



**F14 Tomcat
Assembly Instructions**



PRECAUTIONS:

This aircraft is not a toy. This model has been designed using state of the art miniature ducted fan technology. For your safety and the safety of others, please observe all product safety warnings for this kit as well as all accessories included. Also, please follow all field safety rules.

This plane is capable of high speeds. If you are uncertain of your ability or have never flown a radio controlled model aircraft before, please seek the help of an expert. Oakdale Aircraft strongly recommends you be a member of the AMA (Academy of Model Aerodynamics).

Read through this construction manual in it's entirety before starting so you have a thorough understanding of the building process.

Complete all instructions in the manual including assembly, radio and engine installation, pre-flight, and flying. Every attempt has been made to include guidance through all phases of this kit and by doing so, you will enjoy many flights with this model.

SPECIFICATIONS:

Length: 56"

Wing Span: 58.5" Extended
34.25" Swept

Power: Twin 90mm EDF Units (high power mini480 fan units will also fit)

Control Functions:

ESC (Throttle), Taileron, Spoilers, Wing Swing, Nose Wheel Steering, Retracts

Radio:

Minimum 6 channel with elevon mixing
Hi Torque Servos
Micro servos (Nose steering, retract valve)

Control Surface Throws:

Taileron Elevator: 1"
Taileron Aileron: 1"
Nose Wheel Steering: 10°
(adjust these as necessary after first flights)

Weight:

8-11lb (depending on setup configuration)

CG:

3" aft of the forward edge of the main hatch

BILL OF MATERIALS:

Part Number	Qty	Description
5000	1	Main Fuselage Body
5001	1	Fuse Nose
5002	2	Wings (Left and Right)
5003	2	Tailerons
5004	2	Fins
5005	2	Rudders
5006	1	Main Hatch
5007	1	Canopy Hatch
5008	2	Under Strakes
5009	2	Vent Hatches
5010	2	Swing Wing Brackets (Left and Right)
5011	2	Carbon Plates
5012	2	Intake Ducting
5013	2	Exhaust Ducting
5014	2	Tail Cones
5015	2	Spoilers
5050	1	F14 Instruction Manual

ASSEMBLY INSTRUCTIONS FOR THE F14 TOMCAT

Note: During assembly of this model, you must at all times strive to keep the weight as low as possible. This kit has been designed to build easily and fly the same. Excess ply, glue and any other components will only add to the weight and decrease the performance.

This kit is built using taileron and/or spoileron control, therefore a computer radio is required. Let's get started:

FUSELAGE:

- Unpack all the contents of the kit and inspect each part.
- Thoroughly wash with warm soap and water all the fiberglass molded parts to remove any mold release wax that may be present. Let dry completely before proceeding.



INTAKE DUCTING:

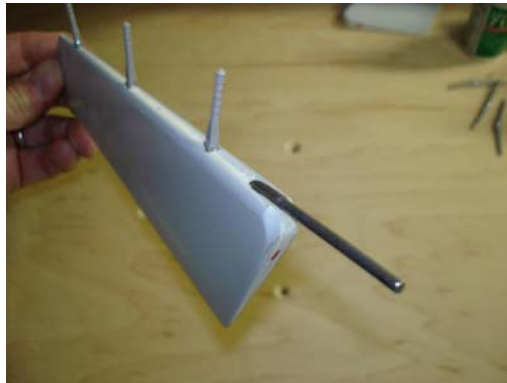
- Trial fit the ducting by sliding into the fuselage from the front.
- To glue the ducting in place, mix a thickened mixture of epoxy and microballons or other suitable filler. Slide the ducting into the fuselage so the inside edge of the ducting is "inside" the fuse. Apply the epoxy around the edge and slide forward the ducting. Let cure completely.



- Once the epoxy has cured completely, sand the edge to a smooth round shape. Repeat for the opposite side.

