



INSTRUCTION MANUAL

A semi scale model of the world's leading competition aerobatic and airshow display aircraft.

Technical Specification

| | |
|---------|--|
| Span: | 1588mm (62.5 in) |
| Length: | 1372mm (54 in) |
| Engine: | 1.20 cu in Four Stroke |
| Radio: | 4 Channel with four high torque and one standard servo |

History of the Pitts Special

It is hard to believe that it was as long ago as 1943 when Curtis Pitts built the first of a series of aircraft that would dominate competition aerobatics throughout the 70s and 80s. Christened the 'Pitts Special', it went on to be the most successful and easily recognised American-built aerobatic design. It was certainly evolutionary and because of its small size, light weight, short wingspan and extreme agility, it remained unbeaten until it was finally toppled by the Russian Yak-50.

While there have been many versions of the Pitts Special - in both single and two seat versions - it is widely accepted in the aviation community that the Pitts Special is THE standard by which all other aerobatic planes are judged - and few have ever matched. The design has been continuously refined, however, the current Pitts Specials still remain close to the original in concept and in actual design... a testament to the genius of Pitts' original concept.

Wingspan: 5.28 m (17 ft 4 in) • Length: 4.72 m (15 ft 6 in) • Weight: 290 kg (640 lb)
• Speed (max): 253 km/h (157 mph) at sea level • Power plant: 93.2-kW (125-hp) engine

THE WINGS

STEP 1.

Glue each of the aileron hinges (four per aileron) half way into the wing training edges using thin cyano ensuring the glue soaks into the hinge and the surrounding wood.



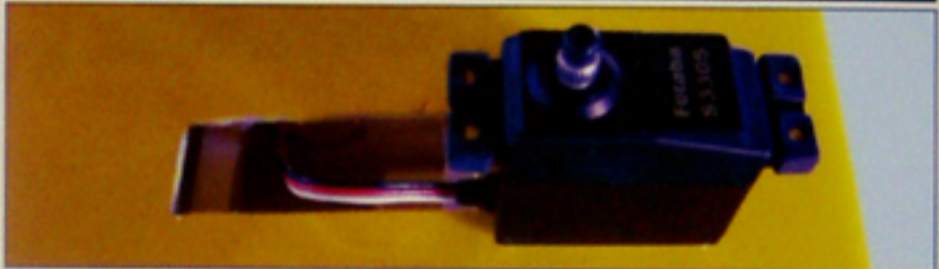
STEP 2.

Fit the ailerons to the wings ensuring gap-free hinge lines, making sure the ailerons are centred between the root and tip, and that each is free to move through their entire travel. Carefully add a couple of drops of thin cyano to each hinge ensuring that the glue does not run through the hinge line onto the bottom of the wing. Turn the wing over and drop more cyano onto each hinge from the other side. Repeat for both wings.



STEP 3.

Check the fit of your choice of aileron servos into the pre-cut apertures in the underside of the lower wing. Connect extension leads to the servos as necessary. Fit the rubber grommets and brass ferrules supplied with your servos, pilot drill then mount your servos as shown using the screws supplied with your radio.



STEP 4.

Locate the aileron horns, pushrods and nylon clevises and make up the linkages as shown. Position each horn on its aileron - in line with the aileron pushrod and the hinge line - then pilot drill the ailerons and mount the horns with the screws and horn backing plates supplied.



STEP 5.

Locate the aileron connection horns, pushrods and nylon clevises that will link the upper and lower ailerons. Align the horns on the hinge lines as shown so that each pushrod passes through the pre-cut holes in the lower wing. Pilot drill the ailerons and mount the horns with the screws and horn backing plates supplied.



STEP 6.

Turn the wing over and clip off any excess screw length flush with the horn backing plates as shown. Ensure that the extended aileron servo leads cannot fall back into the wings.



