

## Windows

*(Ed: There are at least two choices in terms of replacing windows/seals:*

- *Replacing like with like ie simply (!) renewing the rubber seal*
- *Getting new, and over-size, windows made from e.g. Perspex, and fixing these on the outside of the cabin side using self-tappers or nuts and bolts or inter-screws.*

*Both of these methods are described in the following articles.*

*One of the problems in renewing the seals is determining the right 'H' profile to use .The thickness of the window is uniform and is easily measured - once a window has been removed. Because the thickness of the cabin side is not uniform, this is less easily decided, and it may be of advantage to grind away some of the very thick areas. The thickness of the 'H cross-bar' also needs to be identified to ensure there is enough of a gap between the window and cabin side to fit the new seal. The original Building Instructions required builders to provide a gap of 5/16" when cutting out the window apertures.*

*Another problem arises in locating a rubber seal (extrusion) that will accept the very tight radius of the front corner of the front window. This is around 40-50mm, but some seals are supposed to accept radii of not less than 100mm*

### **1. The Original Method in the Building Instructions**

"Fitting the windows: Starting with a large window - since these are easier to fit - clip the window rubber round the opening. If you have lined the cabin with foam-backed PVC don't try and clip the rubber over the lining at this stage since this can be very tedious. The slot in the window rubber that is closed in it's natural position goes on the boat, leaving the open slot into which the window panel is fitted. The groove for the filler strip should be on the OUTSIDE of the boat. The join in the rubber should be at the TOP centre of the window, and BEFORE cutting off the rubber; make sure that it is fitted as tight as possible into and around the window corners otherwise when you fit the windows, the two ends of the rubber will open up. Allow about 3/8" (10 mm) overlength of rubber when cutting off so that the ends of the rubber have to be forced together, so giving a watertight joint.

To fit the window, position it in the bottom corner; then with the handle of a teaspoon work the window panel into the rubber, giving it occasional sharp taps with the heel of the hand to click the window into place. *(Ed - alternatively, use a length of strong waxed cord tied onto a stout piece of wood to pull the outer lip out as the window pane is forced in. This method is described in elderly Haynes car manuals, eg for the windows in a Triumph Herald).* You may find that it is better to peel the foam off the PVC cabin lining to a width of about 3/4" (about 20 mm) around the window before tucking under the rubber. Now fit the infill strip. To do this you will need a special tool, which usually can be borrowed from your local garage. The tool consists of a wire loop fitted into a handle, and sometimes has a nylon roller under the loop. The infill strip is threaded into the loop and forced into the centre slot of the rubber; the front of the loop opens up the slot, and the nylon roller helps to push the infill strip into the slot. The join in the infill strip should be at the centre of the bottom edge of the window, and the ends cut over length as for the rubbers so that they can be forced together"

*Ed - Liberal use throughout of a lubricant such as washing-up liquid is very helpful*

## ***2. The Dutch Way***

“A few months ago I asked via the Wychnet information how to replace my crackled window rubbers of my Seawych, SPARKY 267. I got several reactions and useful information by e-mail and by post.. Special thanks to Roy Sallabank. Via his son I phoned him and we had a very nice talk and he told me thinks about the Wych I didn't know she could.

After I gained the information I began to visit the web site of Wilks, a company who purchases window rubber Then I phoned to Wilks Co Ltd in Tollesbury. They were very helpful and understanding. It was possible for them to sent me window rubber, the filler and the special Insertion tool.

Payment by credit card was no problem. After a fortnight I received 9 meters of window rubber (6 x 6 mm- product number XESOO66WROI), 9 meter white filler (product number PVCOO48WHOI) and one tool (product number WOOOOOOOWT). The rubber was £28.35, the filler £4.59 and the tool £4.94. I paid £66.83 including VAT.. The shipment by United Carriers cost me another £19.00

Last weekend, 21 March, it was rather nice weather so I took the change to begin the job. I studied the information I got via our members very carefully. It was handy that the Seawych was out of the water First of all you have to remove the railing. It made the work more easy. Then I began with the little front windows and removed the filler. From inside the cabin I cut some rubber and then pulled out the entire window, That was the easy part. Then I measured the old window rubber and cut the same length plus 5cm from the new window rubber. I began to insert the window rubber not in the upper part of the window as the information said but in the lower part and folded the rubber along the window in the way that exactly the end was in the middle of the upper part of the window.

