

March 10 2008

Hello Forum members;

As most of you are aware, it all started with "Quest for SS Frame". Back in Sept 2006 we have purchased a well used 1973 26' Argosy. After bringing it home to Pennsylvania, close inspection revealed that the frame needed serious repairs. At first, we have considered sandblasting and replacing sections of rotted frame [shown in the picture under the new one]. After some quick calculations we decided that it would be cheaper for us to build a new SS frame. This would eliminate cost of sandblasting priming and painting for ever. Having most of needed SS material in stock, we first tore down and scrapped the interior which was to be replaced anyway. We removed the empty shell and left it on blocks in the storage yard. In the end of December 2006 old frame was brought into the shop and work begun on new Stainless Steel frame. All work in the winter of 2006 was done on after business hours basis. We could only afford to tie up one 12'X35" bay because our business had to remain operational.



In order to increase structural integrity of the frame over the original one, two rectangular 2"X3" tubes were stitch welded together on top of each other, thus increasing the frame depth from 5" to 6". Main frame tubes are 0.125" thick. Outriggers top members were made out of 0.090" 1" x 2" tubing. Outrigger supports were bent with help of Oxy torch and formed on home made die. Each outrigger has an ear plate welded on the sides to provide means to mount the shell. All frame spanning cross members are 1"x2" tubing 0.065" thickness and the three upright supports per each truss, locks them into a lightweight structural frame. Tongue section is a one 2"X2" and one 1.5"X2"X 0.185" thick tubing. It is stitch welded atop of each other, which gave us very strong 2"X3.5" tongue. Front header cross member tying it to the frame is a 2"X2"X .185" same goes for the #2 cross member. Rear ends of the tongue's A frame are welded to 5.5"X 16" X 0.250" thick connector plates at a proper angle. These plates were then welded to the main frame members. Cross members 1 & 2 are solid welded onto the tongue's A frame. New 0.125 thick SS header mounting plate was welded onto the A frame and to lower # 1 cross member.

New aluminum LPG tank base carrier was built. The short cross member right behind the coupler serves also as the box for the wiring junction block. It was cut length wise on top of back side near the top where it is hinged to open. Front side is cut at the lower front, thus giving the impression that it is a solid cross member but only the bottom half is welded in. Bottom half of this 2"x3" is welded into the A frame.



Shock absorbers were added after lengthy debate with some experts, weighing pros and cons. I have heard different opinions on this issue and in the end have decided that considering the minimal cost involved, they can only help.

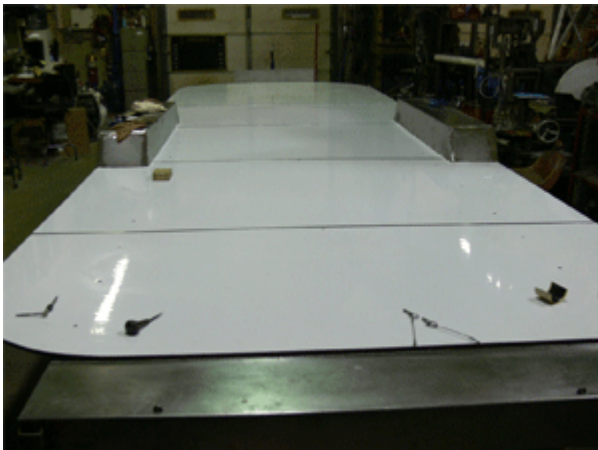


In order to have 12" brakes, 5000 lbs capacity axles were ordered from DEXTER with 3500 lbs suspension. Axles are bolted onto a SS mounting plate 9"x76"x 0.312". Outer fenders are solid welded to the frame and outriggers, making them totally waterproof. All through frame wire cross over points have SS tubes inserted and welded into the frame. All ends are chamfered to prevent wire abrasion. Brakes are wired in with 12 Ga. multi strand silver coated wire, sealed by heat shrink at all connections. All wiring throughout the trailer is of Marine Grade, including the 110 Volt circuit. All wiring is routed in a lightweight SS conduit, which is tack welded onto the frame

and finished with neoprene grommets at each end.