UNDERCARRIAGE

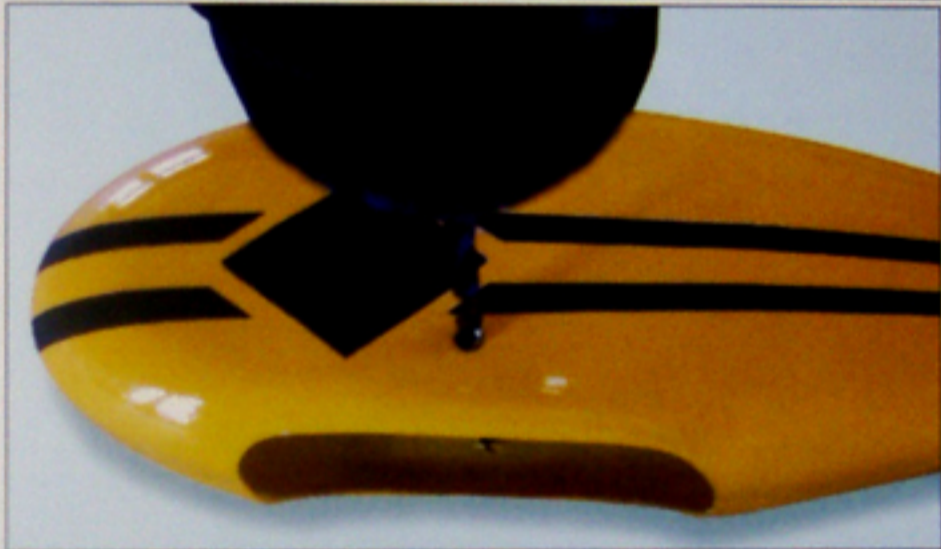
STEP 7.

Roughen the inside of each wheel spat and glue the plywood reinforcement squares in place as shown. Make sure you make a left and right hand spat.



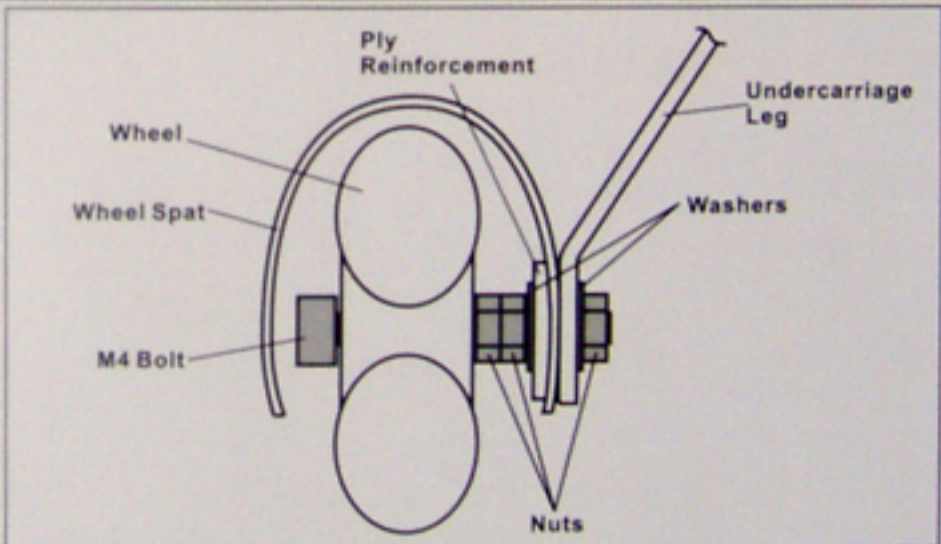
STEP 8.

Using the pre-drilled hole as a guide, drill right through the spat and the reinforcement square using a 4mm drill.



STEP 9.

Assemble each wheel and spat to the pre-formed aluminium undercarriage using the diagram as a guide. You will need to enlarge the outer hole to pass the mounting bolt through. Apply thread lock to the ends of the bolts before tightening the final nut.



