PC-6 PORTER (PILATUS) Instruction Manual

Specifications

- Wing span 44 in
- Fuselage length 31 in
- Weight 680 - 780 grams
- Main landing gear and shock absorber like a full size airplane and realistic performance
- Steerable Tail wheel

Requires

- Brushless Motor 1000 Kv or 2 – Stroke Engine .15 cu in
- Propeller 9 x 5
- Battery Li-Polymer 11.1V 2000 mAh
- 4 Channel Radio, 4 mini Servos (2 for Ailerons)
- Monokote

Open the Box

The Kit contents in the box as follow;

1. Plan sheet and CNC cut pattern
2. Photo illustrated instruction manual
3. Fuselage contents pack
4. 3 mm and 6 mm CNC cutting balsa contents pack
5. Epoxy adhesive 30 grams
6. Accessories contents pack i.e. wheel, collar, aluminum shock absorber, landing gear
7. Decal, wind shield and side windows contents pack

Remark: CA glue and Monokote not included

Introduction

Thank you for purchasing the Chin Model AirCraft PC-6 Porter (Pilatus). The PC-6 Porter is the 5th model in a series of R/C electric scale airplane from Chin Model AirCraft that designed for slow flying and simple to build.

Anyone's who have mastered a trainer with ailerons should be able to fly PC-6 with a high level of proficiency from the first flight.

If you have any questions about building and flying PC-6 Porter, please feel free to contact us at www.chinmodel.com

Thank you for purchasing copyright product that invents and produces by Thai,

Chinnathon Akarapat
15 / 5 / 50

Building accessories and tools

This is the list of tools and accessories required to finish the PC-6 Porter.

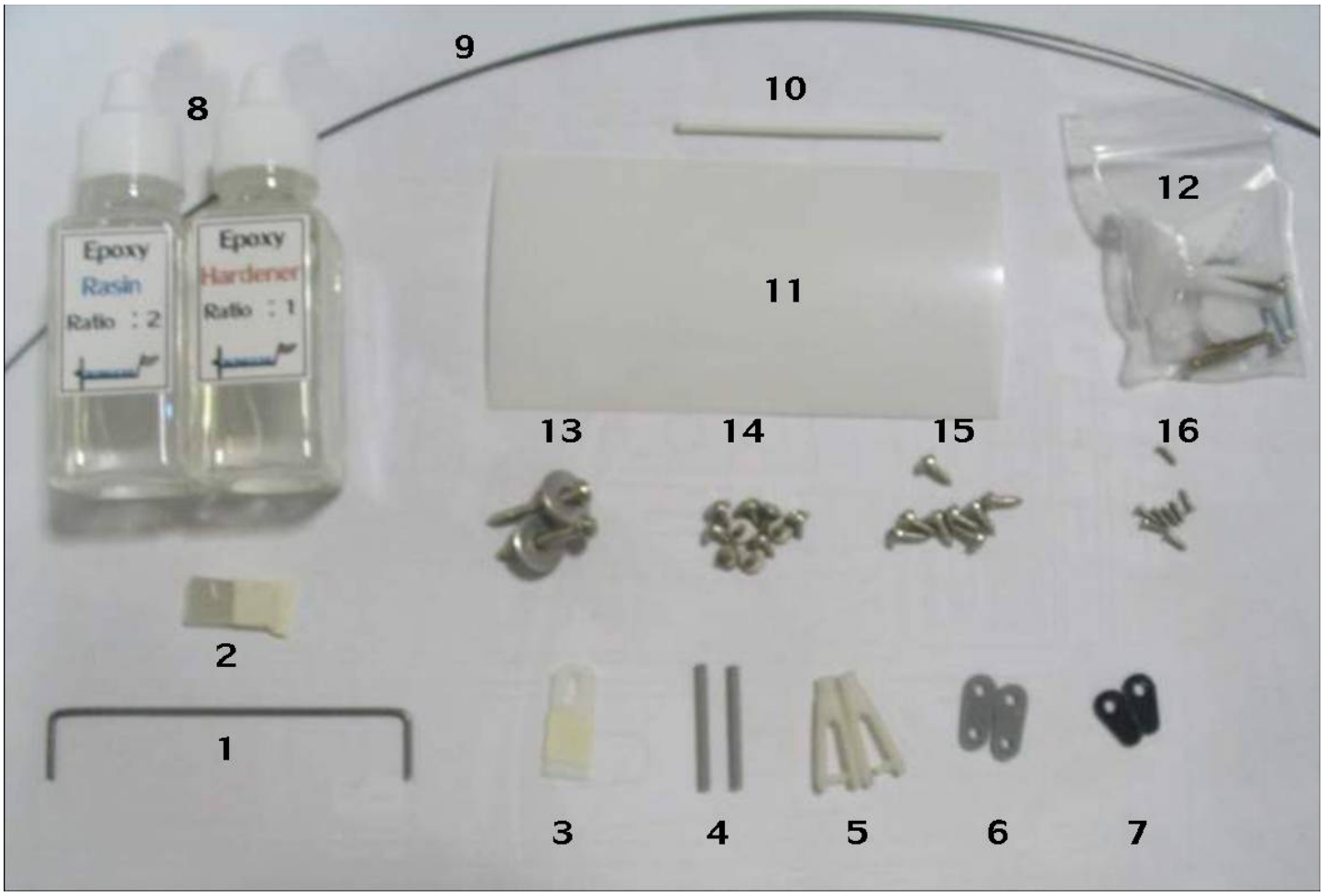
Supplies and Tools

1. Cutter, hobby knife
2. sandpaper (coarse, fine)
3. Ruler, Pen, small set square
4. Razor Saw
5. File set
6. Small Phillips and flat blade screwdriver
7. Masking tape
8. Hand drill
9. Drill bits 1, 2, 2.5 mm.
10. Pliers with wire cutter , pins
11. CA glue, UHU HART, UHU allplast
    Epoxy adhesive
12. Adhesive latex , Powder (or Balsa filler)
13. Paintbrush , Black enamel paint , Thinner
14. Monotoke and sealing iron

