

**64** **RECOGNITION AND OBSERVATION OF  
POTENTIAL RESCUE VICTIMS IN AN  
OPEN WATER ENVIRONMENT** **69**



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## INTRODUCTION

The following presentation will focus on the first of five basic premises related to one of the primary lifeguard responsibilities, that of rescue response.

The five premises of rescue response are:

- Know how to recognize trouble
- Know how to get to the victim
- Know what to do with the victim in the water
- Know how to get back with the victim
- Know what to do with the victim once back on shore

While rescue is one of the primary responsibilities of lifeguards, the most important responsibility must be prevention. Because time is the most critical of all factors, the recognition of potential victims is key to the preventative lifesaving model. Lifeguards must be well trained in the observation of swimmers for signs of distress certainly, but they must also be trained to observe beach clientele for indications of their swimming ability and *rescue potential* even before they enter the water.

In order to provide the essential elements of preventative lifeguarding this report considers all factors including the environment, beach topography, dry land observations and specific observations relative to individuals presentations in the water as a vital part of scanning the surf for potential rescues.

The information presented here comes from the **United States Lifesaving Association Manual of Open Water Lifesaving**, with some elements extracted from the first USLA training manual, **Lifesaving and Marine Safety**.

## ENVIRONMENTAL CONSIDERATIONS

## **Surf**

Without providing a whole seminar on waves and their formation, suffice to say that waves are generated by wind with few exceptions. The exceptions being seismic activity and tides. The energy of a wave, often travels great distances with the strength of the waves based upon:

- The velocity of the wind,
- The distance over which the wind has effect and
- The duration of the winds effect.

The experienced lifeguard knows that waves can cause visible changes in beaches depending upon the size and type of wave and the composition of the bottom. Waves are categorized into three primary forms:

- *Spilling waves*
- *Plunging waves (also known as shorebreak)*
- *Surging Plunging waves*

*Plunging Waves* generally have the most impact on beach conditions and may aid the most in the formation of Rip Currents. They are also responsible for more injuries in the surf environment than the other two types combined. Such injuries include bodysurfing, bodyboarding and surfing neck and back injuries created when the swimmer or surfer is thrown against the bottom.

However, any of the three types of waves may be responsible for increased longshore or lateral currents. The danger to swimmers from longshore currents is that they may be carried laterally along the beach to the area where a Rip Current pulls them seaward and small children can be carried into inshore holes where the depth of the water could easily be overhead.

## **Backwash**

Backwash is most notable on steeply inclined beaches and particularly around high tide and during increased surf activity. Because the returning water often knocks peoples feet out from under them, this phenomenon is particularly hazardous to smaller children and older people.

## **Shorebreak**

Plunging waves often break on or very near to shore and sometimes in little or no water. Such waves are said to break on the shore and are extremely hazardous to bodysurfers, bodyboarders and surfers who are thrown against the bottom creating severe injuries including cervical-spinal trauma.

## **Lateral Current**

Lateral currents are also known as longshore currents or lateral drifts. These currents are created when waves coming from an angle to the beach push water along the beach as the waves break. These currents may be so strong that a swimmer is unable to retain their position relative to shore. Those who do not pay attention can be swept sideways into a Rip Current and then beyond the breakers.

## **Sand Bars**

Sand bars and troughs are found in areas where consistent lateral currents have cut a channel in the sand bottom near the beach. The size, depth and shape of these channels can vary greatly depending upon the type and consistency of the sand and the strength of the current.

Sand bars may attract unsuspecting waders into an area adjacent deeper water, only to have them swept off by the lateral current and into the channel or trough. Often the lateral currents that create these sand bars feed Rip Currents. Swimmers often fail to recognize that the depth of the water is greatly varied and upon diving head first into the water without checking first often find the back side of an inshore hole or a sand bar with their head, causing severe cervical-spinal injuries.

### **Inshore Holes**

Inshore holes are depressions in the sand caused by erosion of the sand and is fairly localized. These areas can be extremely hazardous to small children. Inshore holes can also be a serious hazard to lifeguards who can sprain or fracture an ankle or knee during response to surf rescues.

