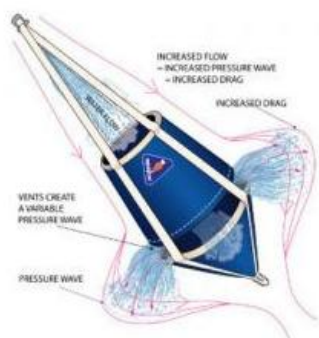


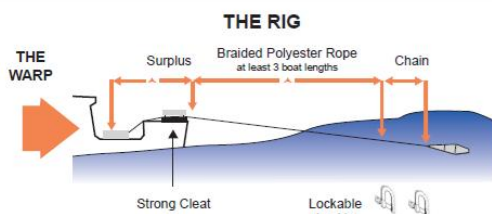
Flingtime - Drogue (Rev 20130122)



model GPL24

RIGGING SPECIFICATION CHART.				
Note: This table is a guide for production boats. Vessels of heavy construction or with high windage areas are advised to go up a size.				
Model	GP24L	GP30L	GP48L	GP60L
Tow Line Type	Braided Polyester for all models			
Tow Line Size	9/16" 14mm	5/8" 16mm	3/4" 19mm	3/4" 19mm
Tow Line Length	Length x Boats length for all models (Minimum)			
Tow Line Surplus	Plus 30% for all models			
Chain Size	3/8" 10mm	3/8" 10mm	1/2" 13mm	1/2" 13mm
Chain Length	8ft 2.4 mts	10ft 3.0 mts	12ft 3.6 mts	14ft 4.2 mts
Shackle Size	3/8" 9.5mm	3/8" 9.5mm	1/2" 12.7mm	1/2" 12.7mm
Boat Length	10' – 35' 3.0 – 10.8 mt	36' – 55' 10.9 – 16.8 mt	56' – 75' 16.9 – 22.8 mt	75' – 95' 22.9 – 29.0 mt

Note : removal of the GP18L from 2006 Seabrake range has been compensated in Boat length recommendations



Seabrake's unique principle operates through the disbursement of water flow to induce local turbulence creating a variable pressure wave which is activated by speed through the water. The greater the flow through the unit, the greater the drag effect. As the water is disbursed evenly through the 4 exhaust ports at the base of the Seabrake it tracks truly with no rotation, providing endless hours of tangle free operation and reliability.

INSTRUCTIONS

ASSEMBLY

1. Consult the rigging specification chart to ensure the correct line and chain for each model Seabrake
2. Attach appropriate length of chain to the thimble of the Seabrake ensuring the pins of the shackles are lockable or wired to prevent vibrating loose.
3. Attach appropriate length of line of good quality braided polyester to the other end of the chain with a lockable or wired shackle

DEPLOYMENT

1. Secure tow line around a strong cleat and launch off stern at one side at very slow speed
2. Keeping the Seabrake close astern check that the Seabrake sets and remains stable. **CAUTION: High levels of drag exist at very slow speed**
3. Ensure that when the Seabrake is deployed railings, staunchions, rigging or deck structures will not obstruct the line and keep limbs free of assembly.
4. Using a transom cleat or bollard ease the Seabrake out under restraint to approximately 3 boat lengths
5. For rough weather operation (anti broaching / surfing) tie off line to weather quarter cleat.
Note : operational speed in heavy weather should not exceed 7 knots
6. Check tow line regularly for wear or chaffing if line comes in contact with deck or transom.
7. To recover Seabrake simply back down or turn back on the line to hand recover.

CARE & MAINTENANCE

1. Avoid any contact with sharp objects that may cause damage to the Seabrake and rig.
2. Do not expose the Seabrake or rig to chemical or petroleum products.
3. Keep metal parts of the assembly free of rust and dirt.
4. Check shackles for wear and ensure pins lock or are wired to prevent vibrating loose.
5. Check regularly that the attachment points are secure.
6. Wash in fresh water after use and dry before returning to the bag

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When to use the drogue?