Accessories

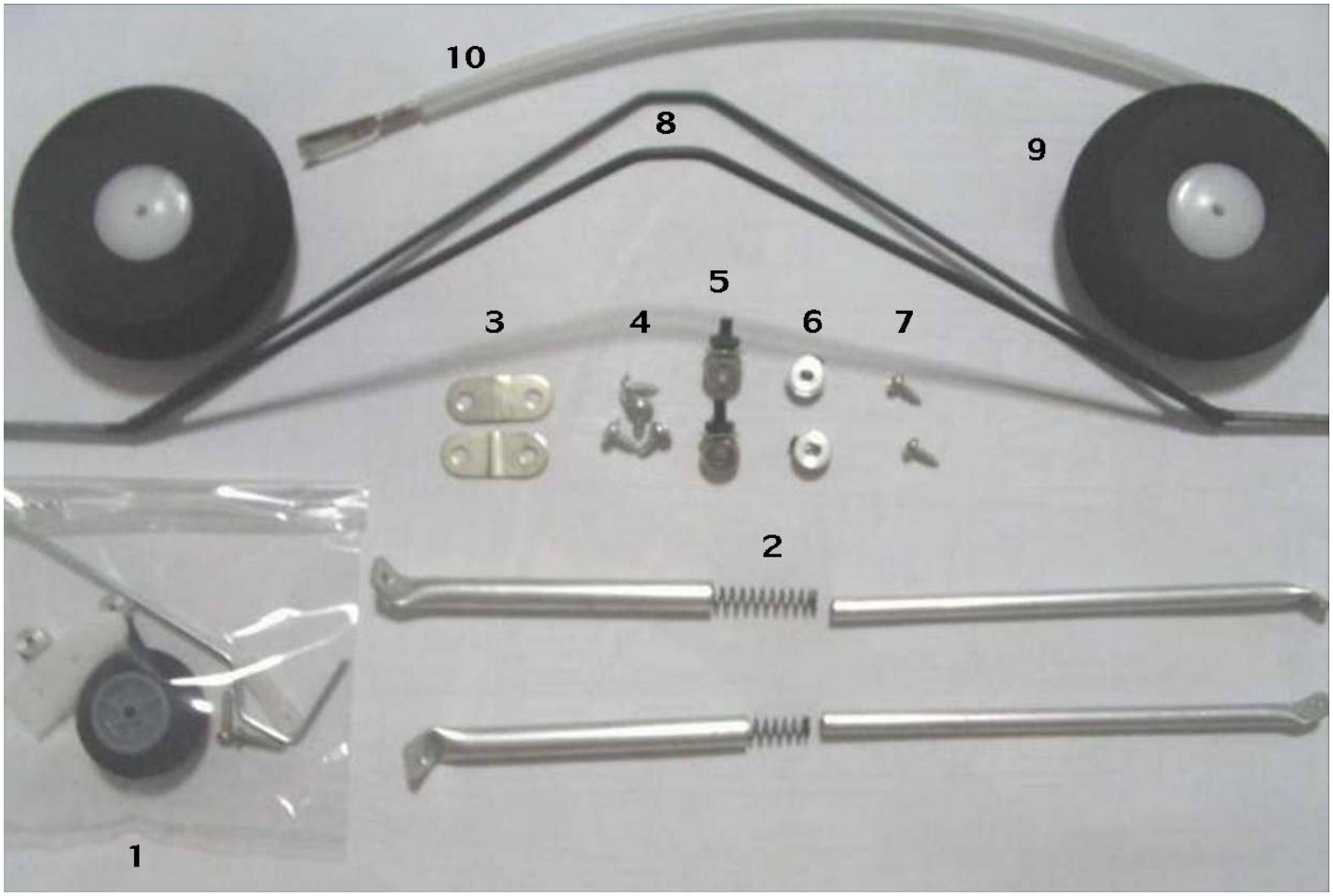
1. Radio 4 channel
2. 4 mini servos with 5 connectors
3. Y-connector (for ailerons)
4. Brushless 1000 Kv or 2- stroke Engine .15 cu in.
5. 9 x 5 Propeller
6. 30-40 mm. spinner
7. ESC
8. Li-Po battery 11.1V 1500-2000 mAh
9. Battery charger

Accessories



1.	Elevator joiner wire	1 Piece
2.	CA Hinge	13 Pieces
3.	Wing strut straps	2 Pieces
4.	Wing strut dowels	2 Pieces
5.	Nylon clevises	2 Pieces
6.	Plastic tab (Wing struts)	2 Pieces
7.	Plastic tab (battery hatch)	2 Pieces
8.	Set in 30 minutes and cure in 6-8 Hours Epoxy adhesive	1 Set
9.	1 mm. pushrod wire	1 Piece
10.	Antenna tube	1 Piece
11.	Plastic sheet for Aileron servo cover	1 Piece
12.	Control horns	1 Set
13.	Wing bolt with washer	1 Set
14.	Aileron servo cover and wing strut screws	10 Pieces
15.	Battery hatch screw	8 Pieces
16.	Stab Fin and Canopy screw	8 Pieces

Accessories

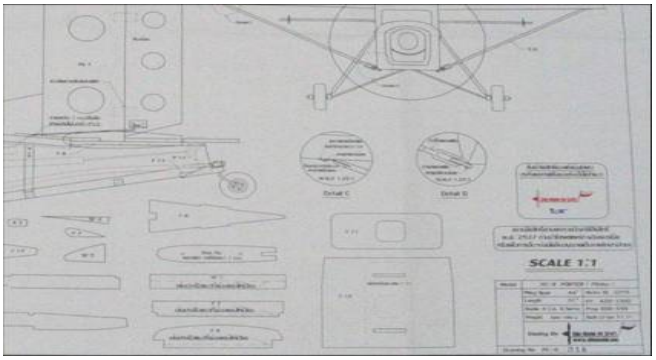


1.	Tail wheel set	1 set
2.	Aluminum shock absorber	1 set
3.	Landing gear straps	2 Pieces
4.	Main landing gear screws	4 Pieces
5.	Shock absorber-Main landing gear collars	2 Pieces
6.	Wheel collars	2 Pieces
7.	Shock absorber screws	2 Pieces
8.	Main landing gear wire	1 Set
9.	60 mm. main wheel	2 Pieces
10.	Flexible tail wheel push rod with metal clevis	1 set

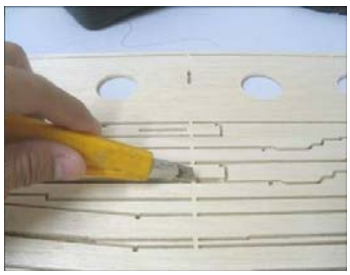
Decals Set

1.	Molded plastic windshield	1 Piece
2.	Chin Model Air Craft Logo	1 Set
3.	Red cross decals	2 Pieces
4.	Stabilizer fin	2 pieces
5.	Molded acrylic side windows	1 Piece
6.	PILATUS – PORTER decals	2 Pieces
7.	Silver stripe tape	1 Roll
8.	PC-6 decal	1 Piece
9.	HB-FLE decals	2 Pieces
10.	PILATUS decal	1 Piece

Assemble the fuselage



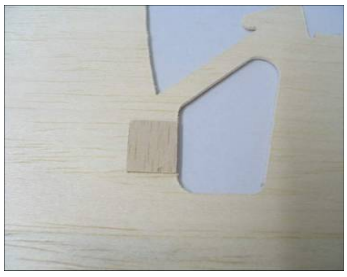
1. Prepare the plan sheet (Genuine product must have the owner stamp and authentic sign)



2. Remove fuselage parts from the sheet

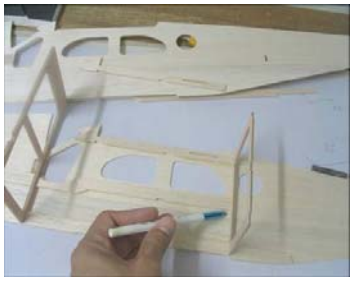
3. Lightly sand the edges to remove any excess CNC cutting

