

U.S. Department of
Homeland Security

United States
Coast Guard



Cutter Anchoring Operations Tactics, Techniques, and Procedures (TTP)



U.S. Coast Guard
Force Readiness Command
(FORCECOM)

CGTTP 3-91.19
September 2017

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U.S. Department of
Homeland Security

United States
Coast Guard



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CGTTP 3-91.19

15 SEPTEMBER 2017

COAST GUARD TACTICS, TECHNIQUES, AND PROCEDURES, CGTTP 3-91.19

Subj: CUTTER ANCHORING OPERATIONS TACTICS, TECHNIQUES, AND PROCEDURES
(TTP)

- Ref:
- (a) Rescue and Survival Systems Manual, COMDTINST M10470.10 (series)
 - (b) Naval Engineering Manual, COMDTINST M9000.6 (series)
 - (c) Gas Free Engineering, Naval Ships' Technical Manual, Chapter 074, Volume 3, S9086-CH-STM-030
 - (d) Operational Risk Management, COMDTINST 3500.3 (series)
 - (e) Aids to Navigation Manual - Seamanship, COMDTINST M16500.21 (series)
 - (f) Anchoring, Naval Ships' Technical Manual, Chapter 581, S9086-TV-STM-010
 - (g) Knights Modern Seamanship, Eighteenth Edition

1. PURPOSE. To provide Coast Guard tactics, techniques, and procedures (CGTTP) for conducting cutter anchoring operations in various environments.
2. ACTION. This CGTTP publication applies to U.S. Coast Guard (USCG) personnel stationed onboard cutters, cutter inspection teams, and Afloat Training Organization. Internet release authorized.
3. CGTTP AFFECTED. None.
4. DISCUSSION. The Coast Guard Office of Cutter Forces COMDT (CG-751) conducted a review of USCG seamanship publications and directives to determine the breadth and accuracy of standard anchoring seamanship procedures for the fleet. They determined that procedural guidance for cutters conducting anchoring operations is scattered across many documents, and some information is outdated or gapped. This tactics, techniques, and procedures (TTP) publication focuses on deck seamanship duties and responsibilities of anchoring. Where appropriate, this TTP publication also includes procedures for other stations (e.g., bridge) necessary for a safe and complete anchoring evolution. This TTP publication was authored and validated by accomplished performers and subject matter experts in the field. TTP publications adhere to a life-cycle maintenance periodicity unless triggered by other revision requirements.

5. DISCLAIMER. This TTP publication is not a substitute for applicable legal requirements, nor is it itself a rule. It is intended to provide guidance for Coast Guard personnel and is not intended to, nor does it impose legally binding requirements on any party outside the Coast Guard.
6. DISTRIBUTION. U.S. Coast Guard Force Readiness Command (FORCECOM) Training Division (FC-T), TTP Section posts an electronic version of this TTP publication to the CGTTP Library on CGPortal. In CGPortal, navigate to the CGTTP Library by selecting **References**, then select the **TACTICS, TECHNIQUES, AND PROCEDURES LIBRARY** link. FC-T, TTP Section does not provide paper distribution of this publication.
7. USCG FORMS. None.
8. REQUEST FOR CHANGES. Submit recommendations for TTP improvements or corrections through the TTP Request webpage on CGPortal. In CGPortal, navigate to the TTP Request webpage by selecting **References**, then selecting the **TTP Requests** link.

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Chapter 1: Introduction

Introduction

This chapter overviews U.S. Coast Guard (USCG) cutter anchoring tactics, techniques, and procedures (TTP). It also defines the use of notes, cautions, and warnings throughout this TTP publication.

In This Chapter

This chapter contains the following sections:

Section	Title	Page
A	Introduction	1-2
B	Notes, Cautions, and Warnings	1-4

Section A: Introduction

A.1. Background Anchoring is a frequently conducted task that is part of the fundamental qualifications as a boatswain's mate or officer of the deck (OOD).

- USCG cutters rely upon experienced boatswain's mates who act as subject matter experts when an anchoring evolution arises.
- Cutters use the specific anchoring checklist from their unit navigation standards to guide and track event sequencing.

The Coast Guard Office of Cutter Forces COMDT (CG-751) conducted a review of USCG seamanship publications and directives to determine the breadth and accuracy of standard anchoring seamanship procedures for the fleet. They determined that procedural guidance for cutters conducting anchoring operations is scattered across many documents, and some information is outdated or gapped.

COMDT (CG-751) identified a need for standardized guidance to help crews safely and effectively conduct anchoring operations.

**A.2.
Performance
Factors**

COMDT (CG-751) identified several anchoring performance factors to address in this TTP:

- Crew safety and performance during anchoring evolutions.
- Clear anchoring procedures for cutters.
- Standardized procedures from cutter to cutter.

A.3. Scope

An anchoring evolution begins when a cutter decides it will anchor and ends when a cutter weighs anchor.

This TTP publication provides procedural guidance to the cutter community for conducting anchoring operations in different environments, (e.g., ideal conditions, low visibility, diverse weather and sea states).

This TTP publication includes:

- Safety precautions.
- Communication.
- Manning guidelines associated with anchoring.
- Guidelines for anchoring in different environments.
- Equipment associated with anchoring.

- Anchoring procedures for:
 - Letting go.
 - At anchor.
 - Weighing anchor.
 - Emergency procedures.
- This TTP publication also includes job aids for:
 - Anchoring checklist.
 - Anchoring safety brief.
 - Anchoring commands.
 - Free fall problems.

A.4. Exclusions and Assumptions

This TTP publication focuses on deck seamanship duties and responsibilities during anchoring. When appropriate, it also includes some procedures for other stations (e.g., bridge), that are necessary for a safe and complete anchoring evolution.

Anchoring is a fundamental qualification for a boatswain's mate or OOD. Refer to the [Office of Cutter Forces \(CG-751\)](#) CGPortal site for watch qualification standards when conducting anchoring duties and responsibilities.

A.5. Target Audience

The primary audience for this TTP publication is USCG personnel stationed onboard cutters, cutter inspection teams, and the Afloat Training Organization.

A.6. Best Practice

Throughout this TTP publication, the term “best practice” means a modified or innovative practice that results in an improved or more effective response that might merit adoption by other units, platforms, or commands.

A.7. Deviations

This TTP publication cannot cover every cutter anchoring scenario that might arise. Some cases might result in a need to deviate from guidance in this publication. Deviate as necessary to complete the task with greater safety, effectiveness, or efficiency, but do not take such deviations lightly. Temper a decision to deviate with maturity and a complete understanding of the mission, members' capabilities, and equipment. Whenever possible, consult your unit chain of command prior to deviation. Report TTP publication adjustment needs per the Request for Changes paragraph located in the letter of promulgation.

Section B: Notes, Cautions, and Warnings

B.1. Overview The following definitions apply to notes, cautions, and warnings found in this TTP publication.

NOTE: **An emphasized statement, procedure, or technique.**

CAUTION: **A procedure, technique, or action that, if not followed, carries the risk of equipment damage.**

WARNING: *A procedure, technique, or action that, if not followed, carries the risk of personnel injury or death.*

Chapter 2: Fundamental Principles of Anchoring

Introduction Anchoring evolutions involve inherent risks to personnel and equipment. These evolutions require skill, training, efficiency, and coordination of deck personnel, as well as communication and coordination with the bridge. A thorough understanding of all aspects of the evolution is necessary to prevent mishaps.

In This Chapter This chapter contains the following sections:

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A	Anchoring Safety	2-2
B	Planning Considerations	2-4
C	Anchor Briefs	2-7
D	Personnel Assignments	2-8

Section A: Anchoring Safety

A.1. General

Anchoring is a dynamic and fluid evolution. A thorough understanding of anchoring principles and procedures, combined with an intimate knowledge of equipment capabilities and limitations, is essential to ensure safety.

A.2. Training

On-the-job training is an effective means of training when conducted by qualified personnel. This TTP publication serves as a training aid and a valuable tool in conjunction with on-the-job training.

Cutters crews frequently perform anchor evolution training. Personnel need to be trained and equipped to perform not only routine duties, but also to react when something unusual happens. A field use “best practice” recommends officers and crew conduct regular safety lectures and exercises aimed at reducing risk by identifying unsafe conditions or practices and unusual circumstances.

A.3. Personal Protective Equipment

Anchoring evolutions present inherent safety risks. Wear appropriate personal protective equipment (PPE) while in operating areas. Reference (a), Rescue and Survival Systems Manual, COMDTINST M10470.10 (series), provides guidance when selecting personal protective equipment (PPE). Basic PPE consists of:

- Personal flotation device.
- Hard hat with chinstrap.
- Safety toe boot.
- Eye protection.

The following additional gear might be needed as conditions warrant:

- Gloves.
- Coveralls.
- Foul weather gear.
- Knife.
- Flashlight.

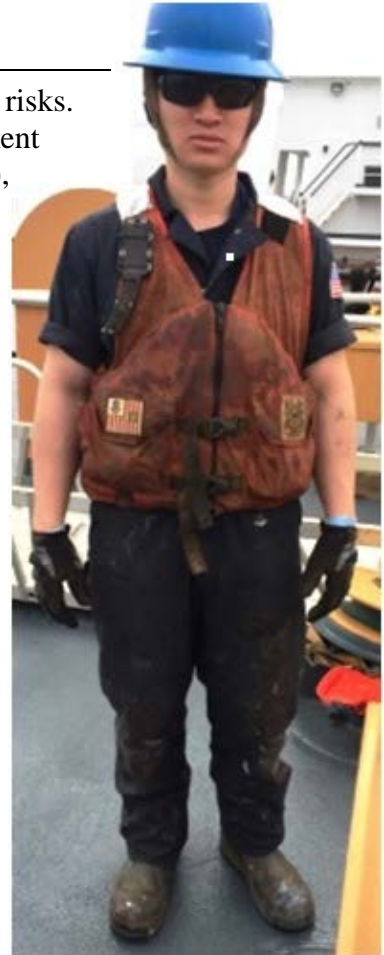


Figure 2-1 Rigger in proper PPE

WARNING:

Remove all jewelry and loose articles.