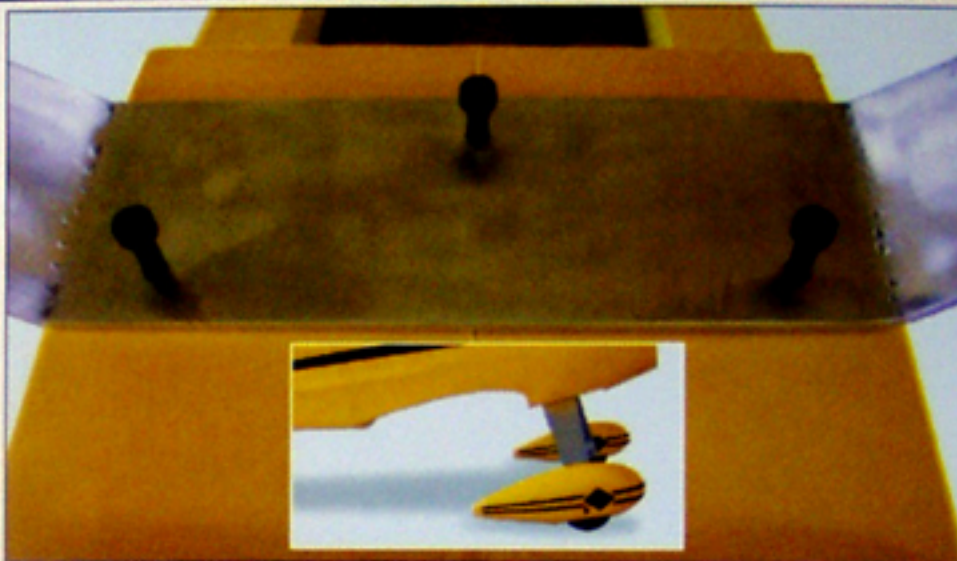
STEP 10.

Locate the tailwheel and the three self tapping mounting screws. Pilot drill the holes, then attach to the rear of the fuselage ensuring that the pivot point is in line with the rudder hinge line.



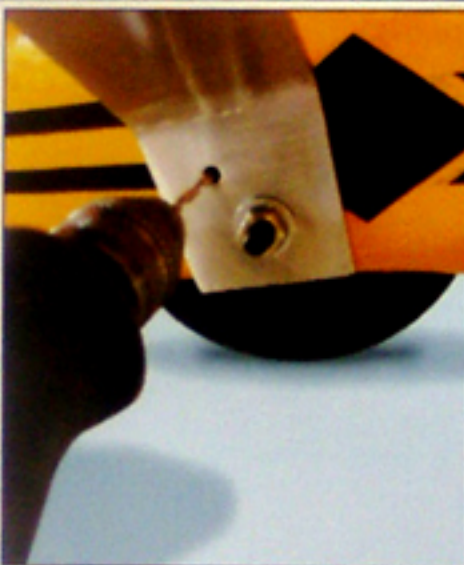
STEP 11.

Mount the main undercarriage using the three cap head screws supplied. Ensure that the spats are aligned as shown.



STEP 12.

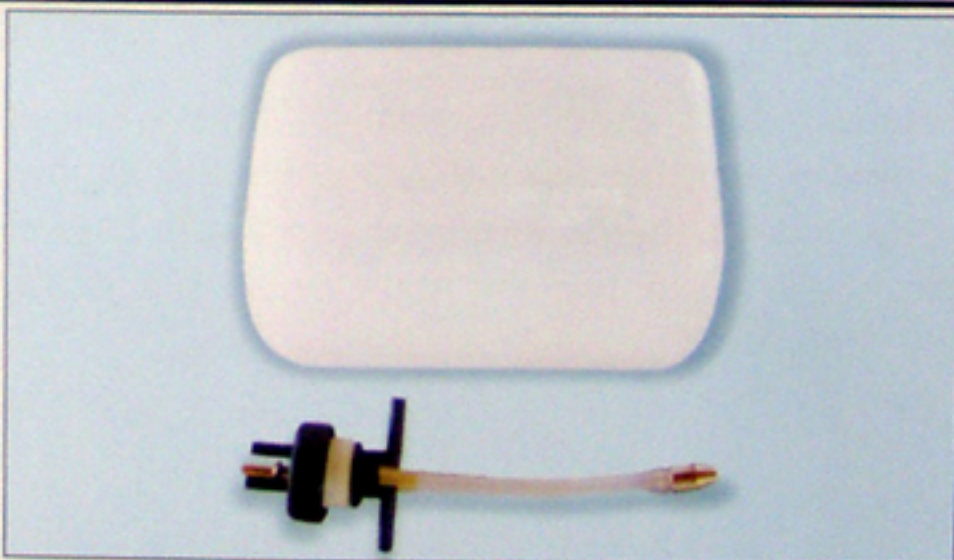
Now pilot drill through the undercarriage into each spat as shown and use a self tapping screw to secure the spat in position.



