The Dismasting of *Sasha*

by

Albrecht and Erika Peters (and Mr.Schmidt)[1]

Sasha

It was the end of July 2005, Erika and I had spent five lovely weeks sailing in the Baltic with the high light of the Swedish Classic Event, which was held at the end of June to the middle of July. Most activities were centred on Stockholm. Several races were organised from Gotland to Stockholm, as well as in the Skerry Garden east of Stockholm. Many well-known *S&S* boats had taken part in these races with great success.

In July, together with approximately fifteen other boats, *Sasha* left Stockholm via the Gota Canal south of Stockholm and continued through the midlands of Sweden to Gothenburg on the west coast. We had time enough to sail north up to Norway, before turning back through Danish waters to our home port.

The night before *Sasha* was dismasted, the winds were particularly strong changing from SW to NW with speeds up to 38 kn. Erika and I decided to anchor overnight in a sheltered anchorage between the Skerry Islands south of Gothenburg before heading south approximately 180nm. The following day the weather forecast was for decreasing winds from W to NW, and later these decreased to 10 kn.

Leaving the anchorage on the early morning, we made the decision to take down the full main and the large genoa. Perhaps this was a bit much to begin with, but it would allow SASHA to sail more stably in the old short and cross-running waves resulting from the previous night's winds. This wave pattern is typical of the easterly areas of the Skageratte and particularly the Kattegat east of the Isle of Laseo.

Initially, we sailed with seven to eight kn. of wind in sheltered waters taking the inner waterway route through the Skerries before reaching the open Kattegat at their southerly end. Because the forestay

[1] The Ship's Dog

was now under control, I increased the hydraulic pressure on the backstay. Reaching open waters, I tightened up the halyard to get the best shape in the Genoa – now close-hauled upwind making 7.5 kn. We had a sailing yacht perhaps 2 nm. Ahead. She appeared to be a modern 40 foot craft, and sailing in the same direction - a perfect sparring partner.
East of the Isle of Laeso the wind steadily increased, changing from NW to SW. The depth of the water in this area varies dramatically, with depth of 12 - 17 mtrs. next to depths of up to 120 mtrs. This bottom formation produces strong, short and breaking waves, the changes and increases in the winds producing cross-running waves.

The wind speed increased up to about 31/33 kn. but we were sure that this increase was just the typical backside of a low and would taper off after a short time. *Sasha* was jumping around under these conditions while sailing upwind with a maximum speed through the water of 7.5 kn.

At that time, Erika had been at the helm for the last four hours. She was feeling exhausted from the strength required to steer *Sasha* in these conditions and was no longer able to handle the boat securely. I took over the helm and began to trim the boat to get better performance in these seas.

Since there was now too much pressure on the big genoa, I decided before changing the foresail or reefing the main to ease and open the genoa up just a little as she was no longer sailing as close to the wind as possible (indeed approximately 10° less). *Sasha* was now speeding at up to 8-8.2 kn, but pushed down very strongly by the cross-running sea.

Dismasted! The stump is clearly visible

The trim of the sails, together with the very high pressure applied by the hydraulic backstay on the aluminium mast, the wind speed and the higher halyard track in the strong, cross-running waves resulted in the dismasting of *Sasha*.

Sasha's mast is masthead rigged, a single spreader with no running backstays or lower shrouds aft of the mast position. Because of the pressure from the main the rig is controlled by a baby stay so as not to move aft.

In consequence when falling into a deep and short valley between cross-running waves, the boat's speed decreased sharply, say from 8kn to perhaps 3 kn. Under these circumstances the mast, held securely only at both the top and deck whipped forward due to kinetic energy. The mid-section - the spreader area – is normally held in position by the main sail. If the main sail is eased open - as it was in this situation – the diameter of the aluminium mast should in theory be strong enough in itself to support the mast (e.g. during reefing manoeuvres).

Sasha fell between two waves and 'stopped' with the main sail open; this caused a surge of kinetic energy so strong that the aluminium mast arched forward in the spreader section. The pressure on the aluminium mast, together with the open main and the full wind in the genoa did not allow the mast column to realign before the shock of the next wave, which caused a second shock of energy pushing the midsection further forward and this bent the mast. Then in the following seconds, the

Under jury rig. A spinnaker pole cushioned by fenders and a board acts as a 'mast'

mast with the boom and sails fell to portside flat into the water before actually sinking below the waves.

