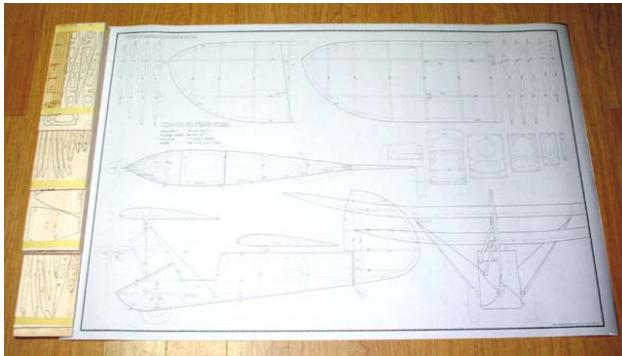


HM-14 FLYING FLEA INSTRUCTIONS

www.estarmodels.com

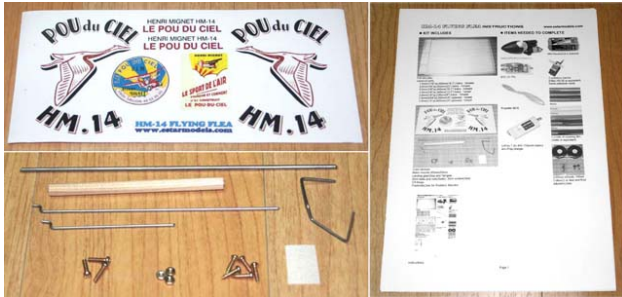
● KIT INCLUDES



Full size plan.

Laser-cut parts.

- 1.5mm(1/16")xL460mm(18.2") balsa : 3sheets
- 3.0mm(1/8")xL580mm(23") balsa : 1sheet
- 3.0mm(1/8")xL460mm(18.2") balsa : 2sheets
- 3.0mm(1/8")xL340mm(13.5") balsa : 1sheet
- 3.0mm(1/8")xL230mm(9") balsa : 1sheet
- 2.0mm(5/64")xL200mm(8") plywood : 1sheet
- 3.0mm(1/8")xL600mm(24") plywood : 1sheet



Color stickers.

Instructions.

- Dowel for motor mount (d5mmx85mm).
- Landing gear(2ea) and Tail gear,
- 2mm bolts and nuts(3sets), 2mm screws(5ea).
- CA hinge.
- Pushrods(2ea) for Rudders, Elevator

● ITEMS NEEDED TO COMPLETE

CAUTION

Be sure to use suitable power.
Too much power makes this plane unstable.



GWS LPS-RXC-CS(6.2:1).



ESC (3-7A).



Propeller 9070.



Li-Poly 7.4V 450-700mAh battery w/Li-Poly charger.



Mini Receiver(3-4 channel).



2 submicro Servos
(Hitec HS-55 or equivalent)
Servo extension cord.

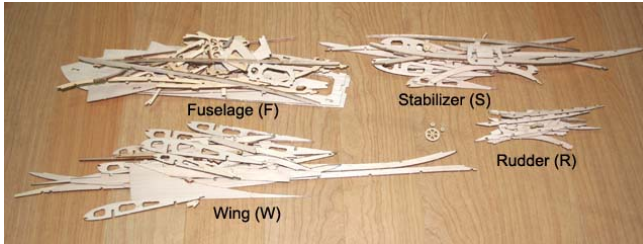


1-2 rolls of covering film.
(Solite or equivalent)



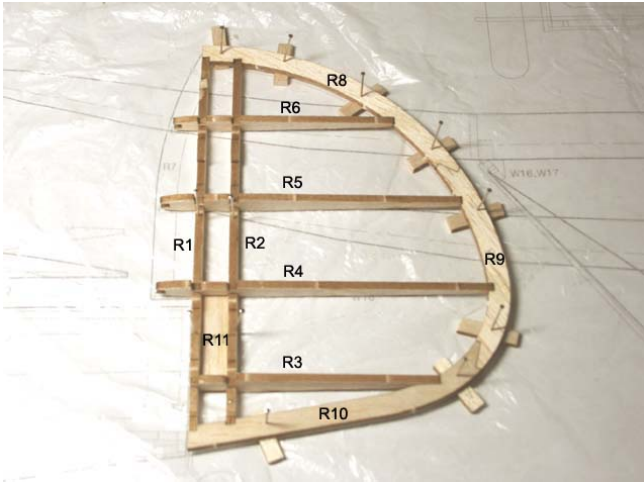
2-60mm Wheels, Wheel
Collars(2 or 4ea) and Rod
adjusters(2ea).

