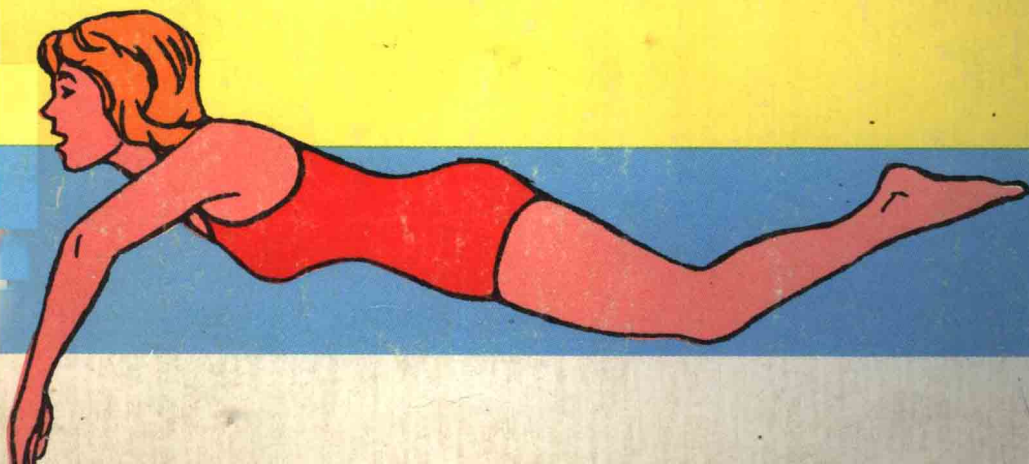
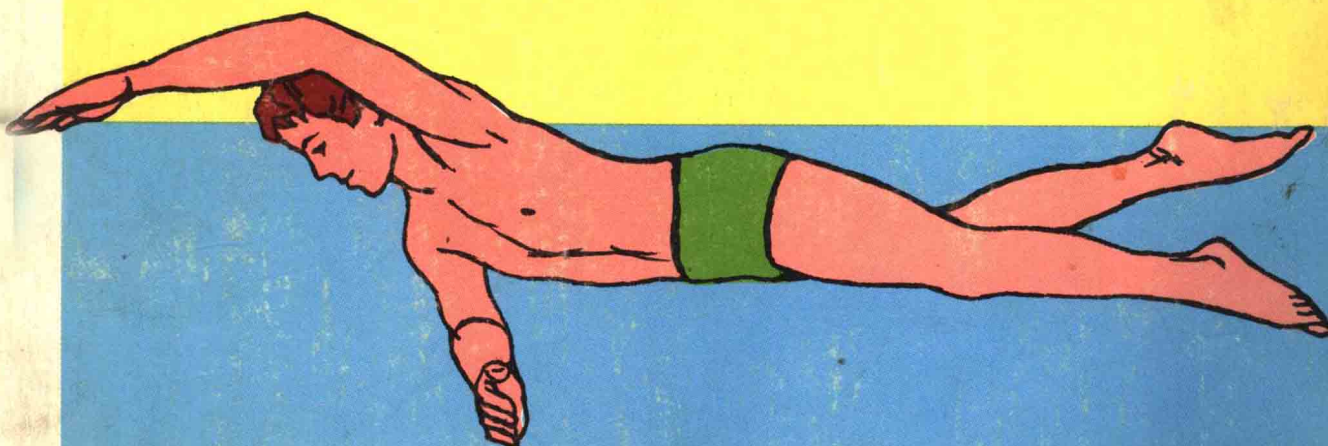
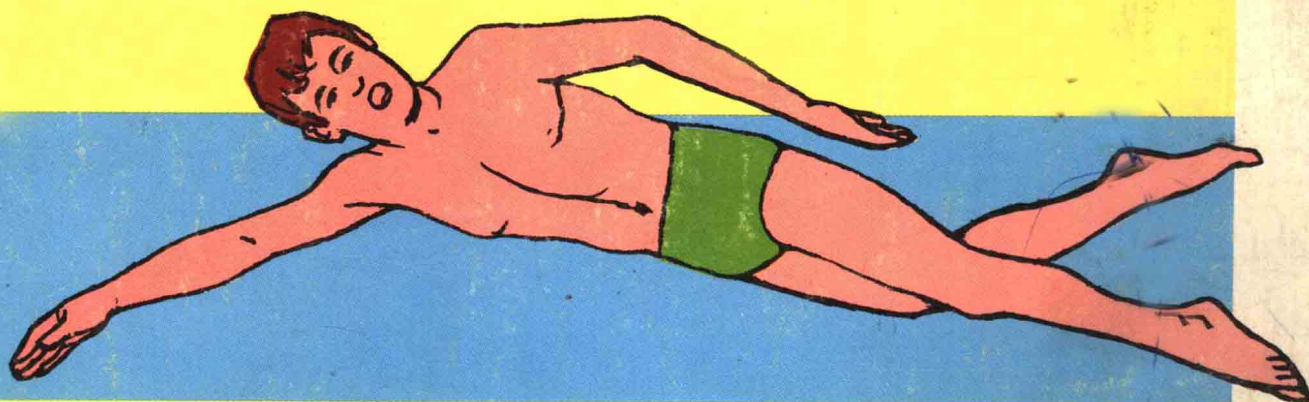




American
Red Cross

Swimming and Aquatics Safety



Swimming and water safety instruction continue to be the most fundamental parts of the American Red Cross total water safety program. Each year, over 40,000 individuals are trained as Red Cross instructors, more than 160,000 instructors are authorized to conduct Red Cross courses of instruction, and more than two million course completion certificates are issued to the participants of these courses.

This publication is intended primarily for use by Red Cross volunteer water safety instructors and basic swimming instructors. They will find it a valuable resource, since it contains comprehensive information about swimming strokes, entries into the water, and other related aquatics skills, as well as suggestions for teaching, analyzing, and evaluating these skills.

All persons who swim reasonably well and, in addition, possess a sufficient number of safety skills, should be able to take care of themselves in most water emergencies. Without skilled swimmers, there could be no lifesaving training program because individuals should be capable swimmers before they can acquire the skills necessary for making a swimming rescue. Furthermore, the ability to swim should be a prerequisite for active participation in such aquatic activities as sailing, boating, canoeing, water skiing, surfing, and skin and scuba diving.

