PUPOSE OF THIS MANUAL

The MC Scow class is growing rapidly. Sailors without much experience are joining the class, so we wrote this user guide to help them learn the basics quickly. The links provide additional information. Click on the photos to view them in larger size. Please send comments to sailzingllc@gmail.com.

ABOUT THE MC SCOW

The MC Scow is a fast, fun boat that appeals to all ages and skill levels. With over 110 fleets and well-attended regional and national regattas, the MC class is one of the most active one-design classes in the U.S.

Melges Performance Sailboats builds the MC. The MC Sailing Association (MCSA) manages the class. We strongly recommend joining the MCSA. The MCSA website contains much information about the boat, class rules, techniques, and events.

BRIEF DESIGN HISTORY

- The MC Scow debuted in 1956. It is an original design by the Melges family. More than 2,800 MCs have been built.
- Hulls are numbered sequentially. Hull numbers up to the mid-1800s were made by either Johnson Boat Works or Melges Performance Sailboats. Melges is now the exclusive builder.
- Beginning with hull numbers in 2470's, Melges changed the design to a sealed cockpit. The sealed areas under the side decks were commonly referred to as tanks. In this design, the position of the boards is not visible from the cockpit. The rear deck was also removed so the cockpit is open to the transom.
- Beginning with hull numbers in the late 2600's, the cockpit was unsealed and is open to the hull on the sides. The board position is visible from the cockpit. The cockpit is still open to the transom.

DESCRIPTION AND CARE OF THE MC

HULL

- The hull is fiberglass with a gelcoat finish.
- Minimum hull weight with rigging, no sail – 420 lbs.
    - Lead is added to the finished hull to bring the weight to the minimum. A sticker on the cockpit rail indicates the weight of lead added. In older boats, the lead was mounted on a threaded rod, with a seal placed on the rod. Newer boats have the lead cemented and taped to the bulkhead.

    - Check the seal/tape to verify that the lead has not been changed.
    - Boats normally do not take on weight over time. If curious, you can have the boat weighed at Melges or do it yourself with any suitable digital scale.

GELCOAT CARE

- The outer layer of the hull is polyester resin gelcoat. Gelcoat is durable, UV resistant, can be colored, and is relatively easy to work with. However, it takes time to polish gelcoat to a high gloss surface. Over time, gelcoat oxidizes and becomes dull and chalky. It can also take on dirt, hard water stains, and marine growth.
- Cleaning. Periodically clean the boat using the mildest cleaner that will do the job.

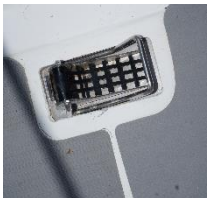
- Boat soap, formulated to clean without removing wax. Example, Meguiars.
- Dish soap. Effective and mild cleaner, but will remove wax.
- Vinegar. Mild acid, good for removing hard water spots.
- Bathroom cleaner. Good for removing tougher dirt. Example, Scrubbing Bubbles.
- Fiberglass hull cleaners. These often contain stronger acids such as oxalic and phosphoric. These will clean the hull quickly, but will also make the gelcoat porous and thus subject to oxidation. Must wax more frequently if you use these. Examples: Starbrite Hull Cleaner, Zing.
- Magic eraser pads remove dirt well without chemicals.
- Acetone works well to remove paint marks, markers, and other organic stains. Follow the safety precautions when using acetone.

- Waxing. Wax once or twice a year. This helps prevent dirt accumulation and oxidation.
  - Some types of wax will protect the hull, but won't make the hull particularly slick. Waxes with PTEF (Teflon) such as Hullkote or Starbrite won't last as long but are slick.
- Compounding. Eventually, unless you are very diligent at keeping wax on the boat, oxidation will build up. Remove oxidation with a marine rubbing compound. You may have to progress through stages of finer grits to achieve a high polish. Mechanical buffers are required. A fiberglass repair specialist can do this.
- Damage
  - Cracks. Large cracks could be serious; have them checked. Small spider cracks are usually not significant. You can buy a sealer such as Captain Tolley's Creeping Crack Cure for small cracks.
  - Gelcoat dings. These look bad but are not normally serious. Some sailors cover with tape until they can get them repaired. You can learn the art of gelcoat repair and fix these yourself, or take the boat to a specialist in fiberglass repairs.
  - Soft spots. Older boats may acquire soft spots from trailering, abuse, or just extended sailing in rough water. Test spots on the outer hull for softness with your fist.
  - Fair. In nautical terms a smooth hull is called a "fair" hull - no bumps or depressions, so that water can flow smoothly over it. Some older boats will have dimples in the hull caused by abuse or possibly manufacturing issues. A specialist can fair the hull.

