

# American



# Skimbat

January 2023



# American Skimbat JAN 2023

We started this snow and ice season sailing on Halloween. It blew busters on small rough ice. Since then we have been lucky with hard ice and breeze. Seems like last winter already.

There was windowpane to crackle a high pitch clatter punctuated by the ping of ice song. We zipped along at high speeds on ice so smooth it was almost silent. We marveled at bottom features of petrified plants and rocks as we drifted in lazy breezes or flashed past with clattering haste all the while caught between the sky and its reflection.

## RBS Battens

## SK 821 vss SK8

## When A Wing Is A Sail

## Skimbat

## *and additional tidbits*



*SK 821 skate sail DEC22*

### **So whats new?**

We are building pretty nice custom rigs these days. Ability to stitch what ever we want makes product development quicker. No waiting on a sail maker.

We continue to learn from the design process.

New for 2022: Gecko Green Dacron Skimbat and SK821

SK821 and the SKBT are improved. Both rigs have tack tensioners. The 2021 Dyneema sails are available upgraded with windows.

We have two new custom carbon tube designs to work with, a new front tube as well as the tapered tube we use with the Skimbat.

There is a new 3.0 as well as a new 4.25 meter rig we are testing.

## RBS Battens

The RBS batten experience has been instructive. With the RBS batten it is possible to tune through a very wide range of sail shapes or sail camber. Small changes make big differences.

The importance of tuning for conditions has been re enforced by the RBS experience.

Light weight rigs allow us to feel the subtle differences in tune which are not so easy to appreciate handling heavy gear with more inertia.

The human brain can still process data relatively quickly. How much would we have to spend on a mechanical sensor to tell us what we can feel. Handling the light weight reactive wing we can feel differences. It is possible to feel the rig improve as we tune for conditions. The ragged roar of too much camber being pushed over the speed limit is subtle but distinctive. The adjustable flexibility of glass battens is marvelous.

Changing the camber or the shape of your rig is an experiment of fiddling. Not enough shape in light air, the rig has to be held up. Flat rigs are fast once they get going. Flat feels heavy if it is un able to fly. Full rigs are easier in light air because they fly at slower speeds. Draft forward is important in light air.

RBS glass battens have a load limit.

We elected to the use a glass batten which weighs very close to the same as the aluminum battens to avoid weight penalties.

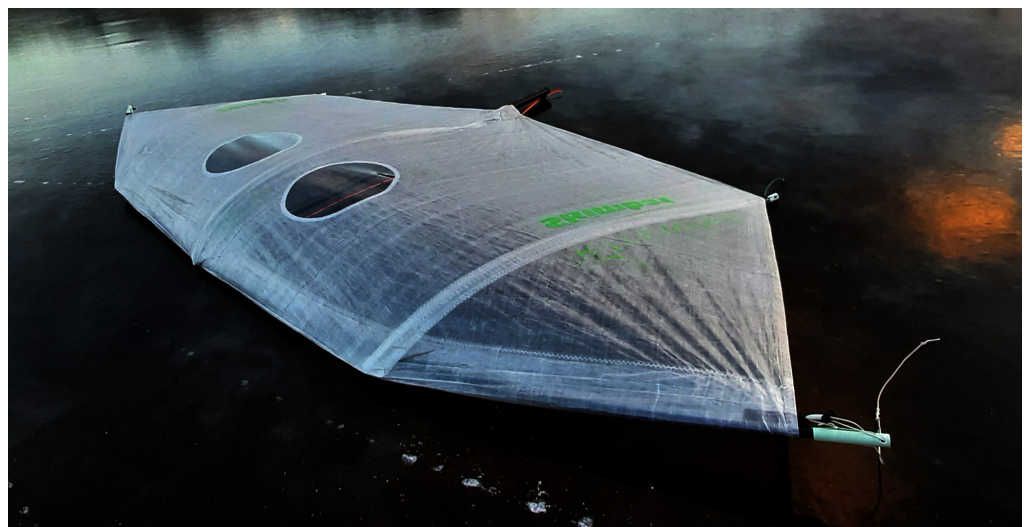
The glass batts we chose are softer than the aluminum counterpart. At high speeds or heavy loads, the glass batts do not support the sail as well as aluminum battens.