When Commodore Wilbert E. Longfellow started the Life Saving Service of the American Red Cross in 1914, he recognized the need for providing swimming instruction as part of the water safety program. In an attempt to meet this need, nonswimmers were taught simple skills through the employment of a mass instruction approach. By 1934, it had become evident that too many beginners did not have an opportunity to progress beyond this level and, in fact, had probably learned to swim just enough to get into trouble.

In 1938, the American Red Cross published *Swimming*

and *Diving* as the resource that would enable water safety instructors to teach a program of swimming courses that started at the beginner level and progressed through the advanced swimmer level. For 30 years, this text was used as the technical reference for all Red Cross swimming instruction in this country and it filled a great need.

The level, scope, and knowledge of aquatics increased rapidly from 1938, and in an attempt to keep pace with the rising interest and activity, the American Red Cross published the *Swimming and Water Safety* textbook in 1968. The American Red Cross has published *Swimming and Aquatics Safety* to provide its trained instructors with even more comprehensive information than did *Swimming and Diving* and *Swimming and Water Safety* about teaching and evaluating the skills that are included in the Red Cross swimming and water safety courses.

The task of "waterproofing" America is still a major challenge. Each year, it is estimated that more than 100 million Americans actively engage in some form of aquatic recreation, and many millions still cannot swim or swim so poorly that they are frequently in danger of drowning. In fact, everyone should know how to swim because yearly drowning statistics prove that over 60 percent of all drowning fatalities involve people who accidentally find themselves in the water.

This book, developed by Orin Myers, national director of the American Red Cross Water Safety Program, is dedicated to the great task of teaching and learning the art of swimming and water safety. It is the textbook and instructor's manual for Red Cross swimming instruction courses. At the same time, it is an authoritative resource for all swimming instructors and provides information useful to all persons interested in furthering safety in, on, or around the water.

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CONTENTS

	Page
CHAPTER 1 AMERICAN RED CROSS WATER SAFETY PROGRAM	1
The Waterproofing of America	1
A History of Red Cross Water Safety Beginnings	2
CHAPTER 2 THE EVOLUTION OF SWIMMING	3
CHAPTER 3 SAFETY IN AQUATICS	6
Personal Water Safety	6
Safety at Home Pools	7
Safety at Farm Ponds	7
Safety at Beaches	7
Hazards in the Aquatic Environment	8
Disrobing in the Water	8
Boating Safety	8
Personal Flotation Devices	8
Immersion Hypothermia	9
CHAPTER 4 GUIDELINES FOR TEACHING DIFFERENT AGE LEVELS	11
Working With Preschool Children	11
Working With Elementary School Age Children	11
Working With Teenagers	12
Working With Adults	12
CHAPTER 5 ELEMENTS OF SUCCESSFUL TEACHING	15
Teaching Approaches	15
Lesson Plans	15
Evaluating Motor Skills	16
Teaching to Course Requirements	17
Conducting Final Tests	18
Retesting	18
Giving Directions	18
Organizing the Class for Skill Development	18
Principles of Class Organization	18
Patterns of Class Organization	18
Arranging the Class for a Discussion on Land	19
Arranging the Class for a Demonstration in the Water	19
Arranging the Class for a Demonstration of Fluid Drills	20
Arranging the Class for a Demonstration of Static Drills on Land or in Shallow Water	21
Teaching Aids	22
Flotation Devices	22
Support to the Body	22
Free-Floating Supports	23
Stationary Supports	24
Hand Supports	25
Other Aids	25
CHAPTER 6 PHYSICAL LAWS APPLIED TO BODY MOVEMENTS IN THE WATER	27
Body Composition	27
Center of Gravity and Center of Buoyancy	27
Changing Floating Positions	28
Law of Inertia	29
Frontal Resistance	29
Eddy Resistance (Drag)	29
Law of Action and Reaction	29
Law of Acceleration	30
Leverage	30
Relaxation and Breathing	30
Adapting Strokes to Body Characteristics	30

CHAPTER 7	TEACHING THE BEGINNER SWIMMER	31
	Physical and Mental Adjustment	31
	Entering the Water	31
	Breath Control	32
	Seeing Underwater	32
	Hearing Underwater	33
	Rhythmic Breathing	33
	Buoyancy, Body Position, and Relaxation	33
	Prone Float	33
	Jellyfish Float	34
	Prone Glide	34
	Back Glide	34
	Propulsive Movements	35
	Prone Glide With Kick	35
	Back Glide With Kick	35
	Arm Stroke and Breathing in the Prone Position	35
	Arm Stroke on the Back	35
	Combined Stroke on the Back	35
	Personal Safety	35
	Turning Over	35
	Changing Direction	36
	Leveling Off From a Vertical Position	36
	Jumping Entry Into the Water	36
	Summary	36
	Games and Stunts for Beginners	36
 CHAPTER 8	 ANALYZING AND TEACHING BASIC SWIMMING STROKES	 41
	Beginner Stroke	41
	Body Position	41
	Leg Action	41
	Arm Action	42
	Breathing	42
	Coordination	43
	Suggested Learning Approaches	43
	Common Faults: Cause(s), Effect(s), Corrective Suggestions	45
	Crawl Stroke	47
	Body Position	47
	Leg Action	47
	Breathing	47
	Arm Action and Coordination	47
	Suggested Learning Approaches	48
	Common Faults: Cause(s), Effect(s), Corrective Suggestions	50
	Elementary Backstroke	55
	Body Position	55
	Leg Action	55
	Alternative Leg Actions	55
	Arm Action	56
	Coordination	57
	Suggested Learning Approaches	58
	Common Faults: Cause(s), Effect(s), Corrective Suggestions	59
	Breaststroke	63
	Body Position	63
	Leg Action	63
	Arm Action	64
	Breathing	65
	Coordination	65
	Suggested Learning Approaches — Recreational Breaststroke	66
	The Competitive Breaststroke	68
	Common Faults: Cause(s), Effect(s), Corrective Suggestions	70

