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Surf Rescue – Student Manual, v.2022

Purpose:

This *World Academy of Safety & Health (WASH) Surf Rescue Manual, v.2022* is exclusively intended to provide guidance and information to enrolled students in the World Academy of Safety & Health (WASH) Lifeguard certification training course(s). All information contained within this manual is subject to change at any time for any reason and without notice. All updates, changes, alterations, and new editions will be published on *www.lifeguardcertifications.com*.

Notification of Rights:

Trademarks, Ownership and Copyrights:

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World Academy of Safety & Health

Disclaimer

World Academy of Safety & Health (WASH) has made all reasonable efforts to ensure the content of this *Surf Rescue Manual, v.2022* is accurate, up-to-date, and aligned with the most recent industry standards and recommendations at the time of its publication. Scientific and medical information and data can frequently change. Medical recommendations may, in turn, be updated to reflect this latest science and data. In addition to the regular 5-year program and curriculum review and update cycle, the *World Academy of Safety & Health (WASH) Surf Rescue Manual, v.2022* will be updated as frequently as is needed based upon any changes in medical recommendations. Any and all updates will be published on: *www.lifeguardcertifications.com*.

Each emergency situation is unique and, hence, warrants its own set of guidelines, principles, recommendations, information and/or emergency response protocols. Therefore, it is not possible for *World Academy of Safety & Health (WASH)* to provide blanket emergency response recommendations.

This *Surf Rescue Manual, v.2022* must not replace or substitute for advanced medical care or emergency services response and treatment. Further, no information contained within this *Surf Rescue Manual, v.2022* should replace the need to seek care and/or advice from a physician, hospital staff member, or other licensed healthcare provider. Cooperation with local medical direction is necessary when developing a facility Emergency Action Plan (EAP) and best practices. Emergency services should always be contacted when there is an emergency situation.

World Academy of Safety & Health (WASH) utilizes an Advisory and Review Committee in the development of all programs, courses, manuals, resources, and other instructional materials.

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World Academy of Safety & Health

About Us

World Academy of Safety & Health is an international certifying body for Pool Lifeguards,Waterfront Lifeguards, Surf Rescue Lifeguards, Lifeguard Instructors, and Lifeguard Supervisors.

We offer high-quality courses that are an affordable, flexible, and accessible option. Courses are delivered as full in-person classes in select areas across the world. We urge you to utilize our website for the most up to date list of approvals: http://lifeguardcertifications.com/2022/01/11/program-curriculum-approvals/

We offer a need-based scholarship program for people to participate in lifeguard certification courses. We rely on outside support in the form of donations, grants, and volunteers.

We invite you to join us in our mission to prevent death by drowning worldwide.

Certification courses available in select areas worldwide. We look forward to serving you!

The World Academy of Safety & Health (WASH) Lifeguard Certification Course was developed to comply with the standards outlined in section 6 of the Model Aquatic Health Code (MAHC)

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World Academy of Safety & Health

Purpose of Certification and Training Course

The purpose of the World Academy of Safety & Health (WASH) Surf Rescue Lifeguard Curriculum and Certification program is to provide the participant(s) with the confidence, content knowledge, and physical skills to recognize, respond, and recover in the event of an emergency in or around tidal open water and/or surf zones.

This program offers the flexibility to be able to adapt the physical skills and/or the type of emergency response and care to the specific and/or special circumstances at a tidal open water facility and/or other tidal open water environment.

This Surf Rescue Lifeguard course is an add-on course and all enrolled participants must hold current WASH pool Lifeguard certification.

This surf rescue lifeguard course is ***not*** designed to:

- train lifeguards to supervise other lifeguards;
- train lifeguards to work at a waterpark facility;

In order to:

- provide lifeguard supervision, successful completion of a management or supervisory course is necessary;
- earn certification and the ability to work at a waterpark facility, successful completion of the WASH Waterpark Lifeguard add-on course is necessary once the WASH pool lifeguard course is successfully completed;

The validity and ability to be employed as a lifeguard acting under any of the WASH add-on certificates is contingent upon any and all local, state, health department, and/or any other government or municipal guidelines regulating the recognition of these WASH certificates.

All course participants have electronic access (using the student login on lifeguardcertifications.com) to the course manuals, course slide presentations, and course skills video clips beginning with class registration and until the expiration date on the WASH certificate for the specific course in which the participant is enrolled.

Certification Policies & Procedures

Provider-Level Course Prerequisites

Prior to the start of the course participants:

- Must be, at minimum, eighteen (18) years of age by the final meeting date of the course to be eligible to enroll.
- Must successfully demonstrate the course's pre-requisite physical skills:
  - Continuously swim, using only the front crawl, 500 yards in open water in 10 minutes or less.
  - Run one (1) mile in 7 minutes, 30 seconds or less.
  - Tread water for one (1) minute while holding a ten (10) pound dive brick with both hands.
  - Swim 25 yards using only freestyle stroke in 20 seconds or less.
  - Execute a shallow head-first dive, freestyle sprint 25 yards, recover ten (10) pound dive brick from pool gutter (or pool edge), return to the starting point 25 yards away and exit the pool with the dive brick.
  - Hold current WASH Pool Lifeguard certificate (hence, already successfully completed the following):
    - Swim 300 yards using only front crawl or breaststroke without resting. This is an untimed event.
    - Tread water using only one's legs for two (2) minutes.
    - Swim twenty-five (25) yards, dive to a depth between six (6) feet and twelve (12) feet to retrieve a ten (10) pound weight, return to the surface, swim twenty-five (25) yards back to the starting point while keeping the ten (10) pound weight above the water's surface. The participant must exit the pool without use of stairs or steps with the 10-pound weight in hand. Each participant will have a maximum of 1 minute and 40 seconds to complete this prerequisite skill.

Requirements for Successful Completion of Provider-Level Course

In order to earn a World Academy of Safety & Health (WASH) Surf Rescue certificate, participants:

- Must be present for all class meetings. This includes but may not be limited to classroom sessions, pool sessions, another in-person sessions.
- Must meet the course objective for each lesson by successfully demonstrating each required physical skill.
- Must earn a minimum score of eighty (80) percent on the final proctored written exam.

Certification Period for Provider-Level Course

Each World Academy of Safety & Health (WASH) Surf Rescue certificate will have a validity period of one (1) year from the date of completion. This date as well as the certificate expiration date will be shown on the certificate itself.

Each American Safety & Health Institute (ASHI), an HSI company, certificate earned during a World Academy of Safety & Health (WASH) course will have a validity period of one (1) year from the date of completion. The Basic First Aid certificate will have a validity period of two (2) years from the date of completion. These dates as well as the certificate expiration date will be shown on the certificate itself.

World Academy of Safety & Health (WASH) reserves the right to suspend, revoke, or otherwise temporarily and/or permanently terminate the validity of any WASH certificate at any time and for any reason. This is at the sole discretion of World Academy of Safety & Health (WASH).

Certification Renewal Requirements for Surf Rescue Course

There are three (3) options available to World Academy of Safety & Health (WASH) certified surf rescue lifeguards once their certificate expires.

- If the certificate is no more than 30 days expired, the person may choose to enroll and complete an abbreviated recertification World Academy of Safety & Health (WASH) surf rescue certification course to earn back their surf rescue certificate. This surf rescue recertification course requires successful completion of the following components for a participant to earn back their surf rescue certificate: pre-requisite physical skills as outlined in Surf Rescue Participant Manual, Policies & Procedures, Section I Course Prerequisites; all required physical skills included in the course curriculum; and final exam.

- If the certificate is no more than 30 days expired, the person may choose to CHALLENGE the course. By successfully demonstrating the physical skills and passing the final written exam, the participant can renew his/her World Academy of Safety & Health (WASH) surf rescue certification.

- If the certificate is 31 days or more expired, the person must enroll and successfully complete a full World Academy of Safety & Health (WASH) surf rescue certification course to earn back their surf rescue certificate.

Course Design

Course Overview:

The WASH Surf Rescue training course is intended for individuals who will seek employment as an open tidal water lifeguard or other tidal waterfront environment. There are several course pre-requisites that can be found in Section I of Policies & Procedures.

The goal of this course is to develop and equip students with the knowledge, skills, and confidence to respond during an in-water or dryland emergency while working as an open tidal water lifeguard. WASH encourages instructional design and skill application that provides flexibility in terms of the best approach and response to an emergency based upon each individual facility's circumstances and constraints. WASH believes this approach allows for more real-world scenarios to be addressed and the most appropriate emergency response taught and practiced.

Program & Curriculum Structure:

Any person wishing to earn the WASH Surf Rescue certificate must hold a current, valid, and verifiable WASH Pool Lifeguard certificate or a pool lifeguard certificate issued by another nationally and/or internationally recognized certifying body.

The WASH certificate that is issued will reflect only the WASH course that has been successfully completed. Hence, any person, for example, successfully completing the WASH Pool Lifeguard course as well as the Surf Rescue Lifeguard course will be issued two distinct certificates – one listing 'Pool Lifeguard' as the certificated area and one listing 'Surf Rescue Lifeguard' as the certificated area.

Delivery Methods:

In-Person, instructor-led training classes will be offered. Content will be provided via instructor lecture, instructor-facilitated discussion, small group work, video segments and slide presentations. The recommended student to instructor ratio is 10:1.

Equipment:

Minimum Equipment	Recommended Equipment (in addition to minimum)
Rescue tube or rescue can – one for each on duty lifeguard	Extra rescue tubes and/or cans
Fully equipped backboard	Ring buoy(s)
CPR pocket mask – one for each on duty lifeguard	Rescue board(s)
Bag Valve Mask (BVM)	Binoculars
Swim fins	First aid hip pack – one for each on duty lifeguard
Mask and snorkel	Two-way handheld radios
First Aid kit with PPE	Portable Emergency Oxygen
Automated External Defibrillator (AED)	Landmark buoy for submerged victims SAR
Communication devices – whistles, flags, megaphones, air horns, etc	
Identifiable uniform, sunscreen, & other sun safety gear	
Documentation procedures and reports	

Course Outline

Chapter	Topic(s)	Explain the following Content Knowledge	Demonstrate the following Physical Skills
1	Introduction to Surf Lifeguarding	• Benefit of lifeguard services • Costs of drowning incidents	Not Applicable
2	Tidal Water	• Types of waves, formation & effects • Types of currents, tides & bottom contours • Types of hazards	Not Applicable
3	Emergency Action Plan (EAP)	• Purpose of an EAP	Not Applicable
4	Preventative Lifeguarding	• Proper & effective scanning & surveillance techniques • How to recognize victim(s) • Features & characteristics that could be hazard(s) • Advantages of	Not Applicable
5	Surf Rescues	• Advantages & disadvantages or rescue tube & rescue can • Advantages & disadvantages of use of rescue board • Modes of water entry • Approaches to victim • Lifeguard's position of protection • Assessment for spinal trauma • Victim tow techniques • Use of swim fins for rescues • Lifeguard defense & escapes • Deciding between extracting & ventilating • Victim extraction from water	• Surf Dash & Porpoising • Front Crawl & Breaststroke • Use of swim fins & mask/snorkel • Approaches to victim • Lifeguard defenses & escapes • Entry & rescue using rescue board • Effective in-water ventilations • Effective victim extraction
6	Spinal Trauma	• Various spinal injury management techniques • Use of c-collar • Need for local medical direction as it relates to spinal trauma	• Proper spinal injury management techniques • Proper spinal injury victim extraction • Proper spinal injury victim immobilization on backboard
7	Communication & Protocols	• Purpose and functions of communication system • Advantages & disadvantages of all types of communication systems • Organizational signals & procedures • Signals to/from onshore & offshore lifeguards	• Various methods of communication – semaphore, whistle signals, hand signals, radio "calls"
8	Search & Rescue	• Deep and shallow water searches in open tidal water	• Shallow and Deep Water Line Searches

Evaluation of Participants

Formal Evaluation of Required Physical Skills:

Each participant will be evaluated on a pass-fail basis for all required physical skills. Each participant must successfully demonstrate each required physical skill.

Formal Evaluation of Content Knowledge:

The written final exam is a required element to earn certification. This exam must be proctored by an Authorized World Academy of Safety & Health (WASH) instructor and is untimed – instructor(s) must provide each participant adequate time to complete the exam.

A participant must score an eighty (80) percent or better on the final written exam. If a participant is unable to meet this minimum score, he or she cannot be issued a certificate and must retake the course.

Certification:

When a World Academy of Safety & Health (WASH) certificate is issued it signifies that the participant, on the date of completion as listed on the certificate, met all course objectives by successfully demonstrating for the WASH Instructor listed on the certificate:

- an understanding of content knowledge as based upon his or her score on the final written exam
- each required physical skill as listed on the Skills Assessment Form (SAF)

A valid WASH certification card does not guarantee the cardholder's current or future performance. It is the employer's responsibility to verify the cardholder's ability to successfully perform all job duties and responsibilities.

Course Pre-Requisites

During the first class session of any World Academy of Safety & Health (WASH) surf certification course, each participant must successfully complete the course prerequisite physical skills.

If a participant fails to successfully complete and one of the pre-requisite physical skills, he/she will not be permitted to continue in the course.

- Verify all participants will be, at minimum, eighteen (18) years of age by the final class meeting.
- Verify training in the WASH pool lifeguard course or equivalent course from another nationally and/or internationally recognized certifying body.
- Continuously swim, using only the front crawl, for 500 yards in 10 minutes or less.
- Tread water for one (1) minute while holding a ten (10) pound dive brick with both hands.
- Swim 25 yards using only freestyle stroke in 20 seconds or less.
- Execute a shallow head-first dive, freestyle sprint 25 yards, recover ten (10) pound dive brick from pool gutter (or pool edge), return to the starting point 25 yards away and exit the pool with the dive brick.
- Run one (1) mile in 7 minutes, 30 seconds or less.

Introduction to Surf Lifeguarding – Chapter 1

Lifeguards at beaches, oceans, and other tidal waters are vital to drowning prevention. According to the United States Lifesaving Association (USLA), the chances of a fatal drowning at a beach guarded by a USLA agency lifeguard is 1 in 18 million[26].

> *When making decisions about using lifeguards and other means of increasing public safety in aquatic settings, policy makers should use available local evidence. This evidence includes:*
>
> - *the effects that lifeguards have had on patrons' safety and attitudes;*
> - *the number of people using the facility or beach area during the past years;*
> - *the incidence of water-related injuries and drownings at the facility or beach area during those time periods;*
> - *data on the number of water-related injuries and drownings at pools and beaches in the local area or state with and without lifeguards, for comparison; and*
> - *the level of lifeguards provided (e.g., number of lifeguards per number of persons using the facility).*
>
> *In addition to these factors, policy makers should consider public attitudes about lifeguards and legal issues related to using lifeguards[4].*

The cost of lifeguards including recruitment and hiring, training, salaries, and equipment is often the biggest hurdle for organizations and municipalities/governments in approving lifeguard services. It is important for decision-makers to consider the possible risks and costs associated with not providing lifeguards. For instance, there are costs associated with insurance payouts; long-term medical care for non-fatal drowning victims; and mental health costs for families of drowning victims. According to the National Safety Council in 1997, the estimated cost was $790,000 USD for each unintentional injury death[15]. This equates to more than $1.4 million in 2022.

According to the World Health Organization (WHO), there were approximately 236,000 fatal drownings worldwide in 2019 and, overall, drowning is the 3rd leading cause of unintentional death worldwide. Examining data only in the United States, the costs related to drowning incidents along the coastline are in excess of $273 million on an annual basis[28].

Data provided by the Centers for Disease Control (CDC) indicates that, "nonfatal drowning can result in long-term health problems and costly hospital stays"[5] as evidenced by:

- *For every child who dies from drowning, another eight receive emergency department care for non-fatal drowning.*[7]
- *More than* ***40%*** *of drownings treated in emergency departments require hospitalization or transfer for further care (compared with 8% for all unintentional injuries).*[7]

Figure C1.1

Tidal Water – Chapter 2

Tidal Cycles

The Earth is not a perfect circle or sphere. For this reason, not every geographic area on our planet experiences the same tidal cycles. If the Earth was a perfect circle then all regions of the world would experience two equally proportioned high and low tides in each 24-hour period of time.

As the Earth rotates, large landmasses (i.e. continents) prevent the tidal bulges from moving west. Therefore, this water is unable to freely and, hence, establish unique tidal patterns in each ocean and/or in different regions of the same ocean[21].

Semi-Diurnal Tides – The most common tidal pattern. High tide and low tide occur twice during a 24-hour period of time and the variation in height of each successive high and low tide is minimal. This is typically found on the east coast if the United States.

Diurnal Tides – High and low tide each occur once during a 24-hour period of time. This is typically found in the Gulf of Mexico.

Mixed Tides –. This is typically found on the west coast of the United States as well as many Pacific islands.

