Flingtime - Anchoring (Rev 20130217)

Rules-of-thumb...

- The anchor cleat to bow roller distance on the foredeck is approx. 2 metres for main anchor chain measurement by eye as it is lowered.
 - Chain markers; Number of marks x 10metres = rode length.
- The windlass circuit needs to be activated by pressing the main breaker button inwards. It is turned off when not needed so that this strong machine is not accidently operated.
- Hands and feet need to be well clear of the chain (or rope) at all times, particularly when the windlass is in use.
- The windlass may be operated by remote switch at the helm or (more usually) by (covered) foot switches near the windlass. Be clear on who is controlling the windlass.
- There is an emergency/manual method of raising or lowering the anchor.
- <u>Do not use</u> the rope windlass for hoisting a person aloft in the bosun's chair.
- The Manson Supreme is the primary anchor with the Guardian (Fortress) as a full sized second anchor and for kedging. The Hydrobubble is good for mud or as a 'lunch pick' kept under supervision, or as a supplementary e.g. aft anchor for the main anchor. (Either of the small Hydrobubble or the folding Grapnel are used for the dinghy)
- Depth and GPS alarms may be used as overnight anchor watch mechanisms
- Aft anchors should always be marked with a buoy as this is not very commonplace. The main anchor may also be marked or have a retrieval/trip line on a buoy.
- The Guardian anchor is normally stowed disassembled. Instructions and spanners are stowed in the anchor bag.
- A scope of 3.5:1 is usually OK for short term (attended) anchoring.

http://www.fortressanchors.com/resources/safe-anchoring-guide



Some things to avoid...

- Exposure to a lee shore
- Areas open to a broad fetch
- Proximity to permanent mooring areas and channels
- Sloping or grassy bottoms
- Boats that swing differently from yours (most monohulls)
- Rowdy or careless neighbours
- Anchoring up wind of another vessel (so you end up over their anchor)

AYBC Anchoring Guide; A 32' cat is equivalent to a 40' mono. (1lb = 0.4536kg)



Terminology...

Ground Tackle

Collectively, all the rode, shackles and anchor used to anchor a boat.

Rode

The chain, rope, cable, or a combination of these that attaches to the anchor.

Scope

A ratio of the length of rode to the depth of the water. [the water depth is measured from the bridle attachment point to the bottom, plus rising tide adjustment]

Up and down

An anchor chain is up and down when the boat is directly above the anchor and the chain is no longer lying on the bottom.

To weigh anchor

To take on the weight of the anchor on the boat, to lift the anchor from the sea floor. Similar to Anchors Aweight (not anchors away!)

An anchor is broken off or broken out of the bottom

When it is lifted off the bottom.

Come home

To Drag

Set

To drop and position an anchor so that it holds

Changing the NIP of the anchor line

To prevent wear at the same place the anchor line is occasionally let out or taken in so that chafe is not always on the same spot on the rode.

Tripping an Anchor

A tripping line is attached to the opposite end of the anchor. This line is used to pull the anchor out if it is caught or fouled.

Horizontal Load

The force exerted on an anchor by the boat pulling horizontally.

Vertical Load

The force exerted on the bow of a boat by the anchor rode.

Ancho Type	r	Type o	f Bottom	How Does it Work	Other I	Information	
R N S V B S	Rocna, <mark>Aansor</mark> Uprem Vasi, Bügelan arca, N	i <mark>e,</mark> Iker, Nantus	All	This style of Anchor had bow or roll bar that he anchor quickly position to allow the spade to s digging in and helps pr the anchor from dragg its side or turn around down. Because they se quickly and hold in diff bottoms these anchors much appreciated.	s a lp the itself tart events ing on upside t icult s are	Flingtime PRIMARY anchor, 3 60 meters of 8mm all chain r windlass which has a manua arrangement. <u>Caution:</u> Can badly jam in the rollers if winched in as the sh tapered. Can use a trip line of model but this is not recomm A 'new generation' anchor w rating; super strong holding.	51b with ode, via backup backup ank is nenk is nended. ith Lloyds