4. Prepare fuselage parts



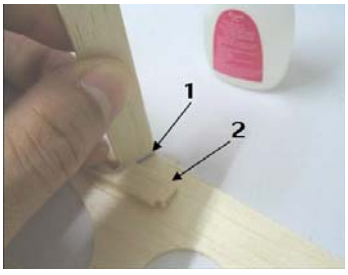
5. Assemble F15 to B 1

6. Glue P1 - P3 in place



7. Use F 3 - F 4 to mark position of P2

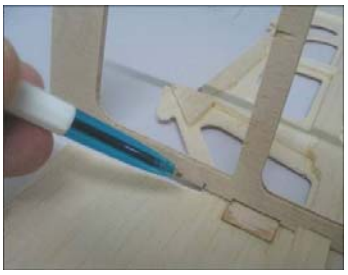
8. Position P2 and glue



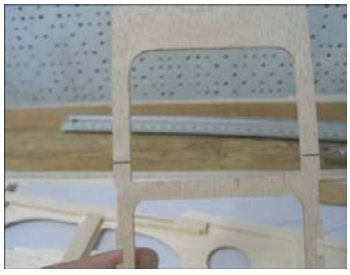
9. Use F7 to mark (1) and trim P 1 approximate 1 mm. to shape with P 11 (2)

10. Assemble P 4, P 5, P 6, P 10, P 11 as position shown on the plan

11. Repeat step 5-10 for the other fuse side

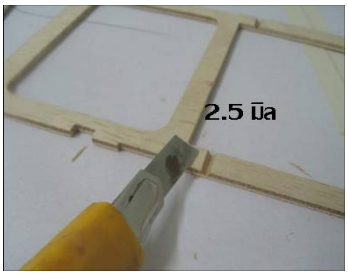


12. Use F3 to mark position for bending as shown

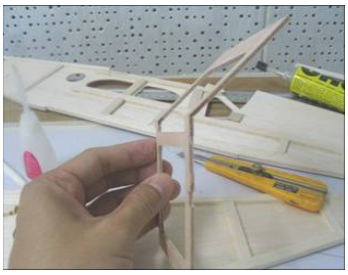


13. Mark F 3 on both sides as shown

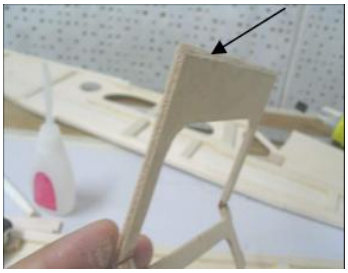
14. Saw on marked line



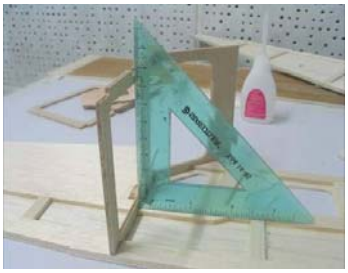
15. Use cutter to cut a notch as shown



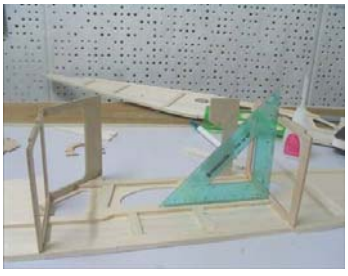
16. Lay flat against with the fuselage and apply a drop of CA



17. Trim top of F 3 slope for an exact fit with F 14

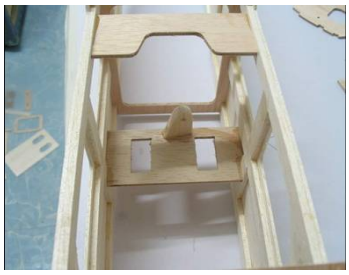


18. Place F 3 in position, use square to hold it perpendicular to the fuse side while gluing in place



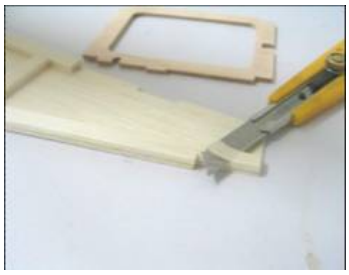
19. Place F 4, F 13 in position, use square to hold it perpendicular to the fuse side while gluing in place

20. Join the right fuselage side to the left

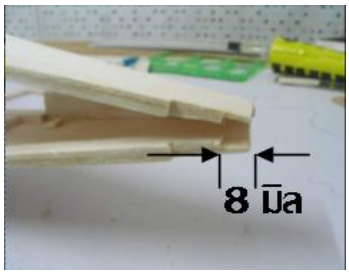


21. Assemble F 12 to A 1 as position on the plan

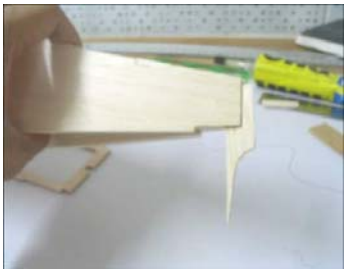
22. Place F 8 in position



23. Before assemble F 8 trim P11 approximate 8 mm.

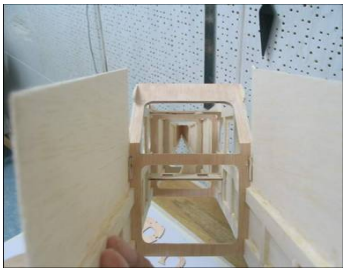


24. Bottom view of F 8 in position



25. Add a piece of 3 mm. balsa then trim and sand

26. Place F5 in position



27. Make sure that pail post are aligned

28. Trim F 7 slope for an exact fit with F 13

29. Place F 7and P 9 as position on the plan

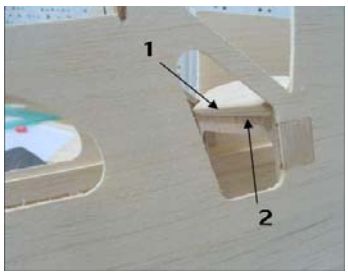
30. Place BP 5 in position and glue, note that rudder push rod exit must be on the left as shown in the plan

31. Assemble BP 4 and F 10 in position

32. Position F 11 and glue

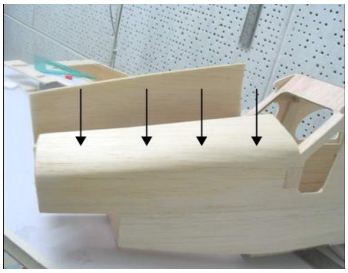
33. Place F1-F2-F6-P8 in position

34. Place P 10 in position



35. F 6 will forced to incline by P 8

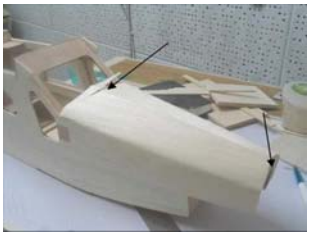
36. Trim excess balsa wood



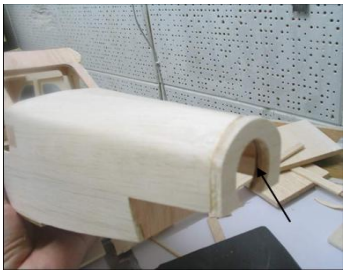
37. Wet the outside of the sheet, slowly bend the fuse side along the curve and apply CA inside

