one-o-four

Preface:
Which Modellflieger does not dream of a birdlike model like the natural
to circle role models in thermals? I for one have always wanted to do that. However.
the available models are not really promised. Either they were not scale enough or too expensive.
So I thought about how to build an affordable model with great flight characteristics.
After several attempts and many development steps "Jonathan" was born. The fuselage made of
vacuum formed polystyrene has a very prototypical shape and even a "spring-like"
Oberflächenstruktur. Besides, bent wings were out of question for me, it should be the typical
"Seagulls' Strike" in the wings. So I developed a technique Depronflügel with KF-Profil in
the desired shape. Together with the siluette of the elaborately CNC-cut
Tragflächen a uniquely realistic flight image is created which will amaze not only model builders.

Kit contents:
2 pcs. White polystyrene fuselage shells
1 pc. wooden strip 3x6mm
1 pc. carbon rod 0,5x3mm
1 set of depron parts (see overview)

The first step of the work is a tough one,
because it is very important for a good result
First you cut two pieces of the Carbonflachstab, each 475mm long.
Glue them with UHUpor on both sides
of the fuselage frame. The exact position of the
Rods indicate the notches on the front and back of the Depron part. The bars must be
be glued absolutely straight because they give
later on the position of Tragfläche. The
Depron part should be set to
on a straight surface!

Fig.1

Fig.2

Glue flush in the front, prefer some Depron at the back
to survive. Here
Must be taken into account when adjusting the
Fuselage shells often
some more Depron has to be cut away.

Fig.3

Fig.4
actual cutting line
distance ca.3mm

impressed cutting line

distance approx. 7mm

Now the time has come to cut out the fuselage halves as shown ( Fig.4 ). It is best to start with the

outer edge. The embossing helps here. On the belly side (below) the following is especially important
one thing to consider. The underside must not be cut straight along the marking but in
an even arc. See Figure 4 above.
Now you can also make the cut-outs for the lid, the Tragflächen and the V-tail.
As a precaution, these should be cut out slightly smaller, i.e. always on the inside of the indentations.
will be.
Then alternately place the shells on the Depronrumpfspant and adjust them. It may be necessary to adjust the
Cut some more depron off the tail.
Now the fuselage shells can be put aside again.

Fig.6

Fig.5
The cutouts for the cover...

...and for the V-tail.

Now the two upper Tragflächenspanten can be glued into the two slots in the fuselage bulkhead
will be. You will later specify the V-shape of Tragflächen and the exact position ( Fig.6).
The Tragflächenspanten are pushed into the slots from above until the front 3mm
ends above the carbon rod. The rear one is pushed further in and ends at the lower edge of the
Carbon rods. The position of the ribs is different because we will later update Tragfläche with
of its upper edge directly below the carbon rod. However, in the front area we have
a doubling (Fig.7).

Tragflächenoberteil

Tragflächenspant

wooden strip

Tragflächenunterteil

Carbon rod
Tragflächenwinkel

The figure on the right shows the
exact location of Tragfläche,
but before we stick these on
If we're going to be able to build it, we have to build it.
Which means the next time
...the construction stage:
The Tragflächen.

Fig.7

First you cut two pieces of
225mm length each of the supplied 3x6mm
wooden strip and glue it into the gap of the

Tragflächenunterteils. After sufficient
Drying comes now the dirtiest work.
Grinding the Tragflächen. The leading edge
is rounded at the top and bottom to the first 2.5-3cm. At the rear edge
from below (!) a slope of about 3cm
ground so that about 2mm of material thickness remains ( Fig.8).
For orientation the drawing Fig.7
can serve as orientation.
Fig.8

Let's come to the construction of the slipway that makes it possible Tragflächen with the elegant, gull typical double bend very simple
and quickly produced.
Actually, it's more like a bending gauge.
It is constructed in such a way that it only
is plugged together and not glued.
After finishing the right Tragfläche
they are simply disassembled and mirrored for
left Tragfläche is plugged back together again.
That sounds more complicated than it is
the following things:

Contact edge

Slant to the right

- The longer (335mm) Depron part for the
Bending radius always points to the wing root,
so towards the fuselage
-The bevel on the base plate and contact edge
always points in the direction of Tragflächenspitze

long stencil 335mm

Fig.9
short template 305mm

It is best to start with the right side and sort the parts as shown in the figure above (Fig.9).
Now put the parts together as shown below (Fig.10+11).
Fig.10

Fig.11
335mm

335mm

305mm
305mm

Konfiguration for the right Tragfläche...