Sidestroke	73
Glide Position	73
Leg Action	73
Arm Action	74
Coordination	76
Suggested Learning Approaches	77
Common Faults: Cause(s), Effect(s), Corrective Suggestions	78
Back Crawl	81
Body Position	81
Leg Action	81
Breathing	82
Arm Action and Stroke Coordination	82
Suggested Learning Approaches	83
Common Faults: Cause(s), Effect(s), Corrective Suggestions	85
CHAPTER 9 ANALYZING AND TEACHING OTHER STYLES OF SWIMMING	87
Overarm Sidestroke	88
Arm Action and Coordination	88
Suggested Learning Approaches	89
Common Faults: Causes(s), Effect(s), Corrective Suggestions	89
Inverted Breaststroke	90
Teaching Suggestions	91
Common Faults: Cause(s), Effect(s), Corrective Suggestions	91
Trudgen	93
Coordination	93
Teaching Suggestions	94
Common Faults: Cause(s), Effect(s), Corrective Suggestions	95
Butterfly Stroke	97
Body Position	97
Leg Action	97
Arm Action	97
Coordination and Breathing	99
Teaching Suggestions	100
Learning Sequences	100
Additional Drills	101
Common Faults: Cause(s), Effect(s), Corrective Suggestions	103
CHAPTER 10 ANALYZING AND TEACHING OTHER AQUATICS SKILLS	105
Surface Diving	105
Feet-First Surface Dive	105
Teaching Suggestions	106
Common Faults: Cause(s) and Corrective Suggestions	106
Pike Surface Dive	107
Tuck Surface Dive	107
Quick Surface Dive	108
Teaching Suggestions— Head-First Surface Dives in Deep Water	108
Common Faults: Cause(s), Effect(s), Corrective Suggestions	108
Swimming Underwater	109
Safety Factors	109
Teaching Suggestions	109
Sculling	109
Supine Position	110
Prone Position	110
Vertical Position	110
Sculling and Swimming	110
Teaching Suggestions	111
Common Faults: Cause(s), Effect(s), Corrective Suggestions	111
Treading Water	111
Teaching Suggestions	112
Common Faults: Cause(s), Effect(s), Corrective Suggestions	112

Back Float	112
Teaching Suggestions	112
Survival Floating	113
Teaching Suggestions	114
Survival Stroke	115
Turns	116
Crawl Stroke Open Turn	116
Teaching Suggestions	117
Common Faults: Cause(s), Effect(s), Corrective Suggestions	117
Open Turn for Breaststroke and Butterfly Stroke	118
Sidestroke Turn	118
Backstroke Turn	118
Teaching Suggestions	118
Common Faults: Cause(s), Effect(s), Corrective Suggestions	119
Open Spin Turn on Back	119
Start on the Back	119
Teaching Suggestions	120
Common Faults: Cause(s), Effect(s), Corrective Suggestions	120
CHAPTER 11 ANALYZING AND TEACHING ENTRIES INTO THE WATER	121
Safety	121
Jumping Entries	122
From a Low Height	122
Teaching Suggestions	122
Compact Jump	123
Teaching Suggestions	123
Stride Jump	123
Diving Entries	124
Fundamentals of Diving	124
Physical Laws Applied to Diving	124
Beginner Diving Progressions	124
Step One — Sitting Position	125
Teaching Suggestions	126
Common Faults and Corrective Suggestions	126
Step Two — Kneeling Position	126
Step Three — Tip-In Position	126
Teaching Suggestions	127
Common Faults and Corrective Suggestions	127
Step Four — Fall-In Position	127
Step Five — Crouch Position	127
Step Six — Standing Dive With Small Spring	127
Step Seven — Standing Dive With Vigorous Spring	127
Step Eight — Standing Dive With Spring and Arm Action	127
Long Shallow Dive	128
Shallow Dive — Standing Position	128
Teaching Suggestions	128
Shallow Dive — Running Position	129
Springboard Diving	129
Standing Front Dive From a Springboard	129
Running Front Dive From a Springboard	130
Suggested Learning Procedures	131
Teaching Suggestions	131
Common Faults: Cause(s), Effect(s), Corrective Suggestions	132
CHAPTER 12 SWIMMING AND WATER SAFETY COURSES	133
Beginner Course	133
Advanced Beginner Course	136
Intermediate Course	138
Swimmer Course	140
Advanced Swimmer Course	142

CHAPTER 13 LEADERSHIP COURSES.....	144
Water Safety Aide Course: Instructor's Outline	144
Swimmer Aide Course: Instructor's Outline	151
CHAPTER 14 EVALUATING SWIMMING STROKES	154
Performance Standards: Elementary Backstroke	154
Performance Standards: Sidestroke	156
Performance Standards: Crawl Stroke.....	158
Performance Standards: Breaststroke	159
Performance Standards: Back Crawl.....	160
CHAPTER 15 ASSEMBLY LINE METHOD OF TEACHING SWIMMING.....	161
CHAPTER 16 GAMES AND STUNTS	164
Individual Contests and Stunts at the Beginner and Advanced Beginner Levels	164
Group Games and Contests at the Beginner Level.....	164
Team Games for all Levels	165
Mass Games	165
Relay Races.....	166

AMERICAN RED CROSS WATER SAFETY PROGRAM

*"In The Water 'Save Face' And
It May Save Your Life!"*

The Commodore

More than to any other one man, the aquatics-minded people of this aquatics-minded land owe a debt of gratitude to Commodore Wilbert E. Longfellow. The Commodore was among the first to see, at the turn of the century, that the rapidly mounting toll of death from drowning, unless soon curbed, would assume the proportions of a national tragedy. He saw the need for a nationwide program of swimming and lifesaving instruction. His vision, plus his aquatics skills, teaching abilities, showmanship, and enthusiasm, made him the natural leader for the enterprise.

Keenly interested and anxious to do what he could to prevent needless loss of life, Longfellow carefully studied available literature on aquatics trends, activities, and safety procedures; wrote features on water safety; and reported waterfront rescues and steps taken to safeguard swimmers. He became highly proficient in the various swimming styles and lifesaving skills. He also offered his spare-time services to the U.S. Volunteer Life Saving Corps, a young organization with headquarters in New York City, and began sharing his aquatics knowledge and skills with other swimmers. Soon he was organizing his more outstanding pupils into volunteer crews for safeguarding the lives of bathers. The work gradually spread, under his direction, to nearby towns and cities.

