

**Dale Tattam had been searching
for a 'different' subject when
one day.....**



Pietenpol

AIRCAMPER

It's quite funny how we decide to build something. I had been looking for a slow flying machine with good colours and possibly electric for a while. One day, whilst helping out with a full size Taylorcraft, I had the chance to fly in an Aircamper owned by a friend of mine Dave Silsbury. Since the sky was blue with very little wind I jumped at the chance and after 45 minutes of great flying I had found my next modelling project!

This Aircamper was originally in Dave's colours of yellow all over with black trim but then, whilst at the Donkeswell PFA Strut Meeting a month later, another Aircamper turned up. Wow! It was just as per the original 1930s plane with superb colours and unmodified except for the engine. I just had to have one and since my pocket money wouldn't

stretch to hangar fees etc, the model version was going to have to do for the moment.

After a few hours drawing up plans and studying the photos, the Pietenpol Aircamper started to become a reality.

Tail and Fin

I like to start with the tail. This gets rid of about 1/3 of the building, leaving all the 'fun' part's to come!

It's a good idea to keep all the wood in this area light but firm. The spars, leading edge and trailing edge are all about the same - firm to hard. Then just the tips, spacers and gussets can be softer but still firm. What we don't need is the assembly warping when it's being covered. I used PVA glue for 90% of the building with some super glue for spot fixing. Just a light sanding and a rounding off of the edges will do.

Undercarriage

This is all very straight forward with no strange angles - simply bend and solder. The wheels (white plastic ones) are far too heavy for this model so some made up wheels will be the only way to go. Don't start pulling our what little

Fig. 1

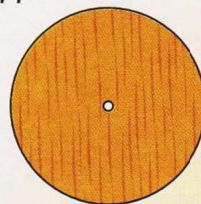
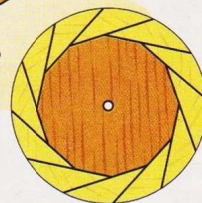


Fig. 2



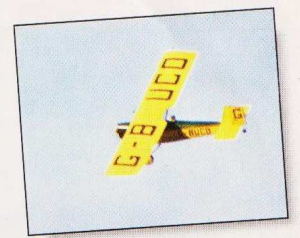
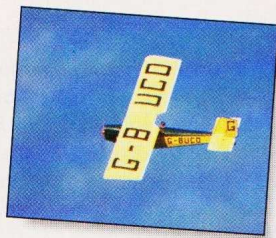
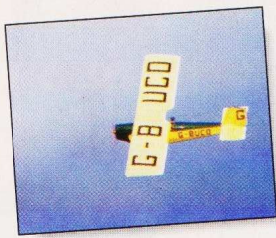
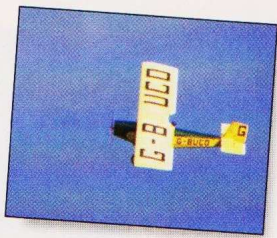
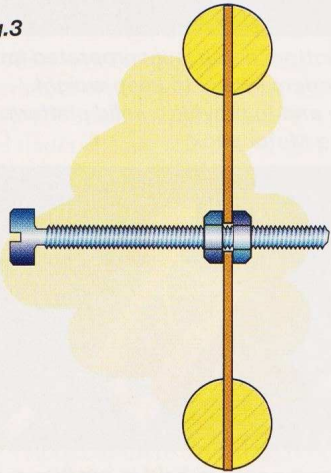


Fig.3



hair you do have left - this is quite a simple thing to make.

Start by cutting a plywood disc the size of the finished wheel from 1/16 ply.

Now build up the tyre section from 1/8"x3/8" balsa. Super glue this to each side until you end up with a stone age wheel. This can now be sanded to a tyre shape, a job much eased by sliding a bolt through the centre and popping it into a drill. A few turns later, something like a wheel will appear!

Epoxy a tube to fit over the 16g undercarriage piano wire to act as a bearing.

Add 1/16" balsa triangles each side of the tube - about five or six on each side will do. The rear side of the hub needs a flatter disc than the front. These are made from paper by cutting a large disc and the snipping up to the centre and folding the cut edges over each other to give you a cone shape.

Glue the rear side to the wheel and then fix the wheel to the model before adding the outer cone.

