

# **Speed Boat Safety!**

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## **Chapter 1 – Introduction**

Boat safety is extremely important if you are thinking about buying a boat or even riding in one. If you have a friend or family member with a boat and they allow you to drive you should also know the basics of speed boat safety. This could save your life or someone else's.

The purpose of this e-book is to teach you everything you need to know about boat safety. The information contained in this e-book includes some of the things you would learn in a boat safety course and more.

This e-book will take you through regulations set forth by the state and federal government for boat safety. You will learn about floatation devices and how to use them properly.

There is a lot of helpful information in this e-book which includes safety lights and why you need them, fire extinguisher basics, prevention tips, distress signals, about hypothermia, and much more.

There are hundreds of boating accidents that result in death every year. Many of the people hurt by speed boats are fishermen who are minding their own business fishing. Accidents happen and you may think that it would never happen to you.

The smartest thing you can do is educate yourself about speed boat safety and how you can take proper precautions while you are on the water for your passenger's safety, other boaters, and yours.

The most common accidents happen when drivers of speed boats are not paying attention, they don't know the rules of the water, how to protect their passengers, and many more reasons. When you educate yourself about boat safety you will know the rules and regulations, how to save a passenger, and much more. This e-book will teach you everything you need to know.

## **Chapter 2 – Federal & State Safety Regulations**

There are many federal & state regulations and guidelines set forth regarding speed boats on the water on lakes, oceans, rivers, canals, and more. You should never drive a boat with passengers in it or alone if you are not aware of these. This knowledge could save you from a hefty fine, jail time, or even prevent an accident from happening.

### Age

No one should drive a speed boat or a personal watercraft, known as a jet ski 16 years of age or younger. Motorboats that are less than 6hp can be maneuvered by children. These age restrictions vary from state to state and this is not a federal mandated law unless you are far out in the ocean.

Federal law will prohibit anyone from under the age of 16 operating a speed boat and the United States Coast Guard will enforce this age.

### **Identification and Registration Legal Requirements**

Registration is a state law and you must have your boat registered with the state you reside in. State registration requirements vary depending on the state you live in and you should check with your state. If you move, you should reregister your boat as you would your personal automobile.

When you register a boat you will fill out an application and get a certificate of number and receive the number on the certificate. Your boat registration number will be a combination of letters and numbers. It should begin with an abbreviation of the state the boat is registered in. The certificate number must be on the boat when the boat is in use.

You will also be given a validation decal which will be placed next to the numbers on the port side of your boat. You may live in a state that requires your validations to be on both sides of your boat. This registration is an annual renewal in most states. Be sure you don't forget to renew your registration.

The display of your boat numbers should follow specific guidelines. The numbers, letters and figures are read from left to right. They should be displayed on the forward half of the side of the bow of your boat.

The numbers are supposed to be in bold, block letters that are easy to recognize. The size of the numbers must be larger than 3 inches high. They must be contrasting with the background or hull of the boat so they do not blend in with the paint and are hard to read. The numbers should be far above the waterline.

When you stick your numbers on your boat you also need to separate letters and numbers with hyphens or spaces. Within six inches of the number you need to place the validation decal.

Also, these registration numbers are very important for identification to the coast guard or any regulatory agency on the waters. You cannot place any other numbers on this side of the boat.

#### **Hull Identification Number**

Every boat built after 1972 has a hull identification number. This is like a vehicle identification number. These numbers are unique to every boat and required on the title when you register the boat. This number is permanently attached to the boat on the starboard side above the waterline.

After 1984, because of boat thefts the guidelines for the HIN to be on the boat required two locations for this number. The second number will be unexposed and not visible.

### **Coast Guard Minimum Requirements for Equipment**

The federal government has set forth guidelines and requirements you must follow when you own a speed boat and ride in on the waters. There is a list of equipment you should have with you on the boat at all times.

If you are pulled over by the Coast Guard and you do not have the equipment you could be fined or even required to abandon the boat and they will impound it.

The minimum equipment items that are required by the U.S. Coast Guard include these items:

- Personal Floatation Devices
- Bell or Whistle
- Visual Distress Signals
- Fire Extinguishers
- Ventilation
- Back fire flame arrestor

## **Chapter 3 – Personal Floatation Devices**

Personal floatation devices or PFDs are life saving devices and they are required by the state and the federal government to be on board for every passenger you have on the boat. There are many considerations when you select a PFD.

