LULU'S BACK IN TOWN

JIM WRIGHT, FROM THE IVINGHOE SOARING ASSOCIATION, DESCRIBES THE CONVERSION OF THE ORIGINAL 1949 AEROMODELLER 'LULU' FREE FLIGHT GLIDER TO 2 CHANNEL RC, AND PROVIDES DETAILS OF A NEW KIT OF THE UPDATED LULU RC

In the beginning…

When Aeromodeller published the plan of John Barker's Lulu 50-inch wingspan Free Flight glider in November 1949 I am sure nobody would have predicted that model would appear again as 'Lulu RC' almost 75 years later, but it has. In 1949, John Barker was 22 years old and had been modelling since he was 11. He was a member of the Grantham Zoomers club and employed as an engineering draftsman.

The model was described in Aeromodeller as a 'lightweight contest glider that can be constructed in approximately four hours', a claim we would dispute, although basic assembly might have been possible if you had all the parts cut and ready.

Of course, the model has been popular on and off since 1949, and SAM35 did run a Lulu postal contest about 8 years ago and there was once a 'one model' contest as an 'add on' event at the BMFA Free Flight Nationals some years ago.

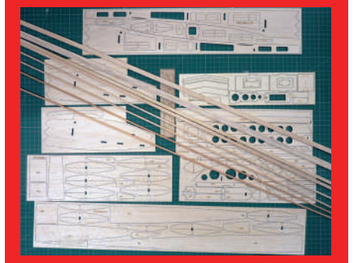
Adoption of Lulu by the Ivinghoe Soaring Association

The proposal to adopt the Lulu for our club team build in 2024 came from John Snell, the editor of our club magazine The Beacon. He suggested we adapt the design and convert it to two channel (rudder-elevator) radio control with a focus on getting members to build something a bit different for our annual Nostalgia Day slope soaring event held every September at Ivinghoe Beacon. The original model was a towline glider so a lightweight bungee launch was also considered.

John Snell had spotted the Lulu in a book titled 'Old Timers, Model Sailplanes'. (His review of this book is to be found at the end of this article). Although John had been building and flying models since the 1940's, he was not previously aware of Lulu but he mentioned it to me and I knew about Lulu from my early Free Flight days.

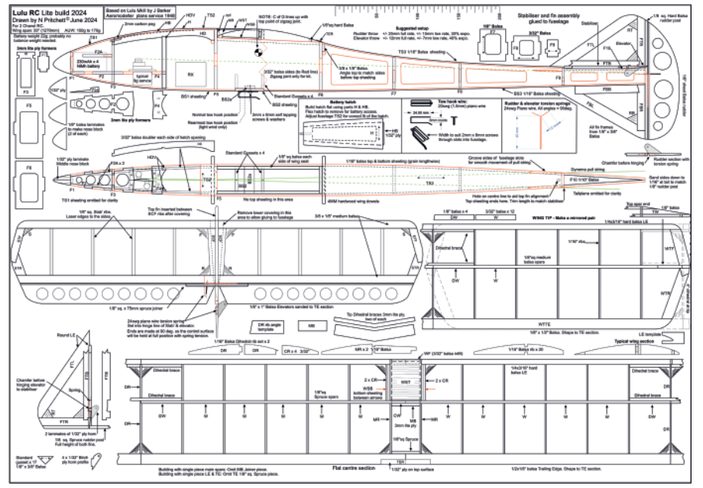
The Lulu RC soaring over Ivinghoe Beacon on its maiden flight.

John Barker's MkII Lulu, from the November 1949 aeroModeller.



The complete kit of laser cut parts for the Lulu RC Lite flat field thermal soarer.

Andy Sephton launches his Lulu RC Lite on the Peterborough Bungee.



The plan of the ISA produced Lulu RC Lite, this version is intended for bungee launching.

'Proof of concept' build, flight tests and into production

The first thing to do was to decide the size of the rudder and elevator. This was based on a lot of RC experience rather than calculation, and the old adage of 'if it looks right it will probably fly right' that I think was a phrase used by Chris Foss, the respected designer of many successful slope and thermal soaring models.

A CAD plan and prototype laser cut parts kit was duly produced, and I agreed to build the 'proof of concept' model. The model is ideal for small field bungee launches and for light wind slope soaring for those lucky enough to have easy access to suitable hills.

The prototype was built and ready to fly for some time, but it wasn't until late April 2024 we were finally able to 'maiden' Lulu RC from the slope after a long wait due to a very wet and windy spring. When the wind finally dropped the sun shone, and on the day the wind speed was about 5-9mph but temperature was only 5-8degrees C.

The model flew straight and level so our estimates for rudder and elevator size proved right, all the initial flights from the slope were successful. The slope flights were later followed by some bungee launches that also proved successful but more on this later.