38. Mark and cut the sheet along the center line

39. Repeat steps 37 and 38 for the other side



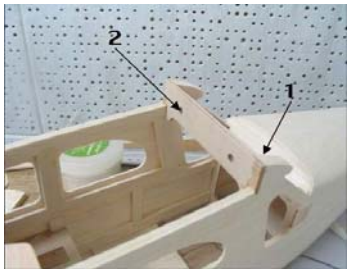

40. Trim excess wood and sand



41. Position F 0 by refer to the curve inside edge of F 1 (arrow point)

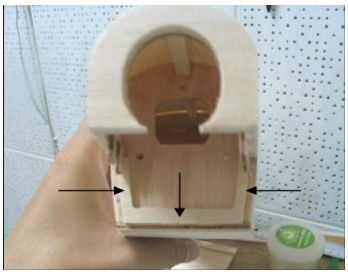
42. Place F 9 and BP 3 into position

43. Make stringer by cutting P12 and assemble F 17 for tail wheel support

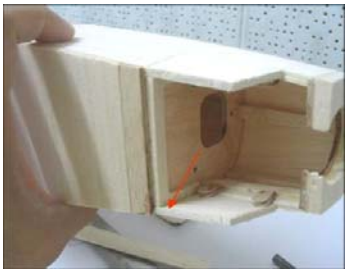


44. Position P7 (1) and F14, elongate hole if necessary (2)

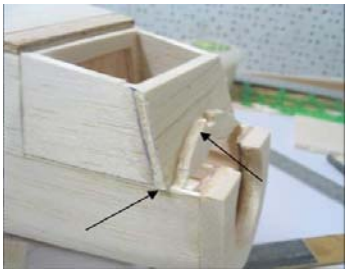
45. Place B4 - B5 into position



46. Place B 3 in position and apply a few drop of CA



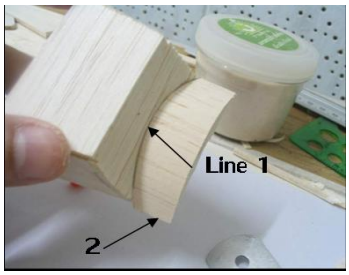
47. Place B 2 into position and trim B 3 (arrow point) to match with B 2



48. Assemble BP 1- B 7, arrow point show bevel line

49. Tape B 6 on F0 as shown

50. Add a piece on 3 mm balsa as shown, and remove motor cover



51. Trim B 8 (Line 1) to match with BP 1 as shown

52. Trim excess wood of B6 and apply CA inside

53. Lay the work down on smooth sandpaper, sand the excess wood of B6 and trial fit with fuselage

54. Tape all parts together and sand

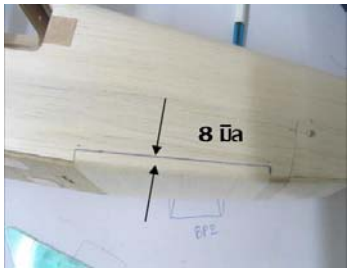
55. Draw a line to round the edge

56. Another view point

57. Carefully trim the edge as shown

58. Finished sanding

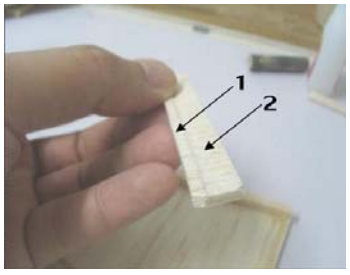
59. Mark the location of screw hole and drill, attach motor cover with metal screws



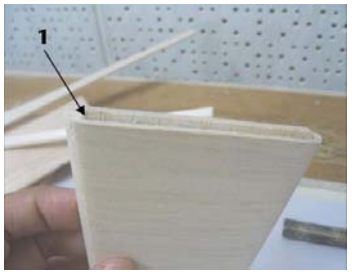
60. Draw a line for the slitting (8 mm.) battery hatch plate

61. Use cutter to slitting battery hatch

62. Assemble BT1 as shown; cut the 10x78x3 mm balsa strip for battery hatch stop



63. Sand the aft end to match with F 10



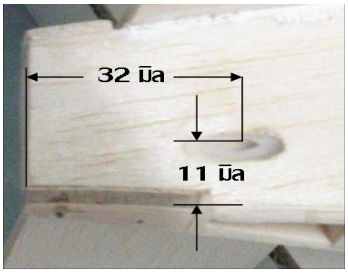
64. Glue the hatch stop to the fwd end of hatch plate

65. Place battery hatch to fuselage

66. Use a round file to shape F16

67. Install pushrod tube as shown in the plan

68. Bottom view

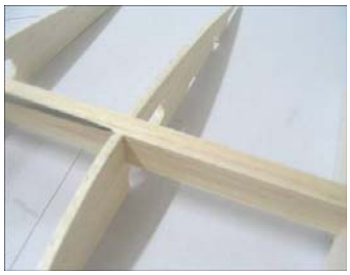


69. Pushrod exit position (32 mm. x 11 mm.) as shown

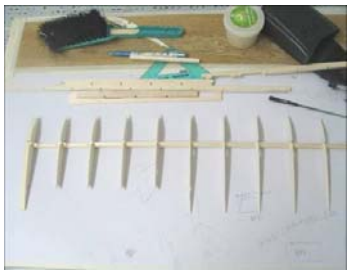
Assemble the wing

1. Prepare all wing parts

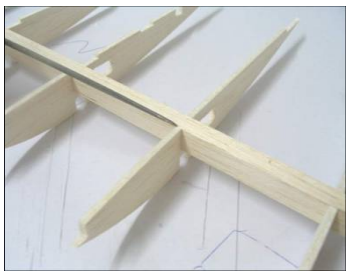
2. Test fit the ribs into the notches of S 2



3. Make sure that all ribs are even with the spar S 2

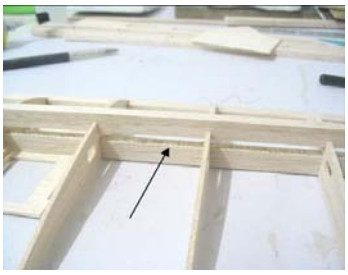


4. Test fit balsa ribs on the spar S3

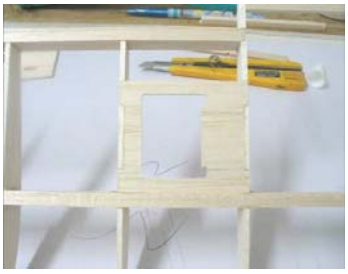


5. Make sure that all ribs are even with the spar S3

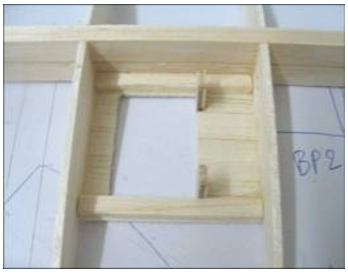
6. Fit the balsa ribs into the notches of the S1-S3-S4-S5, and then apply a drop of CA. W0 - W1 will far from the board 1.5 mm.