Danforth or Fluke also called Light weight	est in Clay, and and lud	The anchor lands on the bottom flat on its side. The rod like stock extend on both sides to keep the anchor from rotating and the flat crown pieces keep the flukes in position. The anchor gradually buries itself. Can come undone if there is a large shift in the direction of pull from the boat such as in tide change. If the bottom does not allow for digging in such as hard or rocky, or weedy, then the flukes can't bury and the anchor will not set.	Guardian G37 (by Fortress) is Flingtime #2 Anchor and is most useful as a stern anchor and for kedging. The G37 is large enough to replace the primary anchor if it is lost. Mostly high strength steel but <u>aluminium model made</u> by Fortress is available. Best anchor style in terms of weight to strength or anchoring ratio. Easy to store because it lies flat. Very popular. The angle of the flukes is important, 32 degrees standard, more up to 45 degrees for soft mud. Both flukes should have the same angle.
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Same <mark>Hydrobubble</mark> as plow	Hydrobubble has a buoyancy tank that helps the anchor go down in the water avoiding the fluttering that other plows and spade style of anchors have. It land in good position and start plowing in immediately. This helps it set quickly.	chain+rope rode, loves mud! It has been tested and has caused some surprise because of its light weight and holding power. It is
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	Coral,
<mark>Grapnel</mark>	Stone, heavy vegetation

Grapnel type anchors are useful in coral Grapnel anchors are often or where the flukes can grip something. seen where there is a legal Grapnel are less useful in mud or sand. Grapnel anchors are often used in dinghies or where their light weight or small size is an asset. Folding models and grapnels that come apart are

requirement for an anchor but they are not likely to be used often, such as on dinghies. Tends to snag its rode at every opportunity.

available. Not for serious anchoring unless the bottom can be hooked. Sometimes useful when there is heavy vegetation and the thin flukes can penetrate while the outside ones grab vegetation.

Fortress Anchor Assembly Instructions

The following contains instructions for assembling your anchor.



Use of the Guardian G-37 anchor on Flingtime.

Shackle, chain & 3 ply nylon rope rode for the Guardian G-37 are stowed in the general deck locker to starboard of the mast.

Kedging.

- The Guardian anchor is the best one for kedging, which on Flingtime usually means pulling the boat into deeper water after it has run aground. The first task is to sound out the local area to find the deep water where the kedge will be dropped, usually the boat hook is long enough to do this from the dinghy.
- The anchor is assembled and then the rode is flaked into the dinghy (in a tough tub) anchor and chain first, followed by the rode.
- The bitter end is either secured to a horn cleat or pad eye on the boat (via an extension rope if necessary) before setting out in the dinghy.
 The kedge, or its rode, needs to be marked with a buoy on a separate line so that other boats don't accidently foul the kedge rode.
- The rode is paid out as the dinghy moves along until it is all out or the best location for dropping it is found. Try to get it set in the right place a.s.a.p.
- Once the kedge is set, take up the slack and wait for high (or higher) tide, then slowly winch or windlass in the rode to pull the boat out to deeper water. Usually the boat will simply start floating and be turned by the kedge once the tide has risen sufficiently.
- See Diagram, use a kedge to pull the boat back into deeper water. This technique works quite well. First, try pulling the boat back the way she came in. After all, you have dug a trench in that direction so it should be easier. [NB: first lock rudders to centre] Alternatively, you can try to spin her around by using an anchor off the bow. You may think this is easier because you can use your electric windlass, right? Probably not because of the poor angle of pull.

Aft anchor.

- Kedge anchor After running hard aground take an anchor out in the dinghy and drop. Using line rode and a stern winch pull the boat backwards. Alternatively, take primary bow anchor out in dinghy and drop.
- A similar procedure is used for setting a second, usually aft, anchor to prevent swinging in a tight anchorage.
- In this case the second anchor bridle is attached to the aft pad eyes and the rode is hitched onto the bridle tail. This permits length adjustment by sliding the hitch along.
- The bitter end must be independently secured in case the hitch fails.