There you go! One pair of wheels for a few grams weight and a few pence!

Fig. 4

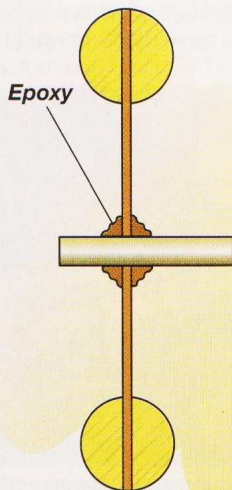


Fig.5

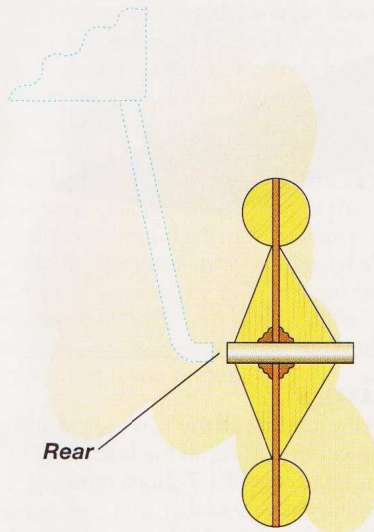
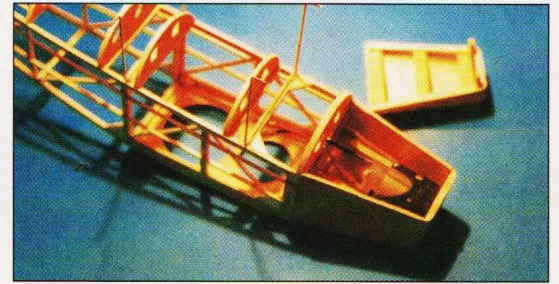
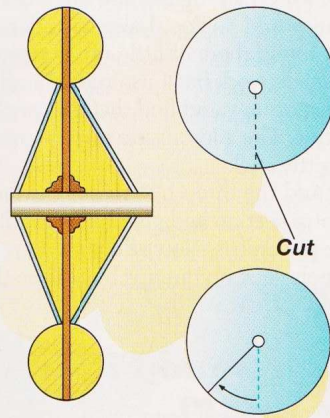
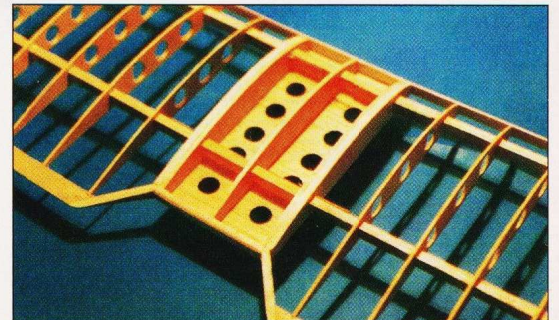


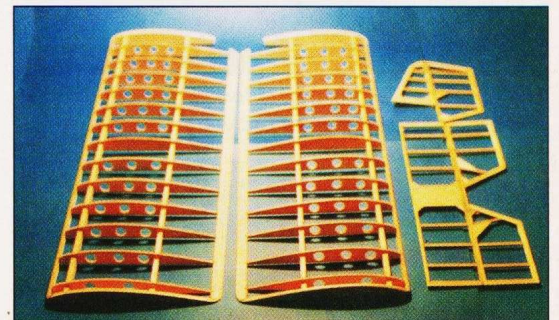
Fig.6



The fuselage is mainly stringered with uprights and a very few formers. The cowling is built up so that the top is removable for motor access.



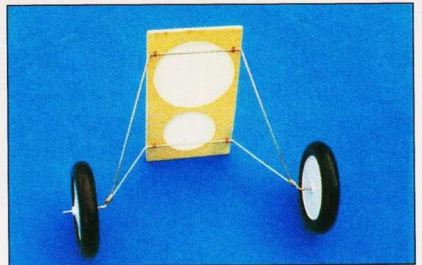
Lightening holes are added wherever possible to keep the airframe light.