7. Apply UHU hart glue (an arrow point) and then place S 2 into position

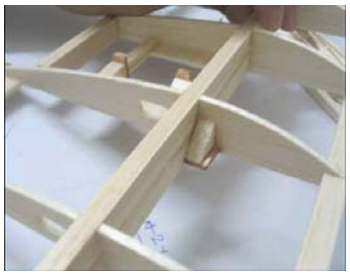


8. Place WP 3 in position



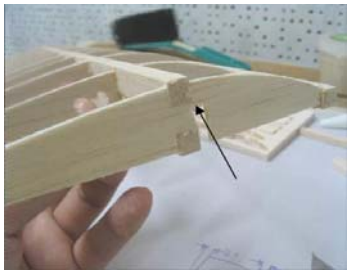
9. Assemble WP 4 and glue balsa strips 3 mm. as shown

10. Glue a piece of balsa 6 mm. each of the servo screw holes on the rear of WP 4



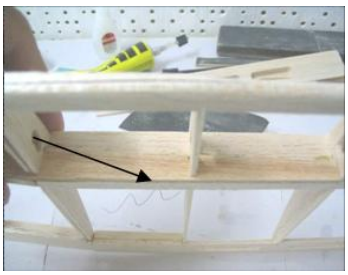
11. Place WP 5 and F 16 in position and glue

12. Place W 7 in position and glue on both sides of the wing and join the wing panels

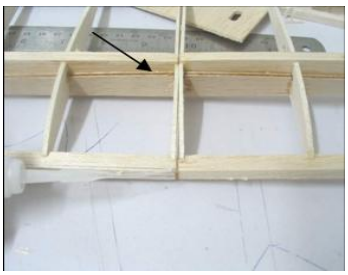


13. Use cutter carefully cut a 2 mm. slot in root rib W 0

14. Apply UHU Hart glue on the position of S 7 as shown



15. Join the wings panel, the bottom of S 7 must be even with S 3



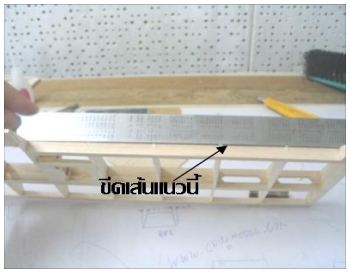
16. Drops CA on S7 (an arrow point) and leading edge

17. Apply small drops of CA at TE

18. Cut S 4/1 as shown and glue them in position

19. Glue the center skin WP1 - 2 in position


20. Drill holes for Y-connector exit and sand

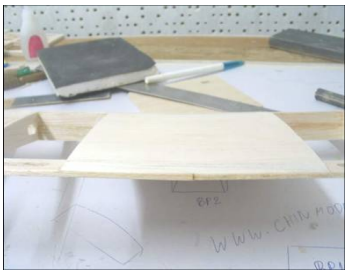


21. Place a straightedge against W3 and W6 and drawn a line all the way

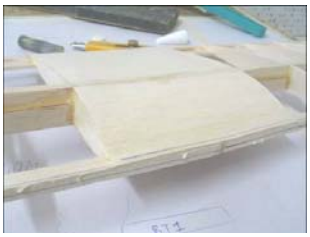
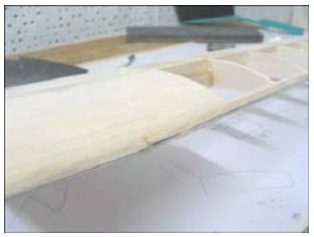
22. Carefully use a cutter to shape S 5 even with the ribs

23. Use a bar sander to sand S 5 (be carefully the ribs)

24. Aft Wing center still has the thickness



25. Trim aft wing center even with S 4

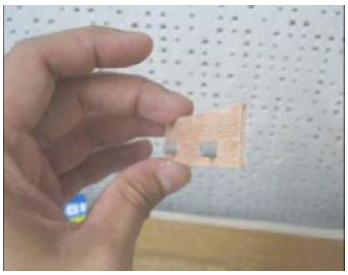



26. Mark the outline to round the leading edge of S 1


28. Carve and sand W 6, then round to finished wing tip, glue assembly together and final sand

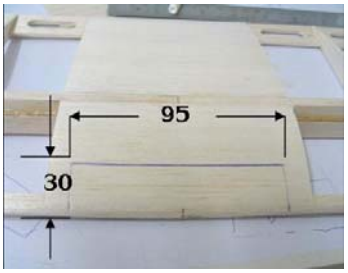
29. Finished wing

Fit the wing to fuselage + Wing struts

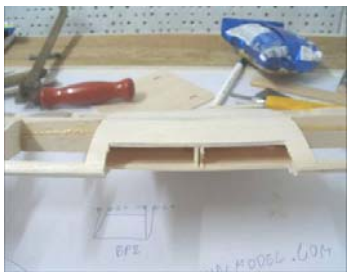


1. Install wing dowel D1into SF4 and protrudes 6 mm. of the wood and then apply glue

2. Trial fit with F 14



3. Measure center of the wing for notched wing leading edge 30 mm. x 95 mm. as shown

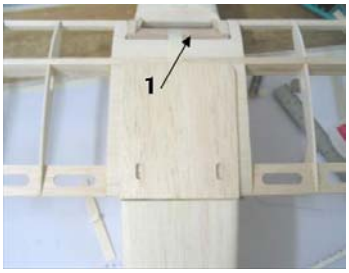


4. Cut the wing center as shown

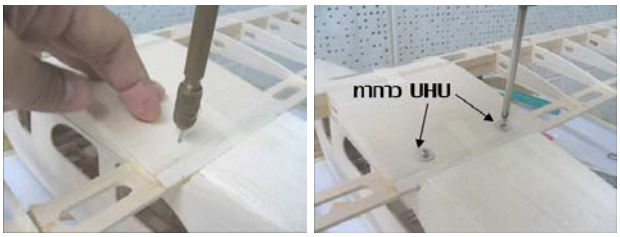
5. Position the wing in the wing saddle

6. Temporary tape the wing in place

7. Measure the distance from the aileron bay, adjust the wing until both distance are equal

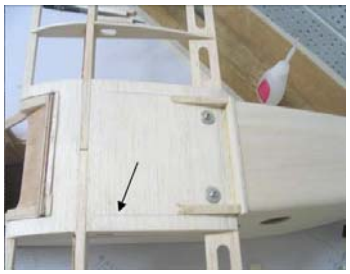


8. When the wing is perfectly align, drop a couple of CA (1) and place SF 3 on the TE to mark wing bolt position



9. Drill a hole though the wing and wing bolt plate. Align the drill perpendicular to the top surface of the wing and glue washer

