GeeBee Sportster TRIBEWT foam board model design by Alistair Potter ©2014

NOTE: design is for 5mm foam board. For other foam boards adjust slots,tabs etc. when cutting. Layout is for an A1 sheet size. All dimensions are in millimetres.

If you use these plans, please consider donating a payment to the author.
Payments through PAYPAL to alipotter@blueyonder.co.uk.

Wingspan - (original) 790mm / 31inches - (amended) 840mm /33 inches

Length (excluding prop) - 640mm / 25.2 inches

AUW with a 1000mah 3S Lipo - 820g / 29 ozs

(Imperial sizes are approximate.)

This is not a scale GeeBee but is based on aspects of the X & D Sportster models.

The plane shown is flying with an Emax GF2215 1200Kv outrunner motor with a 9 x 3.8 prop. The max current draw for this setup is just under 16 Amps. With this combination the plane is able to loop and roll but does not have unlimited climb capability, though in theory the motor could be 'propped-up' to achieve this.

This plane uses many design elements from the Flite Test Baby Blender, and you can refer to the FT build guide for most of the basic techniques, but there are some significant variations. The wing has more in common with the FT Duster, though the dihedral is built-in rather than bent-in.

In retrospect I should have taken the wing out to the full width of the A1 sheet (840mm / 33 inches), so for these plans I've altered the wing to this dimension. This should give a slightly slower flying plane (depending on your battery load).

For information on shaping the wings, creating the dihedral and other variations, consult my article "GeeBee Sportster" on the Flite Test website.

With my 1000mah battery I manage flights of around 6 minutes, but the foam board I use is significantly heavier than Dollar Tree or similar foam boards, so a build in lighter board will have longer flight times and be able to carry larger capacity batteries. I do tend to build heavier, more durable planes, so even a careful build in one of the heavier foam boards is likely to be lighter than mine. E.g. my blue body colouring is sticky-back plastic and my turtle decks are cereal-box card, which all add weight. Still, the plane flies at reasonably sedate pace, but would benefit from trading-off fuselage weight for a larger battery capacity to achieve longer flight times.

Like the Duster this plane uses servos embedded in the wings to operate the ailerons. This allowed for a later mix to create flaperons, which reduces the landing speed. There's video of the plane flying with flaperons on the Flite Test website .

The nose detail is shaped polystyrene foam. After gluing-on an oversize piece use sharp knives to pare down the basic profile and fine sandpaper to finish. A couple of coats of dilute PVA will strengthen the foam and also allow it to be painted without 'melting'.

Alternatively, I've supplied an outline for a 'nose blank' which could be stuck on as a single layer of foam board or sandwiched up and shaped - or omitted for an even simpler build.

The front and rear turtle deck stiffeners help to stabilise the turtle deck formers - these can be omitted if you use thicker paper or thin card (e.g. - cereal box) for the turtle decks. The top edges of the stiffeners will need a little shaping to match the profile of the formers..

The undercarriage is fairly simple, and other neater solutions are available - see Flying Penguin RC's removable landing gear on the Flite Test website. I have modified and simplified the undercarriage from the original build to reduce the length of the horizontal wire tucked under the wing. The original detail proved to be too effective a 'spring' and the plane jumped about a lot on the ground.

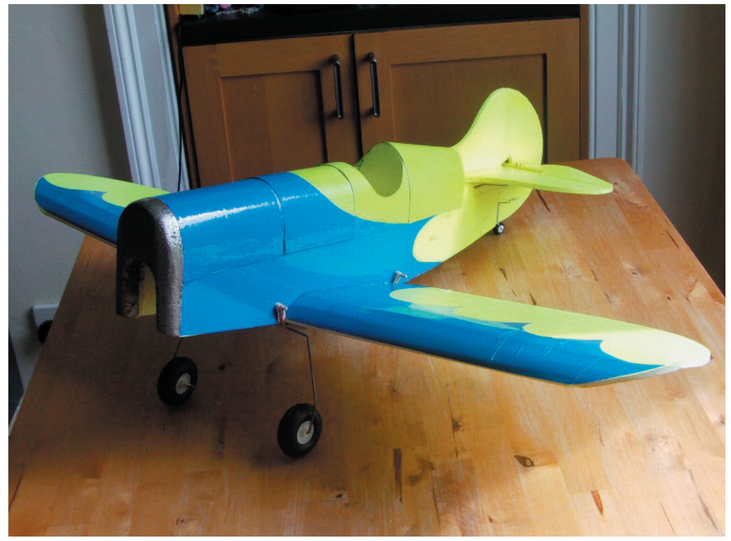
My simple tail steering is shown on the Flite Test website.