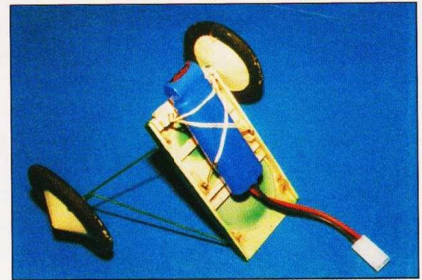
The ribs are slid onto the spars, making sure that they are not an 'interference' fit which could induce warping during the covering stage.



One man and his model! I wanted something a bit different and my flight in the Aircamper provided me with a lovely model with excellent handling characteristics.



The bottom hatch is incorporated into the undercarriage to keep weight down and to provide a solid platform for the Motor pack.



The motor pack is held in position with rubber bands and the hatch is slid into position and fixed with a single screw.

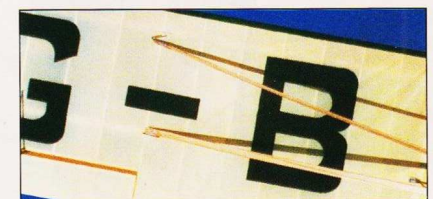
use a separate NiCad for the radio system - 225mAh works just fine but you could use a BEC system - it's up to you. The all up weight is just 1lb (16ozs) which isn't bad considering the size!

Fuselage

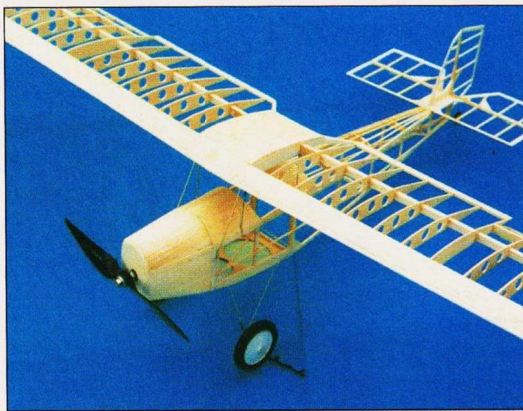
The top and bottom longerons are made from 1/8"x1/4" hard balsa and the uprights are of 1/8"x1/8" with just a couple of 1/4"x1/8" at the front. Build both sides over each other and once they are dry, remove them and sand both sides. Now commence with the main building sequence.

I start with the front section and the firewall. Glue this in position making sure that everything is square. I then worked back to the rear cockpit and left the whole assembly to dry. Pull in the tail end and glue. Once this is dry, add the top and bottom cross braces, at the same time double checking for squareness. As a precaution, lay the fuselage on top of the plan to make sure you're not building a banana!

Bend up the centre struts and bind them to 1/4"x1/8" hard balsa, not forgetting the gussets. Add the top formers (with holes) and the top 1/8"x1/8" hard balsa stringers. Don't use soft balsa here as they will only bend later when you come to cover the model.



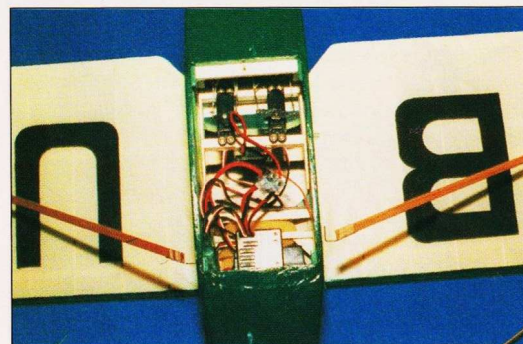
The struts are from 3/32"x1/4" spruce, sanded to an aerofoil section with 22g fittings.



The only sheeted portion is forward of the cockpit and the centre section of the wing. Everything else is open structure.



The i.c. version is much more substantial to take account of the vibration and extra power of the Laser engine I used.



There is sufficient room for the radio/NiCad installation. The Futaba 110 speed controller is just visible at the front. The motor pack sits over this installation.

Wings

After cutting all the ribs to size, add lightness by cutting all the holes out, using an off cut of 1/2" brass tube sharpened at one end.

Slide the ribs onto the spars but make sure they are an easy fit. If not they will split and warps may sneak in later on.

The trailing edge is notched for each rib. I used PVA glue here but any super glue would be fine. I also had ailerons but found them of little use in practise. They do work but I use rudder and elevator now and find that this works better. The ailerons are now on my throttle stick.