10. Bevel SF 1 as shown



11. Use SF 3 to mark position of SF1-SF 2 and glue

12. Trim and sand SF 3 as shown

13. Apply glue on the position of SF 3

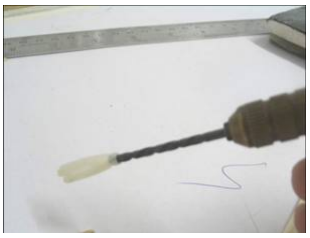
14. Place SF 3 in position

15. Use SF 5 to mark position

16. Shape SF 3 and SF 4 even with F3 as shown

17. Remove the wing from the wing saddle and apply drops of CA, fill any small gaps with balsa filler and place SF 5 into position

18. Assemble SF 5 and sand

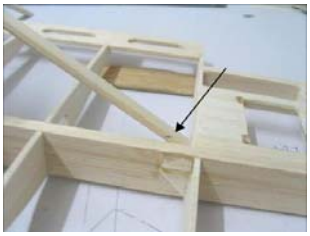


19. Enlarge the hole in the nylon clevis with a 2mm. drill and glue

20. Round the edges of S 8 and drill a 2 mm. hole for dowel and glue them together

21. Install wing strut tab as shown

22. Temporary assemble clevis to the tab as shown

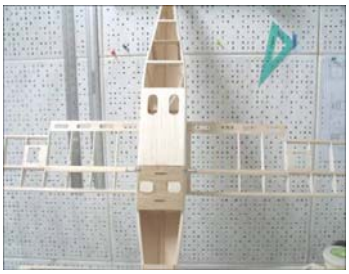


23. Mark S 8 with WP 5 and trim excess wood

24. Saw the center of S8 about 8-9 mm

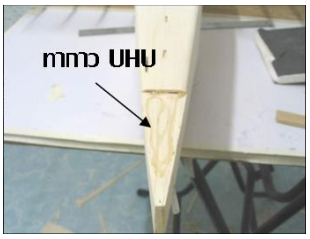
25. Position strap and glue

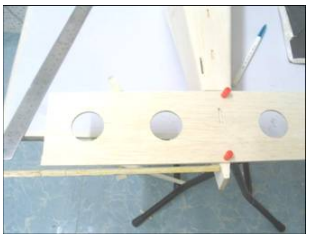
26. Test fit and temporarily attaché to the wing with screw



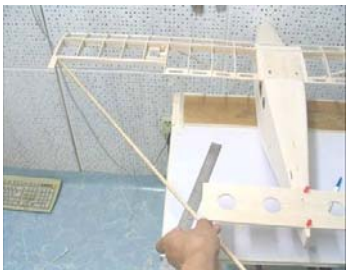
27. Temporarily assemble wing struts to the wings

Setting Empennage-Filling-Paint

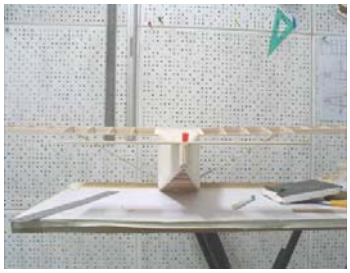




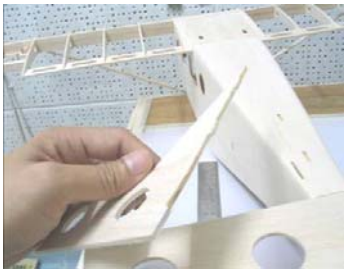
1. Center the stabilizer on the stab saddle



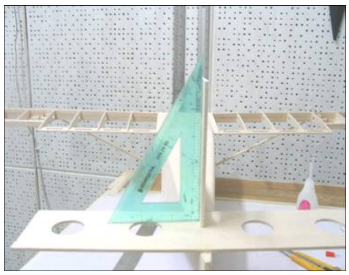
2. Mount the wing on the fuse, measure the distance from the aileron bay to the TE corner of the stab. Adjust the stab until both distances are equal. When satisfied with the fit, glue stab to the fuse



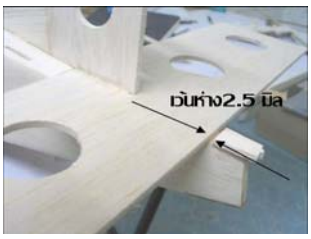
3. Checking that the stabilizer is parallel with the wing



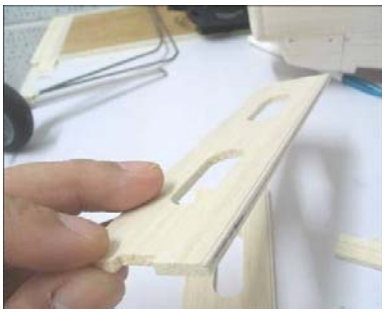
4. Assemble Fin1 and Fin2

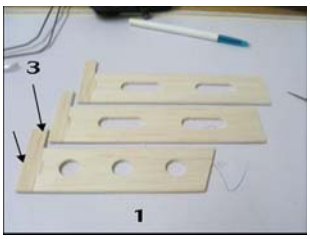


5. Set the fin in place, use a set square to check that the fin is perpendicular to the stab and then put a drop of CA



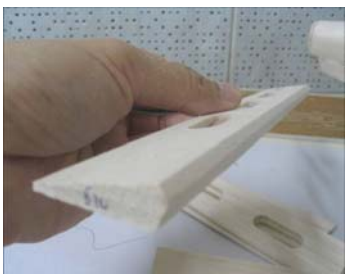
6. Add a piece of 3 mm balsa as shown, keep 2.5 mm spacing from stab





7. Bevel the leading edge of the Elevator and Rudder, assemble the fin and round the edges (1, 2, and 3)

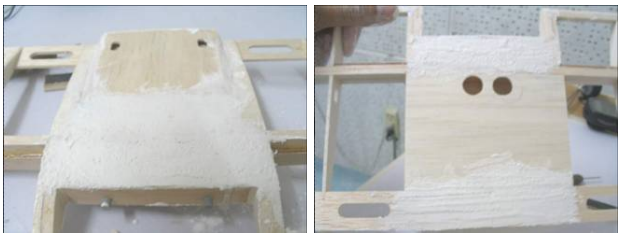
8. Draw a bevel lines on Aileron to make “V” shape on the leading edge