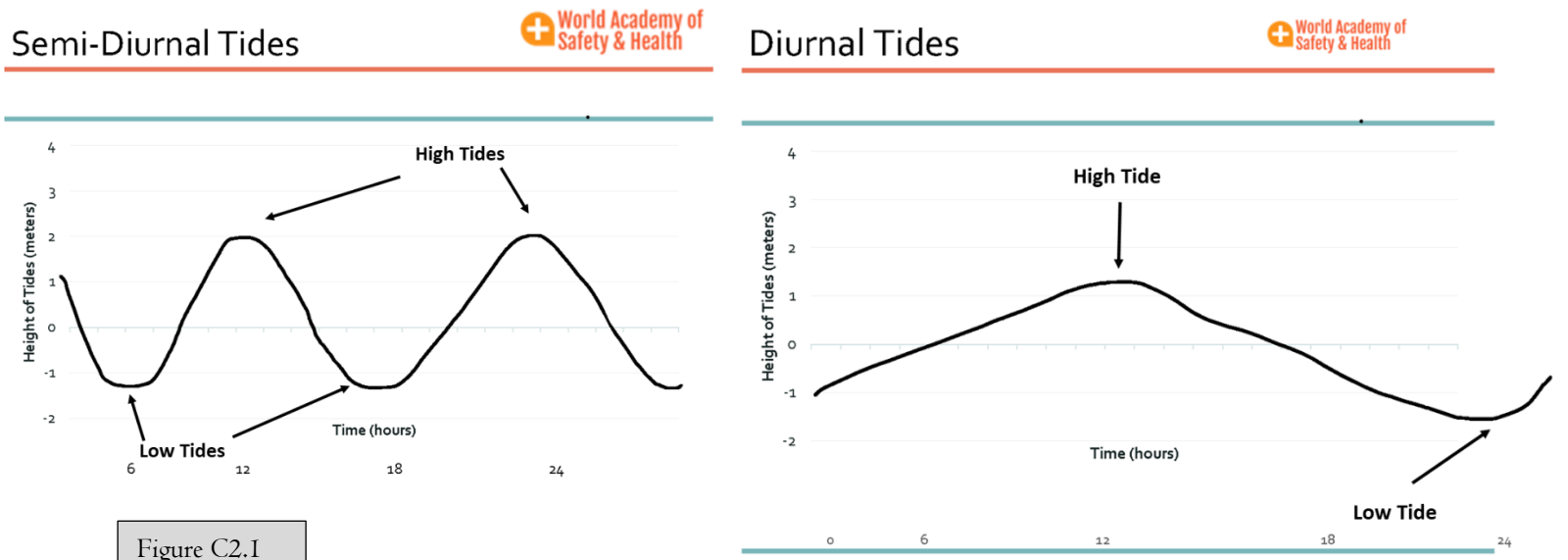


Figure C2.1

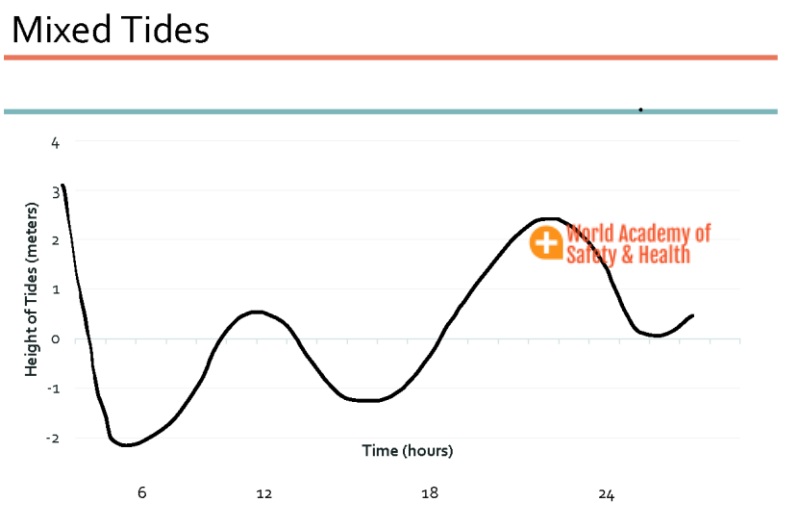


Figure C2.3

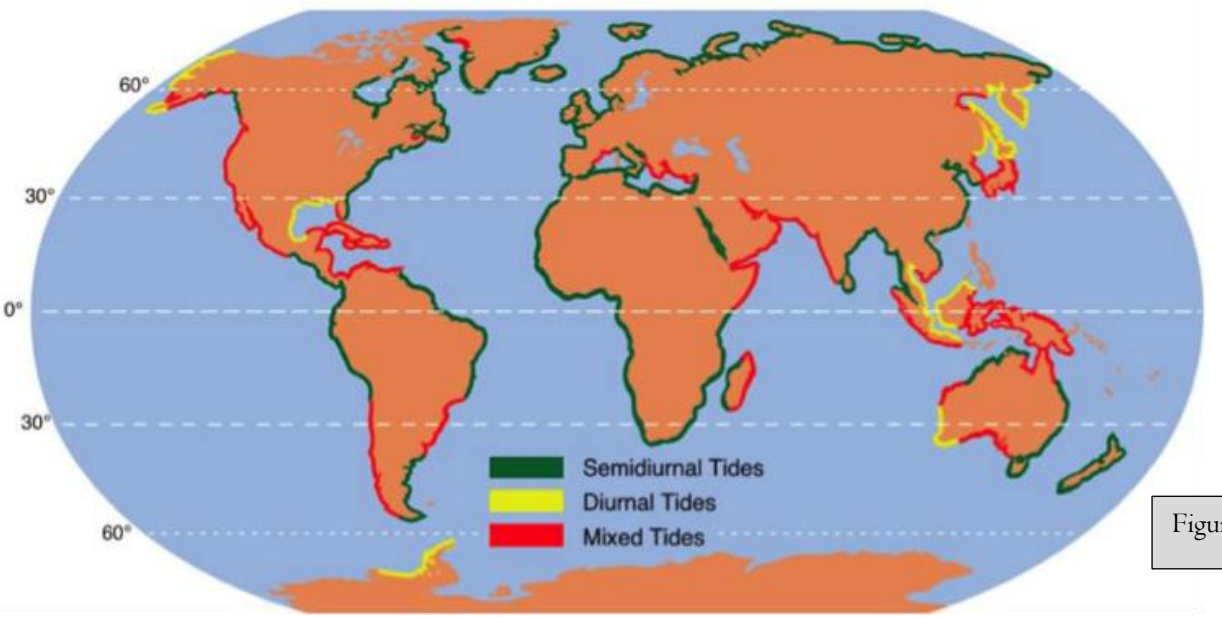


Figure C2.4

Waves

Ocean waves all share the same characteristic component parts. These include:

- **Crest** – the highest point of a wave
- **Trough** – the lowest point of a wave
- **Height** – the distance between the crest and the trough
- **Amplitude** – the distance between the crest or the trough and the resting position of the water's surface
- **Period** – the time between two consecutive wave crests
- **Frequency** – the number of waves that pass by a fixed position in a given amount of time

Wind waves are caused by a friction between the local winds and the surface of the water.

Swell waves or ground swell are generated by the wind associated with distant weather systems. Local winds have little to no impact on swell waves.

Ocean Currents

According to the National Oceanic Atmospheric Administration (NOAA), an "ocean current describes the movement of water from one location to another. Currents are generally measured in meters per second or in knots (1 knot = 1.85 kilometers per hour or 1.15 miles per hour)[18].

Rip Currents

A rip current is when a volume of water flows away from the beach or shoreline in a narrow channel. These currents, typically, occur at surf beaches where there is a gap or split in a sandbar and/or near other structures such as a jetty, dock, pier or similar object. They are surface currents and can only pull a swimmer away from the shoreline – they do not pull a swimmer under the water.

> *Rip currents can form in a gap between sandbars, piers, or parts of a reef. Such underwater obstacles block waves from washing directly back to sea. The water from these waves, called feeder waves, runs along the shore until it finds an opening around the obstacle.*

> *The stream of water, now a rip current, rushes to the opening, just like water down a drain. A rip current flows more quickly than the water on either side of it, and may stir up sediment from the beach. This sometimes makes rip currents easy to spot as dark or muddy lines running from the beach out toward the ocean. Rip currents are also usually more calm-looking than the surrounding water. Once past the obstacle (between the sandbars or piers), a rip current loses pressure and stops flowing*[15].

Often times, rip currents and undertows are confused with one another. Unlike rip currents, an undertow is an ocean current that flows along the bottom of the water column. An undertow can also pull a swimmer beneath the water's surface[15].

Rip currents can be as narrow as 10 feet in width but can also be as wide as 100-200 feet in width. The water is usually moving 1-2 feet per second (approximately 1.09-2.19 kilometers per hour or .59-1.18 knots) but, can be as fast as 8 feet per second (approximately 8.8 kilometers per hour or 4.74 knots)[18].

Why are Rip Currents Dangerous

- Rescues performed at surf beaches, over 80% of the time, are the result of rip currents[18].
- Pull people away from shore no matter the person's swimming ability.
- Can appear, disappear and reappear at a moment's notice and can also increase in strength at any moment.

How to Recognize a Rip Current

- Cloudy, murky, and/or discolored channel of water
- Flattened area of water within the breaking waves
- Outward flow of water while the flow of water on either side of the narrow channel in question is flowing inward. This is most often identified by a line of debris, seaweed, foam or other objects moving away from the shoreline in the channel.
- The outward flow of water is choppier than the surrounding water.

Escaping the Pull of a Rip Current

- Relax and float until the current ends – the longer rip currents extend only a few hundred feet from the surf zone and weaken as they move farther from the shoreline.
- Never attempt to swim against the outgoing current – you will likely tire quickly.
- Once 'released' from the pull of a rip current, swim parallel to the shore until well clear of the current. Only then should you begin swimming toward the shoreline.
- Sometimes the current weakens enough and/or circles back to the shoreline while you are floating to allow you to swim back to the beach.

Figure C2.5

Figure C2.6

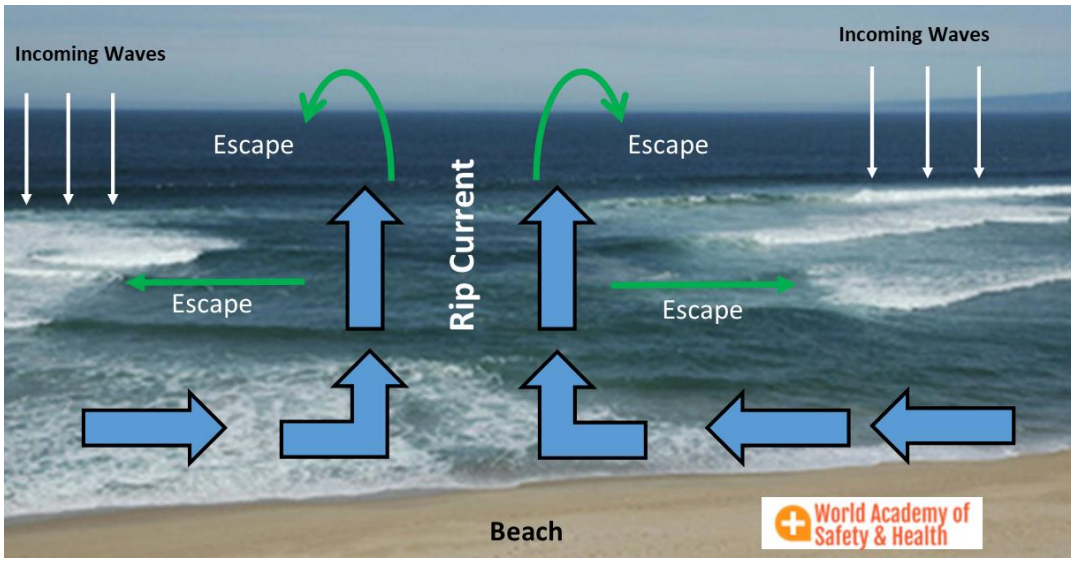


Figure C2.7

Longshore Current

When a wave reaches the beach, there is a release of a tremendous amount of energy that, in turn, creates a current that flows alongside or parallel to the coast within the area of breaking waves. This current moving along the shoreline is called a longshore current.

The velocity of a longshore current is influenced by several factors all having to do with the original wave reaching the coast (i.e. the velocity of incoming wave, angle of the incoming wave, slope of the ocean floor leading up to the beach). For example, the steeper the angle of the breaking wave or the steeper the ocean floor then the resulting longshore current will travel with greater velocity.

A wave breaks and runs up the beach and then begins to recede down the beach and back into the water. Longshore currents move onto the beach and then away from the beach as a "sheet" of water taking with it sand and other debris from the beach and can lead to beach erosion. This movement of sand, debris, and other sediment is referred to as longshore drift.

Emergency Action Plan (EAP) – Chapter 3

An Emergency Action Plan (EAP) is an established set of protocols and procedures designed to be activated and followed during an emergency.

EAP's are written procedures that must be presented to every staff member and practiced on a regular basis. The more familiar the lifeguard staff is with the EAP, the more efficient and effective the response will be during an actual emergency.

The EAP must be published, easily accessible and posted in visible locations for lifeguards to see. A well-designed EAP states, specifically, what each staff member should do, when he/she should do it, and exactly how to do it by outlining exact procedures.

Activation of the EAP must occur every time there is an emergency and/or a lifeguard or other staff member recognizes an emergency and/or victim. Typically, in an aquatic environment, activation of the EAP occurs with the whistle signal being used to signify a water or land-based emergency.

EAP's are designed specifically for each facility and that facility's unique layout, staffing, equipment, level of training and more. Rarely are two EAP's exactly the same though many will have overlapping protocols.

Review and practice of the EAP must be a part of a facility's routine In-Service Training or Continuing Education for all staff with a responsibility during an emergency.

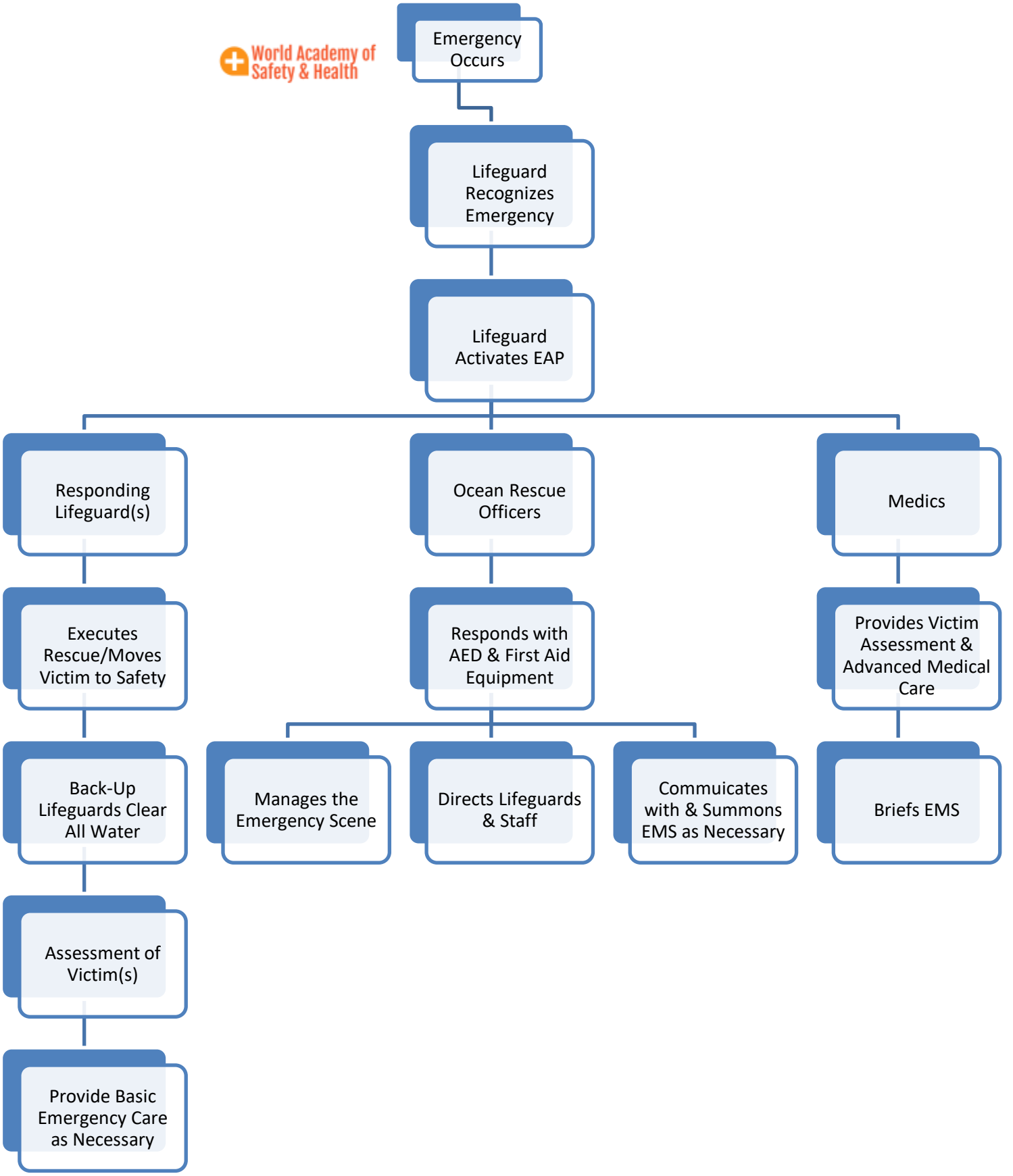
It is advisable for training to be coordinated together with local EMS to ensure a well thought out, medically sound, and seamless response during an emergency.

This type of training should be conducted, at minimum, once per month for all staff members.

Effective communication and coordination is vital to the overall effectiveness and quality of the EAP and, in turn, the outcome for the victim(s). In many jurisdictions, the EAP is required by the health department and when the facility is inspected, the EAP will be examined.

Additionally, many insurance companies will ask for this document to ensure that the facility for whom they are providing insurance is taking proper risk management steps.

Surf Beach Sample Emergency Action Plan (EAP)



Preventative Lifeguarding – Chapter 4

Each lifeguard organization must decide between preventative lifeguarding and reactive lifeguarding.

Preventative lifeguarding is a series of techniques used to stop accidents, rescues, and other emergency incidents from occurring. It requires the lifeguard(s) to engage in continual swimmer surveillance during the entirety of his/her shift and stop behaviors that could lead to an emergency incident.

Reactive lifeguarding is more similar to most other first responders and emergency services departments in that the lifeguards do not keep a constant, watchful eye on the beach or the swimmers. Instead, the lifeguard(s) are not assigned to a specific swimming area or beach but, rather, are on roving patrols across the entire shoreline. In this case, the lifeguards respond to an emergency call for help as opposed to working to prevent it.

