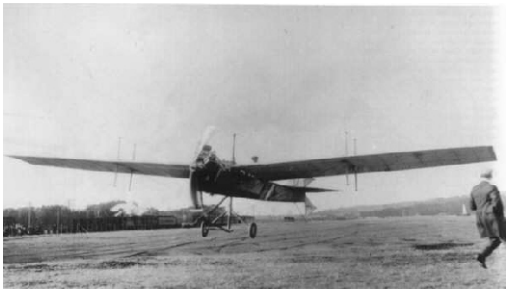
Aircraft In Miniature Limited

Historic Wings

1:72 Metal Kit of the



1911
Antoinette VII

History, Notes and
Assembly Instructions

History

The Antoinette company was named after the daughter of the director, Jules Gastambide, while the companies engines were created by the designer Léon Levavasseur.

The aircraft resembled a dragonfly, with its long thin body and delicate wings. It was an aerodynamically advanced monoplane with a slim fuselage, rectangular wings with marked dihedral, and a cruciform tail. It was also the first practical monoplane with ailerons, although they performed poorly and were replaced with wing warping in later models.

The VII was a development of the Antoinette IV, with increased engine power and a wing warping system developed by Levavasseur for the Antoinette V in place of the ailerons of the Antoinette IV.

Specifications

General characteristics

Length: .....11.50 m (37 ft 9 in)
Wingspan: .....12.80 m (42 ft 8 in)
Height: .....3.00 m (9 ft 10 in)
Wing area: .....50 m² (538 ft²)
Gross weight: .....590 kg (1,300 lb)
Powerplant: .....1 × Antoinette 8V, 37 kW (50 hp)

Performance

Maximum speed: .....70 km/h (44 mph)

Introduction

This Historic Wings kit is made from etched brass for the main structure, with cast metal detail parts. The flying surfaces and rear fuselage can be covered with the Litespan film supplied, although many modellers may prefer to leave the structure uncovered to show the details.

Brass components can be soldered together, or joined with cyanoacrylate (SuperGlue) or 5-minute epoxy. If you have the skills and equipment we recommend soldering.

To remove parts from the etched fret, you can use a pair of side cutters, or put the fret on a ceramic tile, and press down on each attaching tab with a sharp knife. If you use the 'knife & tile' option, put the attaching tab with the half-etched side of the tab face down. Whichever method is used, it may necessary to remove the burr of the attachment tab with a needle file afterwards.

CAUTION - MAKE SURE THE ORIENTATION OF THE WING IS CORRECT BEFORE YOU TWIST EACH RIB.

The wings are etched with integral ribs. Hold the leading or trailing edge in a vice or clamp, and then hold each rib in turn with a pair of fine flat-nosed pliers, and twist that rib through 90 degrees. When all the ribs have been turned, clamp the trailing edge, and do the process again.

Where etched parts are joined with two inter-locking slots it may be necessary to enlarge a slot with a needle file. This is because photo-etching is not an exact process, and sometimes the etching is slightly uneven across a sheet.

Parts List

Cast Metal

Coolant tank . . . . . 1 off
Form tool - female . . . . . 1 off
Form tool - male . . . . . 1 off
Engine . . . . . 1 off
Figure - pilot . . . . . 1 off
Fuel tank . . . . . 2 off
Propeller . . . . . 1 off
Tyre . . . . . 2 off
Undercarriage leg . . . . . 1 off