**A.4. Anchoring
Equipment
Precautions**

Go to the [Fleet Training and Readiness Branch \(FC-Aftr\)](#) site on CGPortal for your cutter-specific command assessment of readiness for training (CART) checklist to verify that the proper equipment is on-hand.

- Never drop two anchors simultaneously.
- When underway, check on a daily basis that anchors are secured for sea.
- Check for catenary in the anchor chain between the aft stopper (pelican) and the windlass.
- Perform scheduled preventative maintenance on ground tackle per appropriate maintenance procedures cards found on the [United States Coast Guard Logistics Information Management System Surface Technical Information Portal \(CG-LIMS STIP\)](#).
- Use manufacturer's guidelines for maintenance and stowage of ground tackle.
- Inspect deck fittings, ground tackle, and other anchoring gear before use and periodically, as required by reference (b), Naval Engineering Manual, COMDTINST M9000.6 (series).

CAUTION:

Use caution if deficiencies are noted during a pre-operational inspection and the decision is to continue with the anchoring. Only the CO or OIC decide to anchor using deficient equipment.

CAUTION:

Ensure the brake is set and the wildcat is disengaged before using the windlass for line handling.

WARNING:

Keep hands and feet off, and away from, moving anchor chains and lines. Never step over, on, or straddle any anchor chain or line.

WARNING:

Most chain lockers are classified as confined spaces. Enter only when permission is given by the commanding officer (CO) or officer in charge (OIC), no anchor evolutions are planned, and the space is certified as gas-free. See reference (c), Naval Ships' Technical Manual (NSTM), Chapter 074, Volume 3: Gas Free Engineering, S9086-CH-STM-030 (series), for more information.

Section B: Planning Considerations

- B.1. Checklist** Use your command’s anchoring checklist to guide planning for each anchoring evolution. A sample checklist is provided in [Appendix B: Cutter Anchoring Job Aids, Section A: Sample Anchoring Checklist](#).
-
- B.2. Risk Management** Risk is the possibility of loss or injury due to exposure to a hazard and is inherent in all operations and activities, especially dynamic operations like anchoring. Risk management (RM) is a process to identify, assess, control, mitigate, and manage hazards associated with an operation, evolution, or activity. When properly executed, the RM process results in early identification and control of hazards, enabling safer operations.
- The most common cause of mishaps is a lack of deliberate and systematic RM during preparation, planning, and execution of operations and activities. The RM process provides a framework to identify and assess hazards, evaluate the risk level, and weigh the risk against potential benefits. Taking calculated risks is often necessary, but deliberate use of the RM process increases mission success by reducing member exposure to hazards.
- RM models for identifying and mitigating risk, as well as important team coordination principles, are found in reference (d), Operational Risk Management, COMDTINST 3500.3 (series). While technical skills are important, these alone do not ensure safe operations; risk mitigation and coordinated teamwork are critical to operational success and safety.
-
- B.3. Environmental Considerations** Mitigating environmental concerns that might affect the anchor evolution is one of the biggest factors in conducting a safe anchoring evolution. The CO or OIC considers environmental conditions (e.g., wind, current, tides, etc.) when deciding whether to conduct, delay, or cancel the evolution.
-
- B.4. Equipment** Identify appropriate equipment, based on available information, during the planning stage. Anchoring equipment is dependent upon the ships’ outfit list for that cutter class.
- Before anchoring, the anchor detail inspects each piece of equipment. If there is any doubt about its condition or serviceability, replace it.
-

B.5. Scope

Scope is the length of anchor chain or line from the cutter's deck to the sea floor. Many factors influence the determination of scope, including:

- Depth.
- Wind.
- Current.
- Sea swells.
- Bottom type.
- Sea room.
- Location.

The controlling factor in determining scope is to keep the anchor shank horizontal for maximum holding power.

- If the scope is too short, the chain might lift the anchor shank off the bottom, raise the flukes, and the anchor can break out and drag. A ship usually anchors with a scope of chain between five and seven times the depth of water.
- When a ship at anchor is subject to heavy weather, more chain is pulled off the sea floor, and more scope is necessary.

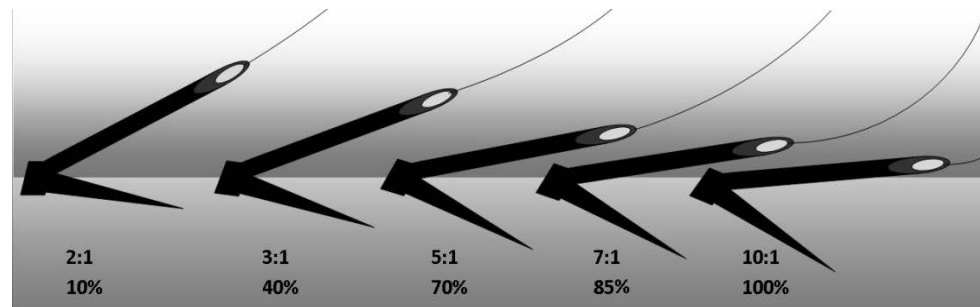


Figure 2-2 Anchor chain scope effect on anchor holding power

**B.6.
Communication**

Communication among all involved parties, e.g., bridge, anchor watch, petty officer in charge (POIC), deck safety, etc., is critical to a successful anchoring evolution:

- Ensure communication equipment is available and used by both the bridge and the anchor detail.
- Establish communication between the bridge and the anchor detail.
- Establish a secondary means of communications.
- Methods of communication include:
 - Installed equipment (e.g., 1MC, 1JV, 2JG, etc.).
 - Handheld radios.
 - Standard hand signals and standard anchoring commands, where possible (see [Appendix B: Cutter Anchoring Job Aids, Section B: Anchoring Commands](#)).
- Primary and secondary radio frequencies, other communication devices to use, and times of status reports are per the communications schedule.

WARNING:

Improper communications might result in mishap, injury, or death. Understand the communication plan to guard against mishaps.

**B.7.
Communication
Schedule**

The bridge establishes a communication schedule with the anchor detail and anchor watch. The following are examples of reports between the anchor detail or watch and the bridge.

- Anchor detail manned and ready.
- When anchor has been let go.
- Number of shots on deck.
- When prescribed length of chain or line has been let out.
- When anchor appears to be holding.
- When the anchor detail is secured.
- When the anchor watch is set.
- Report concerning chain direction and strain.
- During every round made by the anchor watch.

NOTE:

Traditionally, chain reports are made referencing clock directions, with the bow as 12 o'clock.

Section C: Anchor Briefs

C.1. Pre-Anchor Brief

A major contributing factor to the success of any anchor evolution is communicating all facets of the evolution to all involved personnel. Conducting a pre-anchor brief ensures everyone knows what is happening and each involved individual knows his or her role.

As part of the pre-brief, conduct a safety brief that discusses:

- General evolution information.
 - Anchor being used.
 - Position assignments.
 - Anchoring method (e.g., [letting go](#) or [walking out the anchor](#)).
 - Depth of water and bottom type at planned anchorage location.
 - Planned amount of chain to be let out.
- Proper PPE for personnel.
- Anticipated and emergency procedures.
- Communications plan.
- Safety precautions and hazards.
- Risk assessment and management.

C.2. Post-Anchor Debrief

After the anchoring evolution, conduct a debrief that includes:

- A brief summary of the evolution.
- Differences between planned and actual occurrences.
 - Problems encountered.
 - Lessons learned to apply to future anchoring evolutions.
 - Anything that went noticeably well.
 - Safety concerns, including a discussion of the risk assessment from the pre-anchor brief.
 - Was the general assessment of risk appropriately determined?

NOTE:

Solicit feedback from the most junior personnel for the post-anchor debrief.

Section D: Personnel Assignments

D.1. Overview At a minimum, fill positions with experienced, personnel qualification standard (PQS) qualified, members per the watch, quarter, and station bill. Assign “break-in” riggers to learn new positions.

D.2. Safety Officer The safety officer maintains team oversight to ensure personnel strictly adhere to risk management practices.

- Observes personnel actions and checks procedures throughout the evolution, but does not personally handle lines or equipment.
- Ensures non-essential personnel are removed from the area to prevent distractions and limit the number of people in a hazardous situation.
- Eliminates frivolity or loud, boisterous behavior from the team and minimizes excitement or confusion during anchor evolutions.
- If confusion does exist by any member of the team, ensures that member is comfortable questioning whatever they do not understand.
- Does not have any other duties that might detract from observing the evolution or taking action to stop an unsafe condition.

D.3. Petty Officer in Charge POIC is in charge of the anchoring evolution and is the supervisor.

- Attends the cutter anchor and navigation brief.
- Leads the on-deck anchor safety brief prior to an anchoring evolution.
- Establishes and maintains communications with the bridge.
- Determines which rigger fulfills each position and assigns them during the brief.
- Supervises riggers throughout the evolution to ensure safe and proper use of equipment.
- Ensures break-in riggers are properly supervised by qualified riggers.

NOTE:

To avoid distraction during the evolution, the POIC does not handle equipment or lines.

D.4. Phone Talker If hand held radios are not used, designate a person as a sound-powered phone talker if equipped.

D.5. Riggers

Riggers are qualified individuals who act under direction of the POIC. They have completed the required qualification tasks for their unit and are knowledgeable and experienced in all aspects of the evolution.

- Take soundings with the lead line and pass soundings and bottom type to the POIC.
- Set or release the brake, and heave around or pay out on the anchor windlass, under the POIC's direction.
- Trip the stopper under the POIC's direction.
- Deploy and tend the anchor buoy, if used.
- Shift colors as appropriate.



Figure 2-3 Riggers passing the stopper

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Chapter 3: Anchoring Procedures

Introduction

This chapter provides descriptions and physical requirements of anchoring equipment, as well as standard procedures for deck seamanship duties and responsibilities for conducting anchoring evolutions. When appropriate, it also includes some procedures for other stations (e.g., bridge), that are necessary for a safe and complete anchoring evolution. Use this chapter to educate and train crews on equipment and procedures associated with anchoring.

In This Chapter

This chapter contains the following sections:

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B	Chain Anchoring Procedures	3-15
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Section A: Anchoring Equipment

A.1. Anchoring Terms

Anchoring equipment includes the windlass, wildcat, capstan, gypsy head, anchor, anchor chain or line, and anchor chain or line appendages.