- For emergency steering.
- To slow the boat down to a safe, controllable, non-surfing, speed in strong following winds, sometimes with large waves, in order to reduce the risk of capsizing.
- To provide directional stability, no broaching.
- ..ditto.. but crossing a bar when possibly the waves, not the wind are the main risk.
- When being towed it keeps the towline taut to avoid running into the tow boat's stern.

Broach (sailing) -from Wikipedia, the free encyclopaedia

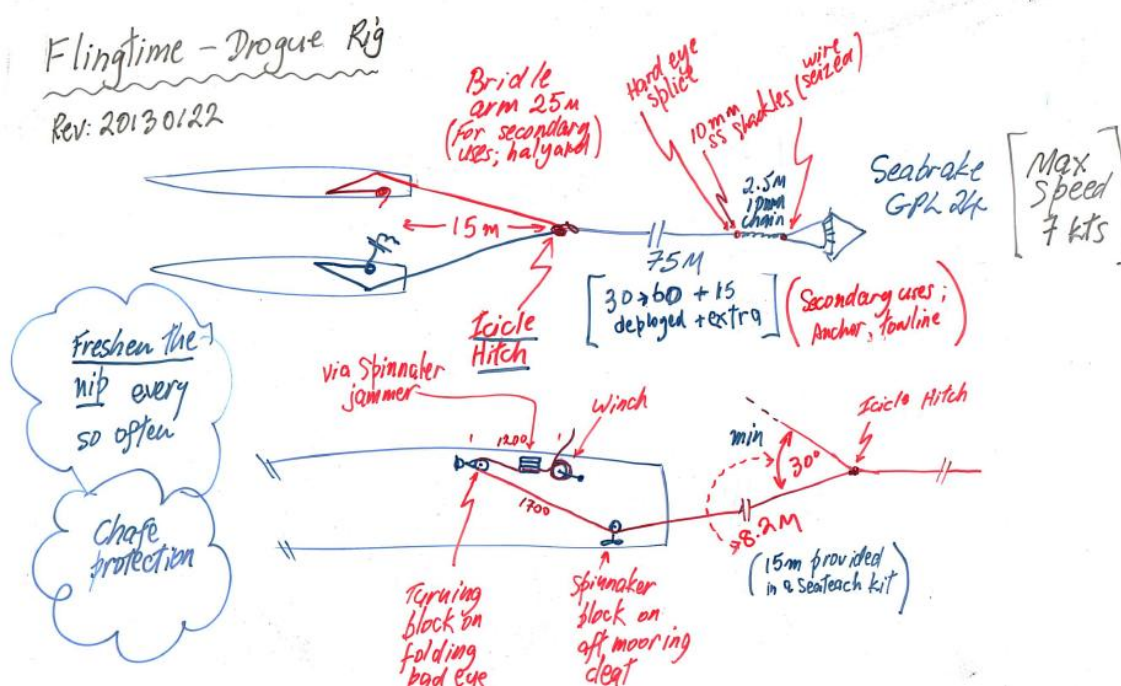
A sailboat broaches when its [heading](#) suddenly changes towards the wind due to [wind/sail](#) interactions for which the [rudder](#) cannot compensate. This causes the boat to roll dangerously and if not controlled may lead to a [capsize](#). This happens when the aerodynamic force on the rig greatly exceeds the hydrodynamic force on the hull, due to a sudden increase in wind strength or turbulent sea conditions.

A very low stretch (12 mm Dyneema, **Yellow**) line is used so that line stretch does not let the boat accelerate down a wave only to pull strongly in the trough.

CAUTION: The loads can be quite large even at a slow speed, e.g. 2 kts.

Anticipate approx. 540 kg at 8kts and 800 kg at 10 kts. The Ronstan turning block is rated at 1000kg MWL and the Wichard 8mm pad eye is rated at MWL 2400kg. The Spinlock clutch has a MWL of 575kg, i.e. the first guiding/anti-chafe block on the aft mooring cleat via a strop, and is not subjected to anything like full load whereas the other components will see near double the line load due to the line direction reversing; However, the load is normally spread across two arms. Flingtime hull speed is estimated at 7.8 kts and that would appear to be a reasonable planning assumption for top speed with the drogue deployed.