Surveillance

Lifeguards in open water environments can utilize a variety of methods to engage in patron surveillance. It also occurs from many vantage points depending on the environmental conditions, layout of the swimming area, training level of the lifeguards, and available equipment.

The most traditional method of watching swimmers is from an elevated lifeguard station or chair. In some locations, there is one lifeguard assigned to each chair while in other locations, there are two lifeguards assigned to each chair.

Other widely used methods of patron surveillance include: use of an elevated platform in the water located either amongst the swimmers or behind the swimmers; drone coverage; rescue board deployment; patrol vessels.

Scanning & Victim Recognition

Not all drowning victims exhibit the same behaviors. Generally speaking, a victim:

- is unable to make any forward progress in the water – all movements are being used in an attempt to get air.
- has both arms extended to the side and is simultaneously slapping the water with both hands or is pushing down on the water trying to support him or herself and stay able the water.
- is vertical in the water with an ineffective or no kick or,
- is horizontal in the water with the face down in the water.

Drowning victims may be vertical in the water with the head tilted back with the face looking toward the sky or the horizontal victim may have his or her head face down in the water. In either case, the victim is, typically, unable to shout or wave for help. Without assistance, the victim will eventually submerge and might continue to struggle in an effort to resurface. The struggle will cease as the victim becomes passive and unconscious below the water's surface. It is possible that some victims never exhibit a struggle and, instead, slip under the water and begin the drowning process – this is, usually, more difficult to identify than the victim on the water's surface.

The lifeguard is watching for:

- **Head low in the water** – The victim's face and mouth can submerge and resurface repeatedly as he or she struggles to get air and each time he or she gasps for air, water can be inhaled. A strong or healthy swimmer is easily able to keep his or her head high in the water and above the water's surface. A person unable to do this may require assistance.
- **Low Stroke** – A strong or healthy swimmer is easily able to bring his or her elbows out of the water with each swim stroke. A swimmer dragging his or her elbows in the water is a sign that he or she may require assistance.
- **Little to no kick** – A strong or healthy swimmer maintains a strong kick of his or her legs. No kick and/or no breaking of the water's surface with a kick is a sign that he or she may require assistance. Often times, the victim is more vertical than horizontal in the water when there is an ineffective kick.

Typically, a swimmer displays a low head in the water, a low stroke, and little to no kick simultaneously.

Additional signs of distress in the water include:

- **Hair in Eyes** – for most swimmers, brushing his or her wet hair off or away from the face and eyes is instinctive behavior. When a swimmer makes no attempt to do this, it should be seen as a sign of distress.
- **Grasping the Water with Both Arms** – when a swimmer struggles to keep his or her head above water and begins to panic, he or she begins to rapidly slap the surface of the water of slash both arms through the water with both hands at the same time. When a lifeguard observes this type of behavior, the lifeguard must immediately respond.
- **'Climbing the Ladder'** – when a swimmer struggles to keep his or her head above water and begins to panic, he or she begins to engage in what appears to be an upward crawl in the water. This is an ineffective method to keep one's head above water and, when observed, requires the immediate response from lifeguard(s).
- **'Bicycle Spokes'** – a distressed swimmer, as recognized by fellow bathers, with the distressed swimmer in the middle and fellow bathers moving toward him or her from all sides to provide assistance looks like a bicycle wheel with the good Samaritans being the spokes of the wheel and the distressed swimmer being at the center of the wheel.
- **Waving of the Hands** – a swimmer who may be tired yet is not yet in a panic or in dire need of assistance may wave his or her hands for assistance from lifeguard(s).
- **Unusual and/or Erratic Behavior or Activity** – any behaviors and/or activities exhibited by swimmer(s) that seem unusual or erratic should be given additional scrutiny to determine if a lifeguard response is required.

It is not always a linear progression from distressed swimmer to drowning.

There are situations in which a victim never displays the signs or symptoms of distress. Instead, they could already be submerged in the water and, therefore, the lifeguard never sees the signs of distress.

Hazards

Each location presents unique features that are and/or could easily become hazards to swimmers and other beachgoers. These hazards can be naturally occuring and a result of the environment or they can be man-made hazards. Some examples include:

Rocks and Jetties
Piers
Storm Drains
Reefs
Sandbars
Poor Swimmer

Docks
Marine Life
Drop Offs & Gullies
Rip Currents
Temperature lunctuations
Surf/Wave Action

Severe Water Conditions
Backwash
Excessive Splashing
Wave Knocks Person Over
Unattended Children
Edges of Swim Crowd

No matter the hazard(s) present, it is important for the lifeguard to recognize the features; understand how the feature(s) is or can be a danger; maintain vigilance in patron surveillance and preventative actions to keep swimmers and beachgoers away from the hazard(s); and understand how to most effectively execute a rescue on and/or near the hazard(s) in question.

The swimming area at a waterfront facility should be marked with a distinct border provided around this swimming area. This will:

- Keep possible dangers to swimmers out of the area – i.e. boats, kayaks, PWC's, etc.
- Keep the swimmers in the area so that lifeguards can more easily scan and keep watch over the patrons as well as more easily communicate with the swimmers.
- Allow for strategic positioning of lifeguards to ensure effective patron surveillance can be maintained.
- Allow for management to monitor the swimming area for underwater hazards.

Using a marked buoy line to set a distinct swimming area. This helps lifeguards with swimmer surveillance and also keeps the are free of vessel traffic—motorized and non motorized.

Underwater Hazards

The swimming area should be inspected on, at least, a daily basis and prior to opening to swimmers for underwater hazards. These hazards should immediately be removed. If it is not possible to immediately remove the hazard, the lifeguard should communicate with management so that the area can be closed or the object marked above the water line so that lifeguards can keep patrons away from that area until the hazard is removed. Whether to close the area or mark the hazard is a decision based on the unique circumstance at the facility and must be made with patron safety as the number one priority. If patrons cannot safely use any portion of the swimming area without the hazard being removed then the area must close until the object is taken out of the water.

Docks and Piers

Floating and stationary piers and docks are common structures found at beachfront facilities. Often times, these structures are used for other recreational activities other than swimming. These include fishing, canoe or paddleboat rentals, or even boat traffic approaching the area. It is crucial that there is a clearly marked safety area surrounding these structures to keep swimmers away.

If the pier or dock includes any features such as a slide or diving board then boat traffic must be kept away and the rental area for PWC's, kayaks, wind or kitesurfers must be on the other side of the structure. In cases like these, there should be a clearly marked swimming area surrounding the landing zone of the slide or diving board.

Whether swimming is permitted in the area or it is strictly reserved for boats, kayaks, and other activities the lifeguard(s) should be assigned to the area using the same general principles of assignment used when positioning lifeguard(s) in the general swimming area.

Environmental Conditions

Changing environmental conditions throughout the day can have a dramatic impact on the water conditions at any waterfront or open water facility. These environmental conditions and their subsequent impact on water conditions should be monitored closely throughout that day. If there are any changes in the water conditions that make it unsafe for swimming, the area must be closed until conditions improve enough to take swimming safe.

Wind can lead to currents where they did not previously exist or changes to existing currents. Rain can also have a significant impact on water conditions. For example, heavy rain can:

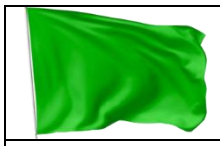
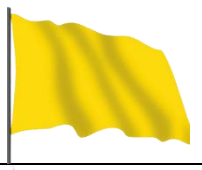
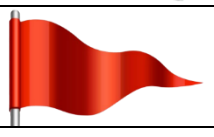
- Negatively impact water clarity
- Decrease the water temperature
- Increase water levels which, in turn, can impact water currents
- Change the contour of the bottom which may lead to changes in water depth and/or changes to water currents

Beach Warning Flag System

Beach warning flag systems are designed to help the public in assessing risk prior to entering the water. With or without warning systems in place, swimmers and beachgoers should always be encouraged to check with the lifeguard prior to entering the water. Even the most experienced swimmers and/or those who feel they are familiar with the ocean should check-in with the lifeguard about current conditions. Further, every piece of beach is different and, therefore, presents unique hazards that may be specific to that beach and/or region. The local lifeguard service will have the most reliable, most up-to-date, and most detailed information about the ocean water and conditions.

Like other communication systems, it is important that the beach warning flag system is uniform and standardized. Standardization of the flag system with the various colored flags having the same meaning from one location to another serves to help limit public confusion. Thus, increasing overall public beach safety.

Use of beach warning flag systems begain in the state of Florida in 2005. At that time, it was used as a simple method of warning the public about the danger or liklihood of rip currents. Rip current risk is determined by a combination of the speed and direction of the wind; the tidal ranges; and the localized surf conditions. For lifeguards, the most important tool at their disposal are their eyes. Looking the water will quickly allow an assessment of it's current behavior.

	Safe to Swim
	Caution; Moderate Risks; Medium Hazard of Strong Currents and/or Heavy Surf
	Extreme Caution; High Risks; High Hazard of Strong Currents and/or Heavy Surf
	Dangerous Marine Life Present
	Extreme Danger and Swimming Area CLOSED
	Marks the Swimming Area with Lifeguards
	Watercrft Area
	Dirty Water

The standard flag colors and meanings for beachgoers. This system should be used on all beaches to increase overall public safety.
FIGURE C.4.2

A "Swimming Area" flag flying on a local beach. They should be attached to a 5-8 pole (PVC or wood) so that they are more easily seen from a distance on the beach. They should be placed deep enough each morning that they do not blow over and should be high enough up the beach so that the incoming tide does not wash away the sand in which they are posted.
FIGURE C.4.3

Surf Rescues – Chapter 5

Immediately after recognizing a water emergency, the lifeguard must activate the facility's Emergency Action Plan (EAP) by whatever means is outlined in the plan – this is typically by using a specific whistle signal reserved for this purpose.

The lifeguard(s) then immediately moves into the respond phase and quickly assesses and decides whether to execute an assist or to signal a full rescue and enter the water to perform the water rescue. In either case, the lifeguard makes contact with the victim, executes the assist or rescue and safely begins to move the victim back to the beach for extraction from the water. The lifeguard should then assess the victim and provide any additional emergency care necessary.

A rescue or incident report should be completed prior to releasing the victim.

Assists

Assists are used to help a tired swimmer without entering the water and/or signaling a full water rescue. There are two types of assists:

Tossing Assist

Lifeguard tosses a ring buoy to the tired swimmer. This is usually utilized from an elevated position such as a dock, pier, platform, vessel. Steps to follow when using a tossing assist:

- Place the rope attached to the ring buoy on a flat surface and place foot on this rope. This ensures that the lifeguard has the ability to pull the victim to the platform once they grab the flotation device that is tossed.
- The lifeguard should toss the flotation device over the head of the victim and beyond or behind the victim. This ensures that the flotation device is not thrown short of the victim's reach. Instead, it lands behind the victim allowing the lifeguard to slowly begin pulling the throw line or rope in a controlled manner bringing the flotation device to the victim.
- Once the victim has a firm grip on the flotation device, the lifeguard should slowly pull the throw line without any sudden jerks of the rope to the edge of the platform.

Reaching Assist

Lifeguard extends a reaching pole, rescue tube or can, or his or her hand/arm to the tired swimmer. This is usually utilized from an elevated position such as a pier, dock, platform, or vessel. Steps to follow when using a reaching assist:

- Lifeguard should stand at the edge of the platform ensuring he or she has a strong base with feet shoulder width apart. The lifeguard should shift his or her weight back away from the edge of the platform to avoid the victim pulling on the reaching pole causing the lifeguard to be pulled into the water.
- Once the victim has a firm grip on the reaching pole, the lifeguard should begin to slowly and in a controlled manner use the pole to pull the victim to the side of the platform.

Water Entries

Surf Dash

This entry should be used when the lifeguard is entering the water from the beach. The lifeguard must always enter the water "up current'. In other words, lifeguard(s) should use the current to his/her advantage when making an entry and approach to a victim so that the current pushes the rescuing lifeguard(s) laterally (parallel to shoreline) toward the victim during the swim from the beach.

The lifeguard should be wearing the rescue can, keeping it in one hand along with the towline and begin to run into the water. Effort should be made to bend one's knees and lift one's feet and legs out of the water to clear each incoming wave – this is often referred to as "high knees". This technique allows the lifeguard to move through the surf zone as quickly as possible and mitigate the effect of the breaking waves and whitewater.

Once the lifeguard reaches a depth in which it becomes difficult or impossible to lift his/her feet and legs out of the water to clear the waves, then he/she should begin to dive head-first over the incoming waves. This usually occurs when the lifeguard is about knee to thigh deep.

To effectively dive over the waves, the lifeguard should:

- Keep arms and hands extended over his/her head to protect one's head, neck and face from striking the bottom (***FIGURE C.5.1***).
- Once over the wave and under the water, grab the sandy bottom with both hands, grabbing a fistful of sand in each hand.
- Move both arms backwards through the water column, tossing the handfuls of sand behind you while, simultaneously, re-establishing both feet on the bottom to be able to push off the bottom for the next head-first dive over the next incoming wave.
- Continue this movement until reaching a depth in which it becomes more effective and efficient to swim to your victim (***FIGURE C.5.2***).
- Once swimming, the lifeguard should dive head-first (***FIGURE C.5.3***) under each incoming wave and come up on the other side to immediately resume his/her swim stroke (***FIGURE C.5.4***).

FIGURE C.5.1

FIGURE C.5.2

FIGURE C.5.3

FIGURE C.5.4

Lifeguard is seen jumping from an elevated position keeping his/her feet down and the rescue is being worn and held in one hand..
FIGURE C.5.5

Elevated Feet-First Dive

The entry should be used when the lifeguard must enter the water from an elevated position (***FIGURE C.5.5***). This entry must only be used when the lifeguard is certain that he/she will be entering deep water and there are no underwater hazards that he/she might strike upon entry.

Elevated Head-First Surface Dive

This entry should be used when entering the water from a platform and is most commonly used when entering from a vessel.

The lifeguard should be wearing the rescue tube and holding with one hand as he/she stands on the edge of the platform. The lifeguard should use one hand to push him/herself away from the platform while entering the water head-first.

This entry should only be used in deeper water and when the responding lifeguard is certain of the water's depth and absence of any underwater hazards.

Approaching the Victim

The lifeguard should always allow the rescue tube or rescue can to trail behind him/her as he/she approaches to the victim(s). This will allow the lifeguard to choose between the front crawl arm stroke and reach the victim with maximum swim speed.

The lifeguard should maintain visual contact with the victim during the entirety of his/her swim approach. Hence, the lifeguard must be swimming with his/her head up and out of the water (***FIGURE C.5.6***). When lifeguard is within arm's length of the victim, he/she should stop approaching, reach behind him/herself and grab hold of the rescue can towline; pull the rescue can to him/herself; and hand the rescue can to the victim – always keeping between him/herself and the victim.

Lifeguard uses font crawl stoke to approach a victim and keeps her head out of the water in order to maintain constant visual contact with the victim.
FIGURE C.5.6

Water Rescues

Water rescues can come in many forms and can occur at any time. Lifeguards must always be prepared and expecting an emergency to occur.

Rescue Tube and Rescue Can

The lifeguard rescue tube should be on the lifeguard's person at all times when on duty and responsible for emergency response. To properly wear a rescue tube or a rescue can, the lifeguard should place one arm and his or her head through the strap so that the strap lays in a diagonal direction across the lifeguard's chest. Rescue tubes are available:

- in a variety of high visibility colors (i.e. red, orange, yellow, bright blue, etc…)
- in a variety of sizes with the most common being 40" and 50"
- in various buoyant materials with the most common being closed cell dense foam

Rescue tubes and rescue cans will:

- provide enough buoyancy for both lifeguard and victim
- help calm a panicked victim once he or she is able to grasp the rescue tube
- provide a barrier between the lifeguard and victim to prevent the lifeguard from being grabbed by a panicked victim

A lifeguard should never enter the water to execute a rescue without properly wearing the rescue tube or rescue can.

Always remember, it is vital for the lifeguard to activate the EAP prior to entering the water to execute a rescue and/or make contact with any victim.

Contact and Control

Generally speaking, when a lifeguard contacts a victim, the rescue tube or rescue can provides a certain level of comfort to a victim and can help to mitigate the behaviors of a panicked victim. It is important for the lifeguard to protect him or herself from a panicked victim – the rescue tube or rescue can should always be kept between the lifeguard and the victim and used as a barrier to help prevent a panicked victim from being able to grab hold of an approaching lifeguard. If a victim is able to reach and grab a lifeguard, the tube should be immediately removed from the lifeguard's head and arm, pushed toward the victim, and the lifeguard should swim away from the panicked victim. Leaving the rescue tube with the panicked victim will keep him or her afloat until the lifeguard can re-approach and contact the victim safely.

Rescue Procedure and Coverage

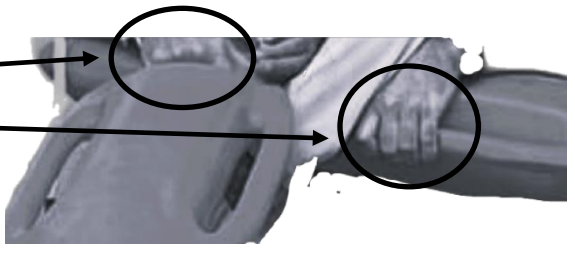
1. Lifeguard recognizes victim(s) and removes excess clothing and puts the rescue tube or rescue can strap over his/her head and one arm.
2. Activate the EAP by using 6 or more short whistle blasts often referred to as "blowing shorts" and the whistle blasts should not stop until the lifeguard enters the water. This should be the universal sound of an active water rescue.
3. Lifeguard enters the water using the "Surf Dash" as previously described and approached the victim while maintaining visual contact with victim.
4. The water entry point is determined by quickly assessing the direction and strength of the prevailing water current/movement.
5. Lifeguards on either adjacent side of the rescue will cover or stand up on the stations/chairs.
6. A covering lifeguard may have to scan the water of the rescuing lifeguard(s).
7. Lifeguard arrives to victim.

