

Naval Special Warfare Combat Side Stroke Guide



Combat Side Stroke

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PREFACE

This instruction manual was developed by the Naval Special Warfare Center, Preparatory Course and NSW Basic Training Command. It is intended to serve as a guide in fulfilling the basic requirements for teaching and testing the skills necessary for the combat side stroke, with and without fins. This manual is designed to promote instructional and testing standardization throughout the Naval Special Warfare community.

Proposed changes or revisions, and request for copies of this manual should be addressed to:

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CHAPTER 1

Combat Side Stroke (CSS)

1.1 OBJECTIVE

To ensure the correct body position while utilizing proper stroke mechanics, allowing the swimmer to successfully pass all Naval Special Warfare swim standards.

1.2 STROKE DESCRIPTION

The CSS is a long axis tactical stroke designed to be, low profile, efficient, and fast. It is used to travel long distances in open water and to quickly swim through the surf zone. The CSS is performed with or without fins, and in various configurations of tactical dress and protection. CSS is performed with a 90 degree balanced rotation. This stroke begins on the stomach then onto the side and back to the stomach. All put together it is a natural rotation, using the core to assist and create power and torque.

1.3 BODY POSITION

The swimmer is stabilized by alignment of the head, back, and hips which is referred to as stabilizing the core. Stabilizing the core is the foundation of the stroke. This is achieved by beginning the stroke in the streamline position and ending in the same position. With continued alignment, the energy output is directed to forward movement and sidewinding is minimized.

<p>Common Body Position Mistakes</p> <ul style="list-style-type: none"> • “Swimming Up Hill” • Head at surface causing the hips to slant downward, increasing drag 	<p>Corrections:</p> <ul style="list-style-type: none"> • Maintaining a head down posture with head below the surface of the water, also known as “Swimming Down Hill” • Leaning into the stroke, or ensuring top of head is pointing in the direction of travel
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Common Mistakes and Corrective Actions Associated with Poor Body Position

1.4 PULL ARM

1.4.1 The Pull and the Catch

The top arm begins and ends in the streamline position. It is a cyclical pattern. At the top of the stroke (the longest body position), the swimmer presses the palm of the hand down to begin the catch, continuing until a vertical forearm is achieved and the elbow is above the wrist. The swimmer then begins the pull sequence by following through until the hand is in line with the upper thigh and the arm is fully

extended. The swimmer will be on their side until recovery of the pull arm has begun. Immediately, as the swimmer's hand comes in line with the thigh, the recovery sequence begins.

1.4.2 Streamline

Streamline is the body position with the least resistance that a human can create in the water. During the streamline the swimmer has the option of doing a flutter kick (see 1.7.2) to help keep momentum moving forward.



Figure 1-1, Streamline



Figure 1-2, Streamline

1.4.3 Initiating the Catch

Keep the fingers lower than the wrist, wrist lower than the elbow, and the elbow lower than the shoulder. This allows the swimmer to start anchoring the elbow to maximize the effectiveness of the pull arm.



Figure 1-3, Initiating the Catch

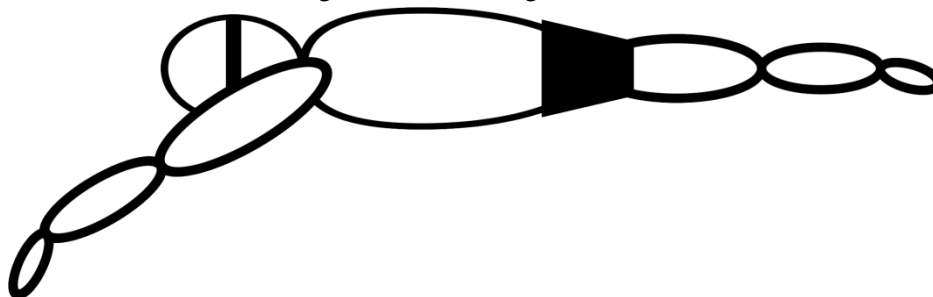


Figure 1-4, Initiating the Catch

1.4.4 Full Catch

Position the arm to allow the swimmer to pull them over an anchored position. This maximizes the surface area of the swimmers arm, while also allowing the swimmer to utilize larger muscle groups for propulsion.

