

# WINGNUT WINGS



## Sopwith Pup RFC

1/32 Scale

Sopwith's wonderful Pup was developed from a design that their test pilot, Harry Hawker, legendarily chalked out on the factory floor for his own personal runabout in the latter stages of 1915. Featuring wing warping technology this runabout formed the basis for the Sopwith Sparrow of which only 4 were made. In February 1916 Sopwith took it upon themselves to produce a single seat fighter prototype based on this design, slightly redesigned, strengthened and with ailerons replacing wing warping for lateral control. Given the serial number 3691, this prototype attracted the attention of the RNAS (Royal Naval Air Service) who were suitably impressed enough to order the type into production as the Admiralty 9901 Type. The RFC were likewise taken by the prototype with Maj. Gen. H.M. Trenchard famously stating 'Let us get a squadron of these' which led to them ordering it into production as the Sopwith Scout. Despite being officially known as the Admiralty 9901 Type or Sopwith Scout it was quickly given the eminently more appropriate, albeit strictly unofficial, nickname 'Pup' after a remark by a Brig. Gen. W Sefton Brancker upon comparing it to the larger Sopwith 1 & 1/2 Strutter.

The Sopwith Pup was universally liked by the young aviators of the RNAS and RFC charged with flying it. Of the more than 2100 built by The Sopwith Aviation Co Ltd, William Beardmore & Co Ltd, The Standard Motor Co Ltd and Whitehead Aircraft Ltd the vast majority were powered by a 80hp LeRhône 9C rotary engine as represented in this kit. Many others were fitted with Clerget and Gnome engines of various capacities, although usually in machines destined for training units. Ever adaptable, the Pup was modified for shipboard use by the RNAS as the 9901a Type, taking off from both turret mounted platforms and early aircraft carriers. Despite having only one Vickers gun its light weight and great maneuverability ensured it was a good match for the twin gun armed Albatros D.II, Fokker D.II, Halberstadt D.II and D.III fighters it faced in late 1916. At least 29 RFC and RNAS pilots achieved ace status in the Pup with victories claimed over the aforementioned fighters as well as later Albatros D.III's and D.V's, observation balloons, various two seaters, seaplanes and 5 Gotha bombers before being withdrawn from frontline service in the latter stages of 1917.

While there is little controversy about the common colour scheme for RFC Sopwith Pups of PC10 (Protective Covering number 10) for the upper surfaces and CDL (Clear Doped Linen) wing lower surfaces, there is a great deal of controversy as to what colour PC10 actually was. Made from mixes of yellow ochre, iron oxide and lamp black pigments it varied between olive drab and chocolate brown, depending on the mix and, presumably, time spent exposed to the elements. It appears that early, fresh PC10 appeared more olive drab while later mixes and aircraft exposed to the elements for some time would appear more chocolate brown. Metal cowling panels were often painted Battleship Grey on the exterior with the insides left unpainted or left unpainted all together. Metal brackets were usually black. All surfaces exhibited a shiny gloss appearance when new.

Wingspan:	Length:	Max Weight:	Max Speed:
26' & 6" (8.07m)	19' & 3.75" (5.89m)	1225lb (555.6kg) 80hp LeRhône 9C	105mph (169kph) 80hp LeRhône 9C
No. manufactured:	Production:	Engine:	Ceiling:
Approx. 2100 (includes over 280 rebuilds)	Feb. 1916 to April 1917	80hp LeRhône 9C, 80hp Clerget 7Z, 80hp Gnome, 100hp Gnome Monosoupape.	17500' (5443m)

### Armament (RFC):

.303 (7.7mm) Vickers gun, occasionally a .303 (7.7mm) Lewis on the upper wing and up to 100lb (45.5kg) of bombs.

### References:

The Sopwith Pup, J.M Bruce, Gordon Page & Ray Sturtivant, Air Britain 2002. Windsock Datafile Special Sopwith Pup, J.M Bruce 1992. Windsock Datafile Sopwith Pup, J.M Bruce, 1986. Osprey Sopwith Pup Aces of World War 1, Norman Franks, 2005. 1914-18 Aviation Heritage Trust. Private Collections.



# Sopwith Pup RFC

## 1/32 Scale

**Warning:** Choking hazard. Keep small parts and plastic bags away from children. Use glue and paint in a well ventilated area. Always wear protective eyewear when cutting and a protective mask when painting, gluing and sanding. Do not breathe dust from polyurethane resin parts (if included). Beware of sharp edges on metal parts.








**Assembly:** Read all the instructions carefully before starting assembly. Use glue intended for plastic models. Assemble metal and resin parts (if included) using Cyanoacrylate (CA) or epoxy glue. Before assembly select a marking option and note optional parts required in instructions.

**Rigging:** If installing rigging please drill out all location holes with a 0.5mm drill bit to a depth of at least 1mm.