Once the lifeguard reaches the victim and passes the rescue tube or rescue can, the lifeguard will have two choices:

1. If victim is conscious and able to maintain a grip on the rescue tube or rescue can, the lifeguard will:
    a. Pass the rescue can or tube to the victim and tell them to hold it tightly with both hands and to help kick if he/she is able to do so.
    b. Roll onto his/her back so that he/she is facing the victim and begin to backstroke to the shoreline.

2. If victim is unconscious; the lifeguard is not able to effectively swim the victim to shore; or the victim is unable to maintain grip on rescue tube or rescue can, the lifeguard will:
    a. If lifeguard is using a rescue can:
        1. Place the rescue can diagonally in front of the victim; lifeguard places his/her arms under victim's arms; lifeguard will place victim between him/herself and the rescue can; the victim's arms will freely rest draped over the rescue can.
        2. Signal for back-up lifeguard(s).
        3. Primary lifeguard will maintain a grip on his/her rescue can with one hand and grab the secondary lifeguard's rescue can handle with the other hand (***FIGURE C.5.7***).
        4. Secondary lifeguard will begin to swim primary lifeguard and victim to the shoreline.
        5. As additional back-up lifeguards arrive to assist, each will hand his/her rescue can to previous responding lifeguard in the "chain" and turn to begin swimming to the shoreline.
        6. All back-up lifeguards should be holding the handle of the can of the lifeguard in front of him/her with one hand and using the other hand to help sidestroke to the shoreline.

Please note that if a lifeguard either does not have long enough arms or does not have the strength to maintain a grip on the secondary lifeguards' rescue can handle, the lifeguarding service leadership should consider tying loops in all rescue can towlines. This will allow lifeguards to slip his/her hand through the loop; drape the loop around his/her wrist; and hold the towline in the palm of his/her hand (***FIGURE C.5.9***).



Primary lifeguard holds rescue with one hand across the front of the victim and grasps the handle of the back-up lifeguard's rescue can during a 'chain' rescue.
FIGURE C.5.7

Victim grasping rescue tube as the Lifeguard uses the backstroke to return the victim to the shoreline.

FIGURE C.5.8

Loop tied in the rescue can towline for a lifeguard during a 'chain' rescue to slip his/her hand and wrist to maintain a connection with his/her back-up lifeguard.
FIGURE C.5.9

b. If lifeguard is using rescue tube:

1. Place the rescue tube straight across the front of the victim; clip the rescue tube closed (*FIGURE C.5.11*) so that it forms a circle around the victim's torso; lifeguard places both arms under the armpits of the victim so that his/her elbows rest in the victim's armpits; lifeguard places both hands on the victim's shoulders.
2. Signal for back-up lifeguard(s).
3. Primary lifeguard will maintain a grasp of the victim in the recue tube and the back-up lifeguard will hand the primary lifeguard the towline loop of his/her rescue tube.
4. Primary lifeguard will slip his/her arm and wrist through the loop and hold the towline in the palm of his/her hand.
5. Secondary lifeguard will begin to swim primary lifeguard and victim to the shoreline.
6. As additional back-up lifeguards arrive to assist, each will hand his/her rescue tube towline loop to the previous responding lifeguard in the "chain" (*FIGURE C.5.12*) and turn to begin swimming to the shoreline.
7. All back-up lifeguards should be holding the towline loop of the rescue tube of the lifeguard in front of him/her with one hand and using the other hand to help sidestroke to the shoreline.

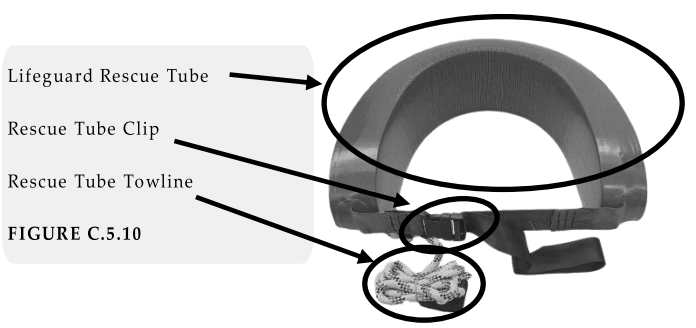


FIGURE C.5.10


Rescue tube clipped around victim.

FIGURE C.5.11

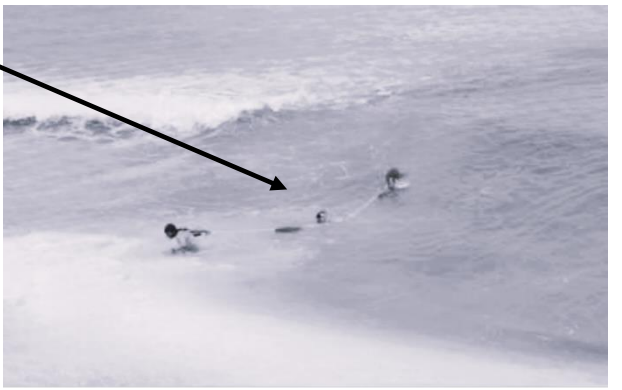

Lifeguard Chain Rescue

FIGURE C.5.12

Multiple Victim

This type of rescue involves 2 or more drowning victims at the same time. The victims could be any combination of passive, active or, simply, a distressed or tired swimmer.

The best response to multiple victims is to have at least one lifeguard for each victim enter the water. However, this is not always possible. When there are more victims than lifeguards to perform a rescue, the responding lifeguard(s), using the most appropriate entry and rescue technique for the circumstance, shall:

- Activate EAP.
- assist the victim who is in the most danger. In other words, the lifeguard will quickly assess and decide which of the victims needs attention first.
- perform rescue on the victim in greatest need.

If all victims are active, the lifeguard should:

- Secure the first victim and then swim, with the first victim, to the second victim.
- Assist the second victim in grabbing hold of the rescue tube or the rescue can handles. If using a rescue tube, the second victim should be instructed to wrap his/her arms and legs around victim #1.
- Signal for back-up lifeguards to assist in bringing victims to the shoreline (if available, a lifeguard with a line buoy should be deployed)

If one victim is passive, the lifeguard should:

- Lifeguard secures the passive victim on the rescue tube or rescue can first.
- If victim is unresponsive, lifeguard checks for breathing and if not breathing, provides immediate rescue breathing.
- Signal for back-up lifeguards to assist in bringing passive victim to the shoreline (if available, a rescue board or kayak should be deployed if the victim is pulseless).
- If victim is responsive and/or is unresponsive but breathing, the lifeguard should secure the victim on the rescue tube or rescue can; signal for back-up lifeguards; and swim to the next victim.

Submerged Victim

The following procedure should be utilized when a submerged victim is easily seen from the water's surface by the responding lifeguard(s) and/or the lifeguards' assigned post from the shoreline:

- Activate EAP.
- Lifeguard approaches victim using either the front crawl or the breaststroke keeping the rescue tube high and tight across chest and under rescuer's armpits.
- Lifeguard should allow the rescue tube to float on the water's surface while continuing to wear the rescue tube strap as he or she approaches the victim's underwater position.
- Lifeguard shall perform either a feet-first or head-first dive to reach the victim in the water column or on the bottom of the pool.
- Lifeguard shall reach one arm under one of the victim's armpits from the rear so that the victim's back is flush against the lifeguard's chest and the lifeguard's arm is able to reach across the front of the victim's chest.
- Lifeguard may choose to push off the bottom with his or her feet and/or begin to kick to propel both victim and rescuer to the water's surface. This is likely unnecessary as the buoyancy of the rescue tube is enough to propel both victim and rescuer to the water's surface.
- Lifeguard shall simultaneously begin to reach for the rescue tube tow line with the hand of his or her free arm. Once the tow line is in hand, the rescuer should begin to feed the tow line to his or her hand that is across the victim's chest.
- Lifeguard shall slide the rescue tube between the victim's back just below his or her shoulder line and the lifeguard's chest.
- Lifeguard shall lean the victim back on the tube (just as was done for a passive victim at the water's surface).
- Lifeguard shall open and maintain an airway and provide in-water ventilations (discussed in detail later in the chapter) if necessary.

Chapter 8 – Search and Rescue discusses and outlines the procedures for submerged victims not immediately and easily seen from the water's surface by the responding lifeguard(s).

Rescue Board Rescues

Rescue boards are common pieces of equipment routinely used by lifeguards at waterfront facilities. They look similar to a surfboard and are made from a variety of materials. Some rescue boards are composed exclusively form high-density foam while others have a core of plastic or fiberglass which then has an outer covering of high-density foam or rubber.

There are other features that can be added or removed from a board during production. For example:

- fins of varying sizes on the underside
- two handles on the topside while some have handles the entire length of the topside
- foam knee pads on the topside

And, the boards can vary in both size and shape which can have a dramatic impact on the manner in which the board functions in the water.

Rescue boards allow a lifeguard to:

- Reach victim(s), who are a distance from the shore, much quicker as compared to swimming to the victim(s).
- Perform patron surveillance from a different vantage point – i.e. in the water behind the swimmers. This also allows the lifeguard to be in much closer proximity to the swimmers in the case of an emergency.
- Rescue larger victims who otherwise might require multiple lifeguards to bring him or her to shore.
- Efficiently rescue a passive victim who are a distance from shore.
- Rescue multiple victims at one time.
- Perform in-water assessments of a victim.

Lifeguard rescue board with side handles, foam topper, bottom skeg.
FIGURE C.5.13

Executing Victim Rescue with Rescue Board

- Rescuer can either use the rescue board by paddling prone – laying flat on his or her stomach while stroking the water with both arms simultaneously or one arm followed by the other arm similar to a front crawl swim stroke. Or, the rescuer may kneel on the board with his or her weight centered and while leaning forward and downward extend both arms into the water to stroke simultaneously.
- As the rescuer approaches the victim, he or she should exit the rescue board keeping hold of the board.
- Rescuer should position him or herself on the long side of the board; turn the board upside down in the water; and approach the victim by pushing the board toward the victim and while keeping the board between him or herself and the victim.

ACTIVE VICTIM:

- Rescuer should ask victim to extend one arm; rescuer grab the wrist of the victim's extended arm to help drape it over the rescue board.
- Rescuer will hold the victim on the board by continuing to grasp the victim's wrist against the side edge of the board.
- Rescuer will gain leverage with his or her kick under the water so that he or she can flip the rescue board right side up in the water while continuing to hold victim's wrist against the board so that the victim ends up on his or her stomach on the board.
- Rescuer should grasp the victim by the swimsuit and/or waistband (or the hip if necessary) to pull the victim's lower body onto the board.
- Rescuer can: side stroke to the shoreline while holding the rescue board with the other hand; use a breaststroke kick while pushing the rescue board with both hands from behind to the shoreline; place him or herself on the rescue board by positioning his or her chest between the legs of the victim and paddle with both hands toward the shoreline. An active victim can be asked to help paddle in any of these scenarios.

PASSIVE VICTIM:

- Rescuer grabs one of the victim's wrists and drapes it over the rescue board while pulling the victim's chest onto the rescue board as far as possible.
- Rescuer will hold the victim on the board by continuing to grasp the victim's wrist against the side edge of the board.
- Rescuer will gain leverage with his or her kick under the water so that he or she can flip the rescue board right side up in the water while continuing to hold victim's wrist against the board so that the victim ends up on his or her stomach on the board.
- Victim's head and face must be positioned on the rescue board so as to not take in any water.
- Rescuer should grasp the victim by the swimsuit and/or waistband (or the hip if necessary) to pull the victim's lower body onto the board.
- Rescuer places him or herself on the rescue board by positioning his or her chest between the legs of the victim and paddle with both hands toward the shoreline.

Lifeguard makes a water entry on the rescue board to begin his approach to a possible in-water victim.
FIGURE C.5.14

FIGURE C.5.15

Landline Rescues

This type of rescue involves what is often referred to as a "line buoy". It is a rescue can attached to marine line (600-800 feet or 182.88-243.84 meters in length and .25-.50 inches or .64-1.27 cm in diameter) and this line is attached to a stationary point on the beach.

Landline system used for rescues which may require rescuer to swim long distances and/or to swim in very rough and unfavorably dangerous conditions.
FIGURE C.5.16

Typically, lifeguards utilize one of three types of landline setups. The first option is more traditional in nature and entails a spool of marine line that is able to freely dispense as the lifeguard enters the water. One end of the line is attached to the spool and the other end is attached to the line buoy as shown in ***FIGURE C.5.16***. The second option is a rescue throw bag (***FIGURE C.5.17***). The line is self-contained in the bag and the lifeguard(s) on the beach maintain control of the bag while the other end is connected to the line buoy. The third option is having the line spooled on the winch of a Motorized vehicle. In this case, the line is mechanically dispensed as the lifeguard enters the water and can be mechanically reeled in to return the lifeguard and victim to the beach.

Rescue throw bag which can be used instead of a landline for areas in which rescues will require shorter swims. This throw bag also tends to be more portable than the landline system.
FIGURE C.5.17

Once the lifeguard reaches the victim with the line buoy he/she has two choices:

1.) Pass the rescue can to the victim so that he/she places the rescue can diagonally in front of the victim; lifeguard places his/her arms under victim's arms; lifeguard will place victim between him/herself and the rescue can; the victim's arms will freely rest draped over the rescue can
2.) Pass the rescue can or tube to the victim and tell them to hold it tightly with both hands and to help kick if he/she is able to do so.

In either of the above cases, once the victim has a grasp on the rescue can, the lifeguard will signal the lifeguard(s) on the beach to begin pulling the line back to the shoreline (***FIGURE C.5.18***). If possible, the lifeguard and the victim should assist the "pullers" by
kicking

Lifeguard pulls the landline back to the beach with both the swimming lifeguard and victim(s) attached to the other end of the line.
FIGURE C.5.18

Rescue Kayak

Kayaks to be used for lifeguards and/or rescues should be 10-12 feet (3.05-3.66 meters) in length, be open topped, and weigh between 40-50 pounds (18.14-22.68 kg). Kayaks can be used for water patrol, a more advantageous position for patron surveillance and scanning, or for water rescues.

Positioning in the Rescue Kayak

To maneuver the kayak safely, the lifeguard should:

- Sit straight up in the kayak with shoulders square.
- Grip the paddle at shoulder-width and neck to chin height.
- Lean backwards through incoming waves while holding the paddle at or above the level of your head.
- Lean forward with feet secured in the foot wells and paddle once a wave passes and you are within the lull.

Navigation of the Rescue Kayak

- **Launching** – drag the kayak into ankle to knee-deep water; place hands on ether side of the kayak; sit in the kayak; immediately grab the paddle and begin paddling.
- **Paddling** – push the water with one side of the paddle while pulling the water with the other side of the paddle. Ideally, it should approximately be 60% push and 40% pull.
- **Turning** – use a backstroke of the paddle on the side/direction you want to turn the kayak. Follow the backstroke with a forward stroke of the paddle on the opposite side/direction you want to turn the kayak.
- **Stopping** – use a backstroke on alternating sides of the paddle; jump out of the kayak feet-first.
- **Approaching Victim** – always maintain visual contact with the victim; rescuer and victim should be facing one another; ensure the victim is on one side of the kayak.

The kayak should always be kept at a 45-degree angle to the waves when moving through the surf/impact zone. The lifeguard must also ensure that maximum speed is reached prior to attempting to move through incoming waves/swell.

Executing Victim Rescue with Kayak

ACTIVE VICTIM:

- Rescuer approaches facing the victim and keeping the victim to one side of the kayak.
- Rescuer straddles the kayak with his/her legs while remaining seated on top of the kayak.
- Rescuer assist the victim in placing both arms/hands on top of and across the kayak.
- Rescuer instructs victim to kick his/her legs while pulling the victim at he arms/shoulders and waist onto the kayak.
- Rescuer pulls the victim's legs onto the kayak so that the victim is face-down and his/her head is near the bow and his/her feet are near the rescuer.
- If the rescuer is unable to maneuver the victim onto the kayak using the method described above:
  - rescuer should maneuver the kayak so that the victim is able to grab hold of the bow.
  - rescuer instructs the victim to grasp the bow firmly with both hands.
  - rescuer attempts to return the victim to the beach or other safe area.

PASSIVE VICTIM:

- Rescuer approaches facing the victim and keeping the victim to one side of the kayak.
- Rescuer should exit the kayak on the side nearest to the victim.
- Rescuer, while exiting the kayak, should maintain grasp on the kayak with one hand and roll the kayak upside-down while exiting.
- Rescuer grasps the wrist of the victim and pulls him/her toward the kayak.
- Rescuer places/drapes the victim's arms over the top of the kayak.
- Rescuer climbs on top of the upside-down kayak while maintaining a grasp on both of the victim's arms ensuring they remain draped over the top of the kayak.
- Rescuer exits the kayak on the opposite side of the victim while, simultaneously, rolling the kayak to the upright position. Rescuer will gain leverage with his or her kick under the water so that he/she is more easily able to flip the kayak upright.
- Rescuer climbs aboard the kayak.
- Rescuer straddles the kayak and moves the victim's legs onto the kayak.
- Rescuer should position the victim on his/her back if rescue breathing is required.
- Rescuer returns the victim to the beach or other safe area.

