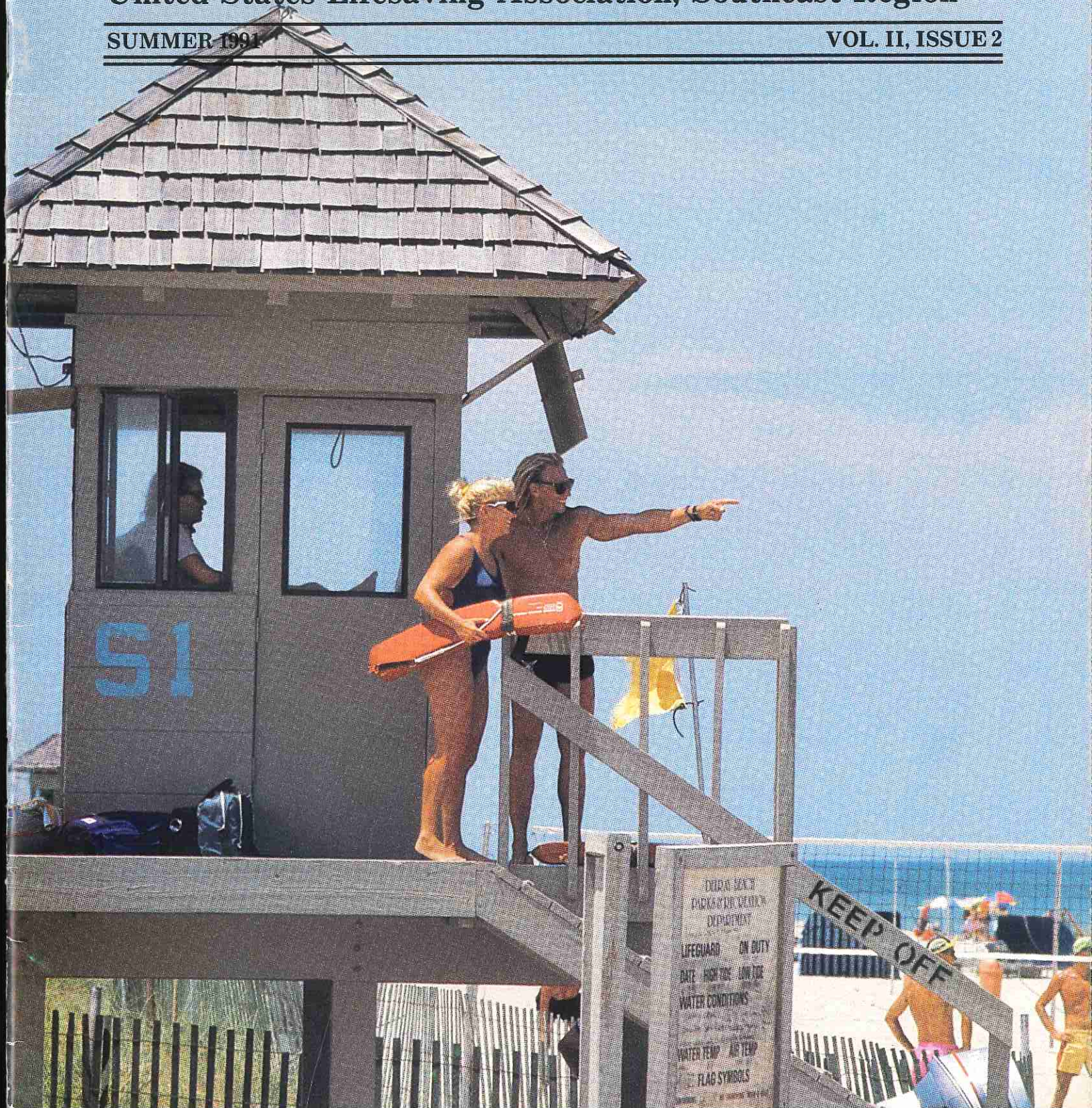
Ocean LIFEGUARD

United States Lifesaving Association, Southeast Region

SUMMER 1991 VOL. II, ISSUE 2



The Southeast Region of the United States Lifesaving Association would like to thank the wonderful Sponsors who have supported our Ocean Lifeguards.

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Ocean LIFEGUARD

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Southeast Region, United States Lifesaving Association

Mission Statement: To Promote Beach Safety & Education

Table of Contents

Florida Ocean Lifeguard Magazine
1323 Southeast 17th Street, Suite 123
Fort Lauderdale, Florida 33317

Dear Reader,

Surf lifesaving in Florida is unique for many reasons. Perhaps the most important one relates to the Gulf Stream which is responsible for creating summer-like weather year-round. Consequently, there is a need for full-time lifeguards as opposed to states located north where lifeguards are seasonal.

Having to work all year in the surf environment poses special health problems to Florida lifeguards. These include biohazardous waste, salt air and wind blown sand.

To date many of the governmental agencies (state, local and county) which provide lifeguard services have been slow to respond to this problem. I feel that there are two reasons for this. The first is economic. Few governments are willing to accept the responsibility of dealing with environmental diseases because of the cost of medical bills and accepting long term responsibilities for paying health benefits.

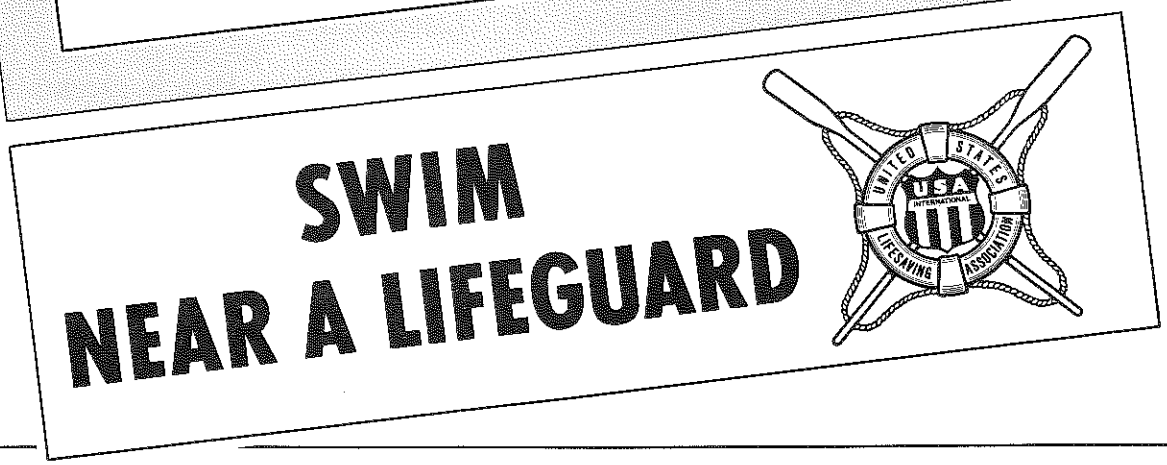
The second and perhaps the most important reason is that the surf lifesaving industry lacks a scientifically conducted occupational health study. Consequently, although there is little doubt that these problems exist, it is impossible to set quantitative parameters around them so that they can be defined and compared with other occupations (i.e. police and fire rescue). Fortunately, a lifeguard occupational health study is underway. However, because of logistical support and funding problems, it may be many years before this study is concluded.

In the meantime, we cannot remain idle. We must educate our employers, the public, and the media about these health and safety problems which relate to the environment. Also we need to identify some of the many new products which may offer partial solutions to these problems. A few examples which come to mind include; a special UV protective T-shirt, improved sunglasses, special footwear, protective wear to reduce the chance of accidental exposure from blood born pathogens, and new types of sun car products designed to reduce the threat of both UV A and UV B radiation.

In sum, the beach is a wonderful and challenging place to work. However, we must be cognizant of the fact that the beach environment conspires to create potentially serious health problems to the men and women who work as professional surf lifeguards. We need to work together to address this problem. If we don't who will?

Sincerely,

John Fletemeyer
USLA SE Region President



DELRAY BEACH PATROL HOST OF THE 1991 SOUTHEAST REGIONAL LIFEGUARD COMPETITION OF THE UNITED STATES LIFESAVING ASSOCIATION

Welcome to the United States Lifesaving Association Southeast Regional Lifeguard Competition. The Delray Beach Patrol is honored to host this event again in 1991. The U.S.L.A. Southeast Regional Competition is part of the 15th Annual Sunrise Kiwanis Beach Festival. The Kiwanis Club in conjunction with the City of Delray Beach produce this annual beach festival to generate contributions for the Leukemia Society of America.

The Kiwanis Club initiated the development of the municipal beach in 1929 by organizing local merchants and the local carpenter's and painter's union to construct the pavilion pictured above with a board walk complete with showers. The City of Delray Beach hired it's first Ocean Lifeguard in January 1935 and three weeks later, Ocean Lifeguard Wilbur Hollenbeck produced an ocean lifesaving demonstration for a crowd of nearly 150 people.

Today, sixty-six years later the Delray Beach Ocean Lifeguards are hosting the U.S.L.A. Southeast Regional Lifeguard Competition. Delray Beach Ocean Lifeguards have traveled from New Jersey to Hawaii representing the City in U.S.L.A. National Lifeguard Tournaments.

The Delray Beach Ocean Lifeguards on behalf of all the Ocean Lifeguard competitors wish to thank you for your support in their effort to raise money for the Leukemia Society through the demonstration of their ocean rescue skills.

Richard Connell
Beach Supervisor

SCHEDULE OF EVENTS

Tournament Director: John Osborne (497) 838-5483

Registration: 8:00 A.M.

Coaches Meeting: 9:00 A.M.

EVENTS

9:15 AM — 1. Surf Dash Relay (4 contestants). Each team member will enter the surf and will swim around a pole located 25′ from shore.

9:45 AM — 2. Run Relay (4 contestants). Each relay team member will sprint approximately 40 yards in the sand. A Peterson Style Buoy will be used in the exchanges.

10:15 AM — 3. Paddle Board Relay. Each relay team member will paddle approximately 200′ around a buoy, then parallel to shore, then around a 2nd buoy and back to shore.

10:45 AM — 4. Distance Swim. In this individual event, swimmers will swim 100 meters from the shore, around a buoy and back to shore.