**Painting:** Only use paints suitable for plastic model kitsets.

**Decals:** Cut out each decal as required. Soak in warm water for 15 seconds. Slide off backing paper onto gloss painted surface of model. For large decals it is helpful to apply a drop of water to the area they are being applied to. This will make it easier to maneuver them into the correct position

### SYMBOLS

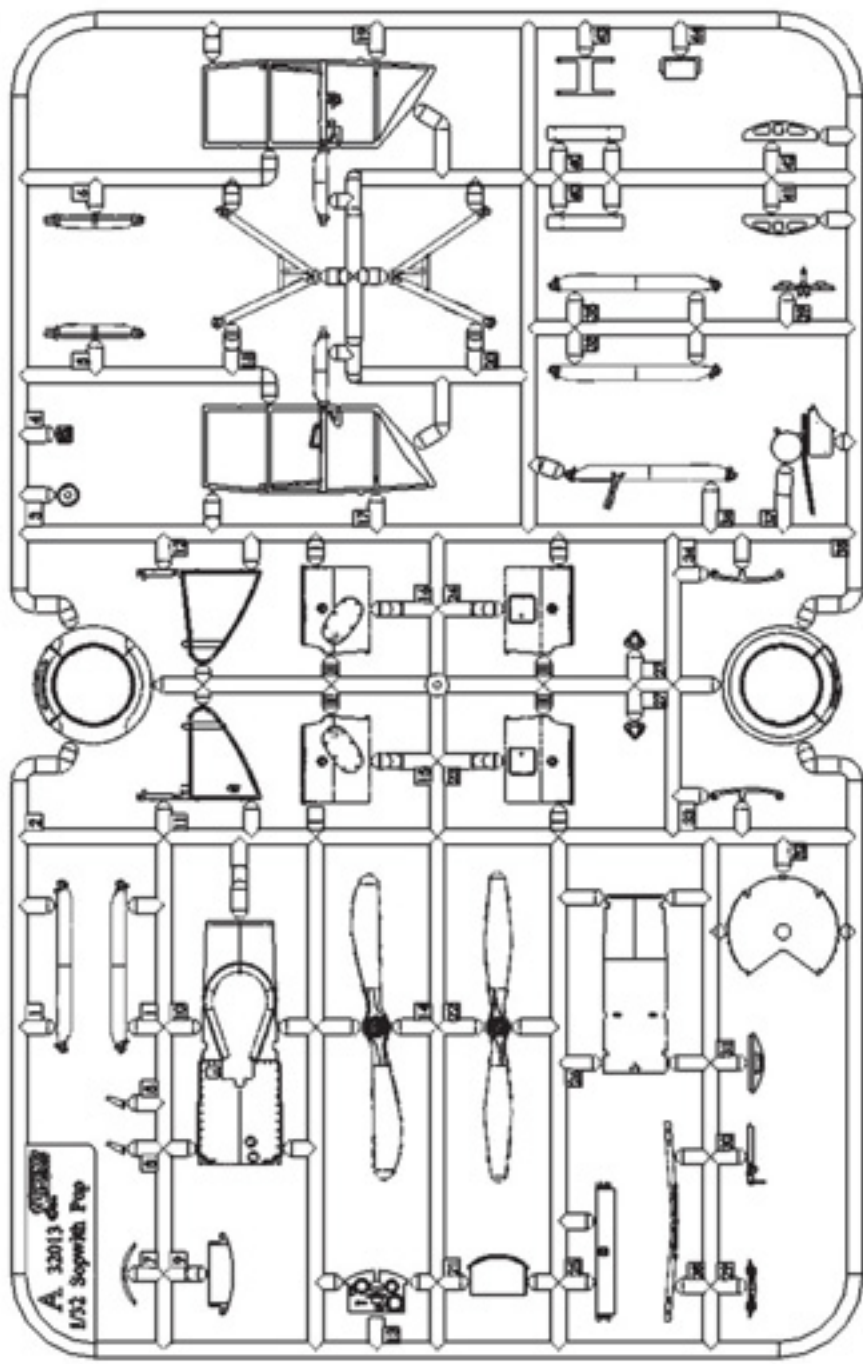
 Construction Step	 Choose	 Attention	 Remove
 Part Number	 Do Not Glue	 Option	 Drill
 Decal	 Cement For Metal	 Other Side	 Paint Colour
 Photo Etch Part			

### PAINT COLOURS

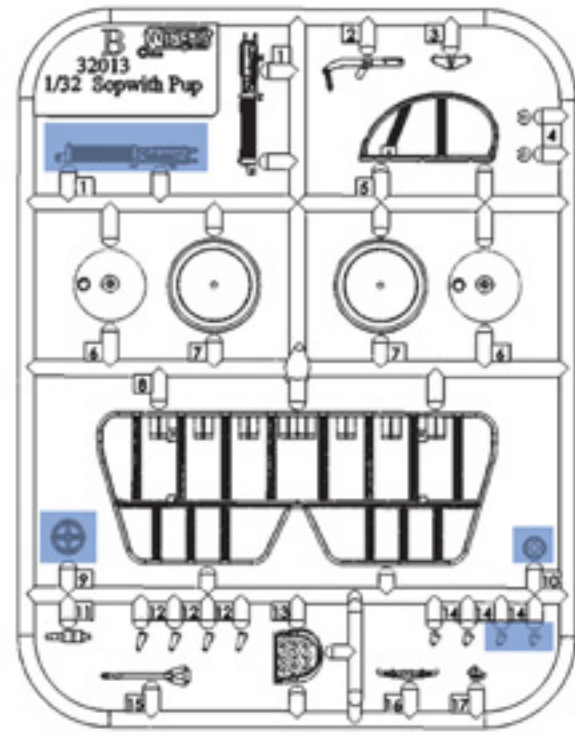
	All colours	Tamiya	Humbrol	Misterkit
a	Clear Doped Linen	XF55	121	BC05
b	Light Wood	XF59	93	
c	Dark Wood	XF68	98	
d	Leather	XF52	62	
e	Semi Gloss Black	X18	85	
f	Aluminium	XF16	27001	
g	Brass	X31	54	
h	PC10 Early	XF62	155	BC03
i	Gun Metal	X10	27004	
j	Copper	XF6	12	
k	Rubber	XF69	66	
l	Battleship Grey	XF53	87	BC01
m	White	XF2	34	
n	Blue	XF8	25	BC08
o	Red	XF7	60	BC07
p	Steel	XF56	27003	
q	PC10 Late	XF51	98	BC02