The suggested control surface set-up is below but it is down to individual choice.

Centre of Gravity (CG) marked on the plan is ~50mm from the leading edge. To achieve this, you can move the battery forward or aft or, of course, add some lead as needed.

1. Rudder movement 15mm left and right of centre and exponential -30%
2. Rudder 'dual rate' (reduced movement) 10mm left and right
3. Elevator movement 7mm up and 7mm down of neutral and exponential -60%
4. Elevator 'dual rate' (reduced movement) 4mm up and down of neutral

The model is responsive and performs well with the reduced control movements.

The 'flying weight' of my prototype is 285g so rather heavier than the 1949 model, that weighed about 170g with no RC equipment.

I used a 4-cell AAA NiMH battery, a 'nostalgic' 35MHz receiver and a couple of Hitec HS-55 servos that I had in stock plus 35g of nose weight just in front of the battery position to get the CG about where it should be. The model was covered in Oralight covering film but in 1949 Lulu would have been covered with tissue.

Feedback on the build with a few suggested improvements in construction were discussed and incorporated into the plan and kit.

Following the success of the prototype, ISA members were invited to pre-order and reserve a kit and plan. The initial take up was 17 kits and at the time of writing over half have already been built and flown.

Lulu RC Lite rudder and tailplane details.

Lulu RC Lite towhook detail.

More evolution and bungee spec.

Two of the Lulu RC kits were bought by Andy Sephton and Kevin Wallace (also ISA members) and Andy felt the model would be good for small field thermal flying. The Peterborough Club have introduced small field RC models into their contest repertoire, and the Lulu RC would fit the bill perfectly.

However, to meet the rules Andy needed his Lulu RC to be less than 200gms, which enables an effective launch on the Peterborough bungee that comprises 7.5m of ¼" flat model aircraft rubber and 22.5m of fishing line. To achieve the under 200g requirement, Andy made several modifications to the build to reduce the weight, and these are included in what we now call 'Lulu RC Lite'.

By using even smaller/lighter servos, a lighter battery (4 x 1/2 AAA size), a small and very light 2.4GHz receiver, and some structural modifications the result was a model that balanced on the plan CG without ballast and weighed in at 175g ready to fly. Coincidently, Kev Wallace has made similar mods on his Lulu RC and achieved a flying weight of 155g.

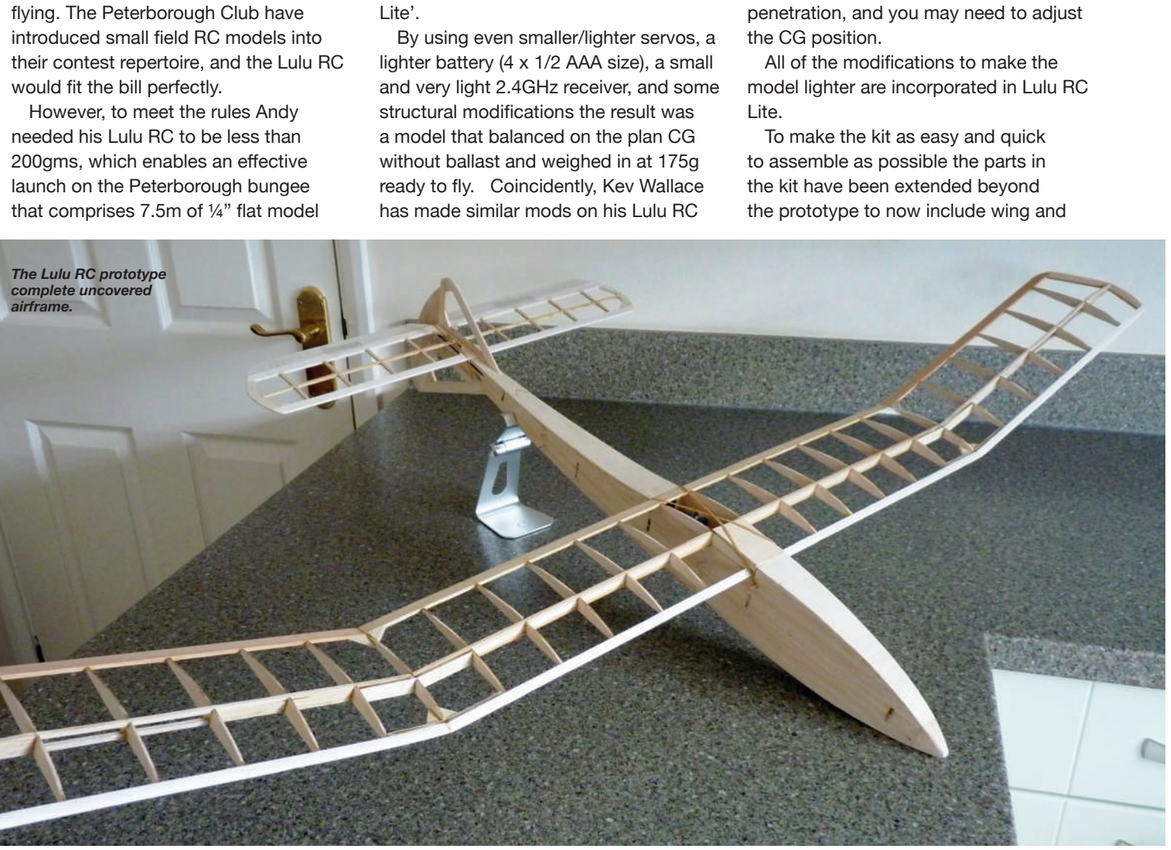
If you do want to fly the model in light winds from the slope there is ample space in the fuselage below the wing to add some ballast to achieve better penetration, and you may need to adjust the CG position.

