

# Advantages

## **A Summary of Battslide®'s Advantages over Conventional Mainsail Systems by Tom Wood.**

A mainsail that binds in open water may only be an irritation or a minor embarrassment. But a mainsail that jams in a crowded harbor, or when you're tucking in a reef, can rapidly escalate into an emergency.

With the advent of modern sailmaking and spar technology, it is now common to have sails bind while running up and down the mast. Sailcloth designed especially for mainsails is now more tightly woven and has a higher resin content. This makes the cloth less porous and prone to stretch, but also stiffer and harder to handle. Modern masts are often designed with considerable pre-bend and extruded internal sail tracks have become smaller. Whether standard short batten or full batten, these advancements have made mainsails much more efficient, but they are also the cause of many sail handling problems.

If you dread going forward to fight with a sticky mainsail, Schaefer Marine and your local sailmaker offer these solutions to make your main behave. The Schaefer Battslide and their Battslide intermediate system are the essence of simplicity, yet they have been tested in thousands of miles of blue water cruising and 'round the buoys racing.

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## **The Basics**

Whether extruded internally in the mast or fastened externally to it, all spars have a track system. Most are designated as flat track to accept slides or round track to take slugs. Each slide or slug creates a little resistance as it rides up and

down the mast track, even if it is made of a slippery plastic. A mainsail with a long luff will have a large number of these slides to generate considerable friction. As a result, substantial effort exerted through a sizable winch is often needed to hoist a big sail.

All mainsails hoist, lower and reef more easily if the boat is brought head-to-wind. Of course, this is not always practical in a tight spot or for a quick reef. Spilling as much air as possible sometimes allows the flogging sail to shake itself free of any tendency to jam.

If the main still sticks or requires excessive effort to hoist and lower, work with the sail track first. Take a trip in the bosun's chair to inspect for misaligned track sections, burrs, loose paint or corrosion that may inhibit proper sliding action. Insure that the track is clean and free of sticky grease. Clean on the way up and lubricate with a dry Teflon spray on the way down. Never use petroleum based grease or oil. If you are satisfied that the mast track is clear and clean and the mainsail still binds or sticks, it's time to examine the mechanics of your system.

### ***Binding Boltropes:***

Many daysailors, trailer sailors and pocket cruisers have a boltrope on the luff of the mainsail that slides directly into the groove on the back of the mast. This arrangement is inexpensive to build, but has many disadvantages in everyday use.

First, friction cause by the long length of sailcloth rubbing directly against the aluminum mast often causes difficulty raising and lowering the sail. To make matters worse, sailcloth loosely sewn around the boltrope can "bunch up" causing a jam.

Secondly, the sail must be removed from the mast track each time it is lowered, leaving the crew to fight with yards of

sailcloth billowing loose in the wind.

A permanent solution is to attach Schaefer's patented Battslide intermediate fittings to the luff of the sail. Combined with the proper slugs to fit the mast track, the Battslide intermediate system allows the main to glide up and down the mast track with virtually no friction. With the addition of a track stop, the intermediate fittings capture the main when lowering or reefing and permit the sail to be left attached to the mast.

The Battslide intermediate fittings consist of a small triangular plate that attaches to the luff of the main with three fasteners. Unlike the typical method of sewing the slides or slugs on to grommets in the sail, these plates spread the load of the slide over a large area of sailcloth. They are easy to install, and the screw in shaft allows adjustment for small irregularities in the installation.

Best of all, the intermediates allow the sail to move in all directions without binding or jamming. This is a common problem with sail slides or slugs that are installed with simple shackles or sewn on with traditional webbing.

## **Traditional Slide Solutions**

If your mainsail has traditional slides and it balks at hoisting or dropping, the fault probably lies with the attachment to the luff of the sail. Sailmakers commonly attach sail slides or slugs to the mainsail by sewing them on with webbing. Other attachment methods include metal or plastic shackles or numerous wraps of tough lacing line. All of these methods hold the slides tightly to the sail's luff, making a relatively rigid joint between the cloth and slide that allows very little movement. When combined with stiff mainsail cloth, these inflexible attachments at the sail's luff are a common source of jamming.

The reason is clear. When hoisting a stiff mainsail, the cloth

pulls upward on the bail of the slide, trying to tilt its upper end into the mast. When lowering, a heavy sail will weigh downward on the slides, forcing the bottom edge of the slide into the mast track. In addition, sailcloth often attempts to flake itself when halyard tension is released. As the sail twists from side to side, the stiff webbing or shackles transfer this rotary motion to the slides. The resulting side loads and unfair strains wedge the slide into the mast track, making the sail difficult to raise or lower smoothly. Even slides or slugs made of slippery plastic are not immune to this binding.