A



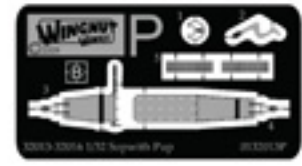
B



C

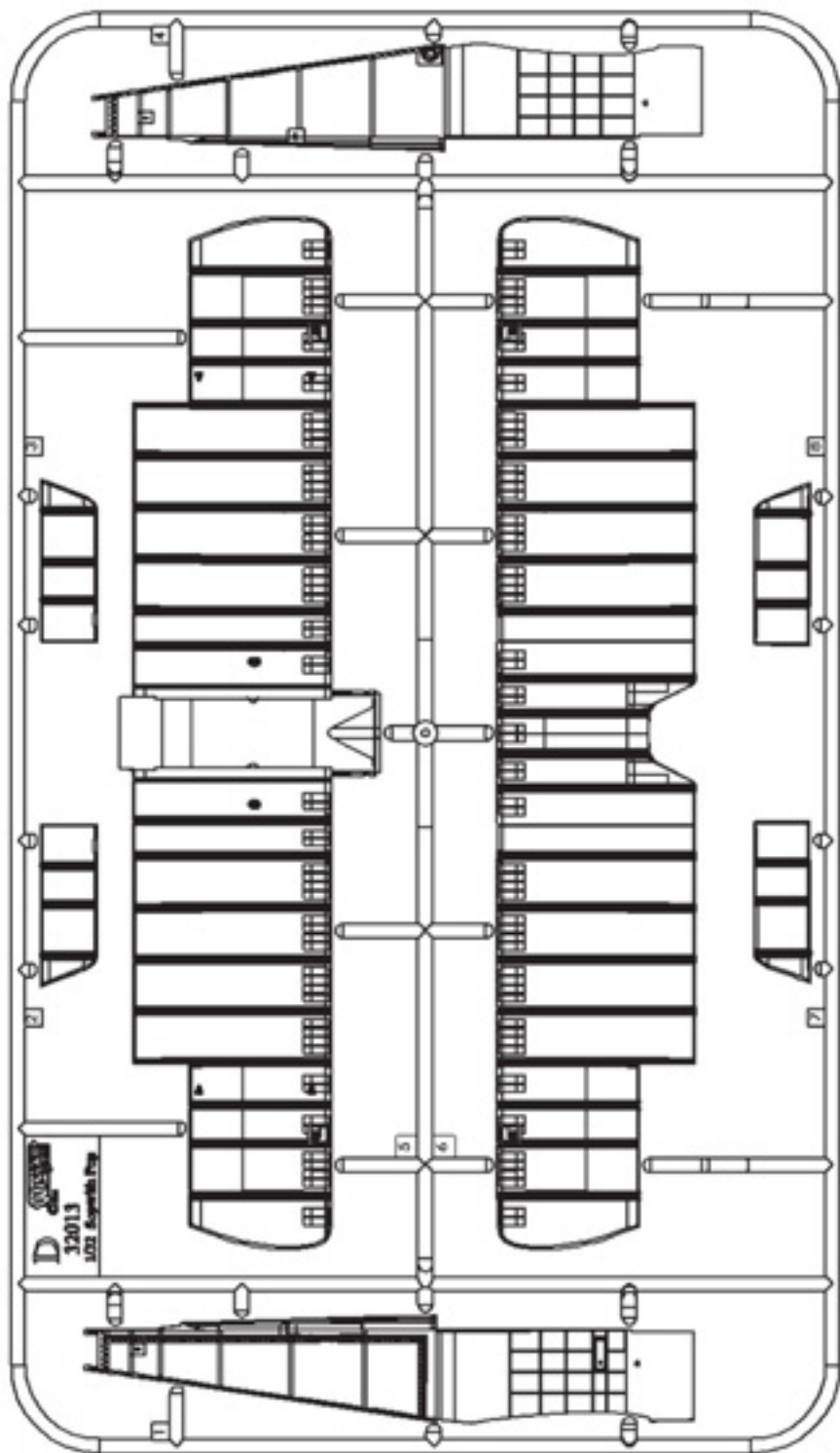


Photo Etch

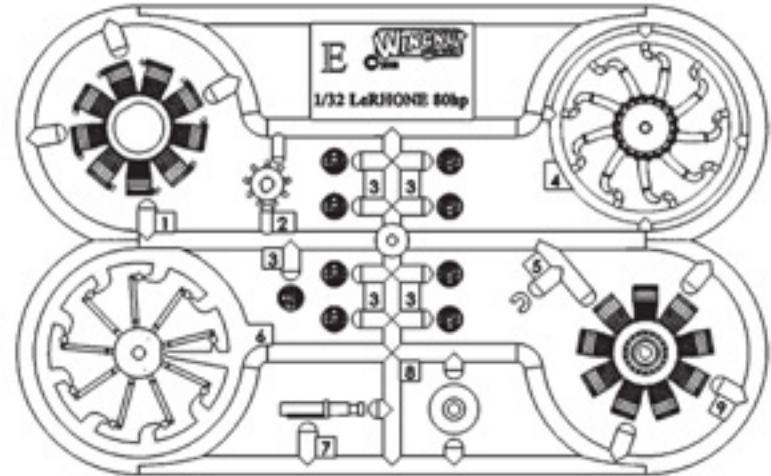