Anchor chain (line) appendages include detachable links, pear-shaped detachable links, chain swivels, end links, bending shackles, chain stoppers, and outboard swivel shots.

Ground tackle includes anchor, chain, line, and appendages.



Figure 3-1 Ground tackle

A.2. Anchors

Anchors carried on the bow are called bower anchors and are lightweight, stockless, or balanced fluke. Anchors used aboard cutters are class specific, chosen for their holding power, and their dimensions are per applicable specifications and ship's drawings.

A.2.a. Lightweight

Lightweight anchors are generally constructed of lighter metal, but have very high holding power compared to their weight; but holding power varies greatly depending on manufacturer. They gain their holding power by digging deeply into the bottom rather than lying as deadweight.

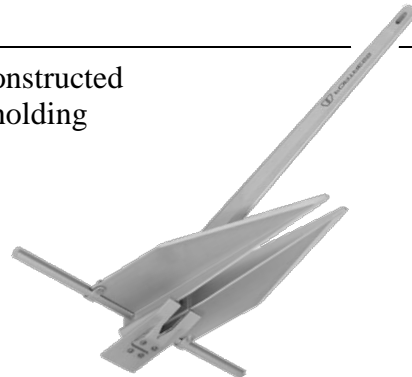


Figure 3-2 Lightweight anchor

A.2.b.
Stockless

Stockless anchors consist of a heavy head in which the crown, tripping palms, and flukes are forged in one piece. The flukes are large and long, and tripping palms, or shoulders, project from the base of the flukes to make them bite. As the force of the drag exerts itself, the shoulders catch on the bottom and force the anchor to take hold by pushing the flukes downward into the bottom.

Because an upward pull on the shank of a stockless anchor has a tendency to break out the flukes, use a long scope of chain to ensure the shank remains on the bottom when the anchor is set.

With too short a scope, or even under steady pull with a long scope, a stockless anchor might disengage its flukes as a result of gradually turning over and rolling out. Under this condition, the anchor can offer no resistance to dragging except by its weight.

With a properly set anchor, the anchor holding power for a standard stockless anchor is 7.1 times the anchor weight.

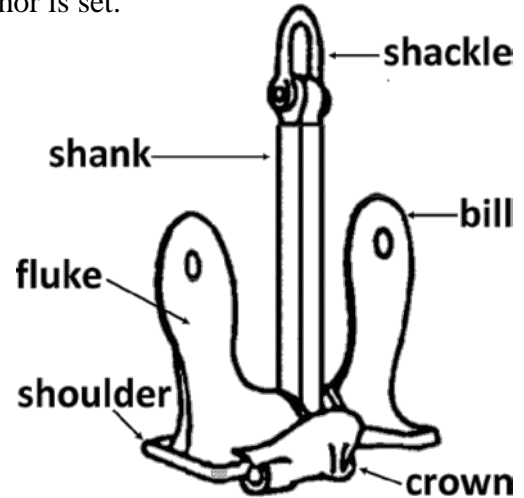


Figure 3-3 Stockless anchor

A.2.c.
Balanced Fluke

The flukes of a balanced fluke anchor are always in a vertical position when the anchor is suspended by the anchor chain. Typically, holding power for a two-fluke balanced fluke anchor is nine times the anchor weight.



Figure 3-4 Balanced fluke anchor

A.3. Anchor Size and Holding Power

Anchor size is expressed in terms of the weight of the anchor in pounds. Anchor holding power, also expressed in terms of pounds, is calculated by the manufacturer, and is pre-determined for each class of cutter.

A.4. Anchor Log

The anchor log is used to record the use and maintenance of ground tackle. In addition, log each semi-annual inspection of the anchor chain in the system of record.

A.5. Anchor Chain

Anchor chain aboard cutters is class specific and its dimensions are per applicable specifications and ship's drawings. The link or chain size refers to the nominal diameter of the link material in the grip area.

The grip is the area where the adjacent links make point contact with each other when the anchor chain is under strain.

Anchor chain lengths are measured in shots.

- A fathom is 6 feet.
 - A shot is 15 fathoms, or 90 feet.
-

A.5.a. Stud-Link Chain

Anchor chain is made with studs and commonly called stud-link anchor chain. The stud is the bar that holds the two sides of each link apart. Stud-link chain does not stretch as much as chain without studs and link dimensions are critical to properly fitting into the wildcat. Studs also help prevent chain from kinking or knotting.



Figure 3-5 Stud-link chain

A.5.b. Anchor Chain Shot Marking

Paint detachable links and adjacent chain links to identify the length of chain payed out.

- Paint all links in the last shot red.
- Paint all links in the next to last shot yellow.
- Paint detachable links as follows:
 - After the first shot, red.
 - After the second shot, white.
 - After the third shot, blue.
 - Repeat, using red, white, and blue, in order until the yellow shot.
- On each side of the detachable link, paint the number of white links that correlates with the shot number:
 - One link on each side of the first shot detachable link white.
 - Two links on each side of the second shot detachable link white.
 - Three links on each side of the third shot detachable link white.

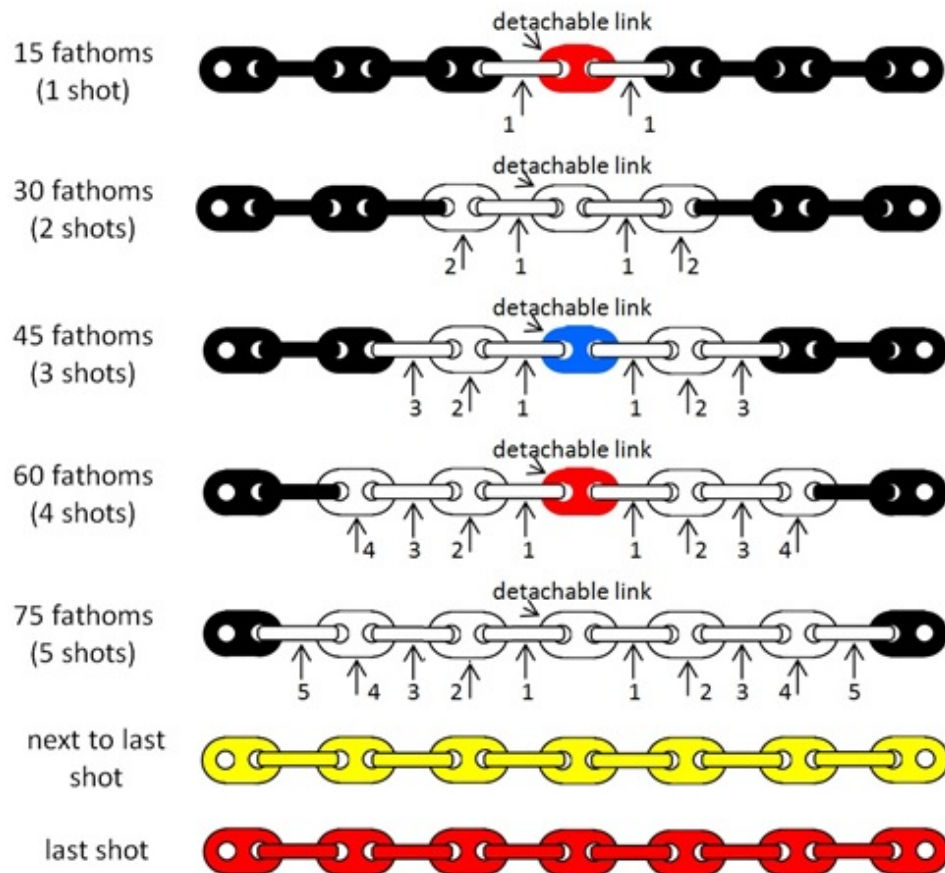


Figure 3-6 Anchor chain shot marking

- Mark anchor chain with turns of wire on the studs of certain links as follows:
 - Place one turn of wire around the stud on the first link at each side of the detachable link after the first shot.
 - Place two turns of wire around the stud on the second link at each side of the detachable link after the second shot.
 - Place three turns of wire around the stud on the third link at each side of the detachable link after the third shot, and so forth.

A.6. Anchor Line Some smaller cutters use line, or a combination of line and chain instead of just chain. For more information, see [Section C:Line Anchoring Procedures](#) of this chapter.

- Line takes more scope and is usually not heavy enough to create significant catenary in weather conditions that bring the line to moderate to heavy strain.
- Mark the line every 15 fathoms to help determine how much line is payed out.
- Avoid the use of permanent whippings in double braided nylon or polyester lines. It interferes with the independent operation of cover and core.

A.7. Anchor Windlass An anchor windlass is primarily for handling and securing the anchor and anchor chain. Two types of windlasses are horizontal shaft windlass and vertical shaft windlass.

A.8. Capstan or Gypsy Head A capstan, or gypsy head, is a rotating drum, keyed to the windlass shaft, designed to handle lines for mooring and warping. Vertical windlasses have capstans and horizontal windlasses have gypsy heads.

A.9. Wildcat

A special type of drum or sprocket constructed to handle the anchor chain links. The outer surface is provided with flats or pockets in which the chain links lay flat side to the wildcat shaft. At each end of the pockets, lugs known as whelps are provided that contact the end of the link. The wildcat is rotated by the windlass drive to heave in or pay out the chain.



Figure 3-7 Wildcat, with brake, and stud-link chain in whelps

A.9.a. Wildcat Locking Head

The wildcat locking head (clutch) provides for disengaging the wildcat from the windlass drive. This permits free rotation of the wildcat when dropping anchor using the hand brake. It also permits the windlass drive to rotate the capstan while the wildcat is secured by the brake.

Do not engage or disengage the wildcat locking head while the drive is rotating. Before disengaging the wildcat locking heads, set the hand brake to prevent the wildcat from rotating.

Fully engage or disengage the wildcat locking heads; partial engagement might damage locking head components and result in intermittent wildcat movements that the operator cannot control.

NOTE:

Disengage the wildcat to handle line. When the wildcat is engaged, both the wildcat and the capstan or gypsy head rotate.