For first flights set the CG at 55mm from the wing's leading edge. This will give a more 'steady' flight experience.
The plane will fly with a 30% 60mm CG, but best to get it trimmed-out for level flight first.

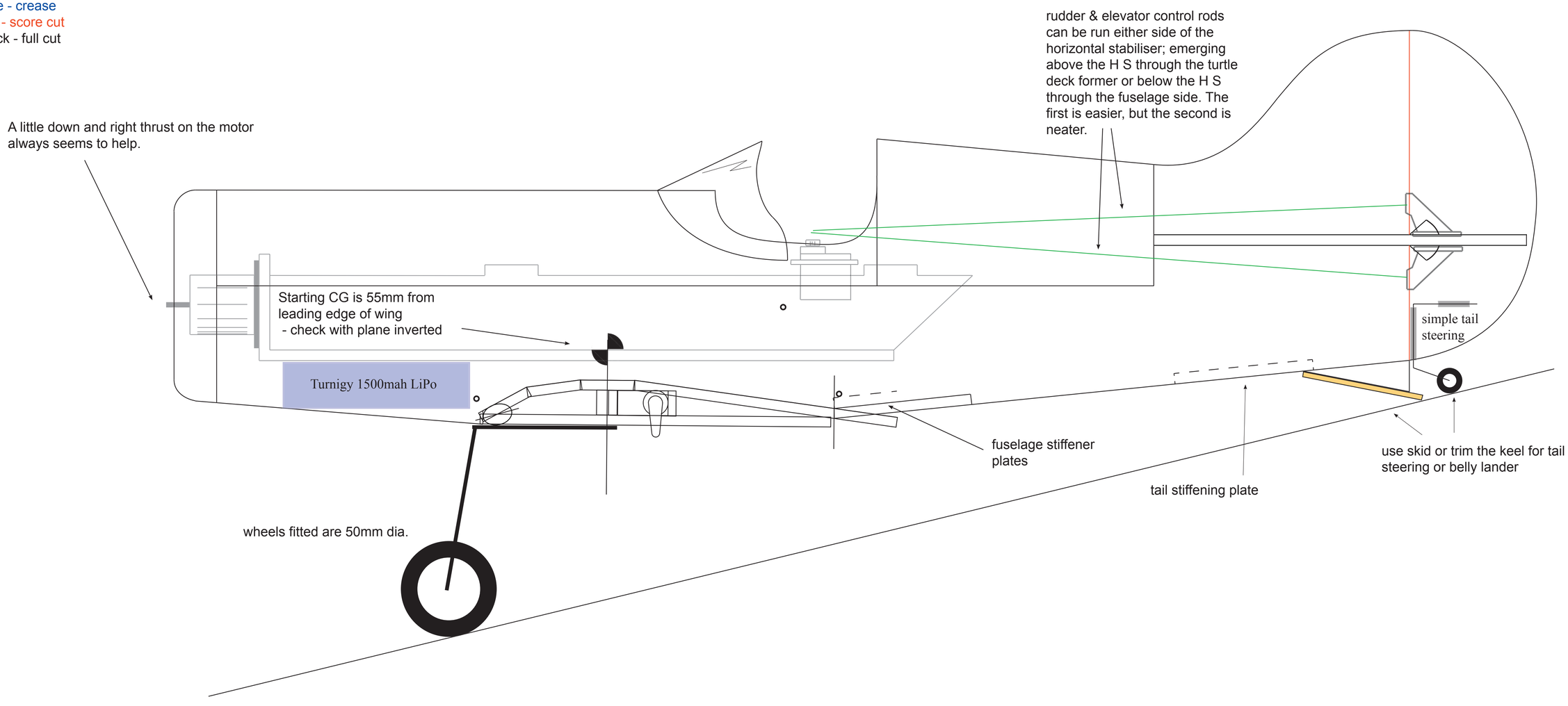
Throws;

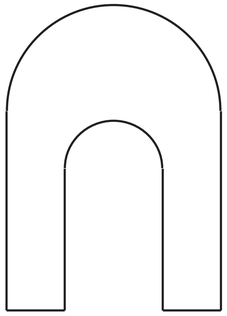
low rates; elevator & ailerons 10º, rudder 15º.