● PREPARATION

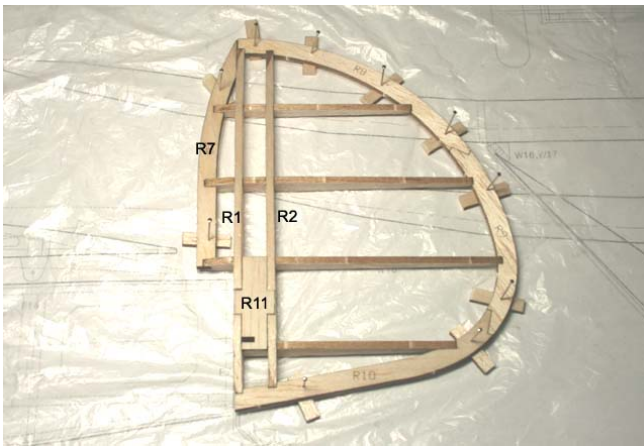


Remove parts from laser-cut panel and group as shown above.

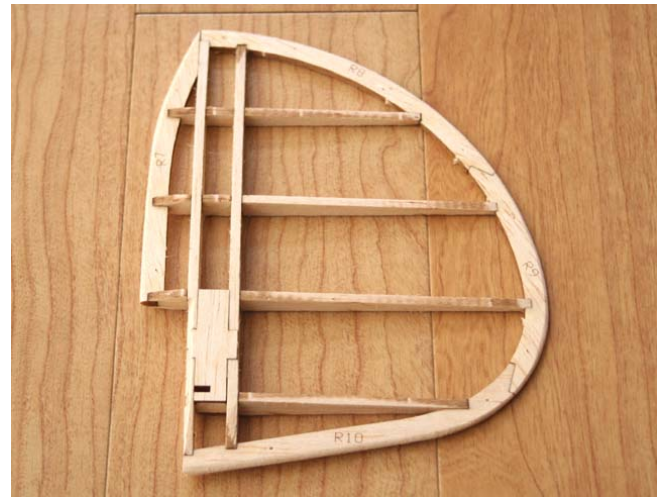
● RUDDER



1. Lay the waxed paper or PVC film over the plan. Pin the part(R11) and spars(R1,R2) on the plan. Assemble ribs(R3-R6) and pin the trailing edges(R8-R10). Use 3mm scrap balsa as support jigs. Glue with thin CA.

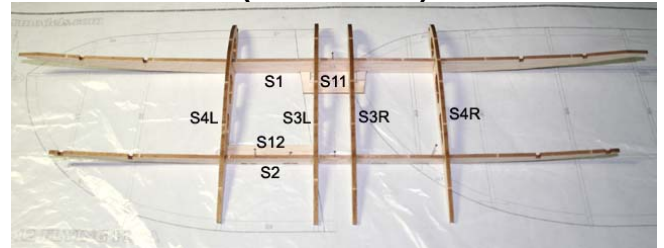


2. Assemble and glue leading edge(R7) Using 3mm scrap balsa as support jigs. Assemble and glue spars(R1,R2) and the part(R11) with thin CA.

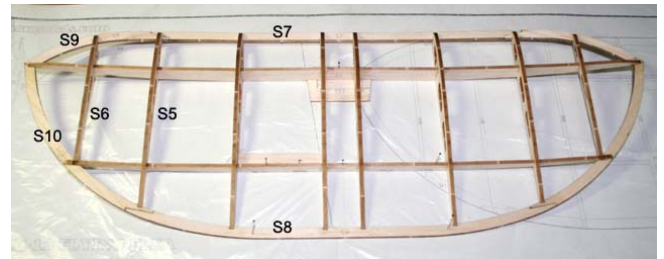


3. Remove rudder from the plan and **apply thick CA glue at each joints for reinforcing.** Carefully sand surfaces.

● REAR WING (ELEVATOR)



1. Lay the waxed paper or PVC film over the plan. Pin the parts(S11,S12) and spars(S1,S2) on the plan. Assemble ribs(S3R,S3L,S4R,S4L) and glue with thin CA.