A.9.b.
Hand Brake

Each wildcat has a hand brake that consists of an externally contracting flat band that closes on a drum. The band is lined with friction material and forms a brake shoe. The drum is keyed to the same shaft as the wildcat. The wildcat only turns when the drum is allowed to turn.

Use the handwheels provided on the deck or in the windlass room to operate the hand brake. Turning either handwheel contracts or expands the brake band. For anchor chain sizes 3¹/₂ inches and larger, hydraulic cylinders assist in operating the hand brake.

The hand brake is used intermittently to stop the wildcat when dropping the anchor. If the anchor was allowed to free fall, the anchor chain would pull out of the chain locker completely. If the bitter end shackle then fails, it would result in the loss of the anchor and chain.



Figure 3-8 Hand brake

A.9.c. Chain Stripper

A rigid structure, attached to the deck, extending into the wildcat groove on the side opposite where the chain contacts the wildcat. If the anchor chain pitch is less than the wildcat pitch, the anchor chain tends to lock onto the wildcat. The chain stripper forces the chain off the wildcat.



Figure 3-9 Chain stripper

A.10. Vertical Shaft Windlass

A vertical shaft windlass has its power source below deck with the wildcat, capstan, and controller above deck. This type can handle only one anchor.



Figure 3-10 Vertical shaft windlass

**A.11. Horizontal
Shaft Windlass**

This type of windlass is usually self-contained with the windlass and windlass motor mounted on the same bedplate on deck. It handles both the port and starboard anchors.

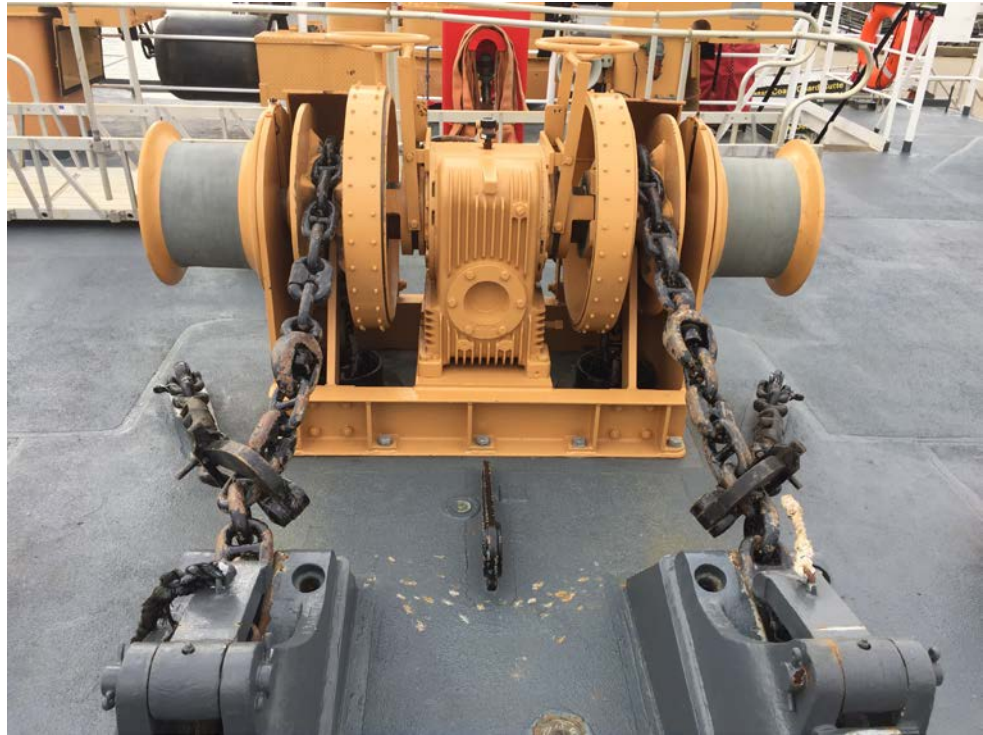


Figure 3-11 Horizontal shaft windlass

**A.12.
Chain Stopper**

Chain stoppers are used to secure and carry the load of the ground tackle. They eliminate having to leave constant strain on the windlass both anchored and housed.

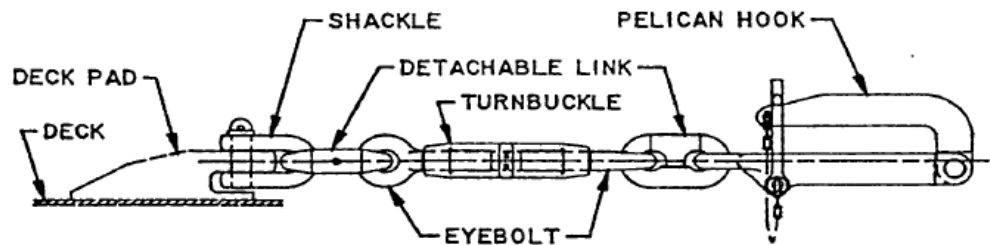


Figure 3-12 Chain Stopper

NOTE:

Some units find it beneficial to use a rubber mat under the stopper to minimize damage to the deck coating.



Figure 3-13 Stopper



Figure 3-14 Tripping the pelican hook

A.13. Outboard Swivel Shot

Outboard swivel shots consist of the appendages and chain between the anchor and first full shot of anchor chain. Assembled per the ship's drawings, outboard swivel shots usually consist of small sections of chain, a swivel, and detachable links. The outboard swivel shot is also commonly called a bending shot.



Figure 3-15 Outboard swivel shot

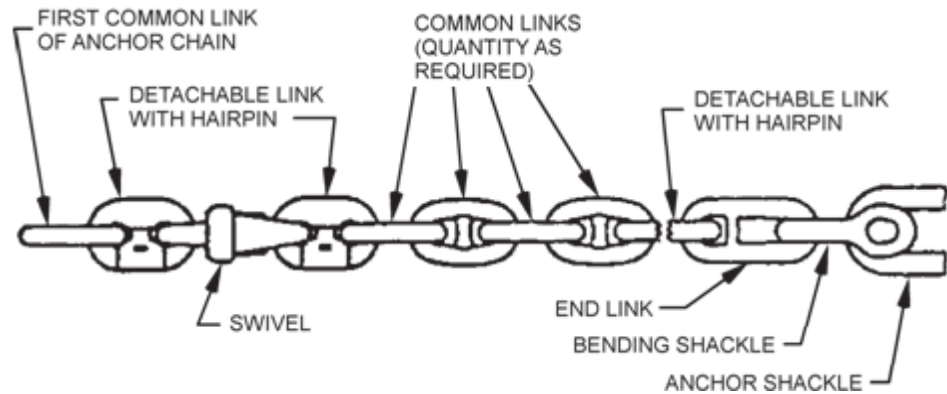


Figure 3-16 Standard outboard swivel shot

A.14. Anchor Buoy

The anchor buoy indicates the actual position of the anchor to which it is attached by floating above it. When used, the anchor buoy and line are put overboard, well clear of the cutter, the instant the anchor is let go.

A.15. Tools for Anchoring

Tools needed for anchoring include a sledgehammer and the chain stopper turnbuckle wrench.

A.16. Detachable Links

Detachable links connect sections of anchor chain and appendages. The exploded view of a detachable link in Figure 3-17 shows the parts that make up a detachable link, and how they assemble.

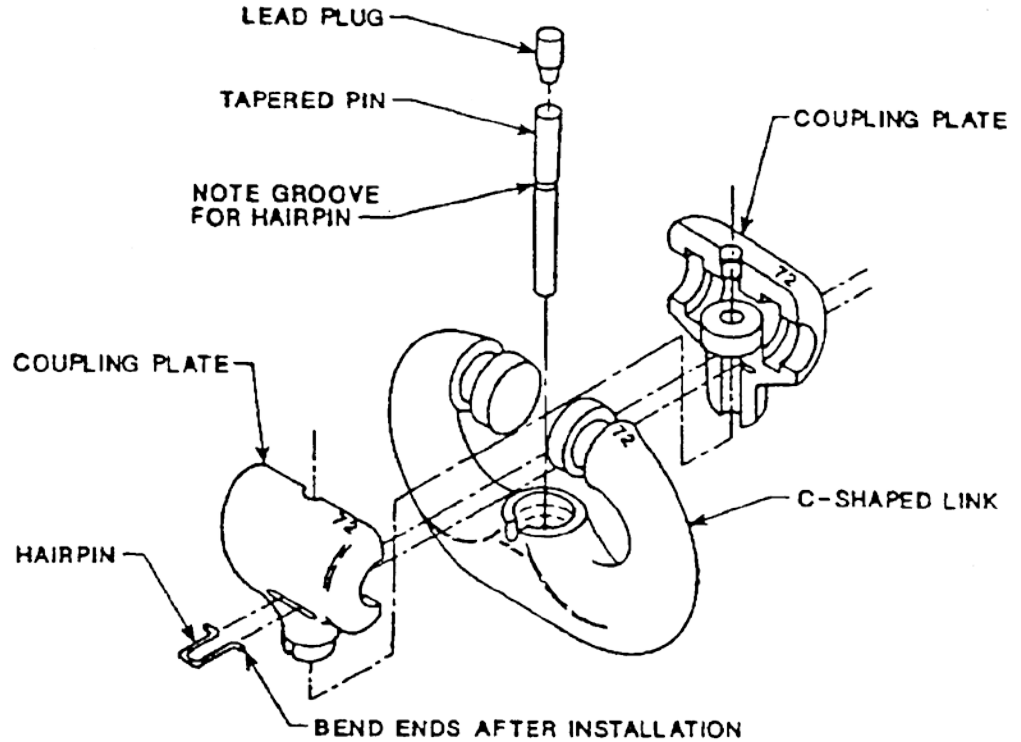


Figure 3-17 Detachable link breakdown

A.17. Detachable Link Marks

Detachable link parts are not interchangeable. Match the marks of each major part of a detachable link when assembling.