9. Bevel the leading edge of the Aileron

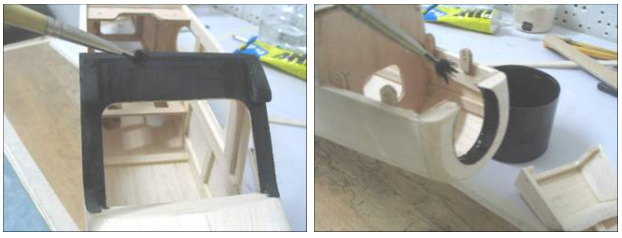
10. All components that finished

11. Make balsa filler by mixing Latex, water and powder

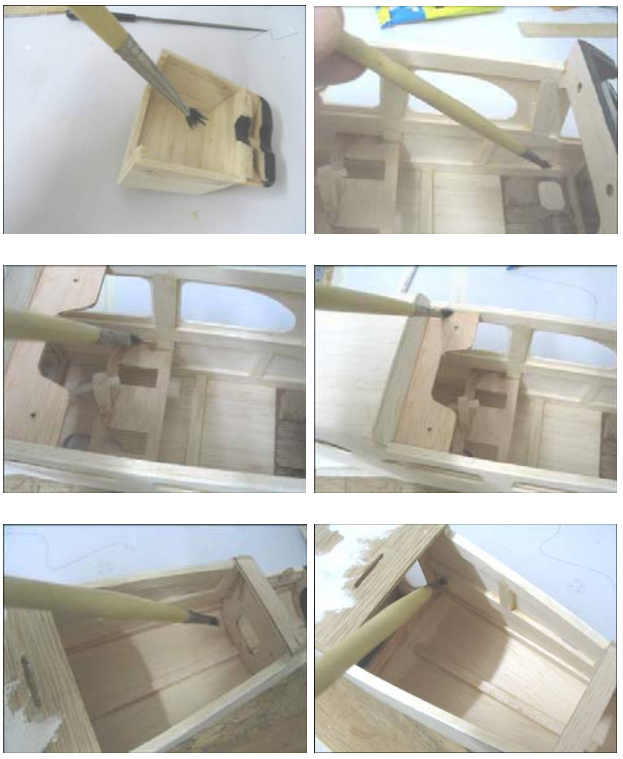


12. Fill any small gaps with balsa filler

13. After the surface has dried, sand the area smooth

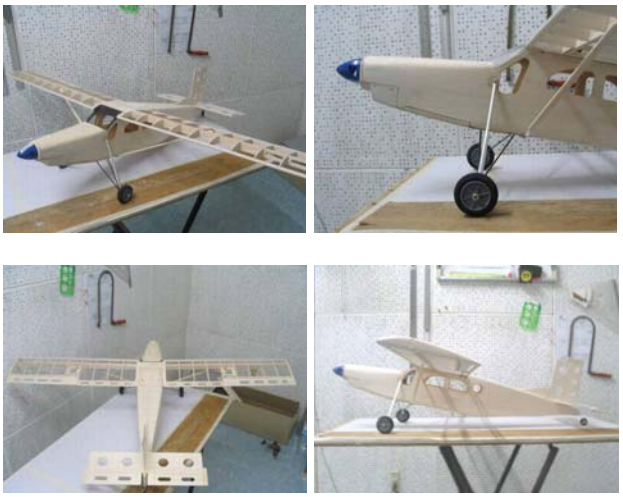


14. Use Black enamel paint as shown



15. Apply Epoxy inside of fuselage as shown

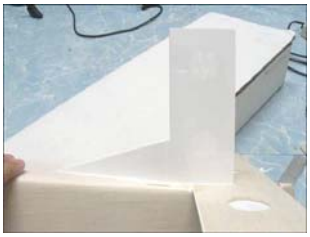
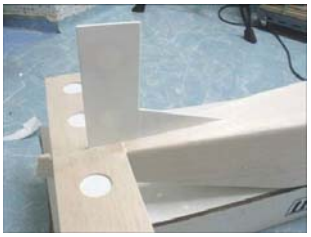
Covering



1. Prepare the model for covering and painting

2. Iron fuselage bottom


3. Iron STAB bottom

4. Iron Fin left side, followed by right side

5. Iron STAB top


6. Iron fuselage right side and let side

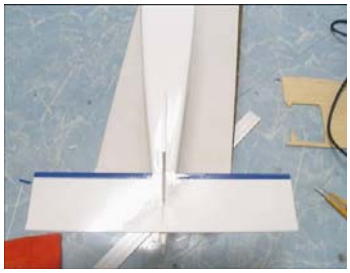
7. Trim scheme as shown


8. Iron fuselage top

9. Puncture side windows

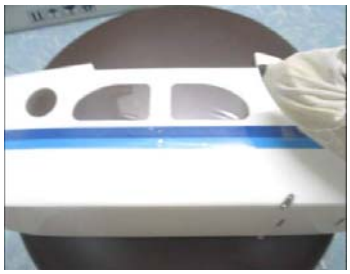

10. Iron top front sheet with black Monokote


13. Cut 10 mm. Blue strips and iron them to the fuselage

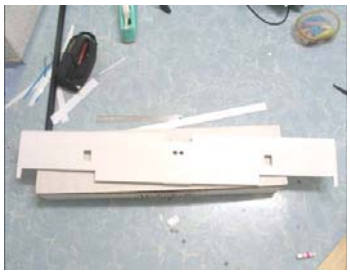


14. Iron 10 mm. Blue strips to stab

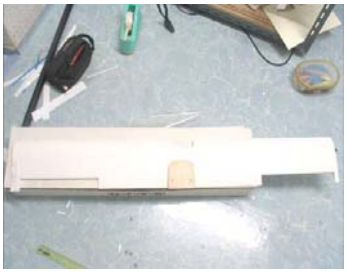

15. Iron F 0 and trim excess Monokote



16. Install side windows or cover by clear Monokote



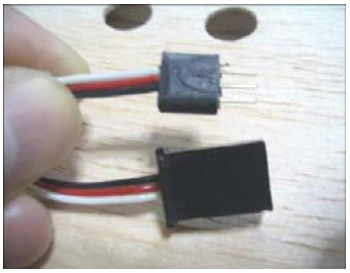
17. Iron bottom right wing panel followed by the left



18. Iron top right wing panel followed by the left

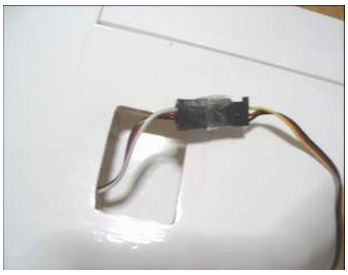
19. And iron wing center section

20. Iron blue strip at the wing tip



21. Prepare Y-connector

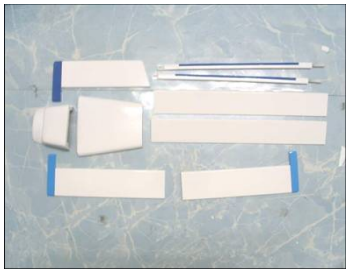
22. Tape Y-connector with straw to guide the wire through the wing and out the hole



23. Secure connections with tape and pull it back

24. Mount the aileron servo to the servo mount (Install connector and center servo arm before mounting servo)

25. Cut plastic sheet for Aileron servo cover and mount it on the wings with screws



26. Iron all components as shown

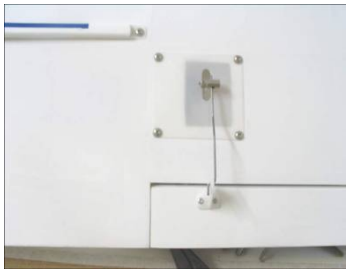
Install hardware and accessories

1. Install hinge and apply a drops of CA to both sides of each hinge

2. Cut the covering from the hinge slots

3. Install the Ailerons with their hinges and apply drops of CA

4. Hinge the other aileron the same way



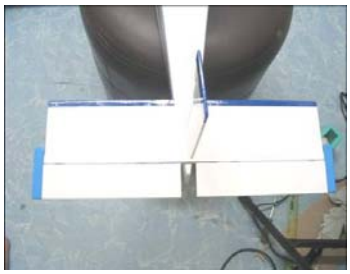
5. Install control horn, pushrod and wing strut