After then I put the window in the front part of the window rubber. Then I used a screwdriver to fit in the window into the rubber. (A teaspoon was recommended but not at hand when I was doing the job...). When the window was into the rubber I began to insert the filler. The tool they supplied was very handy and after some practice it works well. After three-quarters of an hour the job was done.

The next three windows were done at the same way and I was ready in about 2.5 hours. One of the larger windows was crackled i the corner. I was very lucky that I had one spare window when I bought the seawych in 1990. Now I could replace that window also.

It looks very good now but the great test is still to come when it rains cats and dogs then I can see if all works well.”

*Kees Murre (2000)*

## ***3. Rubber Size***

There have been several bits in Seawychcraft and on Wychnet recently about replacing windows and rubbers. This has been of interest because new rubbers are on my 'to do' list.

I have delved into the darkest deepest and dustiest corners of the garage, and found an off cut of the original rubber supplied back in 1977. It is, I am pretty certain, 3/16 x 3/16. One slot is wide open, the other is almost closed, which is what makes it difficult to measure. It is fitted with the closed slot onto the cabin side.

There appear to be several suppliers of this material advertising in the yachting press viz: Cherry's Chandlery in Bournemouth, Seals+Direct in nearby New Milton and Precision Plastics in Colchester. Precision Plastics web site is worth a quick visit. Display Developments in Belvedere advertise Perspex cut to customers' requirements. There has also been some discussion in "Reader to Reader" on the PBO web site regarding the merits of Perspex (acrylic) vs. Polycarbonate for window material. After my recent experiences with a car windscreen replacement company (recommended by various insurance companies and motoring organisations), I would not expect to get any reliable help from that quarter, and certainly would not let them near the boat in any circumstances.

One thing, which bothers me about fitting new windows, is the fact that the cabin sides are curved. The forecabin windows must be pre-formed to that curve, but I don't remember whether the main cabin windows were pre-formed or not. Can any one else remember? Precision Plastics do offer pre-forming, but I haven't yet checked it out to find out what information they need to do it. (Has anyone still got the pieces of fibreglass they cut out for the windows?).

*Gordon Winspear (200?)*

#### **4. Replacing Rubber Seals**

Having read the problems suffered by Gordon Winspear, and having fitted new window rubbers to my Sea Wych at the beginning of this season, I thought I would pass on some tips, which may help other owners. I remember that when I originally fitted my windows, it was a tedious and awkward job so I wasn't looking forward to doing it again.

First of all you need to get the right rubber. You need one that is suitable for a glass thickness of 3/16" and a panel thickness of 3/16". I see Gordon used 1/4" x 1/4", and that may well work just as well, I don't know. The panel/glass separator should be 1/4" and the minimum bend radius should be as small as you can get, but certainly no more than about 2 1/4". One of the problems with fitting the Sea Wych windows is that the corner radii are quite small for this method of fixing. I got my rubber from Cherry's Chandlery in Bournemouth (934, Wimborne Road, Moordown, Bournemouth, Dorset. BH9 2DH. Tel: 01202 517513). It's their section no. 1209, and is virtually the same dimensions as the original rubber, but a slightly lighter weight. They have a catalogue of all the sizes they stock, and other useful odds and ends. The filler section is available in black, white or chrome. Chrome was the original colour and, I think, still looks the smartest. You need about 10 metres to do all the windows. Cherry's can also supply the 'Window Tool' essential to fit the window rubber and filler strip, also some fitting instructions, which are very similar to those in the original building manual.

When it comes to fitting, I suggest you take out only one window at a time. That way you only have one hole to cover when the job has taken you hours longer than expected and it starts to rain! If you are not the original owner of the boat, the first thing to do is check that the window openings are correctly cut. If you cut six or eight short lengths of the old window rubber you can use these to hold

the perspex panel in the opening and check that you have 5/16" clearance all round, especially in the corners. Anything less, and fitting will be even more difficult.

After this, follow the instructions in the original manual or those from your rubber supplier. Make sure you cut the ends of the rubber off square to get a good join; In addition I used some car window sealant at the join to make sure it was watertight. Pushing the 'Window Tool' along to fit the infill strip can be quite hard work, but you can lubricate the rubber with washing up liquid or 'Swarfega' hand cleaner to make the tool slide more easily. Don't worry if the fitting isn't too neat initially, when you've finished putting in the infill strip you can go round again with the tool and settle the strip in more neatly.