MULTIPLE VICTIMS:

- Rescuer should approach the victim in the greatest distress first.
- Rescuer should follow the procedures outlined above in both the 'ACTIVE' and 'PASSIVE' sections.
- Rescuer will then, with the first victim aboard, will approach the second victim.
- Rescuer should either follow the procedures outlined above in the 'ACTIVE' and 'PASSIVE' sections. Sometime, the rescuer will need to use his/her judgement and enter the water with the rescue tube to secure and move the second victim onto the kayak instead of following the 'ACTIVE' or 'PASSIVE' procedures.
- Rescuer should have the second victim firmly grasp the stern of the kayak with both hands.
- Rescuer should instruct victims to grasp the side of the kayak if/when there are more than two (2) victims.
- Rescuer should position victim(s) on his/her back if rescue breathing is required. Other conscious victims can be given the rescue tube in these cases so they may float and await back-up lifeguard(s).
- Rescuer(s) should return the victims to the beach or other safe area.

Personal Watercraft (PWC) Rescues

The ideal PWC for open water rescues is the WaveRunner as opposed to the Jet Ski as the WaveRunner has seating for multiple people. This allows the driver of the WaveRunner to take along 1-2 rescuing lifeguards if needed. Additionally, the WaveRunner is much more stable in the water and allows a Rescue Sled to be towed behind the PWC. PWC operators should avoid navigating within the surf/impact zone whenever possible and should never jump the waves.

The PWC should always be operated at a safe speed based upon the prevailing conditions (wind speed and direction, waves/swells, etc) and slow speeds are absolutely necessary when moving through waves and when approaching a victim.

Features and of Rescue PWC

- **Rescue Sled** – high-density foam and highly buoyant with a 2-3 point attachment to the PWC to allow superior stability in the water with and without victim(s) aboard. Must be able to accommodate, at minimum, 2 victims.
- **Rescue Tube** – attached to the PWC in such a manner to allow easy and quick deployment.
- **Side Handles** – run along both side of the PWC hull on or around the foot well. These are used for victims to grab hold of the PWC and can be useful when there is more than a single victim requiring assistance at one time.
- **Wear and Tear Protector** – this, usually rubber or silicone, is applied to the stern of the PWC to prevent the rescue sled from damaging the PWC's hull.

Equipment on Rescue PWC

- **Portable Hand-Held Radio (or other onboard communication system)** – ideally the two-way communication system is built into the PWC driver's helmet. It may also be a two-way hand-held radio mounted to the steering mechanism or to the driver's life vest in either case, the radio must be secure in a sealed waterproof radio bag.
- **Life Vest(s) for PWC Driver** – must allow for superior mobility while being worn by the PWC driver.
- **Helmet for Driver** – must allow PWC driver: superior mobility; to wear sunglasses or other protective eyewear; should be equipped with two-way communication system.
- **First Aid Kit with CPR Mask** – this should be kept in water tight sealed bag under the PWC seat.
- **Fire Extinguisher** – used for fire onboard PWC and for other vessels that may require it.
- **Knife** – used to cut tangled line.
- **Compass** – best if mounted on PWC steering mechanism.
- **Tow Rope with Clip** – used as a back-up to the rescue sled; used to assist a vessel; used to provide assistance is sled being used by other victim(s).
- **Mask, Fins, Snorkel** – to be used in the case of a submerged victim search.

The PWC, in many locations, is replacing some of the more traditional modes of rescue. And, in other locations, is supplementing the traditional modes of rescue depending upon each circumstance. Executing a rescue using a PWC has advantages:

- allows for much quicker response times
- allows for better mobility in rough water conditions
- allows for a quicker return to the beach when advance medical care is required
- provides flotation for all victims of a mass rescue until back-up lifeguards arrive

PWC Rescue Operation

Making a safe launch of a rescue PWC, the lifeguard(s) should follow this protocol:

- Ensure water is clear of swimmers in the launch area.
- Push trailer into a few inches of water; tilt trailer toward water so that PWC begins to slide off trailer; and push PWC from trailer into the water with bow pointing into the incoming waves/swell (ideally during a lull).
- PWC operator mounts PWC and starts it as the rescuer climbs aboard.
- The PWC operator, PWC rescue lifeguard and any other lifeguards who helped launch the PWC, will check the area for swimmers and yell "CLEAR" if it is safe for the PWC to proceed.
- The bow of the PWC should be kept perpendicular to or at a 45-degree angle to the incoming waves/swell until clear of the surf/impact zone.

Making a rescue using the PWC:
CONSCIOUS VICTIM

- If possible, the victim should raise one hand/arm out of the water and above his/her head.
- PWC operator should begin a slow approach to the victim and finalize the approach only when it is safe to do so based upon the conditions (prevailing winds, swell size and direction, etc).
- PWC operator will approach the victim so that the rescuer is facing the victim and the victim is kept on one side of the PWC.
- The rescuer extends an arm and grabs the victim's wrist and forearm.
- Rescuer guides the victim alongside of the PWC and onto the rescue sled.
- Rescuer instructs the victim to firmly grasp the rescue sled handles with both hands.
- Rescuer returns the PWC to the beach or other safe location for the victim to be evacuated by back-up lifeguard(s).
- If the PWC has a rescuer onboard in addition to the operator:
  - above procedure remains the same except that the rescuer secures the victim and moves him/her to the rescue sled.
  - once victim is face-down on the rescue sled, the rescuer should lay on top of the victim placing his/her arms under the victim's armpits and firmly grasping the handles. The victim should be instructed to also firmly grasp the handles of the rescue sled.
- If the above procedure is ineffective, the operator (if alone) or the rescuer (if accompanying the operator) should utilize the rescue tube to assist and secure victim and then move victim to the rescue sled.

UNCONSCIOUS VICTIM

- PWC operator should begin a slow approach to the victim and finalize the approach only when it is safe to do so based upon the conditions (prevailing winds, swell size and direction, etc).
- PWC operator signal or call for back-up.
- PWC operator enters the water with the rescue tube to approach and secure the victim.
- PWC must decide if:
  - he/she is able to move victim onto the rescue sled and secure the victim to the sled.
  - he/she is able to safely return to the beach or other safe location with the victim.
- If it is not possible for the operator to secure the victim to the rescue sled and/or to move the PWC back to the beach with the unconscious victim aboard, the operator will signal or call for back-up and float in the water with the victim secured to the rescue tube.
- If the PWC has a rescuer onboard in addition to the operator:
  - once the operator approaches the victim, the rescuer leaves the PWC with the rescue to secure the victim and move him/her to the rescue sled (operator can assist rescuer in getting the victim aboard).
  - once victim is face-down on the rescue sled, the rescuer should lay on top of the victim placing his/her arms under the victim's armpits and firmly grasping the handles.
  - victim should be kept on his/her back if it is determined rescue breathing and/or CPR is required.

Landing PWC on Beach

- PWC operator should signal to lifeguard(s) on the beach that he/she is preparing to come ashore.
- Lifeguard(s) should clear the landing zone of swimmers.
- PWC operator brings PWC into the surf/impact zone and turns the PWC off and dismounts the PWC.
- PWC operator must maintain firm grip and control of the PWC.
- PWC is guided to shore within a lull (and behind an incoming wave).
- Lifeguard(s) bring trailer to shallow water and the PWC is allowed to float onto the trailer with the assistance of a wave pushing it onto the trailer.

1

Figure C5.19

2

Figure C5.20

3

Figure C5.21

4

Figure C5.22

The basic stages of an active victim rescue using a Personal Watercraft (PWC).
#1 – approach while facing & keeping victim on one side of PWC. Extend arm closest for victim to grab
#2 – victim grabs rescuers wrist while rescuer secures victim by grabbing wrist/forearm.
#3 – forward momentum of PWC helps rescuer to move victim to the rescue sled.
#4 – rescuer assists victim onto the rescue sled in a belly down position while grasping sled's handles with two hands.

FIGURES C.5.19-C.5.22

In-Water Ventilations

There are times when a lifeguard encounters an unresponsive passive victim who is not breathing. In these cases, it is crucial to ventilate as soon as possible. If the lifeguard is not able to recognize and extract this victim within seconds, ventilations must be provided while in the water.

In-water ventilations can be provided while the passive unresponsive victim is on the rescue can or tube. Additionally, if the lifeguard places the victim on a rescue board, ventilations can also easily be provided once the victim.

To provide ventilations to a victim in the water, the lifeguard should:

- Ensure the rescue tube is against the victim's back just below his or her shoulder line and under his or her armpits with arms draped over the tube.
- Position him or herself at the top of the victim's head with CPR pocket mask to ensure the airway is open to initiate ventilations.

Ventilations in the water can also be provided to a spinal trauma victim in much the same way as described above. Once the victim is on a rescue board, the lifeguard should position him or herself on the side of the rescue board with a CPR pocket mask to ensure an open airway and to initiate ventilations.

Escapes

Active victims only objective is survival. The victim will do anything to keep his or her head above water and breath. This includes grabbing for and latching onto any stationary object and/or person in the water. This includes the rescuing lifeguard.

A lifeguard cannot allow the victim to grab him or her and possibly becoming a victim him or herself. Hence, it is standard practice for rescuing lifeguards to approach an active victim from the rear as to limit the victim's ability to grab hold of the lifeguard.

There will be times, no matter the precautions a lifeguard takes, that he or she will be grabbed and possibly held underwater by a panicked active drowning victim. In these cases, it is vital that the lifeguard be very well versed in performing both rear and front victim hold escape maneuvers.

Anytime a lifeguard is grabbed by a victim, his or her initial reaction and first action must be immediate. If not wearing a rescue tube, the lifeguard should:

1.) Tuck his or her chin against his or her chest
2.) Submerge him or herself in the water by pushing up with both hands and arms as many times as is needed to submerge. The victim will likely release his or her hold in an effort to return to the water's surface.
3.) Return to the surface and re-approach the victim from the rear and execute a rear rescue by placing one arm over the top of the victim's shoulder, across the victim's chest and under the opposite armpit. Use a side stroke to move the victim to safety.

If wearing a rescue can or tube, the lifeguard should:

1.) Tuck his or her chin against his or her chest
2.) Forcefully push up on the victim's elbows or apply pressure to the brachial pressure points to break the victim's hold.
3.) Submerge him or herself.
4.) Return to the surface and re-approach the victim from the rear and execute a rear rescue by placing one arm over the top of the victim's shoulder, across the victim's chest and under the opposite armpit. Use a side stroke to move the victim to safety.

1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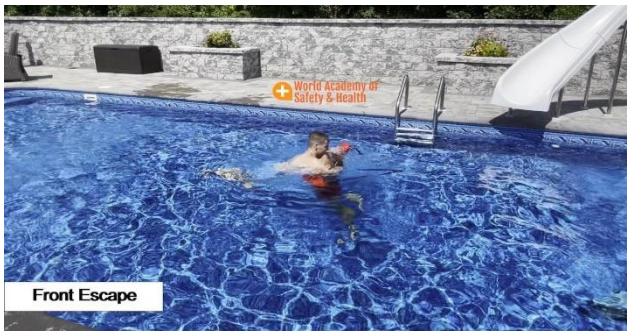
Front Escape

2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Front Escape

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Front Escape

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Front Escape

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Front Escape

Extraction From the Water

- **Assisted Walk** – one or more lifeguards place one arm around the waist of the conscious victim while being removed from the water and drapes one of the victim's arms around the lifeguard's neck and over his/her shoulder. The lifeguard(s) carries the rescue can or tube in his/her other hand and escort victim to the sand.
- **Chair Carry** – two lifeguards facing one another, interlock arms by holding one another's wrists – right arms to left arms, respectively. The two forward most arms scoop the victim under his/her knees and the two rear most arms support the victim's back. The victim's left arm is draped around one lifeguard's neck while the victim's right arm is draped around the other lifeguard's neck.
- **Victim Beach Drag** – lifeguard stands behind the victim and places his/her arms under the victim's armpits far enough so that the lifeguard's elbows rest under the victim's armpits. The lifeguard interlocks his/her hands and fingers in front of the chest of the victim. The lifeguard begins to walk backwards out of the water dragging the victim 's heels across the ground.

Medical Emergencies

If a call for emergency medical care is received by a lifeguard and:

One lifeguard is assigned to the area:

- Lifeguard notifies, via agency's communication system, the lifeguard supervisor of the medical emergency and the location of the victim(s).
- Lifeguard uses whistle to immediately notify the swimmers they will be unsupervised and should clear the water immediately.
- Lifeguard responds to the medical emergency being sure to take a communication device and medical response bag.
- Lifeguard provides an update, via the agency's communication system, to lifeguard supervisor and/or advanced medical team.

Two or more lifeguards are assigned to the area:

- One of the lifeguards (lifeguard #1) responds to the medical emergency being sure to take a communication device and medical response bag.
- Lifeguard #1 assesses the victim(s) and determines if a supervisor is required and/or if immediate advanced medical care is required.
- Lifeguard #1 provides an update, via the agency's communication system, to lifeguard #2 and lifeguard supervisor of the condition of the victim(s).
- Lifeguard #2 remaining within the assigned area begin to clear the water in anticipation of providing back-up coverage at the scene of the medical emergency.
- Only once all lifeguards return to the assigned are will swimmers be permitted back in the water.

There is a Lifeguard supervisor nearby:

- The lifeguards notify, via the agency's communication system, the assigned supervisor of the emergency while providing as much detail as possible starting with the location so that the supervisor may begin his/her route while receiving additional information.
- The lifeguard supervisor responds to the medical emergency.
- The lifeguard supervisor assesses the victim(s) and determines if more advanced medical care is necessary.

All medical aids other than minor basic first aid require the lifeguard and/or lifeguard supervisor to accurately complete an agency incident report. Though the details of the report can be completed post-incident, it is vital that the victim's information be gathered while on-scene. This would include: victim's signs and symptoms, allergies, medications, past pertinent medical history, last oral intake, events leading to incident which is often referred to as SAMPLE; first and last name; phone number; local address and permanent home address; and any other contact information for victim and family members and/or friends accompanying the victim.

Spinal Trauma – Chapter 6

Figure C6.1

Recognizing Signs & Symptoms

Spinal Trauma should be suspected in any of the following circumstances:

- Pain in Head, Neck and/or Back
- Fluids Exiting Nose, Mouth, Ears or Eyes
- Numbness and/or Weakness
- Altered State of Consciousness
- Imbalance on Their Feet

Stabilization of Spinal Trauma

Effectively managing a victim of a spinal injury can be scary. It is important that the lifeguard remember that so long as the victim has a pulse, is breathing, and is not suffering any additional immediately life-threatening injuries, lifeguards and other rescuers should take their time to ensure there are no sudden or erratic movements of the victim and that inline stabilization is constantly maintained.

Citing the latest research, many medical professionals, EMS services, Medical Directors and others in both the medical profession and emergency services now suggest not backboarding a victim when spinal trauma is suspected.

> *Recent evidence regarding spinal immobilization with backboards has shown limitations to their usefulness in preventing neurologic injury, and several papers have demonstrated harm in the form of more frequent pressure ulcers, decreased pulmonary function, and greater pain for patients 1-4. Because of these findings, many EMS protocols have shifted away from routine use of backboards for anything other than extrication. While this change is progressive and shows a reasonable response to the literature, it took decades to occur. The evidence against cervical collar use is similarly mounting, yet there is little sign that practice recommendations are changing* [10].

When it comes to splinting an injury, lifeguards are taught not to splint unless the victim must be moved. This is exactly how we should approach the idea of backboarding here. And, that a victim should only be moved if leaving them in their current position would cause further harm as they await EMS arrival.

Victims of spinal trauma should be treated in a similar way – backboarding of a victim with suspected spinal trauma should only be done if and when local EMS protocol dictates it. Aquatic facilities must coordinate with their local EMS for guidance.

Backboarding a victim does not come without inherent risk of causing more harm, paralyzation or even death. If treatment of victims of spinal trauma is approached from a benefit analysis point of view, according to the National Association of EMS Physicians and American College of Surgeons Committee on Trauma,

> *Long backboards are commonly used to attempt to provide rigid spinal immobilization among emergency medical services (EMS) trauma patients. However, the benefit of long backboards is largely unproven.*

The long backboard can induce pain, patient agitation, and respiratory compromise. Further, the backboard can decrease tissue perfusion at pressure points, leading to the development of pressure ulcers.
Utilization of backboards for spinal immobilization during transport should be judicious so that the potential benefits outweigh the risks [18].

- *Appropriate patients to be immobilized with a backboard may include those with:*
    - *Blunt trauma and altered level of consciousness*
    - *Spinal pain or tenderness*
    - *Neurologic complaint (e.g., numbness or motor weakness)*
    - *Anatomic deformity of the spine*
    - *High-energy mechanism of injury and any of the following:*
        - *Drug or alcohol intoxication*
        - *Inability to communicate*
        - *Distracting injury*

Patients for whom immobilization on a backboard is not necessary to include those with all of the following:
- *Normal level of consciousness (Glasgow Coma Score [GCS] 15)*
- *No spine tenderness or anatomic abnormality*
- *No neurologic findings or complaints*
- *No distracting injury*
- *No intoxication [18]*

BOTTOM LINE:
- *There is no high-level evidence that prehospital spinal immobilization positively impacts patient-oriented outcomes*
    - *Spinal Immobilization Does NOT Help Immobilize the Cervical Spine*
    - *Spinal Immobilization Does NOT Decrease Rates of Spinal Cord Injury*
    - *Spinal Immobilization Increases the Difficulty of Airway Management*
    - *Spinal Immobilization Can Cause Pressure Ulcers*
    - *Spinal Immobilization Changes the Physical Exam*
    - *Spinal Immobilization Worsens Pulmonary Function*
    - *Spinal Immobilization Increases Intracranial Pressure*
- *There is no evidence that immobilizing awake, alert patients without deficits/complaints provides benefit*
- *Selective spinal immobilization protocols can help identify patients at low risk for injury and avoid immobilization [18].*

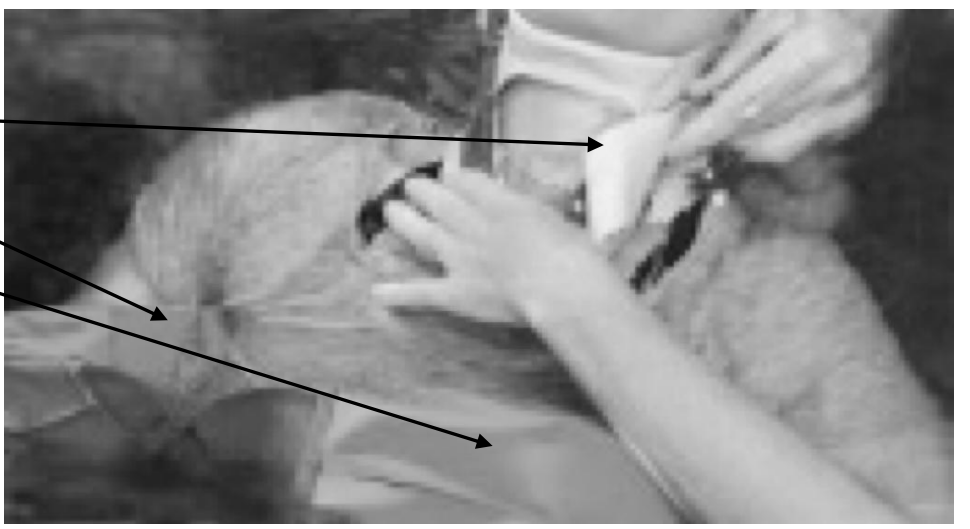
Do we backboard? Do we use a C-collar? Do we only use manual inline stabilization?