In 1905, in recognition of his already noteworthy achievements, Longfellow was awarded the title of "Commodore" by the U.S. Volunteer Life Saving Corps. In 1910, the U.S. Volunteer Life Saving Corps appointed Longfellow to the salaried post of Commodore in Chief and designated him as general superintendent of the organization in further recognition of his abilities and achievements.

THE WATERPROOFING OF AMERICA

Proceeding with a large-scale program of water safety and lifesaving education in and around New York City, where the Corps' activities, chiefly financed by the city of New York, were centered, the Commodore began planning his most ambitious program, "the waterproofing of America." However, the Life Saving Corps decided against a nationwide expansion of its activities because it would require the raising of a large amount of additional funds.

Looking for a way to accomplish his great purpose, Longfellow presented his plan to the American Red Cross in 1912. A committee representing a number of national organizations was established to prepare and to submit a definite program for consideration by the Red Cross.

The committee's plan for a nationwide program was adopted by the Red Cross in January 1914, and the following month the Red Cross Life Saving Corps, forerunner of the present-day Red Cross Water Safety Program, came into being. Longfellow was appointed to organize the lifesaving program, and, at the same time, was awarded Red Cross Lifesaving Certificate Number One and the lifesaving emblem that has since been earned and proudly worn by millions.

In the succeeding months of 1914, at beaches and swimming pools all over the country, the big fellow with the Red Cross emblem on his swimsuit began to appear. Everywhere he was recognized as a man experienced and well-versed in aquatic arts and lifesaving skills.

The Commodore's first step in putting the lifesaving plan into operation was simplicity itself. In each community, he gathered a group of good swimmers, trained them in the methods of lifesaving and resuscitation, organized them into a volunteer corps, and asked them to accept responsibility for supervision of bathing activities in the community.

He then persuaded owners and operators of swimming facilities to man their beaches and pools with trained lifeguards.

The next step — more difficult and perhaps more important — was to provide sound, large-scale instruction in swimming. Longfellow accomplished this by selecting outstanding swimmers from each corps that he organized, by giving them additional training, and, in each community, by authorizing these individuals to teach swimming on a voluntary basis. In this way, sound swimming instruction was multiplied many times over.

Finally there came the business of consolidating public interest and support. This the Commodore did with amazing success. He gave talks and demonstrations, wrote for newspapers and periodicals, created and produced water pageants, and, with the advent of radio in the twenties, put his message on the air. The water pageants perhaps best illustrate the Commodore's philosophy of teaching, which was to "entertain the public hugely while educating them gently." Under Longfellow's guidance, a pleasurable activity for participants and spectators alike became a solid educational experience.

He was always the cheerful crusader, the self-styled "amiable whale," the man whose terrestrial mission was to lure Americans to the water in order to teach them how to be at home in it, how to have fun in it, and how **not** to drown.

"Water is a good friend or a deadly enemy," the Commodore was wont to tell his pupils. "After you have

been properly introduced to it, keep on good terms with it. Don't slap it, try hugging it — an armful at a time!"

They did. And how they loved him for so pleasantly teaching them how!

From 1914 until the time of his retirement, and his death 3 months later on March 18, 1947, Longfellow worked with devotion and enthusiasm in the nationwide water safety program of the Red Cross. The results were astonishing both in the prevention of death by drowning and in the growing participation of millions who were being taught how to enjoy the water in safety. Within his near half-century of crusading, the Commodore witnessed a tremendous upsurge in the popularity of swimming, boating, and other water activities to the point where an estimated 80 million Americans were participating in some form of aquatic recreation. He saw the nation's drowning rate cut in half — from 10.4 per 100,000 to 5.2. Thanks to the dedication and untiring efforts of those who followed his example and continued his work, by 1979 the drowning rate dropped further — to 3.0 per 100,000.

His efforts, enthusiasm, and foresight must continue to be carried on by his successors in the never-ending challenge of preventing serious injuries and the loss of life through aquatic accidents.

A History of Red Cross Water Safety

Beginnings

- 1914 — Lifesaving instruction initiated
- 1922 — Beginner Swimming instruction initiated
- 1922 — National Aquatic and First Aid Schools initiated
- 1922 — First National Life Saving Conference held
- 1937 — *Lifesaving and Water Safety* textbook published
- 1938 — *Swimming and Diving* textbook published
- 1943 — Functional or Survival Swimming program initiated
- 1944 — Swimming for the Handicapped program initiated
- 1953 — Water Safety Aide program initiated
- 1957 — *Teaching Johnny To Swim* booklet published
- 1960 — Swimmer Aide program initiated
- 1961 — Swim and Stay Fit program initiated
- 1968 — *Swimming and Water Safety* textbook published
- 1974 — *Lifesaving: Rescue and Water Safety* textbook published
- 1977 — *Adapted Aquatics* textbook published

THE EVOLUTION OF SWIMMING

*"Every American A Swimmer,
Every Swimmer A Lifesaver!"*
The Commodore

As practiced by man, swimming is an art. Fish, amphibians, waterfowl, and practically all quadrupeds are either born with the ability to swim, have instincts that enable them to acquire swimming ability very rapidly, or are able to use the same form of locomotion in water as they do on land and still make good progress.

Basically, humans are handicapped by structure and habit when they enter the water. Their natural position is upright and they propel themselves by thrusting against the ground with a relatively small area of the foot. Also, for the most part, they possess a narrow margin of buoyancy. The specific gravity of human beings is so nearly that of water itself that average people, when suspended motionless in the water, find that they submerge to about eye level. Unable to breathe at this level, they must necessarily make some lifting motions to raise themselves a little above their normal flotation level. If, in this vertical position, they attempt to make progress by using the same movements as they do when walking on land, the only possible result can be some up and down movement but little or no forward progress. Humans must therefore adjust to water as an element, learn to assume other than the vertical position, and, finally, employ different arm and leg movements.

In spite of not being an amphibious animal, humans have become amazingly versatile in the water, primarily because of their capacity to reason plus their possession of an important physical asset — a set of swivel or ball and socket joints in the shoulders and the hips — that permits a wide range of movement. As a result, they can swim on the front, the side, and the back, at the surface or underneath. They can swim forward, backward, or even sideways. They can somersault forward or backward or can rotate on the long axis of the body like a rolling log. In contrast, swimming animals are limited by their structure to far fewer patterns of swimming action.