Federal regulations mandate states that do not have life jacket laws. Today, there are four states that are mandated because they do not have a set law.

This mandate by the federal government requires children under the age of 13 to wear an approved personal floatation device while using a speed boat. A child doesn't have to use a floatation device if they are in a closed cabin or below decks on your speed boat.

There are many dangerous conditions that you should wear a PFD. All passengers on the boat should be required to wear PFDs in these situations also. Dangerous conditions are considered to be dangerous weather, local hazards, high boating traffic, far away from shore, boating at night, and when you are along.

More than 50% of boating accident deaths occur from drowning victims that are not wearing a personal floatation device. Any circumstance where you do not feel safe you should put on your PFD.

### Types of PFDs

There are five different types of personal floatation devices. It is important to know the different types and which one is right for you. This will help you learn which vest you should be wearing. Each device is intended for different use.

The Type I personal floatation device is known as the off-shore life jacket. This life jacket is designed to provide the best buoyancy in any type of waters. When a boater is unconscious this type of life jacket is designed to turn the body over to a face up position.

There are two sizes to this PFD; adult size and child size. A child size PFD type I will provide a minimum of 11 pounds of buoyancy and the adult size will provide 22 pounds. This life jacket is best when in rough waters and a long delay of rescue is expected.

The type II PFD is also known as the near-shore vest. This life jacket is best for quick rescues in calm or inland waters. This type will not turn all wearers of this PFD to a face up position but some. This vest is not as efficient as the type I vest.

The type III PFD is known as a floatation aid device. It is best for calm and inland waters where rescue will be quick. This device will not turn people wearing it to a face up position. The person will have to tilt their head backward so they do not end up face down in the water. If you are knocked unconscious wearing this vest it may not help you.

The type IV PFD is known as a throwable floatation device. This device is best used for when help is visible and present and where there is a lot of other boating traffic. The person will not wear this device but they will hang onto it until they are rescued.

A type V PFD is known as a special use device. This is designed for special activities. These come in different varieties like inflatable devices, deck suites, work vests, sailing vests and more. A type V vest will inflate immediately upon entering any water. Children or anyone who cannot swim should not wear these floatation devices.

## **Ensuring Fit**

When you wear a PFD you need to ensure it fits you properly. The proper fit is a snug fit. The person wearing the device should raise their arms above their head and you will pull firmly on the upper straps. This will tighten the life jacket and ensure it is snug. If the life jacket fits the person properly it will not ride higher than the person's ears or mouth.

#### **Floatation Device Labels**

All floatation devices that are approved by the U.S. Coast Guard have labels on them. The labels will specify what the vest's intended use is supposed to be. If you choose to use a floatation device outside of the scope of what it is for then you could be ticketed because it is against the law. In addition, it could cost someone the loss of their life.

## **Chapter 4 – Navigation Lights & Visibility**

Navigation lights are required on any boat that is on the waters between sunset and sunrise. Many people assume their boats come with navigation lights and all of the proper equipment.

A showroom boat may have lights and other things that your boat doesn't come with. It is entirely up to you to make sure your boat has all of the proper lighting fixed on your boat.

### **Low Visibility**

When visibility is restricted or you are operating at night you are required to have navigation lights and they are mandatory to be displayed. When there is another vessel the lights will let the oncoming boat know which vessel is the stand on or give way vessel.

If a boat is approaching from your starboard side, this is known as your danger zone. It will show its red port light. The boat will see your green 'go' light and you will have the right of way. If the boat is not a power driven boat or does not have any lights they will have the right away at all times.

If visibility is really bad you are require to use sound and warning signals every two minutes. A speed motor boat should use a prolonged blast every two minutes. If you are stopped then you should blast two prolonged blasts every two minutes.

Visibility is extremely important. You don't want to come across a situation where you are upon a large freighter or cruise ship and it is too late to get out of the way. Heavy fog and situations like this occur and when they do you need to know how to read the lights.

Large vessels cannot move out of your way even if they do see you coming. This is because they are too big. Don't ever think that a big boat will move. A small speed boat can maneuver better and faster. Listen for sound warning signals when you are in your speed boat at night time and there is poor visibility.

## **Chapter 5 – Fire Extinguishers & Fires**

There are many different types of fire extinguishers. As a speed boat operator it is important you know the differences between the different types and which one you are required to have on your boat.