Because inshore holes, sandbars and troughs are often close to shore, it is essential that lifeguards be taught to scan both shallow and deep water.

### **Rip Currents**

Rip Currents occur when waves spilling over sandbars into troughs on the shoreward side pile up and subsequently exit quickly through any break in the wall of sand that traps them. Similarly, lateral currents push up against inshore holes, or immovable objects such as promontory points, jetties, groins or piers, forcing the water seaward and creating what has been described as "rivers in the surf" which pull seaward.

Based upon USLA National Statistics, **Rip Currents account for more than 80% of all surf beach rescues**. Statistically, spring and early summer are the most hazardous times because of the unstable condition of the bottom created primarily by winter storms. These conditions are further aggravated by colder water temperatures which effect both swimmers and lifeguards alike.

#### **Rip Current Characteristics**

- Rough
- Choppy
- Suspended particles (sand, debris and kelp particles)
- Foam
- Usually pull the hardest with ebbing tide and during lulls between sets of waves

Rip Currents can be defined in four types:

- *Fixed or Stationary Rips*
- *Permanent Rips*
- *Flash Rips*
- *Traveling or Transient Rips*

### **Beach Topography**

In addition to the previously mentioned problems which exist in the water and which are generally related to waves or surf, there exist another set of problems associated with physical structures that often occur on our beaches. Steep berms, rock outcroppings, cliffs and man made structures such as groins, jetties and piers, all create their own unique physical hazards to swimmers and must be observed and be controlled as to access by the swimming public.

### **Weather**

Storms of all nature, fog, lightening and waterspouts all carry their own particular problems which lifeguards must deal with. Specific emergency action plans should be developed to deal with each type of hazard. Lifeguards must be attuned to these environmental hazards and be prepared to deal with the results.

Similarly temperature and sun exposure is a continual problem for beach attendees. Lifeguards should be aware of the impact of the sun, its harmful rays and how adverse temperature, both high and low, can effect the beach populace.

## **RECOGNITION AND ASSESSMENT**

In the USLA's manual the chapter on Water Surveillance is introduced with the following statement:

*"In emergency medicine there is often reference made to a golden hour -- the period of time after a traumatic injury during which effective medical intervention is essential to the saving of life. In open water lifesaving, such a time frame is an unheard of luxury. Lifeguards measure the opportunity for successful intervention not in minutes, but in moments."*

In order to effectively prevent injuries and successfully intervene before a drowning occurs, one of the primary skills a lifeguard must learn is the recognition and assessment of potential rescue victims, often before the victims themselves are aware they are in danger. Experienced lifeguards can frequently predict which persons will need assistance long before an emergency arises and sometimes even before they leave the parking lot. This is possible by observing visual clues as defined in this portion of this paper. While some of the information may appear to contain bias, the information is based on statistical evidence based upon years of evaluating rescue records and accounts of seasoned lifeguards.

### **Dry Land Observations**

The observation of patrons as they arrive and "set-up" at the beach front will many times provide specific clues as to the possible aquatic abilities or beach sense of various individuals.

- **Age** -- Very old or very young individuals should be watched carefully. They may lack the physical ability or strength to fight an unexpected current or to quickly move away from a dangerous situation. These individuals usually incur injuries very near the shoreline requiring quick recognition and immediate response.
- **Body Weight** -- Persons who are overweight or extremely underweight each have their own specific problems in an aquatic environment, but both may be out of shape and not capable of

struggling for longer periods of time as compared to individuals who have stayed in some physically inclined condition.

Overweight persons may become easily exhausted and are hampered in their ability to move quickly to avoid danger while those who are underweight can be adversely effected even by moderately cold water.

- ***Pale or Extremely White Complexion or Extreme Sunburn*** -- Individuals who look as though they just stepped out of a mayonnaise jar often are making their first visit to the beach this season, or for that matter their first trip ever. These person should be watched carefully to ascertain their swimming ability once they enter the water. They should also be contacted about the hazards of the sun.