I only did two windows on each day to try and prevent me getting all frustrated and bad tempered. I also found my arms ached from pushing the tool along, and my feet ached from standing on the ladder. But don't let me stop you from looking forward to such an interesting and exciting job!

*Tony Bromley (2003)*

## **5. Externally Fixed**

Before I started, I read all the past Wychnet e-mails, manuals & SWOA mags on the subject, so I was well informed of our members' methods. I did, however, have a sense of doubt about fitting the windows in with the lining tucked under the rubber on the inside.

When the new window rubber arrived from Cherry Chandlers, it was bigger in section than the old rubber; also the min bend radius was stated to be 100 mm. The section was for 5 mm window, but the boat aperture was for 6 mm. As the cabin side was between 5mm and 9 mm lay-up thickness, I set about hand grinding the glass fibre high spots down to 6 m/m all round where the rubber would overlap on the inside and the lining would tuck under. I checked the distance across the rubber at the bottom of the slots, and as the rubber was a larger section, either the window needed to be smaller by 4 m/m all round, or the aperture would need to be 4 mm bigger. Out came the grinder again and the aperture was then opened up to the right profile size. I set the window in the aperture as a gauge and checked the gap between window and boat all round to be the same as the rubber, plus a bit for slide fit.

Being a bit concerned about the aperture corners being less 100 mm min bend on the boat, I decided to trial bend a piece of the rubber into the aperture corners. I nearly got it in before the rubber section collapsed. After 3hrs or so of sheer frustration trying to fit the window into the rubber and into the aperture, I realised I was not put on this earth to carry out this process. I was in tears, and my knuckles were bleeding; don't try it. Cherry chandlers confirmed I had the correct rubber and was very sympathetic when refunding my money on return of the rubber. Enough of all that, now this is what we did.

We decided to line 4 m/m ply wood panels and screw them to the coach roof underside, the rest of the hull we glued the lining straight onto the glass fibre as originally done. We thus had the decision of how to finish the lining at the windows.

All Plastics cut me out some new 25 mm bigger all round windows in 5 mm Perspex for 2/3's the price

of the rubber refund. Then I:

- \*Drilled all the fixing holes into the window, 25 mm overlap at 40mm pitch to suit 5 mm x 10mm long panhead self-tappers
- \*Positioned the windows onto the boat apertures and spotted 4 corner holes.
- \*Drilled 4 corner holes tapping size (tight fit) for 5mm self-tappers.
- \*Screwed window in place on corners.
- \*Spot drilled all remaining hole centres.
- \*Drilled remaining holes tapping size through.
- \*Scribed line around window onto boat. Removed window.
- \*Deburred holes and abraded clean scribed joint area.
- \*Glued lining inside cabin wall and around window section.
- \*Cut out window in lining, glued well and folded over to stick on aperture edge. Clamped and continued to work it until stuck fast.( Yvonne's job.)
- \*Trimmed edge of lining flush with outside of cabin side to slightly proud with joint face - carefully.
- \*Primed joint faces with Sikaflex primer.
- \*Skimmed 1 mm White Sikaflex on boat joint face covering lining edges and left it until touch dry.
- \*Skimmed 1 mm White Sikaflex on both joint faces and positioned window to boat using corner screws.
- \*Fitted all remaining screws and gradually screwed window down to joint. Did not tighten until next day, and then not over tight.

Don't worry about the excess Sikaflex. Leave until dry, then it comes off easily, trimming with a not too-sharp pen knife.

This method seals the foam around the window, first with the glue, and then it gets moulded into the Sikaflex joint. I year later and its as good as new.

*John & Yvonne Boyce (2002)*

## **6. Use a Car Windscreen Company**

### *Part one*

I had my boat damaged by another boat that broke its moorings on Lake Windermere recently. The front port window rubber was damaged, and needing replacing; the following is my experience.

I went to a local company called A 1 Shatterscreen, Sale, 0161 9761336. I called in and asked about 6x6mm window seal. I told him it was for a boat, he gave me a piece to match up on the boat, and it is the same as on the boat. I then phoned him back and asked for a price and this is how it went:

9 metres 6x6 mm with the seal, £68.00 inc vat. Fitting cost, if I brought the boat to the workshop would be £83.00. To come to my house, remove the windows and fit new rubbers, £98.00. Job done and dusted, not worth me messing and fiddling about at that price.

### *Part Two.*

Just a few lines to let you know how I went on with A1 Shatterscreen Co - not very well!!!