FIN/RUDDER CONSTRUCTION:

- Begin by marking and drilling the location of the hinges on the fin and rudder.
- Bend a 1/8" length of music wire 90° as shown in the photo below.
- Mark the location for the short end of the rudder torque rod to be glued in place.
- Using a 1/8" drill, drill a hole for the torque rod. Using a knife or chisel, carve a slot for the length of the torque rod so the centerline of the rod is on center with the hinges.
- Trial fit everything in place and glue with epoxy.
- Repeat for both rudders.



WINGS:

- Trial fit the wing into the wing swing pivot brackets.
- Insert the shoulder bolt and tighten until the wing is just snug, but not tight.
- Mount the pivot brackets to the top of the ply swing wing structure and bolt in place.
- Mount the carbon plate on top of the bracket.
- Repeat for both sides and check the overall fit.



Carbon support plates not shown for clarity.

- Remove everything and using sandpaper, thoroughly scuff the bottom and top of both brackets.
- Epoxy both brackets to the ply swing wing structure and epoxy the carbon plate to the top of the bracket. Use the two mounting screws to secure.
- After the epoxy has cured, re-attach the wings and check the fit.

Note: The wings are designed to be removable for transport.

Spoilers

- If desired, spoilers can be built into the wings. Cutout the fiberglass plate to match the spoiler cutout on each wing.
- If the spoilers are not desired, simply cut and glue the length of fiberglass plate into the cutout on top of the wings. The gap around the spoiler can be filled and sanded for a smooth finish.

- To assemble the spoilers, right angle hinges are required.
- Create 6 mounting blocks out of ½" x ½" hardwood. (3 for each spoiler). The hinge should be glued to each block and the blocks glued in place inside the wing. The hinge should be free to pivot up to a 90° position.
- Glue the spoiler to each hinge and align it to the wing cutout. Tape in place until the glue has cured.

- To actuate the spoiler, a mini servo can be mounted to the plate on the underside of the wing. The spoiler should be spring loaded in it's closed position (a small coil spring can be used). Using a single servo arm, position it so as the servo arm rotates, it pushed the spoiler up (the return spring will close it).

- Route the servo wires through the end of the wing into the fuse, ensuring it does not interfere, catch or rub on anything.

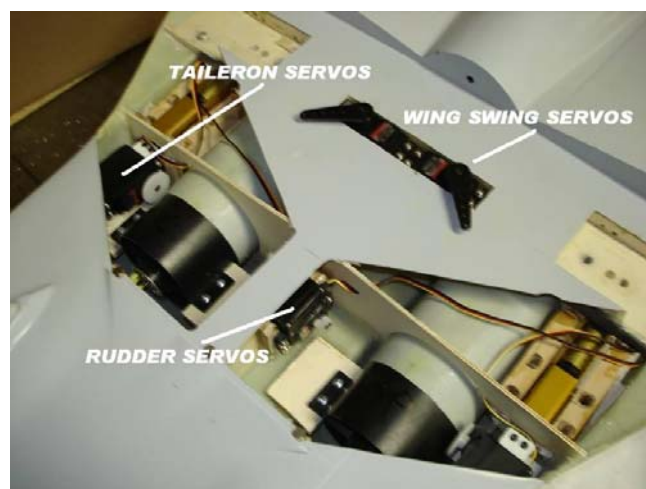
TAILERON INSTALLATION:

- Slide the taileron into the pre-drilled hole in the rear of the fuselage.
- Check the fit to ensure it pivots freely without binding on anything.
- Using a shaft steering linkage, secure the taileron pivot.