Etched metal

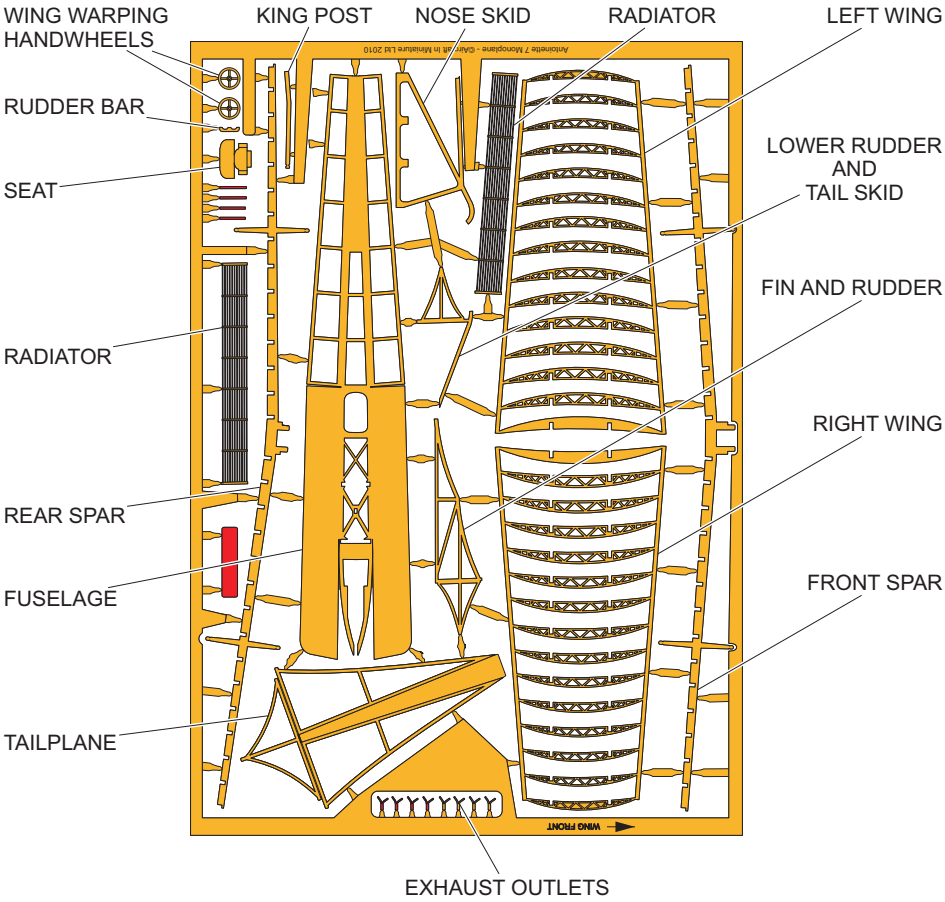
Fret 1 - brass 1 off
Fret 2 - nickel silver . . . . . 1 off

Miscellaneous

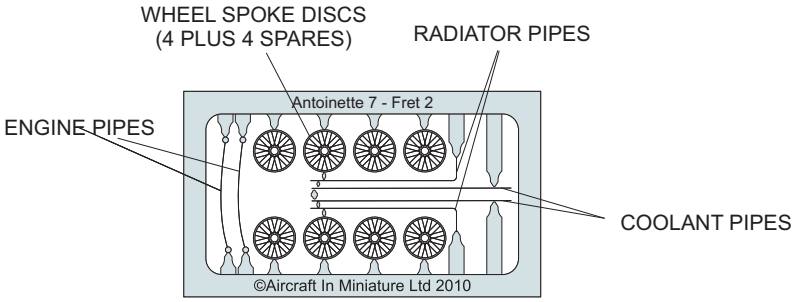
Cream Litespan film . . . . . 1 sheet
Decals . . . . . 1 sheet
Instructions . . . . . 1 set
Pin (for propeller) . . . . . 1 off

Fret 1

PARTS SHOWN IN RED ARE NOT USED IN THIS KIT



Fret 2



1 ASSEMBLE THE SPOKED WHEELS

A Drill a 1/16"/1.5mm diameter hole through the centre of the female form tool as shown in Figure 1 below. This is to let you push the disc of spokes out of the form tool after they have been formed into a cone.