Sasha rolled and pitched uncontrollably with her mast broken, the lower end (with its winches and cleats being all that was still holding the rigging together) with the power cable now pressed up against the port side of the hull.

While Erika contacted Swedish Rescue, I tried to free the mast which was beginning to cause real damage to the hull. The fastest way to free the mast was to remove all the split pins but the rolling made this very difficult. Using a large bread knife, Erika cut the halyards from the deck. I cut all the power cables so that the mast and sails trailing underwater were no longer damaging the hull. Finally, I took a metal saw and cut the last two connections between mast and hull: baby stay and backstay. This took ten minutes and two saw blades to accomplish.

After the mast and sails had sunk a hundred metres underwater, we started the engine, but were only able to go right up into the wind. Every other direction proved impossible because at this point the boat had begun to roll so strongly that the crew (incl. Mr Schmidt) were barely able to remain on board!

Dismasting and cutting all the power cables, halyards, and mast connections took about three-quarters of an hour. Our former 'sparring partner', who as mentioned above was only sailing about one nautical mile ahead, turned around when *Sasha* was being dismasted and stood by the entire time until we gave a signal that everything was okay and that our engine was running. Their decision to stand by was the best help I have ever had offshore. It was a pity that they sailed away before we could read their boat's name, so we had no chance to thank the crew for their assistance. We hereby thank the skipper and their crew for giving us a hand!!

By the way, the new mast for *Sasha* will be made with additional running backstays to avoid dismasting in future (I hope).

Repairing s/v *Nimue*'s decks

An owner restoration in the San Francisco Bay area

by

Jim Koss

1962, when American Marine, Kowloon, in B.C.C. Hong Kong built *Nimue*, epoxy was not available for adhering fiberglass to her plywood decks. Since 1962 these decks have been exposed to chain anchor, tool and winch handle impacts and Mexico's hot sun as well as California's sun, rain and cold.

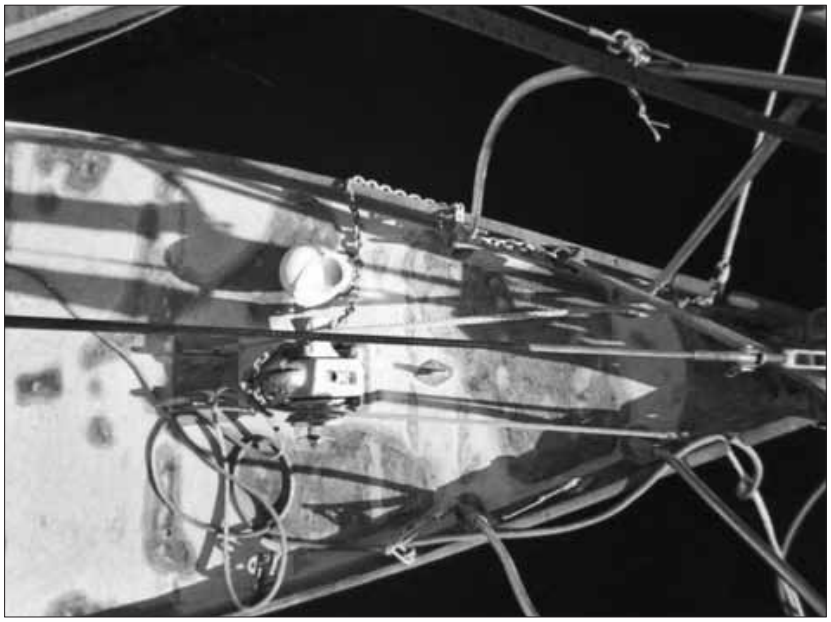
Recently I noticed small lifting sites with cracking and crazing of the painted surface. These sites were small but worrisome. If the break in the paint extended through the polyester and glass layer to the wood deck underneath it risked rot. To find out I must break this seal. Upon advice from our respected Yacht Club Boatwright I decided to patch these breaks. Advice was to grind and feather each site and then epoxy and glass patch each one.

A big mistake! Polyester Resin is heat labile. The grinder generates enough heat to continue flaking glass off the plywood. Instead of being stable and patchable one continues to make bigger holes from a small fault due to heat produced by the grinder disk. Big patches for small faults bothered me. Winter threatened to intervene. I had to finish this job and protect the wood I had exposed.

