

# CoaxAir

## Designed by Ray Malmstrom

An account of a visit to Ray paid by Doug Gillies and Bill Hannan and of flying Push me pull you...

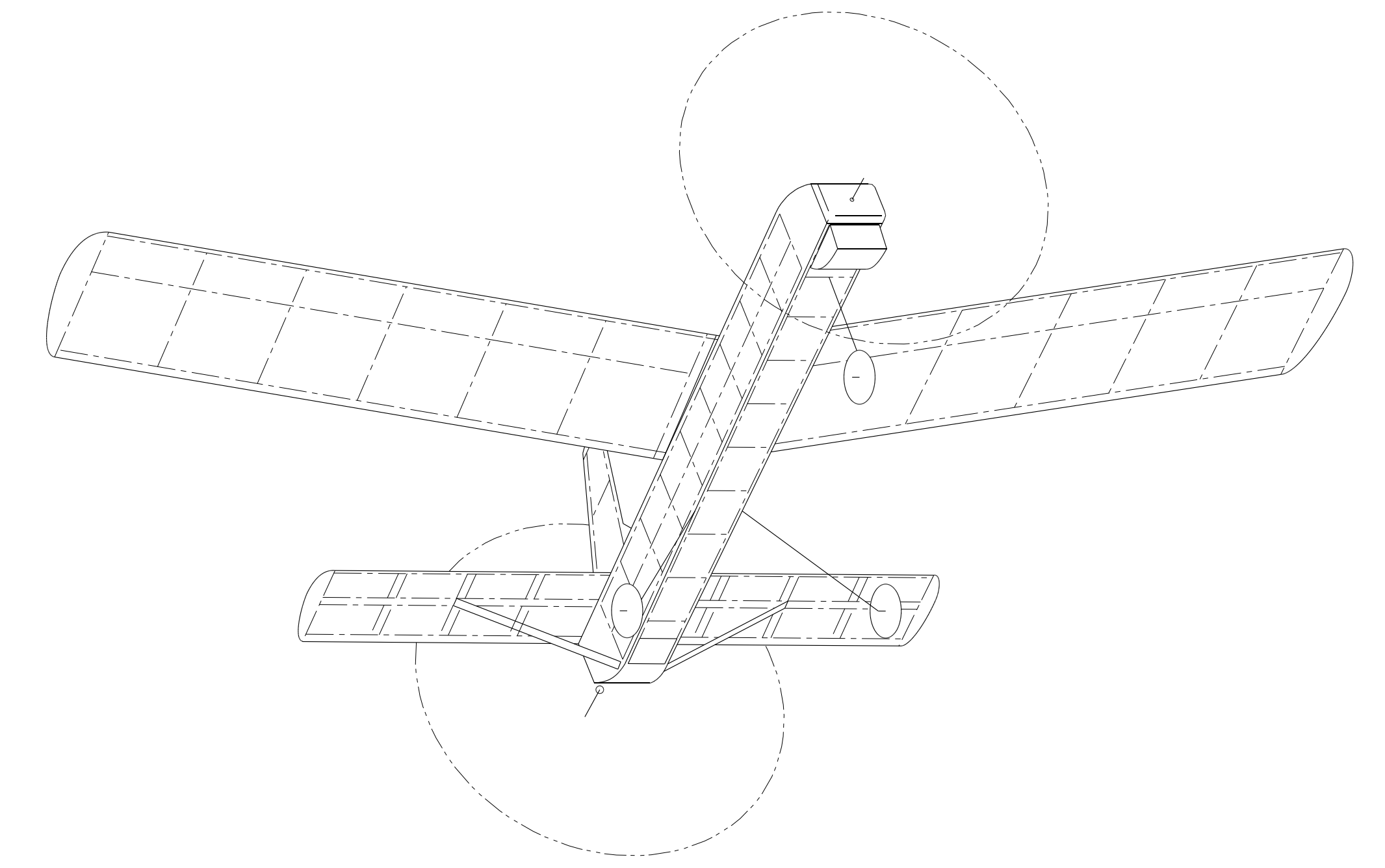
Ray Malmstrom was an artist/teacher/author and an aeromodeller extraordinary. His interests included virtually every facet of model building, and his creativity and enthusiasm were legendary. He published a remarkable number of original model designs in magazines over the years, and contributed cartoons to most of the Runway publications. During 1975 the late Doug Gillies and I visited Ray in his Cambridge, England home, and the following excerpts are from Doug's diary, edited in the interests of brevity:

Ray Malmstrom is an elderly youth aged somewhere between 15 and 50 vintage, and upon our arrival full-spectrum three-way communication is instantaneous. Sheila Malmstrom, a marvellous hostess, supplied delicious refreshments as our animated conversation flowed on. Time stops, or maybe, is annulled... we view Ray's model den, Bill flies one of his single-bladed helicopters...we examine a multitude of photos and press clippings... and we go into the back garden and fly a profile autogyro. Ray produces a push-'n'-pull rubber-driven monoplane of about three-foot wingspan, and as we eventually go outside to air it, we discover that the inevitable night has fallen; pitch-black night. Nothing daunted, we four (Ray's grandson Peter, makes the fourth, complete with battery torch), pile into somebody's Mini car and navigate the velvet black lanes of Cambridgeshire. In five minutes or so we arrive at the flying site, and pile out of the Mini into a field of large dimension, with vaguely-seen cattle perambulating here and there. They are not so much seen by sight, but rather by their king-size pancakes underfoot... All the while Ray has been adding power knots to the rubber-motor of his push-'n'-pull, and eventually announces a full keg; then poses the immortal question, Which way is England and launches the model in the general direction of Betelgeuse in Orion. The craft immediately goes into the fourth dimension and becomes invisible to us but fleeting glimpses are reported of the model's progress as it blacks out stars, or the fuselage faintly reflects light from the torch held by the youngest and most active member of our crew. Vector-location is also indicated by the ghostly cattle, who disperse to left and right of the model's course as it whirs amongst the quadrupeds!

Master younglegs retrieves the model whilst the three adults(!) stagger around chuckling, laughing, effervescing in their utter freedom from life's woes, and delight at this performance. Ray makes another twist the rubber, plus a few extra turns for luck, and this time the model goes even further into the wild black yonder, and we concede that all things are finite - and to venture again would tempt fate. So, in a pixilated state, we all five (four humans and an apparatus) squeeze back into the Mini and away we go to the Malmstrom residence.

Words just cannot do justice to this experience - only those who were there can understand the sterling value... life is for living... Ray Malmstrom is one of nature's livelier characters and to be in his company is to be truly alive. Ray makes me a present of his Peanut Scale model of David Livesey's D.L.5 minimum-aircraft and Bill receives signed 4 copies of Ray's aeromodelling books. The time has come to say goodbye to this gentleman who has devoted a lifetime to imbuing thousands of people with the joys of model making.

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### Builders notes

I drew this plan from memory and by scaling from photographs so it cannot be exactly correct but I borrowed the original model and drew the plans and built one so it is much better than guesswork. (I lost the plan sometime during the last yikes! forty years.) I remember cutting all the 1/16" notches in the deck that separates the two motors and the fuselage sides. The 1/6 square cross pieces really are notched into the longerons. Nearly all the parts are cut from 1/16 sheet. The structure is light so use thinned dope sparingly. I'm sure that when I built mine I put the wing where Ray put it. In this case it would be sensible not to fix the wing mount until the model is trimmed or at least built so the CG can be located before fixing the fore and aft location of the wing.

The model was very easy to trim requiring only about 3 degrees of down thrust and some side thrust on the forward propeller.