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Deployment: The bridle must be well arranged and secured, the line flaked to run smoothly, the line should be at least 45 metres, and light hand (gloved) pressure should be kept on the line as it streams out so that it neither snarls nor yanks the Seabrake at an unfair angle when the slack runs out. Double check that rope does not tangle in deck rails and other gear.

Note: A trip line could be used but is impractical as it can easily tangle.

A trick that reduces the impact load during deployment significantly is to slowly turn about 30 degrees while playing out line, so that the drogue has to turn and the line has to straighten when the strain comes on.

"A Seabrake will hold the PDQ (a similar sized cat.) at a 7-knot drift at 50 knots sustained, and a 5-knot drift at 40 knots sustained. "

"Seabrake recommends 8 feet of 3/8-inch chain, but user experience seems to suggest that may be too light for extreme conditions." (To be confirmed...can add/or substitute chain from #2 anchor rode if necessary)

The drogue bridle on Flingtime is set-up such that the main line continues through to form one arm (primary) and the other is attached via an Icicle Hitch so that the line length might be adjustable. The main line should be set to the side which will normally be away from a lee shore **and used for steering by lengthening or shortening**. The secondary arm can be left alone once set.

Avoid running directly downwind if possible.

"One of the less obvious causes of broaching is an [oscillation](#) developed when [running](#) downwind.^[1]"

Rolling Hitch - "Good for connecting a rope to another rope or railing where the pull is parallel to the railing/other rope ." To be even more secure one **must tie a figure-of-eight knot on the free end**.

" Caution: Some modern ropes are very slippery, e.g., Spectra®, Dyneema®, and Polypropylene. A Rolling Hitch will not hold at all in such materials."

[to be tested on the Dyneema rope used for drogue. It is likely to be fine for the second anchor rode to bridle attachment, but not the drogue. **Use Icicle Hitch instead**]



<http://www.animatedknots.com/rollinghitch/index.php>

Research: In August of 2009 [Practical Sailor](#) reported on their testing of slide



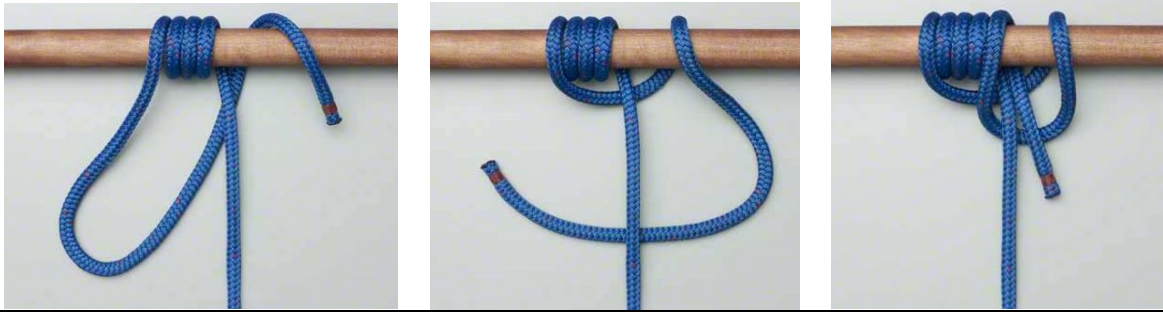
Icicle Hitch Using the End

and grip knots. Their analysis concluded: "... On more modern line, which tends to be much more slippery, the rolling hitch often slips under load. It may also fail to hold on wire or stainless-steel tubing...."

After testing various knots, they **recommended the [Icicle Hitch](#) as offering the best performance as a Slide and Grip Knot.**

Variations: With these knots the number of turns should be increased or decreased to suit the ropes and the conditions, i.e., before using any Slide and Grip knot, **test it** to see that it both grips and releases well.

Rope Size: These knots must be made using a rope smaller than the load bearing rope, e.g., 5 or 6 mm cord around the climbing rope. The effectiveness of these knots diminishes as the sizes of the two ropes approach each other.