■ = Not Used

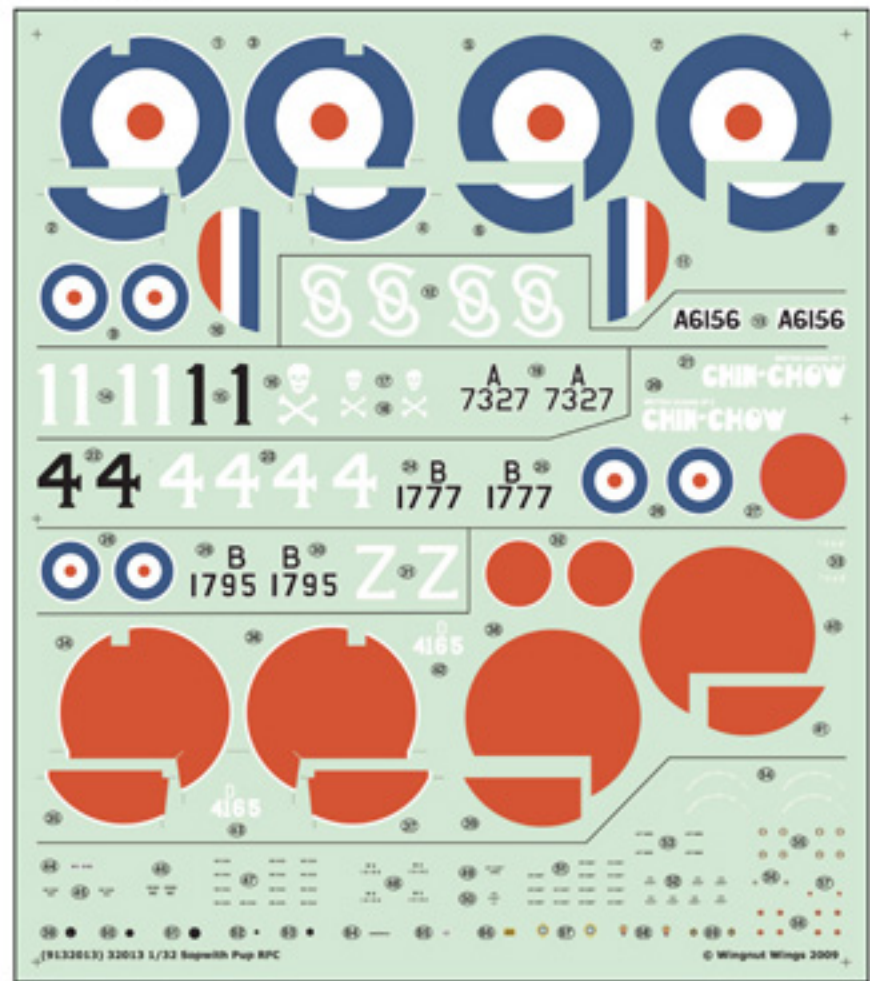
D



E



Decal Sheet

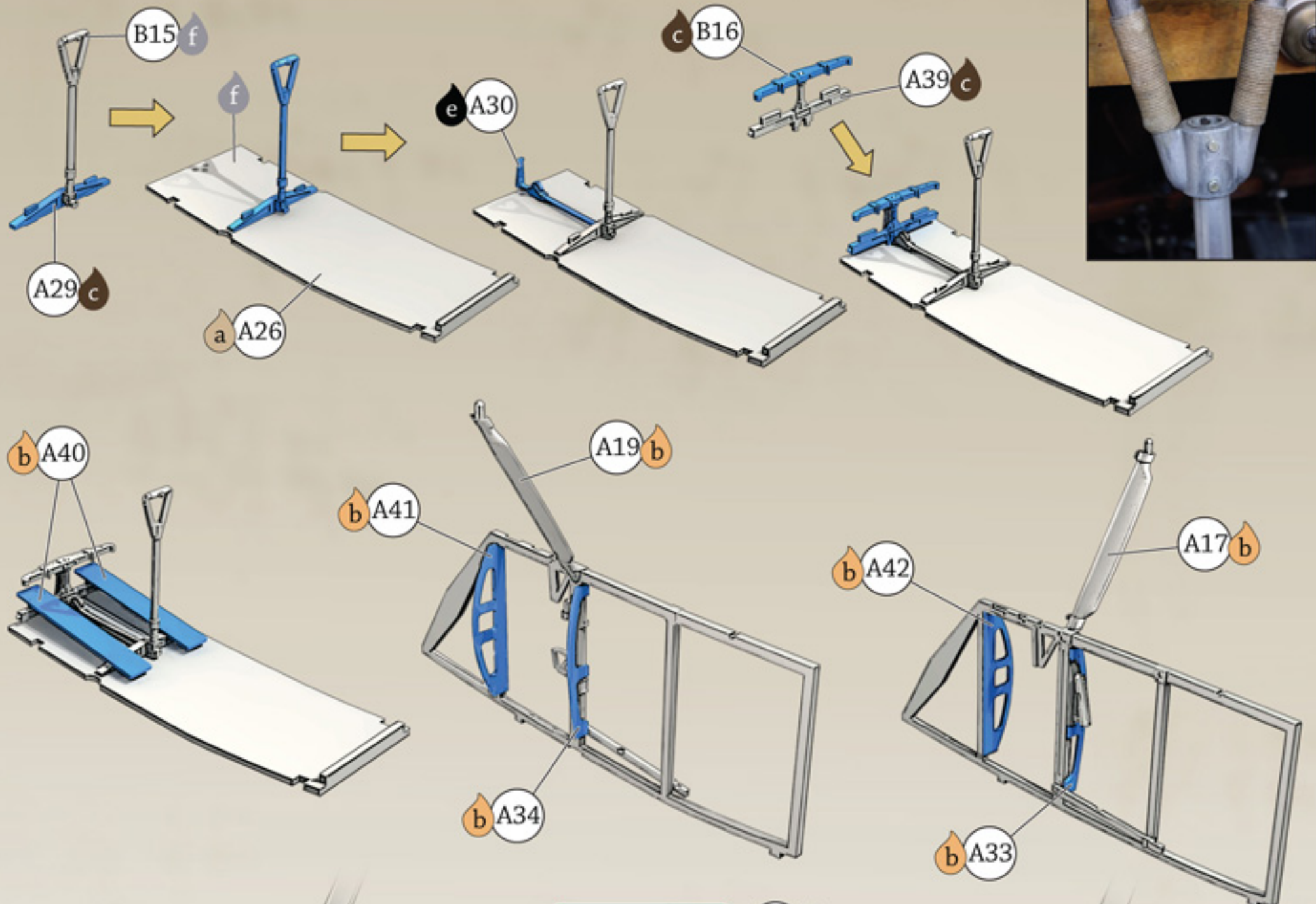




# 1 COCKPIT