Glass battens can invert if mis handled.

However, glass battens are much more versatile and durable compared to bent aluminum battens. 2 square meter SK821 is easy enough to handle with glass battens even when the battens are loaded past their limit.



*Stacey K with her Skimbat  
Northern Maine DEC22*



*2021 Dyneema Skimbat upgraded  
with windows and tack soft eye.  
Shown rigged with RBS glass bat-  
tens DEC 2022*



## SK821 vss SK8

SK821 is as sophisticated or simple as you want. The 2 square meter rig is much stiffer than the old SK8. Both rigs share the same frame dimensions.

It is possible to upgrade an old SK8 with the new SK821 sail and three RBS glass battens.

SK8 was conceived to bring a relatively cheap product to the Kitewing line. The simple rig is based on the Cape Vincent skate sail which is a design dating back over 100 years. It was an easy step to use the Exel tip wand like a flexible bamboo spar to support a modern sail similar to the Egyptian cotton rigs built back in the day.

SK8 works very well. It stows all the parts of the frame within a roll less than 42 inches long. The 1.75 sq M rig works in any condition but it is a compromise.

Unsupported sails are not as efficient as fully battened rigs. The tip wands have a load limit beyond which they do not support sails very well by themselves.

SK 821 sports three glass battens and a bit more area. Static shape is good. Light air performance is close to Skimbat.



*SK 821 skate sail RBS battens  
DEC22*

New SK821 rigs can be built from light carbon tubes which is a significant step up.

**Saving weight is the easiest way to boost performance of any hand held wing sail.**

To design a new skate sail based on the SK8 was in part inspired by folks who added battens to the original SK8 on their own. The extra battens do not cost very much relative to the total cost of parts involved. By adding battens and a better sail design we made the SK821 into a much more efficient rig.

The new SK82I design is a much higher performance value relative to cost than the old SK8.

Tuning the rig is easy. A simple camber inducer and a tensioner at the tack allow camber to be adjusted through a very wide range. Full for light air or flat for heavy air.

SK82I and Skimbat share the same battens. Aluminum Skimbat battens can be used with the SK82I, an additional performance upgrade for heavy air.

Where as the SK8 gives up and starts to flap at top speeds or heavily loaded conditions, the SK82I can push further. Initial static sets with full battens are much more efficient in light to moderate conditions. The SK8 is a sail.

The SK82I is a small fully battened wing.

On fast surfaces in a breeze SK82I is all the rig most folks need. SK82I stows all its frame parts inside the same short roll as the old SK8.



*2021 Production proto type  
Dyneema SK82I Sailing in the rain  
DEC22*



*SK 82I small pond black ice sailing  
NOV22*



# When A Wing Is A Sail

Basic Sailing: Points for beginners.

You may approach hand held wing sailing without much practical sailing experience.

We use the wing sail to generate force which opposes lateral resistance.

Sail boats on soft water have keels or foils which keep the boat from going sideways. Ice and snow sailors have skates or skis.

Hand held wing sails can teach you to be a sensitive sailor if you take the time to feel what the rig is doing. The rig lets you know what it wants. If you fight the rig you will loose.

Pick a day when there is enough wind to fly your wing sail, or enough wind that your wing will fly by itself when you hold it over your head.

Sailors need to understand the wind. We feel it on our faces. To be able to point up wind or at the wind is crucial to success.

If you know where the wind is coming from you can set your wing to the best angle to the wind.

Feel the wind, sail by feel. The best sailors can. It is the same for hand held wing sailing on skates or skis. We sail hand held wings by feel.

When you stand on the ice or snow on a cold day it is easy to tell where the wind is. Your face is a wonderful sensor. Feel the wind on your face.

Up wind is the direction the wind is coming from or true wind direction.

As long as there is enough breeze to fly the weight of the rig, the hand held wing sail is going to fly over your head with the leading edge pointed at the true wind acting like a wind sock. Hold the wing close to the leading edge by the boom or from the leading edge.