I decided patching was a stupid choice. I choose to remove all the old glass and epoxy new glass fabric to the raw plywood. First all deck fittings needed removal. Any idea how many? I carefully labeled all deck fittings and mounting fittings. A smart move! I discovered I could strip the old glass off the plywood deck using a 4 inch (10 cm) moderately flexible putty knife. This home made tool easily separated the glass sheet from the plywood. The just patched sites were my only difficulty! I labo red to separate these newly epoxied patches from the plywood deck. At least I felt my job would stick.

From the foredeck

The house and the teak toe rail sit on the deck, on the glass covering the deck, and must have been mounted after the deck was glassed over. To keep the glass fiber seals between the deck and the house, and the toe rail intact, I decided to leave an inch (2 1/2 cm) of old glass at the edge of each. To do so I notched a 4 inch (10 cm) moderately flexible putty knife an inch (2 1/2 cm) from one edge. Applying pressure on this one inch of blade laid on top of the glass layer near the wood edge, the remaining 3 inches of blade were slid under the larger area of glassed deck. The notch separated the glass fiber sheet at this one inch distance from the wood's edge, making a clean cut one inch from the house and toe rail, leaving the desired inch of covering undisturbed and still adherent to the deck... The remaining 3 inches of blade lifted the deck sheet free at the same time. It cut fast. Once separated from the house edge and the toe rail the remaining full width of the glass fiber sheet remaining could be lifted and pulled off in large sheets. It was so easy I was surprised. Not much adhesion with the old Polyester Resin. I stripped the remaining glass rapidly. It went fast. Only my patches resisted this pulling! This was encouraging.



Foredeck from the mast

Port waterway

I carefully lifted and loosened the one inch wide flaps from the deck, avoiding shattering the rigid material at the house and toe rail edges. Soaking the wood deck and underside of the glass flap with epoxy, the flaps were then firmly held against the deck with small nails and thin 1/2 inch x one inch removable wooden battens (1 inch = 25 mm.). Waxed paper between the battens and glass flaps permitted easy batten removal after the epoxy set. Abrasive fairing of the now epoxied down edge of the flap smoothed the overlap where the new deck glass fabric will be epoxied over it. This should keep the house/deck and toe rail/deck joints waterproof.

The deck was in great condition for its 42 years. It is two layers of 1/2 inch plywood glued and screwed to each other and to the deck beams below. I was surprised at the excellent state of the multi-layered plywood, Brunzeel I suspect. It was remarkably resistant to damage. I even saw Chinese writing and measurement lines legible on the plywood under the removed glass. The fiberglass lifting and faulting appeared to be due to heat expansion and contraction at some of the screw heads. I also found a few places with wood pitting from the bronze screw head corrosion. Epoxy fixed this. The deck problem was obviously not due to impact or trauma. I should have no future worries after this repair.

A few small Dutchmen were needed at the Merriman jib deck lead flush pad eye fittings. Water must have seeped behind these bronze fittings and into the soft pine backing blocks, softening sites up and down the grain. I replaced this wood, marking deck fitting locations, and drilled the proper countersink diameter and depth through the deck into the new backing blocks. I soaked the exposed wood with epoxy to avoid leakage damage in the future. The yet to be applied new glass fiber bridged the drilled holes. It was easy to see them and to cut out later to properly remount these deck fittings by through bolting and using metal back plates as well.

Years before I installed mid-ship 12 inch bronze Herreshoff deck cleats. Seepage had softened a few mms of the one mm ply layers of the two 1/2 inch (6 mm 1/2) layers of deck plywood. Just like the deck pad eyes, water had permeated the soft wood backing blocks further than surface damage indicated. I used thin Honduras mahogany Dutchmen to repair the damaged plywood layers then flush sanded the surfaces smooth. These cleats now stand on 1/2 inch (12 mm) teak plates, well bedded with a good compound, back blocked with hardwood and a metal plate as well. Better than new, stronger too.

I always wanted to reposition the cockpit gate stanchions from amidships to between the cockpit winches. I like this boarding site better. It aligns well with my full boat cover opening. Repositioning a few poorly positioned bronze deck stanchion bases to lie between deck beams rather than screwing into them, I could then use wood and metal backing plates under the decks, improving future access and widening the load area to reinforce these already strong installations.