Switch to high rates for aerobatics!

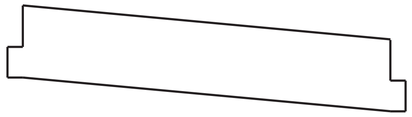


blue - crease
red - score cut
black - full cut

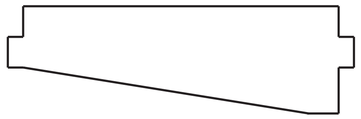




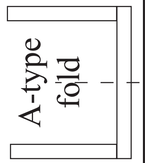
nose blank

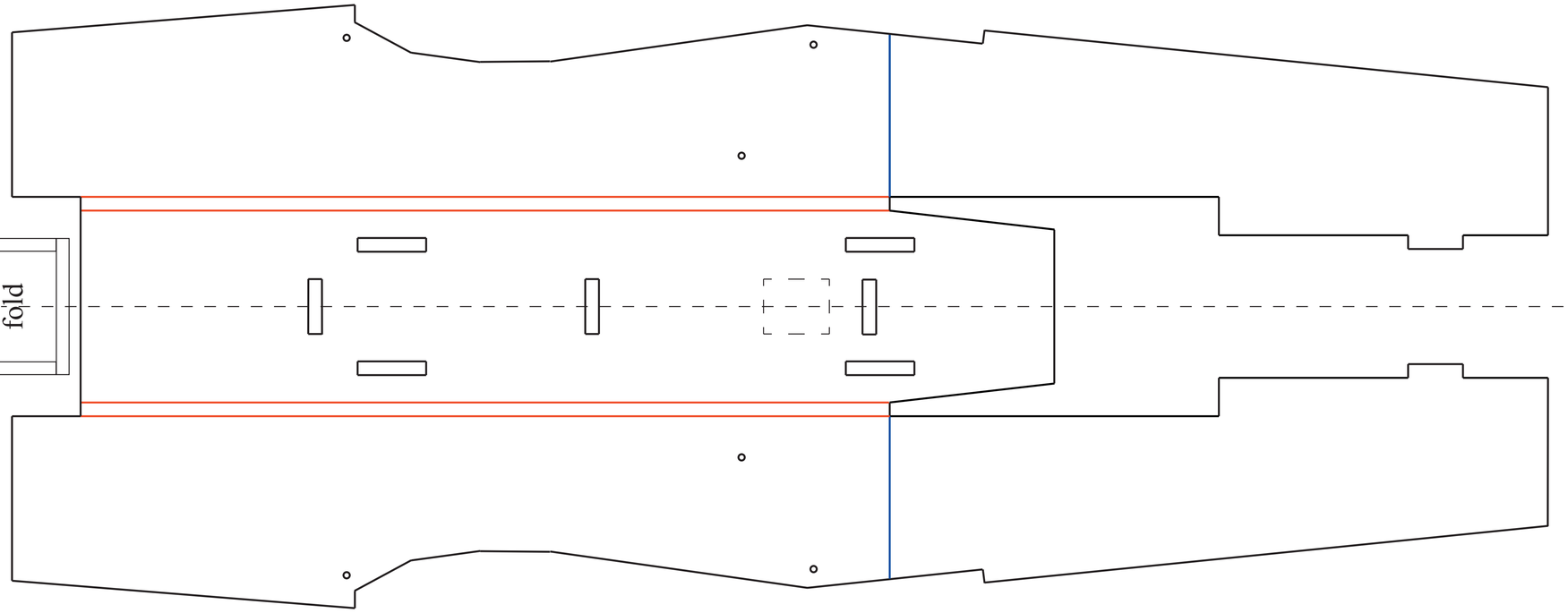


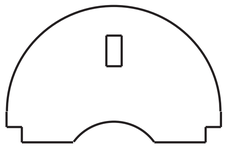
rear turtle deck stiffener



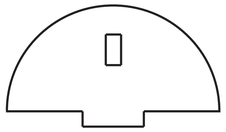
front turtle deck stiffener