...and mirrored together for the left.

Before we now send the two Tragflächenteile to
of the leading edge Congruent with each other
they have to be able to glue them together they have to be pre-bent
will be. For this purpose a cardboard roll or
something similar with a diameter of approx. 10cm is used
(e.g. thermos flask etc.). The leading edge of the Tragfläche should always be parallel to
roller can be held (Fig. 12). During
of the pre-bending the parts from time to time
Place the control on the slipway. The better the
parts nestle to the radii of the stencil the easier the parts can be
stick together later. If the Tragflächenoberteil is also pre-bent, it can be made with UHUpor
beAbb.12
with UHUpor. While the glue is flashing off
drape the Tragflächenunterteil on the
Helling so that the contour of the leading edge lies exactly at the contact edge. Now you place
the Tragflächenoberteil on the Tragflächenwurzel (fuselage side) and the leading edge and
with a little pressure from the inside out. Make sure that Tragfläche is always set to
the slipway. Now change the template and finish the left Tragfläche in the same way.
Afterwards we hold both Tragflächen once again next to each other and check if the radii
have become identical for both Tragflächen. Now we leave the glue some time to dry
and dedicate ourselves in time to the V-tail.
For the assembly of the V-tail you simply glue
the smaller part, this can be achieved by stacking
herausfinden, at a 90° angle onto the
Larger (Fig.13).

Fig.13

Then sand the lower edge slightly (!) flat and fit the tail unit in the slot on the
Slide the fuselage frame. If it fits and neither
stretches still wobbles can the tail unit be glued in
(Fig.14).

Fig.14
In addition, the Tragflächen can be used as shown on page
three Fig.7 glued to the fuselage frame as seen in the picture
will be.
The exact position can be seen in the illustrations.
To stabilize the unit, you now glue from below
the Tragflächen and tail unit angles. Here applies
for all angles, the shorter straight side always at
the fuselage bulkhead (Fig.15).

Fig.15

You can attach the Ruderflächen according to your personal taste. Both
UHUpor hinge as well as glass fiber tape do here
their service. Before gluing, the oars should be
but grinded a little thinner towards the end

will be. From the sections of the fuselage halves
you can get two simple rudder linkages
cut out (Fig.16+17).

Fig.16

Fig.17

The Bowden cable tubes can be cut out through the angles
(Fig.18).

Fig.18

The servos should, like all RC components,
sit as far forward as possible so that later the
ideal centre of gravity can be reached without lead
can. The battery must also be as far as
somehow possible to sit in the head (Fig.19).
Fig.19
About the mounting of the battery and the motor I don't want to lose many words here, because the most model builders here rely on their own experience and preferences. I recommend for
Use of a motor a power of 75-150W and a folding propeller for sailing.
The motor camber should be 3° and have 1.5° side drag.
When the RC installation is complete the fuselage shells can be glued on. The parts are each
3mm glued to the 6mm thick Depron fuselage frame. If both shells are glued on, you should draw a throat seam with UHUpor between Tragflächenunterseite and the fuselage shells.
This increases the stability of the Tragflächen enormously! Now you only have to remove the lid from the two parts
can be glued together and adjusted.
The weighing completes the assembly. The centre of gravity must be 2mm behind the leading edge (measured directly at the fuselage). Because of the short fuselage the gull reacts quite strongly to changes in the centre of gravity, so you should do the weighing very carefully.

The Erstflug:
For the Erstflug I recommend in principle a meadow with high grass. Jonathan reacts to all oars quite calm. You should be prepared at Kurvenflug to pull a lot of height.
The tighter the curve the more elevator. If you fail to do this, you will lose a lot of height, which could be tricky in the start-up phase. But once you have got used to it, this is no problem at all.
Due to the very short fuselage, curves need to be actively controlled.

I wish you a lot of fun with the construction,
and many beautiful flights with the gull Jonathan!

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