**On fast surfaces with less drag we can sail faster than the wind. This makes the game a bit complicated.**

The wind blowing over the sail gets us going. The speed we are able to ride at generates wind as well.

Wind and forward motion build an apparent wind force. We call it combined apparent wind. Combined wind velocities with efficient wing sails allow us to go faster than the wind.

On a day when the wind is blowing 5-10 mph we can sail at least twice as fast as the wind on fast surfaces.

If you are sailing on fast ice in light air you will feel the combined apparent wind on your face. Combined apparent wind direction is not the same as true wind direction.

Stick your hand out the window of the car. As the car moves you feel wind on your hand. Unless it is really windy, the combined apparent wind direction is from directly ahead of the car.

You can make your hand fly up and down by cupping your fingers to make an air foil. Manipulate a wing sail the same way relative to combined apparent wind direction to generate force.

You cannot go directly up wind. We tack or change direction, from either side of directly upwind to make distance in the upwind direction. We gybe down wind either side of directly down wind. Going down wind is more efficient when you can generate combined apparent instead of heading directly down wind.

The easiest point of sail is a beam reach or a heading at 90 degrees to the true wind direction.

**If you can fly a paper airplane or sail your hand out the car window, sailing the wing sail will be intuitive.**

Hold your wing sail over head. Stand facing the wind. Turn 90 degrees to the wind direction, so the wind is blowing on one side of your face. Grab the leading edge of your wing or the Y tube with the hand closest to the wind. The down wind hand is on the boom.

Pull on the boom to find the best angle. You will feel the wing generate force. Too much angle between the wing sail and the wind, and the wing blows away or pulls out of your grip. Not enough, and the wing will park in neutral.

Practice finding the place where the wing can fly over head without pulling on you. From that position you can experiment to drop the wing either side of the wind where it will generate force.

Practice static sailing without skates or skis. You can practice tacking and gybing without the complication of navigation. Static sailing is the best way to get to know your rig.

**Everyone has something to offer with regard to handling the hand held wing.**

What works for some may not be what works for you.

If you mis handle the wing by back winding, you may be pushed off your feet. Back winding is when the wind gets on the wrong side of your sail or wing. Keep the force of the wind blowing on the boom side.

Play the wing until you feel it fly the way you want. Hitch a ride.

Pass the wing over your head or behind you.

**Do not let your wing get between you and the wind. On a windy day, the skate sail is very powerful.**

Think about what you are doing to your wing before you manipulate it. Planning ahead makes it less likely to be spanked.

<https://vimeo.com/user2834872>  
Link to Vimeo video about the SK821 which includes a few sailing tips.



Hold your rig over head. Stand facing the wind. Turn 90 degrees to the wind direction, so the wind is blowing on one side of your face. Grab the leading edge of your rig or the Y tube with the hand closest to the wind, the down wind hand is on the boom.

Red arrows show intended direction of travel. Blue arrow represents true wind direction. Purple arrow represents combined apparent wind.

Rig is SK 821 with RBS glass battens tuned full to show obvious camber.

Pix is example of static sailing without skates or skis. Practice static sailing.



Two hand grip on boom is a more advanced way to manipulate the wing sail. Rig can be spun about the horizontal axis to control.



# SKIMBAT

We produced a limited run of Skimbat skate sails in 2021. The new Gecko Green 2022 sails are recut with a re enforced leach, a soft eye at the tack, and a window.

The 2021 Dyneema sails are still available with a 2022 upgrade which includes the window and a tack soft eye. Dyneema sails are lighter than the Dacron version. Dyneema works a lot better on a wet day.

Dacron gets heavy when it is wet, and it stretches. Dyneema is a performance upgrade.

The Dyneema sail is very nice. The light weight translucent Dyneema sail can be tensioned to the carbon frame to achieve a more reactive rig. The sail to frame fit will not stretch or yeild the same way as a Dacron sail. Dyneema sails are about 12 ounces lighter than Dacron sails.