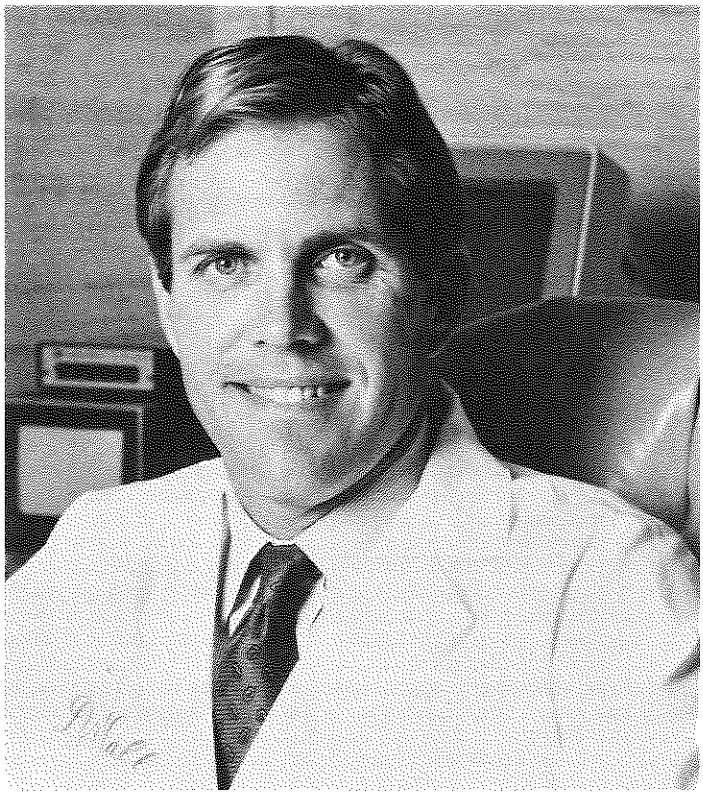
SENIOR LIFEGUARD CHAMPIONSHIPS

Tournament Directors: Jim McCarthy, Jerry Falconer & John Osborne

Event & Membership Registration: 8:00 AM (Pavilion, Atlantic Blvd. and the ocean)
**Must be current USLA member to register.*

EVENT	SPONSOR	TIME
1. Two Mile Beach Run Race *(All)*	Budget Rent-A-Car	11:00 AM
2. Surf Rescue *(Open)*	Day's Inn	11:30 AM
3. Surf Boat *(Open)*	Adolph Kiefer	11:30 AM
4. Surf Boat *(Senior, Master, Vet.)*	Adolph Kiefer	12:00
5. Rescue Board *(Open)*	Sting-Aid	1:00 PM
6. Rescue Board *(Senior, Master, Vet.)*	Sting-Aid	1:30 PM
7. Run Swim Run *(All)*	Frogwear	2:00 PM
8. Landline *(Open)*	Consolidate Safety Products	3:00 PM
9. 1,000 meter swim *(All)*	Dr. Garry Hall *(Gold Medalist)*	3:30 PM
10. Iron Man *(Open & Women)*	Nestcafe	4:30 PM
11. Iron Man *(Senior, Master, Vet.)*	Wally's	5:00 PM
12. Beach Flags *(Open, Senior, Masters)*	Microshield	5:30 PM
13. Run Relay *(Open)*	Water Safety Products	6:00 PM
14. Host Event-Paddle Board Relay *(Open)*	Hope Chiropractic Center	6:30 PM

Competitive Award of Excellence Trophies to the top men and women competitors, Sponsored by Trader Tom's



How To Protect Your Eyes From The Sun

By: Gary W. Hall, M.D.
Eye Surgeon,
Phoenix, Arizona

A recent report by the EPA, based on information received from NASA, indicates the earth is losing its protective ozone layer at twice the rate once thought. This alarming trend is thought to be related to the worldwide use of halocarbons from spray cans. The resulting increased exposure to radiation could cause as additional 12 million new cases of skin cancer over the next 50 years. This loss of ozone could be even more devastating to our vision, as our eyes are even more sensitive to sunlight than our skin.

In my ophthalmology practice in Phoenix, Arizona, 75% of my patients have suffered from some **preventable** sun related eye damage. The most common problems seen are pterygiums (degenerative growth of conjunctiva over the cornea), skin cancer of the eyelids, cataracts, and incurable macular degeneration, the leading cause of legal blindness in the elderly.

The good news is that by wearing proper sun protective glasses, most, if not all serious eye problems can be prevented.

When do we Start Protecting?

Our eyes are most vunerable to sun damage when we are children. During our first 25 years of life, the immature lens allows up to 70% more dangerous ultraviolet light to reach the sensitive retina.

The closest "yardstick" we have to measure retinal damage is the accumulation of a certain waste material called *lipofuscin*, located in the pigmented cells directly behind the retina. It is beleived that *lipofuscin* levels in the retina will increase as a direct result of exposure to both ultrviolet and blue light. Studies by New York ophthamologist, Dr. Sidney Lerman, have also shown that *lipofuscin* levels increase dramatically during our childhood up to the age of approximately 25. At that time, when the human lens reaches a more mature state and absorbs nearly all ultraviolet light, the lipofuscin levels behind the retina remain relatively stable.

Like with sunburned skin, the damage to the cells behind the retina never really goes away. In fact, it can eventually lead to incurable macular degeneration. Therefore, wearing the proper sunglasses is most important for children, but should continue throughout our life.

UV Protection is not Enough?

Ultraviolet light is not the only light that can damage the eye. It is also believed that blue light, the highest energy form of visible light, damages the retina at any age. Since trhe lens does not absorb harmful blue light, it is important that your sunglasses do.

In researching the most popular sunglasses on the market, I discovered that very few block harmful blue light. Consequently, I designed a new lens, called the UltraGuard™ lens, that blocks 100% of blue and ultraviolet light. Figure 1 demonstrates the retinal protection of the UltraGuard™ lens compared to other sunglasses.

The special mirrored coating of the UltrGuard™ lens also reduces infrared light by nearly 40%. Infrared is known to generate heat, but is not believed to be nearly as harmful as ultraviolet or blue light to the eye.

Who is at Greatest Risk?

Because their lens allows so much UV light to enter the eye, children

are at the top of the list. Since both water and snow reflect up to 80% more sunlight back toward the eye, swimmers and coaches are at a much higher risk to develop sun related eye damage. People with a fair complexion and blue eyes allow more harmful sunlight to penetrate their eyes, resulting in a higher incidence of macular degeneration in later life. Anyone taking photosensitizing medication such as the antibiotic, tetracycline, or the arthritis medication, Plaquenil, will increase risk of suffering sun related eye damage.

Although sun exposure may be greater in the warmer climates, it is still significant in all parts of the world, especially between the hours of 10:00 a.m. and 3:00 p.m. Remember that clouds offer a false sense of security, as they block the warming infrared rays, but fail to block the harmful ultraviolet and blue light.

Also at greater risk are people who live or work in altitudes where the UV exposure will increase by approximately 15% for every 1,000 feet above sea level.

How do we Select Sunglasses?

The sunglasses you choose should have more than 100% UV protection. They should also have total blue light protection. Since product information on sunglasses does not include light transmittance data that will tell you how much blue light is blocked, you have only one way of estimating the blue light protection of th lens, and that is through its color. Amber or orange tinted sunglasses give the maximum blue light protection. Brown tints would be next, while gray, green or smoked lenses offer much less blue light protection.

Wrap around styles block 10% more light than flatter lenses. Polycarbonate lenses, though softer and more scratchable, are made of a lighter material and are also virtually shatterproof. Glass or CR39 plastic lenses can shatter and cause serious injury to the eye.

In conclusion, start protecting your eyes properly today. Make sure that the sunglasses become a standard part of your children's wardrobe. As we lose more of our atmospheric ozone, it becomes more important than ever to wear the proper sunglasses at all times while outdoors. A hat or visor over your sunglasses will not only reduce glare, but will provide even more protection for your skin and eyes. Finally, when selecting sunglasses, get blue light protection in addition to 100% UV blockage to keep your vision great for your entire lifetime!

For information on UltraGuard™ sunglasses, call 1-800-762-4416.