Fire extinguishers are extremely important for safety. Not every motorboat is required to carry this device but it is best if you do have one on board. Each fire extinguisher will be approved by the U.S. Coast Guard.

Fire extinguishers are classified by a class of fire they have the capability to put out which are according to letters and numbers. A, B, C, and D are set forth to indicate the class of fire the fire extinguisher is designed to put out. There will be a number that stands for the capacity of the fire the extinguisher can put out. The larger the number the larger the capacity.

#### **Fire Classes**

The four classes of fires include class A, B, C, and D. A Class A fire is considered a fire full of combustible solids that can be wood or anything else. Class B fires are fires with flammable liquids like gasoline. Class C is an electrical fire and a Class D is a fire with combustible metals.

### **Carbon Dioxide CO2 Fire Extinguisher**

A carbon dioxide fire extinguisher can take care of a class B or C situation. The carbon dioxide fire extinguisher has a large blast of high pressure gas. This fire extinguisher is not designed to put out amber and ash fires. Spraying this type of extinguisher on ambers and ash will cause the fire to spread everywhere.

## **Halon Fire Extinguisher**

The Halon fire extinguisher is designed for Class A, B, and C rating fires. This extinguisher is designed for small class A fires. The halon fire extinguisher

### **Dry Chemical Fire Extinguisher**

A dry chemical fire extinguisher is designed for a class B or C fire. This type of extinguisher comes in three different varieties. You can find them in sodium bicarbonate, potassium bicarbonate, and mono ammonium phosphate.

The dry chemical is not recommended for use on speed boats because the materials are corrosive. It has a Class A rating because it has the ability to melt the item on fire to encase it and put the fire out.

### **Foam Fire Extinguisher**

A foam fire extinguisher is designed for a class A or B fire and it is the best solution when boating. Foam extinguishers have the ability to provide a blanket over a fire and completely smother it. The foam separates the vapor layers in Class B fires also.

All gasoline powered boats are required to carry B-1 approved fire extinguishers.

If you have a fire on your boat the only place to go is in the water. Three things make up the elements of a fire and they include oxygen, fuel, and heat. By removing one of these elements you can put a fire out.

Gasoline and propane are very dangerous fuels. The fumes often collect in areas like the cabin, lower areas of the boat and the bilge. They are naturally surrounded by oxygen so all they need for a fire to ignite is heat. Just a spark from the ignition could cause the boat to explode.

Be sure you read the instructions on your fire extinguisher and you know how to use it. Never hesitate and always be prepared to use an extinguisher and put a fire out. Direct the extinguisher at the flames and use short bursts. As you are blasting the fire sweep the extinguisher from side to side.

## **Chapter 6 – Visual & Sound Distress Signals**

Visual distress signals are for circumstances you are under distress and there is someone you can see that can help you. Certain devices you can use as visual distress tools include flares, smoke flares, and meteor rockets.

You are required to carry visual distress devices on your boat at all times. there are many circumstances that might arise that require you to use them. If you are in a speed boat on the ocean, great lakes, seas, or any water directly connected to them you are required to be equipped with distress signals.

Boats that are not required to carry visual distress signals in the day but they are at night include recreational boats less than 16 feet long and boats in organized events like races, marine parades, and regattas.

Flares are usually marked with an expiration date. Be sure your flares are up to date and you know how to use them. They should always be accessible and ready to use.

You should never use a distress signal when you are not in distress. If you do you could face a penalty or a fine. It is best you do not waste your distress signals either. You should only use them when you see approaching aircraft or another boat from a distance that can help you.

You must carry a minimum of three pyrotechnic devices on your boat and they must be approved by the USCG. To satisfy the USCG you can carry one of the following combinations:

- A total of three hand held flares for the day and night
- One red flare and two meteor flares
- One hand held orange smoke signal for the day and two floating orange smoke signals for the day and one electric light signals for night use.

There are things you should know about flares before you attempt to use them on your own. These things include the following:

- Reading and understanding the directions of use
- The flare is not expired
- Hold lit flares downwind, away from boat and your passengers
- Hold away from your body
- Store in water tight container so they don't get wet
- Have them accessible and ready for use
- Use only in an emergency situation

### **How to Call the Coast Guard for Help**

The VHF radio on your boat is something you should become very familiar with. The channels designated for the USCG are channel 16 and channel 22A.