Port waterway view from aft forward

Starboard waterway view towards stern

I then changed the foredeck mooring configuration. First I moved the windlass aft one deck frame bay to a better site to drop chain into the stainless lined chain locker below. Next I moved the forward and centered pair of 16 inch mooring cleats to flank the windlass, setting them on two separate bronze deck plates. The foredeck ventilator cowl fits just aft of this cluster providing good ventilation without cluttering the deck. This new configuration opens up the deck area making foredeck work even easier.

To strengthen the mooring cluster (the windlass is now flanked by the two 16 inch Herreshoff cleats), I fitted an 8 foot (almost the full foredeck length) by one foot white oak plank underneath the deck, inside the chain locker. Lying under and fitted to the original king plank and crossing the deck beams. Aft, it reinforces the mooring cluster, forward it strengthens the forestay deck fitting, stretching between them. The deck fitting is through bolted to a metal plate it is then tied to a floor timber at an angle. This creates a triangle, stabilizes this deck fitting, avoids pumping, and shares the mooring stresses as well.

This white oak second king plank crosses a second shorter oak plank, placed athwart ships and aft. Fitted between two deck beams, it crosses beneath the windlass and extends port and starboard under the flanking cleats. These two 16 inch massive Herreshoff cleats lie on bronze deck plates. These are through bolted each four inches (100 mm) at their edges to the white oak below. The cleats are in turn bolted through the deck plates, glass covered plywood deck, the white oak, and metal backed, as is the windlass, which in addition is bolted through the crossing of the two strong layers of oak, and its metal backing plate, spreading the anchoring load even more. The deck fore triangle is now solid and strong.

Laying glass fabric is a trip. Timing is everything. I choose a laminating epoxy, slightly flexible when cured. Mix is 1:1. Slow setting types make it easier. I rolled small batches of mixed epoxy liquid onto the exposed, dried, cooled, and alcohol cleansed plywood. One layer after another of this expensive stuff is applied until it is smooth or your wallet feels the bite. After several such layers I allowed it to 'kick' (cure). This cured hardened surface needs to be roughened for grip, first for the glass layer to adhere to the epoxy saturated plywood deck, again for the high fill epoxy primer used to fill and smooth minor irregularities prior to painting, and once again roughened to prep for the painting.

A 4 inch (10 cm) belt sander gives the proper 'tooth,' use a finer grit each step. Coarse for raw hard epoxy on bare wood, finer on the layered epoxied glass to prepare the accepting surface for the prime layer, and even finer grit for the high fill primer to grip the paint. Alcohol washes between each

preparation removes atmospheric junk and the removed material not completely vacuumed after each sanding. After wiping with alcohol, the dried and roughened wood-epoxy surface is wetted with rolled liquid epoxy, carefully placing, positioning and smoothing a yard (almost a meter) wide sheet of woven light glass fabric, pre-cut to approximate deck width, onto the sticky epoxy, which helps hold the glass in place. Athwart-ships layering seemed easier than a lengthwise application. A long stiff wood plank crossing toe rail to toe rail allowed me to climb over the surface being worked, avoiding unwanted contact. I poured, spread and rolled more epoxy into the fabric to create a saturated surface. A soft plastic blade spreads this gooey mix. You do not want the glass to lift and float. Remove any air bubble voids using a thin flexible plastic spreader, light pressure, and not too much epoxy.

Starboard waterway

Masking tape on the house and toe rail surfaces protects them from being epoxy stained. The glass gets soft and flexes easily at these joints. When it is just right; experiment first please, it leathers (firms up) and can be cut with a razor type tool, without creep. A box cutter is perfect. This allows a near ideal fit at the house and toe rail deck junctions. I don't think one should roll the glass edge onto either house or toe rail joints. These work, move, and could crack the glass covering allowing leaks to penetrate.

Once the first layer of glass was down and overnight cured a second layer was applied following the preparation sanding and alcohol wipe. This was easier; I was confident and experienced. My biggest error was lacking confidence to cut straight across each sheet's overlap, stripping the excess and reapplying the two cut edges to lay flat. I chose to leave the bump from the overlap. In finishing off the deck this is near invisible due to the sand non-skid texturing. I wish I had cut the joints though. Instead I staggered the top and bottom layer overlaps. They disappear when done, but…I know they are there.