Extremely sunburned individuals may simply be the ones who were here yesterday that came back to fill in their "tan". Guards should continue to key on these persons for the same reasons as those who are milk white.

- ***Intoxication*** -- Alcohol and water don't mix. Most beach facilities do not allow alcoholic beverages, and for good reason. Statistics indicate a high degree of drowning incidents in the United States are related to alcohol consumption. Individuals are impacted in two general ways that will contribute to the probability of their getting into trouble in the water.

1. The impairment of their normal physical abilities.
2. The impairment of their ability to act responsibly.

- ***Improper Equipment & Flotation Devices*** -- Some individuals who have limited swimming skills often rely on flotation devices to bolster their ability to access deeper water. Many times these devices become separated from the swimmer by wave action, or the apparatus simply deflates because of a leak, leaving the swimmer to their own basic ability. Many individuals get the "right kind of gear" but fail to follow simple safety rules like using leashes and swim fins with bodyboards.

- ***Improper Attire*** -- Persons entering the water wearing clothes, other than those meant for swimming are also at risk. The weight and the restrictive nature of wet clothing can cause a person to tire more quickly. Similarly, not using wet suits when they should be used or using them when they are not needed are also keys.

- ***Disabilities & Ethnicity*** -- While persons with physical impairments generally know their limitations and often use swimming as a means of exercise, the addition of currents, waves, variable water temperatures and other environmentally driven factors, may cause them great difficulty. They should be watched carefully and warned of these types of hazards.

There have been studies that identify significant differences in the drowning rates of various racial and ethnic groups. However these statistical trends vary somewhat on a regional basis and there appears to be an association with socioeconomic factors. However varied, lifeguard agencies should evaluate their own statistics to identify at-risk populations in their own areas of operation.

## **Swimmer Observations**

Once the above visitors enter the water, additional clues will aid the guard in evaluating their condition. The pre-entry clues simply allow the guard to key on individuals who **MAY** be a problem. When they hit the water, either the suspicions are confirmed or negated. A number of signs and symptoms in the water are the essential clues the guard must watch for .

**Facing Toward Shore** -- Swimmers, generally face toward shore when they are concerned about how to get there. Body surfers and bodyboarders usually face the waves to prevent them from being pummeled and to catch waves. The less experienced individuals are looking toward shore as their haven of safety.

- **Head Low in the Water** -- Competent swimmers remaining in a stationary position usually hold their head high. They tread water, breaststroke, swim on their back, but generally they keep their chins well out of the water.
- **Low or Erratic Stroke** -- This key usually accompanies the subjects head being low in the water. The swimmer may display erratic stroke with the elbows dragging.
- **Lack of Kick** -- Under normal circumstance the weaker swimmer displays little or no kick. Stronger swimmers will often propel themselves solely with their legs and feet and usually use fins to add to their abilities.
- **Waves Breaking Over the Head** -- Most people who are competent swimmers will dive under waves to prevent themselves from being pummeled.
- **Hair in the Eyes** -- The natural instinct for most people in control of themselves in the water is to sweep the hair out of their eyes.
- **Glassy, Empty or Anxious Eyes** -- It is said that the eyes are a window to our emotions. Depending on the distance and the quality of optical equipment, the lifeguard can read fear, anxiety and fatigue in the eyes of a distressed swimmer.
- **Heads Together** -- Swimmers who suddenly converge and remain together may be attempting to assist one another. Persons who congregate together in the water for no other apparent reason may be attempting to assist another person who is in difficulty.
- **Hand Waving** -- Self explanatory. The guard must be alert to it as an indicator.
- **Being Swept Along By or Fighting the Current** -- The first sign of distress for a swimmer caught in a current is that they are being swept laterally or being pulled offshore by the current.
- **Erratic or Unusual Behavior** -- Watch for hyper-active motions, such as flailing or for total immobility in the water..
- **Clinging to Fixed Objects** -- Individuals hanging onto pier pilings or other solid structures or those attempting to climb on to jetties or groins during surf activity.