Retinal Safety Levels

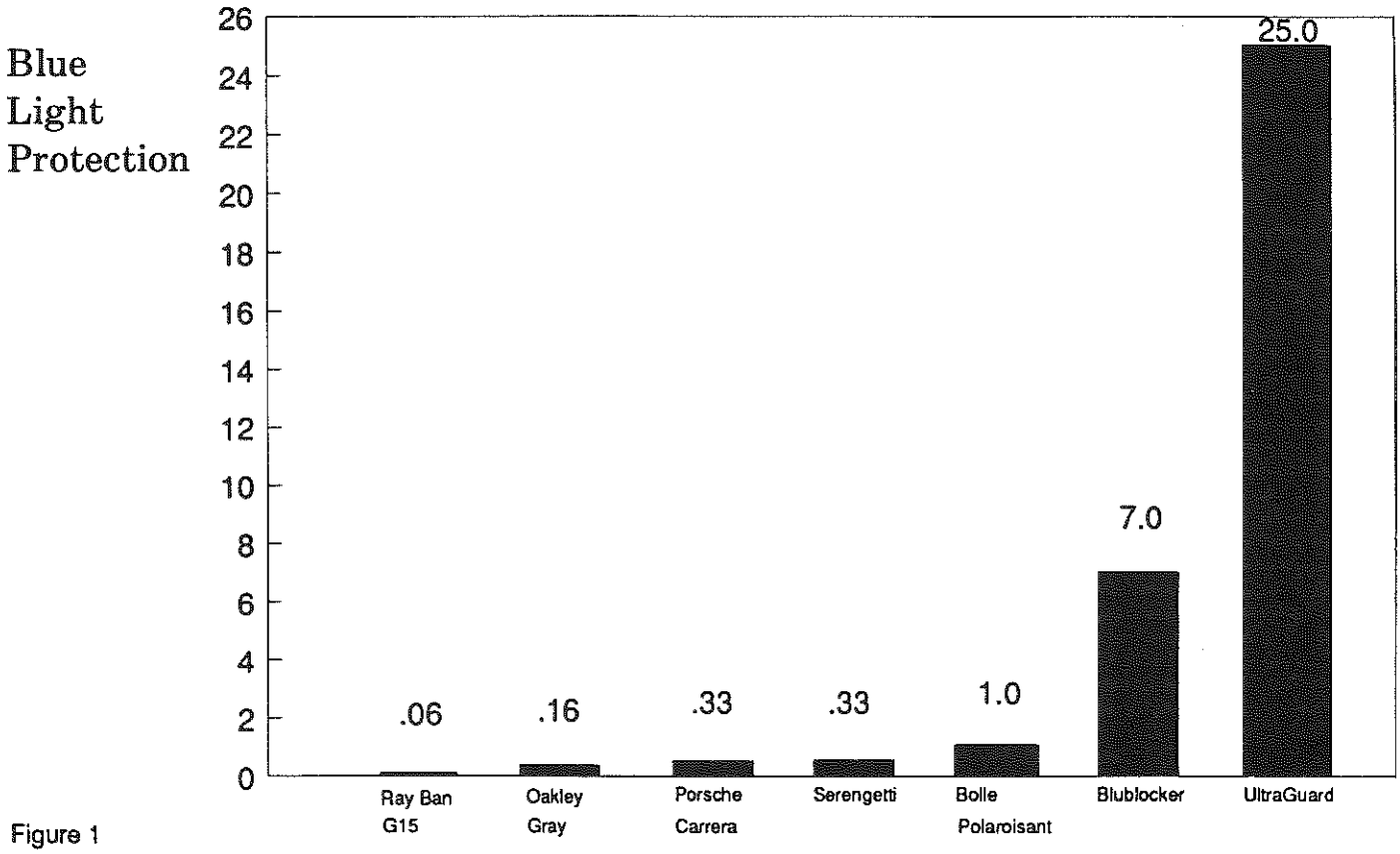


Figure 1

Information derived from retinal research studies by Professor William T. Ham, University of Virginia and Spectrophotometer measurements.

Waterspouts-Mini Tornadoes

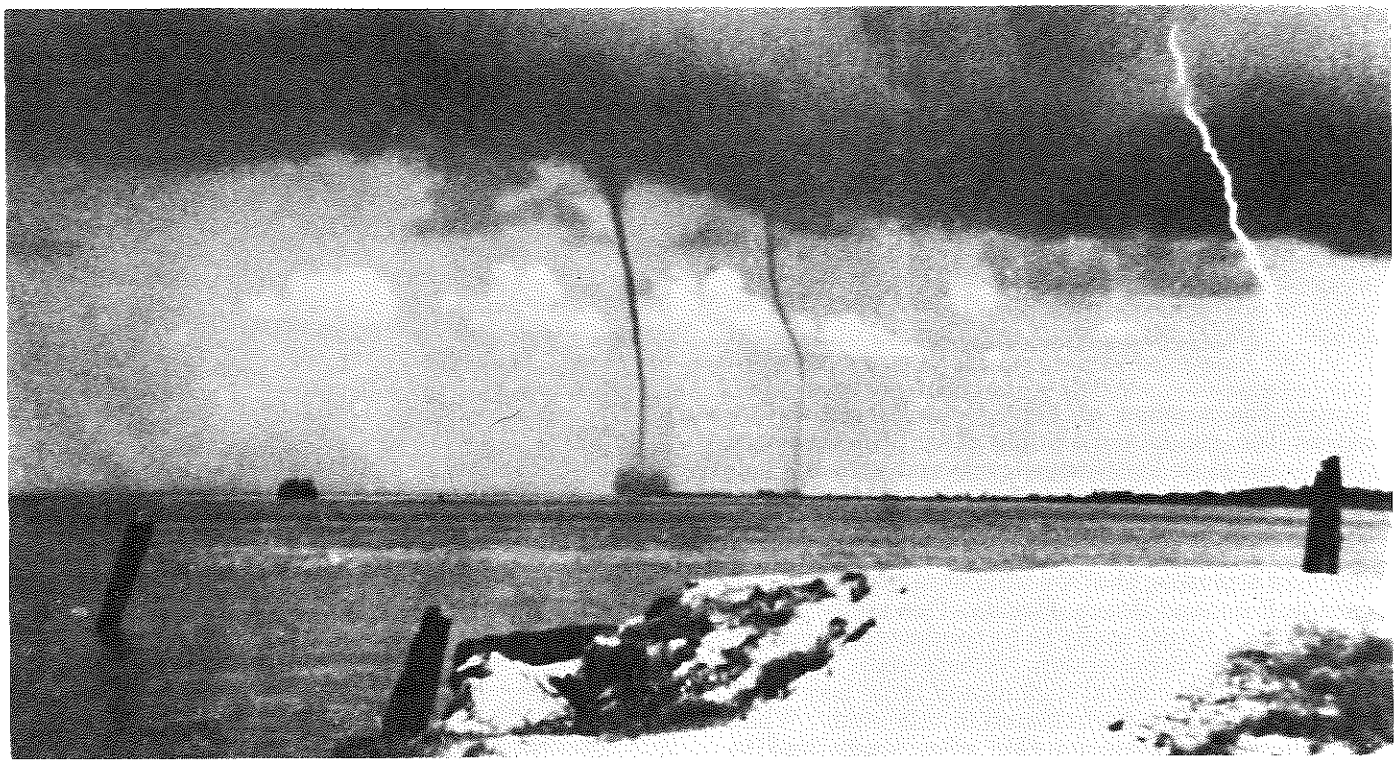
By: James B. Lushine, Lead Forcaster
National Weather Service Forecast Office
Miami, Florida

A waterspout is defined as a tornado over water, but are all waterspouts as big and nasty as the one that blew Dorothy to Oz? The answer is no. Many of the waterspouts that occur in the warm season are often fragile pendants that may be nearly transparent and drift aimlessly for several minutes before being washed away by a passing shower. On the average, winds of around 40 knots extend 20 to 30 feet from its nearly calm center. It is a threat only to the unwary small boat who doesn't take evasive action. On the other hand, the true tornado over water hangs black beneath a thunderhead which spits bolts of lightning. This dervish may spin at up to 200 knots in an area a hundred yards or more in diameter. Its forward speed might overtake a cigarette boat, and even ocean liners are at risk to their destructive power.

At the present time the National Weather Service issues a Special Marine Warning whenever a waterspout, whatever its strength, is reported. Many sightings of waterspouts come from observant beach patrol personnel, and we applaud your vigilance and encourage you to call the nearest weather office whenever you see one.

Knowing the difference between weak and strong waterspouts can save you from making a serious error in judgement as to what actions to take to protect bathers and yourself. For the sake of clearly distingwishing the strength of waterspouts, let's call them by different names. Since the weak waterspout is more like a dust devil than a tornado, I'll call it a "water devil". The strong waterspout will be titled a "tornadic waterspout".

Let's examine their basic characteristics. The water devil forms when wind conditions are very light and a line of cumulus cloud is in the area. Near shore this often occurs in the early morning hours when a land breeze is pushing slowly offshore. There are no thunderstorms nearby but showers are usually in the vicinity. the water devil occurs beneath a cumulus cloud that is growing rapidly to a height of about two miles. The sequence of events proceeds as follows. The base of the rapidly growing cumulus "parent cloud", which is initially quite sharp and smooth, develops a rotating protrusion which lowers toward the water as a funnel cloud. Within a minute or two, a spray vortex appears on the water surface nearly directly beneath the lowering funnel cloud. They quickly merge. The water devil's vortex is usually quite thin and is



almost transparent at times. It meanders slowly and usually in no particular direction for its 10-minute average lifetime. Its demise occurs when a rain shower overtakes it or on infrequent occasions as it moves onshore.

The tornadic waterspout on the other hand forms from a cumulonimbus cloud, also known as a thunderhead because of its anvil shaped top. The thunderhead may reach a height of eight to ten miles. From the base of the sometimes rotating thunderhead, a large rotating protrusion known as the wall or collar cloud extends downward. From this protrusion a dark funnel forms. The tornadic waterspout usually moves in the same direction as the thunderstorm to which it is attached, and may reach forward speeds of 50 knots or more. It may last only a few minutes but could last as long as an hour.

What is the best way to distinguish a water devil from a tornadic waterspout? Watch for lightning and listen for thunder. If either is observed it is likely that the vortex is a tornadic waterspout.

What dangers do water devils and tornadic waterspouts pose to people in the surf zone or on the beach? Even though the winds in a water devil are usually "only" near 40 knots and weaken quickly as they encounter the increased friction from the shore, they are still to be avoided in the beach area. Cases of beach patrol stands being overturned and loose objects such as trash cans being hurled about have been documented. Because the water devils are slow moving, plenty of time is usually available to clear the water of bathers and to move inland a hundred yards or so to avoid its effects.

Tornadic waterspouts pose a much more serious threat. Tornadic waterspouts moving onshore have killed people and have done extensive damage to boats anchored at marinas and to structures on land. One of the most recent examples of a deadly tornadic waterspout occured at Eastpoint, Florida, near Apalachicola, on June 8, 1989, when a squall line spawned tornadic waterspout moved onshore from Apalachicola Bay and completely demolished a wood-framed house killing all three occupants. When faced with a tornadic waterspout, quickly clear the water of bathers then move to a well constructed permanent structure such as a concrete bathhouse. Of course the tornadic thunderstorm is accompanied by deadly cloud to ground lightning which will effect the beach area, but that is a story for another time.

Results From USLA Occupational Health Study

By:
Jolanda N. Janczewski
and
George S. Robinson

During the summer of 1990, Consolidated Safety Services, Inc. conducted a study of USLSA members to determine their knowledge levels and personal opinions related to the transmission of the AIDS virus. This study consisted of a self-administered questionaire which provided to, and completed by, volunteers attending the1990 Lifeguard Championship games in Pompano Beach, Florida. This study served as a pilot for a future study to be conducted, using the entire USLSA membership. Ninety-eight USLSA members from all coastal regions and large lake areas of the United States participated in this study. While the purpose of conducting this pilot study was to evaluate the effeciency of the questionaire, the responses provided by the USLSA members were also interesting. The ensuing, therefore, is a summary of some of the salient answers received and analyzed.

The first section of the questionaire addressed the knowledge level of the respondents pertaining to the transmission of the AIDS virus. In general, the USLSA members provided a correct response to the majority of the questions posed to them on this topic. However, a large percentage of the respondents, for each question, indicated that they probably knew the answer to the question, but were not willing to provide a definite answer. This indicates that Lifeguards have a general idea about the AIDS virus and its transmission routes, but do not possess the exact knowledge to confidently provide a definite answer.