Add the three 1/8" ribs to the flat centre section and glue before adding the ply braces. Now add the outer panels, jack up the tips by 3/4" on the tip ribs and leave to dry.

Struts and Fittings

These are all from 16g tube on the centre section and 22g for the strut fixings on the wing panels. Bind the tube to a scrap of 1/4"x1/4" hard balsa and then glue in position. If you are using ailerons, add all the cranks etc before cutting the ailerons free. Top hinge them with covering material.

The struts are from 3/32"x1/4" spruce, sanded to an aerofoil section then cut to length. Bind the 22g fittings to each end, give them a quick coat of dope and finish with paint. Don't leave them off as they add lots of character to the model plus additional strength to the airframe.

R/C Installation

Two Futaba micro servos are mounted in the front cockpit with closed loop systems actuating rudder and elevator as per the full size. For throttle I used a Futaba 110 speed controller which works perfectly. With the receiver over this, there is plenty of room for the flight and motor battery packs. I always



Cowl

After mounting the motor and gearbox, the two side cowls are made up from 1/8" medium balsa whilst the nose and underside are soft 1/4". Use either PVA or super glue to fix them in place. I built the top of the cowl and then sanded the slit along the join line.

The cowl is held in place with one long 22g piano wire pin from the front instrument panel through both formers and into the cowl itself. The two front tags are scrap spruce or balsa.

All the top decking is soft 1/16" balsa. The photos show two stringers down both sides but there should be only one - the layout shown on the plan is correct.

Hatch

I used 1/8" lite ply for this as the flight NiCad, undercarriage and struts all fit to this and I thought that one good strong area would be a good idea! The plate has to have the grain running from side to side as you need a bend from nose to tail. This needs to be held to shape so a couple of formers from 1/8" scrap were used. All the blocks to hold the NiCad fixings are from scrap hardwood. The front of the hatch has a small lip (see photo) and a screw at the rear. All this may look a bit technical but in practise it is quite simple.



The completed model just before its first 'interesting' flight! This subject has loads of character and performs well in the air with the control throws and CG position shown.



I was so impressed with the little Aircamper that I blew the plan up and produced a 68" version for i.c. power - both of the models are shown here.

Covering

You need to keep the weight down as much as possible so I used Litespan which gave me the exact colour for my prototype. Follow the instructions carefully and you should encounter few problems. For the green I used Humbrol, air-brushed on the fuselage and hand-painted for the rest of the model. Be careful when removing the masking tape after spraying. I used a 'low tack' masking tape. The registration letters - G-BUCO' are hand painted straight onto the model. You could use sticky trim if you prefer.

Flying

Now the fun begins! Two weeks went by before a calm day presented itself by which time the model was all charged up.....and so was I!

The CG was located at 30% of wing chord, the nose was pointed into wind and with a minor heave, we were away.

Aaah. Oops! Stick forward, stick back, then forward, then back! Tail down. Wobble, wobble, twitch. Mind the ground. Just climb up a bit more and start to breathe again! Must have been some turbulence from that passing seagull! Tail still down. Ailerons have opposite effect so revert to rudder control. Now ease back. Nearly completed a 360° circuit.

That's better - back on the ground again! For the next flight I moved the CG to 25% of chord and that sorted everything out - no trim needed this time!

The next good flying day arrived after a week or so by which time a new flight pack had arrived from my friend in Rugby. This was a 7.2v 600mAh pack which I gladly exchanged for the old 500mAh pencils I had been using before. I can now do figure 8's in front of me in both directions with no problems at all and with the motor at just over 1/4 open long, slow passes are the order of the day.

My friend Ray Ellis has built an Aircamper from my plans using the same radio but Solarfilm covering and his flights are every bit as good as mine. In fact, I have been so impressed with the performance of my Aircamper that I have enlarged the plan for my Laser 50. This larger model is ideal for those long summer evenings when all you want to do is stooze around and watch a lovely shape in the air.

PRODUCT file

SUBJECT:

Pietenpol Aircamper

DESIGNER:

Dale Tattam

SPAN:

47"

WEIGHT:

16ozs

POWER:

Speed 400/2.33:1 gearbox and 7.2v 600mAh pack

RADIO:

3/4 function

IC VERSION

SPAN:

68"

POWER:

.40-.50 4-stroke

RADIO:

4 function