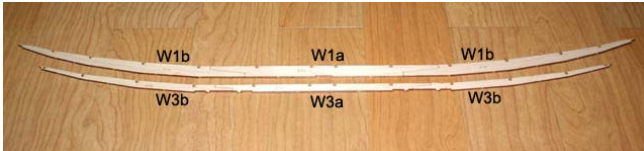


2. Assemble and glue ribs(S5,S6) and edges(S7-S10).



3. Remove stabilizer from the plan and **apply thick CA glue at each joints for reinforcing.** Carefully sand surfaces.

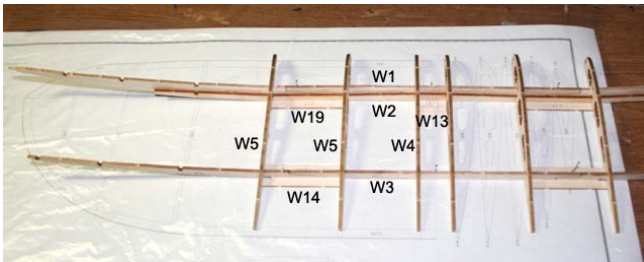
● FORE WING



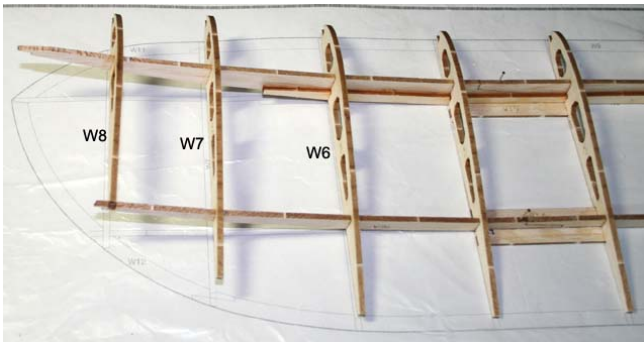
1. Glue right, mid, left spars(W1a-W1b, W3a-W3b) with **thick CA**.



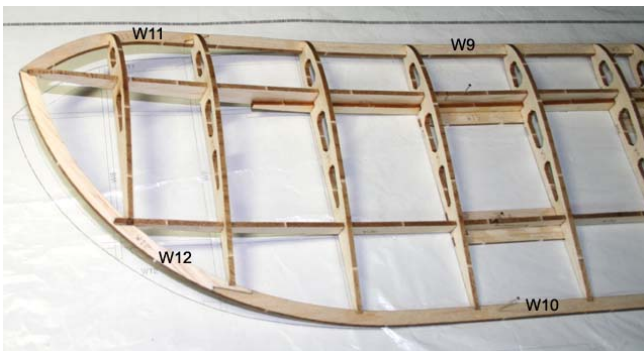
2. Glue plywood spars(W2) to the W1 with **thick CA**.



3. Lay the waxed paper or PVC film over the plan. Pin the parts(W13,W14,W19) and spars(W1-W3) on the plan. Assemble ribs(W4,W5) and glue with thin CA.