Some respondents indicated that they were unsure of some of the basic issues reguarding the AIDS virus. For example, seventeen percent of the respondents were not positive that they could not get the AIDS virus from the simple act of shaking hands, Seventeen percent of the respondents were not sure whether the AIDS virus could be transferred from a pregnant woman to her fetus. While these answers do not indicate that the USLSA respondents are over precautious or under precautious in avoiding the AIDs virus, they are unsure about how the virus is trasmitted. Out of ninety-eight responses, seventeen percent may seem like as insignificant number, but when one thinks of how fast the AIDS virus is spreading, coupled with the fact that these were very basic questions, seventeen percent becomes a very significant number.

The most confusing questions to the respondents were those relating the transmission of AIDS, via saliva. A total of fifty percent of all respondents were unable to state definitely whether or not the virus could be transmitted through a saliva exchange.

The last two questions of the AIDS Knowledge Level section may explain the indistinct answers that respondents have previously given on the questionaire. The last two questions were, "Have you read the Surgeon General's report on AIDS?", and "Have you read the O.S.H.A. proposed Hepatitus B/HIV standard?" An alarming seventy-two percent of all respondents answered that they had not read the U.S. Surgeon General's report on AIDS. Further, seventy-five percent of all respondents indicated that they had not read the O.S.H.A. proposed Hepatitus B/HIV standard. These percentages, along with the lack of definite knowledge shown in the survey answers, indicate one of two things; either a lack of interest in learning about AIDS and disease transmission, or a lack of information on AIDS provided to the USLSA members.

Section two of the questionaire was aimed at learning about USLSA members opinions on AIDS and how it affected their working lives. This section was most enlightening as to how the fear of AIDS, or lack there of, was affecting the USLSA members in their job duties.

The greatest concern about contracting the AIDS virus came from the West Coast where members felt they were at a greater risk than others because they were guarding a large homosexual and intravenous drug user population. The East Coast, however, felt that because they were taking precautions they were at a lesser risk than other guards. However, there were still those on the East Coast that felt they were at a risk for reasons such as constant contact with bodily

fluids (ie. C.P.R. and treating open wounds). A large number of guards also expressed concern about needles on the beaches.

The majority of the respondents indicated that they do talk about their concerns of getting the AIDS virus from work. However, most reported that they only talk to their co-workers about it and only a few indicated that they talk to their supervisors or spouses about their concerns. this is a topic that needs to be discussed with enveryone who will listen, but most importantly to job supervisors and those with the capability to implement safety procedured and get the necessary safety equipment to protect the guards from contracting the AIDS virus while performing their job duties.

The question that seems to stare us in the face at this point is whether or not the fear of contracting AIDS will affect the Lifeguards ability to do their job (saving lives). Fifty percent of all responding members mildly think about the risk of contracting AIDS through their job duties, wile the majority of the other fifty percent only moderately think about it. Seventy percent of the respondents indicated that the stress they incur at work, related to the fear of AIDS, is mild to none. Seventy-four percent of all the respondents believe that they are not affected at all or are only mildly affected in doing their job because of the risk that AIDS presents. Consequently, twenty-six percent of the responding guards do believe that their job duties are affected by the risk of contracting AIDS, thus possibly compromising their lifesaving abiltiies.

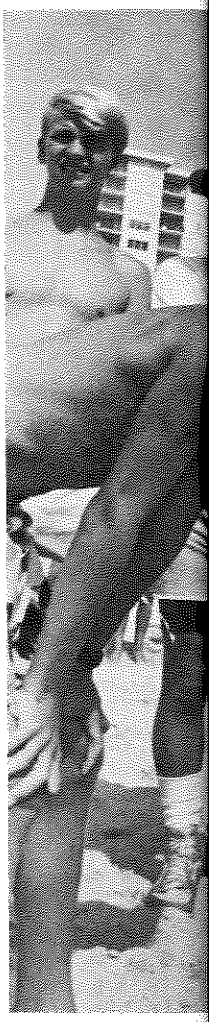
The results of this pilot study indicate that the USLSA members are probably in need of formal training, which addresses how to protect themselves from contracting the AIDS virus while performing their job duties. The survey respondents knowledge about the AIDS virus is generally correct, yet there is an element of doubt shown by the lack of definitiveness in their answers. Their knowledge about the AIDS virus could be solidified with the proper training, in turn, their Lifeguarding capabilities along with their protection from the virus could be greatly increased. While the majority of the responding USLSA members indicated that the threat of contracting AIDS does not impair their work, there are still a large number of members, around thirty percent, who believe their work is impaired. With formal training, those who are unsure of the threat of contracting AIDS as a Lifeguard, as well as those whose job resposibilities are being jeopardized, can greatly reduce their risk of getting AIDS, while being competent in the business of saving lives.

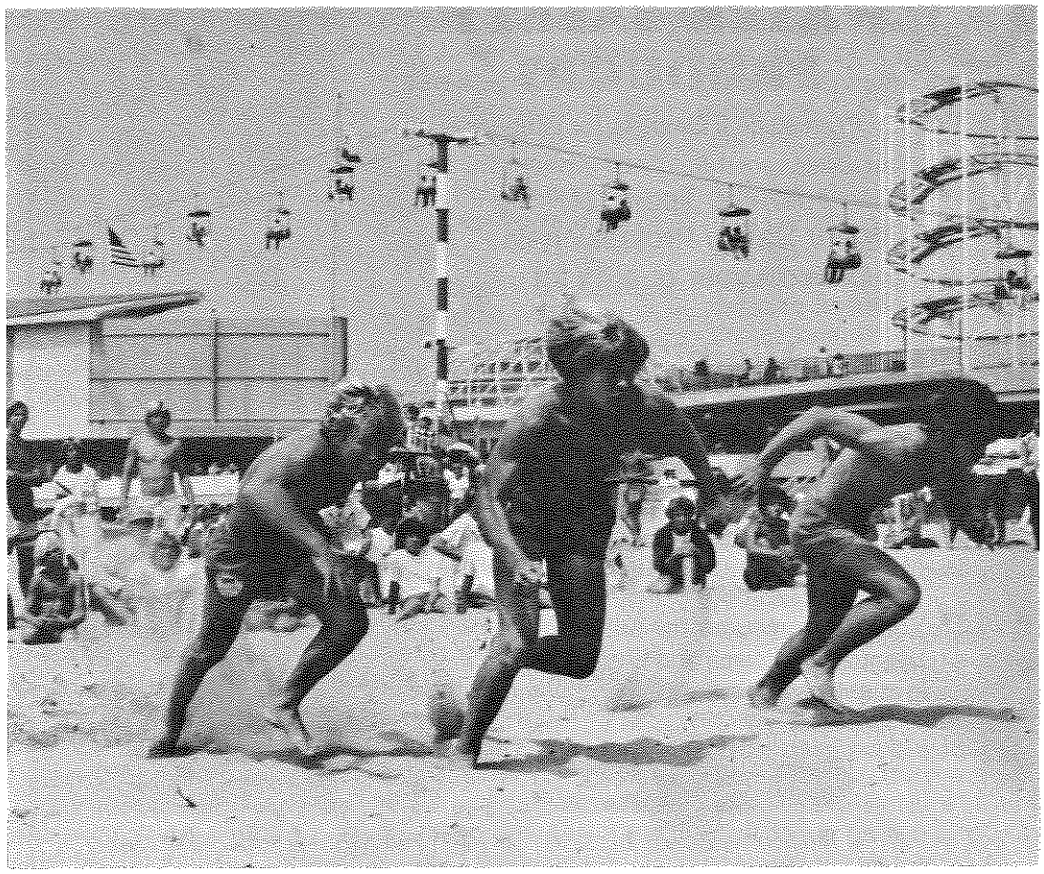
Results of the next survey, conducted with all USLSA members, should indicate more about the types of training to be conducted.

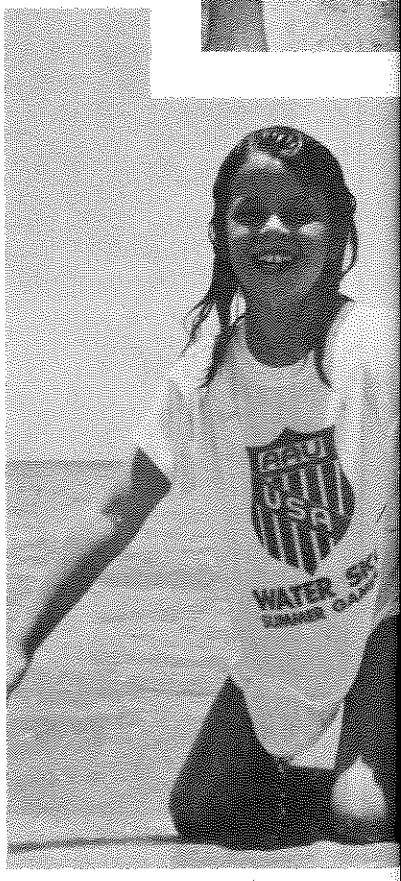
The United States Lifesaving Association, and Consolidated Safety Services, Inc. wishes to thank all of the Lifeguards who participated in this pilot study.

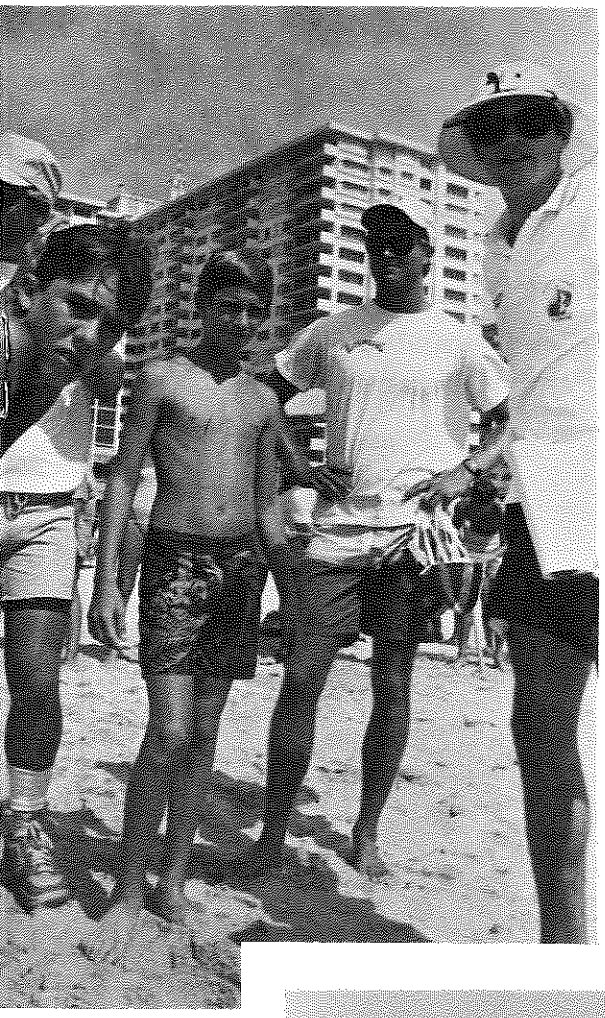
NEW WAVE KIDS!

