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The RETRIEVER PROJECT

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Situation

GLOBAL

History shows that drowning has been a major concern for virtually every civilization. **According to the World Congress on Drowning “World-wide half a million people die each year due to drowning”.**

DOMESTIC

Due in large part to the efforts of countless water safety groups, since the turn of the century, the U.S. has experienced a steady decline in drownings. An average annual fatality rate of 4,000 has remained steady since 1978. In the recent **“Lifeguard Effectiveness Report”** from the Centers for Disease Control’s Injury Prevention Center, a strong case was made for maintaining a lifeguard presence when and wherever possible, concluding *“There is no doubt that trained lifeguards have had a positive effect on drowning prevention in the United States”*. Lifeguards are the first line of defense, especially for open surf rescues and have saved countless lives. The report presented some disturbing facts:

- Each year 4,000 people drown in the US and 80% of drowning victims are male.
- Drowning victims can submerge in as little as 20-60 seconds.
- The vast majority of drownings occur in unguarded locations.
- 89% of drowning victims are not wearing personal floatation devices.
- 60 -70% of US beaches are unguarded.
- Many state & federal parks have unguarded bodies of water and some sites have instituted “swim at your own risk policies.”
- More than one third of the adult population reported that they are unable to swim more than 72 feet.
- While throwing lines or floating objects is encouraged for non-swimming rescues, lifeguards developed improved lifesaving devices for lifeguard use during “water-entry rescues”, These include the rescue buoy, the rescue tube and the rescue board. (LSI Comment) It bears repeating that each of these tools is intended for use in “water-entry rescues”.
- Despite many water safety and drowning prevention programs and product innovations, drowning remains a leading cause of “unintentional injury death”.
- In 1997 the National Safety Council placed the economic value of each “unintentional injury death” at \$790,000 and the comprehensive costs at \$2,790,000, with incapacitating injuries costing \$138,000 for each instance.

Source: Centers for Disease Control’s Injury Prevention Center; “LIFEGUARD EFFECTIVENESS REPORT/INJURYFACT BOOK”

The “Lifeguard Effectiveness Report” stated that its aim was to stimulate new ideas and approaches to this longstanding problem.



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OUR CONCLUSION

LIFE-SAFER, INC. agrees with the CDC's finding of fact and would add that 22 years of 4,000 to 5,000 drowning deaths each year in the U.S. and half a million drowning fatalities each year around the world, strongly indicate that it's time to try a more proactive approach if we ever hope to see a decline in drownings.

OUR TEAM & MISSION

Our group is comprised of personnel from various facets of the professional rescue community: Police, Fire, EMS and various military rescue groups that have experience of arriving too late to effect a rescue and have seen the grief of friends and family of these victims. This is our motivation to seek a more effective response strategy.

A PROVEN STRATEGY

The team at *LIFE-SAFER, INC.* suggests that the proponents of the current response strategy for drowning emergencies consider taking a page from the playbook of Air/Sea rescue. Air/Sea rescue, as the name infers, is often a two-part process. During this response, the time/distance logistics problem is much the same as the challenge of responding to a drowning. As with an "Actively Drowning Person", when a vessel at sea reports taking on water, it is classified as an "Actively Sinking Vessel". If in the initial distress phase, the rate of flooding/surface time is determined to place the distressed vessel out of range for an effective response by a surface craft, the air wing goes into action. Although the cutter/patrol craft is the most capable resource, its slower transit time will not allow it to arrive, on-scene in time to recover the vessel unless the air element can rapidly deliver to the sinking vessel the means of remaining on the surface. The distressed vessel's survival window has now been expanded, making it feasible for the slower cutter/patrol craft to arrive on scene and recover them to safe harbor. In other words, the most expeditious means is used to keep the vessel's survival window open. At a drowning, only a strategy that safely and effectively enabling on-lookers will prove to be the most expeditious and effective means of stabilizing a sinking person.

Just as the offshore distressed vessel will sink unless initial action succeeds in keeping their survival window open, a drowning victim in unguarded waters needs a response that is rapid enough to keep their survival window open until suitable resources arrive on scene to make the rescue. This strategy buys more time for the PIW (person in water) for a more "suitable" recovery resource to arrive on scene: e.g. marine unit, swift-water rescue team, lifeguard, or other specialized group. Far too many drowning victims will continue to perish, until an effective means of extending their survival window can be found.