4. Assemble and glue ribs(W6-W8).

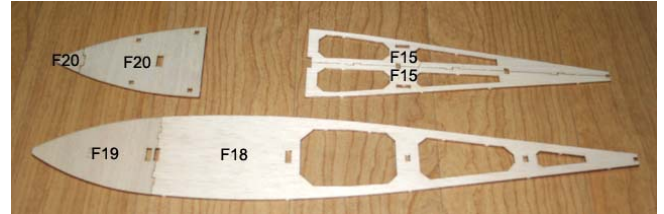


5. Assemble and glue edges(W9-W12).

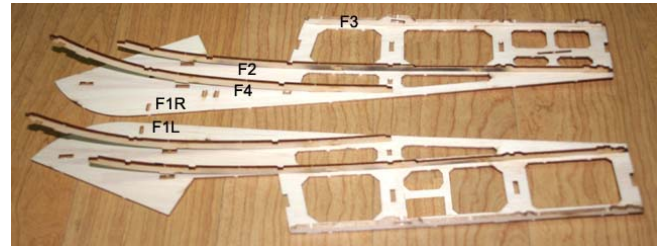


6. Remove wing from the plan and **apply thick CA glue at each joints for reinforcing**. Carefully sand surfaces.

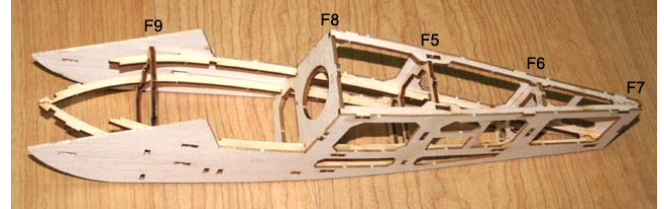
● FUSELAGE



1. Glue fuselage top fore sheet(F20), top rear sheet(F15) and bottom sheets(F18,F19) each together.

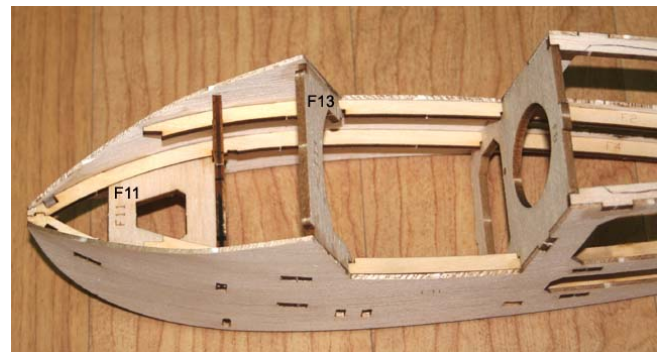


2. Assemble longerons(F2-F4) to the side sheet(F1R,F1L) and glue partially with thin CA.

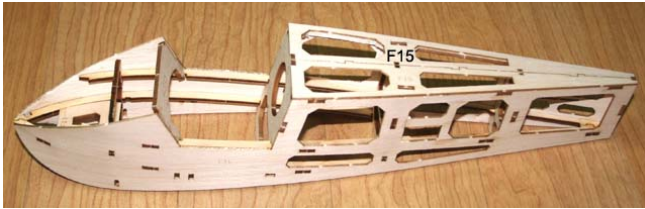


3. Assemble bulkheads(F5-F9) and glue partially with thin CA.

Caution Make sure to pay attention to the bulkheads, the numbers should be facing forward.



4. Glue longerons(F4) together and glue battery tray(F11) with **thick CA**. Assemble and glue bulkhead(F13) and glue side sheet(F1) to the longerons.



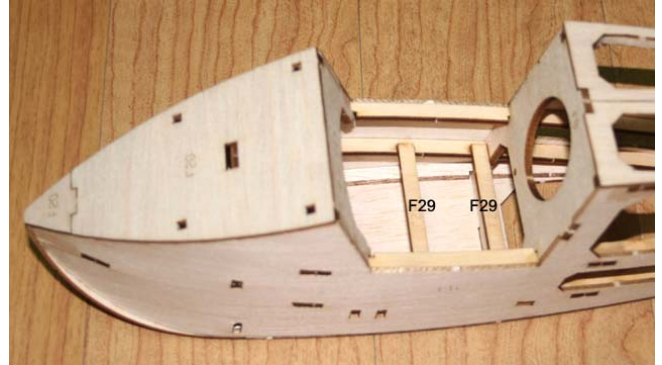
5. Glue top sheet(F15) with thick CA.



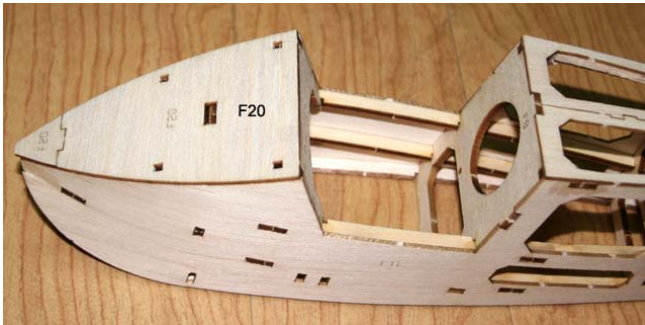
10. Glue bottom sheet(F18,F19) with thick CA.