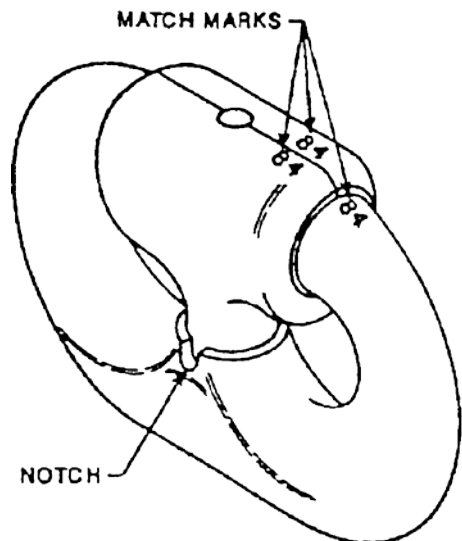


Figure 3-18 Detachable link markings

**A.18. Detachable
Link Tool Kit**

Use the detachable link tool kit when it is necessary to disconnect the anchor chain between shots or from the outboard swivel shot. The tool kit consists of at least:

- Hammer.
 - Tapered pins.
 - Lead plugs.
 - Punches.
 - Hairpins.
 - Detachable links.
-

Section B: Chain Anchoring Procedures

B.1. Overview In addition to crew skills and knowledge, a successful anchoring evolution depends on:

- Anchor holding power.
- Cutter size.
- Environmental conditions (wind, current, and tides).
- Depth of water.
- Bottom type.

Consider each factor when choosing a method to let go the anchor.

**B.2. Let Go
Anchor Methods**

There are three common methods for letting go the anchor.

- Let go the anchor from the brake.
- Release the anchor from the stopper.
- Walk the anchor out prior to letting go.

NOTE:

For further guidance on advanced anchoring techniques, such as dredging and kedging, see reference (e) Aids to Navigation Manual – Seamanship, COMDTINST M16500.21 (series).

**B.2.a. Let Go the
Anchor from the
Brake**

This is the preferred and most commonly used method because personnel are well clear of the stopper and anchor chain prior to the release of the anchor.

B.2.a.(1).
Make the Anchor
Ready for Letting
Go

Generic procedures for making the anchor ready for letting go are listed below. Refer to your cutter's unit navigation standards for specific details.

1. Conduct an anchoring safety brief per [Appendix B: Cutter Anchoring Job Aids, Section C: Sample Anchoring Safety Brief](#).
2. Ensure all required equipment is available.
3. If used, remove all chain and hawse pipe covers.
4. Ensure the brake is fully set.
5. Disengage the wildcat.
6. Test the windlass.
7. Raise the cat's paw and remove the riding stopper.
8. Make both anchors ready for letting go.
9. POIC reports ANCHOR DETAIL MANNED AND READY.

NOTE:

Alternatively, take slack out of the chain or lower the anchor out of the pocket before disengaging the wildcat.

B.2.a.(2). Let Go
the Anchor

As the cutter makes its approach to the anchorage:

- The bridge passes distance in yards to the anchorage.
- The POIC acknowledges these reports, and passes the information to all hands on deck.
- When the cutter gets close to the planned anchorage, the bridge passes STANDBY THE (PORT/STARBOARD) ANCHOR. This distance varies between cutters.
- The POIC acknowledges the command and directs the rigger to trip the stopper.
- When the stopper is clear and the rigger is clear of the area, the POIC reports to the bridge STANDING BY THE (PORT/STARBOARD) ANCHOR.
- At the command LET GO THE (PORT/STARBOARD) ANCHOR, the POIC acknowledges this command and directs the brakeman to release the brake.

WARNING:

Verify that the area of the chain run is clear of personnel before releasing the brake.

CAUTION:

To prevent uncontrolled paying out of the chain, the brakeman controls the speed of the chain paying out by feathering the brake. Uncontrolled chain can damage equipment and result in more chain being let out than planned.

B.2.a.(3).
Calling the Shots

As the chain pays out, all hands on deck observe the chain, looking for shot markings.

- Riggers call out each shot marking that pays out.
- Riggers hold up the appropriate number of fingers to indicate how many shots have payed out.

As each chain marking passes the wildcat:

- POIC makes the report (NUMBER) SHOT ON DECK to the bridge.
- Small cutters indicate the direction the chain is tending by reporting CHAIN TENDING (NUMBER) O’CLOCK..

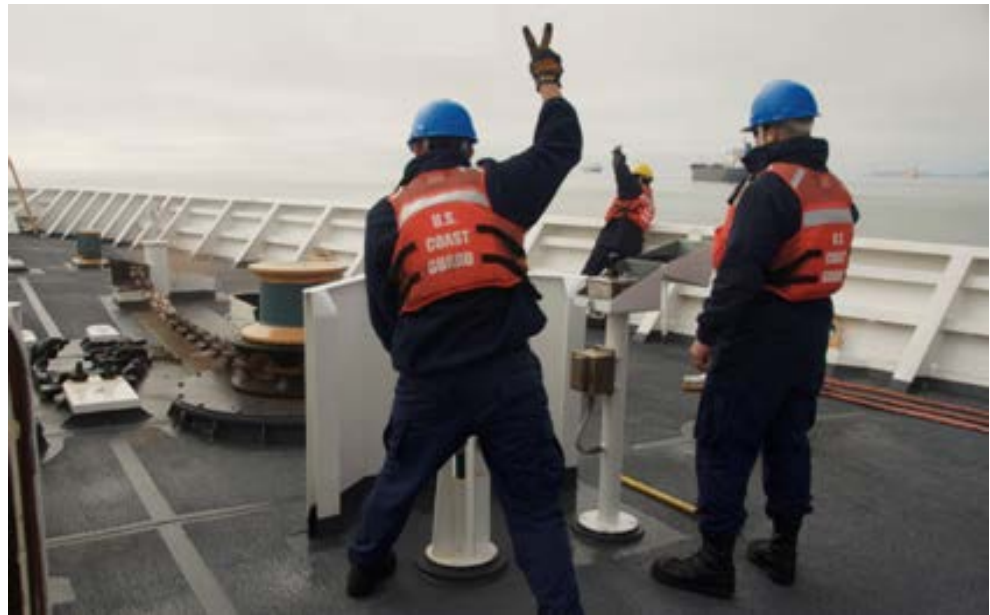


Figure 3-19 Brakeman operating the brake and calling the shots

B.2.a.(4).
Setting the
Anchor

Once the planned amount of chain pays out:

- POIC directs the brakeman to set the brake, stopping the chain from paying out further.
- POIC directs riggers to put the cat's paw down as an extra safety precaution.

Once the brake is set:

- POIC reports (NUMBER) SHOT ON DECK, BRAKE SET, CHAIN TENDING (NUMERICAL DIRECTION) O'CLOCK, (LIGHT/MODERATE/HEAVY) STRAIN.
- POIC makes tending reports to the bridge as necessary.
- POIC looks for signs that anchor has been brought to and is holding. Signs include:
 - Going from heavy or moderate strain to light strain.
 - Heading change.
 - Cutter surging forward.
 - Observing terrestrial range changes.

NOTE:

Signs of dragging anchor can include the chain "bouncing" in the water, no change in strain, or seeing strain go from moderate to slack accompanied by bouncing.

NOTE:

If anchoring in a heavy head current, strain might change or be less than moderate.

NOTE:

If the chain tends around the stem, report the situation to the bridge.

- POIC observes signs of the anchor being brought to and holding, then reports THE ANCHOR APPEARS TO BE BROUGHT TO AND HOLDING, REQUEST TO MAKE THE ANCHOR READY FOR RIDING AND VEERING.
- The bridge then passes the command to MAKE THE CHAIN READY FOR RIDING AND VEERING.
- The POIC acknowledges the command and ensures the detachable link is inboard of the stopper. It might be necessary to heave around on the chain.

- The POIC directs riggers to pass the stopper, then engage the wildcat.



Figure 3-20 Passing the stopper

WARNING:

When passing the stopper do not reach over or under the chain. Two people might be necessary.

- Once these steps are complete, raise the cat's paw and walk out the chain via the wildcat out until chain tension is off the wildcat and on the stopper. If the cutter has two stoppers, share the tension equally.
- Set the brake, lower the cat's paw, and disengage the wildcat.



Figure 3-21 Cat's paw down



Figure 3-22 Cat's paw up

- The POIC then reports (PORT/STARBOARD) ANCHOR READY FOR RIDING AND VEERING.
- When anchor detail is secured, stow all gear.

B.2.b. Let Go the Anchor from the Stopper This method is useful for letting go the anchor for cutters without wildcats or brakes, precision anchoring, or during emergencies.

B.2.b.(1). Make the Anchor Ready for Letting Go Generic procedures for making the anchor ready for letting go are listed below. Refer to your cutter's unit navigation standards for specific details.

1. Conduct an anchoring safety brief per [Appendix B: Cutter Anchoring Job Aids, Section C: Sample Anchoring Safety Brief](#).
2. Ensure all required equipment is available.
3. If used, remove all chain and hawse pipe covers.
4. Ensure the brake is fully set.
5. Disengage the wildcat.
6. Test the windlass.
7. Raise the cat's paw and remove the riding stopper.
8. Make both anchors ready for letting go.
9. POIC reports ANCHOR DETAIL MANNED AND READY.

NOTE:

Alternatively, take slack out of the chain or lower the anchor out of the pocket before disengaging the wildcat.

B.2.b.(2). Let Go the Anchor As the cutter makes its approach to the anchorage:

- The bridge passes distance in yards to the anchorage.
- The POIC acknowledges these reports, and passes the information to all hands on deck.
- When the cutter gets close to the planned anchorage, the bridge passes STANDBY THE (PORT/STARBOARD) ANCHOR. This distance varies between cutters.
- The POIC acknowledges the command and directs the rigger to release the brake.
- Once the brake is released, the POIC directs a rigger to stand by the stopper.
- The POIC reports to the bridge STANDING BY THE (PORT/STARBOARD) ANCHOR.
- At the command LET GO THE (PORT/STARBOARD) ANCHOR, the POIC acknowledges this command and directs the rigger to trip the stopper.

NOTE: **When to pull the pin to trip the stopper is determined by unit policy.**

CAUTION: **To prevent uncontrolled paying out of the chain, the brakeman controls the speed of the chain paying out by feathering the brake. Uncontrolled chain can damage equipment and result in more chain being let out than planned.**

WARNING: *Verify that the area of the chain run is clear of personnel before releasing the brake. The rigger tripping the stopper also clears the area immediately after doing so.*

B.2.b.(3).
Calling the Shots

As the chain pays out, all hands on deck observe the chain, looking for shot markings.