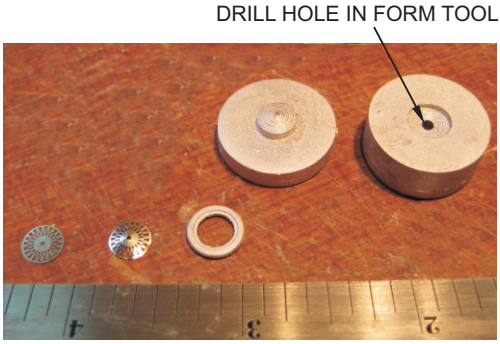


Figure 1

B Remove the four spoke discs from the fret and remove any burrs from the attachment tabs.

C Form each spoke disc.

(1) Put each disc into the cavity in the female form tool.

(2) Put the male form tool into the cavity and press the disc into a cone. Figure 2 shows a vice being used to compress the form tool.

NOTE: These photographs show typical wheels, spoke discs and tyres. They are NOT specific to this kit.

Figure 2

(3) Remove the form tool from the vice and remove the formed disc of spokes.

(4) Do steps 1 C (1) thru 1 C (3) again for each of the spoke discs.

D Assemble the wheels.

(1) Paint the appropriate tyre areas of the cast metal tyres matt black. Do not paint the recesses where the spoke discs will be attached.

(2) Apply your preferred adhesive in the recess on one side of a cast metal tyre, then attach the conical spoke disc as shown in Figure 3.

Figure 3

(3) When the adhesive is dry/cured, turn the wheel assembly over and attach the second spoked disc to the other side. Leave this adhesive to dry/cure.

(4) Do steps 1 D (2) and 1 D (3) again for the other wheel.

2 WING ASSEMBLY

A Remove the left and right wings and the front and rear spars from the fret and remove any burrs from the attachment tags.

B Twist all the ribs on each wing through 90°.

C Twist the eight rigging posts (on the wing spars) through 90°.

D Engage the slots in the front and rear spars in the slots in the ribs of each wing. Make sure that they are symmetrical, then bond the wing spars in place.

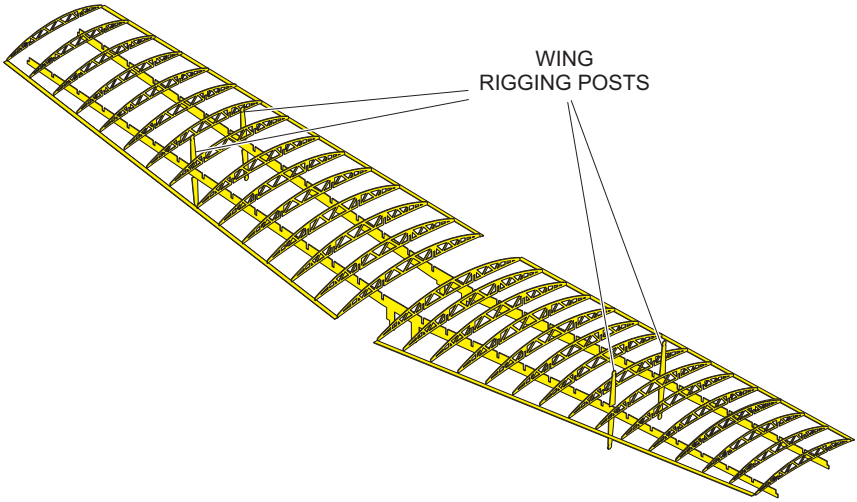
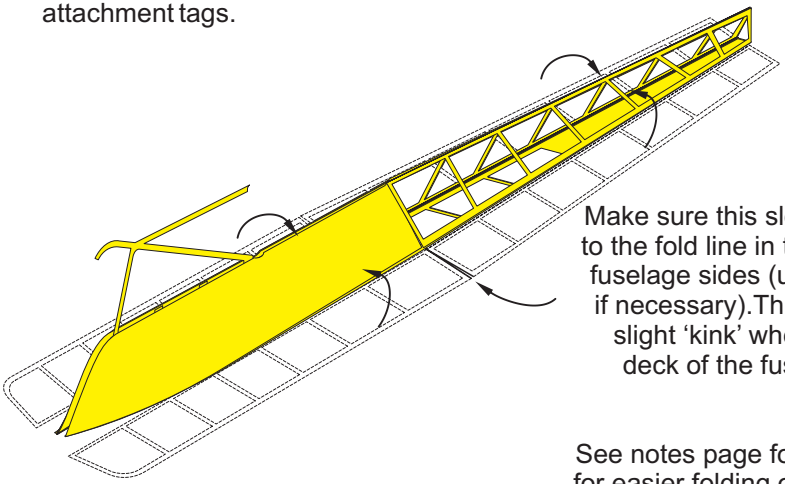