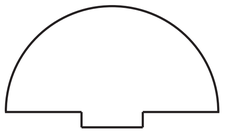




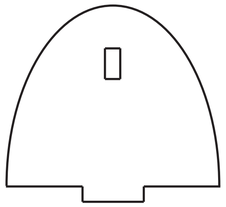
front



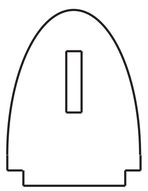
mid



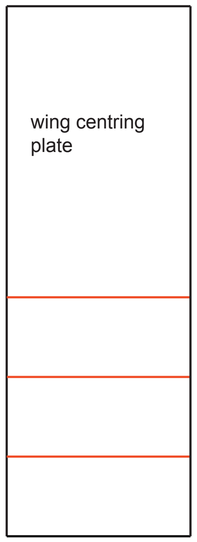
cockpit

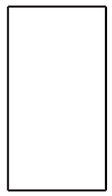


headrest

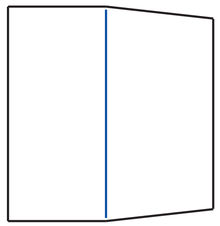


tail

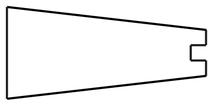




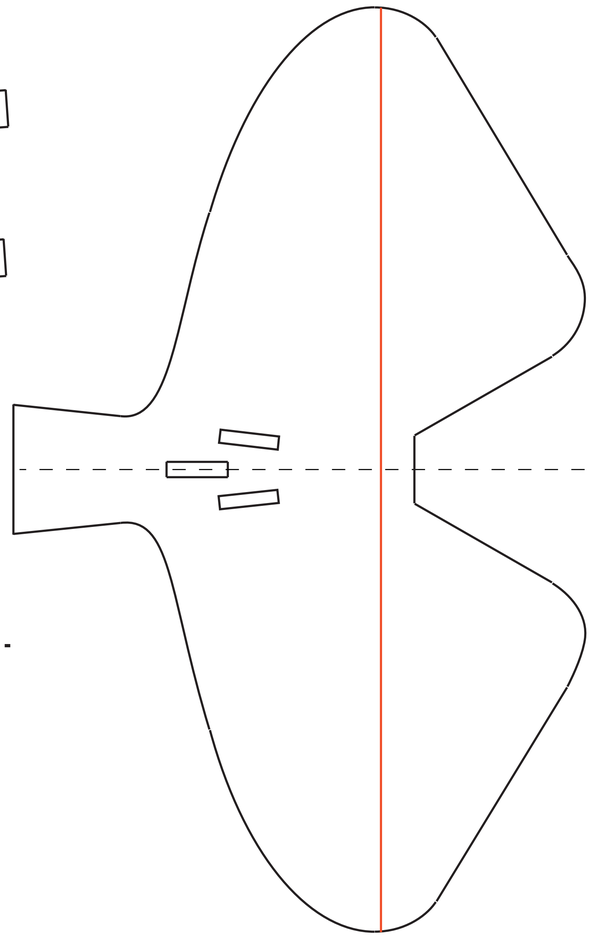