For many drownings a rapid interim response is needed, especially with a very narrow response/survival window. Add the risk faced in a "water-entry rescue" attempt by personnel not properly trained or equipped. It becomes clear why policy makers after 22 years are still haunted with a fatality rate of 4,000 to 5,000 Americans each year.

FIVE-MINUTE RESPONSE WINDOW (Cardiac Arrest)

To understand this approach, one needs to consider strategies within the rescue community. An example is how CPR was taken from a technique exclusive to emergency rooms and EMTs to a practice now performed by thousands of people. Before this skill was prevalent in the general population, rescuers often arrived on scene too late to revive the victim in cardiac arrest. With only a five-minute response window, a way of getting CPR to these people in time had to be found. National policy makers determined to remedy this and subsequently CPR was taught to the general population.

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ONE-MINUTE RESPONSE WINDOW (Drowning)

The key to the lifeguard's success: delivering buoyancy within the 20-60 second window has been at the core of the unquestioned successes lifeguards have had when rescuing people on guarded beaches. An "Actively Drowning Person" often has no more than 20-60 seconds of surface time. Only a suitable response from a source already on-scene is likely to effect the rescue. Globally, response time continues to exceed event duration for unguarded waters.

A CLEAR OBJECTIVE

The initial objective of the Retriever Project was to extend the survival window beyond the 60 seconds most actively drowning victims have. When lifeguards enter the water to perform rescues, they deliver buoyancy in the form of a can or torpedo, it reduces panic, which stabilizes the victim allowing them to effect a safe recovery. It became evident that only by enabling those on-scene to safely emulate the basic functions of a lifeguard (Deliver Buoyancy, Create Stability and Effect Recovery)" WITHOUT" entering the water could there be any hope of seeing an increase in live rescues. *LIFE-SAFER, INC.* also looked at existing equipment and found that it provided either effective reach or sufficient buoyancy, but not both (more on that later).

LIFE-SAFER, INC. analyzed current drowning intervention policy being promoted to the non-professional by major water safety groups. The most prevalent policy is best stated in the American Red Cross mnemonic, "Reach, Throw, Don't Go!" Shown in the typical water safety posters are the "minimal responses" these organizations feel comfortable promoting in our litigious society. Not being stated, but clearly implied, for a more aggressive response, the "First Responder" is to await the arrival of specialized assistance. This posture is understandable, when considering the loss of life among non-professionals attempting "water-entry rescues". Responding to a drowning is not an everyday occurrence for most public safety officials. Most complete their career without ever having to make the decision to either risk their life by jumping into the water to attempt a rescue or stand by and watch one of the 4000 - 5000 who drown each year in the United States.

If a public safety official arrive at an incident that they are not trained or equipped to handle, some are instructed to isolate the problem, deny entry and call for appropriate resources. This tactic works well when dealing with hazardous material spills, fires or downed power lines. This action minimizes loss of life to both the officials and the public in the area and is recognized as a reasonable and prudent policy.

Unfortunately, the Public Safety Official is often perceived as the most likely the person to assume the risk, but often unqualified or not properly equipped to effect the rescue.

During a drowning response in static water, the untrained person may not recognize or understand the obstacles to a successful rescue and may attempt a water-entry-rescue or try to convince someone else to take the risk. The power and danger presented by water, whether moving or not, is not understood by those who have not experienced its dark side: e.g. hypothermia, debris, poisonous snakes, predators, or hazardous liquids.

PERCEPTION

Unfortunately, when the general population observes their public safety personnel appearing to do little more than watch a person drowning, this perception can severely damage community relations. Over a year ago, two nationally syndicated television talk shows covered the drowning of a man in a river while Police; Fire and EMS units awaited the arrival of a marine patrol unit. According to current city doctrine, they took the correct action by awaiting the arrival of an appropriate resource to effect the rescue.

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However, the gathering crowd, observing little or no activity on the part of the public safety personnel, perceived it as indifference toward the drowning man's plight. That the appropriate resource, the marine patrol unit, was performing a rescue at another location was not brought to light. As so often is the case for thousands each year in this country, that resource did not arrive within the small survival window this individual had and he perished in front of all on scene. During both nationally televised programs, the anger of the general public witnessing this event could be heard on the audio track in the obscenities being shouted at the public safety officials. There appears to be a difference of opinion as to what "Protect & Serve" may mean to the professional and to the public in light of current policy and mandates. In a recent Department of Justice study 25% of the U.S. population rated law enforcement as fair to poor in responding to calls for assistance.