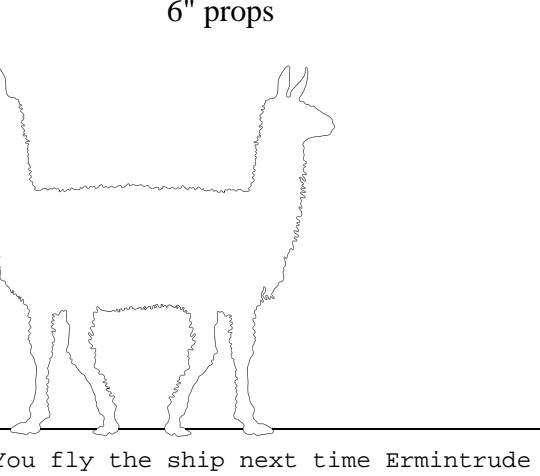
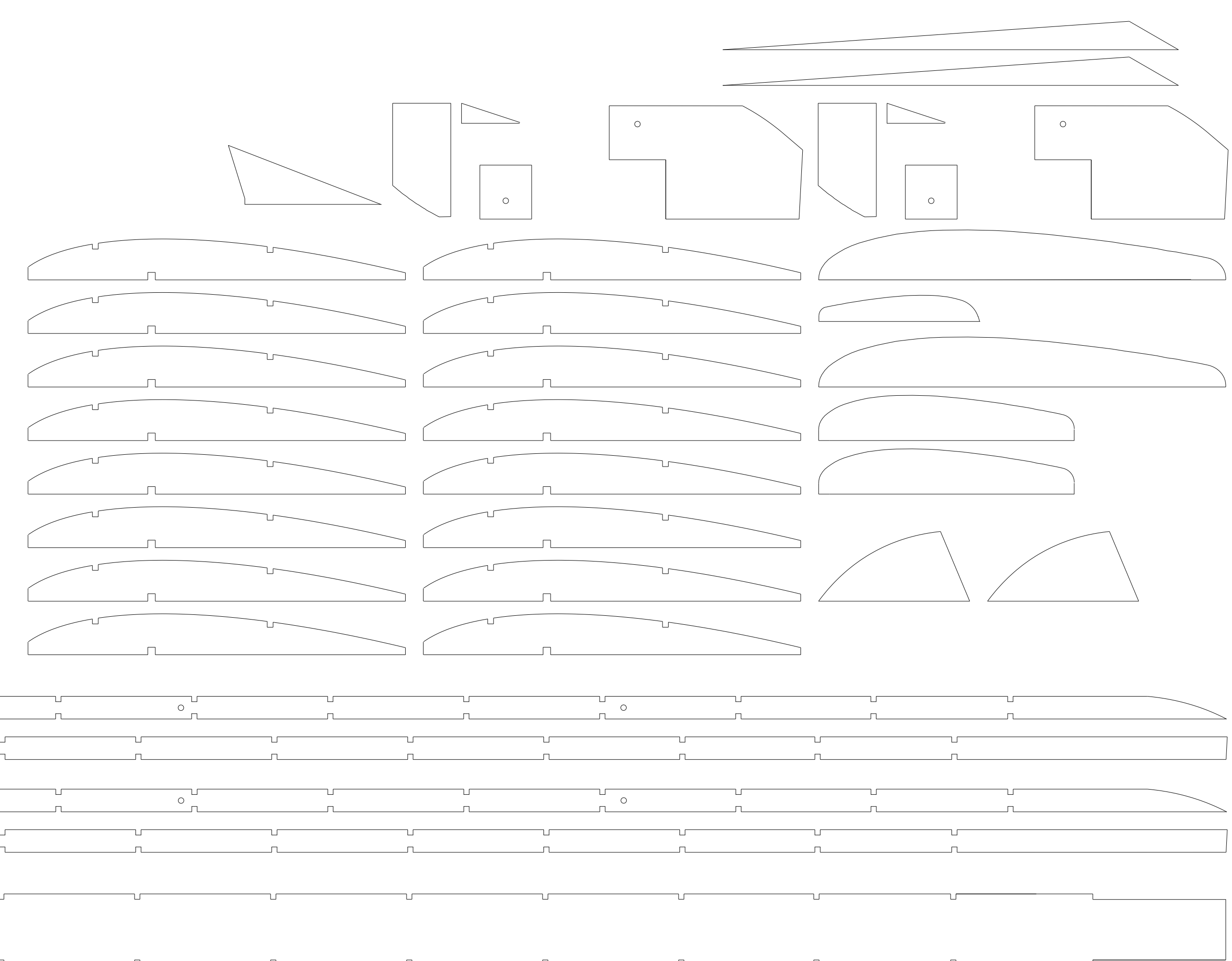
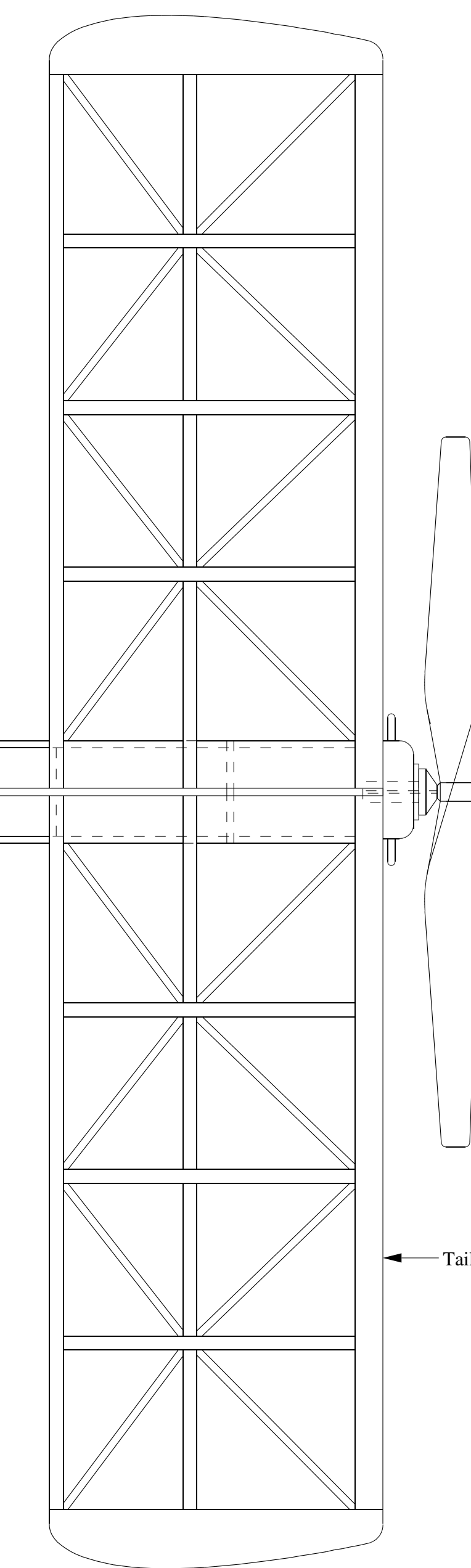
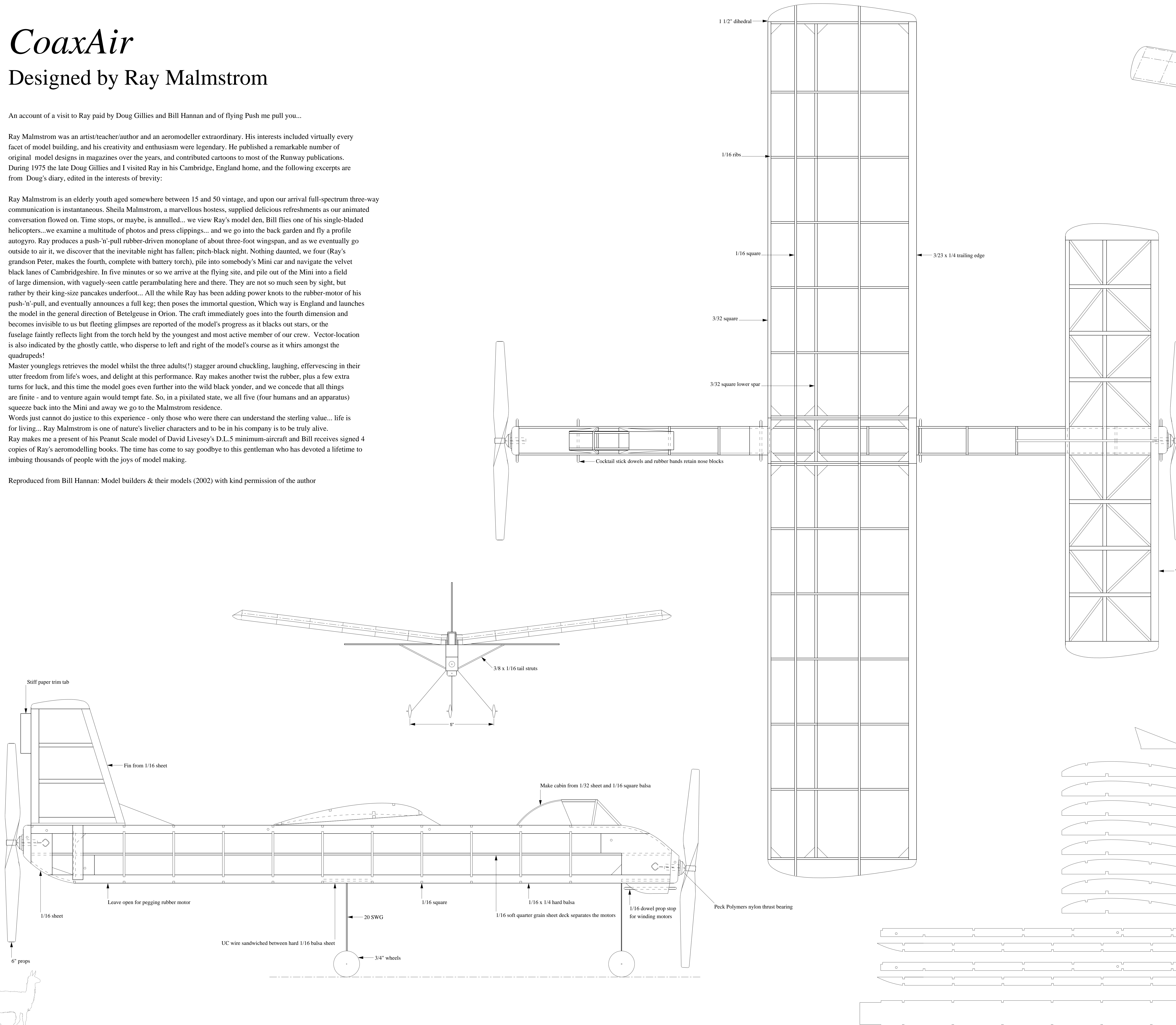
### Some thoughts and suggestions

It fly's quite well for such a model, 30 second flights are easy. However if you want it to float then use an under-cambered section. The top surface of the Ray section is very nearly a Solikov section as used on FF contest models so if you cut the under-camber shown by a dotted line on the plan it becomes a Solikov section and if you remove the UC the flights will get even longer.

The built up 1/16 tail warped - not badly enough to be a problem but enough to make me wonder if it would have been easier to make from 1/16 square and cover in the lightest tissue.

If Ray were alive now...

I'm sure he would (I would) put electric motors and lightweight radio in it. We wanted to do this back then but it was beyond the technology of the time. Which didn't stop us trying! An RC senator, several cox 010 powered ACE RC models and home made 'lightweight!' RC sets. It never ended well.



You fly the ship next time 2012/12/16