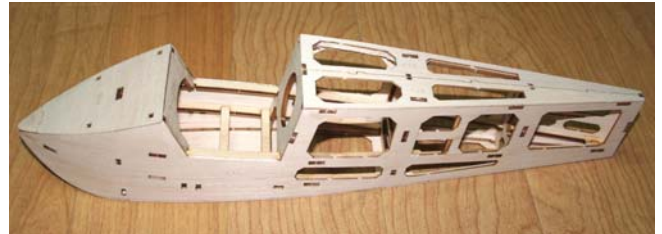
6. Insert and glue fore deck longerons(F12).



11. Glue plywood trays(F29) for rudder servo.



7. Cover fore deck(F20) with thick CA.

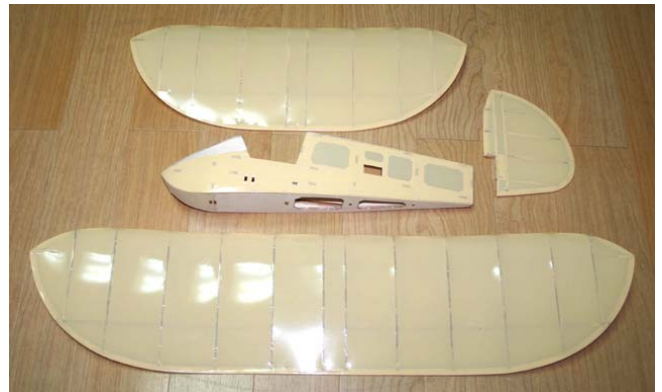


12. Carefully sand surfaces.

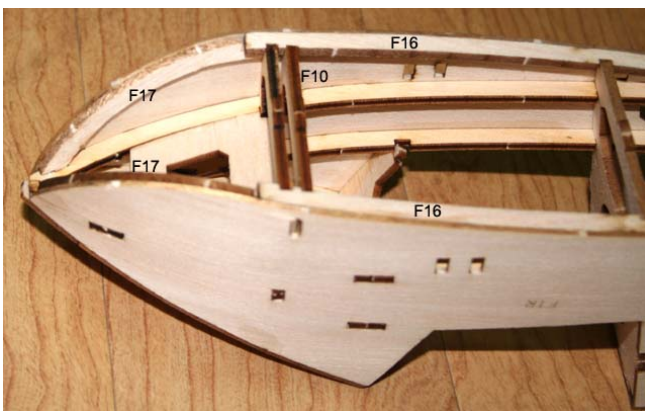


8. Glue plywood servo trays(F14) on the inner left side.

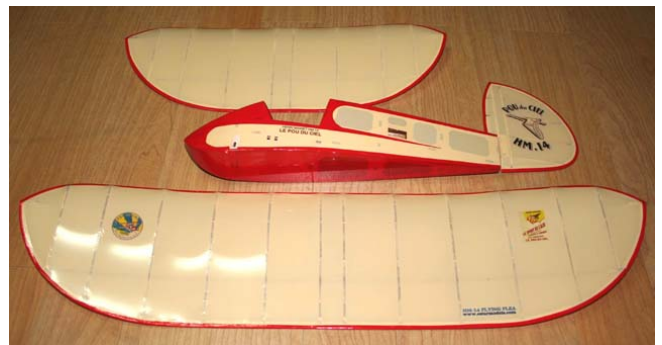
● COVERING



1. Cover film,



9. Insert and glue bulkhead(F10) and longeron(F16,F17). Apply thick CA glue at each joints for reinforcing.

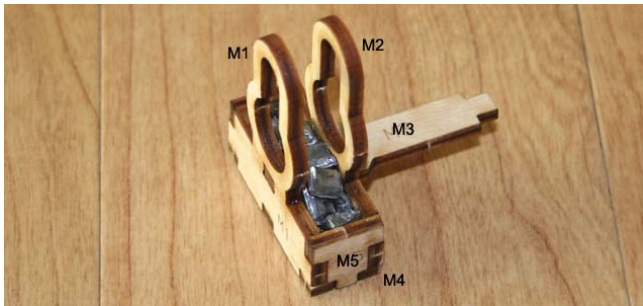


2. with your own color scheme.