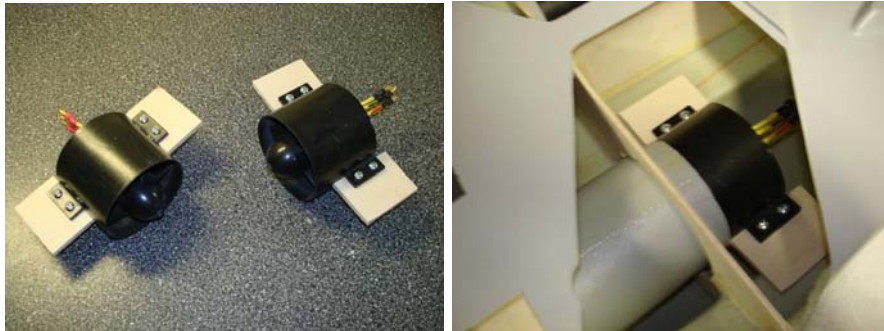


SERVO AND FAN INSTALLATION:

- Two high torque (130oz-in+) standard servos should be used to swing the wing.
- Mount these in the cutouts under the main hatch
- Mount two standard servos in the rear spine for each rudder
- Using the urethane mounts provided, mount two high torque (100oz-in+) standard servos to these.
- Using epoxy, glue these in place on the sides as shown.

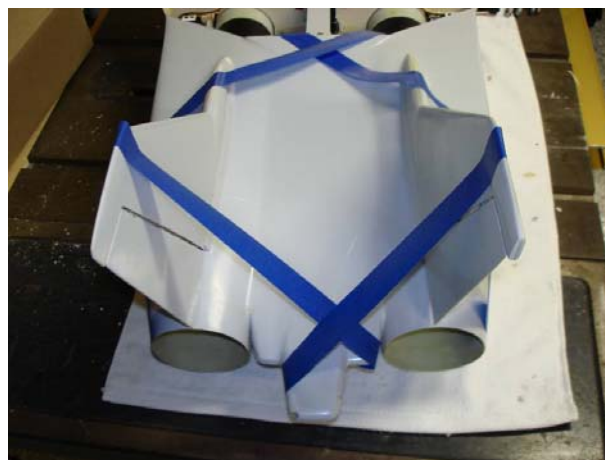


- Using 1/8" birch ply, mount the fan units to mounting rails
- Slide the units inside the fuse hatch and slide the fan units into the rear of the intake ducting. Ensure a proper fit.
- Using epoxy, glue the rails in place onto the fuselage ledges. Let cure completely before you remove the fan unit.



FIN ATTACHMENT:

- Using sandpaper, scuff the bottom of the fins, and the top of the fin mounts on the fuselage.
- Using a 3/16" – 1/4" diameter x 4" long hardwood dowel, create a mounting spar for the rudder.
- Drill through the base of the rudder and glue in place the dowel, leaving approx 1/2-3/4" of length exposed.
- Mark the location of the spar on the fuse and drill a receiving hole.
- Trial fit both fins to ensure proper fit and free movement of the rudder.
- Create a thickened mixture of epoxy and microballons. Coat the bottom of the fin and the top of the fin fuse mount. Thoroughly coat the hardwood spar and then mount the fins in place.
- Align to ensure they are parallel to each other and 90° to the fuselage.
- Masking tape can be useful to hold the fins in place while the glue cures.
- After the fins have cured, sand down the excess glue that has squeezed out of the joint.



LANDING GEAR INSTALLATION (OPTIONAL):

- Mount the nose gear to the firewall in the front of the fuselage.
- To mount the main gear, a cutout needs to be made in the fuselage.
- After the cutout has been made, mount the main gear in place.

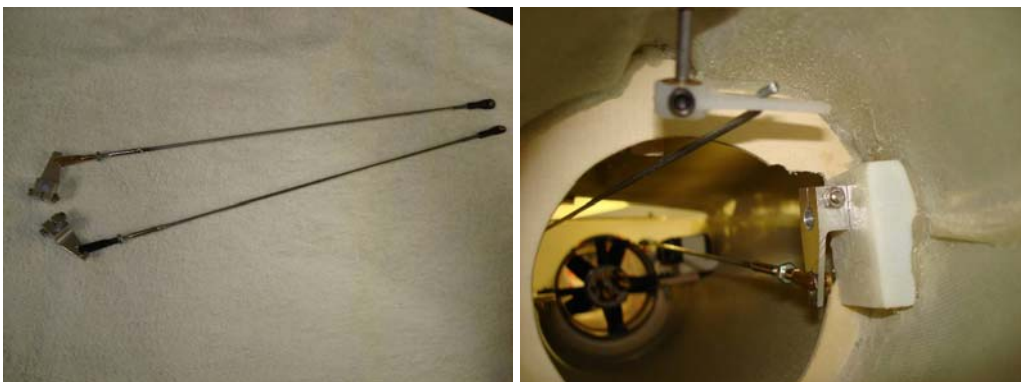
Note: *It may be easier to attach the pneumatic air lines to the retract units prior to mounting them in place.*