Adapted from detailed a (3rd party) method that seems to work best for them when setting the anchor.

http://coastalboating.net/Cruising/Seamanship/Anchoring/resources.html

- Choose a location that will be best suited for predicted overnight conditions (e.g., in the lee of a high shore). Prepare your anchor and rode on deck, and optionally add a trip line (a line equal to maximum expected depth attached to the shank of the anchor with a buoy to the surface) if you choose for ease of retrieval especially in problem anchorages.
- Check the tide to see where it is now, and how it is likely to affect the depth relative to your draft as well as to the amount of scope you will need.
- Motor in a circle around the perimeter of what you expect your swing to be to make sure there aren't any obstructions, boats that could swing close, or variables in depth that weren't charted. Your boat will swing, sometimes in a 360° circle.
- > Point into the wind and head for the centre of your circle.
- Stop the boat, and let the anchor drop <u>slowly</u> to the bottom.
- When the anchor reaches the bottom, start reversing slowly (or let the boat drift backwards) and slowly let out some more rode. This achieves two results: the anchor is cleanly on the bottom in the correct orientation, and the rode is cleanly stretched out from it. Now tug on the line repeatedly to set the anchor (you should feel it catch securely).
- Reverse your boat slowly to make sure the anchor is securely buried. Applying too much power will simply pull the anchor out. This is best done with one person at the bow and one at the helm of the boat. While the helmsman reverses, the other person carefully places a hand on the rode that is stretching away from the boat. If the boat drags, the vibration is easily felt. At the same time the helmsperson should take a sight on a near and distant point to see if the boat is moving. If it drags, pull up the anchor and start again in slightly different spot or with a different anchor. (Remember a different anchor may work better on a given bottom).
- Now you can let out the remaining rode. Use adequate scope. A 5:1 ratio (scope) rode:depth overnight, less for short stay.
- Unless you have an all chain rode, attach a chafe guard where the line passed through the chock.
- > [Attach the anchor bridle] which will need a bit more chain out.
- If you have an anchor alarm on your GPS, set it so it will keep watch for you overnight. You'll sleep much better! Just always remember electronics are not foolproof. It always pays to stay vigilant. It is always a good idea to go topsides during the night to check things out; the weather may have changed, or someone else's anchor may be dragging. But even if nothing has changed, you will also see how beautiful it is out there at night!

Scope:

Bear in mind that "more is better" when it comes to scope. A 10:1 ratio will give you double the holding power and a 3:1 ratio only half. We usually go for a 7:1 scope - more if we are expecting stronger winds.

Here's a little trick to help you determine the correct amount of rode to let out to attain the optimal scope. All you need to know is approximately how high off the water your bow is. Multiply this by at least 5, and you should see that much rode from the bow cleat to where it enters the water when stretched out ahead of your boat.

It is very important that you take the tide into consideration. If you anchor at low tide in say 8 feet of water, and there is an 8-foot tidal range, your scope will be reduced to half at high tide when the depth is 16 feet, with a corresponding reduction in holding power.

We found one spot where our anchor kept dragging no matter what we did. That was the day we switched anchors to a plow and it held like a charm. We surmised that the bottom was solid shells there.

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Guardian Selection Guide

Anchor size recommendations are for boats of average windage and proportions, 30 knots of wind, average bottom conditions, and moderate protection from open seas. For storm conditions, we recommend using an anchor one or two sizes larger.