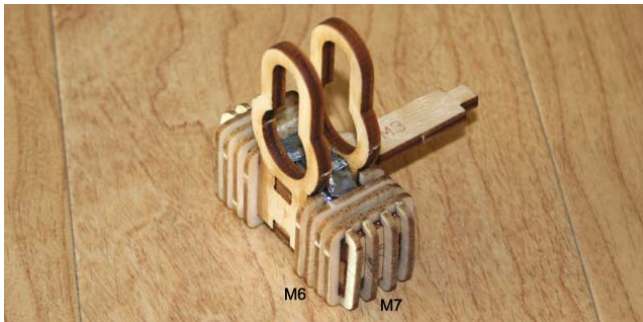
● EQUIPMENT INSTALLATION



1. Assemble and glue motor mount (F25-F27).
Apply thick CA glue at each joints for reinforcing.



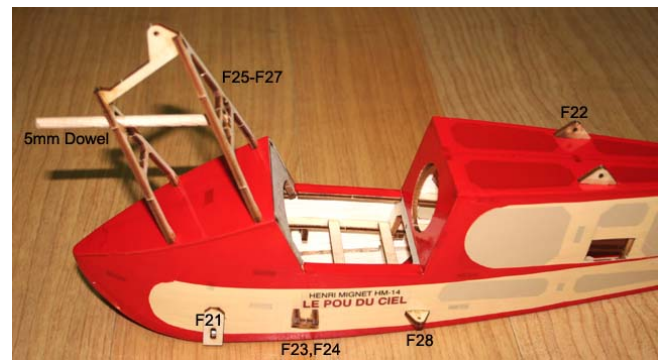
2. Assemble and glue dummy engine(M1-M5). Put lead weight as shown. To balance this model, 30~40g of weight balancer would be required.



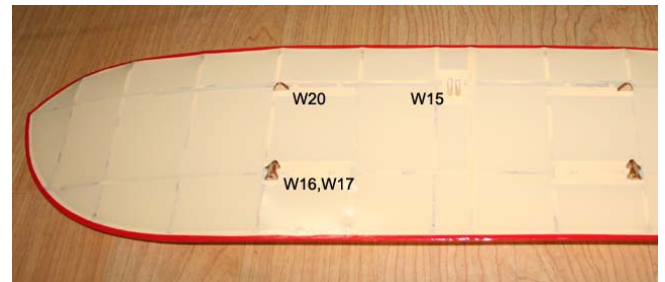
3. Assemble and glue cooling fins of dummy engine(M6,M7). Oops, M7 should be glued in horizontal.



4. Paint dummy engine and install motor and gearbox.



5. Insert and glue motor mount(F25-F27), landing gear guide(F21), strut bracket(F23-F24), rear wing holder(F22) and rigging bracket(F28) to the fuselage. Apply thin CA to the bracket and holder for reinforcing.



6. Insert and glue strut bracket(W16-W17) and fore wing holder(W15) to the fore wing. Apply thin CA to the bracket and holder for reinforcing.



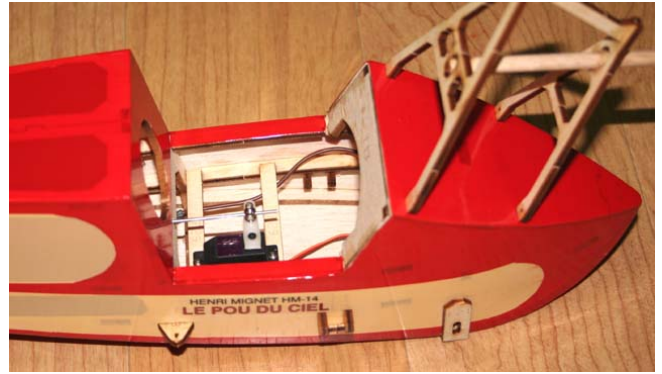
7. Insert and glue rear wing holder(S13) and horn(S14) to the rear wing. Apply thin CA to the holder and horn for reinforcing.