All of the modifications to make the model lighter are incorporated in Lulu RC Lite.

To make the kit as easy and quick to assemble as possible the parts in the kit have been extended beyond the prototype to now include wing and tailplane tip pieces, gussets, strip balsa and a few other parts.

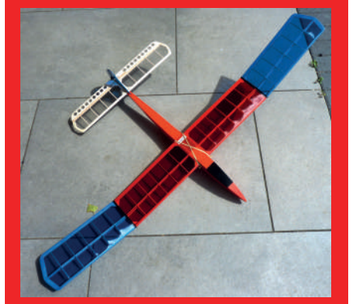
All of this should make assembly closer to that '4-hour assembly claim' made back in 1949.

Even more evolution is in progress. One member has added an electric power pod strapped over the centre of the wing, whilst another Lulu RC builder is planning to put a small electric motor in the nose. It seems the inventiveness of flyers has no limits.



The Lulu RC prototype complete uncovered airframe.

John Snell (left) and Neil Pritchett with Neil's laser cutter.



Neil Pritchetts Lulu RC Lite, finished in Oracover.

Left to right, Kevin Wallace, Andy Sephton and Jim Wright 11 Jul 2024 at Hockliffe.

Jim Wright holds aloft his very smart looking Lulu RC.

Kit and plan availability

Although the kit and plan were originally intended for ISA members we felt it would be of interest to other modellers.

You can now order the Lulu RC Lite kit of parts and plan directly from Neil Pritchett on a 'made to order' basis. The price of the kit and plan is £55 plus post and packing.

Email Neil at RetroPlanesUK@gmail.com with your order.

The kit contains balsa and lite-ply precision laser cut parts, wing and tailplane leading and trailing edge, wing spars plus carbon push rods and a detailed A1 size plan with a separate sheet of assembly notes.

So far, our objectives are met, i.e., to encourage ISA members to do some scratch building for Nostalgia Day and flat field bungee launches and even perhaps hold a 'one-model' contest in the future.

We hope you will enjoy Lulu RC Lite as much as we do. It is different, simple and easy to fly and of course packed with nostalgia from simpler times. ■

OLD TIMERS --- MODEL SAILPLANES, BOOK REVIEWED BY JOHN SNELL :

If you are searching for a present to yourself, here it is - a compendium of silent flight from the 1920's to 1956 which I found in a posting on the WhatsApp group of the Phoenix club (not known as an outpost of silent flight). But what a treat! Published in 2023, the author is Italian but, happily, most of the text is in English. The first 75 pages (of 180) describe in detail the models of respected Italian designers of the era, explaining that the scarcity of engines, or even reliable rubber led to an emphasis on gliders. And what graceful machines they are: elliptical wings and tailplanes proliferate, streamlined fuselages created from an infinity of carefully blended small rhombi in the age before computers arrived. All beautifully illustrated in reduced-scale replicas of the original plans (there are over 130 such reproductions). Curiously, Italian glider guiding seems to have flourished during the war period. The second half is mostly concerned with the decade after WWII and the author moves on to Czechoslovakia (as then was) - not much history but 50 pages of reduced plans. There is much more history when he gets to GB and there is a roll-call of names that will be familiar: L. G. Temple, Dick Twomey, Roy Yeabsley, P. E. Norman, Norman Marcus, Ron Warring and others, with models that are truly icons, such as, Celestial Horseman, Leprechaun, Sunspot, Jinx, Thermalist, and Keil Kraft Chief. Frank Zaic and his gliders get a deserved 10 pages. Finally, and briefly, to France (hence the cover illustration), plus Germany and The Netherlands.
The A4 format of the book makes it easier to appreciate the reduced plans than is the case with the much smaller format of the Zaic Year Books. And, as the author points out, full-size plans of all the models depicted are available from https://outerzone.co.uk
The book ISBN is 97988731 165018 and is printed in UK and available from Amazon.