Even though humans have devised a great variety of skills and stunts that have been given names such as dolphin, porpoise, seal-diving, swordfish, sealfish, and marlin, the physical actions employed by people are radically different from those of the animals that gave the skills their names. There is actually little that humans have been able to borrow from the animal world in the development of the art of swimming. Not understanding this fact was a deterrent to people's development of aquatic skills. A classic example is the kick employed in the breaststroke. All through history, learners were

told to imitate the frog in using the legs for this stroke. However, when humans attempt to thrust backward against the water as frogs do, with the frog's widespread, webbed feet, they make little forward progress. Yet even today the leg action in the breaststroke is mistakenly called the frog kick.

Through a slow process over the centuries, humans have had to learn and to discover their own principles and methods of water locomotion. People have learned from their predecessors, but for many years improvement was the result of trial and error only. During the modern era, improved facilities, clarity of water, and photographic techniques permitting stop-action and slow-motion filming of body movements in the water, especially under the surface, have all enhanced the understanding of how man swims most effectively. Scientific study and experimentation by qualified swimming experts have resulted in the application of the physical laws that govern body movements in the water to the point where people today are swimming more efficiently and effectively than ever before.

How and why humans actually took to the water is not known; however, the three motivating forces that influenced their immersion were undoubtedly economic necessity, comfort, and preservation of life in the face of danger. Economic necessity must have been the dominant factor. Humans derived much of their food supply from the many forms of marine life. Wading, reaching, and groping for food in shallow waters caused initial immersion and paved the way for the development of some forms of swimming movement. Seeking to escape the discomfort caused by the extreme heat during hot seasons and in tropical regions, they must have discovered early in their experiences that immersion in water allayed that discomfort. Immersion could also have been used by primitive people as a refuge from fire, animals, and other persons, in an attempt to preserve their own lives when in danger. Other motivations for immersion may have been cleanliness, as part of a religious rite, and quite possibly for sport.

While there is fragmentary evidence in literature and the visual arts that ancient peoples swam, before the sixteenth century no one, presumably, thought it necessary to describe the strokes used nor any method of teaching them. At that point, however, a few treatises on swimming began to appear in the literature of Europe. The first known work on swimming was written by Nicolaus Wynman, a German professor of languages,

and was published in 1538. In 1587, a book on swimming, written in Latin by Sir Everard Digby and later translated into English, was published in England. About 1697, a Frenchman, Thevenot, wrote a book entitled *The Art of Swimming*, in which he described and illustrated a method closely resembling the breaststroke. This style of swimming gave unobstructed vision and, with the mouth and nose held out of the water, permitted free breathing. The underwater arm recovery eliminated splashing water in the swimmer's face and gave the swimmer good stability even in rough water. From Thevenot's description, it is evident that a breaststroke style had been in common usage for many years. English translations of his work became a standard reference and helped to establish this stroke as the method most commonly employed, a distinction it was to enjoy for many years.

From this point, the people of northern Europe went through the process of evolving a series of swimming strokes, turning from the breast to the side and progressing to an overarm sidestroke used extensively in England in the middle nineteenth century. With the introduction of competition, speed became an important factor and the hand-over-hand stroke came, belatedly, to Europe. It was introduced in England, in 1873, by John Trudgen, who had learned the style from South American Indians. This hand-over-hand stroke, also referred to as the alternating overarm stroke or trudgen stroke, soon caught the public fancy and was actually the forerunner in the development of the crawl stroke as it is known today. Each arm recovered out of the water by rolling the body from side to side and a scissors kick occurred following the stroke of one arm.

Until approximately the turn of the twentieth century, most of the attention had been given to the arm action, with almost total disregard to the action of the legs. Now, however, the increasing emphasis on competition spurred a search for styles of swimming and refinements in stroking that would produce even greater speed over measured distances than the trudgen stroke. Study and experimentation with the trudgen stroke showed that the negative recovery action of the legs discounted much of the positive thrust. Each leg kick provided a single forward thrust and the kick did not seem to blend with the alternating overarm stroke.

At this point, an Australian competitive swimmer, Richard Cavill, developed an up-and-down thrashing action of the legs that he combined with the alternating overarm stroke. This style was introduced in 1902 at the International Championships, where Cavill demonstrated its speed by swimming 100 yards in 58.4 seconds to set a new world record. The method became known as the Australian Crawl, and with this introduction of a form of the flutter kick, a new era in speed swimming began.

American swimming coaches and speed swimmers made further refinements in the breathing, kicking, and arm recovery techniques of the crawl. The success of their efforts was evident when, in 1906, C. M. Daniels became the first United States speed swimming champion

of the world as he lowered the 100-yard record to 55.4 seconds. The Australian Crawl, with refinements, became known as the American Crawl.

The development of the crawl stroke was further influenced by the late "Duke" Kahanamoku, an Hawaiian, whose stroke was characterized by a truly vertical 6-beat flutter kick action of the legs. The "Duke" was an Olympic record holder and an Olympic Gold Medal winner for the 100-yard crawl in both the 1912 and the 1920 Games. Also influencing the stroke was another outstanding U.S. swimmer, Johnny Weissmuller, who dominated crawl sprint swimming throughout the years encompassing the 1924 and the 1928 Olympic Games. In 1927, Weissmuller swam 100 yards in 51 seconds flat in a 25-yard course, setting a record that was to remain unbroken for almost two decades. Weissmuller's style featured a deeper kick that allowed the chest and shoulders to ride higher; a rotating of the head, for inhalation, that was independent of the action of the arms; and an underwater arm action in which the elbow was bent slightly for greater positive action. Since champions have always had a large following, the popularity of both Duke Kahanamoku and Johnny Weissmuller not only contributed greatly to the development of the present-day crawl but also popularized the stroke so that it became the stroke to teach beginners.

During the 1920s, the Japanese made extensive use of slow-motion films that were taken of Weissmuller and other great swimmers to add further improvements to stroking mechanics. These improvements, coupled with a tremendous emphasis on training and conditioning, enabled the Japanese to dominate swimming in the early 1930s.

In the present day, more people are swimming for pleasure and more people are competing than ever before, and the continued lowering of swimming records is indicative that stroking mechanics are still being improved.

