a rapid recovery tool specifically developed with the causal factors (outlined in this document) in mind, a case of form following function.

22 years of 4,000 to 5,000 drowning deaths each year in the U.S. seems to indicate that it's time to try another approach.

Consider the logic behind the design of the Type 50 EN 393 Buoyancy Aid:

- ***Sufficient buoyancy to keep a conscious person afloat***
- ***Intended for use in areas where help is readily available.***

The *PERSONAL RETRIEVER*™ provides more than the 50N (11 pounds) buoyancy required for the Type-50. Since our design has a recovery line, help is readily available at the other end of the recovery line by the person deploying the device.

RISK INHERENT IN NON-BUOYANT DEVICES
As previously mentioned, many rescuers tasked with rendering assistance have shifted to non-buoyant devices in order to extend their reach. ***Sending a non-buoyant device to an "Actively Drowning Person" is not advisable.*** Lifeguards are trained to enter the water carrying a buoyant device. They approach the victim with caution and provide the buoyant device to the potential drowning victim in order to stabilize them. Once the victim shows signs of calming and begins to acknowledge the lifeguard's directions, the lifeguard closes with the victim to begin the recovery.

EMULATE BASIC LIFEGUARD FUNCTIONS

A lifeguard enters the water to:

- *Provide buoyancy*
- *Create stability*
- *Effect recovery*

Most others need to accomplish these basic functions from shore.

Lifeguards at guarded beaches are trained and physically conditioned for these types of rescues. As most drownings occur in unguarded waters, the would-be rescuer is often a bystander in the immediate area. Bystanders normally lack the necessary training or are not fully aware of the risk inherent to water-entry-rescues. They are usually not physically conditioned for the demands they will face during the attempt. There are few exceptions as the loss of life among "First-Responders" over the years has shown.

INSTINCTIVE GRAB / RELEASE REFLEX

Buoyancy is critical for stabilizing a drowning victim in order to execute a safe recovery. Among water rescue professionals, it is common knowledge that drowning victims often latch on to any source of buoyancy including the rescuer. During a water-entry-rescue, the goal of the lifeguard is to get close enough to pass a buoyant device to the victim before they submerge and do it without being grabbed by the victim. If a rescuer is grabbed by a panicked drowning victim the rescuer is taught to submerge. Rather than be taken under water, most victims instinctively release their grip. A drowning victim wants to keep their airway above water at all costs. ***Whether it's a lifeguard, or a non-buoyant device taking the drowning victim under, the outcome is likely to be that they release their grip***.

Conversely, it's that very "Grab Reflex" the *PERSONAL RETRIEVER*™ exploits in a safe manner by delivering the needed buoyancy. With the exception of water-entry, our goal is the same as that of the lifeguard, to deliver the buoyancy close enough to exploit this well known and instinctive grab reaction exhibited by drowning victims and achieve this without the necessity of entering the water, which minimizes jeopardy to the responder.

With lifeguards being a limited resource, it will be through the further development of a non-water-entry system, one that provides the timely and reliable delivery of sufficient buoyancy that will result in an increase in occurrence of live rescues. ***Enabling people on-scene to safely get buoyancy to these drowning victims within the 20-60 second survival window is the critical first step to seeing a decline in the fatality rate.*** Whether the recovery is immediate, or the buoyancy simply arrives in time to sustain a person until proper resources arrive, the goal was the development of a system that gets buoyancy out farther and in a safe and reliable manner.

DESIGN ADVANTAGES (Shipboard)

Though originally designed for use by shore-bound rescuers responding to water emergencies, the *PERSONAL RETRIEVER*™ has emerged as a very effective rapid recovery tool for shipboard emergencies.

In a man-over-board situation, the rapid breakout feature of the *PERSONAL RETRIEVER*™ is extremely useful and should play a role in seeing a trend toward shipboard pickup, as the preferred method of recovery***.***

***In extremely cold waters, the time lost executing a small boat recovery could adversely affect the outcome of the rescue attempt. Boat lowering is an inherently high-risk evolution even during a drill. Under the duress of an actual man-over-board, the risk of a mishap increases exponentially*.**

The rapid breakout feature is useful at regattas, races or other maritime events where there is high volume water traffic. If an emergency arises that places a person in sudden peril, the rapid break out and ease of deployment from any of the boats within 100 feet of the potential victim, is ideal for such situations. In cases where there is no transit time, there may be little or no time for preparations/set up prior to response.

The *PERSONAL RETRIEVER*™ is a user-friendly tool for new/inexperienced personnel. It deploys more rapidly and reliably than the traditional heaving line and with minimal training. New/inexperienced personnel find the heaving line a difficult tool to master and for many it is a difficult skill to maintain.

For larger vessels executing a shipboard pickup, the extended reach allows the bridge (personnel piloting the vessel) to keep the PIW (person in the water) out of the bow's blind area and in clear sight at all times during the approach. Extended reach creates a larger pickup zone allowing the vessel to standoff at a safe distance in rough seas. Once the ship is positioned for recovery, the PIW can be drawn directly to the designated recovery zone with minimal maneuvering and avoiding the risk of placing the PIW near the screws.

For multiple personnel recoveries, the *PERSONAL RETRIEVER*™ requires no rewinding or any other preparations to re-deploy repeatedly. It is an extremely effective *rapid recovery* tool. While all devices of this type are affected by wind, most operators take an up-swell approach that takes advantage of prevailing wind to carry the heaving line. Using this same tactic with the *PERSONAL RETRIEVER*™ will insure maximum extension and often exceeds the reach attained with the typical heaving line. It will outperform comparable devices when deployed under the same conditions.

DESIGN ADVANTAGES (Shore-side)

LIFE-SAFER, INC. evaluated and field tested typical rescue equipment being purchased by rescue professionals and private citizens, for shore-side drowning interventions. These devices essentially fell into one of two categories providing either reach or buoyancy. Those products providing sufficient reach achieved it at the expense of sufficient buoyancy; conversely those possessing sufficient buoyancy did so at the expense of sufficient reach. It became apparent that a device was needed that would provide both reach and buoyancy in order to safely enable "First-Responders."

Our goal became to provide the maximum buoyancy possible out to 100 feet and provide means of rapid recovery and do all this in a medium that was unlikely to injure, simple to use and was small and light weight. We sought a safe way to enable "First-Responders" to emulate the basic functions a lifeguard performs without having to enter the water with a tool that would compliment the current "Reach, Throw, Don't Go!" strategy. The product of years of development is the *PERSONAL RETRIEVER*™, a device that possesses all these features in one embodiment.

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A FINAL WORD

The *PERSONAL RETRIEVER*™ is not a lifeguard on a string. Its effectiveness is directly proportional to an individual's skill and like CPR, requires practice for proficiency. It won't dive and recover a submerged drowning victim. In the same way a lifeguard is employed, the *PERSONAL RETRIEVER*™ is intended for deployment to victims struggling on the surface, prior to submerging. Properly developed and implemented it could finally prove to be to drowning victims, what CPR and now AED's are to cardiac arrest victims.

P. K. Driscoll,
BMCM, USCG Ret.
President, *LIFE-SAFER, INC*.

For more information, visit us at www.life-safer.com or (619) 222-3467