To prevent the motion in the mainsail cloth from transferring loads into the slide, the joint between sail and slide must allow movement in any direction. Metal shackles, tightly knotted lacing lines and heavy Nylon webbing cannot be arranged to accomplish this de-coupling.

The intermediates from Battslide solve all these problems and provide a mechanical joint between the luff of the sail and the slide, allowing proper three-dimensional movement. Each fitting has a miniature gooseneck allowing up-and-down, side-to-side and rotational movement in the sail without transferring the motion to the slide itself. They were engineered with adjustment threads so that the installation can accommodate minor differences in mast and sail.

No modifications are necessary to the mast or boom and any sailmaker can install the entire system in just a few hours. Thus the cost of conversion to the Battslide system is usually quite modest.

### ***Twist at the Top – Headboards:***

Sailmakers have been struggling with headboards on mainsails for many years. They need to be very strong and stiff to accommodate the enormous strain from the halyard. The

headboard must also be firmly attached to the mast with multiple slides, especially when deeply reefed. The weight of the boom and sail, combined with tension from the main sheet and boom vang, pulls the leech downward and attempts to pull the headboard away from the mast. This twisting motion pushes in on the lower headboard slides and pulls back on the upper slides. All these stresses on the closely spaced slides of the unyielding headboard plate are a common recipe for binding.

Schaefer has given sailmakers special Battslide headboard fittings to fight the war on headboard jamming. Like the rest of the Schaefer system, the Battslide headboard fittings allow three-dimensional motion and adjustment to conform to mast rake and sail shape. The Battslide headboard fittings, however, are made entirely of metal for extra strength during reefing.

## **Full Batten Solutions**

Fully battened mainsails are one of the great advancements in sailmaking in the past few decades. They have been enthusiastically embraced by many sailors as their greater aerodynamic shape has come to be appreciated. Full battened mainsails have a downside, however, as they usually make mainsail slide jamming problems worse than a conventional main.

Most full batten systems force an aerodynamic shape into the sail by making the batten a bit longer than the batten pocket in the sail, thus pressing against the sailcloth at leech and luff. The resulting compression presses the track slide into the back of the mast, making jamming more likely.

In addition, the weight of full battens enhances the sailcloth's normal tendency to flake itself when not under halyard tension. The long battens tend to roll over on their sides, inducing tremendous twisting motion into the slide and jamming them against the sides of the mast track.

Schaefer's Battslide patented batten receptacles can solve all the problems of full-length battens. Because the Battslide receptacles articulate in all three dimensions, they allow the batten's forward end to move in any direction without transferring this motion to the track slide. Without the ability to tilt the slide upwards, cock it downwards, or twist it in the mast track, the slide is free to run with greatly reduced friction. The problems associated with full batten pressure against the mast are virtually eliminated.

Since the Battslide batten receptacles allow the batten to roll over on to its side without transferring any torque to the slide, the sail is free to flake itself effortlessly onto the boom. This makes reefing, lowering, and stowing a fully battened mainsail a breeze.

Battslide's patented full batten receptacles are available in several sizes for boats up to 200' LOA. Numerous sizes of either flat or round battens can be adapted to the Battslide receptacles and most sailmakers can quickly convert an existing fully battened mainsail to accept Battslide receptacles.

## **Benefits of Battslide**

- Don't shake your fist at that sticky mainsail. Consider the advantages of a smooth Schaefer Battslide® System.
- The Schaefer Battslide Recepticals and Intermediates use your existing mast track. There are no expensive track or cards to purchase and no holes to drill in your mast. Weight aloft is kept to a minimum.
- Installation is simple. The Schaefer Battslide systems are added only to the luff of your mainsail. They do not require trips aloft in a bosun's chair and there are no adapters to fit together.
- Schaefer systems are versatile. There are Battslide parts to fit most mainsails, whether they are battenless, have traditional or full length battens.

- Durable and reliable. All Battslide parts are made from the highest quality marine grade materials and require no maintenance. There are no ball bearings or rollers to fail and the Schaefer systems will not mar a painted mast. They carry Schaefer's full five-year warranty.
- Schaefer has complete systems available with batten receptacles to fit almost every mast and track system on boats to 200 feet. Battslide receptacles are available for both flat and round battens in either adjustable or non-adjustable models.