print this at 100%, and this line will measure 5 cm

fold it on a table and press every crease flat with your fingernail as you go

2 fold these corners in to the middle line

1 fold the sheet in half the long way and open it again

3 fold these edges in to the middle line

it should balance here

5 fold it in half, away from you

6 fold this flap toward you along a line from the nose corner through the dot

now turn it over and do the same on this side

7 fold this much up along the edge of each wing

4 tuck the tip under by this much

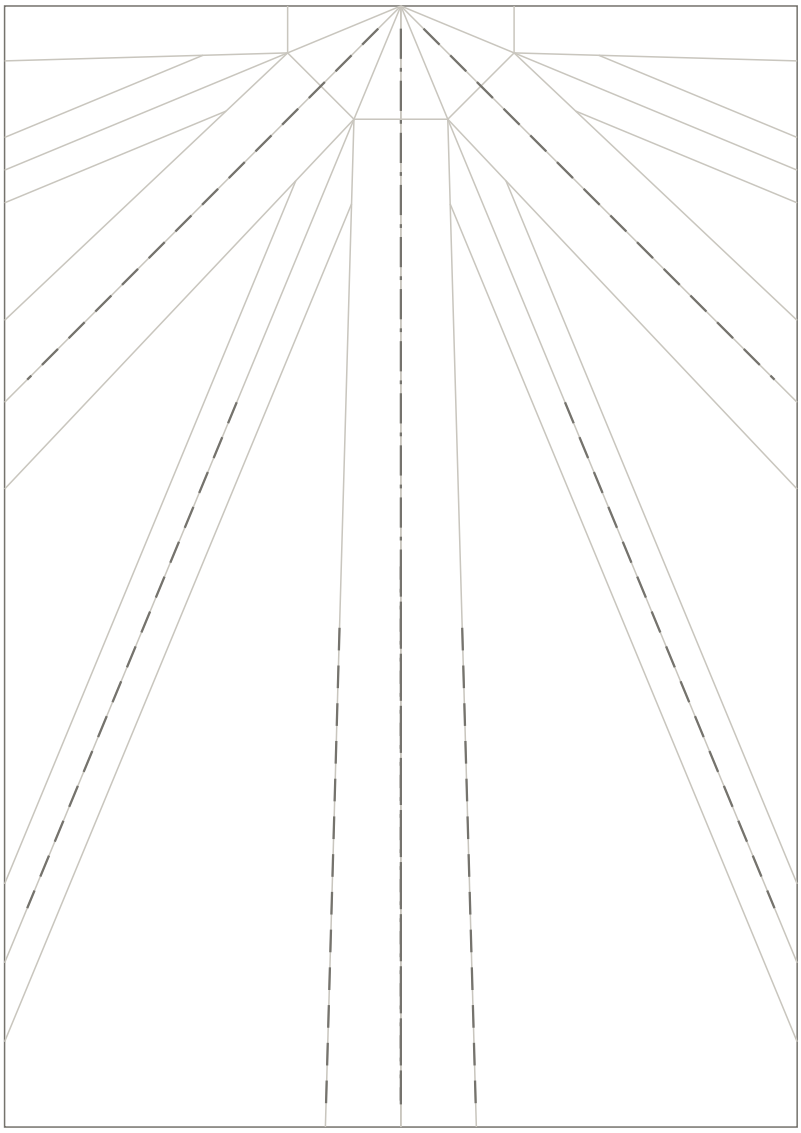
to fly it, open the wings so they sit flat and slightly up, hold it underneath and push it gently forward without throwing it.

if it dives, curl the back edges up more.
if it climbs and then drops, curl them less, and if it turns, curl the other wing up a bit.