HULL STRUCTURES

- Bulkhead. Separates the cockpit from the area under front deck and adds strength to hull and deck near the mast step. The bulkhead has openings at the cockpit floor to allow drainage.
  - Maintenance tip: Check the openings to make sure they are not clogged.
- Backbone (also called strongback). This runs along the center of the cockpit floor. It adds strength to hull. The control lines are routed through the backbone. You can access the control lines through a hole cut into the backbone under the deck just behind the mast. The backbone is open to the area under the front deck. The through-deck holes near the mast for vang, cunningham, and outhaul allow water to run into backbone.
  - **Maintenance tip: To avoid water buildup in the backbone, remove the plugs in the backbone or get the one-way drain plugs sold by Melges.**

- Board wells. These encase the bilge boards. The pivot point for the boards is a bolt that runs through the forward part of the board well.
- Bailers. Bailers allow you to drain water from the cockpit when the boat is moving at adequate speed. Keep them open in rough water when the cockpit tends to fill up. Shut them when stationary or at low speed.
    - **Maintenance tip: lubricate the bailers periodically with silicon. Eventually you may need to change the bailer gasket.**



Bailer - shown closed

- Flotation. Class rules require eight cubic feet of flotation material spaced evenly so the boat will float level or slightly bow up when swamped. Flotation is installed under the front beck, behind the board well and under the rear quarter deck. Floatation is either air bags, empty plastic containers or Styrofoam.
    - **Maintenance tips: Ensure air bags are inflated but not over inflated. Cover Styrofoam with plastic sheeting or shrink wrap to prevent wear.**
- Rub rail. Many boats have a hard plastic rub rail on the boat to prevent damage at dock or in collisions. This is an option on newer boats.
    - **Maintenance tip: if you have a rub rail, look for looseness, bent or broken screws. If loose or damaged, water can enter the hull through the screw holes.**

- Splash rail. This helps keep water running over the foredeck from entering the cockpit. Avoid stepping on it. Keep the screws tight.
- Transom holes. If the boat becomes swamped, remove the patches over these holes to drain the boat while being towed. Patches are made of sail tape.

HULL FITTINGS

- Bow plate. The front hole is for a bow line, sometimes called a painter. The rear hole is for the forestay shackle.
    - **Maintenance tip: periodically check the bow plate for wear. Here's an** example of wear from the forestay shackle.
- Chain plates. The front hole is for the shrouds; rear hole is for the bridle.
- Boom stand. For boats with a rear deck, this is a hinged fiberglass or wood piece with cut out for boom and tiller. For boats without a rear deck it is a U shaped bracket that fits in a shaft just forward of the traveler.
    - **Maintenance tip: A wood boom stand needs periodic refinishing.**
- Lifting bridle. Class rules require that you have a lifting bridle in the boat. The bridle attaches to the rear lifting eye and the aft holes in the chain plates.

MAST

- Mast: The mast is an extrusion of anodized aluminum. Anodizing is an electrochemical process that converts the surface into a smooth, durable, corrosion-resistant, oxide finish.

Maintenance tips:

- **The mast is quite flexible, but can be bent beyond its elastic limit. To check straightness, place on horses with the track facing up and sight along the track or use a string line. If bent slightly, you can straighten it by applying heavy pressure at the point of the bend.**

- **The mast must be sealed well enough to float for 10 minutes (class rule). This helps prevent the boat from turtling when capsized. Make sure the fittings are sealed with silicone. See our article on this.**
- **Keep the mast clean. Acetone works well to remove organic material.**