Figure 4

3 FUSELAGE ASSEMBLY

A Remove the fuselage frame from the fret and remove any burrs from the attachment tags.



Make sure this slot extends back to the fold line in the left and right fuselage sides (use a razor saw if necessary).This is to give the slight 'kink' where the upper deck of the fuselage folds.

See notes page for suggestions for easier folding of the fuselage

Figure 5

B Fold the sides of the fuselage into a triangular cross section. Take care to fold the two sections of each fuselage side individually.
Note - The fuselage sides should have the half-etched frame details on the inside of the fuselage.

C Fold the front of the side panels to a smooth curve to match the profile of the top decking.

D When the sides are folded, fit the nose skid between the two front side sections.
Note - Two versions of the nose skid are supplied (etched and cast metal). Align the rear edge of the skid with the hole in the fuselage for the undercarriage leg.

E With the sides aligned symmetrically and the nose skid in place, bond or solder the lower seam and attach the nose skid.

4 OVERALL ASSEMBLY

A Remove the fin and rudder, tailplane and tail skid and lower rudder from the fret and remove any burrs from the attachment tags.

B Apply epoxy adhesive to the four lugs on the wing spars, then engage the lugs in the slots in the top deck of the fuselage. Leave tha assembly until the adhesive has cured.

C Empennage assembly.
(1) Attach the tailplane to the top decking of the rear fuselage. The half-etched area of the tailplane must mate with the fuselage top decking.
(2) Attach the lower rudder and tail skid to the fuselage.
(3) Attach the fin and rudder to the top surface of the tailplane.

D Undercarriage assembly.
(1) Enlarge the hole in the fuselage aft of th nose skid until the undercarriage leg will fit into the fuselage.
(2) Drill out the holes in the centre of the spoke discs to 1 mm diameter..

