Scow Developments

Behind the scenes, there is another quiet foiling revolution under way, a Scow revolution!

Somewhere, part way between a skiff and a catamaran there is another type of sailing craft altogether. Almost forgotten in the hype of todays foiling Americas cup cats and Moths, the humble scow is being fully revolutionised, and for many very good reasons. There is not only one, but two quite separate developments happening right now, that provide a completely different way of looking at sailing dinghies with comfortable, very high performance.

Lake Scows

The Lake scows of America are steeped in tradition and have a fearsome reputation. Surprisingly, for such large boats, up to 38’ long, they handle and behave like dinghies. They were the original sports boat, with centreboards and plane easily downwind.

Unlike catamarans they are easy to right after a capsize and are the no wider than a modern sports boat, so they are easy to store and transport. There has not been any serious development over the past 50 years, due to the strict one design rules for these classes.
Quant 23

It has taken a Swiss sailing enthusiast, Michael Aeppli, to break this mould and bring modern lake scows into the 21st century. He has not only come up with a super light-weight, modern carbon rig with the latest Landenberger sails, but has also entreated designer Hugh Welbourne to go one step beyond his Dynamic Stability system used on his Quant boats, to come up with a fully foiling version. His system is quite unique, completely different from other designs and foils.

The new Quant 23 scow gently lifting at 14kts boat speed in just 8kts of wind

Then the real magic happens as she lifts off and blasts down the bay!

This is the latest foiling development and the first ever fully foiling keel boat. With more righting moment than most catamarans, combined with a small easily handled low drag aerodynamic hull, the Quant 23 powers up easily in any breeze. It is not just about speed, but a manageable transition from high performance light air sailing in 1-5kts of wind through fast planning to full foiling with a
very strong focus on high speed upwind performance, something not yet achieved in the foiling catamarans. This is where true efficiency lies.

**Design breakthroughs!**
Rarely are there any truly inventive breakthroughs in sailing craft design. Most developments are incremental, based on pushing the limits of a current design trend with small modifications, but just occasionally something completely unique breaks new ground.

Foiling sailing craft have been around for many years, the first of which used simple Vee foils, the best known example being the flying Tornado cat "Icarus" of James Grogono. Tee foils with flaps were introduced fairly early, epitomised by the Rave trimaran design of Dr Bradfield.

* The unique Hobie Trifoiler design of Greg Ketterman broke many records and proved that high speed sailing was really possible and easy, for all sailors. Perhaps this design concept with automatic incidence control was ahead of its time.

* Adapting the well proven ‘airchair’ water ski foil design to both sailboards and kite boards has enabled a whole new field of high speed sailing on boards which is the latest trend.
The application of centreline foils to the Moth was a truly innovative step, enabling the hull itself to provide righting moment upwind making this one of the most efficient sailing craft, even today. This development now constitutes the key concept for most foiling monohull dinghies, such as the Glide Free foiling Laser kit.

In a remarkable effort to skirt the highly restrictive design rules of the Americas cup, the New Zealand Team developed a unique method to stabilise flight using a foil which slips sideways. While not so efficient upwind, this development has currently become the favoured design trend for most catamarans to foil.

This very latest development of Hugh Welbourne and Michael Aeppli is just such a breakthrough! It works quite differently to the existing foiling systems as it allows the foil to run on the surface. This design greatly increases the righting moment, and yet it is very simple with no moving parts or side slip for height control. It is aimed at providing high performance upwind and easy foiling throughout the wind range and looks to be applicable to a wide variety of sailing craft, not previously possible to foil, such as sports boats.
Over the next year it will be extremely interesting to see how this new, truly unique development proves itself as a foiling breakthrough!

**Scow Moths**

In the antipodes, there has been a long history of scow sailing in Australia. For the uninitiated, the International Moth Class was, for much of its life since 1932, dominated by scow designs. It was not until the mid 1980s when skiff designs finally proved superior to the lightweight planning scow designs and not until 1999 when life was breathed into foils, which lifted the skiffs clear of the water altogether.

Jim French of Melbourne remembers the scows well and the fun of learning to sail on a lightweight stable planning dinghy with excellent performance, planing upwind and down and easy to sail for beginners. He has built over 130 scows and many skiff moths and has recently been determined to bring scows into the foiling age.

Rather than following the developments of the skiffs with centreline foils, Jim sought to utilise the immense leverage offered by the scow hull and introduce twin lifting foils.

**Skeeta Moth**

The Skeeta Moth is a completely new Scow Moth development by Jim French.
Jim has developed a new hull design to suit the foiling setup and produced his own foils, based on the Glide Free design used on the foiling Laser.

With a light-weight fully carbon hull, a completely new over-rotating free-standing rig without prodders or spreaders, it presents a low drag profile. The wings can be attached within 1 minute and is quick and easy to rig. The foils are retractable, making it easy to launch and sail off the beach.

While this development is in its early stages, this Moth can already outpace a conventional A class cat, and most notably it is very stable and easy to sail, even for average sailors. It handles waves very well and can readily achieve 22kts in just 15kts of wind.
The future for foiling Scows is extremely bright.

**What foiling offers**

**Speed**
The main initial reason for using foils is to increase speed, up to 3 times that of the boat in displacement mode and up to twice the windspeed. Going fast feels great!

**Sensation**
Free of the surface, waves, noise, the boat seems to glide effortlessly, it is this sensation which is the most addictive. It is not like any other sailing.

**Stability**
Twin foils offer huge increase in stability, just like twin hulls on catamarans. It seems ironic, that the catamarans now lift the windward foil, resulting in less stability. The boats get quite difficult to sail.

**Righting moment**
I always thought that righting moment and stability were pretty much the same thing, but this is definitely not the case. It seems counter intuitive, but a centreline foiled Moth has lots of righting moment and even gains more as it foils and heels to windward, even though it is quite unstable, balancing on just one foil. On the other hand catamarans which are otherwise highly stable platforms, with their latest vee foils, they actually reduce righting moment as they lift. They also become much less stable, as they lift on just the leeward foil. The Scows designs gain righting moment from their foils.
Thrills
The type and level of thrill you get depends on how the foils and boat are set up. The older trimaran designs were pretty fast, but very stable. With the windward foil sucking down, the boat remains flat at all times, the speed sensation is quite good, but the thrills are limited.

At the other end of the spectrum, balancing on top of a single foil on a kite board is extremely fast, but also highly unstable and you are on the edge of balance and disaster all the time. A lot of skill is required.

These new Scow foilers offer a full range of thrills! It may even be possible with scows in the future to alter the foiling characteristics to suit the skills of the skipper.

Summary
The two major foiling scow developments highlighted in this article illustrate that it will soon be possible for sailors to have stable, easy to sail fast and fun foiling. This is just the beginning of these developments and these new designs show what is possible and a glimpse to the future.

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