MAST FITTINGS AND RIGGING

- Mast step (on deck) and base (on mast). There are three styles.
  - **Maintenance tip. Check annually for cracking or wear.**
- Bale for vang. The vang shackle attaches to the mast at the bale.
  - **Maintenance tip: As the boat ages, the through-bolt holding the bale to the mast can induce wear on the aluminum mast.**
- Hounds. Shrouds attach to the mast at the hounds. Use cotter pins or rings.
  - **Maintenance tip: check hounds for cracking annually.**

- Spreaders. The spreaders are swept aft. These control mast bend. Three styles: Two-position, continuously adjustable sweep, adjustable length.
- Spreader bracket. Holds spreaders in place.
  - **Maintenance tip: check spreader bracket for cracking annually.**
- Tack slug. Holds the tack of the sail to the mast via a shackle. To reduce strain on the tack slug, ease the outhaul before turning downwind.
  - **Maintenance tip: Inspect frequently. TackSlide™, a more durable replacement is available from SailZing.**

- Gooseneck. Holds the boom to the mast. Secured to the mast with three screws tapped into the mast.
  - **Maintenance tip: Check the screws for tightness annually. Also, the screws have been known to break, most likely due to a high loading event.**
- Shrouds and forestay. Shrouds (sometimes called sidestays) resist sideways and forward forces on the mast. The forestay resists aft-ward forces. Made of 1/8" 1X19 stainless wire cable. Attached to the bow plate and chain plates with a length-adjustable Sta-Master. The shrouds are swaged to the spreaders.

Maintenance tips:

- **Replace the shrouds or forestay if any of the individual wires break. Also consider replacing if the wire becomes kinked.**
- **Periodically lube the Sta-Master with silicone spray or a few drops of oil.**
- **Tape the rigging. The tape shown in the picture prevents the springy metal "keeper" from coming off the Sta-Master. You can also tape the keeper directly onto the adjuster nut. Some sailors also tape the cotter pin that attaches the shroud to the Sta-Master.**

BOOM AND FITTINGS

- Boom. The boom fits into the boom pin on the gooseneck.
- Internal outhaul rigging. The boom comes rigged internally with a stainless wire with a 2:1 purchase. This rigging can become twisted, although newer boats have heavier cable to minimize the chance of twisting.

- **Maintenance tip: Periodically check that the cable moves freely. Replace wire if frayed. The sheaves can wear out with age.**

- Boom blocks. Two blocks on the boom for the mainsheet. One block may also have a becket to tie off the mainsheet in a 5:1 purchase system.
  - **Setup tip: The blocks should be aligned with the boom and should not swivel. Most blocks have a swivel lock to keep them aligned. Engage the lock.**
  - **Maintenance tip: Clean the blocks periodically.**
- Bale for vang. attaches the vang system to the boom.

RUDDER, TILLER, AND TILLER EXTENSION

- Rudder. Pintles on rudder fit into gudgeons on transom. Make sure to use a ring in the top pintle to secure the rudder. Keep the rudder clean and smooth to minimize drag.
- Tiller. Old tillers made of mahogany are no longer available commercially. New tillers are made of fiberglass.
  - **Set-up tip: Tighten the forward bolt/nut so the tiller stays put in the full down position.**
  - **Maintenance tip: If you have a wood tiller, varnish the inside of the forks that fit over the rudder to prevent rot.**
  - **Maintenance tip: If you have the hinged boom crutch on the rear deck, glue a piece of sheet rubber or felt to the bottom of the tiller to prevent wear.**

- Extension. There are many types of extensions – choose based on personal preference. Typical length is 36”or 40.” Material: aluminum or carbon. Universal joint: rubber or metal mechanical. Grip surface: wire wound with plastic coating, foam, roughened applique, home-made (e.g., bicycle handlebar wrap.). Many sailors prefer a ball on the end to prevent losing control of the extension.
  - **Maintenance tip: check the rubber universal joint frequently and have a spare on hand.**

BILGE BOARDS (ALSO CALLED LEE BOARDS)

- The boards are angled approximately 15° outward. To maximize their effectiveness, sail upwind with a 15° angle of heel, so the board is vertical in the water. Also, the boards are toed in a few degrees. Therefore, you should minimize the amount of time sailing with both boards down to prevent a snow-plowing effect.