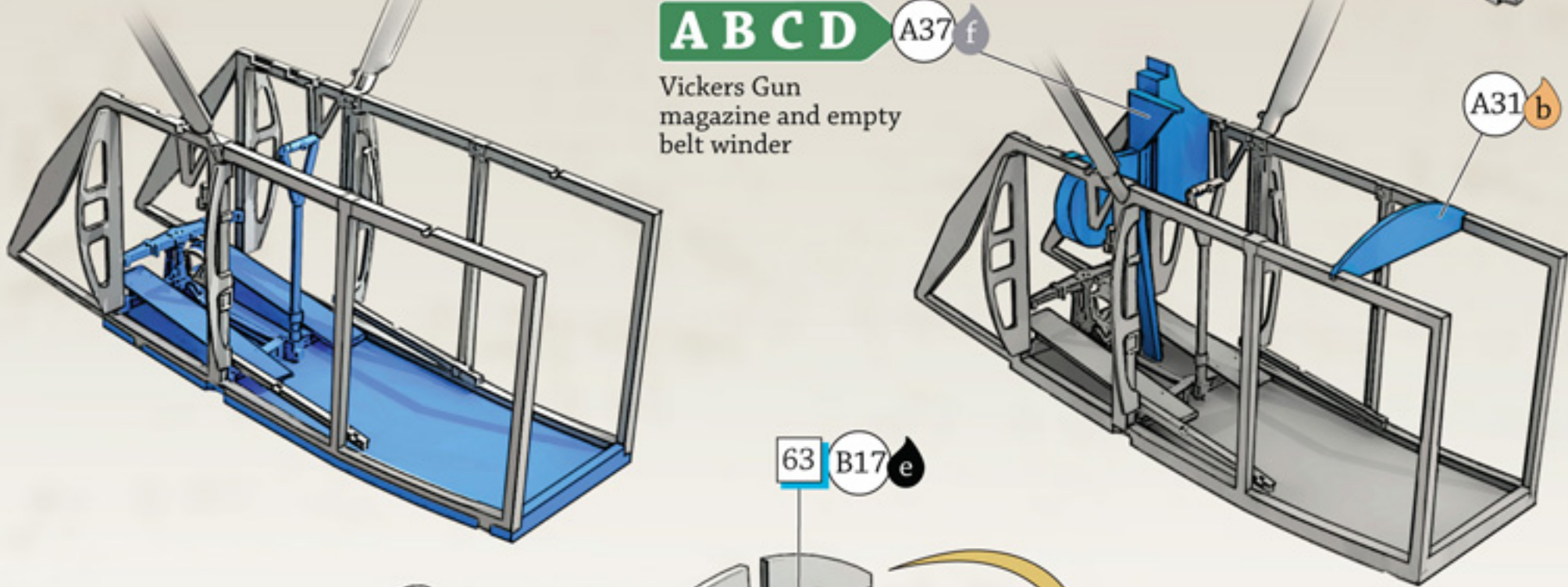
Paint brackets and small fittings **e**

>Control column detail from Shuttleworth's Sopwith Pup (converted from a Sopwith Dove)