INSTALLING THE ENGINE

STEP 13.

Prepare the fuel tank bung as shown, ensuring that the clunk is free to move around the tank once assembled. Do not over-tighten the assembly screw.



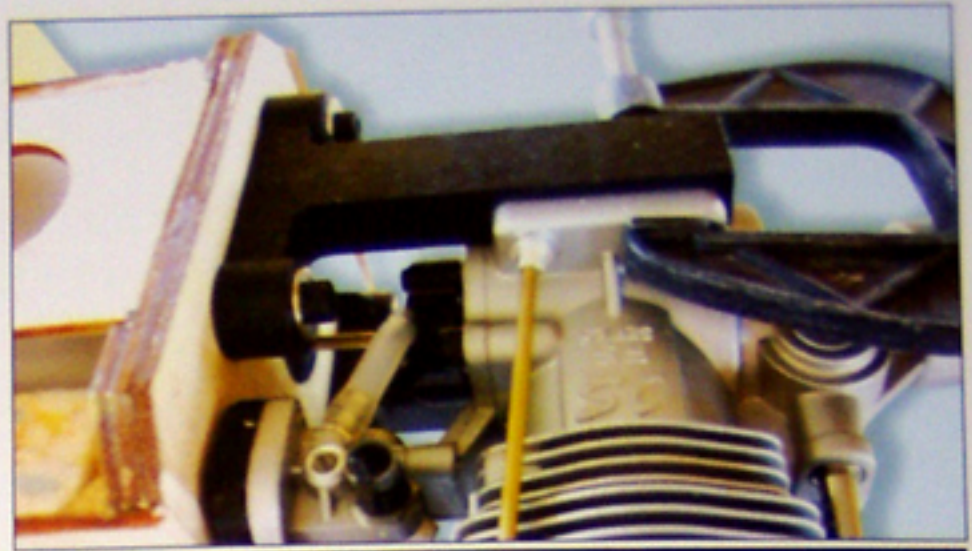
STEP 14.

Slide the fuel tank into its bay from the rear and pack with dense foam to retain. Bolt the engine mount in position using the cap head bolts and washers supplied into the captive nuts already fitted in the bulkhead.



STEP 15.

Clamp your engine to the mount ensuring that the front of the prop driver is 130mm in front of the bulkhead. Mark the engine mount through the engine's mounting lugs as shown and remove the engine.



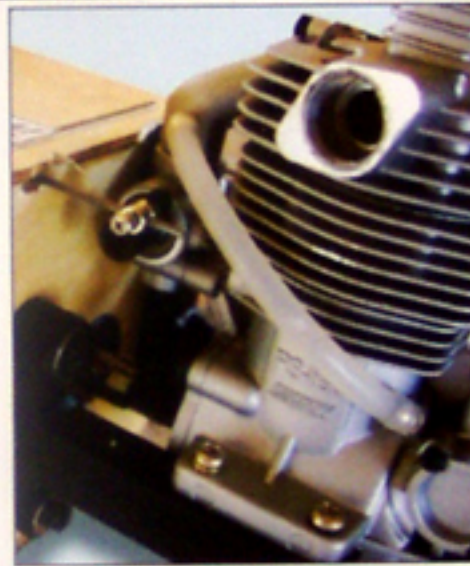
STEP 16.

Drill clearance holes in the engine mount for the mounting bolts supplied. Connect three lengths of fuel tubing to the tank then mount the engine.