Channel 16 is the universal channel for the coast guard and for emergency use only. Never use this channel to have a conversation with another boater on as it is a violation of the law. If you must hold a conversation on the radio then you should agree to a different channel and then proceed talking.

If you are in a distress situation you will switch to channel 16 on your VHF radio and say, "mayday mayday". If you are not in distress but you need to get someone to help you then you will say "Coast Guard." These channels are monitored day and night by the coast guard and you will get the help you need.

If you have a cell phone and you want to call in for help it will take you much longer than getting to know your radio. The radio is a direct connection to the coast guard. Your cell phone is a direct connection to land lines.

The coast guard is going to want to know some information when you call them and you need to give it to them. They will ask you your position or location via GPS if you have one. You should know where you are at all times when you are on a boat.

You should tell them exactly what is wrong and what the problem is. They will want to know how many passengers are on board and how many are injured or just in danger. You will need to give your boat name, registration, and a description so they can easily spot you. They will also want to know the safety equipment you have on board so they can walk you through any help over the radio if they need to.

### **Sound Signals**

Knowing sound signals coming from other boats could save your life. You should also know the appropriate sound signals to give to other boats that are on the water and approaching your vessel.

If you have a boat approaching you and it gives you one short blast then it means they intend to change course to starboard. Two short blasts means they intend to change course to port. Three short blasts means that they are moving in reverse. Multiple blasts of five or more means a danger or that there is doubt of what is going on.

The only way to communicate with other boats is by using sound signals. If you are not clear what a boat is doing then you should not be afraid to use these signals. The danger signal should be used if you are confused or you are not sure what a boat that is coming right at you is going to do.

You might use a danger signal to tell another boater what they are about to do is dangerous. They may be heading into dangerous waters or they might be backing up close enough to hit you.

When a danger signal is used all boats will stop and then communicate. When everyone agrees that the action going to be taken is safe then the boats will resume on the water.

## **Chapter 7 – Precautions**

Weather is a precaution you have to take when you are on the water. If you don't pay attention to the weather then you could be in big trouble. Weather is as important as a full tank of gasoline in the boat. As the skipper of the boat you need to be fully aware of the weather.

You can check the weather by your local television station, the news, radio, and even your VHF radio. There are many indicators that can show you that the weather is going to suddenly change. These factors include:

- Weather changes come from the west watch the western skies
- A sudden drop in temperature can mean a coming storm
- A sudden drop in pressure means a storm is approaching
- Cloud build up
- Sounds of thunder
- Rough water
- Fog forming

There are many things that you should do if you are out in the water and a storm is approaching. These things are for your safety and for your passengers. These things include:

- Be sure everyone is wearing a life jacket
- Slow down and drive with caution
- Close all ports and hatches
- Head to the nearest and safest shoreline
- Stay dry
- Switch to a full tank of fuel
- Secure all loose items
- Everyone should remain low and in the center of the boat
- Disconnect electrical equipment if there is lightening
- Sound the appropriate signals in foggy conditions

#### **Local Hazards**

You should always be aware of the local hazards of the water you are boating in. If you are new to the area ask around before you put your boat in the water and just go exploring. There are many dangers you should be aware of which include inlets, shoaling areas, whitewater and rough waters, dams, locks, and abnormal tides and current conditions. These can be very dangerous to you and your crew.

State and local officials often have requirements or restrictions to areas. Some lakes don't even allow motorized speedboats on the lake. Be sure you know all of the guidelines before you get into the water so you don't find you are in a heap of trouble.

### **Fueling**

Fueling should take a serious precaution. You should never fuel your boat when there are passengers in it and you are in the water. Be sure you are docked with no passengers. Use a portable tank. Turn off the engine to the boat and extinguish any flames. Do not use any electrical switches for anything, not even a lighter. Do not smoke. Close all of the ports and hatches.

You should determine exactly how much fuel you need before you fill up. You should never over fill your tank. After filling you will open the ports and hatches back up and turn on the blower for a minimum of five minutes. Then you can do a sniff test and start up the engines if you don't smell any fumes. The passengers can get back on the boat and you are ready to go.

### **Approaching Large Vessels**

If you find you are approaching a navy or coast guard vessel you will need to call them on channel 16 unless they are calling you already. Answer all questions they may have for you. It is against the law to not tell them the answers to their questions or withhold any information. They even have the right to board your boat if they want to. Any violation while you are in a navy protection zone could land you with a felony and up to 10 years in prison.