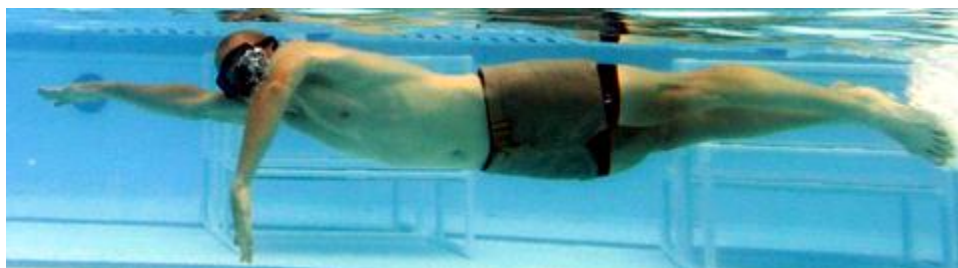


Figure 1-5, Anchored Position

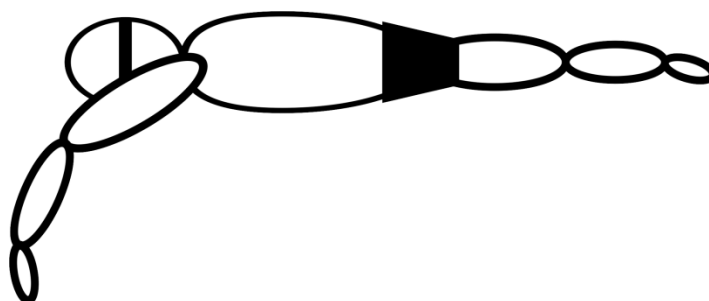


Figure 1-6, Anchored Position



Figure 1-7, Pull Phase



Figure 1-8, Finishing the Pull

1.5 RECOVERY

The swimmer's arm will be fully extended; hand passed their waste, along the side of their body when the swimmer begins the recovery. The swimmer begins the recovery process by moving the hand forward (hand and arm must be underwater) as close to the body as possible, from passed the hips back to streamline. During this phase, the swimmer will rotate the shoulders and hips to move from their side into a streamline position and onto their stomach. The swimmer will end in the same streamline position. By rotating the body when pulling, the swimmer becomes more efficient and powerful. This creates more torque as he is pulling, as opposed to pulling with his arm only.



Figure 1-9, Beginning of the Recovery



Figure 1-10, Beginning of the Recovery



Figure 1-11, Recovery



Figure 1-12, End Recovery by Entering Streamline

Common Mistakes: <ul style="list-style-type: none"> • High or raising the elbow in recovery (Shark Fin) • Half Pull- when swimmer begins the recovery prior to full range of motion • Not achieving full extended streamline before starting next arm cycle • Not rotating when pulling • Hand exiting the water 	Corrections: <ul style="list-style-type: none"> • Following hand along the mid-line • Make sure the arm is fully extended alongside the body • Have swimmer glide underwater for 2-3 seconds in streamline position • Rotate the body and hips to create more power, similar to how a baseball player throws with more power by using his core/hips/shoulders
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Common Mistake and Corrections for the Pull Phase

1.6 LEAD ARM

The lead arm works independently from the pull arm. It is a supplementary movement to complete the swimmer's rotation to the initial starting position, the streamline. When the pull arm is recovering and has begun moving forward from the waistline to the streamline position, the lead arm slightly presses down and makes a catch. The fingertips of the lead arm will rotate down with the palm pressing back as the elbow remains higher than the hand. This leads into a small sculling motion (this motion is almost identical to a breast stroke motion). The two hands will meet at or in front of the mask as the swimmer reaches forward, placing the swimmer in the streamline position.