- Always use manual inline stabilization both in-water and on land for any suspected spinal.
- Only backboard a victim of suspected spinal trauma when required by local medical direction.
- Participate in additional in-service training using the equipment, facility, local protocols and facility protocols for spinal trauma victims.

Application of C-Collar to an in-water victim suffering an apparent spinal trauma injury.

Rescue tube can also be seen clipped around the victim under his/her armpits.

FIGURE C.6.2



Arm Splints

To effectively perform this skill, the lifeguard should:

- Activate the EAP.
- Approach the victim by either using the breaststroke or the walking being careful to limit any disturbance in the water.
- Align hip closest to the victim near the victim's hip.
- Use arm closest to the victim to grasp the victim's outer arm farthest from the lifeguard near the bicep while simultaneously using arm farthest from the victim to grasp the victim's outer arm closest to the lifeguard near the bicep.
- Simultaneously move the victim's arms up alongside the victim's head so that the victim's biceps are against the victim's ears (***FIGURE C.6.2***).
- Apply pressure to both of the victim's arms so that the head and neck are immobilized. This pressure should be firm and evenly distributed on both sides of the victim's head.
- Slowly and smoothly walk around the pool in the direction the victim's head is pointing as you perform this entire skill and after the victim is rolled to the face- up position (***FIGURE C.6.3***).

This will help the victim's lower body to remain buoyant and float near the water's surface which will keep the victim's entire body more streamlined.

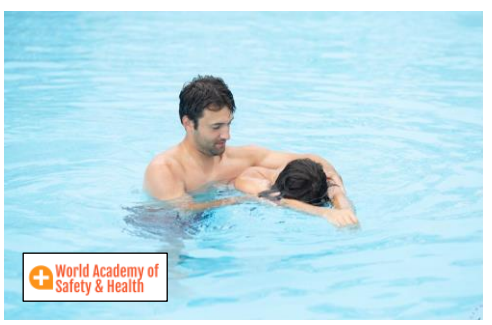


Figure C6.3

Figure C6.4

Figure C6.5

Figure C6.6

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Figure C6.8

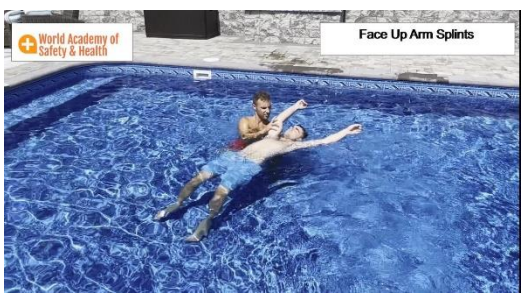


Figure C6.9

Backboarding Spinal Trauma Victims

The following are generalized set of procedures for backboarding. They are designed to provide a broad understanding of the goals of backboarding in various situations and environments. Each facility's design, protocols, and techniques are different and local medical direction and EMS protocols may differ from one jurisdiction to another. For these reasons, it is vital for a lifeguard to receive additional in-service training from his or her employer based upon the employer's specific procedure and technique(s) as well as the local medical direction and local EMS protocols.

The overall goal of backboarding an in-water victim of spinal trauma is the ability to extract this person from the pool without causing additional injury. There are many techniques used to effectively backboard a victim. All techniques are based upon the same set of principles and the specific detailed steps are dependent upon the circumstance:

- Maintaining inline stabilization of the head, neck and back of the victim.
- Backboard is placed underneath the victim and raised up to the victim.
- One or more backboard straps, headgear pillows and head strap(s) are utilized.
- Extraction from the pool in a safe and effective manner.

The most desirable circumstance is having at least four trained rescuers available when handling a situation in which a spinal trauma victim must be backboarded.

Seated Stable Carry

This spinal injury management technique was originally developed for use at surf beaches. It is most easily used in water no deeper than the lifeguard's waist [5].

To effectively perform this skill, the lifeguard should:

- activate the EAP.
- approach the victim by either using the breaststroke or the walking being careful to limit any disturbance in the water.
- approach the victim from behind.
- place arm closest to the victim under the victim's armpit farthest from the lifeguard.
- place arm farthest from the victim under the victim's armpit closest to the lifeguard.
- arms should be far enough under the victim's armpits to allow the palms of the lifeguard's hands to reach the victim's ears to provide manual inline stabilization.
- once the lifeguard's arms are fully under the victim's armpits and the lifeguard's hands are providing manual inline stabilization, lifeguard should lift the victim up so that his or her back is flush against the lifeguard's chest.
- while facing the victim, a second rescuer picks up both legs of the victim from behind the knees and pushes the victim against the first rescuer's back as the first rescuer walks the victim out of the water.

This technique is also easily used with a spinal trauma victim on land who is seated, standing, or laying in a prone position.

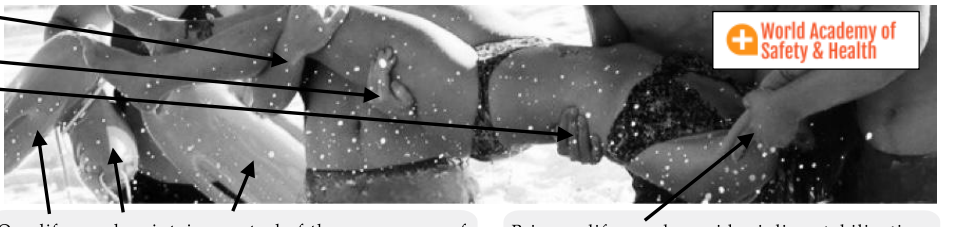
Other responding back-up lifeguards should place themselves in the water between the victim and the oncoming wave action with his/her backs facing the incoming swells and whitewater. The bodies of these back-up lifeguards along with their rescue cans will help to mitigate the impact the breaking wave action has on the victim.

Figure C6.10

Figure C6.11

When additional lifeguards are available, each of the back-up lifeguards should place his/her hands under the back, legs, and waist of the suspected spinal trauma victim. This will help to provide support and stabilization to the spinal column.

FIGURE C.6.12



One lifeguard maintains control of the rescue cans of all other rescuing lifeguards. These were also used on the way to the beach to block the crashing surf.

Primary lifeguard provides inline stabilization.

Standing Backboarding

Standing backboarding or what is often referred to as a "standing takedown" is used when a person exhibits the signs of spinal trauma while on land. Or, it is used when a person complains of the symptoms of spinal trauma while on land and standing [5]. According to the United States Lifesaving Association (USLA), this technique should only be used when necessary and the victim is not able to be safely moved into a sitting position or a supine position. Further, it is recommended that the victim have a cervical collar applied prior to moving to provide additional support of the neck [5].

The steps for backboarding a victim who is in the standing position are:

1.) lifeguard provides manual inline stabilization by placing the palms of his/her hands on the victim's ears while facing the victim.
2.) back-up lifeguard will apply the proper size c-collar while standing behind the victim.
3.) a back-up lifeguard will place the spineboard behind the victim.
4.) Two lifeguards will maintain manual inline stabilization while in front of the victim by each placing the palm of his/her hand closest to the victim on the victim's ear. These lifeguards will place his/her other hand under the victim's armpit and grasp a handle of the backboard.
5.) a third back-up lifeguard will grasp the top of the backboard with two hands from behind the victim to assist in guiding the board with the victim to the ground while the other two lifeguards maintain manual inline stabilization and contact with the backboard handles.

Vertical backboarding on land of a victim of suspected spinal trauma – often referred to as a 'standing takedown'.

FIGURE C.6.13

Zero Depth Backboarding

The zero depth backboarding procedures are used in two different circumstances. If a person exhibits the signs of or complains of the symptoms of spinal trauma while on land and is on the ground. Or, if a person exhibits the signs of spinal trauma while in shallow water – a few inches to only wet ground. If the victim's airway, while on his/her back, is out and remains out of the water then the water is shallow enough to utilize the zero depth backboarding procedures.

The procedure for zero depth backboarding are:

1.) primary lifeguard (lifeguard #1) provides manual inline stabilization using the Arm Splints technique from the top of a face-up victim and while standing on one side of a face-down victim. If the victim is face-down, the lifeguard must roll the victim the face-up position once secure in the Arm Splints.
2.) if victim is unresponsive, lifeguard checks for breathing and if not breathing, provides immediate rescue breathing.
3.) if victim is responsive or unresponsive but breathing, lifeguard #1 maintains inline stabilization.
4.) first back-up lifeguard (lifeguard #2) takes over manual inline stabilization from the one side of the victim's head by placing his/her palms over the ears of the victim.
5.) Lifeguard #1 moves victim's arms to the sides of the body and secures a c-collar on the victim.
6.) lifeguard #1 places the arm of the victim on the side he/she will be rolled.
7.) lifeguard #1 grasps the victim at the hip area and ribcage area.
8.) second back-up lifeguard (lifeguard #3) retrieves a backboard.
9.) lifeguard #2 signals lifeguard #1 to roll the victim toward him/herself and lifeguard #3 to slide the backboard under the victim from the opposite side of lifeguard #1.
10.) lifeguard #2 signals lifeguard #1 and lifeguard #3 to roll the victim onto the backboard.
11.) lifeguard #3 retrieves backboard headgear while lifeguard #1 secures the straps from the chest to the feet of the victim (ensuring that the chest strap is secured under the victim's armpits and the waist strap is over top of the victim's hands/arms).
12.) lifeguard #3 assists lifeguard #2 in securing the headgear and head straps. The top head strap goes across the victim's forehead and if the backboard headgear has a second strap it goes on top of the c-collar near the victim's chin.

Protocols & Communication – Chapter 7

In-Service Training

It is not enough for lifeguards to complete a Certification or recertification course every 1-2 years. Lifeguards must be engaged in ongoing professional development and in-service training at the aquatic facility for which he/she will be providing lifeguard coverage.

Regular and routine in-service training ensures the lifeguard(s) are physically and mentally prepared to properly respond during an emergency.

In- service training topics should be varied and should also address facility-specific concerns. Above all, the rescue skills of lifeguards must remain sharp.

In-service must address, at minimum, the following:

- Learning & practicing the EAP
- Facility rules and regulations
- Preventative lifeguarding techniques
- Refreshing of skills learned in the lifeguard/CPR/AED/1st Aid Certification Course
- Overall risk management
- Facility documentation & administrative procedures
- Review of local, state, and federal requirements of lifeguards
- Industry standards for lifeguards, staff, and aquatic facilities

Lifeguards must be held accountable for keeping their lifesaving skills sharp and in good form - one never knows when they will be needed.

Lifeguards should attend regular in-service trainings for continuous improvement.

Lifeguard Techniques, Stations & Positioning

Generally speaking, when considering the positioning of lifeguards, the management staff must ensure:

- Lifeguard should be provided a stand/chair/tower/station that is elevated above the beach and the level of the swimming area.
- Lifeguard stands/chairs/towers/stations are placed close enough to the water to allow the lifeguard to effectively scan and perform swimmer surveillance, but, far enough up the beach so that the high tide does not disrupt the stability of the stand/chair/tower/station.
- Lifeguard services should consider alternate methods of swimmer surveillance (i.e. stationary elevated platform in the water if there is limited wave action; in water patrol by lifeguard(s) using a rescue board, kayak or other non-motorized vessel).
- All lifeguards have a reliable and effective method of communication with one another and, at minimum, one lifeguard must have a direct line of communication to local authorities; management; and/or other emergency services.

Lifeguard chair for two lifeguards as some areas assign partners to each lifeguard station/location.
FIGURE C.7.1

Lifeguard tower for one or multiple lifeguards. Used in select geographic areas and can be equipped with telephones, climate control, polarized windows & more.
FIGURE C.7.2

Lifeguard chair for a single lifeguard. It is elevated above the level of the swimmers and far enough behind the high tide line that it is not washed away or damaged by the incoming tidal flow and/or wave action.
FIGURE C.7.3

Missing Person/Child

Any time the lifeguard(s) is notified a person missing, he/she should:

- Obtain the name and complete description – including age, gender, hair color, eye color, clothing description.
- Find out the person's last know location.
- Find out if the missing person was engaged in an activity on the beach; was last seen in the water; if the missing person was walking in a particular direction. It is IMPORTANT to note: statistically speaking, missing children and elderly will walk with the wind along the shoreline.
- Find out if the missing person has any medical conditions.
- Obtain any other information that may be helpful in locating the missing person.
- Contact dispatcher with the above information so the dispatcher can alert other lifeguard(s). If there is no dispatcher, alert nearby businesses and utilize any type of communication and/or public address system to alert the public on or around the beach.
- Instruct the family of the missing person to remain in one location so that the lifeguard(s) can easily and quickly make contact as and when needed.
- If the missing person was last seen in the water, lifeguard(s) must immediately assess and investigate to determine if a water search should be conducted.
- Notify the dispatcher when the missing person is located.

Any time a missing child is brought to a lifeguard, the lifeguard(s) should:

- Notify the dispatcher of the missing child being sure to share a complete description – the dispatcher will alert other lifeguard(s).
- If lifeguard does not immediately locate the parents, the missing child should be kept with the lifeguard. It may be useful to use one long whistle blast to gain attention of swimmers and beachgoers and point out the missing child.
- If, after the above public notification, the parents are not located, the child should be taken to the next lifeguard station and the procedure repeated.
- Ensure that the child is comforted and his/her emotional well-being is preserved during the process.
- If this procedure is unsuccessful in locating the parents, the child should be transferred to the local authorities for their assistance in locating the parents.
- At no time during the process, should any lifeguard leave his/her area unguarded.

Communication

All facilities must have a system of communication in place. This system must include a set of communication procedures that outline 'call signs' or other easily identifiable terms used for each person and/or location within the facility and methods of communication to be used (telephone, hand signals, handheld flags, whistles, megaphones, air horns, public address systems, two-way handheld radios, etc.). The system should also address:

- Communication between lifeguards on the beach
- Communication between lifeguard(s) and swimmers/beachgoers
- Communication between in-water lifeguards and on-the-beach lifeguards
- Communication between lifeguards and supervisors
- Communication between aquatics staff and supervisors (or lifeguards) and other facility staff members
- Communication with local EMS services

In most organizations, communication between lifeguards is typically accomplished using one of three established systems – hand signals, whistle signals, and flag signals (i.e. semaphore). The communication systems must be standardized within a geographic area and from one organization to another within that area. This ensures rapid response and quality patient care by providing smooth and seamless interaction between all trained surf lifeguards during normal operations as well as during an emergency.

Some facilities who have worked closely with local EMS services may have a designated person with a two-way handheld radio that is able to connect directly to the EMS dispatcher. This can eliminate the need for telephone calls and may increase efficiency and response times during an emergency.

Local emergency telephone numbers as well as hotline numbers (i.e. poison control) should be posted and easily accessible at each swimming area and/or lifeguard station within a facility. This telephone number list must also be posted and available in any and all facility offices. It is advisable for any person responsible for calling any emergency phone numbers to keep these numbers saved in his/her mobile device.

Whistle Signals

Acme Thunderer whistle recommended for beachfronts, ocean rescue, & other open water environments.
FIGURE C.7.4 World Academy of Safety & Health

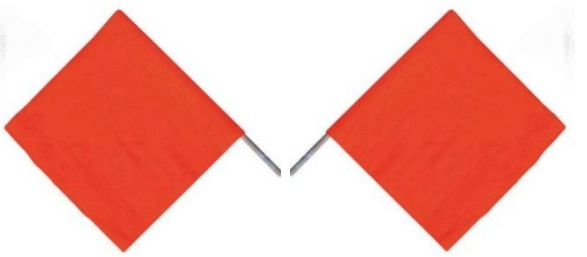
A whistle can be an effective mechanism to communicate with fellow lifeguards, with members of the public, and with supervisors. As with any form of communication within an organization and within particular geographic areas where there are the same and/or similar services offered to citizens, whistle signal communication within lifeguard services must remain standardized. This standardization ensures seamless interaction between lifeguards and/or lifeguard agencies during emergencies and normal operations, thus, allowing the agencies to provide the best victim care possible.

Standard Whistle Signals

One Long Blast	Attention of Swimmer(s)
Two Short Blasts	Attention of Lifeguard(s)
Two Long Blasts	Land Emergency; Medical Emergency
Series of Short Blasts	Water Rescue; Water Emergency

Flag Signals

Two 18"x18" semaphore flags, each mounted on a 24" wood pole for handheld flag signaling and communication between lifeguards.
FIGURE C.7.5 World Academy of Safety & Health



Semaphore is a system or method of signaling to others using a pre-established "signal alphabet". It is often referred to as the language of the ocean.