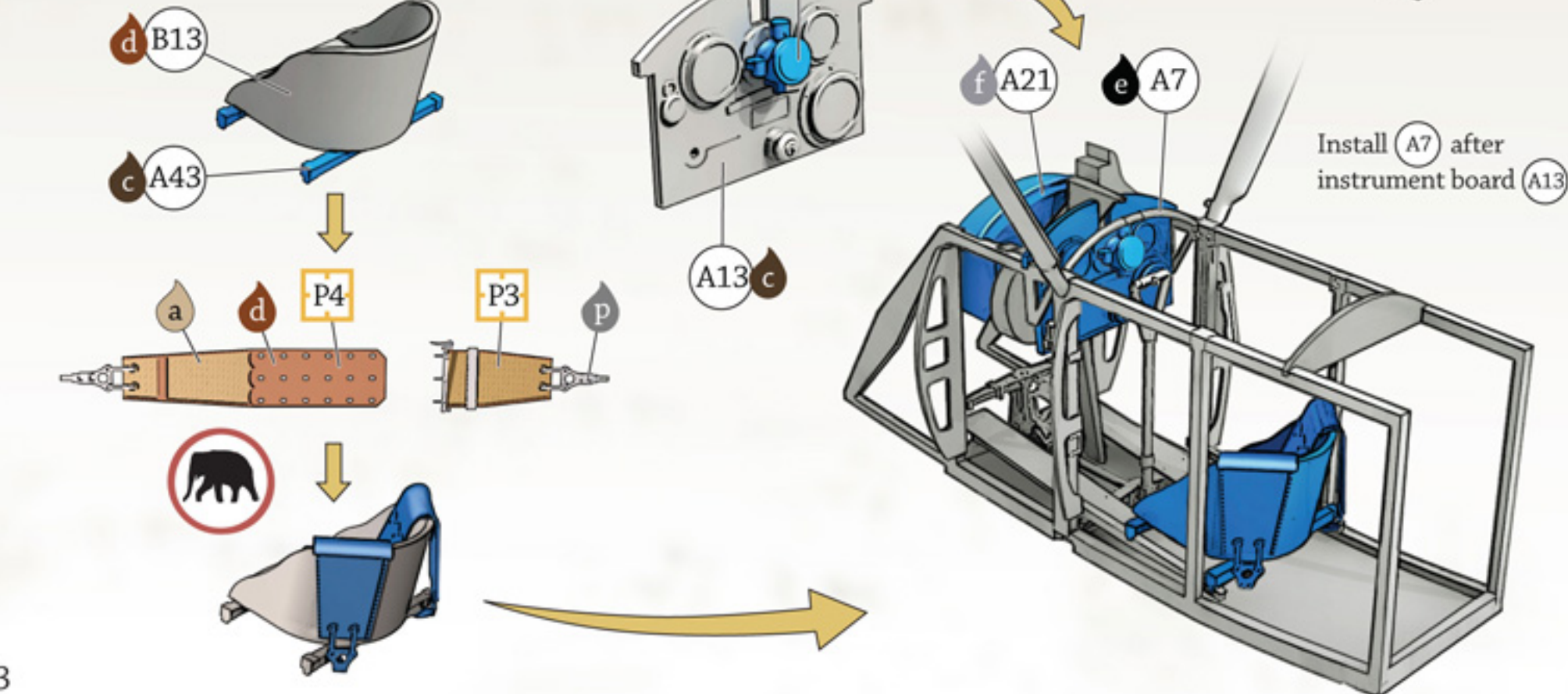


## ABCD

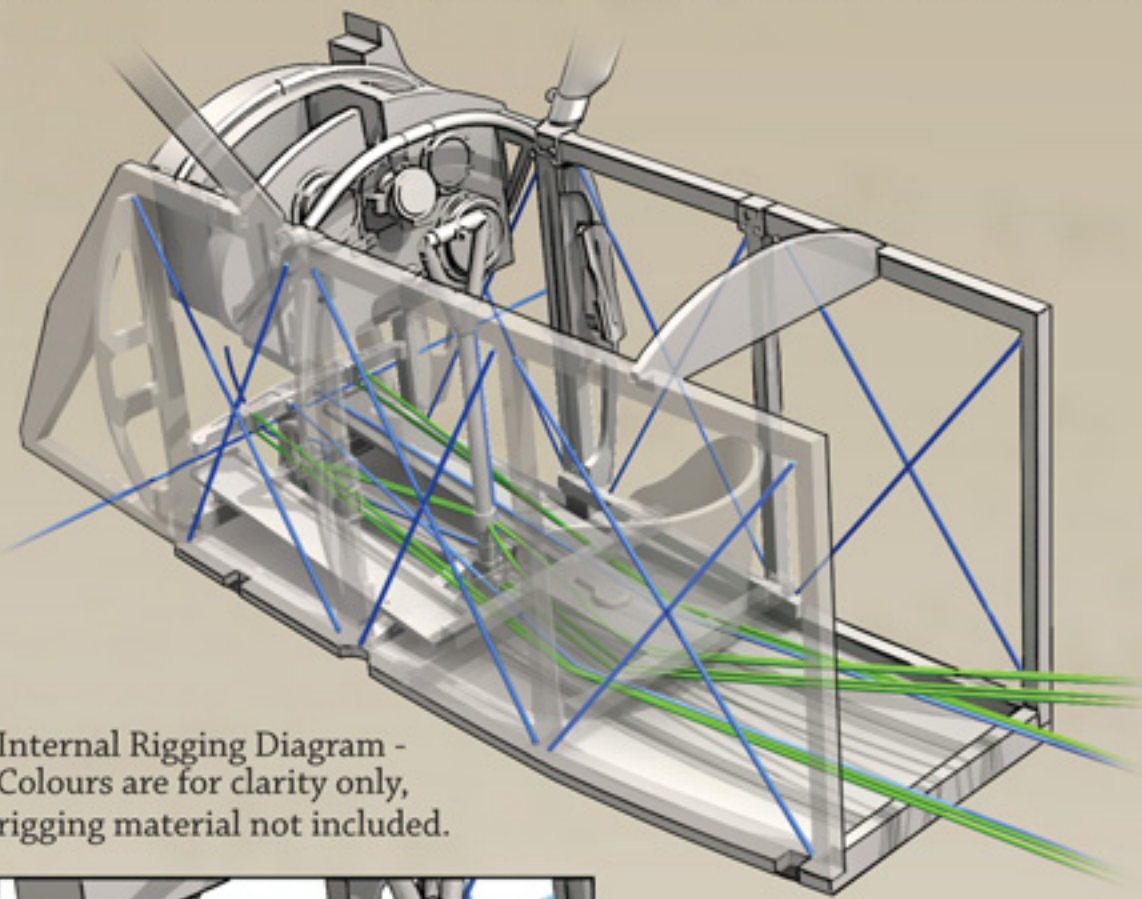
Vickers Gun magazine and empty belt winder