Figure 1-13, Lead arm catch



Figure 1-14, Reach Forward

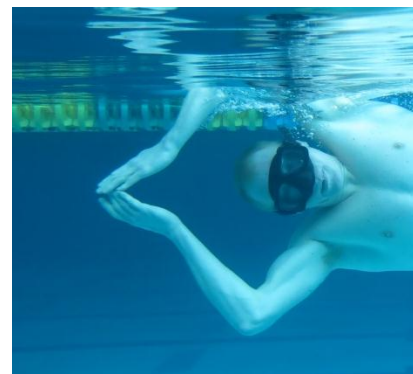


Figure 1-15, Reach to Streamline

Common Mistakes: <ul style="list-style-type: none"> • Dropping the elbow in the initial catch position • Pulling the sculling arm too far back or under the body 	Corrections: <ul style="list-style-type: none"> • Keep the hand below the elbow • Keep the hand in front of the arm pit
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Common Mistakes and Corrections for the Scull Arm

1.7 KICK

1.7.1 Scissor Kick

The swimmer utilizes the scissor kick in the Combat Side Stroke when not using fins. It may also be used in treading evolutions without fins. The Scissor kick is a very powerful kick, but has a resting period when in the streamline position. To become more efficient, the swimmer can use a flutter kick until the next stroke cycle begins. The legs work independently of each other. The top leg (the leg closer to the surface of the water) and the bottom leg (the leg furthest from the surface) move forward and backward respectively, and then meet back together in a streamlined position. Hence, the name of the kick, the movement resembles a pair of scissors.

1.7.1.1 The Top Leg

The swimmer draws the knee up so there is a 90 degree angle at the hip and knee. The swimmer then extends the lower portion of the leg (from the knee to foot) forward, keeping the foot flexed toward the shin. Once the top leg is fully extended, the swimmer points the toes and squeezes the leg to initiate movement back to the starting position.

1.7.1.2 The Bottom Leg

The swimmer bends the knee and kicks it backward with a flexed foot. The swimmer will then draw the foot back to the starting position meeting the top leg.

1.7.1.3 Application of the Scissor Kick

The Scissor kick is a powerful kick that also provides a moment of recovery in the glide phase of the stroke. The power of the scissor kick is derived from pushing the water behind the swimmer using the top of the bottom foot and the bottom of the top foot. At the end of each kick cycle, the swimmer will glide in a streamlined position, using the flutter kick until the next stroke cycle begins.



Figure 1-16, Knee Drawn Up

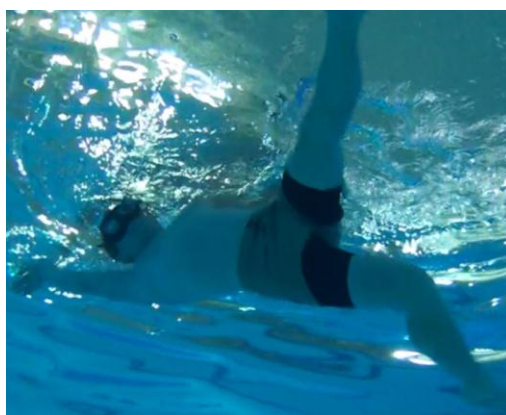


Figure 1-17, Kick the Legs outward



Figure 1-18, Feet Return to Start Position

Common Mistakes: <ul style="list-style-type: none"> • Top leg: pointing the foot, instead of keeping it flexed toward the shin. • Bottom leg dropping causing a breaststroke kick 	Corrections: <ul style="list-style-type: none"> • Draw the toes toward the shin throughout the kick until the streamline position • Make sure both legs are moving along the same plane (forward and back)
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Common Mistakes and Corrections for Scissor Kick