8. Install and glue rudder plywood horn with **thick CA**. Apply thin CA to the horn for reinforcing.



9. Assemble plywood tail wheel. Apply thin CA to the wheel for reinforcing.



13. Install rudder servo.



10. Insert and glue tail gear to the rudder.



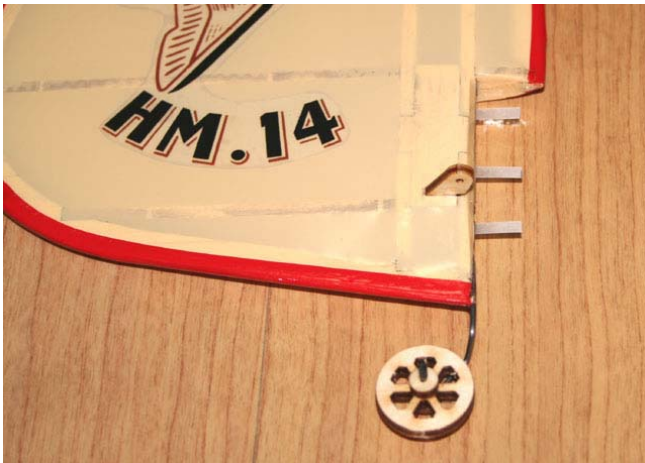
14. Connect pushrod to the rudder horn, and then, attach rudder to the fuselage by gluing hinges with small amount of thin CA.



11. Cut CA hinges as shown above.



15. Fix rear wing(elevator) with bolts and nuts, and then, install elevator servo.



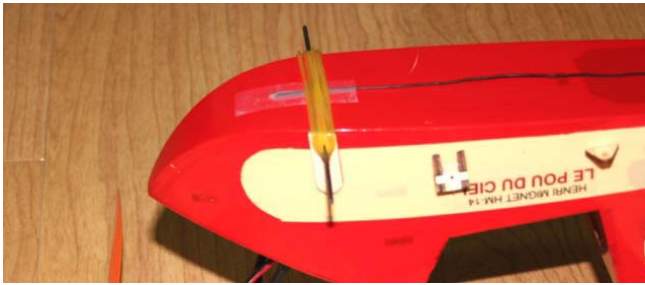
12. Make hinge slots and install hinges.



16. Roll tape to fit motor unit.



17. Install motor and gearbox, drill and fix screw to the dowel.



18. Insert landing gear and hold with rubber bands.



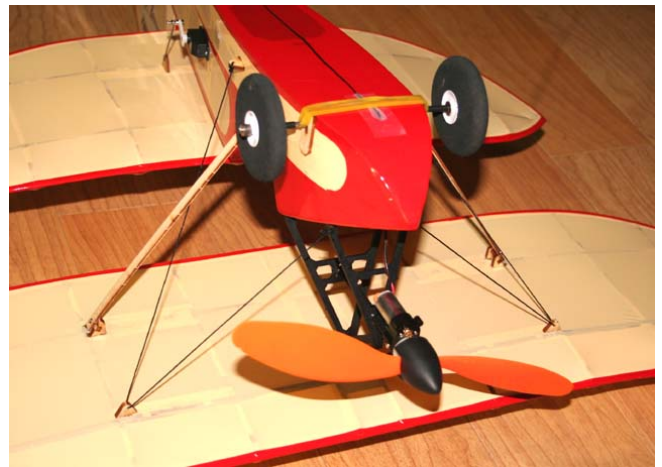
19. Fix wheels with wheel collars. Connect ESC and receiver.



20. Fix fore wing with bolt and nut.



21. Attach wing strut(W18) with screws.



22. Rig threads as shown above.



23. Congratulations! Enjoy flying.

Balancing

- Balancing is very important to fly this model. Balance weight should be installed in the dummy engine. (Refer to the drawing for the CG location.)

Control Throws

The following control throws are recommended starting points. After you are familiar with this plane, you may increase, or decrease.

- Elevator : 13mm(1/2") up, 8mm(5/16") down.
- Rudder : 25mm(1") right and left.