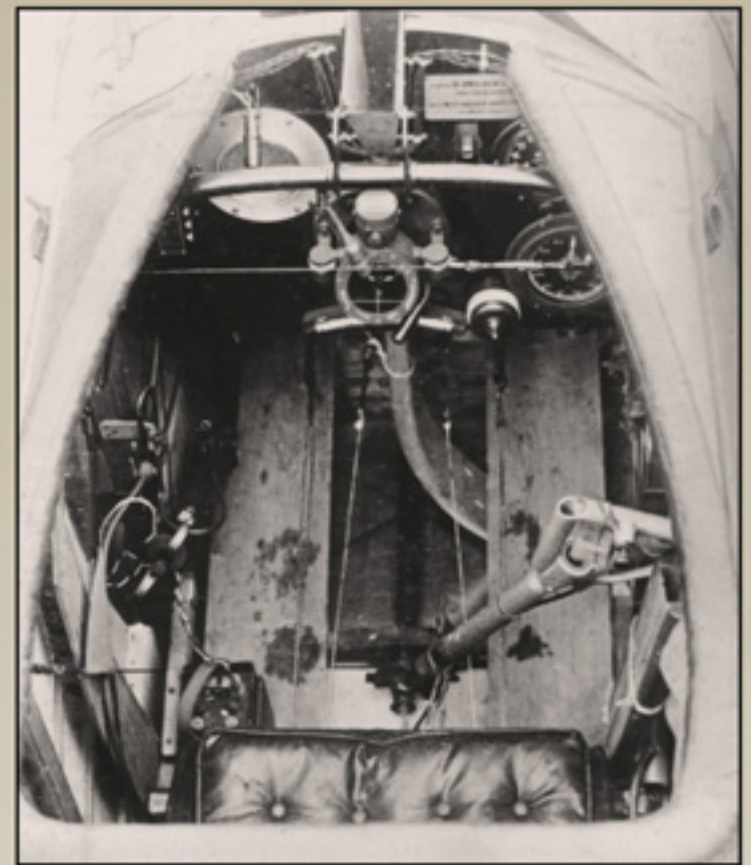
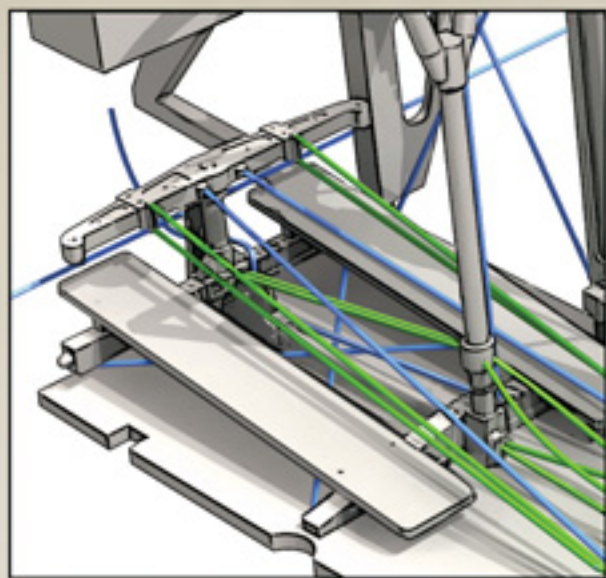
Install **A7** after instrument board **A13**