Originating in France, the semaphore system was developed by Claude Chappe in 1790 and was used during emergency situations on or around ships and/or the ocean and for the government to communicate during the French Revolution. During the 1700's and early 1800's, semaphore was performed using light signals. Semaphore using flags was not developed until 1866[16].

Present day use is typically found along beaches so that lifeguards and/or lifeguard stations may effectively communicate with one another. It is also frequently used to signal to airplanes and pilots. In today's system, one flag (typically orange or another high visibility color) is held in each hand and the person's arms are placed in distinct and specific positions with each position representing a letter or number in the semaphore "alphabet".

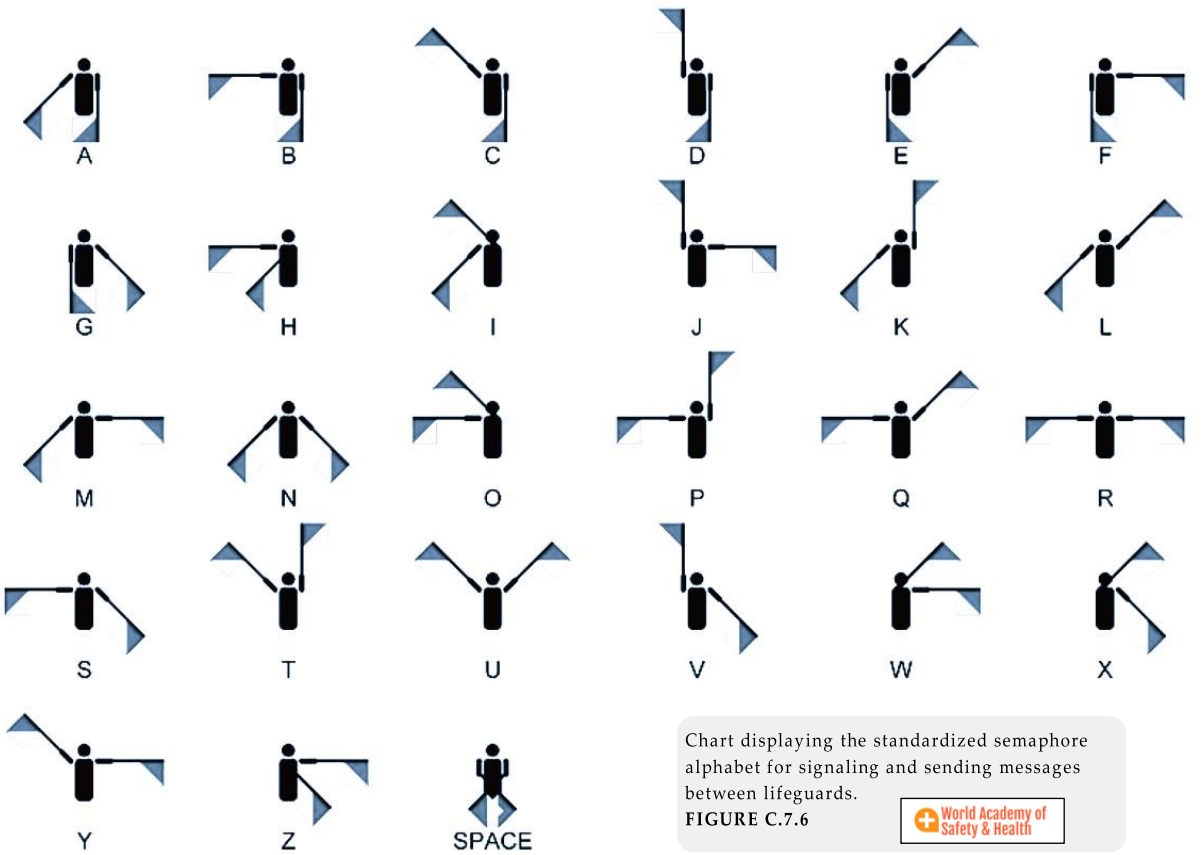


Chart displaying the standardized semaphore alphabet for signaling and sending messages between lifeguards.
FIGURE C.7.6 World Academy of Safety & Health

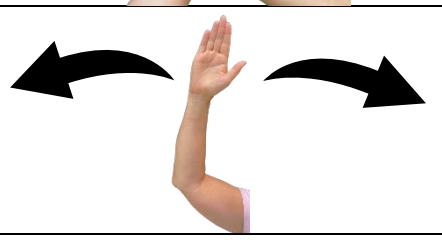
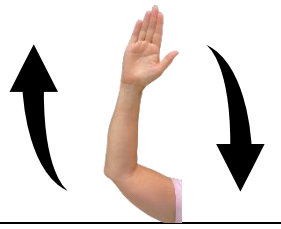
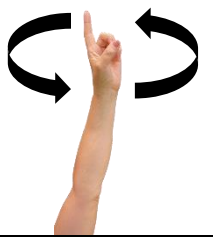
Handheld Portable Radios

If an organization is using a system of communication that includes handheld radios, there are a few mandatory components of such a system that require

A universal or standard set of "ten codes" does not exist. Instead, the use of, meaning of and protocol surrounding "ten codes" varies form one jurisdiction to another and/or from one organization to another.

A full list of "ten codes" can be found in *Appendix A*.

Hand Signals

	**Pointing** - to a Person or Situation to Alert a Fellow Lifeguard of a Situation
	**Tapping the Tap of your Head** – Request a Fellow Lifeguard Watch your Area
	**Creating a 'Circle" Above your Head with Two Arms** – All Okay
	**Making Fist with One Hand while Simultaneously Grabbing the Wrist of that Hand** – Submerged Victim
	**One Hand Straight Over Head Moving the Arm Back & Forth Left to Right** – Signal other Lifeguard(s) that CPR and AED is/are Needed
	**One Hand Straight Over Head Moving the Arm Up and Down While in Water** - Signal Lifeguard(s) on Beach to Begin to Pull the Landline
	**One Hand Straight Over Head on Land or in Water** – Need Immediate Assistance
	**One Hand Straight Over Head While Making a Fist While in Water** – Signal to Lifeguard(s) on Beach to Stop Pulling Landline
	**Arm Extended Over Head with Finger Pointing Upward and Motioning a "Circle" motion with Finger** - Incoming Watercraft, Vessel, or Other Watersport Object; Call a Lifeguard to the Beach from the Water

Signage

It is important to use clear, concise signage to communicate safety information to the public. At minimum, signs should be displayed at each entrance to the beach and/or swimming area(s); on the lifeguards stations (whether towers, buildings, chairs, etc); and roadways leading to beaches and/or swimming area(s). Signs should be customized for the unique features and dangers at each geographically specific beach and/or swimming area(s). At a minimum, all signs should include information about rip currents – what they are, why they are dangerous, how to recognize one, how to escape one. The signs should include a diagram of a rip current with indicators of how to escape. Additionally, agencies should consider adding a few general safety rules and hours of operation hours for lifeguards with a warning not to swim outside of lifeguarded hours.

Uniforms

Lifeguards must be issued a uniform that makes him/her easily identifiable by members of the general public as well as by colleagues and other emergency services personnel. Uniforms should:

- at minimum, include: whistle, hat/visor, shirt, swim trunks, and swimsuit (female lifeguards). Other uniform pieces to consider include: rashguard, jacket, sweatpants/sweatshirt, sun gaiter.
- be labeled with agency logo and/or with any combination of the following: GUARD; LIFEGUARD; BEACH PATROL; OCEAN RESCUE; SURF RESCUE.
- be of a color that is easily seen from a distance on the beach. It is also advisable to consider which colors are most easily seen while under water (neon green, yellow, orange).
- not be worn while off duty.

Reporting System

Each lifeguard agency should implement a data reporting system. The data that is reported on a daily basis should, at minimum, include: preventative actions, assists, rescues, missing persons, first aids. Agencies should also consider reporting subcategores such as multiple victim rescues, minor versus major first aids, and spinal trauma. This data will inform program recommendations, protocols and other decisions related to overall safety and program integrity.

Ideally, this system should be electronically maintained. Agencies using the WASH Surf Rescue program are asked to report annual data, itemized by action and month, to the **WASH** corporate office no later than January 15th of each year for the previous calendar year (admin@lifeguardcertifications.com or online https://lifeguardcertifications.com/agency-reporting/.

Distress Signals from Vessels

There are standardized visual and audible signals that all vessels should use if in distress. However, these standardized signals can change from inland to international waters. Additionally, each region of the world and/or each maritime organization can indicate acceptable and standard distress signals to be used. Therefore, it is vital that the lifeguard(s) know and understand the acceptable standardized signals to be used on the geographic area in which he/she will be working.

Visual Signals can include:

- Signal Flares
  - Red Hand-Held Flare – day and night use
  - Parachute Flare – day and night use
  - Red Meteor – day and night use
- Air Horn, Bell, Whistle
- Orange Flags
- Floating or Hand-Held Orange Smoke Signal
- Electric SOS Lights

In addition to the distress signals commonly used by vessels, it is important for lifeguard(s) to be familiar with other audible signals used by vessels if there tends to be high vessel traffic and/or nearby watersports, sport fishing, or other recreational marina activities.

There are different sound signal combinations for various vessel movements on the water. These signals will be either short (approximately 1 second) and/or prolonged (approximately 4-6 seconds) sounds. If power vessels are within sight of each other and are meeting or crossing within a half mile of one another; each vessel is moving; and each is maneuvering as authorized and/or required by the Inland rules the vessels must use the following sound signals.

When one vessel #1 approaches another vessel #2 and hears either one or two short sound signals, and the sound signal is both understood and vessel #1 can safely let vessel #2 do it, then vessel #1 is required to respond to vessel #2's sound signal with the same sound signal in response.

- **One Short Sound Signal -** When a vessel passes near another vessel, it will navigate around them by leaving them on the left side. If a vessel is behind another vessel, going the same direction and about to overtake it, one short sound signal means: "I intend to pass you on YOUR starboard side, MY port side".
- **One Prolonged Sound Signal –** When a vessel is leaving the dock and/or slip, it signals to other vessels a change in status and that it is getting underway. A prolonged sound signal is also used when a vessel is approaching a bend in a river where vessels coming from another direction cannot be seen. It is sometimes referred to as the "blind bend signal".
- **Two Short Sound Signals –** When a vessel passes near another vessel, it will navigate by leaving them on the right side. If a vessel is behind another vessel, going the same direction and about to overtake it, two short sound signals means: "I intend to pass you on YOUR port side, MY starboard side."
- **Three Short Sound Signals –** When a vessel is operating in astern propulsion, for example backing away from a dock or out of a slip.
- **One Prolonged Sound Signal + Three Short Sound Signals –** Technically, this is two different signals in succession. One prolonged sound signal indicates the vessel is getting under way, and three short sound signals indicates the vessel is backing up. This is what is used when the vessel is leaving a dock or slip in reverse.
- **Five Short Signals -** This is the DANGER signal. If one vessel does not understand the intent of vessel #2, or feel that vessel #2's proposed navigation is dangerous to either vessel, then vessel #1 is required to use the DANGER signal.

As a rule of thumb, inland and international sound signaling differs in that the use of sound signals in inland waters indicates a vessel's intended action while the use of sound signals in international waters indicates a vessel's actual course of action at that time.

Weather Related Procedures

The beach should be cleared whenever there lightning is seen or it is known to be in the area. Agencies should consider at least one portable lightning detector to equip the lifeguards with the most up-t-date, real-time storm and lightning information. Clearing of the beach must include the non-swimmers who are only on the beach. All persons must be directed to take cover in the closest indoor space until the storm has passed and it is deemed safe, by the lifeguards, to return to the beach.

Clearing of the beach can take place using a communication system such as a public address system and/or a megaphone. If the appropriate communication equipment is not available, the lifeguard(s) must use his/her whistle and loudly announce the clearing of the beach due to the incoming weather and/or, once the water has been cleared, walk person to person on the beach making the appropriate notification.

Lifeguard(s) must remain near his/her assigned beach but in the nearest indoor and/or closed safe area.

Opening and Closing Procedures

The daily opening and closing of beaches and swimming areas should adhere to a prescribed set of procedures to ensure personnel and equipment are prepared, functional and operational to start and end each day and that proper notification is made to swimmers at the end of each day.

The following are basic daily opening procedures:

- All lifeguards and staff report to 'lifeguard headquarters" for roll call, daily announcements, and safety checks and maintenance of all equipment.
- Lifeguards are dispatched to his/her assigned beach and/or swimming area for the day.
- Lifeguards, upon arrival at his/her assigned beach and/or swimming area, checks the beach and water for hazards.
- "Lifeguard headquarters" conducts a radio and/or other communication device check to verify there is clean and uninterrupted communication between each lifeguard station and a supervisor and/or "lifeguard headquarters" and lifeguard indicates that he/she is operational.

The following are basic daily closing procedures:

- "Lifeguard headquarters" announces the closing of beaches and/or swimming areas.
- Lifeguards ensure his/her water is clear of all swimmers and that beachgoers understand lifeguard hours have concluded for the day prior to leaving his/her lifeguard station.
- Lifeguards ensure signage indicates lifeguards are off duty and there should be no swimming until lifeguards come back on duty the next day.
- Lifeguards communicate to "lifeguard headquarters" once he/she is no longer operational.
- Lifeguards return to "lifeguard headquarters" to check equipment functionality, charge communication devices, fuel vessels and other equipment, complete any reports, and restock first aid kits.

Physical Disturbances

Whenever possible, the lifeguard(s) should only notify the local authorities of the disturbance and provide as many details as possible when reporting it. If the lifeguard(s) is/are unable to make contact with the local authorities and it becomes necessary for the lifeguard(s) to confront or investigate the disturbance him/herself, at minimum, two lifeguards with his/her rescue cans will approach the persons involved in the disturbance. Lifeguard(s) should do no more than request that the persons involved in the disturbance leave the beach immediately.

At no point should patron surveillance or the safety of swimmers be compromised. The safety in the water must remain the priority even of there is a disturbance on the beach.

When No Rescue Equipment is Available

WASH does not recommend attempting a water rescue without a piece of lifesaving equipment when such equipment is available to the lifeguard/rescuer. Further, WASH does not advise lifeguard(s) attempt any in-water rescue in the absence of the proper lifesaving equipment. That said, it is possible for any piece of lifesaving equipment to fail and/or malfunction during the execution of a rescue and/or for a lifeguard/rescuer to find him/herself in a situation in which a water rescue is required and there is no lifesaving equipment available. In these cases, the lifeguard/rescuer may choose to render assistance and, therefore, must be familiar with rescue techniques without the assistance of flotation devices.

Rescue Techniques Without Rescue Equipment

- **Cross Chest Carry** – rescuer places one arm over one shoulder and across the chest of the victim so that the rescuer's hand is under the opposite armpit of the victim. The rescuer places his/her hip under the backside of the victim and then uses a kick (egg-beater, flutter, scissors, frog) and a sidestroke with his/her free hand to move the victim to the shoreline.
- **Single Armpit Tow –** from behind the victim, rescuer places one hand (arm closest to the water's surface) under one armpit of the victim while keeping his/her forearm straight and against the victim's torso. Rescuer uses the scissors or frog kick along with short, powerful sidestroke pulls with the free arm. Rescuer can breathe using one of two techniques: 1.) rescuer keeps head above the water's surface while verbally reassuring the victim or; 2.) rescuer keeps head under the water and executes two sidestrokes between returning to the surface to breath. This technique allows the victim's body to move into a more streamlined position which will reduce drag in the water.
- **Double Armpit Tow** – from behind the victim, rescuer places both hands under the victim's armpits while keeping both forearms straight and against the victim's back. Rescuer must use only the inverted breaststroke kick to move the victim to the shoreline. The rescuer should keep his/her head above water to breath while towing the victim.
- **Wrist Tow** – using one hand, the rescuer grasps one wrist and forearm of the victim and creates space between his/her body and the victim. If victim is face-down, the rescuer must reach across his/her body (rescuer right hand to victim's left wrist or vice versa) and immediately dip the victim's arm into the water while, simultaneously, turning the victim's arm so that the victim flips to a face-up position. Rescuer turns either onto his/her back or onto one side and uses a kick (egg-beater, flutter, scissors, frog) and either a sidestroke or backstroke with his/her free arm to move the victim to the shoreline.
- **Chin Tow:**
  - **Passive Victim:** rescuer approaches the face-down victim and reaches across his/her body (rescuer right hand to victim's left wrist or vice versa) and immediately dip the victim's arm into the water while, simultaneously, turning the victim's arm so that the victim flips to a face-up position. Rescuer grasps the victim's chin with one hand (using caution not to cover the airway) and pull victim until streamlined. Rescuer pulls victim toward him/her and moves into the cross-chest carry.
  - **Active Victim:** rescuer approaches victim from behind. Rescuer submerges and grasps the victim's legs to spin the victim so that he/she is facing away from you. Rescuer maintains contact with the victim's legs and returns to the water's surface to perform a chin grab on the victim (using caution not to cover the airway) and pull the victim until streamlined. Rescuer pulls the victim toward him/her and moves into the cross-chest carry.

Escapes Without Rescue Equipment

- **Wrist Pull –** used when the victim grasps the rescuer's wrist/forearm. Rescuer makes fist and pulls his/her hand toward the victim's fingers to break the grip. The rescuer should pull in the direction of his/her chest to avoid striking him/herself in the head or face. The rescuer can place his/her other hand on the grasped hand to help with the pull and can place a foot on the victim's torso to help push away from the victim.
- **Rear Choke Hold –** used when victim grasps rescuer from behind. Rescuer should, simultaneously tuck his/her chin to his/her chest toward one shoulder and using his/her hands push the victim's arms up and go under the water. Rescuer, while going under the water should grasp the victim's arm that is lowest in the water and grab the elbow and wrist and pull it back and down behind the victim.

