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Miss Daytona build – 14

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Back to wood working for bit now: I decided that in terms of internal fittings, I had better make up the very visual aspects of the 'cockpit' next as these are fairly fixed in design and location, and in any case the rudder controls (ie the control wire runs) will depend on this layout too. I intend, at this stage, to make the steering wheel rotate with the rudder position, although this will place some demands as to how free I can make the driver move with it. The problem is that the rudder movement would mean one full steering wheel revolution 'lock to lock' and this would be too much for an inanimate driver (who could manage perhaps around +/- 45 degrees or less). The present driver-to-be has articulated but stiff joints, so he will have to be rebuilt too in due course. I will need some licence here: or abandon the steering wheel movement if it proves too difficult. The real thing looks like the steering wheel shaft has a fairly small diameter drum on it with the rudder wire taking a couple of turns round. The photo shows the arrangement of the real thing (you can just see rudder wires going at 45 degrees down from the shaft through the left hand upright, heading for more pulleys to connect them to the rudder: these I will not model as it would be too complex for the need and the wrong 'ratio').



The control panel is mounted on a wooden frame that is held up by two wooden uprights through one of which the steering wheel shaft goes, so the location of the steering wheel and its mechanism is not only visual but functional, and it will determine the space to fit the 'engine' in. I cannot see whether the steering shaft is also mounted into a bearing at the bottom, but I will do this, for strength of a vulnerable part - mine has to take steering loads and the need to move the driver! Fortunately, although the photos are quite superficial in this respect, they do show the nature of this mounting and scaling them with reference to other now known parts gives its location. It is mounted on two lengthwise spars at floor level that may well be part of the real boats frame, but that is not obvious and they do not exist (yet) in my representation. I started by making up these spars for mounting into the hull, and cutting out the control panel mounts and the panel itself. The advantage with doing this now is that it fixes the space available for other things, and allows me the pleasure of replicating the controls themselves, whether working – hopefully - like the steering wheel, or visual like the panel instruments. The spars are made from some obechi with ply strengthening skins, stained to be like the rest of the visible framework, but the panel and uprights will have to be mahogany for strength and appearance. I think I will need to make this frame and the spars removeable for access for things like servos etc, so I anticipate building it as one component including steering wheel gauges etc to be screwed (not glued) into the hull appropriately.

I had some 2mm mahogany 'plank' left over from *Sundowner* that seemed appropriate, but 2mm is a little thin for this vulnerable framework, so I doubled it up: 4mm scales to 32mm thick, whereas the real thing looks more like 25mm: it should be robust enough. The control panel is pierced for instruments and since this would weaken it, I laminated the two bits for this at right angles to help strength. The photo shows the panel as cut out, ready for the rest of the frame and the instruments, but



this will be after making the frame up and finishing the wood appropriately. After some fiddling with bits of mahogany, and much thought on how this will mount on the spars, I ended up with an instrument panel and supports. The photo shows this stage, with the 'screws' visible on the real thing represented here by 1mm brass rod in drilled holes and epoxied in. The reason for this here was I did not want to risk splitting the wood with pins, and I could use the 1mm rod to lend some strength. The next step is to pierce the left hand upright for the steering wheel shaft flange, and that needs the angles etc to be worked out so I can make the flange first to get the fit right.

It seems to me that if I can make the seat (and eventually the driver) mount on the spar assembly as well as the instrument panel, it can

all be removed in one go for access: I have to find a home in the hull for the batteries, receiver and rudder servo as well, and under and behind the seat is a lot of hidden space (relatively speaking!) that might be useful for some of these.

As an aside, I thought I had better weigh it all to see what is happening now that the hull is largely finished and much of the wood and metalwork is made. Without mounting all of the bits, I put them in the hull and weighed it – 1.4kg. I expect that the RC gear and battery will be about 300g (very dependent on the battery capacity), plus 'engine', driver, seat and some other bits and pieces: say total 2.2kg, of which about 1kg is wood, so the buoyancy I add needs to displace about 1.2 kg of water. This assumes I can make the 'engine' reasonably light! The buoyancy added so far under the front deck is about 800g. I think I can get the rest in the pockets at the side of the gearbox, so it should be OK. The radio gear should fit under the deck either side of the opening, hidden by 'fuel tanks' then it is all close together and avoids wires everywhere: under the seat is unlikely to be a suitable place having measured it all up and thought about how it interconnects, but a bit of extra buoyancy could go there. The other factor is that the battery will have to be easily removeable for recharging (or exchanging for a charged one) and so this will need to be located accordingly. The receiver, servo and electronic speed controller will not need such regular access so these can be hidden more.

The progress on building up the removable instrument panel/seat/driver etc is a matter of much thought, fitting in the boat, checking location dimensions and then adding bits as required. The result so far is as the photo (right). Whilst I keep checking it still fits in the boat (it will be secured by means of two M3 bolts into the keel, the hole for one of which can be seen in the cross piece), I am building this out of the boat to make sure it is strong enough to secure all of the bits and pieces to. The steering wheel will be mounted on the brass boss that can be seen on the left hand upright and the seat mounted on the two spars at the bottom of the photo. The next bit is to make the steering shaft as it will rotate in a tube held in the brass boss and in a pad on the 'floor' of the assembly. It is over scale in the thickness of the wood bits, but that is for strength as it is quite vulnerable when in position, and has to stand turning forces.



Part of a forthcoming activity is making the driver's seat. This is quite a visible feature and I want to make it look right: I managed to source a bit of very thin leather (0.4mm thick, for only a couple of pounds: Ebay again) to upholster it mainly to see if I could make it to look right. The leather arrived and I should be able to mimic the seat as long as I can glue it properly round its edges and mimic the ribbing in the seat back. I could not find any green leather, so I got light grey that might take a stain in due course (the seat appears to be a sort of grey/green in photos).

The results of adding some more wood (bits of plywood for seats and 5mm obechi for frames) is shown in this photo, in situ in the boat. It all lifts out and fits in place quite snugly. The pad on the seat bottom is for the driver: he will have an M3 stud glued to him where it hurts to fasten him down onto the pad, which will be hidden underneath some upholstery. The seat will 'feel' soft elsewhere, but I need the driver to be mounted rigidly, hence the wooden pad - there will be some thin foam around it. I expect some fun fitting the upholstery, but it should be possible (I have thought about it!), however that will not be done until later. When the assembly woodwork is completed, I will seal it with epoxy resin as this will resist the impact adhesive necessary for the upholstery, this stuff can dissolve spirit or oil varnishes. The instrument panel assembly is not yet glued in as I am still fiddling around with metal bits for it, and the steering shaft is too long, awaiting the steering wheel. The driver, who will need a lot of fettling, will rest his feet on the frame and on a 'gas pedal' for his left foot that will fix it OK. The real boat has a gas pedal there, just outside the left spar, he does not sit in the middle.



I also purchased a 'low profile' servo for a reasonable price. This has metal gears and a torque of 12 kg/cm that hopefully will be enough to turn the rudder and the driver through its linkages, if I can make these suitably free from binding. I intend to mount it under the deck at the rear on the righthand side on a platform with receiver and speed controller close by, hidden by a 'fuel tank' - the real boat appears to have two cylindrical tanks under each side decking visible through the opening.

The available space under the driver's seat is too short for a reasonably sized battery, so that will go probably on the left side under the deck to balance the other bits, again hidden under a 'fuel tank'.