- Mount the landing gear legs to the retract units. Check for proper actuation.

CONTROL LINKAGE INSTALLATION:

- Create the control linkages to connect between the taileron and rudder servos. At a minimum, 4-40 rods should be used.
- Create the control linkage rods for the swing wing. 1/8" steel rod or 1/4" carbon rod can be used for this. A ball link between the rod and wing pivot makes for easy assembly and disassembly if needed.



FINAL WIRING AND ROUTING:

- Create proper extension wires between the motor and where your ECS and Battery will be housed.
- Route all air lines into the cockpit and mount the retract valve.
- Install the receiver and on board battery.
- Using servo extensions where needed, route everything to the receiver in the cockpit and verify the proper actuation of the taileron, rudder, nose gear and retracts.

WING SWING SETUP:

- There are a number of methods to setup the radio to swing the wings.
 - A simple way is to use a high quality Y harness. This allows the wing to be swept via a 3 position switch or a rotary knob on your transmitter. This is an easy way to set the system up, however, fine tuning the swing of each wing can be a little more difficult.
 - Another method is each wing can be plugged into it's own channel. One channel can be slaved to the other to actuate when the master (switch/knob) is actuated. Consult you radio owners manual about master-slave relationships.
 - Electronic servo units such as the Geoff Sim electronic servo sweeper can be used to program the wing swing.

Whatever method is used, ensure both wings swing exactly the same amount on both directions (20° extended and 68° swept).

FINSHING:

- Finishing the model can be done to your own preference using any type of paints.

PRE-FLIGHT SETUP:

- Check the Taileron rotates without any binding and without any slop.
- Make sure all control linkages are securely connected.
- Secure all screws with a thread locker or CA.
- Check the control throws of each surface and servo
- Check the fan unit to ensure the impellor spins without rubbing the shroud.
- Balance the model per the CG location.
- Range check your radio and receiver prior to any flights.

FLIGHT:

An important step that should be performed prior to any maiden flights is the motor/engine break in on all new engines. Follow the manufacturers instructions for proper motor break in methods.

Runway takeoff's should be 100-200', depending on the weight of your aircraft and fan and motor used. Takeoff's should be at full throttle. Remember, ducted fan jets do not have the prop wash over the wings, so they need the airspeed to produce the lift. Keep this in mind while flying as well. Don't force the jet into the air, wait for the airspeed to build up and give it small amounts of elevator for liftoff.

Bungee takeoff's should have a minimum of 6x the ready to fly weight tension on the bungee cord. Ensure the cord is not twisted and there are no obstructions in it's path.

For landings, keep your speed at a halfway point. Descents should be controlled by the throttle. Landings should be straightforward and simple.

THANK YOU:

Thank you for purchasing the F14 Tomcat model jet from Oakdale Aircraft. This model should provide you with many enjoyable flights. Should you ever have any questions, comments or concerns regarding this kit, please email rahlberg@oakdaleaircraft.com.

DISCLAIMER AND WARRANTY:

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Oakdale Aircraft warrants this product to be free from defects in materials and workmanship for a period of one (1) year from the date of purchase. During that period, Oakdale Aircraft will, at its option, repair or replace without service charge any part deemed defective due to those causes. Due to the variability in construction methods, this warranty will become void once any construction of the model begins. However every effort will be made to help resolve any problems that may surface.

