



CONTESSA 32 CLASS ASSOCIATION TECHNICAL PAPER

IMPROVING BATTERY STOWAGE



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DOCUMENT INFORMATION

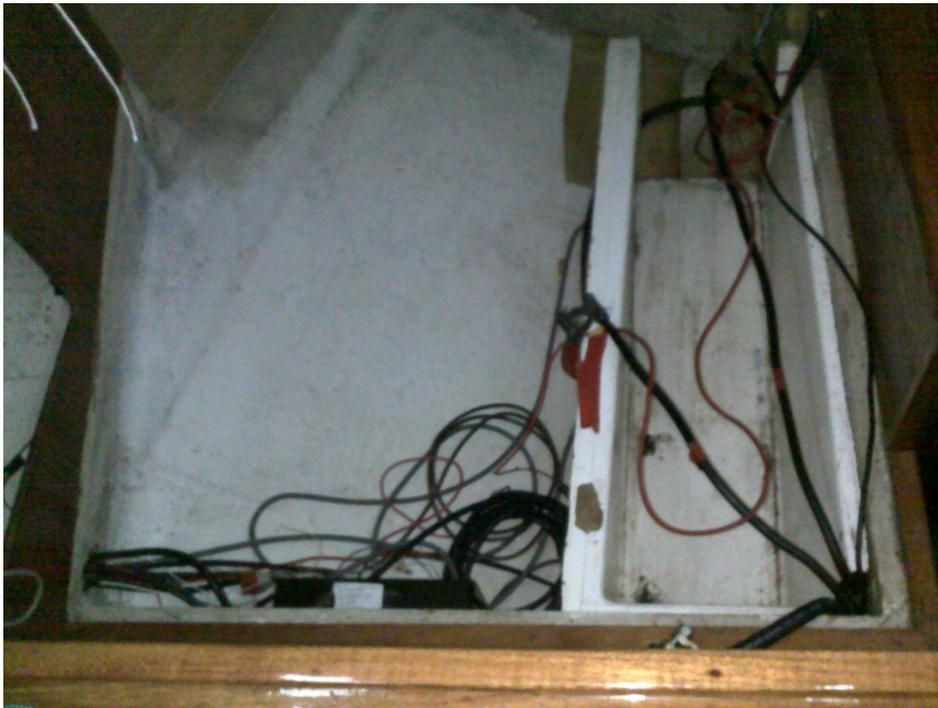
Technical Paper Name	Improving Battery Stowage
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Edited by	George Isted
Date of Original Creation	December 2009

INTRODUCTION

Concerto is a 1978 built Contessa and at that time she was fitted with a GRP molded tray screwed in position under the navigators seat. The 12V batteries would sit in this tray. Unfortunately, there is no easy way to secure the batteries into the tray and with the weight of batteries I am unsure that the tray would stay in position in the event of capsizing. A secondary consideration was that the previous owner removed the aft-end of the tray to allow larger batteries to be installed. The Batteries now in use are 110 A/hr semi-traction "leisure" batteries.

Tackling this problem has always been on my "to do" list, however, I am now in the process of ensuring that the boat meets the ISAF Cat 1 racing regulations that state that all batteries (and other heavy objects) must be suitably fixed in position such that they would not move if the boat was rolled. While I have no intention of getting the mast in the water it seems prudent to address this problem.

Pic 1. This shows the existing battery storage arrangement.



NEW BATTERY STOWAGE

While researching the best solution a number of options presented themselves but most had technical or financial drawbacks so a call was put into the oracle of all things Contessa, Mr. Jeremy Rogers.

Jeremy's suggestion (and what he now does on new-build and refurbished boats) is to make, using plywood, two or three battery boxes in place of the old tray. This will allow the batteries to sit low enough that a wood

or metal bar can be threaded through the top of the storage compartments keeping the batteries in place. Having individual compartments should also help contain any battery acid that may be spilt.

Having removed the old GRP tray I set about measuring up for the new battery compartments, I also took the opportunity to change the orientation of the batteries slightly. Rather than have the batteries in line with the boat, the front battery is turned though 90 degrees, this will allow space for me to add a dedicated small start battery at a later date and also allows easier access to the removable engine case panel that is tucked down the quarter-berth.

Pic 2. Tray removed and batteries placed in their new position so that measurements can be taken.



While measuring up it became clear that the new ply boxes would get in the way of the wiring that exits the main battery selector switch. At some point it will be necessary to get access to this so a removable panel in the side of the forward battery box was planned. While the batteries fitted appear to be a fairly standard size the new battery storage compartments are slightly oversized and any movement of the batteries once fitted can be kept in check with rubber wedges.

With measurements taken the design was transferred to some spare 12mm marine ply and the boxes cut out. After some final trimming on the boat the boxes fit well with the top of ply boxes at a height just below the locker top. Before final fitting all the wood was given a coat of epoxy, especially on the end-grain so that there is no possibility of water being absorbed.

Before the final fitting it is necessary to prepare the surfaces that will be bonded, the Plywood was cleaned and abraded to remove any amine blush (a by-product of the curing process) and on the inside of the locker it is necessary to grind back to clean GRP, to do this an angle grinder with a coarse sanding disk was used. Sanding or using a grinding disk on GRP creates a huge amount of very fine polyester dust so protective goggles and a mask are essential and be prepared to get covered in dust!

Initial fitting of the Plywood was done using thickened epoxy resin that glues it all in place. Once set more thickened epoxy was mixed and put inside a plastic bag with the corner cut off, this allow it to be used like a cake-decorators piping bag. Using the bag thickened epoxy can be applied to all the joints quickly and easily. Finally, all the joints are smoothed to a concave fillet using a rounded spatula. To add additional strength a layer of woven glass tape and epoxy is used over the join between the Ply and the hull

To keep the batteries in place stainless steel studding was used, two nuts were added to the end of each retainer and holes drilled in the ply that are just large enough to accept these nuts. With some more thickened epoxy applied to the holes the studding and nuts were persuaded into place with a hammer and left to set. Grease was applied to the thread of the studding so that once the epoxy had set it would be possible to unscrew the studding, leaving the nuts in place.

Pic 3. The forward battery box with battery retainers in place while epoxy is curing. Note that 10mm battens have been added to the bottom of the box so that the battery is held above any water or battery acid that collects.



With the hard work done all that was required was to sand and paint the new battery boxes and locker and re-connect up all the wiring. Fortunately all the old battery wiring was long enough to re-use although it may be tidied at a later stage with new cabling when the boat is re-wired.

Pic 4 & 5. The finished battery storage (note the retainers are not fully screwed home)



ADDITIONAL COMMENTS FROM JEREMY ROGERS

The latest regulations require that battery storage boxes have ventilation and this is a tricky issue to address. One option, that is done on new boats, is to ventilate through a vent high up in the cockpit attached to a 1.5" flexible pipe from the battery box. The lid of the battery box should also be screwed down to prevent fumes escaping into the cabin.

SUPPLIERS AND ADDITIONAL INFORMATION

If you would like any additional information about how to proceed with upgrades or repairs to your Contessa 32 an excellent forum is available on the Association website where you can post questions and draw on the collective knowledge of many owners.

Contessa 32 owners are in the very lucky position to be able to contact the original and current manufacturer of Contessa yachts, the team at Jeremy Rogers Yachts are extremely helpful and will offer free advice to owners as well as historical information about your particular Contessa. Jeremy Rogers Yachts can provide a range of spare parts and will carry out repairs both small and large, their contact details can be found on the Jeremy Rogers website