Guardian Model		G-5	6-7	G-11	G-16	6-23	G-37	6-55	G-85	G-125
Boat Length	(ft)	12-16	17-22	28-27	28-33	34-41	42-47	48-53	54-62	63-72
	(m)	4-5	5-7	7-8	8-10	10-12	12-14	14-16	16-19	19-22
Weight	lb (kg)	2.5 (1.1)	4 (1.8)	6 (2.7)	7 (3.2)	13 (5.9	18 (8.1)	29 (13.1)	42 (19)	65 (29.3)
Replaces Steel Fluke Anchors	(Ib)	4-6	6-9	10-13	14-18	19-28	33-50	50-65	70-90	100-170
	(kg)	2-3	3-4	5-6	6-8	9-13	15-23	23-29	32-41	45-77
Holding Power										
32° Hard Sand Holding	(lb)	1,050	1,725	2,250	3,225	4,875	7,500	10,500	13,875	18,000
	(kg)	476	782	1,021	1,462	2,211	3,402	4,763	6,294	8,165
45° Soft Mud Holding	(Ib)	840	840	1,080	1,500	2,400	3,600	4,800	6,300	8,100
	(kg)	380	380	490	680	1,090	1,633	2,180	2,860	3,670
32° Soft Mud Holding	(Ib)	210	345	450	645	975	1,500	2,100	2,775	3,600
	(kg)	95	156	204	293	442	680	953	1,259	1,633
Support Hardware										
Proof Coil Chain	in (mm)	3/16 (5)	3/16 (5)	3/16 (5)	1/4 (6)	5/16 (8)	3/8 (9)	3/8 (9)	1/2 (13)	1/2 (13)
Nylon Rope	in (mm)	3/8 (9)	3/8 (9)	3/8 (9)	3/8 (9)	1/2 (13)	5/8 (16)	3/4 (19)	7/8 (22)	1 (25)
Shackle Size	in (mm)	3/16 (5)	3/16 (5)	1/4 (6)	1/4 (6)	5/16 (8)	3/8 (10)	7/16 (12)	1/2 (12)	5/8 (16)

Guardian



Slots and Attachment Holes in Anchors

http://coastalboating.net/Cruising/Seamanship/Anchoring/slots/index.html

Some anchors incorporate a slot along the length of the shank. The intention is for the user to power over and past where the anchor is set to pull the shackle from the end of the shank up to the crown. The rode thus becomes the trip line and makes anchor retrieval very easy.

Wind shifts are quite normal; in fact, sudden wind direction reversals in a squall must be expected. We were once anchored in the lee of an island in a gentle 10 knot breeze, when the wind unexpectedly clocked 180 degrees and freshened to 45 knots. We were now with our stern close to a lee shore and our anchor pivoted and held well. If we had had an anchor with a slot, it is very likely that our anchor would have pulled out and that we would have wound up on the rocks.

Using an anchor with a slot may cause the anchor to trip out when the wind reverses direction



As there are many other options for anchor retrieval if it becomes stuck, we would avoid using the slot option entirely except when anchoring in rocky bottoms for short periods such as when fishing or on a dive boat. We would recommend never using a slot overnight or when leaving the boat unattended.

http://schoolofsailing.net/anchoring-styles-and-mooring.html

This description is for well maintained moorings. Often there is no pendant, just a barnacle encrusted ring. There is pale green rope with a big hook for attaching to a mooring buoy. It is in the general purpose deck locker to starboard of the mast.

Picking up a mooring.

There will be times when you want to moor instead of anchor. Moorings are convenient and quick compared to anchoring. Because they are much more secure than an anchor much shorter scope is used with them. Another advantage of the mooring is no damage will be done to any coral or wrecks by your anchor.



Picking up the mooring is a simple matter of slowly approaching it under power and stopping just in front of it. As with anchoring, approach from downwind. Don't worry if you miss it on your first or second try. Just go around and start again.





because the eye on the pendant will no longer be slipping along a single mooring line chafe will be negligible and no noise will be created for those sleeping in the forward cabin.

Leaving the mooring buoy is an easy matter of releasing the mooring line(s) at one end then pull them onto the boat and you're free to go! We usually sail off our mooring as it builds skill. You can do this by first raising your mainsail, cast off the mooring and, once underway, take out the headsail.

Anti-chafe measures



http://sail-delmarva.blogspot.com.au/p/chafe-gear.html (adapted)

Tested for over 15 years in marine, industrial, and mountaineering applications, the design is ridiculously simple, and thus, absolutely reliable. It is a nylon webbing tube which is near friction free when wet. Use cable ties to retain the sleeve when necessary.

Boat testing. The first set of four lasted 14 years, until the test boat was sold. The lines remained unworn and are still in use. Other chafe guards have been in service for over 10 years with no failures or replacements.