inner fuselage stiffener



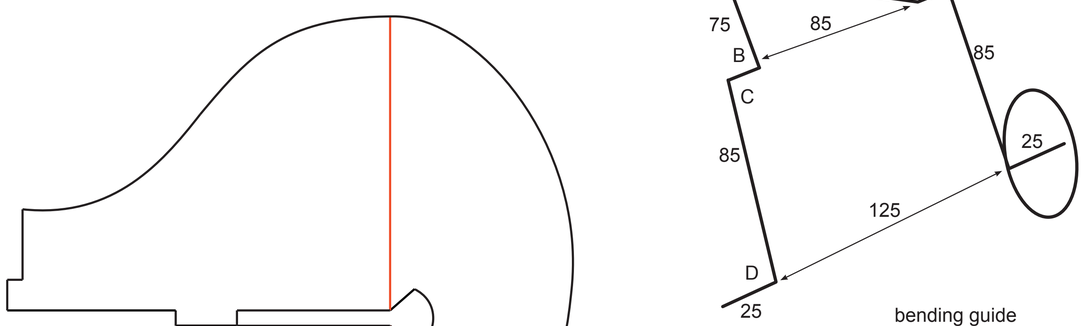
outer fuselage stiffener

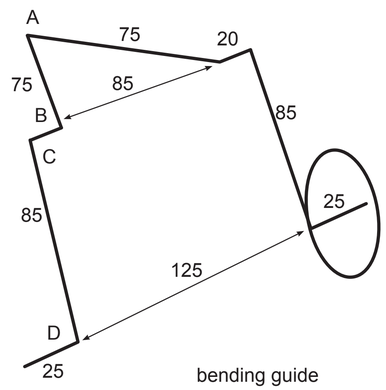


tail stiffener



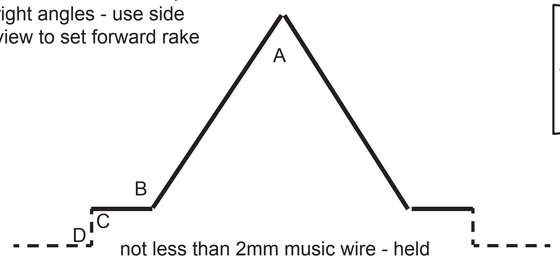
UNDERCARRIAGE



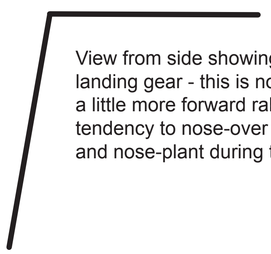


bending guide

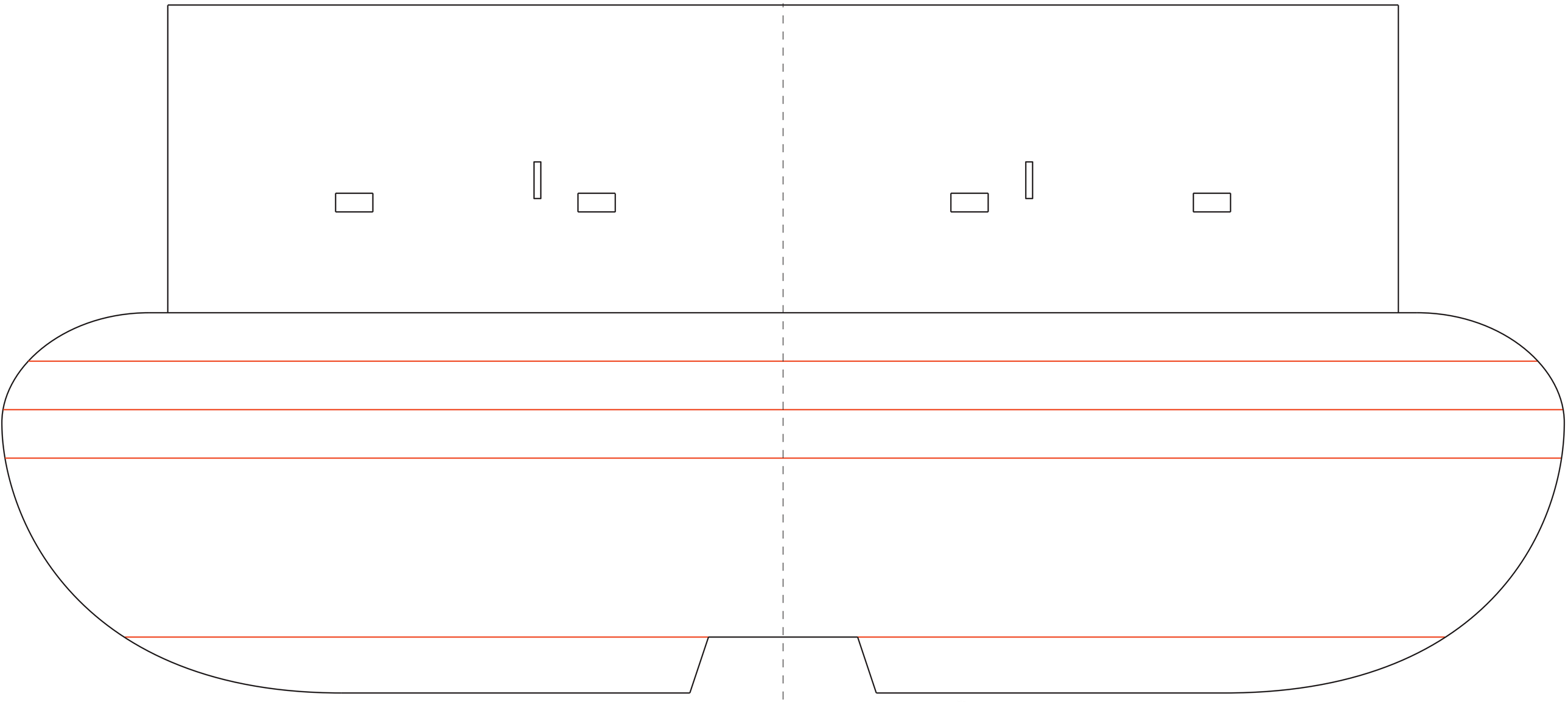
bending guide
bends C & D are simple
right angles - use side
view to set forward rake