I decided on sand for nonskid. I did not use epoxy to seat the sand. I may want to change a pattern and paint is just so much easier to peel. A fine consistent commercial grit works well, about the same as 60-80 grit sandpaper; beach sand if you have the patience to sieve it. Repairs in the South Pacific are easier with all that free raw material. I painted the water runoff patterns where I wanted a smooth surface to remain. Two or three coats, lightly sanded make a slick shiny surface. I taped these with one inch masking tape and used a cat food can to put nice curves where the joins met. A razor sharp edge cuts the curves well. I decorated the new entry site between the cockpit winches with a large letter N (*NIMUE*). I taped and curved the letter edges as I did the thin (one inch=2.5 cm) smooth shiny water way strips. With sand non-skid around it, it is subtle visible and nautical. It looks salty.

To apply sand I used a one pound coffee can with both ends cut out. A plastic insect screen wired onto one end sifts the lumps and allows a controlled application of the very dry sand. With masking tape protecting the shiny "water run off lines" lightly sand the exposed shiny paint. Roll fresh paint onto the deck areas. Lightly cover the wet paint with sifted sand. Apply lightly. Put on less than you think or it will clump. Just cover the paint and then move back. Leave it alone. Don't touch it. It'll be OK.

Alternating painted areas makes this job neat, easy and is fast. It is important to understand this to avoid a mess. Painting only one taped off area and applying sand before moving to the next is the trick. Skipping the next area, alternating non-painted dry areas between each painted one, and not painting the next until totally finished with the one being worked on is important. This allows paint and then non-skid application to only one area at a time. By painting one area only you go slowly and clean up as you do. Your paint will

stay wet long enough to hold sand. Excess sand does not contaminate the next site as none are wet but the one being coated. All areas are dry until you are ready. Rapidly drying paint on the next site, and drifted sand on that paint is no problem.

After finishing each taped off area, blow the loose drifted sand back onto the wet areas where it belongs. Use a shop vacuum backwards. Blow away from the direction you are going to paint next. Drifted sand is easily removed from the adjacent dry area. Finish your work. The skipped adjacent area remains dry so sand can be removed easily. The skipping pattern avoids any chance of sand getting into the paint roller. Sand cannot drift onto the next site to be painted before you are ready. Paint, finish, and skip is the pattern. This slows the pace. Paint the second area, and skip again to the next. You do not need to rush to the next square. Do it only when the prior one is completely finished. When you finish 50% of the areas you can now paint and non-skid the remaining skipped ones.

Wait a day to dry. Vacuum carefully to remove the excess loose sand. Do not abrade, but do suck up all the loose sand. It is surprising how well the sand adheres to the layer of paint under it. Try blowing it off also. The first top paint coat should be well thinned and lightly rolled to avoid picking off any looser sand particles. Do it again with non-thinned paint. Do it again, and again, until the grit is right for your delicate body parts. Carefully pull the tape and… You've got a waterproof and stronger deck. Once the surface paint is worn off the sand particle tips the grip improves. The colour will be affected by the sand's color This may affect your color choice. Choose a lighter one to keep your feet cool.

Reinstalling all the deck fittings is a task in itself. Congratulate yourself if you were patient and intelligent enough to tape nuts and bolts to their respective parts when you removed them, and labeled all the fittings accordingly. Ever rebuild a motor and not do this? One learns! I now have a very attractive and better laid out deck. Now I need to start sailing or I will soon go crazy!

SUPPLIES

[Laminating] Epoxy: 3-4 gallons. I used the 1:1 mix. It's easier.
You can pour to mix but Equal Volume Pumps make it faster. I bought two West pump kits.
Each contains two pumps. One is large (5 parts) and one small (1 part). West mixes 5:1 (Part A: B)
I used the large volume pumps, one for each gallon can of part A & B (mix ratio 1:1)
High Build epoxy primer. Also 1:1. About 2-3 gallons (1 gallon US is about 4 liters).
Paint. A few quarts (liters). Masking tape: 1 inch size #1-2 rolls;
3-4 inch size Get 4-5 times your boat length. (to protect the side of the house and he rail).
Belt sander: 4 inch (10 cm); 4 inch putty knife; cut in the wedge yourself.
Box cutter, lots of sand paper and elbow grease.

TIME

It seemed forever. My tan is Caribbean quality though. Ibuprofen helps the aches.