Use of Vehicles and All-Terrain Vehicles (ATV)

Vehicles may be used to maintain overall beach safety. Among other things, they allow for lifeguards to move from one location to another quickly and efficiently they can be used during a missing person search; they can be used to respond to land-based emergencies and/or emergencies just off the beach; and they can be used for crowd control purposes.

Equipment Aboard Vehicle and ATV

- Rescue Tubes and/or Rescue Cans
- Line Buoy (landline setup)
- First Aid Kit with CPR Mask and Bag Valve Mask (BVM)
- Oxygen Tank
- Mask, Fins, Snorkel (multiple sets)
- Automated External Defibrillator (AED)
- Two-Way Radio
- Spineboard (when possible)
- Rescue Board (when possible)
- Helmet(s) for ATV

Search and Rescue – Chapter 8

Shallow Water Line Search

The lifeguard(s) must activate the EAP and initiate a line search when a submerged victim: cannot immediately and easily be seen by the lifeguard(s) from the shoreline (or his/her assigned post); submerges while the lifeguard(s) is/are responding and approaching the victim and the lifeguard(s) cannot immediately and easily be seen by the lifeguard(s); slips under the water with only bystander(s) witnessing the submersion; slips under the water without the lifeguard or any other bystander witnessing the submersion.

A shallow water line search is utilized when a victim slips below the surface of the water at a depth in which lifeguard(s) can easily walk and the bottom is not visible.

Either the lifeguard who saw this occur or the primary lifeguard who is communicating with the bystander who saw the victim slip under the water, should immediately attempt to triangulate the victim's last known position. To accomplish this, the lifeguard should:

- Make a visual note of the victim's last known position prior to submerging.
- Quickly identify:
  - a stationary object beyond this position;
  - a stationary object that is perpendicular to this position and;
  - a stationary object that is behind you, the rescuer, on the shoreline.
- These three objects relative to the victim's last known position will allow you to maintain a marking of the depth and/or distance from the shoreline of the victim's last known position as well as the being able to maintain the victim's last known position relative to the position of the lifeguard line search in the water.
- As additional lifeguards arrive on scene, they will each enter the water, forming a line in which they are arm's length apart from the lifeguard on either side – to ensure this distance is maintained throughout the search, the lifeguards can interlock arms.
- The most senior lifeguard in the water will be the primary rescuer responsible for directing the search line and will communicate directly with the lifeguard onshore.
- The line should begin either up current or up wind from the victim's last know position; the shortest person must be in the shallowest of the water and the tallest person in the deepest part of the water with no person ever being deeper than chest deep; the line should begin to walk in the direction of the victim's last known position with each person in the line sweeping his or her feet left to right and right to left across the bottom in an effort to feel and locate the victim; the line moves at the pace of the slowest walking person.
- The line search must continue in a back-and-forth fashion across the water until the victim is located.

Deep Water Line Search

Either the lifeguard who saw this occur or the primary lifeguard who is communicating with the bystander who saw the victim slip under the water, should immediately attempt to triangulate the victim's last known position. To accomplish this, the lifeguard should:

- Make a visual note of the victim's last known position prior to submerging.
- Quickly identify:
  - a stationary object beyond this position;
  - a stationary object that is perpendicular to this position and;
  - a stationary object that is behind you, the rescuer, on the shoreline.
- These three objects relative to the victim's last known position will allow you to maintain a marking of the depth and/or distance from the shoreline of the victim's last known position as well as the being able to maintain the victim's last known position relative to the position of the lifeguard line search in the water.
- As additional lifeguards arrive on scene, they will each enter the water with mask and fins (*FIGURE C.8.1*), forming a line in which they are arm's length apart from the lifeguard on either side.
- The most senior lifeguard in the water will be the primary rescuer responsible for directing the search line and will communicate directly with the lifeguard onshore.
- The line should begin either up current or up wind from the victim's last know position; the shortest person must be in the shallowest of the water and the tallest person in the deepest part of the water; the line should begin by performing a head-first surface dive to the bottom and taking the number of underwater swim strokes as preassigned by the primary rescuer in the direction of the victim's last known position with each lifeguard in the line sweeping his or her hands, arms and feet left to right and right to left across the bottom and through the water column and visually looking through the water all in an effort to locate the victim; lifeguards should resurface in an upright position once he or she has completed the preassigned number of underwater swim strokes; once all lifeguards have resurfaced, the primary rescuer moves the line to the lifeguard who is farthest back.
- The line search must continue in in this same pattern across the water until the victim is located; the search is taken over by local EMS services; or the search is terminated by local EMS services.

It is vital that any time lifeguards are submerged in the water, for any reason, that at least one Marker Buoy s used to notify nearby boat traffic of persons under the water's surface.

Mask and fins to be used during a deep water submerged victim search.
FIGURE C.8.1

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Any time lifeguards are performing and activity, including submerged victim deep water line searches, the "Diver Down" flag must be deployed.
FIGURE C.8.2

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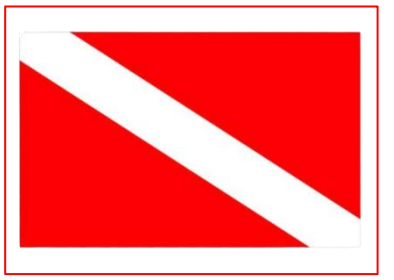


Locating Submerged Victim

- If the victim is located by lifeguards during a line search – deep or shallow water – he or she must immediately be brought to the surface of the water. Lifeguard(s) should accomplish this by any means necessary with the most desired technique being one in which the victim is grasped under each armpit by one or more lifeguards.
- Once at the surface, the victim should be kept on his or her back while ensuring his or her face is clear of the water. The lifeguards should work as a team to move the victim to the shoreline as quickly and efficiently as possible. Once on the beach, the victim should be assessed and the appropriate emergency care provided based on the victim's condition.

Appendix A – Ten Codes

10-1	Receiving you poorly	10-41	Moved to different channel
10-2	Receiving you well	10-42	Traffic accident located at……
10-3	This channel in use	10-43	Traffic congestion located at……
10-4	Okay, Roger, Yes, I understand	10-44	I have a message for……
10-5	Relay the message	10-45	Stations on this channel identify yourself
10-6	Busy, Not able to talk now	10-50	Break
10-7	Out of service	10-60	What is the next message number
10-8	In service	10-62	Unable to copy your transmission. Use telephone
10-9	Please repeat your last message/transmission	10-63	Net directed to…….
10-10	Was 10-6. Now on call	10-64	Net clear
10-11	Talking to fast	10-65	Awaiting your next message
10-12	Visitors are present	10-67	All units comply
10-13	Advise weather conditions	10-70	Fire at…..
10-16	Make a pick up at	10-71	Proceed with your transmission in code
10-17	Important business	10-73	Ending conversation on radio
10-18	Anything for me/us?	10-77	Not receiving you
10-19	Return to headquarters/base	10-81	Reserve hotel for……
10-20	What is your present location?	10-82	Reserve room for…….
10-21	Contact by telephone	10-84	Telephone number is……
10-22	Make in-person contact with	10-85	Address is……..
10-23	Stand-by	10-89	Radio repairman needed
10-24	Assignment is complete	10-91	Talk closer to the radio mic
10-25	Contact another station by radio	10-92	Adjust your transmitter
10-26	Disregard last message/transmission	10-93	Check my frequency on this channel
10-27	I am changing to channel…….	10-94	Give me a long count
10-28	Proper station identification	10-99	All units
10-29	Time is up for contact	10-100	Rest stop
10-30	Violates regulations	10-200	Police needed at……..
10-31	No longer violating regulations		
10-32	Will advise readability of signal		
10-33	Emergency traffic only on this station		
10-34	In trouble, require assistance		
10-35	Urgent matter cannot discuss via radio		
10-36	Time check		
10-37	Send tow truck		
10-38	Injuries, ambulance required		
10-39	Your message has been delivered		

Appendix B - Ocean and Beach Terminology & Definitions

Amplitude – distance form the water's rest position to the top of the wave's crest.
Backbeach – the soft sand portion of the beach prior to reaching the roadside or other off-beach location.
Backwash – outward (or seaward) flow of water that was left over on the beach from previous waves. It flows under the new incoming waves.
Brackish – a mix of salt and freshwater.
Contour – the elevation of the seafloor.
Crest – the highest point of a wave.
Cusp – the arc(s) creating in the sand from the incoming waves and subsequent outflow of the backwash.
Downdrift – the direction that currents move sand, sediment, and other debris.
Ebb Tide – period of time during which the tide is falling.
Feeder – flow of water parallel to the shoreline that all converge to form the neck (or beginning) of a rip current.
Fetch – the distance, over the water, the wind blows in one direction.
Foreshore – area of beach that s under water during a high tide and is exposed to air during a low tide. Synonym to intertidal zone.
Frequency – the number of waves that pass by a fixed point in a given amount of time.
Groin – shoreline perpendicular structures designed to mitigate the sediment transport or erosion of a beach and/or to maintain updrift beaches.
Gully – underwater canyon or hole. An inshore gully refers to a deeper area as a result of a hole in the bottom.
Height – the distance between consecutive crest and a trough of a wave.
Inlet – a recess or narrow passage through a barrier island that leads into a bay.
Longshore – synonym of littoral. A current that is created by a series of waves reaching the shoreline, breaking, and releasing sudden bursts of energy that then run parallel to the shoreline.
Lull – time between wave sets.
Neap Tide – describes the tide immediately after the first or third quarters of the moon phase. It leads to the least amount of difference between consecutive high and low tides.
Offshore – wind blowing from the land to the water.
Onshore – wind blowing from the water to the land.
Outside – a shallow area that causes waves to break farther form shore and well behind the "inside" break.
Period – time it takes for two consecutive wave crests (or consecutive troughs) to pass a specified stationary point
Plunging Breaker – waves that move along a steep sloping bottom and the wave can form a powerful barrel with enormous close-outs.
Salinity – amount or percent of salt dissolved in the water.
Sea Wall – coastal defense structure, usually man-made, to mitigate the impact of coastal processes including but not necessarily limited to wave action, erosion, wind, and storm swell.
Shorebreak – waves breaking directly on the shoreline usually with great impact.
Slack Tide – period of time during which the tide is not rising or falling.
Spilling Breaker – waves that move along a gradual sloping bottom and the crest collapses down (or "breaks") the face of the wave.
Surf Line – the point in which the waves are impacted by bottom contour and form "breakers".
Surf Zone – area where waves typically break.
Swell – series of waves that propagate along the water/air line and are influenced by gravity. Wind transfers energy from the air to the water and swell is not influenced by local winds but rather by distant weather systems.
Tide Line – highest point of a tide.
Tide Pool – seawater left behind in the intertidal zone during low tide
Trough - lowest point of a wave.
Water Column – the space filled with water between the water's surface and the bottom.
Wave – circular movement of water caused by energy moving through the water.
White Caps – during the breaking of a wave, the air and seawater mix causing white caps in which there is a turbulent flow of water beneath the white caps.

Resources

2. DROWNINGS DEATH RATE BY COUNTRY (worldlifeexpectancy.com)
3. Semaphore Flag Signalling System (anbg.gov.au)

References

1. American College of Surgeons Committee on Trauma. Advanced Trauma Life Support, 7th ed. Chicago: American College of Surgeons, 2007.

2. Bart R. and Lau H. 2021. Shallow Water Blackout. Available: Shallow Water Blackout - StatPearls - NCBI Bookshelf (nih.gov).

3. Boyd C, Levy A, McProud T, Huang L, Raneses E, Olson C., Centers for Disease Control and Prevention (CDC). Fatal and nonfatal drowning outcomes related to dangerous underwater breath-holding behaviors - New York State, 1988-2011. MMWR Morb Mortal Wkly Rep. 2015 May 22;64(19):518-21.

4. Branche CM, Stewart S. (Editors). *Lifeguard Effectiveness: A Report of the Working Group*. Atlanta: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control; 2001.

5. Brewster, C.B. *Open Water Lifesaving: The United States Lifesaving Association Manual*. 2nd ed. Boston: Pearson Custom Publishing, 2003.

6. Centers for Disease Control and Prevention. Drowning Facts. Available at https://www.cdc.gov/drowning/facts/index.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fhomeandrecreationalsafety%2Fwater-safety%2Fwaterinjuries-factsheet.html. Accessed on May 21, 2022.

7. Centers for Disease Control and Prevention. 2015. Fatal and Nonfatal Drowning Outcomes Related to Dangerous Underwater Breath-Holding Behaviors – New York State, 1988-2011. Available: Fatal and Nonfatal Drowning Outcomes Related to Dangerous Underwater Breath-Holding Behaviors — New York State, 1988–2011 (cdc.gov).

8. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. Web-based Injury StatisticsQuery and Reporting System (WISQARS) [online]. [cited 2012 May 3]. Available from: URL: http://www.cdc.gov/injury/wisqars.

9. CDC. Wide-ranging online data for epidemiologic research (WONDER). Atlanta, GA: CDC, National Center for Health Statistics; 2016. Available at http://wonder.cdc.gov.

10. Conner E. and Hawnwan P. 2020. Prehospital Use of Cervical Collars. Web-based EMSWorld Print Online Expo [online].[cited 2020 February 28]. Available at: https://www.emsworld.com/1223899/ce-article-prehospital-use-cervical-collars.

11. Dietz P.E. & Baker, S.P. (1974). Drowning: Epidemiology and Prevention. American Journal of Public Health, 64, pp 303-312.

12. Ham W, et al. Pressure Ulcers From Spinal Immobilization in Trauma Patients: A Systematic Review. J Trauma Acute Care Surg, 2014; 76(4): 1,131–41.

13. Hauswald M, Ong G, Tandberg D, Omar Z. Out-of-hospital spinal immobilization: its effect on neurologic injury. AcadEmerg Med, 1998; 5(3): 214-9.

14. Mael, F., Seck, M. & Russell, D. (1999). A Work Behavior-Oriented Job Analysis for Lifeguards (Final Technical Report). American Institutes for Research, Washington D.C.

15. March J, et al. Changes In Physical Examination Caused by Use of Spinal Immobilization. Prehosp Emerg Care, 2002; 6(4):421–4.

16. National Geographic. Rip Current. National Geographic website, https://education.nationalgeographic.org/resource/rip-current. Accessed on 02/15/2021.

17. National Museum of the Marine Corps. Semaphore Flag Communication. USMC website, https://www.usmcmuseum.com/uploads/6/0/3/6/60364049/nmmc_semaphore_flag_booklet_final_1.pdf. Accessed on December 2, 2021.

18. National Safety Council (1997). Accident Facts, 1997 edition. Itasca, Illinois: National Safety Council.

19. NOAA. Rip Currents. National Ocean Service website, https://oceanservice.noaa.gov/education/tutorial_currents/03coastal3.html. Accessed on 01/22/2021

20. NOAA. What is a current? National Ocean Service website, https://oceanservice.noaa.gov/facts/current.html. Accessed on 01/22/2021.

21. Pia F. 1984. The RID factor as a cause of drowning. First published in Parks & Recreation, June: 52-67. Available: www.pia-enterprises.com/RID.pdf

22. Ross, D.A. 1995. Introduction to Oceanography. New York, NY: HarperCollins. pp. 236-242.

23. Sumich, J.L. 1996. An Introduction to the Biology of Marine Life, sixth edition. Dubuque, IA: Wm. C. Brown. pp. 30-35.

24. Thurman, H.V. 1994. Introductory Oceanography, seventh edition. New York, NY: Macmillan. pp. 252-276.

25. Totten VY, et al. Respiratory Effects of Spinal Immobilization. Prehosp Emerg Care, 1999; 3(4): 347–52.

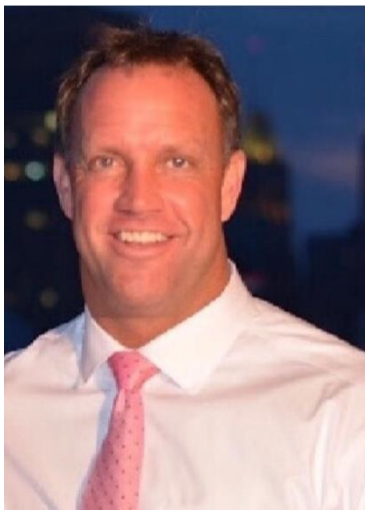
26. United States Lifesaving Association (ed. 2000). USLA Open Water Lifeguard Agency Certification Program, Huntington Beach, California.

27. United States Lifesaving Association. 1999 National Lifesaving Statistics. Available at www.usla.org/page/STATISTICS. Accessed April 23, 2022.

28. White CC et al. EMS Spinal Precautions and the Use of the Long Backboard – Resource Document to the Position Statement of the National Association of EMS Physicians and the American College of Surgeons Committee on Trauma. Prehosp Emerg Care 2014; 18(2): 306

29. World Health Organization. Drowning. Available at https://www.who.int/news-room/fact-sheets/detail/drowning#:~:text=Coastal%20drowning%20in%20the%20United,estimate%20of%20global%20drowning%20deaths. Accessed on July 16, 2021.

Biography of President



Jeff Dudley founded World Academy of Safety & Health (WASH) in 2020 in an effort to reduce water-related accidents by providing affordable and accessible training options to all populations. He has worked in aquatics since 1990. During this time, he served as Aquatics Director for Seapointe Village; Training Officer, Medic and Ocean Rescue Lieutenant for the Borough of Cape May Point; Official for the United States Lifesaving Association (USLA) National Lifeguard Championships; and has delivered lifeguard and lifesaving training and in-services across the world to pool and ocean lifeguards; police departments; 911 operators; and fire and EMS departments.

He holds both a bachelor's and master's degree as well as certifications across multiple states in special education, teacher of sciences, administrator I and II. He has worked as an educational professional since 1998 and has held positions of Teacher, Director of Athletics, Dean, Principal, and Head of School in both public and private settings. Dudley has been selected to serve on several school accreditation review committees.

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