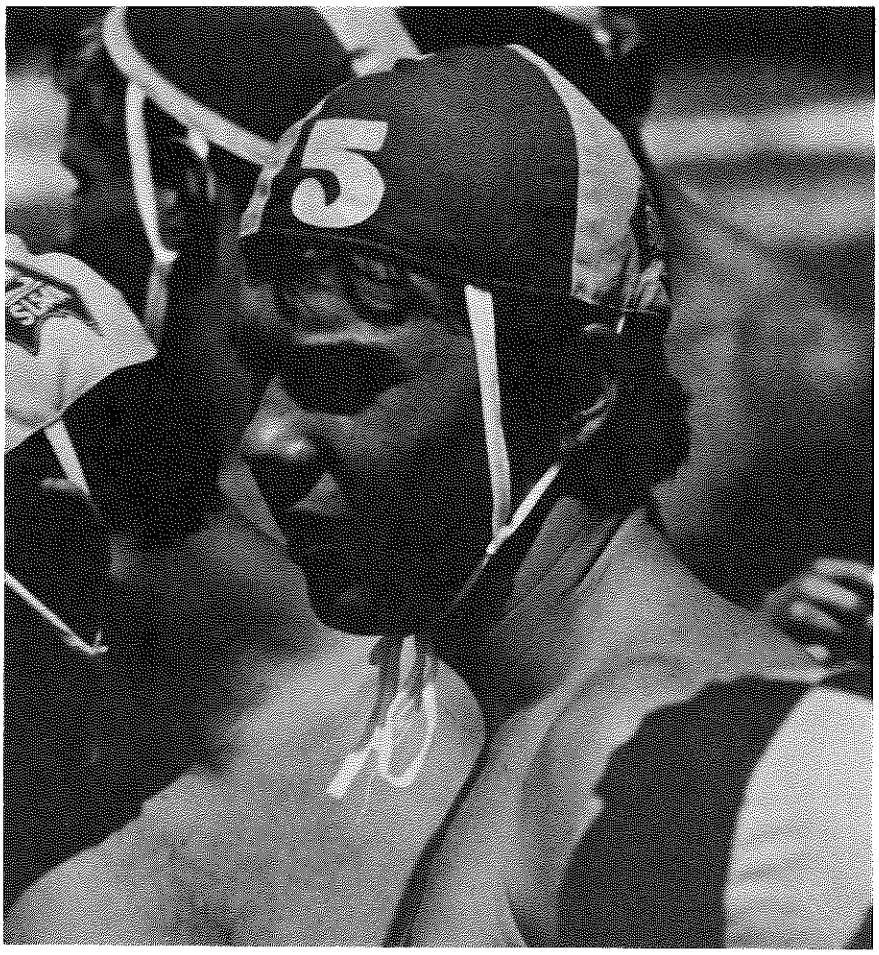
USLA Junior Lifeguards

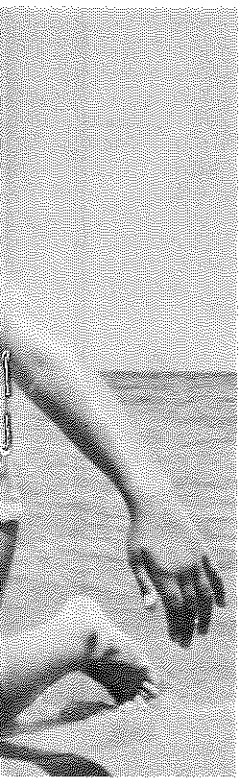






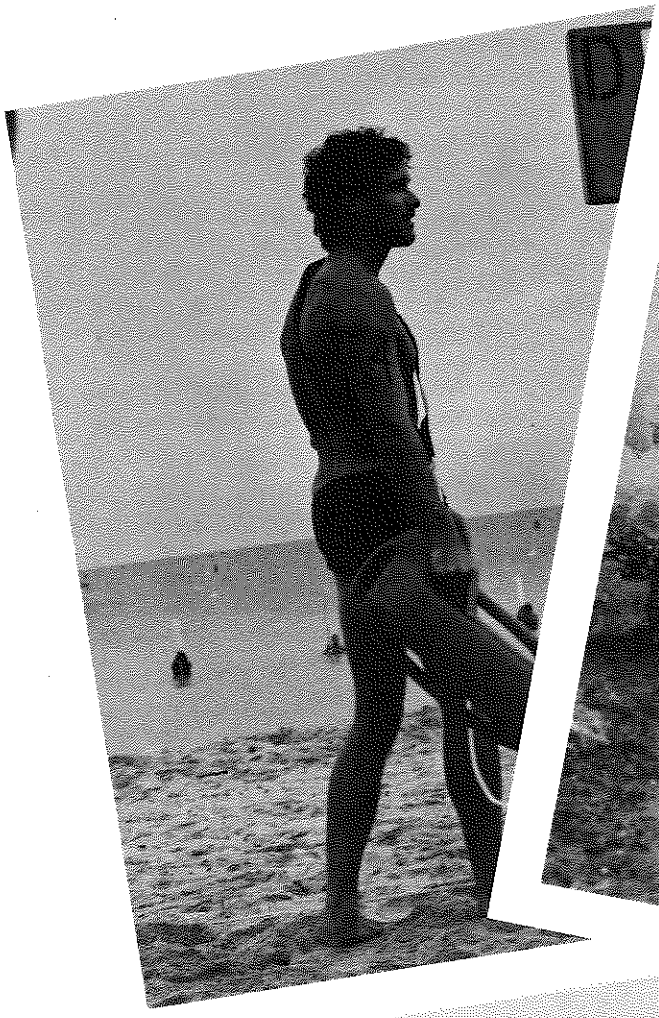


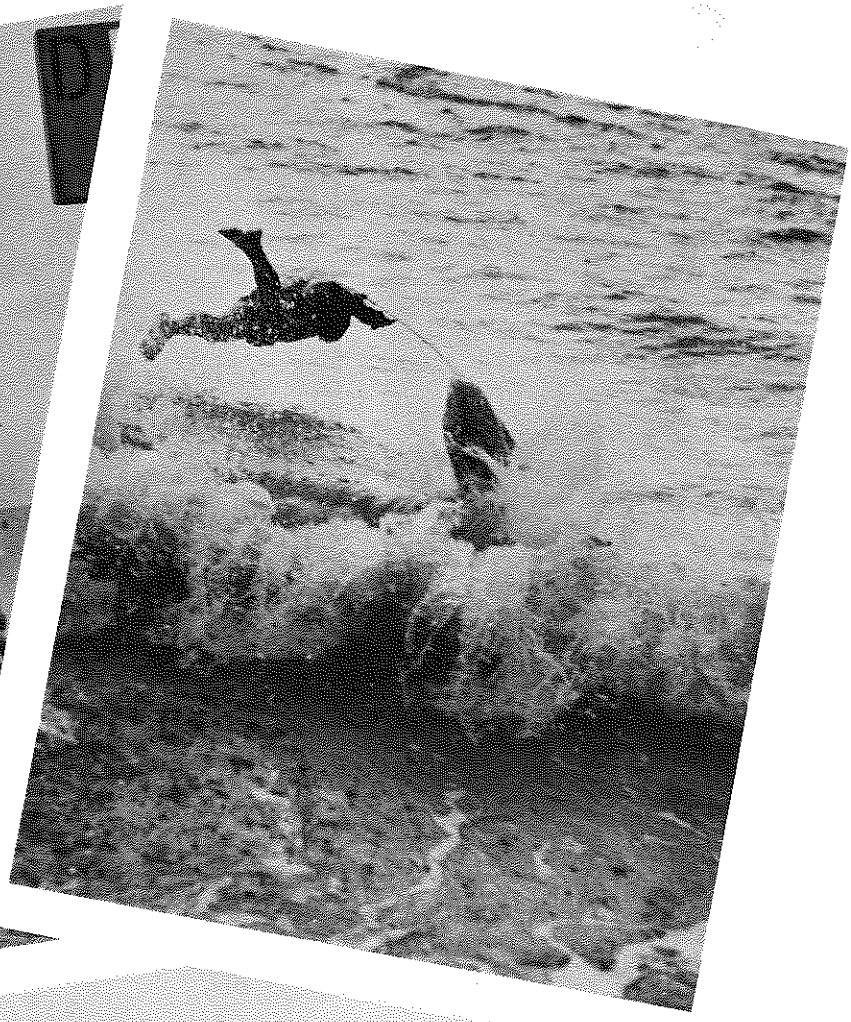




THE MOMENT OF TRUTH!