Dyneema sails and aluminum battens add significant cost.

“Skimbat is a go to rig.” Skimbat is designed to be a minimal skate sail for serious Nordic skaters and skiers. The 3 sq M rig is at home on small ponds or big lakes. The rig stows in a tight roll with all parts which can be carried in hand or easily on a pack.



The rig is based on a tapered carbon tube which replaces the tip wand. Tapered carbon tubes save a lot of weight.

Weight varies with options. The light weight 3 square meter Dyneema rig weighs 3.75 pounds. One part boom saves weight. The aluminum battens are the same weight as the glass battens.

SKBT can be rigged with a two part boom or a single section.

*2021 Dyneema SKBT upgraded with a window and a tack tensioner soft eye. Shown rigged with RBS battens NOV22*

# TACK TENSIONER

SK82I and Skimbat have been upgraded since 2021 with a tack tensioner.

The tack tensioner helps to make the rig more secure and stiff. Tensioning the tack also cantilevers the RBS glass battens over the front tube thereby inducing a tight bend to the front of the glass batten. In concert with the camber inducer the tack tensioner allows us to experiment with a range of camber from flat to full.

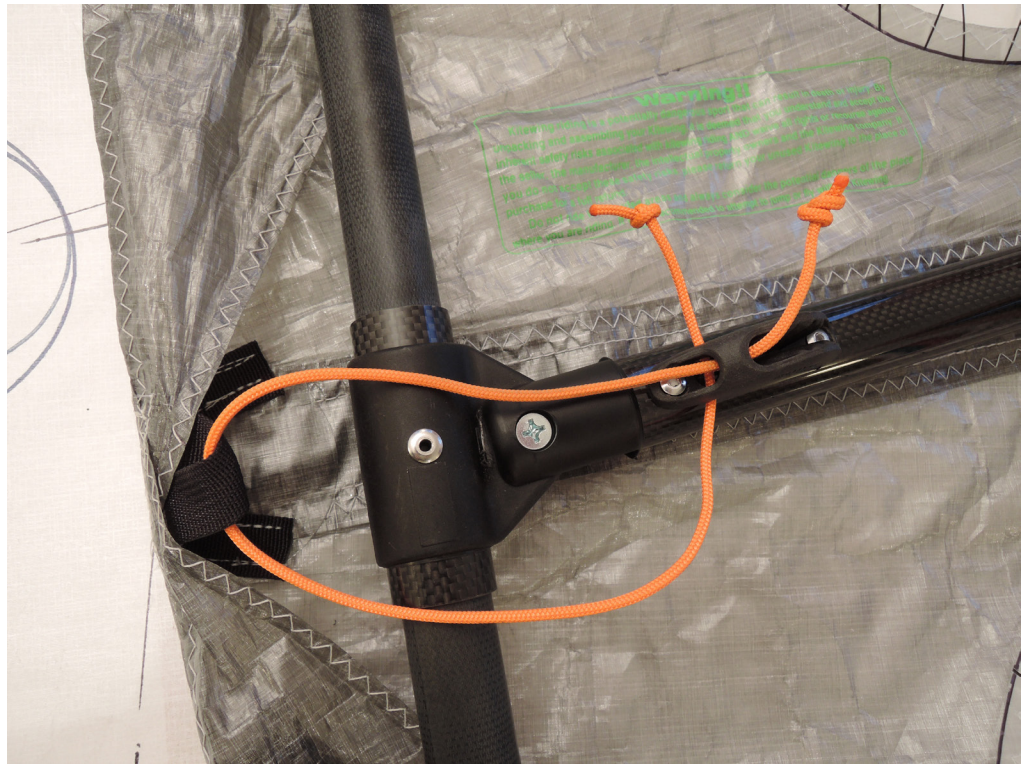
Rigging the SK82I or the SKBT: Slack the tip tensioners to allow the battens to project past the front tube. Engage the camber inducer to force the center batten ahead. Tension the tack to desired tune. Re tension tips if desired.

## TUNING

Tension the luff of your rig and the leach gets soft. Loosen the luff and add camber, the leach gets tight.