Before 1900, swimming on the back was more of a stunt than an actual stroke. Since the breaststroke was in high favor at the turn of the century, the backstroke that was performed at that time was an inverted breaststroke. With the development of the alternating overarm style on the front, this method was experimented with on the back and finally, combined with an inverted flutter kick, resulted in a stroke that was faster than the breaststroke. In 1912, the backstroke was recognized as a competitive event. The search for greater speed, combined with basically the same elements of study and experimentation that occurred in the development of the crawl stroke, has led to the refinements of the stroke as it is known today.

The history of the breaststroke is interesting and again points to the influence of speed swimming in its development. Even though other strokes have proved to be faster, the breaststroke has continued as a separate competitive event. In fact, until the recognition of the butterfly stroke as a separate stroke in competition, the breaststroke was the only one in which a prescribed style was required. However, since the

breaststroke employed an underwater recovery of both arms and legs, this high resistance factor was a problem in developing more speed. In 1934, David Armbruster, then swimming coach at the University of Iowa, devised a variation that employed a double overarm recovery out of the water. This arm action resulted in greater speed but required greater training and conditioning. In 1935, a breaststroke style was introduced that incorporated the out-of-water arm recovery combined with a vertical dolphin or fishtail kick. Even though it was a faster method of the butterfly, the dolphin kick was declared in violation of the competitive rules.

For the next 20 years, champion breaststrokers used an out-of-water arm recovery (butterfly) with a shortened breaststroke kick. In the late 1950s, the butterfly stroke with the dolphin kick was legalized for competition, and the butterfly stroke and the breaststroke were then separated into two distinctly different strokes.

It can be seen that the quest for speed has greatly influenced how humans swim. By applying the same basic body mechanics that the competitive swimmer uses and by taking advantage of the experience and knowledge gained over the years, the noncompetitor should become a safer and more effective performer in the water.

SAFETY IN AQUATICS

*"Water Is A Good Friend
But A Deadly Enemy!"*

The Commodore

Drownings in the United States have averaged between 7,000 and 8,000 yearly during the past few years. These statistics would seem to imply that the concentrated efforts of the Red Cross and other agencies in the field of water safety have not been successful. However, the number of yearly drownings alone does not give an accurate picture.

Millions of Americans have learned to swim since Commodore Wilbert E. Longfellow launched his "Waterproof America" crusade in 1914. The founder of the American Red Cross Water Safety Program built his campaign on the slogan "Every American a swimmer, every swimmer a lifesaver." Before his nationwide effort began, the drowning rate was 10.4 per 100,000 population. Today, as a result of the combined efforts of many agencies and organizations, the rate is approximately 3.0 per 100,000 population. When one considers the tremendous increase both in population and in participation in aquatics activities since the early 1900s, it is evident that water safety instruction and education have proved to be successful in reducing the number of fatalities.

Drownings can occur any place where there is water. National Safety Council statistics of drownings around the home show that individuals have drowned in bathtubs, wells, cisterns, cesspools, and even puddles or pools of water, as well as in swimming pools. Only about 40 percent of the yearly drownings occur to people who are swimming or playing in the water. The remainder, or 60 percent, occur in the classification of nonswimming fatalities due to accidental falls into the water from docks, decks of pools, bridges, or shores, or recreational boating and fishing accidents, or accidents in the home or on home premises.

It is estimated that over 100 million individuals each year engage in some form of aquatic endeavor. No longer confined to the category of being a luxury, over 1,200,000 in-ground residential swimming pools are in existence today. The construction of water conservation facilities and dams and huge man-made lakes and reservoirs have created recreational aquatic facilities where none existed previously. The farm pond, which was originally intended for watering livestock, fire protection, and irrigation, has become today's version of the "ole swimmin' hole" in rural areas. There are now well over a million of these ponds, and the number grows steadily larger each year. Since many of these ponds

are equipped with docks, floats, diving boards, and boats of varying types, and are even stocked with fish, they provide an outlet for aquatic recreation. Keeping pace with the growth of facilities has been the increased availability and refinement of the equipment needed for such activities as skin and scuba diving, water skiing, recreational boating, fishing, and surfing.

The need for everyone to be able to swim well enough to survive is evident. Nonswimmers and novice swimmers account for the majority of drownings. The large number of drownings of young children when left unguarded, even for a few moments, points to the need for more education for all adults and parents. Supervision at all times, especially when it concerns young children, is a must.

Since a majority of drownings occur because people violate or ignore good safety practices, an attempt will be made to categorize such recommended procedures under the following headings:

- Personal water safety
- Safety at home pools
- Safety at farm ponds
- Safety at beaches
- Hazards in the aquatic environment
- Disrobing in the water
- Boating safety
- Personal flotation devices
- Immersion hypothermia

PERSONAL WATER SAFETY

1. Learn to swim well enough to survive in an emergency.
2. Never swim alone and swim only with a buddy who has the ability to help when necessary.
3. Swim only in supervised areas.
4. Follow the rules set up for the particular pool, beach, or waterfront where you are swimming.
5. Learn the simple and safe reaching rescues.
6. Know how to administer artificial respiration.
7. Know your limitations and do not overestimate your ability.
8. Stay out of the water when overheated or overtired.
9. Stay out of the water during electrical storms. If at all possible, seek protection in an enclosed shelter. Trees **do not** provide protection.
10. Dive only into known waters of sufficient depth.
11. Do not substitute inflated tubes, air mattresses, or other artificial supports for swimming ability.

12. Always swim a safe distance away from diving boards and platforms.
13. Avoid long periods of immersion and overexposure to the sun.
14. Take instruction under qualified instructors before participating in such aquatics sports as skin and scuba diving and water skiing.
15. Call for help only when you really need it.
16. Remember that a nonswimmer or a poor swimmer should never attempt a swimming rescue. A swimmer untrained in lifesaving should swim to a victim in trouble only as a last resort and only when all suggested safe rescue methods cannot be used. If it is necessary to risk swimming to a victim, the rescuer should take a towel, a shirt, or any buoyant object to extend to the victim.