6. Tape the Elevators to the Stab and mark the location of the joiner wire holes

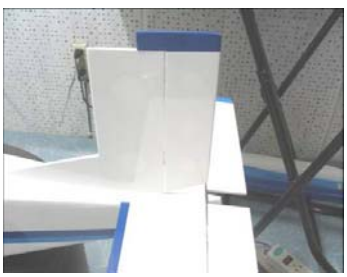
7. Drill the hole in the Elevator for the joiner wire

8. Cut slot to allow the wire to be insert into Elevators

9. Glue the joiner wire in the Elevator with CA



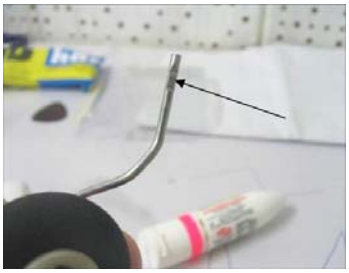
10. Cut the covering from the hinge slot in the Elevator and install the Stabilizer with their hinges and apply drops of CA



11. Install Rudder hinges

12. Use Stab Fin to mark holes location then drill pilot holes and add a few drops of CA to the holes, allow to harden, then secure Stab Fin with metal screws

13. Assemble tail wheel set

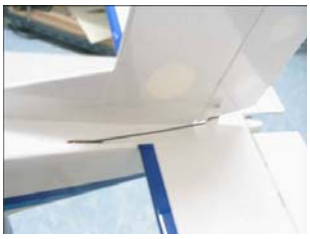


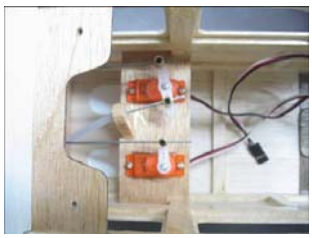
14. File a flat spot where the steering arm locking screw contacts the wire

15. Install tail wheel collar and steering arm

16. Insert flexible pushrod through the hole and secure with a clevis

17. Install the control horn and make the pushrods



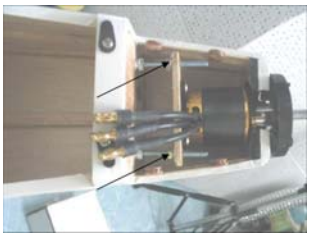


18. Connect pushrod to Rudder and Elevator Servos

Motor Mount

1. Use tree 3x35mm metal screws to attach BM 1 to F 2 as shown in the plan (Detail B)

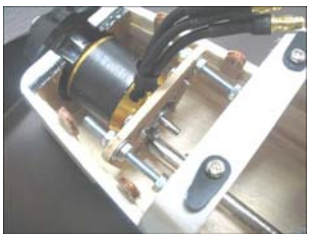
2. Attach carbon fiber motor mount to BM1 with screws



4. Temporarily install motor to adjust downward and right thrust angel (arrow point)

5. Downward thrust = 1° Right thrust = 2°

6. Tighten the nuts the rest of the way



7. Install motor to the motor mount

Mount the Landing gears

1. Position landing gear wire on the landing gear plate and secure with straps and screws

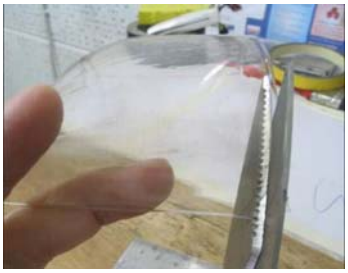

2. Install aluminum shock absorber to the fuselage


3. Install collar with shock absorber and secure with nut as shown

4. Install wheel and wheel collar

Windshield

1. Drawn a cut line on windshield



2. Trim the clear windshield along the cut line

3. Tape windshield in position on the front

4. Trim excess windshield

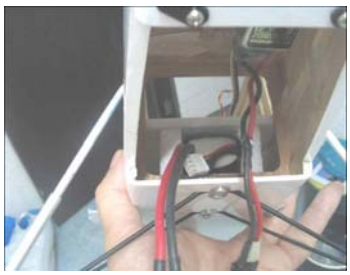
5. Glue with UHU All Plast on the top


6. Secure windshield with screw

7. Apply silver stripe tape to windshield frame

Battery Box


1. Cut foam for battery box as shown in the picture



2. Place battery in the position

3. Install receiver

4. Route the receiver antenna out the side of the fuselage

PC-6 at the airfield

Before first flight at airfield

C.G. is located at Spar S3

Flying weight should approximately 820 g

Prototype using HBT brushless motor A22/15 1000 Kv motor weight 69 grams 9x5 propeller

In the sky

Beautiful Low Pass

Have fun with building and flying PC-6 PORTER PILATUS

Another Models

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Cessna 182

- Wing span 42 in Fuselage length 29 in
- Brushless Motor 1000 Kv or 2 – Stroke Engine .15 cu in
- Propeller 9x5
- Batt Li-Po 11.1V 2000 mAh
- Flying weight 680 - 720 grams
- Radio 4 C.h. 4 Servos (2 for Aileron)
- Steerable nose wheel

Piper Arrow Cherokee 3 Turbo

- Wing span 42 in Fuselage length 29 in
- Brushless Motor 1050 Kv or 2 – Stroke Engine .15 cu in
- Propeller 8x6
- Batt Li-Po 11.1V 2000 mAh
- Flying weight 660 - 720 grams
- Radio 4 C.h. 4 Servos (2 for Aileron)
- Steerable nose wheel

Cessna Caravan 208B (Grand Touring)

- Wing span 46 in Fuselage length 33 in
- Brushless Motor 1050 Kv or 2 – Stroke Engine .15 cu in
- Propeller 9x5
- Batt Li-Po 11.1V 2000 mAh
- Flying weight 740 - 880 grams
- Radio 4-5 C.h. 4-5 Servos (2 for Aileron)
- 5th C.h. for cargo door
- Steerable nose wheel

Cessna 337 Sky Master (O-2)

Specifications

- Wing span 52 in
- Length 39 in
- Brushless motor 2215/1050 KV X 2
- Speed Control 30 A X 2
- Batt Li-Po 11.1V 2200 mAh (20C) X 2
- Propeller GWS 1060
- Propeller APC Pusher 9060
- Spinner 40 mm. (Mini Craft)
- 5 mini servo
- 1 Servo Hitec 81 (Elevator)
- Radio 5 C.h. 6 Servos (Aileron 2) (Ruder 2)(Elevator 1)
  (Nose Gear 1)
- Steerable nose wheel
- Flying weight 1820 grams
- Wing Load 22 oz./sq ft)