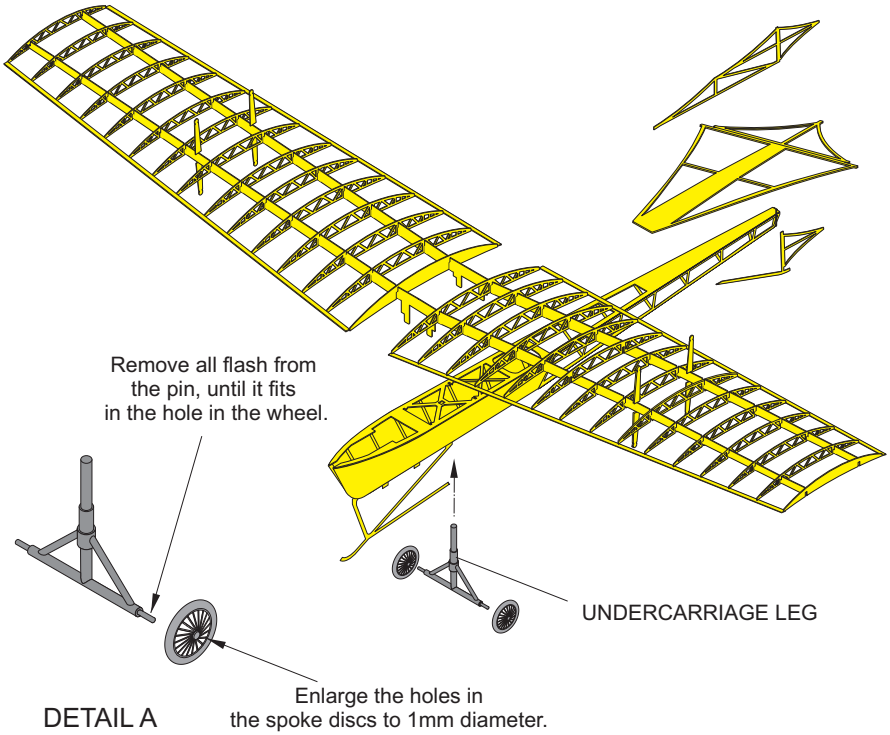


Figure 6

(3) Remove all flash from the pin at each end of the axle on the landing gear leg. Trim these pins until they will fit into the holes in the spoke discs on each wheel as shown in Detail A of Figure 6.

(4) Apply epoxy adhesive to the undercarriage leg, then put the leg into the hole in the fuselage. Make sure that the leg is aligned correctly, then leave the assembly until the adhesive has cured as shown in Detail A of Figure 6

(5) Attach the wheels to the undercarriage leg with epoxy adhesive, align the wheels correctly, then leave the assembly until the adhesive has cured.

5 AIRFRAME COVERING AND PAINTING

A If the airframe is to be painted, do it at this stage in the assembly. Paint the structure to resemble a light to medium brown wood. If the model is to be covered with Litespan film, do not paint those areas where adhesive will be applied.

B If the model is to be covered with Litespan film (the film), cover the fuselage and flying surfaces now. For each area:

(1) Cut a piece of the film which is larger than the panel.

(2) Apply a continuous layer of cyanoacrylate adhesive (superglue) to the structures where the film will be attached.
Note - Cut slits in the film for the wing rigging posts before you attach the covering on the wings.
(3) Attach the edge of the piece of film to one long edge of the bay and press it down so that it is smooth, and without creases.
(4) When the superglue has attached the film securely, apply more superglue to the other three sides of that bay.
(5) Pull the film smooth and attach the other three sides of the panel of film, so that it is smooth and not slack.
(6) When the film is securely attached, use a sharp blade to trim off the excess film.
(7) Do this procedure again for all the other panels to be covered.

6 FUSELAGE DECALS

A Paint the solid area of the forward fuselage gloss white.
B Cut each decal from the sheet. Because these decals have continuous carrier film, it is necessary to trim the decal exactly on the edge of the printed area of the decal.
C Apply a decal to each side of the fuselage.

7 ENGINE, PROPELLER AND DETAIL PARTS ATTACHMENT

A (1) Remove the parts from the fret as necessary, and remove any burrs from the attachment tabs with a needle file or similar tool.