Each section of the frame has 1/8" moisture drain holes. For the floor we used 1/2" OMEGA plywood which has 0.020 aluminum clad skins and it is finished with baked on paint. Floor was attached to the frame with 1/4-20 screws spaced every 12". Holes were drilled, tapped into the frame and plywood was countersunk for flat head bolts. 3M 5200 was used to seal the bolts. Below is a picture of the plywood floor fastened to the frame.



Every cut edge of the plywood was treated with GIT-ROT first. Each section of plywood was joined by horizontally oriented aluminum H trim, into which the plywood was inserted using the 5200 as adhesive. Each joint was clamp driven against the H trim and the next panel. Outer edges were encapsulated with aluminum C trim. Top section of this trim is 1/2" wide and underside leg is 1.25" wide. The bottom leg had to be V notched at the corner radiuses in order to follow around with a smooth bend. This C channel was also glued in with 5200 and retained by #6X 1.1/4" flat head SS screws. Contact area of the plywood to frame was lined with 3M Scotch # 2228, 2" wide Rubber Mastic Tape of .065" thickness. Sections of floor contacting the outer fenders, was solidly sealed with 5200.



With the floor installed the frame was set up on its side, and rigid foam 1"X2" strips were glued onto underside of the floor with 3M 5200. This is to provide an air space barrier between the floor and the bubble foil. Foil insulation was then glued on top of the foam strips. All edges of bubble foil were sealed with 5200.



Above picture shows finished insulated underside of the floor. Outrigger sections were not insulated at this time because of the required additional work to be done at later time in that area.



Most of the original fiberglass insulation was compacted down where over 50% of the total wall area was not insulated at all. Stripped out clean shell was then lowered onto the installed floor and fastened with ¼" SS lag bolts to the outrigger plates and the frame at each end of the shell.



Shell was then riveted to the both header plates in the front and back. Previously removed end caps were insulated with bubble foil and re-installed after repairing the cracks with DEVCON Seal-n-Place epoxy. The entire shell was framed out [including the end caps], with ½"X 2" rigid foam strips which were glued in using the 5200. Foil panels were cut oversize so that the edges could be wrapped along the ribs and touch the inner skins. All wiring was routed on the outside of the bubble foil.



Inner fender covers were installed and sealed after insulating them heavily with bubble foil. Door and all window gaskets were replaced with new. Black tank was installed into the confines of the frame. Cut out was made in the rear of the floor to fit the tank and edges were treated with GIT-ROT. The lip of the tank rests on the top of the floor. Atop of the tank, is aluminum clad plywood [C channel] framed out plate. At the outline of the cut out in the floor and on underside of it, is a welded 1"X2" X0.090" frame. All three components are bolted together with 10-24 bolts and nylon lock nuts.



Top half down to the beltline, was roller painted in summer 2007 with primer and two coats of Pettit EASY-POXY in Off White. Roof plate itself received three coats. Below the beltline we managed only to prime and apply single coat Of Pettit Grand Banks Beige to seal the primer. Second coat was applied in January 2008 after wet sanding. In the summer of 2007 a rear bumper was built. The bumper consists of two 1.3/8" SS tubes 0.156" thickness, which are bent at ends and capped off. A 1/4" thick x 3.5" wide center joining plate was formed and stitch welded on the back side to the two tubes. Mounting brackets were welded onto the back side of the plate in order to bolt the bumper to corresponding frame bolt on brackets. Oval cutouts for each of the eight 32 bit LED taillights, was farmed out to a shop with CNC plasma cutter at the cost of \$250.00. Two of the center lights are hooked as marker lights only. The outside three lights are both Turn and Running Lights. Two center one's are markers only.



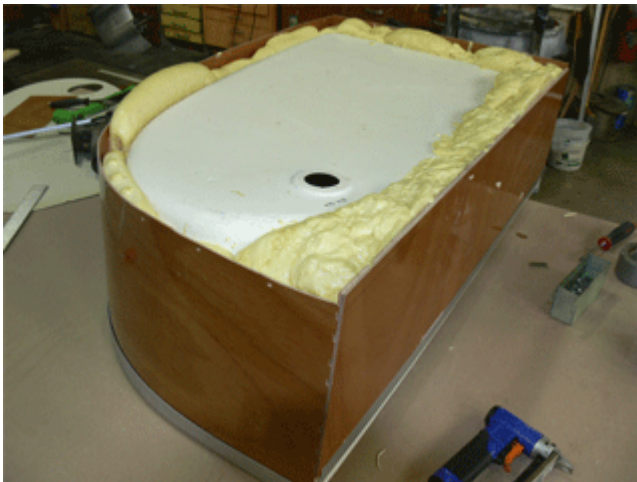
At the back ends of the main frame tubes, a urethane 4"x4" boat rollers were installed by being bolted with 7/8" bolts threaded into mounting bracket. They protrude about 1.1/2" below the frame and just ahead of the bumper to prevent possible damage to the underside should the frame bottomed out.