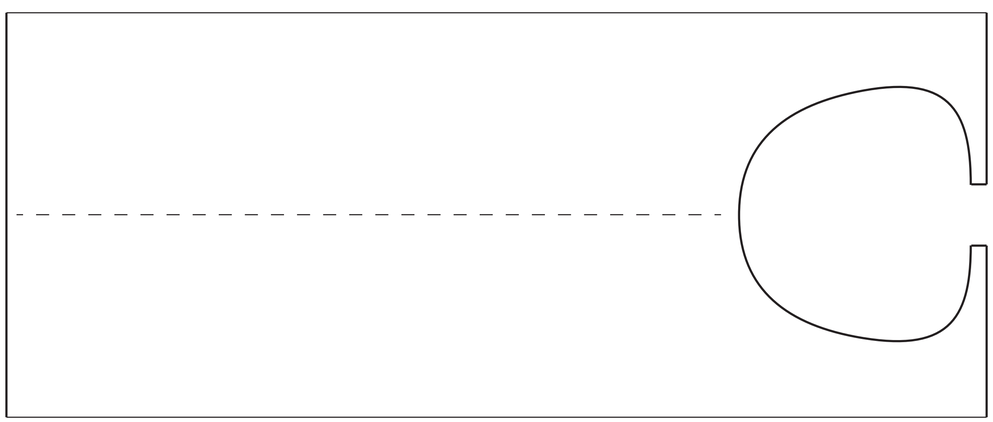
not less than 2mm music wire - held on with cable ties and elastics as Baby Blender detail - requires about 410mm of wire

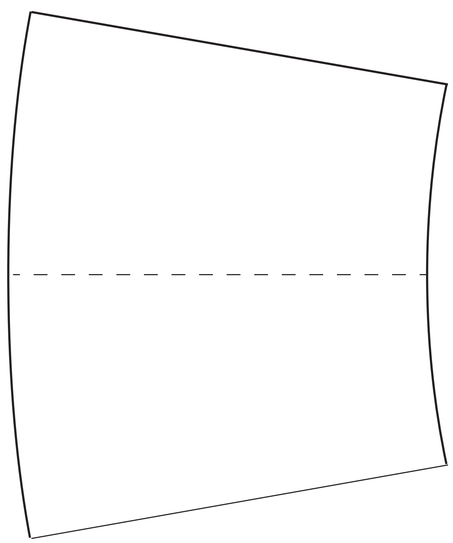


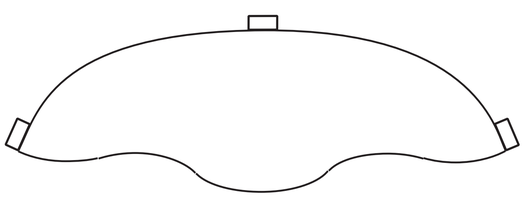
View from side showing forward rake of landing gear - this is not critical though a little more forward rake will reduce the tendency to nose-over on landing or 'trip' and nose-plant during take-off.



TURTLE DECK TEMPLATES







windscreen - use clear packaging plastic