curl this edge up by about 2 mm

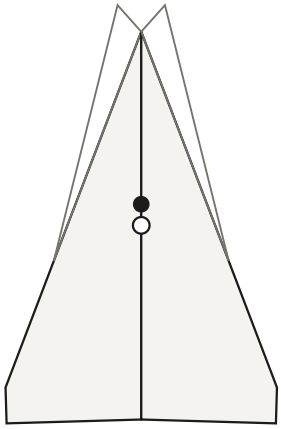
tejasgurav.com/plane
a4 paper at 80 gsm, weighing 5.0 g and balancing 132 mm behind the nose, 8% ahead of where the lift acts. it glides 1 in 4.6 at 2.8 m/s with its nose up 14 degrees.

here is every crease on the sheet, including the ones on inner layers, at half size.



the dark lines are the ones printed on the sheet you fold. the light ones are creases on inner layers that you never need to find.

seen from above, the plane looks like this.

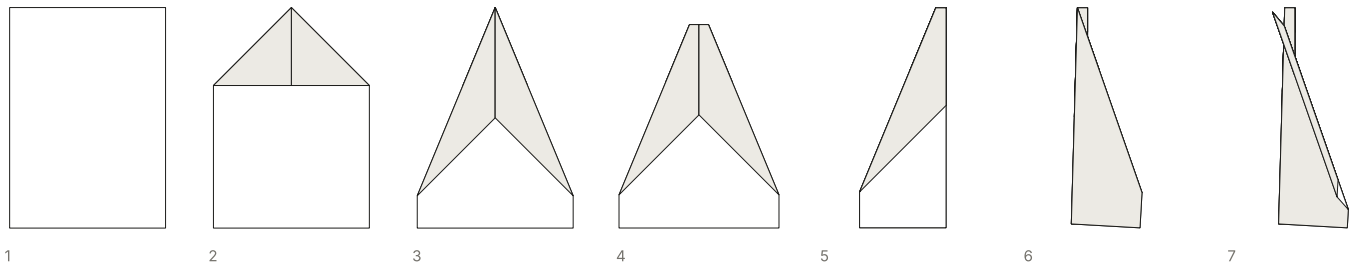


the black dot is where it balances, 132 mm behind the nose,
and the white dot is where the lift acts, at 145 mm.
the gap between the two is what keeps it stable.

and here are its numbers.

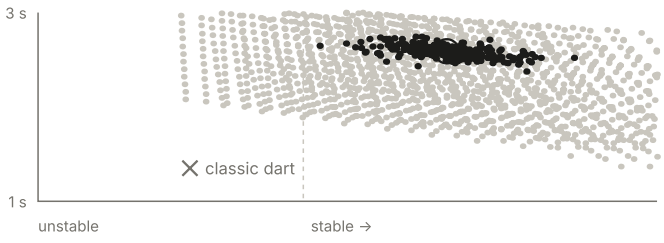
paper	a4, 80 gsm, 4.99 g
nose tucked under	3 cm
keel at the tail	2 cm
edges folded up	8 mm
span	171 mm
wing	229 cm², aspect ratio 1.28
balance point	132 mm from the nose
stability margin	8.1%
trim	14° nose up, 2.8 m/s
glide	1 in 4.6
sink	0.62 m/s
elevators	back edges curled up 2 mm

the folds go in this order.

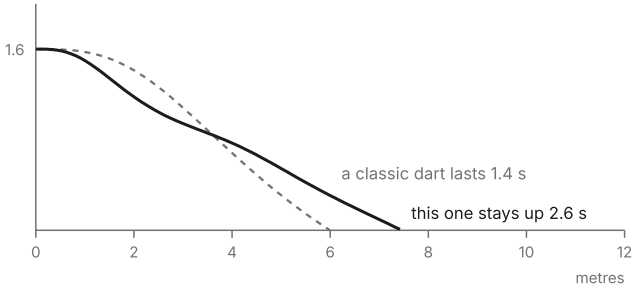


each dot is one of the 1,650 designs that were tried.

the dark ones are this plane, folded slightly wrong 240 times.



pushed gently from shoulder height, it flies like this.



drawing 01 of the plane, by tejas gurav.

i got these numbers from a computer model and haven't tested them in a wind tunnel. tejasgurav.com/plane