You should never approach a navy vessel within 100 yards and you should always be at a minimum speed. Proceed as the commander of the ship tells you to do over the radio.

## Chapter 8 - Alcohol

Alcohol can harm your body and causes serious accidents on the water. Alcohol related boating is responsible for more than 30% of the boating deaths that occur each year. Alcohol causes you to be unable to drive a boat for many reasons. These reasons include the following:

#### **Balance**

Balance on a boat is already very difficult. When you are under the influence you lose your sense of balance and it is common for people to fall out of a boat and drown.

#### **Vision Problems**

The sun and the reflection of light off of the water already make it hard to see. When you are under the influence it makes it even more difficult. It is common for people who are driving a boat while intoxicated not be able to tell the colors of the green and red markers on the side of an oncoming boat. This causes accidents more often than you would imagine. Not only the skipper and his passengers are injured but also the oncoming boaters as well.

#### Coordination

When a person falls into the water and they are under the influence they cannot hold onto a floatation device. It is difficult for them and the cold temperatures of the water can cause the person to go into shock. Once this occurs they are sure to drown.

#### **Blood vessels**

When you are out in the sun your blood vessels dilate on the surface of the skin. This causes you to lose body heat. When someone intoxicated has been out in the sun all day they have already lost a lot of body heat. If they go overboard the chances of hypothermia kicking in quickly is almost certain.

### **Judgment**

Judgment is impaired when you are drinking in every circumstance. When you drive a boat you need to have excellent judgment of many things. It is common for people to be far too relaxed and have no fear when they are drinking. This is when the danger plays a serious role.

No fear causes boaters to do things they don't even know are dangerous. They drive at higher speeds then they should be and they don't even know it. This is when disaster strikes. You must have clear judgment.

#### **Environment**

When you are out in the sun all day your body is already drained from the stresses of the environment around you. The things that drain your body include sun, wind, noise, vibration, glare, motion on the water, and more. These factors cause a condition known as boater's hypnosis and fatigue. You don't have to be drinking alcohol to experience these things. When you add alcohol to the mix then you are beyond unable to comprehend and provide a safe ride for passengers or yourself.

The best thing you can do is not bring alcohol on your boat at all. Never drink prior to getting on your boat and don't let anyone drive your boat that has been drinking.

Driving a boat while intoxicated is a steep penalty if not your life. This ticket is the same if not worse than an automobile drinking and driving ticket. States vary on the penalties but they are severe.

## **Chapter 9 – Speed & Driving Basics**

Driving at a smart speed is very important. Experts take years to develop their skills of knowing when to slow down and when to speed up and what the best speed is. There are many considerations to think about when it comes to speed.

States have different rules for speed on a lake or waterway. If you are on the ocean and far out in the water you can ride your boat fast and safely. However, always use common sense when you are driving your boat.

You should consider the visibility when you are on a boat. If you cannot see ten feet in front of you then you won't be able to stop in time if you are going 30mph. Foggy conditions mean you will be driving slowly or barely crawling and using fog sound signals every two minutes.

Know your location and any hazards. If you are in a new place you might want to drive around the area at least once before you begin your fun. See if there are any fishermen or other boaters. Make sure that when you go up to high speeds there are not any hazards that can cause you danger.

Pay attention to the winds and the weather. You should know the rules of the waters and where you are. If you see any boaters in danger or that need assistance it is law that you stop and help them. This could be a dead battery or a life threatening event. It is your duty as a boater to help them.

When you are around jet skiers, water skiers, other boaters and swimmers you need to drive with caution. When you drive in a highly packed area of other boats you need to drive slowly. It is dangerous to drive at high speeds when there is a lot of traffic in the water. You are responsible for anything you cause with your wake so remember this.

## **Chapter 10 – Recreational Hazards**

The biggest recreational hazards is fishermen and hunters. Fishermen collisions and deaths are at least 30% of boating accidents. These occur from high speed boaters seeing a fisherman at the last minute, fishermen themselves not paying attention, and more.

Almost all fishermen that die in the water from drowning are not wearing life jackets. The problem is not that they do not know how to swim. The problem is hypothermia kicks in and then they drown.