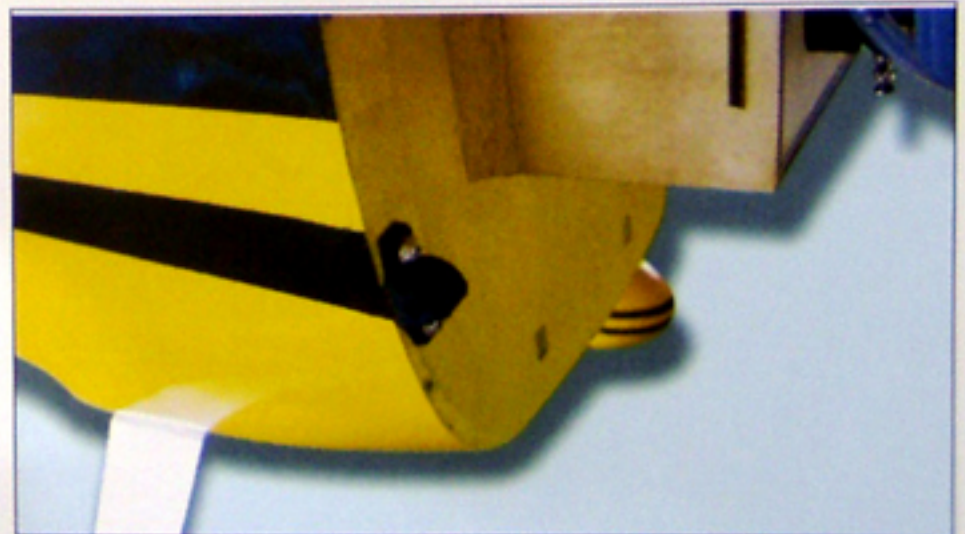
STEP 17.

Prepare the throttle linkage by drilling a hole through the front bulkhead as shown and fitting a pushrod connector to the throttle arm. Mount your throttle servo in the front of the pre-cut servo tray and use a wire pushrod and clevis to complete.



STEP 18.

Now screw the three captive cowl retainers as shown. Pilot drill the mounting holes first and use the self tapping screws supplied.



UNDERWING FAIRING

STEP 19.

Temporarily bolt the lower wing in position and tape the underwing fairing in place, ensuring that it is centred and level with the fuselage at the front and rear. Mark the fairing's position on the wing using a felt tipped pen.



STEP 20.

Using a sharp knife, carefully cut through the film just inside the lines you just marked. IMPORTANT: It is essential that you do not cut into the surface of the wing or it will be severely weakened. Attach the fairing using medium cyano, taking care not glue the wing to the fuselage!



TAILPLANE & RUDDER

STEP 21.

Slide the tailplane in position. Carefully centre it and check it is true and square to both the wing and fuselage. Mark both sides (top and bottom) of the tail where it enters the fuselage then remove.



STEP 22.

Using a sharp knife, carefully cut through the film just inside the lines you just marked. IMPORTANT: It is essential that you do not cut into the surface of the tailplane or it will be severely weakened. Ensuring the tailplane is square and centred to the fuselage, glue it in position using medium cyano.



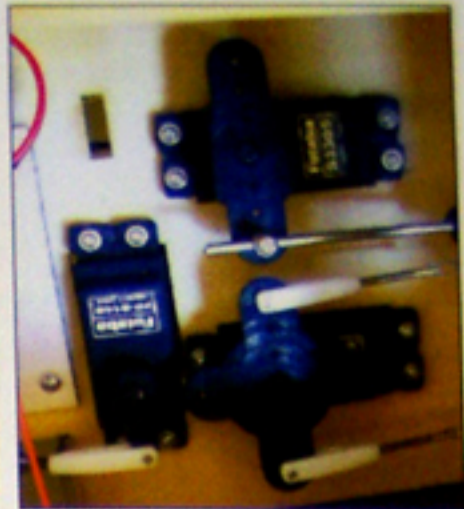
STEP 23.

Hinge the elevators using three hinges per side and the rudder using a further three hinges in exactly the same way as the ailerons. Locate the steerable tailwheel wire drive rod and after drilling a pilot hole in the rudder, glue it in position as shown.



STEP 24.

Use the closed loop components to complete the rudder linkage as shown. The elevators use a pre-formed Y shaped pushrod operated from a single servo as shown. Test the free operation of the elevators and rudder.



FINAL ASSEMBLY

STEP 25.

Tape the canopy in position on the fuselage, checking that the canopy frame is centred. Pilot drill and screw the canopy in position using the four small self tapping screws supplied.



STEP 26.

Locate the undercarriage fairings and attach them to the aluminium undercarriage legs using five minute epoxy. Note that they are handed left and right.



STEP 27.

The most convenient way of mounting the silencer is using a flexible manifold as shown here. Attach the silencer using a nylon mount screwed to the base of the fuselage in front of the undercarriage or your preferred method.