USLA Lifeguards-Ocean Tough





United States Lifesaving Association

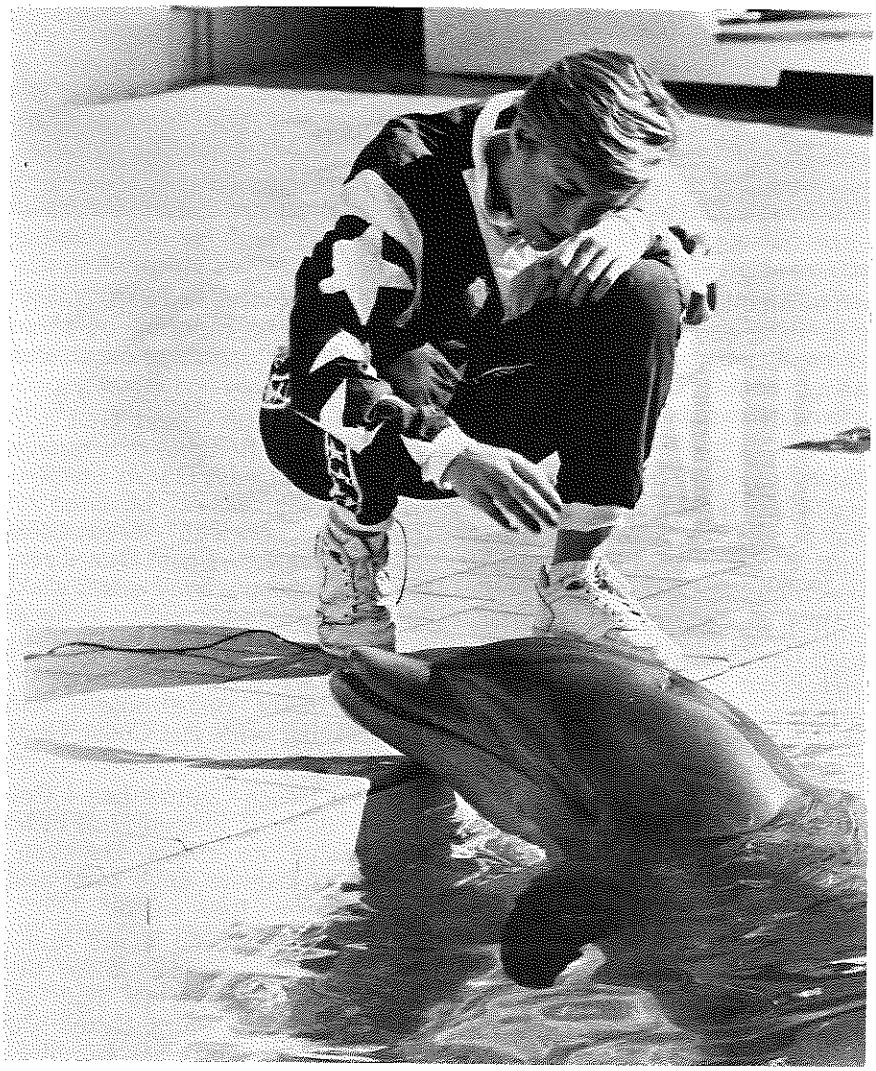
Silver Dolphin Club

Member's Name

- Always Swim Near a Lifeguard
- Learn to Swim
- Don't Let Foolish Actions Ruin Your Life

The USLA SILVER DOLPHIN CLUB

Drowning represents the second leading cause of accidental death among young people in America. To help reduce this alarming statistic, the USLA was awarded a grant from the National Health and Safety Foundation to produce the Silver Dolphin Club. This club represents a program involving a teacher's guide, a video featuring Gold Medalist Marry Wayte and a bottlenose dolphin, and a special membership card. Once completed later this summer, it will be distributed throughout the country to public and private schools. Projects such as this makes the USLA a leader in aquatic safety. Stay tuned for other new and exciting education programs.



THE THRILLS & CHALLENGES OF LIFEGUARDING OCEAN INLETS

By: Bill McNeely, Chief of Marine Safety
Saint Lucie County

Aerial View of Boynton Inlet

Working as a lifeguard on an inlet, or beach bordered by an inlet can be very exciting and demanding. With quickly changing water conditions, a large variety of boats and ships navigating the inlets, and all types of marine life, inlet emergencies can be extremely difficult to handle.

The water depths in inlets may vary from 8 feet to 60 feet and quickly change with the tides and shifting sandbars. Jetty's are built on each side of most inlets to slow the moving sands. Erosion usually is present on one side while the beach builds on the other.

Rip currents continually form along the jetty areas picking up sand in the rip feeder zone and carrying it into the mouth of the inlet. When swimmers are caught in these rip currents the rescuer should attempt to exit the rip with victim or victims before reaching the end of the jetty. If this is not possible the current could drag both rescuer and victim into the mouth of the inlet.

The mouth is the most dangerous area of an inlet. It is the ocean's entrance located at the end of the jetties. The combination of wind, ocean swells and tide surge often creates very large waves at the mouth. These waves can be 4 to 8 feet high on a very calm day and 10 to 16 feet on a rough day. These waves are very unpredictable and seem to break everywhere around the mouth. They are a challenge to navigate for even the most experienced seaman. Boats can become instantly submerged or capsized by these monsterous waves. Many inlet drownings occur and boats are lost when this happens.

United States Coast Guard Stations are found in many inlets. Reliable communications from lifeguarded areas to Coast Guard Stations are very important. Boats in distress can be aided by Coast Guard vessels and helicopters if they are notified in time. However, in many situations Coast Guard response time is too slow to rescue people from a fast sinking boat, or to rescue non-swimmers carried away by swift currents.

In these emergencies inlet lifeguards must move quickly with available rescue equipment including rescue boats, paddleboards and rescue cans. Communicating with the Coast Guard for backup can be very helpful.

Palm Beach County has 4 Ocean Inlets and is currently using 3 Ridged Hull inflatable boats (RHIB's) for rescue operations. Between 1985 and 1990 150 boats in distress have been assisted and 143 people rescued from their inlets.

Lifeguarding the inlets and manning the rescue boats are among the most demanding roles for a lifeguard according to Tom Hutton, Beach Safety Supervisor for Palm Beach County. Operating the boats in strong tides combined with ocean swells

Palm Beach County Lifeguards accepting challenge of guarding an Ocean Inlet

requires much skill and training. These skills do not come quickly but ocean lifeguards often have a "feel" for water being around the surf so much.

Most beach patrols require their rescue boat operators to be certified. This is done by Marine Rescue Consultants out of Newport Beach, California. Rescue boat operations training is a 5 day, 50 hour course and is held in California and Florida each year.

All forms of marine life are found in inlet areas. The fast currents and changing water temperatures attract large numbers of fish and rays. Schools of bait can become trapped by the jetties and are easy prey for feeding sharks. Shark sightings and attacks are usually more common around inlets than open beach areas.

The North Jetty Inlet State Park in Fort Pierce, Florida has a shore break most of the time which is excellent for surfing. Everything from spinner sharks to 18 foot hammerheads are regularly spotted. Different species of sharks will school together in this area swimming right up to the beach. Many surfers have been bitten by sharks over the years on both sides of the inlet. SCUBA divers in this area have also attracted and been bitten by sharks while spearfishing or carrying captured lobsters.

Recreational swimming beaches are sometimes located inside inlet areas. These beaches are very popular for jetskies, boats and swimmers. Many drownings occur in these areas when swimmers are quickly swept away by powerful outgoing tides.

An unsuspecting swimmer may wade out onto a sandbar in very calm water. Suddenly the tide shifts and begins to rush out the inlet. These incredibly strong currents can quickly become very turbulent and sometimes contain whirlpools. Recovery of drowning victims is difficult and can take several days because of the very deep water and treacherous currents,

SCUBA diving is not permitted in most inlets because of the strong currents and heavy boat traffic. Divers who have gone down during the slack tide have been swiftly carried out to sea when the tide changed and found it impossible to return to their boat or to shore.

Surfers occasionally try to paddle across inlets or people try to swim across, not realizing the power of the currents. They sometimes have to be rescued from the rocks on jetties. The rocks can be covered with sharp barnacles and the wave action makes rescues extremely difficult. Using a RHIB is usually the best way to rescue people stranded on long jetties. It's very important to keep the bow of the RHIB pointed directly into the current while approaching the rocks. The crewman should be in the bow to quickly assist the people onto the boat. The rescue boat operators timing needs to be perfect getting the boat up to the rocks and back out again within seconds in strong currents with rolling waves.

Every beach has its own unique characteristics that patrons and lifeguards grow to love. Many of these characteristics which make a beach beautiful and inviting have hidden dangers which can be deadly. Working ocean inlets can be very challenging for the lifeguard with its variety of emergency situations while being very interesting, enjoyable beaches to be stationed.

Dirty water indicates the presence of a Rip Current

RIP CURRENTS

By: Daniel M. Hanes, Associate Professor
Coastal and Oceanographic Engineering Depaartment, University of Florida

A rip current may be difficult to see, but if you were caught in a rip current you would be in danger. You would find yourself being carried offshore through the surf, toward the ocean. The current is too strong to swim against, and the waves might be crashing upon you every few seconds. Fortunately, by taking proper actions, you will be able to escape this danderous situation.

Exactly what is this phenomenon that is sometimes calles a "runout" or "Rip current"? What causes a rip current? What should you do if you are caught in a rip current? This article will try and answer these questions.

What is a rip current?

A rip current may take many shapes or forms, and may be called by many names. The primary distinguishing feature of a rip current is that the direction of the flow is seaward through the surf zone, that is, from the beach toward the ocean. The rip current is often narrow and strong, as shown in the diagram on the adjacent page. After flowing seaward of the breaking waves, the rip current generally weakens, diffuses, and vanishes. Rip currents may occur periodically along the beach, of they may occur in isolation. Sometimes they run obliquely to the shoreline, following deeper channels in the bathymetry. Frequently rip currents re-occur at the same location, which is characterized by a break in the offshore bar or a structural feature such as a natural rock outcrop or a man-made pier.

Rip currents can often be recognized from shore. Sometimes the surface of the rip current contains either "white wash" bubbles from the breaking waves or sediment and debris floating in the water. In these cases you can easily see the patterns of surface movement through the surf zone. Look especially for the rip "head" beyond the breaking waves; it is a telltale sign of a rip

current.