- Riggers call out each shot marking that pays out.
- Riggers hold up the appropriate number of fingers to indicate how many shots have payed out.

As each chain marking passes the wildcat:

- POIC makes the report (NUMBER) SHOT ON DECK to the bridge.
- Small cutters indicate the direction the chain is tending by reporting CHAIN TENDING (NUMBER) O’CLOCK..

B.2.b.(4).
Setting the
Anchor

Once the planned amount of chain pays out:

- POIC directs the brakeman to set the brake, stopping the chain from paying out further.
- POIC directs riggers to put the cat’s paw down as an extra safety precaution.

Once the brake is set:

- POIC reports (NUMBER) SHOT ON DECK, BRAKE SET, CHAIN TENDING (NUMERICAL DIRECTION) O’CLOCK, (LIGHT/MODERATE/HEAVY) STRAIN.
- POIC makes tending reports to the bridge as necessary.

- POIC looks for signs that anchor has been brought to and is holding. Signs include:
 - Going from heavy or moderate strain to light strain.
 - Heading change.
 - Cutter surging forward.
 - Observing terrestrial range changes.

NOTE:

Signs of dragging anchor can include the chain “bouncing” in the water, no change in strain, or seeing strain go from moderate to slack accompanied by bouncing.

NOTE:

If anchoring in a heavy head current, strain might change or be less than moderate.

NOTE:

If the chain tends around the stem, report the situation to the bridge.

- POIC observes signs of the anchor being brought to and holding, then reports THE ANCHOR APPEARS TO BE BROUGHT TO AND HOLDING, REQUEST TO MAKE THE ANCHOR READY FOR RIDING AND VEERING.
- The bridge then passes the command to MAKE THE CHAIN READY FOR RIDING AND VEERING.

WARNING:

When passing the stopper do not reach over or under the chain. Two people might be necessary.

- Raise the cat’s paw and walk out the chain via the wildcat out until the chain tension is off the wildcat and on the stopper. If the cutter has two stoppers, they share the tension equally.
 - Set the brake, lower the cat’s paw, and disengage the wildcat.
 - The POIC then reports (PORT/STARBOARD) ANCHOR READY FOR RIDING AND VEERING.
 - When anchor detail is secured, stow all gear.
-

B.2.c. Walk the
Anchor Out

This method is for letting go the anchor in water depths exceeding 90 feet. Per reference (f), Anchoring, Naval Ships' Technical Manual, Chapter 581, S9086-TV-STM-010, "*Pay out the anchor to within 15 fathoms of the sea bed and freefall the anchor the remaining distance when anchoring in depths exceeding 15 fathoms.*"

Lower the anchor with the wildcat until the anchor is less than 90 feet from the seabed. The anchor is then let go either using the [let go the anchor from the brake](#) or the [let go the anchor from the stopper](#) method.

Section C: Line Anchoring Procedures

- C.1. Overview** Some cutters anchor with line instead of chain. These procedures are general and not class specific. Have a working knowledge of your ship's equipment and procedures and apply it as needed to the following steps.
- C.2. Setting Anchor**
1. Inspect outboard swivel shot for condition of pins, lock wire, chain, and anchor assembly for loose or damaged components.
 2. Test capstan/wildcat operation.
 3. Pin open access plate to line barrel.
 4. Set the capstan break (if equipped).
 5. Remove chain preventer or any other securing rig.
 6. Release chain stopper.
 7. Release brake upon command to LET GO ANCHOR (might have to assist anchor out of hawse pipe).
 8. Once anchor is on the bottom, cutter backs out as crew veers line to desired scope. Call out every 50 feet of line.
 9. As desired scope approaches, cutter slows (minimum/stop) crew sets the brake.
 10. Cutter applies power to set the anchor and test for holding.
 11. Once holding, cutter relieves load on anchor line, crew pulls line out of line barrel through deck opening and makes it fast to the port bitts.
 12. Release the brake and transfer load to the bitts fairlead around the wildcat.
 13. Cutter relieves load on the anchor line to allow crew to set chaffing gear at the hawse pipe.
-

Section D: At Anchor

D.1. Anchor Watch

The anchor watch is set immediately after securing the anchor detail. The watch is instructed by the cutter's boatswain, and watch duties are performed under the direction of the OOD. The anchor watch makes regular rounds of the ground tackle and anchor chain.

- Inspect ground tackle.
- Observe anchor chain to determine strain and direction and make appropriate reports to the bridge.
- Check that the anchor line does not chafe.
- Check for signs that the anchor might be dragging.
- Notify the bridge of any unusual circumstances.

D.2. Veering Chain

While at anchor, situations might require a cutter to veer chain. Normally done by the anchor watch, but might require additional personnel. To veer the chain:

1. Lift the cat's paw.
2. Release the stopper.
3. Release the brake.

The scope of chain is then controlled by the brake. Once the desired scope of chain has been let out:

1. Set the brake.
2. Put down the cat's paw.
3. Pass the stopper.
4. Verify that the anchor is still holding.

D.3. Dragging Anchor

While at anchor, situations might cause a cutter anchor to drag. Correct a dragging anchor by:

- Veering chain.
 - Paying out more line.
 - Walking out second anchor to under foot (up and down).
 - Energizing ship's propulsion to correct for movement.
 - Weighing anchor and getting underway.
-

Section E: Weigh Anchor

E.1. Make the Anchor Ready for Heaving Around

Generic procedures for making the anchor ready for heaving around are listed below. Refer to your cutter's unit navigation standards for specific details.

1. Conduct an anchoring safety brief per [Appendix B: Cutter Anchoring Job Aids, Section C: Sample Anchoring Safety Brief](#).
2. Remove any chain or hawse pipe covers.
3. Ensure all required equipment is available.
4. Fully set the brake.
5. Test the windlass.
6. Engage the wildcat.
7. Set cat's paw to the down position.

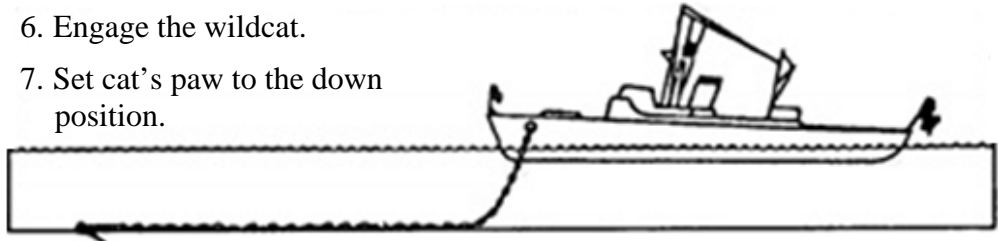


Figure 3-23 Anchored

8. POIC reports ANCHOR DETAIL MANNED AND READY, (PORT/STARBOARD) ANCHOR READY FOR HEAVING AROUND.
9. At the command of HEAVE AROUND THE ANCHOR, BRING IT TO SHORT STAY the POIC acknowledges the command and directs the brakeman to release the brake and heave around until tension is off the stopper and is fully on the wildcat.

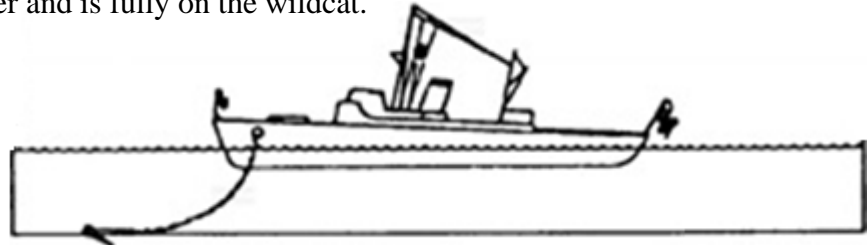


Figure 3-24 Short stay

Once this is done:

- Avast heaving.
- Set the break.
- Trip the stopper.
- Release the brake and begin heaving around.
 - While heaving around, the POIC observes the chain and makes regular reports to the bridge providing chain tension and direction.
 - Once the anchor is at short stay, avast heaving and set the brake.
- The POIC then reports THE ANCHOR APPEARS TO BE AT SHORT STAY, REQUEST TO BREAK FREE THE ANCHOR.

When the bridge responds with BREAK FREE THE ANCHOR, BRING IT TO THE WATER'S EDGE, release the brake and heave around the anchor until it is at the water's edge. When the anchor breaks free of the bottom, the POIC reports ANCHORS AWEIGH to the bridge. When the anchor is at the water's edge the POIC reports ANCHOR IS AT THE WATER'S EDGE, (CLEAR/FOULED/SHOD).

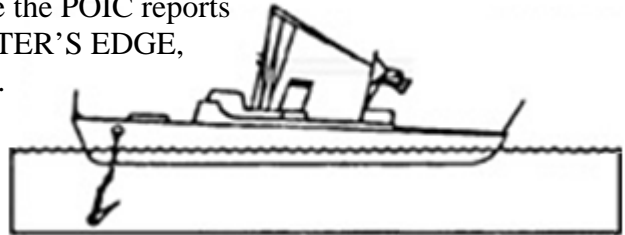


Figure 3-25 Anchors aweigh

E.2. Shod Anchor

If needed, direct a fire hose over the side, or down the hawse-pipe, to clean the anchor before putting it into the pocket.



Figure 3-26 Cleaning the anchor and chain

**E.3.
Make the
(PORT/STBD)
Anchor Ready
for Sea**

When the anchor is ready to house, the POIC passes REQUEST TO HOUSE THE (PORT/STBD) ANCHOR FOR SEA.

After the bridge responds with HOUSE THE (PORT/STBD) ANCHOR FOR SEA:

1. Release the brake.
2. Heave around slowly until the swivel is above the stopper.
3. Set the brake.
4. The POIC then directs riggers to pass the stopper.

CAUTION:

Ensure the flukes point outboard before seating the anchor in the pocket. If flukes face inboard, the anchor might cause damage to equipment and the hull by not sitting in the pocket properly. If necessary, lower the anchor back in to the water and make way to turn the flukes the proper direction.