1.7.2 Flutter Kick

The flutter kick is used to propel a swimmer through the water. It is a continuous kick, resulting in a continuous forward motion. The kick is employed with or without fins. It is an integral part of CSS with fins, contributing to continuous speed and consistent power. The flutter kick is initiated from the hips, allowing the legs to move independently in an up and down motion. While the legs remain long and straight, this does not mean they are rigid. The swimmer must have a natural bend to the knee (a slight bend, nothing more) and relaxed ankle, though the toes must be pointed behind the swimmer. This provides as much surface area as possible to the kick, resulting in a greater displacement of water and forward motion. The swimmer will kick their legs in an up and down motion; pushing the top of the foot down, and pulling the other foot up. Without fins, the kick has a smaller range of motion and is much faster. The kick without the use of fins should occur around fifteen times every ten seconds. When fins are utilized, the rate of the kick will slow slightly, and the range of the kick will become slightly bigger. It is imperative that the swimmer does not disturb his natural body alignment with the gait of the kick.



Figure 1-19, Flutter Kick with Wetsuit and Fins



Figure 1-20, Flutter Kick Barefoot

<p>Common Mistakes:</p> <ul style="list-style-type: none">• Kicking with foot in a natural flat footed position.• Too Large of a Kick• Feet out of the water, excessive splashing.• Bicycle Kick	<p>Corrections:</p> <ul style="list-style-type: none">• This limits the surface area for the kick, which in some cases leads the swimmer to sink. Have the swimmer point his toes as if punting a football.• The swimmer should imagine kicking within a 1.5 foot by 1.5 foot box.• Only allow the bottom of the foot to meet the surface of the water.• This occurs when the kick is initiated from the knee. Reinforce that the kick begins with hip and there is only a slight natural bend to the knee.
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Common Mistakes and Corrections for Flutter Kick

1.8 STROKE ELEMENTS COMBINED

The swimmer's starting and stopping point of the stroke cycle is in the streamlined position. The stroke begins with the pull arm. As the swimmer pulls, the swimmer will allow the shoulder and hips to open to the appropriate direction, allowing an opportunity to breathe. When the pull arm begins the recovery, the kick (either scissor or flutter kick), will help facilitate the body's rotation back into the streamline position. While in this streamline position just under the surface of the water, the swimmer is encouraged to exhale slowly, and flutter kick, especially with the use of fins. This will assist in a continuous and consistent forward motion.

Slick:



Figure 1-21, Streamline Position (Also Starting Position)

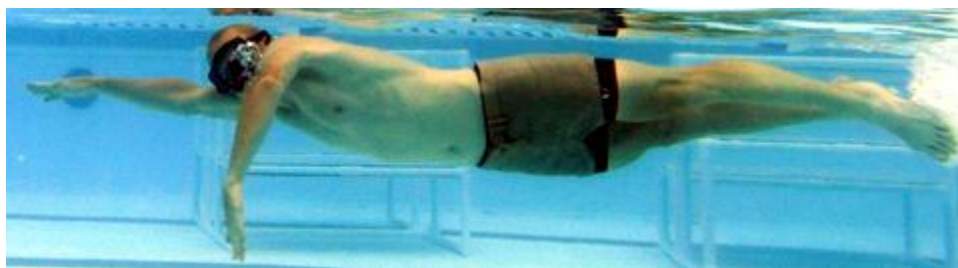


Figure 1-22, Anchor of the Pull Arm



Figure 1-23, Pull Phase



Figure 1-24, End of the Pull Phase and Begin to Breathe



Figure 1-25, Initiation of the Recovery



Figure 1-26, Initiation of Recovery



Figure 1-27, Finishing the Recovery and Starting the Scissor Kick



Figure 1-28, Finish the Recovery and Starting the Scissor Kick



Figure 1-29, Streamline (Also the End Position)

With Wetsuit and Fins:



Figure 1-30, Streamline



Figure 1-31, Initiating the Catch



Figure 1-32, Anchored Position

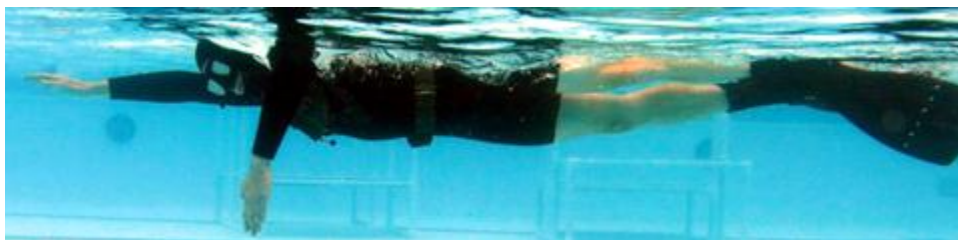


Figure 1-33, Pull Phase



Figure 1-34, Finishing the Pull



Figure 1-35 , Beginning of Recovery



Figure 1-36, Beginning of Recovery



Figure 1-38, End Recovery by Entering Streamline



Figure1-39 , End Recovery by Entering Streamline



Figure 1-40, Streamline

CHAPTER 2

GUIDESTROKE

2.1 OBJECTIVE

To ensure the correct and most efficient mechanics and techniques can be used for guiding in open water swimming.

2.2 STROKE DESCRIPTION

The Guidestroke is used in conjunction with CSS during open water swimming to sight stationary objects to ensuring the swimmer swims in a straight line. The Guidestroke itself is very similar to a breaststroke stroke in that the swimmer is lifting the head and upper body out of the water. While the head is out of the water the swimmer will then sight on a stationary object, whether it is a buoy in the water or a house on land, this will help the swimmer stay on course.

2.3 BODY POSITION

See Paragraph 1.3



Figure 2-1, Streamline/Starting Position- Underwater Lateral View

2.4 BREASTSTROKE PULL

From a streamline position, palms press out slightly wider than the shoulders. Continuously press the palms against the water. Rotate the hands so that the palms pull in towards the chest, finger tips pointing down while maintaining a high elbow position. Pulling the arms towards the chest creates forward momentum which allows the chest to be angled up, and the head in place to breathe and guide.



Figure 2-2, Initial Catch for Breaststroke Pull- Underwater Lateral View

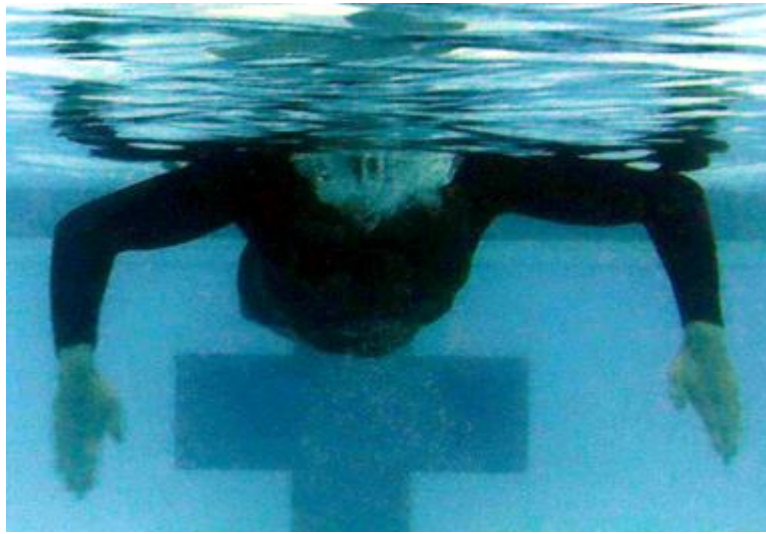


Figure 2-3, Initial Breath and Pull for Breaststroke

2.5 GUIDING

Guiding is used to sight stationary objects and ensure traveling in a straight line during open water swimming.



Figure 2-4, Breathing and Guiding Position- Underwater Lateral View of Guiding



Figure 2-5, Breathing and Guiding Position- Front View of Guiding

2.6 DOLPHIN KICK

The kick used with the Guidestroke is a Dolphin Kick. As the arms move forward, both feet are used simultaneously to kick in a downward motion and drive the body below the surface of the water into the initial starting or streamline position.