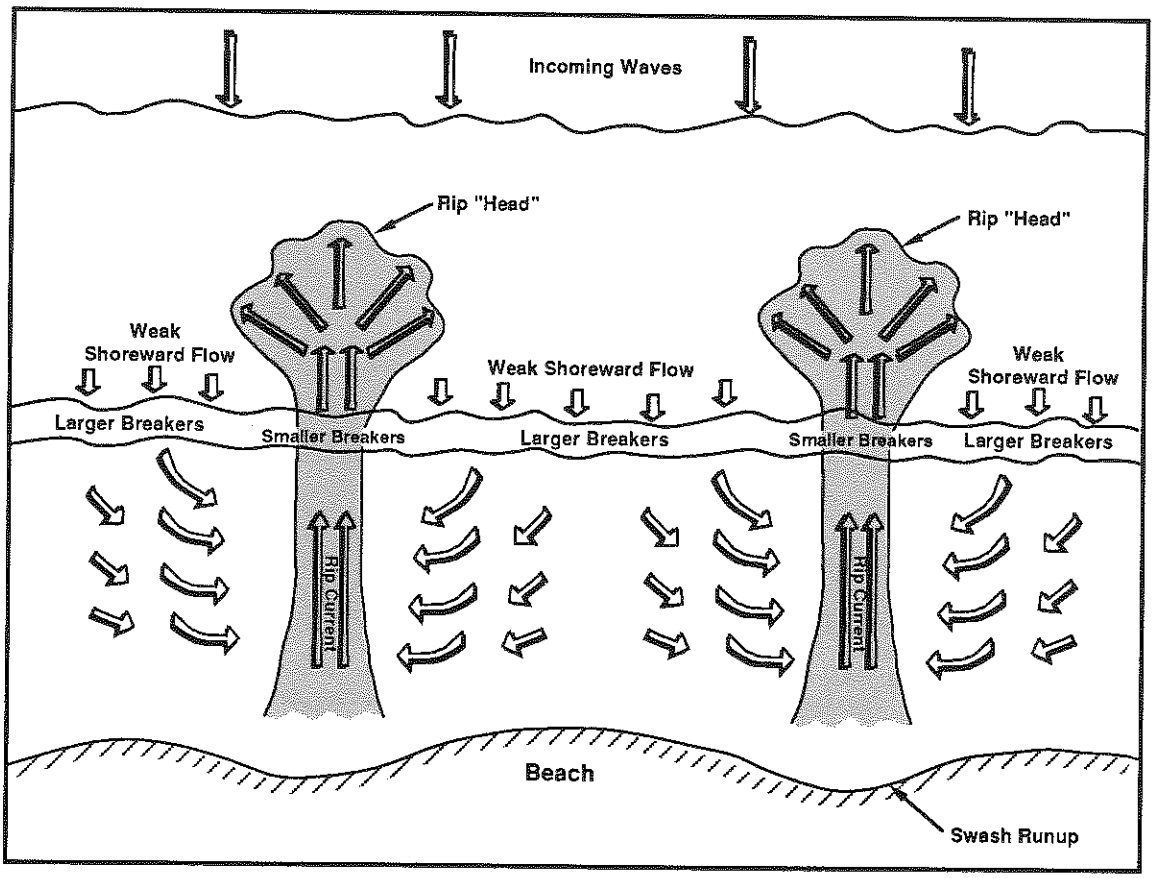
What causes a rip current?

When waves approach the shoreline they induce a small shoreward flow of water known as "mass transport". This flow is weak, and is not felt by the casual swimmer. The shoreward flow can be enhanced by local on-shore winds. When this flow reaches the shoreline, water builds up, and "seeks" a path to return to the sea. Under the right conditions this results in a narrow rip current. Because of the seaward flow the narrow rip current must balance the shoreward mass trasport over the entire region between rip currents, the flow in the rip current is quite strong. Strangely, scientists and engineers cannot precisely predict the occurence and strength of rip currents. However, based upon the explanations above, we do know that they are most likely to occur during periods of large waves and strong, persistent on-shore winds.

What to do if you are caught in a rip current.

Of course, when armed with a knowledge of rip currents, you should be able to avoid ever getting caught in one. Look for warning flags, and look for rip currents, especially on rough or windy days. Don't be fooled into entering the water in regions of lower waves; this is sometimes the precise location of a rip current.

If you are caught in a rip current, don't fight it! The current is usually too strong to swim against, and you might exhaust yourself trying. Let the current carry you beyond the surf, while at the same time try to wave your arms to signal for help. The rip current itself will not pull you down, but breaking waves could temporarily push you under water. If this happens hold your breath and swim up to the water surface! Once you are beyond the surf, the rip current will weaken. Again signal for help. You should then swim longshore (up coast or down coast) away from the rip current. Once away from the rip, swim in to shore.



WARNING: Rip Currents, Lifeguards and the Law

By: Michael Flynn, Associate Professor of Law
Nova University School of Law

According to the most recent figures of the National Safety Council, two out of every 100,000 people who visit a beach will die from a beach related accident.[1] With over 330 million people expected to visit United States beaches in 1991, approximately 3,300 people will die from a beach related accident.[2] In Florida, a state with vast beach areas, between 30 and 40 of these beachgoers will drown in rip currents.[3] What is so tragic about these rip current drownings is that all of these deaths may be unnecessary. The beachgoer, the lifeguard and the beach operator all share a legal responsibility to avoid the hazards of rip currents. However, it is the lifeguard, the water safety expert, who is in the best position to prevent these deaths.

The Lifeguard and the Law of Negligence

To most people, the beach lifeguard is the lucky person who relaxes in a pedestal chair on the best portion of the beach, wears sunglasses, has a beautiful tan, carries a megaphone, and spreads a little zinc oxide on his or her nose to avoid peeling. To the law, the beach lifeguard is a specially skilled person who must use his best judgement and exercise reasonable care for the safety of all beachgoers. The law of negligence imposes this duty on the lifeguard.

A lifeguard's duty and standard of care varies with the circumstances. Confronted with a drowning swimmer or other water emergency, the law expects the lifeguard to possess swimming skill sufficient to rescue the swimmer in distress. In addition, the law expects the lifeguard to have rescue training, including CPR, to properly care for the injured swimmer. In this kind of "circumstance" all of us, including the law, have little problem obligating the lifeguard to this standard of conduct.

Do a lifeguard's obligations extend further? Alice Andrews sure thinks they do![4] Ms. Andrews thinks that the Island Beach lifeguard's obligation extended to not allowing her son, Ronnie Robbins, to die. Island Beach, particularly the southernmost portion known as Dog Beach, is notorious for its strong currents and dangerous undertow. On the day of the drowning, dangerous rip current signs and red flags were posted at various points along the beach. However, no signs were posted in the Dog Beach area. According to the beach patrol, "no signs were needed". In fact, the Island Beach area was promoted by advertisements that stated, "The clear ocean waters are enjoyed for swimming and sun bathing." The lifeguards on duty admitted that people, including Ronnie Robbins, were swimming in the Dog Beach waters on the day of the drowning. The lifeguards further admitted that only occasionally would they ask swimmers to leave the water. The law expects more from its lifeguards!

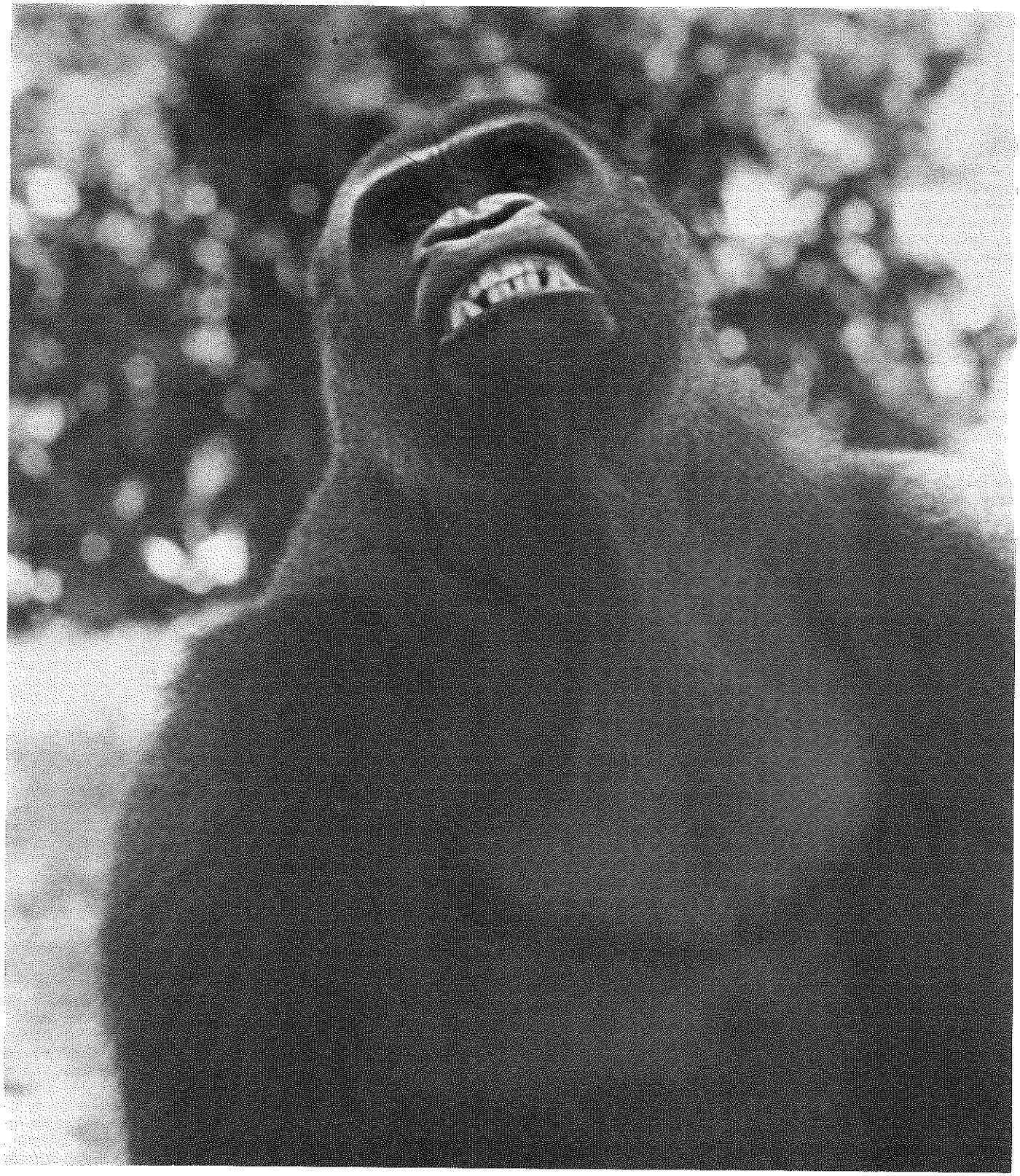
The Lifeguard's Duty of Care and Rip Currents

Training, vgilance, judgment and fitness are the calling cards for lifeguards when it comes to the dangers of rip currents. First, the lifeguard must know what a rip current is and how dangerous such a current can be. This simple amount of training arms the lifeguard with the tools to recognize potential dangerous surf conditions. Sometimes, rip currents are difficult to spot even with proper training. Therefore, second, the lifeguard must be vigilant for any sign of rip currents. Beachgoers rely on the watchful eye of the lifeguard for their safety. Third, once a rip current is spotted, the lifeguard must act. Most lifeguard's have a hearty respect for dangerous rip currents. The lifeguard must use judgment to react appropriately to protect beachgoers and swimmers. As soon as the lifeguard makes a judgment, then, fourth, the lifeguard must have the physical skill and ability to carry out safely any rescue plan. Under the circumstances od a dangerous rip current, the lifeguard's duty is all emcompassing and extremely critical.