NOTE:

Before passing the stopper, open the turnbuckle all the way out.

WARNING:

When passing the stopper be sure not to reach over or under the chain, two people might be necessary.

5. After passing the stopper, raise the cat's paw and slack the chain via the wildcat until chain tension is off the wildcat and on the stopper. If the cutter has two stoppers, equally share the tension between them.
 6. Set the brake.
 7. Lower the cat's paw.
 8. Disengage the wildcat.
 9. The POIC reports ANCHOR IS HOUSED AND READY FOR SEA.
 10. When anchor detail is secured, stow all gear.
-

Section F: Line Weighing Anchor Procedures

F.1. Overview

Some cutters anchor with line instead of chain. These procedures are general and not class specific. Have a working knowledge of your ship's equipment and procedures and apply it as needed to the following steps.

F.2. Weighing Anchor

1. Test operation of capstan and set the brake.
2. Cutter relieves the load on anchor line; crew clears chaffing gear and mooring bitts, and places slack line in line barrel through deck opening. (Move line from bitts to the stopper. If there is strain, control the line using a rat-tail stopper with a rolling hitch while moving it to the capstan.)
3. Commence heaving around (call out 50 foot marks until short stay).
4. At short stay, avast heaving pending command to **BREAK OUT ANCHOR** (might need to break out with cutter).
5. Retrieve anchor until anchor in sight and give report on condition (clear, fouled, shod). If shod, back down, dragging the anchor through the water until clean.
6. Upon command **HOUSE ANCHOR**, retrieve ground tackle and align anchor in flukes up position.
7. Set chain stopper then chain preventer.
8. Check capstan brake, ensure it is set and not running free.
9. Secure the deck.

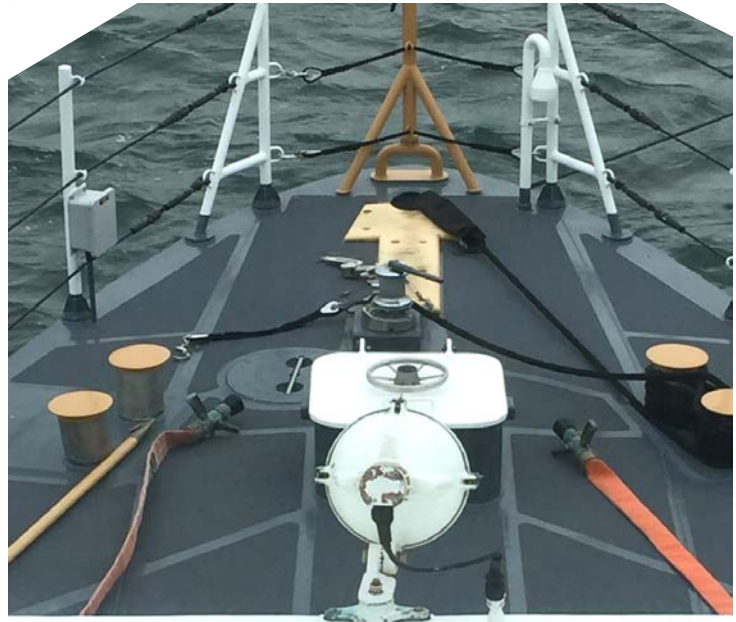


Figure 3-27 Deck setup at anchor with line

Section G: Emergency Procedures

G.1. Emergency Anchoring

When at special sea detail and navigating in restricted waters, keep the anchors in the ready for letting go condition. The anchor or anchors might need to be let go in an expedited fashion in the event of any of the following emergent situations:

- Loss of propulsion.
- Loss of steering.
- Unexpected close quarters scenario.
- Potential grounding.

Dredge anchor, or walk the anchor out to up and down, for stability in high winds, per reference (e), Aids to Navigation Manual – Seamanship, COMDTINST M16500.21 (series) and reference (g), Knights Modern Seamanship, Eighteenth Edition.

In these scenarios, basic anchoring procedures do not change, and safety remains the primary consideration, but accelerate the process as necessary.

A field use “best practice” is to predetermine, and communicate at the navigation brief, the ready anchor to use, and its intended scope, if an emergency anchoring situation arises.

The POIC on the fo’c’sle remains attentive to communications with the bridge at all times, has personnel assignments pre-designated, and is standing by to man the ready anchor immediately.

If an emergent situation arises, the bridge need only pass **STAND BY THE (PORT/STARBOARD) ANCHOR** to initiate manning up, raising the cat’s paw if equipped, and tripping the stopper. The POIC reports completion to the bridge and the next command from the bridge would be **LET GO THE (PORT/STARBOARD) ANCHOR**.

The anchor is then let go to the pre-determined scope, the brake set, and status reported to the bridge.

WARNING:

Avoid using ground tackle to reduce a ship’s headway except under extreme emergency conditions. This practice puts excessive force on the ground tackle, potentially causing significant equipment damage, and creating hazardous conditions for personnel.

G.2. Fouled Anchor

A fouled or knotted anchor or anchor chain aboard a vessel significantly increases the risk level of the evolution. Successful recovery of a fouled anchor requires safe rigging practices, patience, ingenuity, and close coordination between the conning officer and POIC. While no set of procedures can cover every situation that might arise when handling fouled anchors, the first step is to stabilize the situation. Immediately communicate the situation to the bridge and request to set the brake and pass the stopper. Await further instruction from the bridge.



Figure 3-28 Fouled anchor

G.3. Anchor Refuses to Fall

Many ships experience difficulty free falling their anchors from the housed position. The most common cause of anchors not free falling is fouling of the wildcat or capstan shaft bushings. Fouling occurs because of deteriorated greases, dried salt spray and dirt particles accumulating between wildcat and capstan bushings and shafting. [Appendix B: Cutter Anchoring Job Aids, Section D, Free Fall Problems](#) provides potential solutions to this problem.

G.4. Slipping the Anchor

When at anchor, keep a detachable link inboard of the outboard chain stopper, with the detachable link tool kit available to let go or “slip” the anchor in an emergency. When it becomes necessary to slip the anchor, break the detachable link, and trip the stopper to allow the chain to fall through the hawse pipe.

NOTE:

If it is not possible to break the detachable link, use a cutting torch to cut through the anchor chain, or let out the entire anchor chain using the wildcat. Disconnect the bitter end link, and allow the chain to run through the hawse pipe.

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Appendix A: Glossary and Acronyms

Anchor Chain Appendages	Anchor chain appendages include detachable links, pear-shaped detachable links, chain swivels, end links, bending shackles, chain stoppers, and outboard swivel shots.
Anchoring Equipment	Anchoring equipment includes the windlass, wildcat, capstan, gypsy head, anchor, anchor chain or line, and anchor chain or line appendages.
CART	Command assessment of readiness for training.
CGTTP	Coast Guard tactics, techniques, and procedures.
Clear	An anchor condition indicating the anchor has no debris and is clean.
CO	Commanding officer.
COMDT (CG-751)	Office of Cutter Forces.
Fathom	A unit of length equal to six feet (approximately 1.8 meters), primarily used in reference to water depth.
FC-Aftr	FORCECOM Fleet Training and Readiness Branch.
FC-T	FORCECOM Training Division.
Feathering the Brake	Feathering the brake means braking very lightly. Not necessarily steadily, it is light on/off as needed.
FORCECOM	U. S. Coast Guard Force Readiness Command.
Forecastle or Fo'c'sle	Forward part of the weather deck of a vessel, especially that part forward of the foremast.
Fouled	An anchor condition indicating the anchor has caught debris.
Ground Tackle	Equipment used in anchoring, including anchor, chain, line, and appendages.
Kedging	To warp or pull a ship along by hauling on the anchor line or chain carried out from the ship and dropped.

OIC	Officer in charge.
OOD	Officer of the deck.
POIC	Petty officer in charge.
PPE	Personal protective equipment.
PQS	Personnel qualification standard.
Ready for Riding	The condition of a cutter's anchoring equipment when securely anchored. The wildcat can either be engaged or disengaged depending upon conditions and the CO's navigation standards.
Ready for Veering	The condition of a cutter's anchoring equipment when anchored that allows for limited personnel to veer chain or line quickly if needed, (e.g., hand brake set, stoppers passed, wildcat disengaged, all necessary equipment left on station).
Riding	The condition of a cutter when securely anchored, (e.g., the anchor is brought to and holding, stoppers are passed, hand brake is set).
RM	Risk management.
Shod	An anchor condition indicating an anchor covered in mud.
Shot	A standard length of chain, approximately 15 fathoms (90 feet).
Sounding	Measured or charted depth of water, or the measurement of such depth.
Strain (Anchor)	"Chain calls" are reported as light, moderate, or heavy. Light strain typically being up and down to heavy strain where chain/line runs more perpendicular to hawse pipe (more chain/line visibly seen) and might skip or vibrate.
TTP	Tactics, techniques, and procedures.
USCG	United States Coast Guard.
Veering	A method of paying out anchor chain or line in a controlled manner without the use of powered machinery.

Appendix B: Cutter Anchoring Job Aids

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Section A: Sample Anchoring Checklist

Date: _____ Location of vessel: _____

To anchorage

At 2,000 yards to anchorage, MAKE PORT AND STARBOARD ANCHORS
READY FOR LETTING GO.

Give fo’c’sle distance every 500 yards, beginning at 2,000 yards, to anchorage.

At 1,000 yards to anchorage, MAKE (PORT/STBD) ANCHOR READY TO
WALK OUT. WE WILL ANCHOR IN _____ FT OF WATER; BOTTOM
TYPE IS _____. _____ SHOTS OF CHAIN ON DECK.

Give fo’c’sle distance every 100 yards beginning at 500 yards to anchorage.

At 300 yards to anchorage, WALK OUT THE (PORT/STBD) ANCHOR TO
(THE WATER’S EDGE AND MAKE THE (PORT/STBD) ANCHOR READY
FOR LETTING GO FROM THE BRAKE.

NOTE:

Deep-water anchorage is anchoring in water with a depth of 90 feet or greater. When conducting a deep-water anchorage, walk the anchor out to within 90 feet of the bottom before letting go.