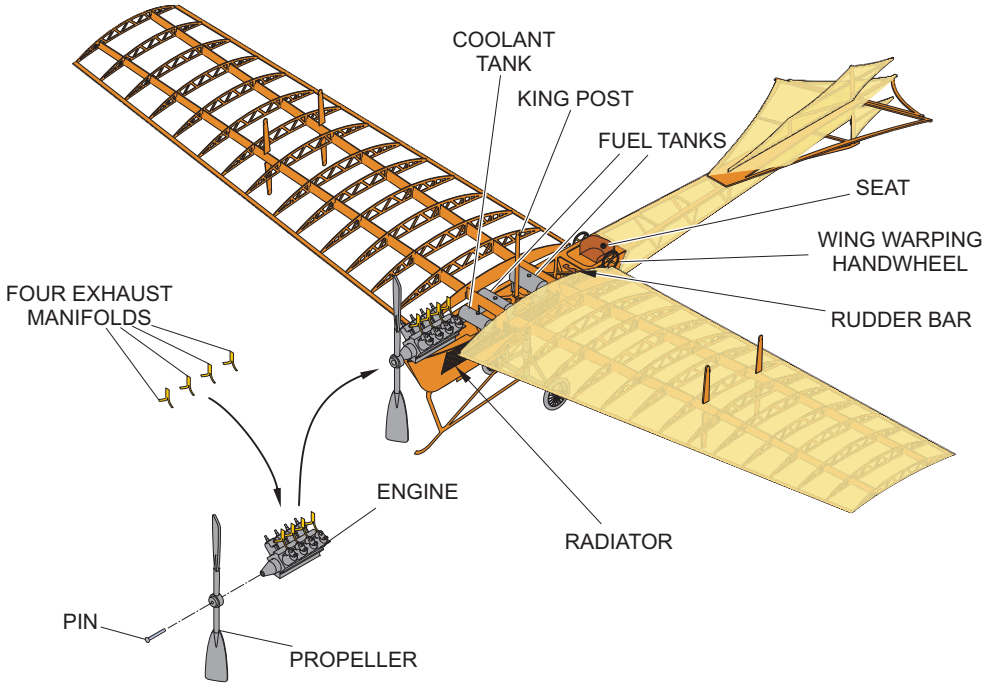


Figure 7

B Attach a radiator to each side of the forward fuselage as shown in Figure 7.

C Cockpit

(1) Attach the rudder bar in the cockpit.

(2) Fold the seat, then attach it in the cockpit.

(3) Attach a wing warping handwheel to each side of the fuselage.

D Propeller and engine.

(1) Drill a 1 mm diameter hole through the hub of the propeller and another into the end of the crankcase of the engine. Drill a small counterbore in the front of the propeller boss for the head of the pin.

(2) File the underside of the crankcase as necessary to fit the engine into the fuselage, then attach it with epoxy adhesive.

(3) Crop the pin to length and attach the propeller to the engine.

(4) Attach the king post to the fuselage. Apply epoxy adhesive to the king post then put it into the rectangular slot in the top decking of the fuselage between the two wing spars.

(5) Attach the two fuel tanks and the coolant tank with epoxy adhesive.

(5) Attach the four exhaust manifolds to the top of the engine with epoxy adhesive.

7 RIGGING

A Add rigging if desired as shown in Figure 8 below. We have found black monofilament to give good results.

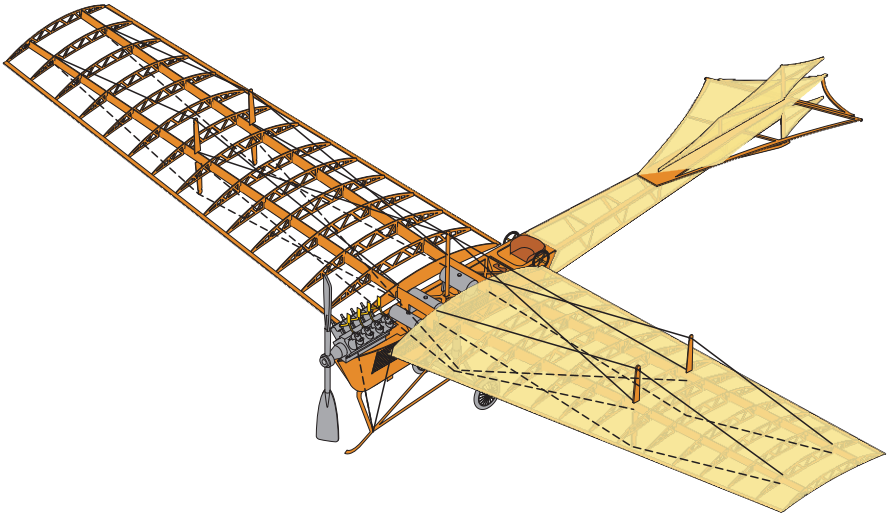


Figure 8

NOTES

Assembly tip - because etching is not a precise process, it may make folding the fuselage easier if you increase the depth of the etched fold lines on the inside of the fuselage. Use a razor saw and increase the depth of the slot to approximately 75% of the material thickness.

We find a folding tool for etched metal very useful (the one we use is called an 'Etchmate' and again this is available from Hannants).

This kit is manufactured in the United Kingdom by

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