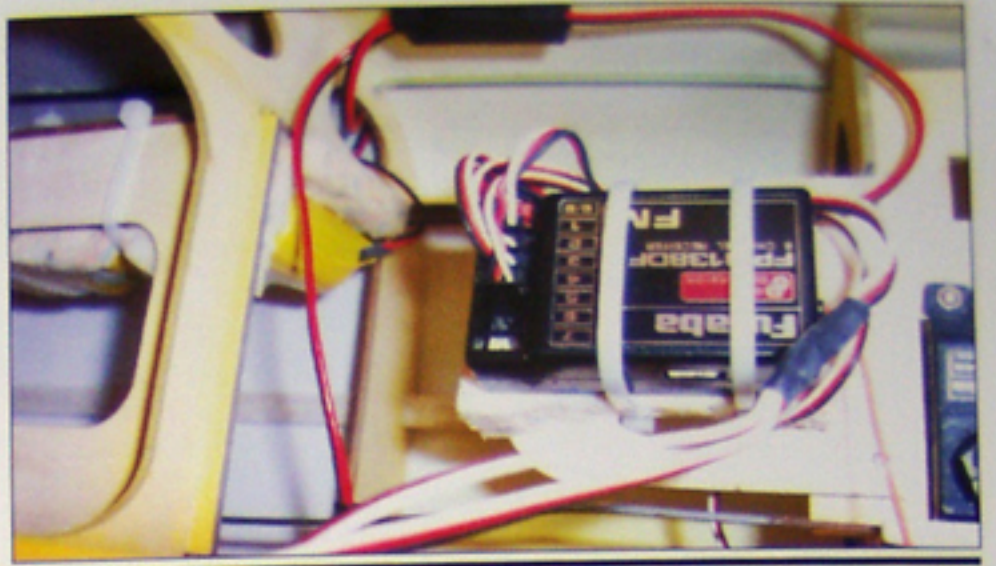
STEP 28.

Attach the cowl using the moulded captive cowl retainers you fitted to the bulkhead earlier. Trim the cowl as necessary to clear the engine's cylinder head and for access to the glowplug. Extend the needle valve as required.



STEP 29.

Mount the switch through the fuselage side and the receiver on dense foam tie-wrapped to the mount shown, which is screwed into place on the servo tray after the fuel tank has been fitted. If fitting a high capacity receiver battery (recommended), you will be able to mount this in the bay behind the fuel tank.



STEP 30.

Rigging the model is best accomplished by fitting the lower wing first, followed by the interplane struts and then the top wing. Adjust the inter connecting pushrods between the ailerons ensuring all four ailerons are level at their neutral position.



Balancing the Model

It is imperative that the model balances correctly before you attempt to fly. The balance point should be 12mm ahead of the upper wing's rear mounting bolt. Adjust the position of the receiver battery to achieve this balance point if necessary.

Control Throws

| | | |
|-----------|-----------|-----------|
| Ailerons: | 12mm Up | 12mm Down |
| Elevator: | 40mm Up | 40mm Down |
| Rudder: | 50mm Left | 50mm Down |

Flying Tips

Just like the full-size, the Pitts Special is a highly manoeuvrable and aerobatic biplane. As with any close coupled biplane it should not be slowed too much on landing until familiar with the model's characteristics.

Guarantee

Advanced Scale Models guarantees this kit to be free from defects in both material and workmanship at the date of purchase. This does not cover any component/parts damaged by use, misuse or modification. In no case shall Advanced Scale Models' liability exceed the original cost of the kit.

In that Advanced Scale Models has no control over the final assembly or the material used for final assembly, no liability shall be assumed for any damage resulting from the use by the user of the final user-assembled product. By the act of using the final user-assembled product, the user accepts all resulting liability.



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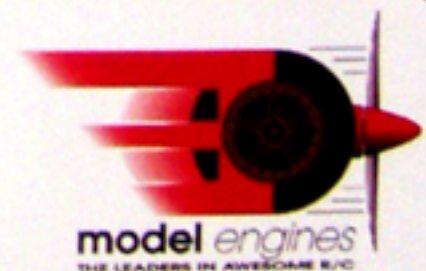
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