SAFETY AT HOME POOLS

1. Never permit anyone to swim alone. Constant and responsible supervision is a must. No child should be left unattended in the pool area even for the length of time it takes to answer a telephone.
2. Have adequate fencing and a gate with a lock to prevent children from unauthorized entry.
3. Keep basic rescue and lifesaving equipment always available.
4. Post emergency instructions and telephone numbers conspicuously.
5. Have an adequate first aid kit available.
6. Enforce common-sense safety rules at all times. At least one responsible person should know how to administer cardiopulmonary resuscitation and give intelligent first aid.
7. Clearly mark the deep and shallow sections. Separate the deep and shallow water by use of a buoyed line whenever weak swimmers or nonswimmers are using the pool.
8. Do not allow running, pushing, or boisterous play on the deck.
9. Encourage responsible parents or other adults to give water safety and swimming instruction to youngsters. A recommended text is the American Red Cross booklet *Teaching Johnny To Swim* (Stock No. 321126).
10. Make sure there is adequate filtration to maintain good clarity of the water. Consult the local health department for regulations on pool sanitation.
11. Do not permit bottles, glasses, or sharp objects in or around the pool area.
12. Observe applicable personal safety rules, such as not swimming when overheated or overtired or during an electrical storm and diving only in known and safe depths. Nonswimmers should not use inflated objects for support in water deeper than standing depth.
13. Small plastic pools should be emptied and turned over when not in use.
14. Protection devices such as a pool cover or an underwater alarm system may be considered by the pool owner.

SAFETY AT FARM PONDS

1. Never swim alone.
2. Mark off safe swimming areas with buoyed lines. Remove underwater snags, trash, bottles, and the like.
3. Avoid swimming areas immediately in front of steep-sloping banks.
4. Post warning signs at danger points.
5. Supervise children at all times.
6. Have the water checked and approved by the local health department and recheck it periodically if it is used for swimming.
7. If practical, erect an adequate fence and a gate with a lock to prevent unauthorized entry by children.
8. Keep basic rescue and lifesaving equipment always available.
9. Post emergency instructions and telephone numbers.
10. Have an adequate first aid kit available.
11. Enforce common-sense safety rules. At least one responsible person should know how to administer cardiopulmonary resuscitation, perform basic reaching rescues, and give intelligent first aid.
12. Have a responsible adult start water safety and swimming instruction for potential farm pond users. A recommended text is the American Red Cross booklet *Teaching Johnny To Swim* (Stock No. 321126).
13. Make sure that piers, rafts, and landings are well-built and securely braced.
14. Observe applicable personal safety rules, such as not swimming when overheated or overtired or during an electrical storm and diving only in known and safe depths. Nonswimmers should not use inflated objects for support in water deeper than standing depth.
15. If a pond is used for skating, add a ladder to the safety post as helpful emergency equipment.
16. To avoid accidents on the ice: **Never** skate alone, skate only on a safe thickness of ice, maintain supervision at all times, and skate in a restricted area.

SAFETY AT BEACHES

1. Swim in areas supervised by a lifeguard.
2. **Never** swim alone.
3. Check with a lifeguard regarding beach and surf conditions before swimming.
4. Report any unsafe beach conditions to the lifeguard.
5. If you are being pulled offshore by a rip current, do not panic and do not try to buck the current. Swim parallel to shore across the current and, once free, swim to shore.
6. Call or wave for help if unable to swim out of a strong current.
7. **Never** fake trouble or calls for help.
8. **Never** substitute the use of floating devices for swimming ability.
9. Do not use breakable objects on the beach, and, if any are found, pick them up and dispose of them in containers for your own protection and for the safety of others.

10. Do not dive into unknown water or into shallow-breaking waves.
11. Do not overestimate your ability by attempting long-distance swims. Swimming parallel to the shore is safer and provides just as much exercise.
12. Maintain continuous supervision of small children even where there are lifeguards.
13. Do not swim close to piers or pilings.
14. Avoid sand throwing or any kind of horseplay.
15. Do not engage in unnecessary conversation with a lifeguard.
16. Be a strong swimmer and be knowledgeable about ocean conditions before attempting body surfing or board surfing in deep water.
17. Observe applicable personal safety rules, such as not swimming when overheated or overtired or during an electrical storm.
18. Respect the judgment and experience of the trained lifeguards, follow their advice, and do not interfere with the performance of their duties.

HAZARDS IN THE AQUATIC ENVIRONMENT

Swimmers must be constantly alert to the hazards of the aquatic environment. Panic, exhaustion, and cramps are three conditions of personal danger. The action of the water and certain types of marine life present hazards to individuals. Information about these conditions and situations is contained in the American Red Cross publication *Lifesaving: Rescue and Water Safety* (Stock No. 321103).

DISROBING IN THE WATER

A majority of drownings occur to people who find themselves accidentally in the water. In most cases, especially in cold water, no effort should be made to remove the clothes. When safety is only a short distance away, the swimmer may decide to swim to safety. In this situation, the swimmer may elect to remove the shoes. In warm water, the swimmer may decide to remove the outer clothing and shoes, since water-soaked apparel impairs swimming efficiency. Swimming to safety should usually be considered as a last resort, except when the distance is short, or when the swimmer is confronted with a dangerous situation.

If no flotation device is available that can be used to support the swimmer in warmer water, a shirt can be easily inflated or the trousers can be removed and inflated. Methods of disrobing and using clothes for flotation devices are discussed in the American Red Cross publication *Lifesaving: Rescue and Water Safety* (Stock No. 321103).

BOATING SAFETY

Each year there are approximately 1,300 fatalities associated with boating activities. The vast majority of these fatalities (75 percent) are a result of capsizing, falls overboard, or collisions. The craft operator needs to know and to apply the following basic information in order to help reduce needless accidents and loss of life:

1. Nonswimmers should always wear a personal flotation device (PFD) while on board the craft. Everyone should wear a PFD if a storm is threatening, the water is rough, or during high speed operations.
2. In case of capsize or swamping, stay with the boat and wear a PFD. Try to right the boat, if possible, and climb back aboard.
3. In case of capsize, get out of cold water as rapidly as possible. If unable to do so, follow the directions that are discussed in the section entitled "Immersion Hypothermia," on pages 9 and 10.
4. Maintain a constant lookout in a full circle around the craft to avoid collisions.
5. Know the specific handling characteristics of the craft in both calm and rough waters, and when fully loaded or with just the operator aboard.
6. Complete a nationally recognized course of instruction that includes supervised on-the-water practice.
7. Consult an up-to-date local weather forecast prior to any boating outing.
8. Head for shore or shelter at the first sign of an impending storm.
9. Get information on local water conditions and any special hazards.
10. Leave a float plan with family or friends, telling them when and where you are going, and when you expect to return.
11. Know and obey the rules of the road.
12. Check and adhere to state and U.S. Coast Guard regulations.