When a lifeguard fails to discharge his or her duty, injury, even death, is the result. The lifeguard's at Dog Beach failed in every aspect. Even though the lifeguard's knew of rip currents, their failure to appreciate the dangers of such a surf condition contributed to Ronnie Robbin's death. Although the lifeguard's watched as swimmers splashed in the Dog Beach waters, they were not watchful. Despite recognizing the rip current condition and looking at the beachgoers and swimmers, the lifeguard's failed to act. These lifeguard's could have emptied the water of swimmers, stationed a lifeguard to prohibit beachgoers from entering the water or even posted signs closing the beach until the danger had subsided. Finally, and perhaps most egregious, there is no evidence to show that the lifeguard's even attempted to rescue Ronnie Robbins. Although performing a rescue under dangerous rip currents is a tricky task, lifeguard's must possess the physical prowess to do so and perhaps save Ronnie Robbin's life.

Although the lifeguards may not be alone in their negligent failure to dicharge their duty under these circumstances, the lifeguard is the front line defense to rip current drownings. Any lifeguard, lifesaver, undertakes a noble job. The lifeguard's job is not easy and involves risks, including rip currents. However, the law expects, even demands, that lifeguard's perform their tasks with skill and care. Otherwise, our beaches may become no more than accidents, even deaths, waiting to happen.

[1] National Safety Council, *Accident Facts*, "Public Accidents 1983" (1984).
[2] United States Travel Data Center, *1990 Summer Vacation Forcast*, (May 23,1990).
[3] *Ocean Lifeguard*, James Luchine, "Predicting Rip Currents" (Summer 1990).
[4] *Andrews v. Dept. of Natural Resources*, 557 So.2d 85 (Fla. 2nd Dist. Ct. App. 1990).



Reaction of Local Lifeguard Candidate after being told he failed his water test!

Handheld Lightning Detector

By: Rob Sterns *Reprinted from: Saltwater Sportsman*

Early one afternoon a few months ago we were happily chasing bonefish on a Florida Keys flat aboard my skiff, when I noticed a somewhat dark mass of clouds on the western horizon. They looked more like the rain-only type, certainly not as threatening as our typical summer electrical storms. But, just for curiosity's sake, I hauled out a handheld lightning detector I was testing at the time, and aimed it at the clouds.

The detector has two modes; Optical and Distant RF. When in the Optical mode, it can actually "see" lightning discharges within the clouds that are otherwise invisible to the human eye during daylight. I'll explain the role these intra cloud strokes play shortly.

In the Distant RF mode, the unit detects all lightning strokes, both intra cloud and cloud-to-ground, within a range of 30 to 50 miles. By using these two sources of information together it is possible to get a good idea just how threatening an oncoming mass of clouds might be.

But that day, when I pointed the unit at the clouds and switched to the Optical mode, if never uttered a single peep. Yet when I switched to the Distant RF mode if sounded like someone pounding out Morse Code at a fast clip. The inference was clear enough: the visible front line of clouds actually did contain only rain, but somewhere behind them lurked a mass of intense electrical storm activity. Exactly how far behind, we had no way of knowing, but the warning that they would be upon us shortly was clear enough.

We headed for the dock, and by the time the severe weather arrived, my boat was on the trailer and we were on the road home.

Anyone afloat in anything less than ocean liner proportions who doesn't take seriously the threat of lightning on the open sea either left his brains on the dock or is a candidate for the funny farm. Even a big cabin boat can at least suffer expensive damage to electronics. And in an open skiff, where your body is the tallest thing for many miles in all directions, the danger potential reaches the ultimate level.

Having been almost blasted by lightning on two separate occasions in years past, my first and foremost consideration when threatened by any electrical storm is most certainly flight, not fight. And if I cannot make it to protective cover or outmaneuver the danger, then everyone aboard gets as low as possible — even though that means getting soaked in the process. Another alternative for any boat that doesn't have lightning protective mast (LPM) already permanently in place would be to keep a portable version in handy out-of-the-way storage.

Even a few minutes' warning can be a lifesaver. And while the human eye is hard to beat as a first line of defense, it cannot always detect the innermost secrets of a threatening situation - i.e. the event outlined above. You can always see cloud-to-ground lightning during the day, and all forms of lightning during the night, but actually it is those daylight-invisible intra cloud discharges that offer the best warning of the potential severity of a thunderstorm.

The more frequent these hidden strokes, the more intense the overall electrical properties of the storm and the greater the threat of dangerous cloud-to-ground lightning strikes. And there's a strong correlation between intra cloud lightning frequency and the strength of the downdraft within the cloud. It is this downdraft that becomes the sudden, sometimes shrieking surface winds which accompany very strong thunderstorms.

Lightning detectors have been around for many years, but until just a few months ago all that I have seen are stationary systems designed for permanent installation. Now there's a handheld unit, about the size and weight of a small portable AM/FM radio.

Made by Airborne Research Associates, a Massechusetts company that specializes in meteorlogical research, the M-10 Advanced Warning Lightning Detector retails for $395, far less expensive than the four to five digit price tag commonly associated with permanently mounted, typically bulky and complex electrical storm early warning systems.

As indicated earlier, the device works by detecting lightning in two separate modes; optical and radio frequency (RF). In the optical mode, the M-10 can see lightning inside the cloud and between clouds during bright daylight as well as the human eye at night. Of course, it also sees cloud-to-ground lightning as well, but it is the intra cloud lightning that's important because it typically preceeds cloud-to-ground strokes by 15 to 20 minutes.

It is the frequency of intra cloud lightning strokes which helps determine the potential for strong winds from the storm. There is no fixed formula for this because of climatic and geographic variations in electrical storm development. But all it takes is a little practice in your area to get a feeling for the relationship between strokes per minutes and the winds that follow. So, while 10 strokes per minute might mean strong winds in a more northerly lattitude, in the south 10 might not mean a lot, but 20 to 30 might indicate real trouble.

As for RF lightning detection, we're all familiar with the snap and pop of lightning-induced static on the AM broadcast band. It's called aferics, and to some extent it can be used as a warning system by tuning in between stations, then turning down the volume until the normal background static is almost inaudible. the idea is that you won't be distracted by music or a ball game, and that any lightning aferics will be louder than the background. In a sense, this system does work, but it also sends out a lot of false alarms because in that band lightning RF can travel hundreds of miles. It can also be reflected by the ionosphere for even greater distance. That's why you might hear very intense aferics on a summer night, even though the sky is completely clear and there isn't lightning visible anywhere on the distant horizon (e.g. so-called "heat" lightning).

The M-10 gets around this false alarm problem by tuning in only very low frequencies, where the lightning RF loses strength rapidly with distance and becomes essentially undetectable by the unit beyond 30 to 50 miles. Aside from easily recognized bogus alarms, such as the constant buzz caused by holding the detector too close to a depthfinder, VHF radio antenna, flourescent lights, etc., if the M-10 starts chirping with the switch in the Distant R/F mode, the cause isn't that far away.

There's a third detection mode that combines both optical and RF. It's programmed so that an optical signal and a RF signal must be received simultaneously for a beep to be heard. The idea behind this is to eliminate false optical signals that might come from the bright sun, or other reflected light sources. For example, rain hitting a windshield usually causes spurious optical signals.

The best way to use the M-10 is point optical sensor (lens) at a suspicious cloud with the switch in the Optical or Both mode. If you get the staccato beeps - which incidently have their own distinct sound patterns - that are common with intra cloud lightning discharges, your next worry will be the direction in which it's headed. And by the way, don't count on the optical system being able to pinpoint the strongest part of a squall line the way your eyes sometimes can at night. The visible light from an internal discharge is diffused throughout almost the entire mass of clouds and the optical sensor can only tell you it's there, not where it is brightest.

If there is no optical activity, try the RF mode for a minute or so just to check for out-of-sight storms that might be approaching. One suspicious cloud could indicate others not far away.

The M-10 is powered by two standard 9-volt batteries, which last 20 hours or more. It is housed is a rugged, splash resistant metal case that measures 7x3.8x1.3 inches. It also has a ¼-20 threaded socket for tripod mounting, and weighs one pound. Best of all, it really does what it is designed to do!

* * * * * * * *

M-10 Advanced Warning Optical Lightning Detector

The first practical way to tell when dangerous electrified clouds are near golf courses. In conjunction with electrically shielded and grounded shelters, and an adequate warning system, it can put an end to deaths and injuries from lightning of golf courses.

One simply points the M-10 at suspicious-looking clouds and listens for beeps caused by rapid invisible changes in light intensity. Or, in the RF (survey) mode, it monitors for lightning activity anywhere within 30 miles. As a storm approaches, it can also determine distance to the lightning. Because it senses invisible "intracloud" lightning discharges in the upper part of clouds, it provides 15-20 minutes advance warning of subsequent cloud-to-ground discharges.

The portable, battery-powered instrument provides reliable information on when to halt and resume play, thus allowing for efficient and safe removal of crowds before the onset of severe weather, and minimum lost time when play is suspended. It can become an integral component for golf course liability protection: The 1990 Tennessee Appeals Court decision requires clubs to notify players when dangerous conditions exist.

The M-10 measures 7.0″x3.8″x1.3″ and fits in a compact camera case. It weighs 1 pound and is operated hand held or mounted on a small camera tripod. The beeper can be heard 50 feet away.

The prototype model, developed for government field test facilities, was used successfully on most of the major tours and at some clubs during 1990.

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1. Learn to Swim.
2. Never Swim Alone. Swim Near a Lifeguard.
3. Check with the Lifeguards on Water Conditions.
4. Learn and Obey the Rules of your Swimming Area.
5. Report Any Dangerous Situations to the Lifeguards or Management.
6. Check the Depth of Underwater Surface by Jumping, Not by Diving Head First.
7. If you are in Trouble, Call or Wave For Help.

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