  The boards are raised with a pull-up line with a purchase running to the forward bulkhead. The boards are lowered by tripping the release line, which uncleats the pull-up line below the deck. Shock cord runs from the board horn to the rear of the boat to help pull the boards down.
- Board height. When the boat is moving, the board in the water develops lift to keep the boat from sideslipping. The board is most effective when it’s fully down and the boat is moving fast.

  As the wind builds, the increased resistance to sideslipping results in weather helm, in which the boat tends to

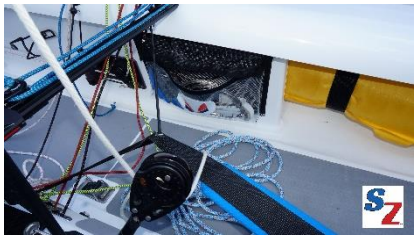
head up in the wind. Weather helm slows the boat down because of the increased rudder drag required to prevent the boat from heading up. When sailing upwind, you can reduce weather helm by raising the board slightly. Newer boats have a system to adjust the height of the boards. You can also retrofit a system fairly easily.

- **Set-up tip: Make sure the boards go down fully. The board is full down when the horn of the board is flush with the deck. This will leave about a ½" gap between the front of the board and the board well. Adjust the knot in the pull-up line to change the position.**

Maintenance tips

- **Make sure the boards are not bent. You can straighten them by applying significant pressure with the board supported at the bend.**
- **Make sure the boards go up and down freely. For older boats, you may need to install a bushing in the pivot hole to correct wear. See instructions on the MCSA site.**
- **The shock cord that pulls the board down can become weaker over time. Replace if this happens. You can stretch and shorten this cord to add tension, but too much tension makes the boards harder to pull up and adds wear to the pivot hole.**

HIKING STRAPS



- Learn to use the hiking straps to hike effectively. Ideally you will get your weight out as far as possible for upwind sailing. This means toes or front of the foot under the straps, rather than ankles or legs.
  - **Set-up tip: adjust the length of the straps for a comfortable hiking position. Make sure to cleat the adjustment line tightly.**

Maintenance tips – prevent falling out of the boat:

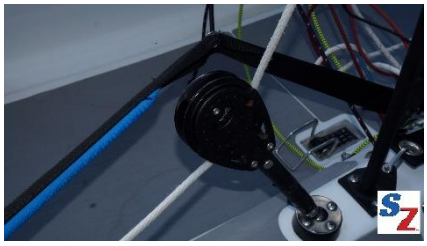
- **Check the shock cords holding the straps up for wear and tightness. The shocks help get your feet under the straps quickly when changing sides.**
- **Look for wear in the straps. Some wear comes from the mainsheet rubbing on the straps. Lower the straps and/or add a ratchet block extender to correct this.**
- **Make sure the shackles holding the front of the straps to the backbone are secure.**

MAINSHEET

- Type of line. You want the mainsheet to be flexible, comfortable to grip, yet narrow enough to move through the blocks freely. Melges offers a tapered mainsheet, which is narrower where it runs through the blocks, and wider where you grip it. This is a nice compromise.
- Purchase. The standard mechanical advantage, or purchase, is 4:1. You can make finer adjustments and sheet tightly with less effort with a 5:1 purchase. However, 5:1 requires a longer mainsheet. More about mechanical advantage here. More about a convertible purchase system here.
- Ratchet block. This block is fixed to the backbone with a swivel. There are several options: manual ratchet, ratchamatic, extra-holding.
- Mainsheet cleat. Located on the deck, this allows you to cleat the mainsheet temporarily. Don't cleat the mainsheet when racing – you should be working it constantly.

Set-up tips

- **Tie the free end of the mainsheet to the lifting eye in the rear cockpit. This prevents knots from forming when the main gets tangled.**
- **Add a ratchet block extender to your mainsheet block. This helps prevent the mainsheet from rubbing on the hiking straps. The picture shows two extenders. Extenders available from Melges.**