REALITY

All across this country, there are dedicated professionals; Police, Fire, EMS, Lifeguards, Marine Patrol Units, Swift Water and Dive Teams, as well as other rescue resources who commit countless hours to training and perfecting the skills and capabilities necessary to become "Advanced Rescue Resources". Our federal, state and county officials, along with many non-profit agencies, invest millions of dollars in advanced equipment and programs. Like the patrol boats in our earlier air/sea rescue analogy, they are often the "appropriate response resource" that as decades of data show, are all too often, unlikely to arrive in time for at least 4,000 Americans each year. As indicated below, a safe and effective way has been found to stabilize sinking bodies, an equivalent to the method employed to stabilize sinking vessels, providing sufficient time for advanced rescue resources to arrive on scene. For many of these drownings, the key to a better outcome may prove to be as simple as keeping a person's airway above water for just a few more minutes.

The ideal outcome would be for the "First-Responder" to make the recovery in low risk situations. In doing so, the more advanced rescue resources can remain at the ready for high-risk responses for which they were trained, thereby keeping down operational costs.

The initial introduction of the **PERSONAL RETRIEVER™** is intended for public safety personnel who must respond to water emergencies, though not prepared to make water-entry rescues. Until now, no tool existed that was engineered to the specific needs of those facing water emergencies, where "water-entry rescue" was not an option. The initial study identified seven specific characteristics and since the study one additional characteristic has been identified. No existing tool met all criteria and could be considered the basis on which a non-professional intervention strategy could be implemented. Only the **PERSONAL RETRIEVER™** meets all the criteria.

SPECIFICATIONS

Typical devices currently in use fall short in one or more of these areas.

PROBLEM

Others

*Not enough reach
Too little buoyancy
Slow deployment
Difficult to retrieve and re-deploy
Hard surface likely to injure
Too complicated for average user
Cumbersome, doesn't travel easily
Poor wind penetration*

SOLUTION

PERSONAL RETRIEVER™

*Reach = 100 feet
Buoyancy = 12 pounds
Deployment = 10 seconds or less
Redeployment time = 45 seconds or less
Soft Foam Cover & Propylene Base
Training Time = One hour or less
Diameter = 17 inches & Weight 1.5 pounds
Full deployment into 15 knot winds*

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LESSONS LEARNED

While all “water-entry-rescues” pose a significant risk, we discovered from shore out to 30-35 feet out was a lesser problem zone, even for rescues by untrained on-lookers / family in reasonable physical shape. Risk rose significantly for a rescue between 40-70 feet from shore. As stated earlier in the lifeguard effectiveness report, a full 30% of the adult population reported being unable to swim more that 24 yards / 72 feet. Water rescues beyond 35 feet could be one-way trips for most. Life-rings & line bags reach little further than 25-30 feet in the hands of most people and line bags do not provide sufficient buoyancy. It was evident that enabling those on-scene to “SAFELY & EFFECTIVELY” emulate the basic functions of a lifeguard “WITHOUT” entering the water, could there be any hope of seeing an increase in live rescues at unguarded locations.

A FINAL WORD - For many specialized rescue groups, line bags and other such devices are the appropriate tools of choice, but only for those trained and prepared to execute water-entry rescues when other actions are unsuccessful. They begin with the minimal actions necessary to effect the rescue: shouting directions, throwing a line or other device and when these actions fail, they continue prosecuting the rescue by entering the water, launching a boat or calling for an aircraft.

The typical “First-Responder” on the other hand, should not be attempting “water-entry-rescues” and often will have only one resource available; the typical life ring may not reach far enough while a line, line bag, or other non-buoyant device may reach far enough, but lacking buoyancy can take the drowning victim underwater causing them to let go. For over 20 years, existing response limitations, equipment performance and the 20-60 second survival window has lead to conditions where 4000-5000 people drown each year here in the United States. Only the **PERSONAL RETRIEVER™** being compact, rapidly deployable and non-injurious, combines effective reach and sufficient buoyancy in a tool specifically tailored to keep “First-Responders” *out of the water and safe* when responding to a water emergency!

Paul Driscoll
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President, ***LIFE-SAFER, INC.***

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