The original light panel at the beltline was cracked into many pieces. It was repaired with DEVCON and Kevlar Cloth. It took quite a few hours to reshape the face of it to a presentable

condition. Top side of the light bar was sealed onto the shell during the installation with 5200 at top and sides of the panel. Bottom was left open so it can drain.



All clearance markers are LED as well. All wiring is soldered and heat shrunk through out the trailer. All wire exit holes trough the shell neoprene grommets which tightly seal the wire to the shell. The lower part of the shell's rear panel about 4" high, which mounted the shell to the frame's plate was badly corroded. That section was cut away and replaced with new SS plate.



Bath tub had few cracks in it. Those were repaired with DEVCON and Kevlar cloth from the backside. The tub was then encased in a 3MM plywood form on the wall side, and a 10MM varnished face panel which is visible when tub is in place. Plywood case was made to fit the tub space exactly and at proper angles to the wall. Void area between the form and the tub was gradually filled with rigid Closed Cell pour urethane foam layer by layer. Urethane foam generates plenty of heat as it cures, and it can melt the plastic tub while curing. This is why caution must be taken when pouring the foam. Tapered foam wedge was glued on the underside of the tub, so that the drain is at the lowest end of the tub. The wedge than was covered with aluminum 0.025" as a protective plate. Tub was then sent out to be professionally recoated with acrylic coating. Cost \$275.00. Prior to having it recoated I have cut and trimmed top edges with

aluminum C trim on the backside, and H trim on the face side connecting the tub and the face plate.



Tub seen with aluminum base plate



Face panel with aluminum H trim joining it to the tub.





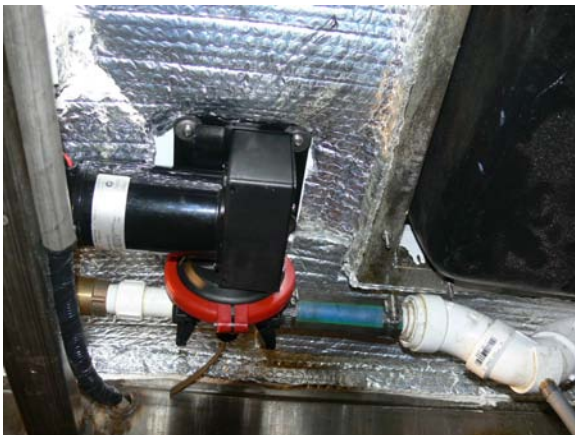
A new Suburban 35000 BTU furnace was mounted on aluminum rails. One heat outlet serves the front part of the trailer and the other is ducted into the bedroom space. Third is yet to be ducted into the bathroom via 4" duct.



New 6 Gal manual ignition Water Heater was installed. The reason for the manual ignition was lack of available space and to eliminate unnecessary use of LPG during day time. Most times use of the campgrounds shower facility will be our preference.



Bath tub was installed into freshly coated with DURABAK Urethane bathroom. While the DURABAK 18, has sealed the bathroom walls and all rivet heads very nicely, it was the most difficult application I have experienced. I do not recommend this process to anyone unless you are a pro in applying heavy urethane coatings.



My gray tank [by no choice] is above the floor level. I could not find a tank that was only 6" deep in order to mount it within the depth of the belly pan. This necessitated the implementation of shower sump pump, so that shower water can be pumped out of the tub, and into the gray tank above floor level. For this I have implemented a Viking 16 pump by Johnson Pumps. This is a diaphragm type pump, which can run dry for extended periods of time. Shallow P-trap [at right] was incorporated with a winterizing drain hose, which is leads to the outside through a grommet in the belly pan wrap. At the outlet side of the pump [to the left of the pump] a bronze 1" check valve was installed with SS check valve spring. This check valve will prevent the water in the 1" discharge pipe from flowing back into the tub.