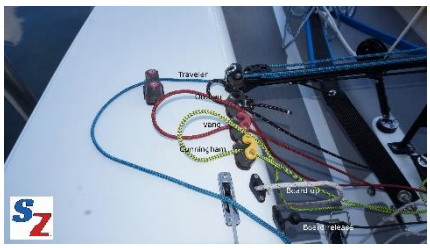


- **Don't coil your mainsheet for storage. Coiling introduces twist, which can prevent the sheet from running through the block. Instead, just make a series of back-and-forth wraps,**
- **Mark the forward or aft end of the ratchet block so you can quickly tell which end to pull from when the mainsheet is bunched up.**
- **Maintenance tip: Unless you have a tapered mainsheet, reverse it annually to spread out the wear on the part that runs through the blocks.**

SAIL CONTROLS

- Boom vang. Pulls the boom down and forward. When sailing upwind this pushes the bottom of the mast forward, flattening and depowering the sail. Pulling down on the boom prevents the boom from rising when the mainsheet is eased. This maintains sail shape when sailing upwind and downwind. The vang has a 16:1 purchase. See the below-deck configuration here.

  - **Set-up tip. Check the range of the vang. It should allow the boom to rise at least 18" above level when control lines are extended fully to the knots. With max tension, the vang should be able to pull the boom several inches below level. If needed, shorten or lengthen the line shown to adjust.**
  - **Set-up tip: Make sure the vang lines do not cross each other above the deck. A twist shackle on the boom bale keeps the lines further apart.**
  - **Maintenance tip: Check for wear frequently. The vang is highly loaded.**
- Cunningham. Pulls down on a grommet near the tack of the sail to tension the luff (front edge) of the sail, to change the sail's draft position. The cunningham has a 2:1 purchase under the deck.
- Outhaul. Pulls on a grommet near the clew of the sail to tension the foot. This flattens and therefore de-powers the lower part of the sail. The outhaul has a 2:1 purchase in the boom.



  - **Maintenance tips: See our** article on this topic.
- Traveler. The traveler changes the sheeting point of mainsheet. The traveler car is normally centered in the boat. When sailing upwind, position the car to leeward as one of the de-powering tools. In older boats the traveler purchase is 2:1. In newer boats, it's 3:1.
  - **Set-up tip: Place a small loop in each end of the traveler line to make adjustment easier.**
- Continuous control lines. The standard control lines for vang, Cunningham, and outhaul are double-ended. SailZing offers a set of continuous control lines that replace the double-ended lines. Continuous control lines eliminate the need for balancing the lengths of line on either side of the boat.

RIGGING THE BOAT

The best reference for rigging the boat is the Melges video on YouTube or the MCSA website. Watch this video to learn how to rig the boat.

The video shows how to step the mast alone with the newer style mast step. For older boats, either use two people or see the one-person method on the MCSA website.

For rigging settings, refer to your saillmaker's tuning guide.

PARTS AND ACCESSORIES

- Melges carries a full line of spare parts for the MC.
- Spares to have:
  - Transom patches. You can make these yourself out of sail tape.
  - Universal joint. Get the one for your tiller extension.
  - Tack slug. SailZing offers a durable replacement.
  - Shackles, pins and rings. Purchase from Melges or any sailing hardware supplier.
  - Sail tape. Useful for repairing sails and making transom patches. Purchase from Sail-Rite.
- Other accessories you should have:
  - Shroud telltales. These help you see the apparent wind direction and spot changes. SailZing sells StayTales™, a great set of shroud telltales.
  - Sail telltales. These help you ensure proper sail trim. They are normally supplied with your sail. SailZing offers SailTales™, a lightweight highly visible set.
  - Paddle
  - Bow line (painter). SailZing offers a floating bow line with a snap.
  - Throwable cushion. Required on all boats in many states.
  - Righting line. This is a line attached to the backbone or the forward hiking strap. If you capsize, you can throw the line over the hull to help right the boat.
  - Plastic electrical or rigging tape
  - Multi-tool. SailZing offers a selection of no-rust multi-tools.
  - Weed stick. Helps remove weeds from front edge of rudder. Here's an example.
  - Mast-up cover for when boat is on lift, trailer, or mooring. Purchase from Melges, Harken, or several other suppliers.
  - Envelope cover for trailering
  - VHF radio (for racing). The Floating Horizon is reliable and well-priced.
  - Tactical compass for racing on larger bodies of water. See our article on compasses.

Coming soon – parts 2 and 3!

BASIC SAILING, SAFETY, AND SEAMANSHIP

RACING OVERVIEW