Fishermen don't act responsibly when they are fishing. They stand in boats and they fall in the water. They also don't wear their life jackets.

One fact that might throw you is that more hunters die each year from drowning off of a speed boat then from a gunshot wound on a hunting trip.

If you are riding your speed boat and you come upon fishermen or hunters it is a rule that you go away and do not ride around them. Never distract a hunter or a fisherman.

If you are driving too quickly around a fisherman standing in his boat and your wake throws him in the water this will make you responsible for what happens to him. If he dies you are at fault for negligence. Do you want this hanging over your head? Just steer clear from people who could be injured from a speed boat wake.

The biggest reason for boating accidents is due to human error. You don't want to be the reason an accident occurred.

## **Propeller Strike**

A propeller strike is when you accidentally run over someone with your propeller. It happens all of the time. A propeller can kill, mutilate, mangle, and permanently disfigure someone because it is not visible to anyone.

When you are driving your boat there are many things to think about when it comes to using your boat and riding near others. Here are ways to avoid and minimize accidents from happening with a propeller strike:

- Engine should be off when people are boarding and unloading
- Before moving be sure everyone is seated
- While moving everyone should be seated

- Never operate near people in the water
- Pay attention

There are devices designed to avoid a propeller strike. These devices include a propeller guard, interlock, and sensors. Propeller guard are devices that fully surround the propeller. Interlocks are designed to automatically shut off the engine. Sensors are devices that people wear and then they go overboard the sensor immediately triggers the engine to shut down and sound an alarm.

### Capsizing

Small speed boats can be unstable and even tipsy when you are driving them improperly and other conditions are present. There are many ways you can avoid this.

Capsizing is when you boat turns over on its side or completely upside down. If the boat is upright and filled with water it is called swamping. This can be just as dangerous as capsizing.

A boat can capsize for many reasons. One of the reasons that causes a boat to capsize is by overloading it. The boat will slow down and the water line will be even higher than it is supposed to be. Swamping often occurs when there are too many people or too much gear in a boat. This can cause the boat to overturn or just sink.

When weight is distributed improperly on a speed boat it is easy to turn it over or capsize. When you turn corners and weight is not right a boat will flip right over quickly, especially if you are driving at high speeds. The boat will be unstable. The people and the equipment should be distributed by weight. Put children with equipment and adults on the other side. Just make sure the weight is evenly distributed on the boat.

When you are driving a speed boat and not paying attention to the current, rough waters and waves you can definitely flip the boat over.

If your boat should capsize the first thing you need to do is take a head count and make sure everyone is accounted for. Be sure everyone has a life jacket and then stay with the boat to remain afloat. Use visual distress signals, horns, and other methods to get help. If at all possible, flip the boat back over, bail out the water and get back inside.

#### **Crew Overboard Procedure**

When you hear someone go over board or another passenger tells you they went overboard you need to follow a few steps.

The first person to see a person go overboard should immediately shout, "crew overboard." This person should act as a spotter and keep their eyes on the person in the water. The most important thing is that you do not lose sight of the person who fell in because it can be difficult to spot them again, especially if you are in the ocean.

When a person falls in the water you want to be sure your propeller is turned away from the side of the water they fell in. You don't want a propeller strike to occur.

Throw a life saving device for them to hang on to until you can get them in the boat. This should always be immediately accessible and within your reach in case of emergencies like this.

Always approach the person slowly and move into the current and the wind. Once you are alongside them you can shut off the boat engine and help them aboard. You should have stairs on the back by the stern.

## **Chapter 11 – Survival**

There are many circumstances where you might find yourself in the water. You might have been on the swim team and won first place but it doesn't mean you know how to survive.

There are many techniques you should learn in case you end up in the water and you are waiting for a rescue. One of the best methods of floating you should learn is to float on your back horizontally. This position is comfortable and keeps your face out of the water. You can lay outstretched and arch your back a little. Allow your legs to relax out in front of you.

The vertical back float doesn't put all of your body on the surface of the water. Your upper body will be on the surface while your legs are extended down in the water. Your back and face and upper chest will be lay back with your arms extended.

Survival floating is a very good thing to know if you are in the water for a long period of time and you don't know when help is coming. When you survival float you will just put your head back and relax while maintaining your face at the surface so you can breathe.

One important factor is that when you tread water you use a lot of energy and it is tiresome.

