4.5"

airfoil support

Dihedral - 1" under each wingtip

3 sq ft wing area

4.125"

airfoil support

3 sq ft wing area

Remove paper and curl

Mark strut attachment point with ball point pen

Remove paper and curl

start with very little elevator throw

limited elevator throw

narrow hobby stick -
drill small hole with Xacto tip

5/8"

cut and hinge with tape

bamboo joins elevators

OLD GUY RC
Hansa Brandenburg KDW
Rudder/Elevator Control
30"span. 3 sqft
8 oz all up weight

Hansa Brandenburg KDW

note 2 degree right thrust

elevator

servo tray

rudder

center wing supports
bamboo struts

2 degrees

lighter lines showing parts alignment

fill front
radiator with scrap
and sand to profile

pod retainer bamboo flush cut to fuselage side

CG

cut out fuselage side on heavy line

Receiver

ESC

Bat

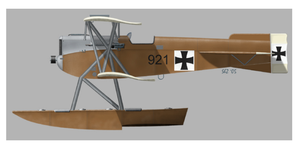
2 degrees
downthrust
2 degrees right thrust
built in with Bulkhead
AA position.

BB

wire landing gear
slips into straw section
glued to pontoon

bamboo skewer 1/2" proud of fuselage for rubber band hold down

glue bamboo spreaders to pontoons



Airfoil strut supports

Rudder
Control
Horn
small popsicle stick
1/2"
3/8"

pontoons should be water tight
remove all paper from pontoon foam board

cut small scrap to fill step

cut apart

cut apart

AA

BB

push pencil thru
to make holes for
control rods

OLD GUY RC
Hansa Brandenburg KDW
Rudder/Elevator Control
30"span. 3 sqft
8 oz all up weight

Glue support inside lower
fuselage near tail
to support vertical tail

tail support

glue section of small straw
to capture 1 Sytem pod
landing gear wire

8.5" long bamboo
cross pieces tie
pontoons across
glue here

bottom pontoon - peel paper off

bottom pontoon - peel paper off

Hansa Brandenburg KDW

Step 1
Cut out all parts along heavy lines, cutting thru center of lines.

Step 2
Remove paper from top side of top fuselage parts and roll with a dowel to form curl

Step 3
Align bulkheads AA BB and servo tray on one fuselage side. Glue in place. Bring the other fuselage side aligning the tail end and lightly glue making sure parts sit level so there is no twist. Pull fuselage side into position so the centerline is true and not banana shaped. Glue fuselage to bulkhead formers when satisfied.

Step 4
Cut horizontal tail along hinge line and notch for a length of bamboo skewer to tie the elevator sections. Hinge with scotch tape leaving a slight gap to prevent binding.
Notch the elevator on the right side where shown for the elevator control horn.
Slide the horizontal stabilizer into the fuselage making sure it is absolutely level. Trim the slot if necessary. Glue in place with small dabs of glue at front and side.

Step 5
Form airfoil by pulling a dull pencil along the half deep slits on the underside of each wing. Bend up until an airfoil support piece matches. Pull the hot melt glue tip along the crease and hold until glue sets.
Glue in airfoil supports where shown on the underside of each wing.
Glue top wing together at join forming dihedral by blocking up one wing tip 2" and the other wing flat on a table.

Step 6
Pontoons need to be water tight and have the paper backing removed. Glue the side pieces together at the tail ends making sure the pieces are level.
Place a top side on the table and glue the pontoon sides on with the front edges aligned. The tails don't need to follow the curve at the ends but should line up with the sides for most of the pontoon. You can sand the excess off later when dry.
Insert a scrap of foam board to seal the step, trimming flush. Take the two parts of the bottom pontoon pieces and glue them in. Once dry you can smooth the edges and corners with sandpaper.

Step 7
Cut two bamboo skewers 8.5" long and glue them onto the pontoons making sure the pontoons are lined up. You can use an 8.5" piece of paper to stay parallel.
Glue a piece of drinking straw across just in front of the foremost cross support to capture the 1Systempod landing gear wire. You'll need to remove the wheels for water flying.

Step 8
Install servos and control rods. Oversize the cutout length for the servos and run the wiring through the cut out in former AA. Make the width tight to temporarily hold the servos. Later when centering the rudder and elevator you can slide the servos fore and aft and then dab glue to hold them.
Glue some coffee stirrers along side of inner fuselage to support fine music wire control rods. Make a "Z" bend and install on servos. Leave some length at the tail so you can make the "Z" bend where it needs to be for the control horns.

Step 9
Temporarily install 1Systempod to fuselage and position. Poke holes where the pod retainer bamboo needs to be to tightly hold the pod's plywood tab. Push the bamboo dowel thru and glue. When dry, trim the dowel flush to fuselage sides.
Glue the top side fuselage pieces on that you had pre curled. Again - make sure the fuselage is straight and not banana shaped.

Step 10
Hinge the rudder and cut the slot for the control horn. Glue in the lower support fill piece inside the fuselage. Glue vertical tail onto fuselage making sure the alignment is straight and true.
Cut control horns from small popsicle sticks. Drill a small hole 1/2" from tail surface The hole should just be big enough for the music wire. Push these control horns in. Make the "Z" bends where they need to be for the control horns to be centered with the servos centered.
Put the control wire thru the control horns and now glue in to rudder and elevator. After trimming the radio for nuetral position dab some glue on to hold the servos.

Step 11
Glue airfoil supports on fuselage side for lower wing making sure the incidence is as shown on the plans (2 degrees) Lightly glue lower wing to fuselage and supports making sure the leading edges line up and are straight across. There should be 2" dihedral under one wing tip with the other wing flat on the table. Once dihedral is set you can apply more glue to wing fuselage join.

Step 12
The Hansa Brandenburg had a lot of struts. We will use bamboo. Note how the wing struts criss cross and are tied together.
The top wing is held in place entirely by struts. Take the sharp ends of the skewers and poke thru from the center and top of the wing at an angle to the fuselage where shown. Dab a little glue on the fuselage joins, but dont cut or glue the skewers wing side until the incidence is set and the wing is straight across. Once you are satisfied, lightly dab some glue on the topside where the skewers come thru and cut off the skewers.
Sometimes you need to tweak the incidence and it is best done by adjusting the foremost skewers going thru the fuselage. Leave the others alone.

Step 13
Push skewers thru top of wing toward the lower wing support in a crisscross manner. Push skewers from top wing airfoil supports down to lower wing fuselage join. Glue at lower side joins leaving excess on top wing. Carefully adjust until dihedral, alignment eveness are close to perfect and then dab glue on top sides. Cut bamboo skewers flush The four bamboo skewers should intersect and be tied with some glue or thread.

Step 14
The pontoon attachment struts are done in a similar way. You can use more liberal amounts of glue where the struts attach under the wing and fuselage.

Step 15
Fusion paint for plastics is a good water proofing paint. Lightly mist the model with two coats. You can add scale detail like guns, steps, cockpit, coaming, radiator, fuel tank, struts, cables.... Decals can be made by printing off the decals at www.oldguyrc.com

Step 16
Install 1Systempod with battery. Balance the model where shown by adding ballast at nose or tail. Test glide with controls in nuetral. Glide should be straight with a gentle descent.

Trimming - this model may need more down stabilizer to keep nose from rising and tail up. It needs a lot of rudder throw (5/8" each way) It needs very little elevator throw at first so you don't over control pitch. You can also control altitude with throttle. Use elevator on first flights to gently flare landings and stay off the elevator other than the trim for level flight.