### Drowning Presentations

Classic, obvious signs that a person has gone beyond being in distress to the imminent danger of drowning are:

- **Double Arm Grasping** -- Which resembles an in-effective butterfly stroke when the individual slaps as the water with both arms simultaneously.

- ***Climbing the Ladder*** -- Simply stated, the victim looks as though they are climbing an imaginary ladder in the water and further looks as though they are attempting to crawl up out of the water.

## EFFECTIVE WATER OBSERVATION

### Observation Techniques

#### ***Visual Scanning***

Several basic and key observation techniques must be employed to enable the lifeguard to adequately observe all the people in their area of responsibility.

Visual scanning requires the guard to sweep their area of responsibility continually, looking from side to side, checking each person or group of persons briefly to ascertain any of the previously defined indications of difficulty or distress.

Watch swimmers close to shore as well as those offshore. The guard begins to put their visual scanning effort together with the keys described earlier in this paper to determine who needs assistance and who doesn't.

Watch all classifications of bathers, *waders*, *fanny dippers* and *swimmers* with equal intensity to locate trouble.

#### ***Use of Optical Equipment***

Guards absolutely **must** wear good sunglasses, for the protection of their eyes but also to aid them in seeing the water and swimmers, particularly when glare is a problem. Sunglasses will also aid in preventing eye fatigue due to long periods of exposure to the sun. Good quality Polaroid lenses will almost completely eliminate glare and make scanning the water much easier.

Quality binoculars are also important. Be careful not to use binoculars with too tight a field of vision as they are extremely limiting. Never rely totally on binoculars when scanning as they generally limit your field of view and cause "tunnel vision". Use them to verify your initial instincts and to key on those clues that require much closer scrutiny, such as, hair in the eyes or the eyes themselves, to check for swim fins on a swimmer or to establish why two people are close together in the water.

#### ***Overlapping Responsibility***

Beaches with multiple towers or stands need to keep them close enough together to allow overlapping of vision to avoid creation of blind spots or areas without coverage between guards. In this situation there is no clear boundary between the stations and guards must overlap their visual scanning effort and eliminate the potential for one guard thinking that a potential victim is in someone else's water.

#### ***Cross Checking***

Because glare and other natural conditions may obscure portions of an area, guards must cross check with each other to insure that all areas are covered completely. Communications becomes an important tool for lifeguards in these situations. Radios or telephones are the best methods to properly communicate in these circumstances.

## AREAS OF RESPONSIBILITY

Lifeguards must consider all areas of the water, the beach and related facilities as part of their responsibility and potentially an area where they must respond.

These areas include the Primary, Secondary and Tertiary Zones.

- **Primary Zone** -- The water is the lifeguards top priority. The Primary Zone for each lifeguard is the water area for which they are responsible. This zone automatically increases when lifeguards in adjacent towers are on a response or the tower is closed.
- **Secondary Zone** -- Usually this area includes adjacent water, including the Primary Zone of other lifeguards, the beach, immediately adjacent park areas, the sky and the water to the horizon. Less frequent scanning of this zone is required, but the lifeguard should check this zone regularly.
- **Tertiary Zone** -- Generally, the Tertiary Zone includes all other areas within sight of the lifeguard. It could include adjacent streets and parking lots for example. These areas should also be quickly scanned, but far less frequently than the Primary and Secondary Zones. Guards may not necessarily respond to these areas themselves, but may observe an incident that requires a response by a supervisory unit or another entity such as police and/or fire personnel.

## CONCLUSION

Emergency personnel are all expected to respond quickly and efficiently once an emergency arises. This is the case even with lifeguards. However, lifesaving on open water beaches must be preventive rather than just reactionary. Using the known concerns of the environment, topographical and other possibly non-aquatic keys, lifeguards can initiate contacts with the public to prevent accidents before they happen.

Using good scanning skills and keying in on Dry Land and Swimmer Observations as a means of recognizing potential rescues also allows the guard to make contact before the incident progresses to a drowning scenario.

Preventative Lifeguarding is the key to success in the elimination of drowning. Pre-recognition and observation skills are essential elements in that process.