If you find yourself in waters that are moving quickly and rapidly like a river or stream then you should turn over on your back and put your feet in front of you facing downstream. This position will help cushion you from the blows you are about to take with the rocks and debris in the water.

When the body is immersed in cold water three things happen quickly to your body; cold shock, failure to swim, and hypothermia.

When the body is suddenly shot into cold water a reflexive action of gasping out of shock occurs. The problem that occurs is when the body gasps naturally like this it takes cold water into the lungs. Drowning can be instant if water does make its way in. The best thing you can do is when you realize you are about to fall into the water is cover your mouth and nose with your hands and hold your breath.

After your body goes through the initial shock you will be unable to swim. The reasons you cannot swim is because you will completely lose manual dexterity.

You may not be able to match your breathing with your swimming and lose all of your coordination because your arms and legs are too cold. People try harder and harder to swim and increase their swim angle and then it results in drowning.

## **Hypothermia**

There are three types of hypothermia. The three different types include mild, medium, and severe.

When the body's temperature drops below 95 degrees you are in a condition known as hypothermia. This is caused by exposure to cold water or cold air. The body loses its body heat and results in losing dexterity, consciousness, and loss of life.

Survival time can be really short depending on the water temperature and exhaustion. Here is a chart to explain survival time for someone who falls into the water.

Temperature of the Water	Exhaustion	Time of survival
32.5	under 15 minutes	under 15 to 45 min
32.5-40	15-30 min	30-90 min
40-50	30-60	1-3 hours
60-70	2-7 hours	2 – 40 hours

## Mild hypothermia

When a person is suffering from mild hypothermia they are in the best shape. They will feel cold, have violent shaking and not be able to speak clearly. Their speech may be slurred.

## **Medium Hypothermia**

At this stage a person will have lost muscle control, feel drowsy, incoherent, and completely exhausted.

## **Severe Hypothermia**

This is the most dangerous stage that can lead to death quickly. The person will collapse and be unconscious. Respiratory distress or signs of a cardiac arrest will take place.

### **Conserving Body Heat in the Water**

When a person is in the water the only way to conserve your body heat is not to move at all. You don't want to flail around and paddle. Try not to move. The more you move around the faster you will lose your body heat and die. Swimming lowers the temperatures in your body. Don't move.

If you are in a position or there is some type of small floatation that will allow you to pull a part of your body out of the water then you need to do this. Hypothermia occurs faster in the water than out. Keeping your head out of the water will really lessen your body's heat loss and increase the amount of time you have of survival.

The most important thing is that you need to be wearing a life jacket. If you are not wearing a life jacket then you will have to float and use energy. A life jacket allows you to float and use nothing.

The best position you can be in when you are in the water is on your back in the fetal position. You can float effortlessly and protect the areas of your body that are susceptible to heat loss the most. These areas include the sides of the chest, groin, armpits, backs of your knees, and more. The ideal circumstance is finding yourself in the water with someone else because you can huddle together and maintain as much heat as you can.

One thing to keep in mind is that you never massage someone's arms or legs that is experiencing hypothermia. This will cause the circulation in their body to take cold blood from the surface to the core of the body. This will speed up the dropping of temperature and progress them into death. Alcohol should never be consumed either because it causes body heat to be lost also. Any type of stimulant will have the same affect as a massage.

## **Chapter 12 – Conclusion**

There are many things to keep in mind when you have a speed boat and you take it out on the water. The best thing you can do is take a safety course and learn everything you need to know before you get started.

You should never bring alcohol on your boat or allow intoxicated riders to board. If you have been drinking then you should not even board your boat.

Obey all state and federal guidelines set forth for boaters. Be sure to load your boat with the proper safety materials so you are ready for anything that could happen.

Make sure you have the right type of safety vest or floatation device. Have the proper fire extinguisher on board too. Make sure your boat has safety lights and you know the right sound signals to give to other boaters so you can communicate with them.

If your boat capsizes be sure you hang onto it and do not swim away from it. You don't want the current to push you so far out to sea you can never be found.

Take care of your passengers, other people in the water, and use common sense when you are driving your boat. You are responsible for what happens when you are on the water.

A boat is a big responsibility. You should learn everything you need to know about safety before you go boating. This e-book is an excellent guide you can keep with you on board to remind you about how to call the coast guard if you are in distress, proper light signals, and much more. Safety is the most important thing when you are in a boat on the water.