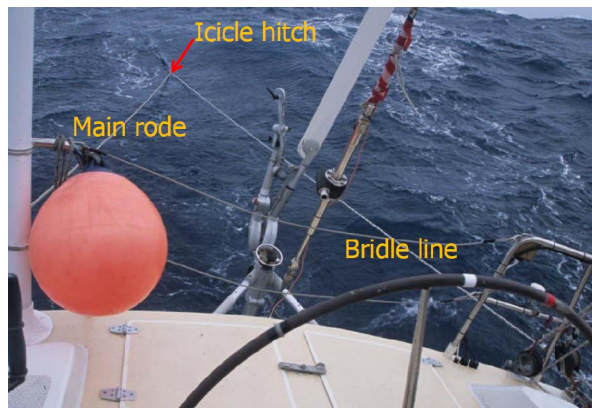
Four turns, under, over and back for final tuck-under-turn. Pull away from the four turns. Can also add a figure-of-eight stopper on loose end.



Above: = drogue to the left

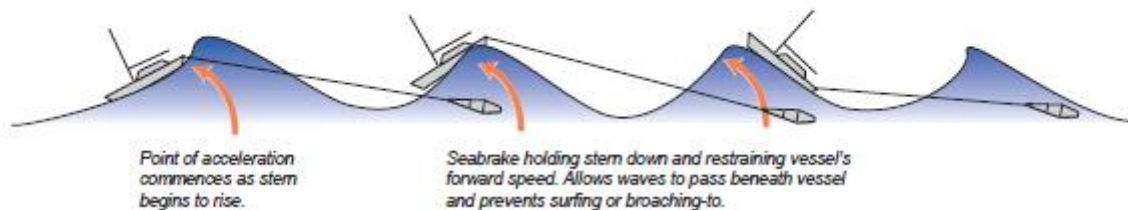
bridle to the right

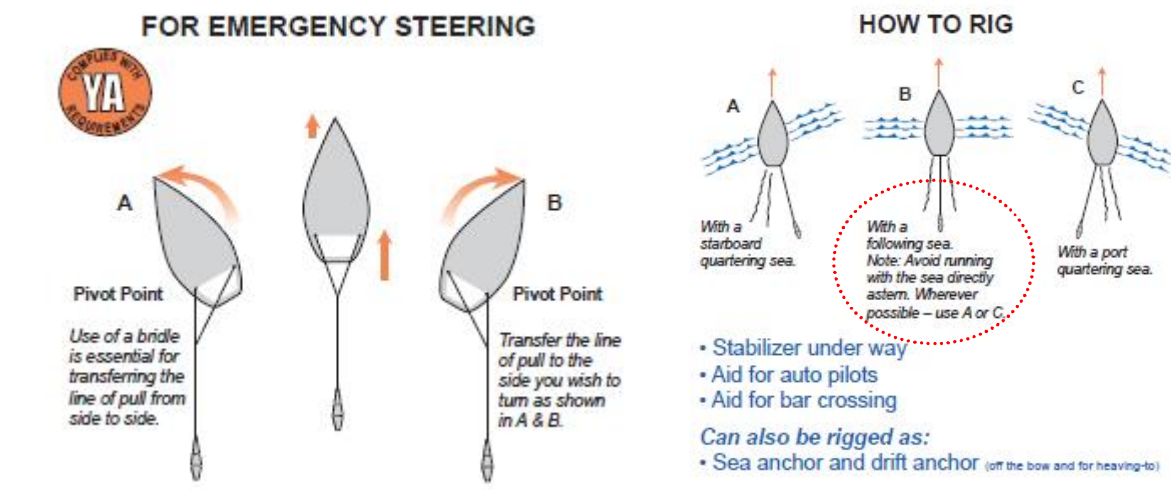
<http://www.bethandevans.com/pdf/HW%20Part%20II%20handout.pdf>



INSTRUCTIONS – RIGGING SUGGESTIONS AND APPLICATIONS

FOR WHEN THE GOING GETS ROUGH





From notes on Flingtime Sails ...this view of wind Vs wave risk is common across many commentaries although waves appear to become the greater threat in survival conditions; hence sea anchors/parachute anchors:-

"GREATEST RISKS TO MULTIHULLS IN STORMS"

- Wind/wind gusts cause majority of capsizes
- Relatively small percentage caused by waves
- Multihulls more prone to pitch poling than monohulls