They messed me about to some tune, then they told me to get somebody else to do the job, which I did. I phoned J.S.Windcreens, Macclesfield (01625) 618555. I told them my story and the very next day, he called, had a look at the job, and quoted £18.00 per window plus rubber and plastic seal.

Now comes the bad news, the rubber that Al had tried to fit was the wrong type, so J.S. had to order the right type of rubber required to do the job properly. I would have to buy 20 metres. @ £46.50 + £9.00 insert (seal). Sub total £127.50 + vat £22.31. Total job £149.81

He did a very nice neat job, and he said if there were any problems, just call and he would sort it out. But there would not be any - said the man!!

*Gordon Winspear (2000)*

## **7. Use A Car Windscreen Company**

I have just made what I consider to be the best ever expenditure on my Seawych - £135 on new fitted polycarbonate windows. Having struggled myself for hours some years ago in just changing the rubbers, it was a real pleasure to watch a craftsman do the job quickly and skillfully. The last one I changed was with the boat beached, and although I had some three or four hours for the job, the tide was over my boots before I had finished!

If you're interested in new windows, then contact your local windscreen repair shop. My chap came from Mobile Windcreens in St Austell.

*Bob Sarah (1999)*

## **8. More on Window Replacement**

The large windows were not preformed and easily took the shape of the cabin side. As you say, there is absolutely no need to use sealant on the rubbers. The main points when fitting the windows are: -

- Use the right rubber section: 3/16" panel, 3/16" glazing, 1/4" dividing web (aka weather strip) and the smallest stated minimum bending radius you can get; probably about 2 1/4". I got mine from Cherry's Chandlery in Bournemouth (their section 1209) who advertise in PBO and Sailing Today.
- Check that the opening is 5/16" bigger all round than the Perspex window. It might not have been cut properly originally, as power jigsaws were not around much in those days and most owners will have had to cut them by hand and the saw was inclined to wander.
- Make or buy an insertion tool for the infill strip. When you're spending probably £60 or so on the rubber, there's no point in saving a fiver on a proper tool or a bit of time making one yourself.

I've got removable ply panels for the headlining on another boat and they're fine. A lot easier than trying to stick the headlining onto the inside of the cabin roof. There should be no need to fix wooden blocks first as the coachroof is double skinned with a foam interior so you can use self-tapping screws

straight into the underside. If you have a vent over the cooker you can see the thickness, or measure it at the side of the companionway. I doubt if self-adhesive Velcro would stick well enough to hold the ply into the curved shape.

*Tony Bromley.(2000)*

## **9. And More...**

I can be confident that the window openings are correct as I cut them myself; with a borrowed jig-saw. I thought the large windows were supplied flat. It may be why they are much more cracked than the small ones. If it doesn't cost an arm and leg, I will probably have them pre curved this time. I'm not sure where the paragraph about bending Perspex with a hot air gun came from in Wychnet 018; it wasn't mine. I don't think I'd risk it to get an even curve over something as large as a window. at least not without practising on something first. Have you actually done it Roy? If you have then I bow to your superior knowledge on the subject.

As best as I am able to judge (I can't find a thermometer with the right range at home), Perspex starts to soften at around 120deg C. The recommended temperature for moulding is 165deg C and decomposition begins at 200deg C.

My hot air gun produces 300deg on low setting, so care would be needed to avoid local over-heating. My point about the infill strip tool was that if you can't or won't buy the proper tool, then make one. Anyone who can make a whole Sea Wych can surely make a little gadget like that rather than use a screwdriver as I saw suggested somewhere.

My local firm, Salford House Services, couldn't form the windows after all, so I have had to go to Precision Plastics in Colchester. Salford House principally refurbish framed windows and hatches so they may be of interest to those of you with larger boats. If I had wanted, they could have made aluminium frames at what sounded like a reasonable price.

*Vic Simmonds (2000)*

## **10. Portlight**

The front porthole on my Wych leaked, and I was unable to effect any sort of repair that would still enable me to open the thing.

I shopped around several chandleries via the Internet, and, to cut a long story short, found that the Lewmar Portlight (that's the proper name for them) size 0 seemed the best bet as a replacement. I got it from Mailspeed Marine at a cost of £90 (mid summer 2003) and fitting it was easy. I removed the old fitting, marked out the outline for the new one and cut the hole with a tile cutting saw blade. Some silicone to bed the frame down and we were in business. The portlight comes with a fitted fly screen – and it doesn't leak!

*Steve Craft (2003)*