Consult your Red Cross chapter for more complete information on boating-safety-education publications and courses.

PERSONAL FLOTATION DEVICES

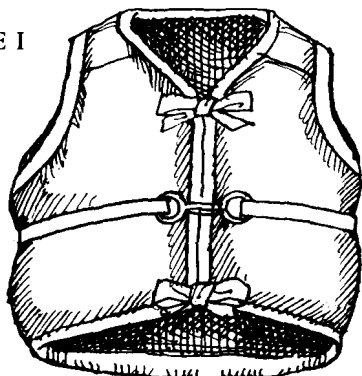
Federal law requires that there be a U.S. Coast Guard approved personal flotation device (PFD) for each person afloat in a small craft. Common sense dictates that the device be worn — by nonswimmers and novices especially. The ability to don and use a PFD is a skill that can be learned and practiced easily in water of standing depth. Jumping and falling into the water with a PFD on should also be practiced. With the straps fastened securely, a buoyant vest can maintain a proper position for swimmers and nonswimmers in the water, and mobility can be acquired easily by kicking and moving the arms in almost any fashion simulating swimming strokes. A PFD may be used under the arms for support in the water even without being worn. When aboard a small craft, or when fishing from a pier or the shore, all nonswimmers and novices should wear a PFD. All boaters should remember that PFDs are lifesaving devices and are not to be knelt upon or sat upon for fear of destroying the device's intended usefulness.

Belt preservers of any kind are inadequate, since their buoyancy acts at the middle of the body instead of at the chest. A belt preserver will not support the face of a stunned or an unconscious person out of the water.

Descriptions of the five types of approved PFDs are as follows:

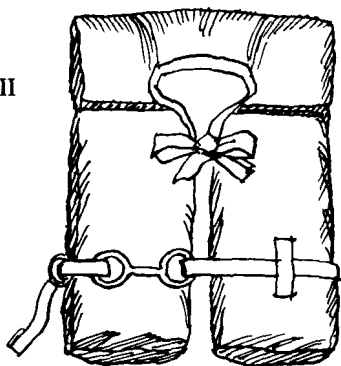
Type I — an approved device designed to turn an unconscious person in the water from a facedown position to a vertical or slightly backward position and to have more than 20 pounds of buoyancy. This device is recommended for offshore cruising and is acceptable for all sizes of boats. Example: A typical life preserver.

TYPE I



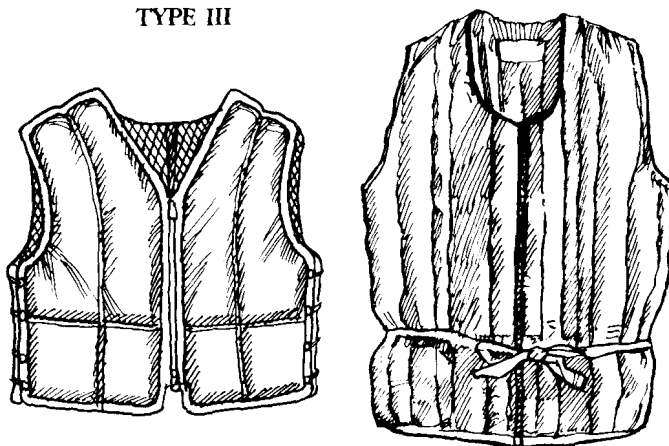
Type II — an approved device designed to turn an unconscious person in the water from a facedown position to a vertical or slightly backward position and to have at least 15.5 pounds or more of buoyancy. The Type II vest is produced in a variety of sizes and is undoubtedly the least expensive device available. Its only apparent drawback is the discomfort of wearing it over a prolonged period. Example: A typical buoyancy vest that has somewhat less of a buoyancy factor than a Type I.

TYPE II



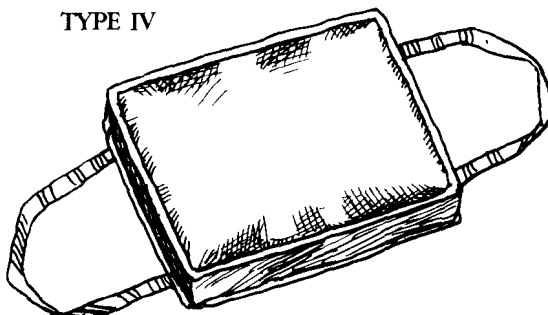
Type III — an approved device designed to keep a conscious person in a vertical or slightly backward position and to have at least 15.5 pounds of buoyancy. Although having the same buoyancy as Type II, the Type III has a lesser turning ability to allow for a comfortable design that does not hinder a person's movement in activities such as water skiing. This device is recommended for use in in-water sports and on boats used on lakes or on other bodies of confined water and close inshore on larger bodies of water. It is acceptable for all sizes of boats. Example: A special-purpose device.

TYPE III



Type IV — an approved device designed to be thrown to a person in the water but not worn. It is designed to have at least 16.5 pounds of buoyancy. It is acceptable for canoes, kayaks, and boats less than 16 feet in length, and as a throwable device for boats 16 feet and over in length. Example: A buoyancy cushion or ring buoy.

TYPE IV



Type V — a PFD approved for restricted use. No PFD of this type is currently approved for use on recreational boats to meet mandatory carriage requirements. However, some Type V PFDs are approved as Type III devices that are satisfactory.

The U.S. Coast Guard is quick to point out that all PFDs for sale in stores must be in serviceable condition and legibly marked with the approval number. On boats, Types I, II, and III must be of an appropriate size for the persons who intend to wear them or are wearing them. They, along with a Type IV PFD, must be in good and serviceable condition, and they must be readily accessible.

IMMERSION HYPOTHERMIA

Hypothermia, a term used to describe a decrease in the inner (core) body temperature, can be brought about by exposure of the body to cold. Hypothermia begins when the body starts losing heat faster than it produces it. In cold water, the onset of hypothermia can begin within minutes, since heat is lost from the body to the water 25 times faster than in the air.

Most persons who find themselves in cold water