Give fo’c’sle distance every 50 yards beginning at 250 yards to anchorage.

At 50 yards to anchorage, STANDBY THE (PORT/STBD) ANCHOR, and when
sternway is evident, LET GO THE (PORT/STBD) ANCHOR, _____ SHOTS ON
DECK.

With sternway on, VEER CHAIN TO _____ SHOTS ON DECK.1

Additional information:

Underway from anchorage

While completing getting underway checklist, MAKE (PORT/STBD) ANCHOR READY FOR LETTING GO. AND MAKE (PORT/STBD) ANCHOR READY FOR HEAVING AROUND.

When getting underway checklist is complete, HEAVE AROUND ON THE (PORT/STBD) ANCHOR AND BRING IT TO SHORT STAY.

When anchor is at short stay, BREAK FREE THE (PORT/STBD) ANCHOR.

NOTE:

Make little to no way after anchor is aweigh until it is reported in sight and clear. If anchor is fouled, the POIC assesses the situation and briefs the bridge. Together, discuss a plan to make the anchor clear. If the anchor is shod, make slow bell until clean, or use a fire hose.

When anchor is in sight, and clear, HOUSE THE (PORT/STBD) ANCHOR.

Additional information:

Section B: Anchoring Commands

The following commands are used during anchoring evolutions. The bridge passes to the fo'c'sle the type of bottom, depth of water, and scope of anchor chain or line prior to the evolution.

<u>Command or Report</u>	<u>Meaning</u>
MAKE THE (PORT/STBD) ANCHOR READY FOR LETTING GO FROM THE BRAKE. WE WILL ANCHOR IN _____ FEET OF WATER; BOTTOM IS (HARD/SANDY/MUDDY). _____ SHOTS OF CHAIN ON DECK (OR AT THE WATER'S EDGE).	See Make the Anchor Ready for Letting Go from the Brake or Make the Anchor Ready for Letting Go from the Stopper.
(PORT/STBD) ANCHOR IS READY FOR LETTING GO FROM THE BRAKE.	See Make the Anchor Ready for Letting Go from the Brake.
WALK OUT THE ANCHOR TO (A SHOT ON DECK/WATER'S EDGE, etc.).	See Walk the Anchor Out.
_____ YARDS FROM ANCHORAGE.	Keeps the anchor detail informed on distance to anchorage. Given at least every 500 yards until 500 yards from anchorage, then given at least every 100 yards until 100 yards from anchorage.
STANDBY THE (PORT/STBD) ANCHOR.	Given a short distance before the command to LET GO. Trip the stopper.
LET GO THE (PORT/STBD) ANCHOR.	Release the brake.
_____ SHOTS ON DECK	Number of shots that have been payed out.
ANCHOR CHAIN TENDING _____ O'CLOCK, (LIGHT/MODERATE/HEAVY) STRAIN.	Given as every shot marking comes into view.
ANCHOR IS BROUGHT TO AND APPEARS TO BE HOLDING. or ANCHOR IS DRAGGING.	Extent to which the anchor is holding.
ANCHOR BUOY IS WATCHING PROPERLY.	Anchor buoy is visible on the surface and still attached to the anchor.
MAKE THE (PORT/STBD) ANCHOR READY FOR RIDING AND VEERING.	See Veering Chain.

<u>Command or Report</u>	<u>Meaning</u>
MAKE THE (PORT/STBD) ANCHOR READY FOR HEAVING AROUND.	See Make the Anchor Ready for Heaving Around.
HEAVE AROUND ON THE (PORT/STBD) ANCHOR.	Commence heaving around using the windlass. Normally, take the anchor to short stay. The conning officer might slowly steam on the anchor to ease the tension on the anchor windlass.
_____ SHOTS ON DECK. ANCHOR CHAIN TENDING _____ O’CLOCK, (LIGHT/MODERATE/HEAVY) STRAIN.	Given as every shot marking is in view on deck. Repeated for each shot.
ANCHOR IS AT SHORT STAY.	Anchor is lying on the bottom with the chain leading straight up to the hawse. Anchor detail stops heaving around.
BREAK FREE THE (PORT/STBD) ANCHOR.	Resume heaving around to raise the anchor off the bottom.
AVAST HEAVING.	Given anytime conn wants the anchor detail to stop heaving around.
ANCHOR IS AWEIGH.	Anchor is clear of the bottom; cutter is underway.
ANCHOR IS IN SIGHT.	Anchor is visible below the water’s surface.
ANCHOR IS AT THE WATER’S EDGE.	Anchor is at the water’s surface. Anchor detail stops heaving around.
ANCHOR IS CLEAR.	Anchor is free of obstructions, and is not fouled on its own chain.
ANCHOR IS FOULED.	Anchor is tangled with some obstruction or debris, or around the anchor chain.
CLEAR THE ANCHOR.	Remove the obstruction or entanglement.
ANCHOR IS SHOD.	Anchor has mud or grass clinging to it.
HOUSE (PORT/STBD) ANCHOR.	Resume heaving around until the anchor is completely housed.
MAKE THE (PORT/STBD) ANCHOR SECURED FOR SEA.	See Make the (PORT/STBD) Anchor Ready for Sea.

Section C: Sample Anchoring Safety Brief

Personal protective equipment

- _____ Protective eyewear.
- _____ Personal flotation device.
- _____ Hardhat with chinstrap.
- _____ Safety toe boots.
- _____ Gloves.
- _____ No watches, rings, jewelry, or loose articles.

All equipment broken out

- _____ Detachable link kit.
- _____ Hammer for stopper.
- _____ Turnbuckle wrench.
- _____ Fire hose, with firemain pressure available.

All equipment broken out

- _____ Anchor to be used _____.
- _____ Planned shots of chain to be let out _____.
- _____ Depth of water and bottom type at anchorage.
- _____ Any pertinent information.

Positions

- _____ Petty Officer in Charge.
- _____ Rigger manning windlass operator/brakeman.
- _____ Rigger manning fire hose.
- _____ Rigger manning anchor buoy if used.
- _____ Rigger shifting colors.

Risk assessment

- _____ Review danger zones and hazards.
 - _____ Review procedures and position responsibilities.
 - _____ Review communications and terminology.
 - _____ Review emergency procedures for equipment failure.
 - _____ Conduct risk-based model and report results to bridge.
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Section D: Free Fall Problems

D.1. Bushing Flushing

Perform the following flushing and lubrication procedure when a free fall problem occurs:

CAUTION:

Follow standard cutter procedures, and exercise caution, when removing and reinstalling anchor chain. Ensure anchor chain is properly secured at hawse pipe and chain pipe to prevent slippage.

1. Remove the anchor chain from the wildcat so the wildcat and capstan (if applicable) are free to rotate under power.
2. Remove the zerk fittings from the lubrication ports associated with the capstan (if applicable) and wildcat bushings.
3. Connect the discharge hose of a pneumatic grease gun filled with hydraulic fluid, MIL-H-17672, SYM 2135TH or MIL-L-17331, 2190TEP, directly to the bushing lubrication ports.
4. Disengage the wildcat and set the brake.
5. Rotate the capstan under power at both low and high speeds. While rotating the capstan, pump the oil into the lubricant ports for the capstan shaft until oil runs freely from the bushings.

NOTE:

Steps 4 and 5 are only applicable to windlasses consisting of one wildcat and one capstan head mounted above the wildcat.

6. Rotate the wildcat under power at both low and high speeds. While rotating the wildcat, pump the oil into the lubricant ports for the shaft until oil runs freely from the bushings.

NOTE:

Inspect flushed oil for bronze (bushing) particles. Presence of bronze indicates bushing wear.

7. After flushing, install new zerk fittings.
8. Rotate wildcat and lubricate wildcat and capstan (if applicable) bushings with the recommended type and quantity of grease.
9. Place the anchor chain back on the wildcat. Raise and lower the anchor under power.
10. Set the brake and disengage the wildcat.
11. Test for free fall of the anchor from the housed position.

**D.2. Remedies
for Free Fall
Problems**

The most common cause of anchors not free falling is deteriorated grease, dried salt spray, and dirt particles fouling the wildcat and capstan shaft bushings.

D.2.a. Free Fall
from Unhoused
Position

Free fall the anchor from the unhoused position by:

1. Passing the chain through the stoppers.
 2. Set the brake.
 3. Engaging the wildcat.
 4. Cast off chain stoppers.
 5. Release the brake.
 6. Payout the anchor to eliminate contact with the bolster.
 7. Set the brake.
 8. Pass housing stopper.
 9. Disengage the wildcat.
 10. At standby - cast off stopper.
 11. Free fall the anchor by releasing the brake. Control the speed of the anchor and chain by applying the brake.
-

D.2.b. Free Fall
from Slacked
Chain Condition

Free fall the anchor from the slacked chain condition by:

1. Passing the chain through the stoppers.
 2. Set the brake.
 3. Engaging the wildcat.
 4. Cast off the riding chain stopper.
 5. Walk out some chain on the deck between the wildcat and the housing chain stopper to provide slack in the chain (i.e., lay enough chain on the deck to allow the stopper to take the strain for the anchor).
 6. Set the brake.
 7. Disengage the wildcat.
 8. At standby - release the brake.
 9. Free fall the anchor from the housing chain stopper. Control the speed of the anchor and chain by applying the brake.
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D.2.c. Free fall
from Unhoused
and Slacked
Chain Condition

Free fall the anchor from the unhoused and slacked chain condition.

1. Passing the chain through the stoppers.
 2. Set the brake.
 3. Engaging the wildcat.
 4. Slack and release the housing chain stopper.
 5. Engage the pelican hook of the stopper to the first horizontal chain link abaft the link previously engaged.
 6. Release the brake.
 7. Heave in until the wildcat takes the strain.
 8. Cast off the riding chain stopper.
 9. Walk out some chain on the deck between the wildcat and the housing chain stopper to provide slack in the chain (i.e., lay enough chain on the deck to allow the stopper to take the strain of the anchor).
 10. Set the brake.
 11. Disengage the wildcat.
 12. At standby - release the brake.
 13. Free fall the anchor from the housing chain stopper. Control the speed of the anchor and chain by applying the brake.
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