Figure 2-6, Initial Kick Phase- Underwater Lateral View of Dolphin Kick



Figure 2-7, Power Kick Phase- Underwater Lateral View of Dolphin Kick



Figure 2-8, Ending Position into Streamline- Underwater Lateral View of Dolphin Kick

NOTICE:

DO NOT USE A HIGH ELBOW RECOVERY (SHARKFIN)

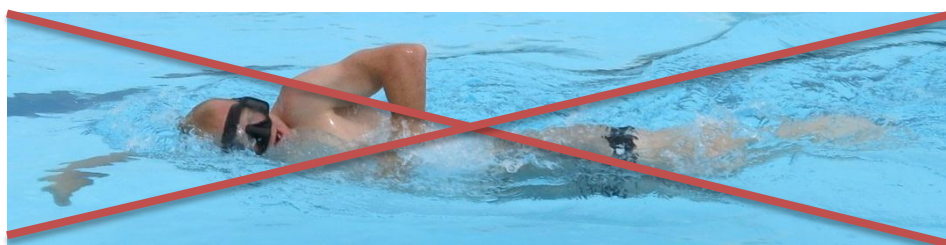


Figure 2-9, "Sharkfin"

References

1. Navy Swimming and Water Survival Instructor's Manual NETC P1552/16 (07-07)
2. Swimming Fastest ISBN-13: 978-0-7360-3180-6

GLOSSARY OF TERMS

Balance: The ability to maintain horizontal body position in the water

Catch: The start of an arm stroke when a swimmer begins to grip and move their hand through the water as though swimming over a barrel

Combat Side Stroke: A stroke used by Naval Special Warfare which combines side stroke and freestyle swim strokes

Dolphin Kick: A kick in which both feet and legs move in unison. The power is generated by the body NOT the knees

Drag: The amount of friction created by a swimmer in the water

Flutter Kick: An alternating whipping motion of the legs used in various swimming styles (combat side stroke and freestyle)

Guidestroke: A technique used to sight stationary objects and ensure swimming in a straight line during open water swimming.

Long axis stroke: A stroke in which the body rotates around the axis that runs along the swimmers spine from the head to the tailbone (combat side stroke and freestyle)

Neutral Body Position: The most natural position for a swimmers body in which the head, neck, and spine are all aligned

Open Water Swimming: Any swimming that takes place in a large body of water other than a swimming pool i.e. lake, pond, ocean and bay

Rotation: The transitional movement of a swimmer's shoulders and hips from the horizontal plane to the vertical plane and back to the horizontal plane while keeping head to toe body alignment with the surface of the water

Scissor Kick: A kick used in combat side stroke and rescue swimming, in which the top leg is pulled up toward the chest till a 90 degree angle is achieved with the knee, the bottom leg moves backward in the same pattern as done when kicking a ball. Both legs are released and brought together at the same time propelling the swimmer forward

Scull: A small sweeping pull using the hand and forearm that moves similar to a figure-8 pattern, continually pressing against the water to create propulsion or in the case of treading: lift

“Shark Fin” or “Shark Finning”: As it pertains to the NSW Combat Side Stroke is an unauthorized arm recovery stroke. The hand and arm is recovered in such a way as to promote the elbow exiting the water

at an extreme angle resulting in the arm resembling a “sharks fin”. It is not authorized for use on testing or conditioning swims at any phase in training. This technique is discouraged due to the tactical application of the stroke, it is considered overt

Sighting: The process of orienting one’s direction in open water swimming off of a stationary object

Streamline: Body position that creates the least amount of drag, visualize a torpedo

Stroke Cycle: One complete arm and leg action in any stroke

Swim Time Standards: Entrance 500 yard swim, SEAL- 12:30, SWCC- 13:00. Exit 1000 meter swim with fins, SEAL- 20:00, SWCC- 22:30

Swimming Down Hill: An analogy used to define the feel the swimmer has when in the proper body position (Defined in paragraph 1.3)

Swimming Up Hill: An analogy used to define the feel the swimmer has when they are in incorrect body position i.e. head up and hips down

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