More camber for light air. Less for heavy air.

For more specific tuning direction review the Skimbat and SK82I manuals posted at Kite-wing.com under the resources files tabs.



*Tack tensioner, tack strap, or tack adjuster. Shows cleat to soft eye rig.*

## TECHNIQUE FOR HEAVY AIR SAILING

You do not have to hang on to your wing with a death grip. Let the wing ride up over head in neutral or at a place where it stops pulling on you. This advice presumes an icy surface, you are going as fast as you want to go. Let the rig coast to avoid going faster than you want to go.

As the breeze picks up, allowing your rig to fly over head keeps it away from the surface where a sudden dive can break parts.

Grip SKBT and SK82I skate sails with one hand on the front tube below the boom and one hand on the boom for the most secure and easy hold. SK82I and SKBT will balance very well when secured by the front tube and boom.

Traditional Y tube rigs take advantage of Y tubes. Use the Y tube on heavy air days. Tune with enough reflex. You should be able to control your rig with one hand on the Y tube when it is in neutral.



# HARNESS

The harness allows you to load the rig without arm fatigue. You may enjoy hanging from the harness.

Most folks break parts learning to harness sail before they are good enough wing handlers.

Sailing with a harness presumes expert technique. Kitewing Skimbat does not warranty parts which you break because you use a harness.

Once upon a time I used the harness almost every time I sailed. For big ice the harness is a useful tool. Even then I used to back off from hook up on blustery shifty days because I was aware that falling on my rig would likely result in broken parts. Sometimes the wind can shift so fast that it is difficult to unhook if need be.

I believe that sailing without the harness makes me a much better wing handler. Without worrying about hooking up, my tacks and gybes are faster and efficient. I am able to work on technique without the complication of extra lines or wearing the extra gear. I have learned to sail the wing with finesse. It does not take brute strength or a harness to get the most out of your rig.

Consider the faster you can maneuver efficiently, the more fun you can have on smaller ice or snow when shifty breezes can make sailing difficult. All is aggravated by heavy rigs which have more inertia.

The more time you take to learn your wing handling before you rig the harness the less likely it will be that you will break parts.

Dicky Saltonstall  
JAN23

## PRODUCT DEVELOPMENT

Kitewing has a new frame. We are experimenting with a different front tube set up. It is the 8D front tube. We have three sails designed to use the 8D frame. The rig allows for use of the SKBT tapered tube as well as traditional tip wands.

Our 8D frame is designed to limit shipping length or to allow shorter and more efficient take down and stow. We are also saving a lot of weight.

8D frames can be rigged with Y tubes and a bent boom or a straight boom without Y tubes to save weight. Y tubes are easier for beginners including traditional Kitewing sailors who insist on Y tubes. Booms can be swapped quickly without taking the rig apart.

Since sailing skate sails with out Y tubes we have learned to rig and manipulate the wing with a straight boom. It takes some practice and technique. In blustery shifty conditions Y tubes are very nice. The Y tube allows a grip which is more stable.

A single part straight boom is light weight as well as clean. Y tubes with the curved boom are not as aerodynamic.

Our new frame is in a testing and development process. We are testing versions of it this season.

*Dyneema 3.0 TWY proto type*  
DEC22



*Dyneema 4.25 TWY proto type*  
DEC22





2021 Production Dyneema SKBT with 4.25 TT. The 4.25 TT is rigged on the 8D frame without Y tubes with the same tapered tube as the SKBT. 4.25 TT is very light weight with the same weight to sail area ratio as the SKBT.

The SKBT shown here is rigged with RBS battens. The 4.25 is rigged with aluminum battens.



## PARTING SHOT

Saving weight is crucial to hand held wing design.

When there is not enough wind to fly your wing, the fun is over.

We seek to sail whenever we can get to the ice regardless of wind strength.

We design for light air sailing. SKBT is tough to beat on ice in light air.

Latest designs which use the tip wand, including the new SK 821 have wide performance envelopes. 3.0 TWY and SK 821 are heavy air screamers.



4.25 TW NOV22