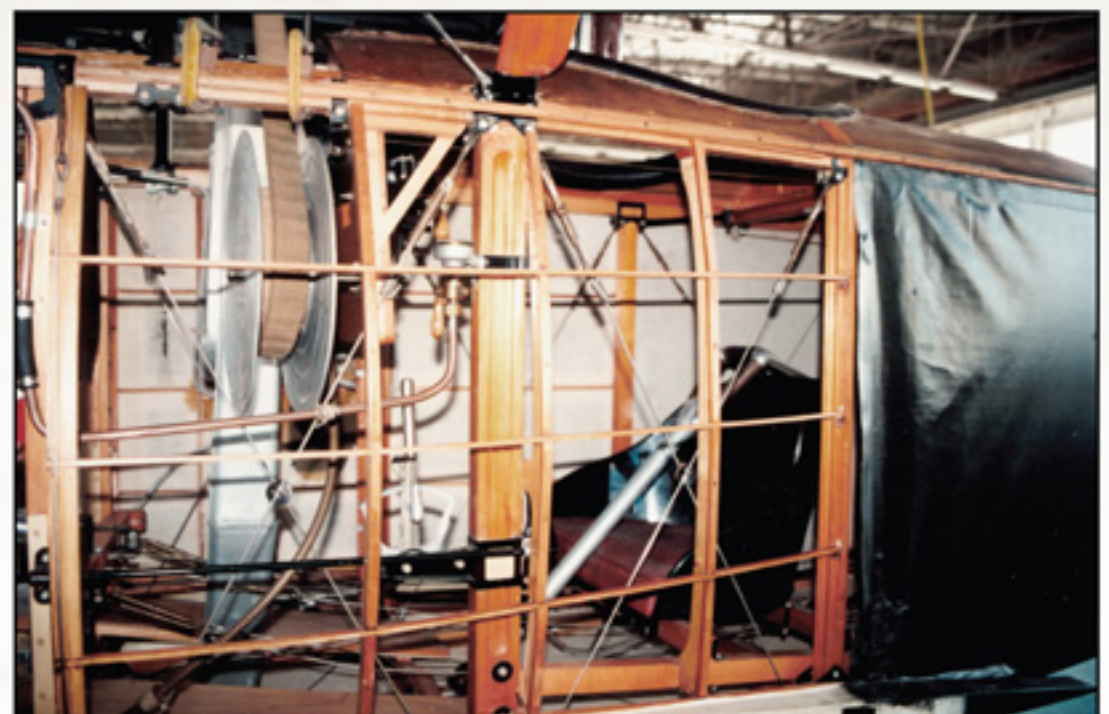
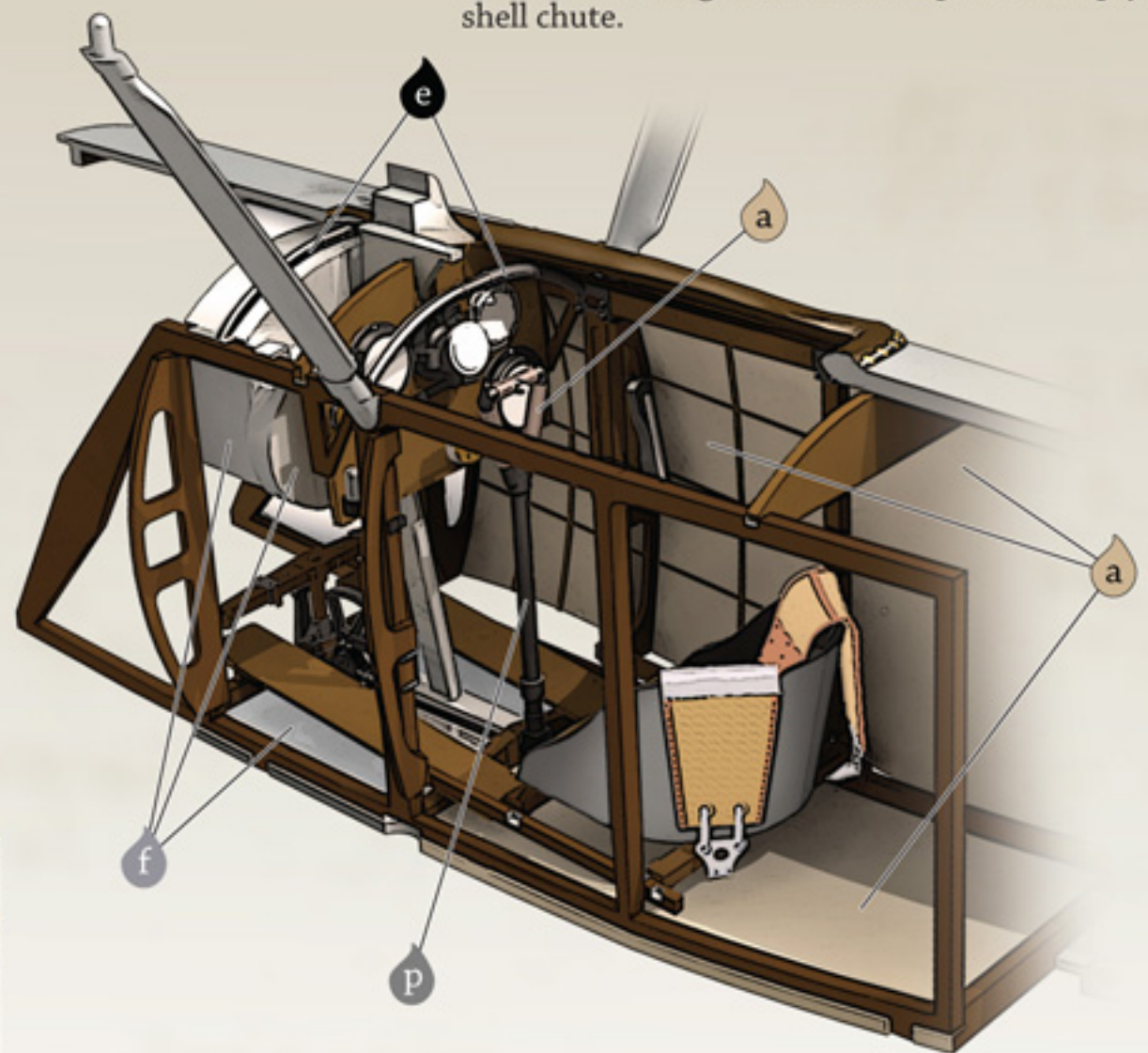
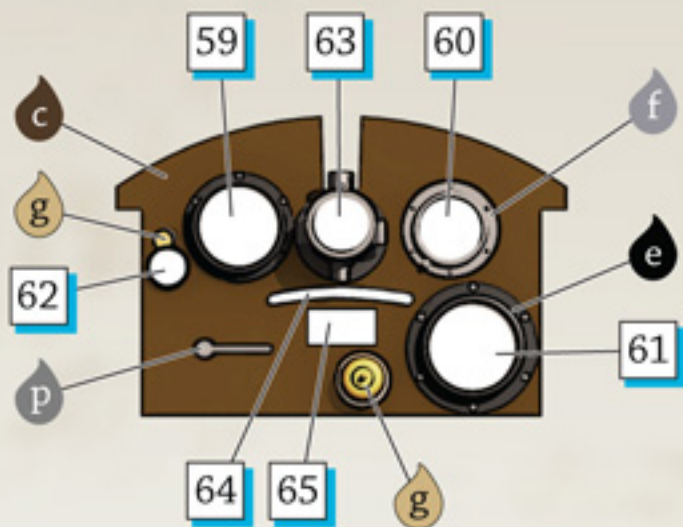


Internal Rigging Diagram - Colours are for clarity only, rigging material not included.



Cockpit from a Sopwith Pup showing one variation of instrument board arrangement. Note the installation of instrument board lights for night flying and wireless for air to ground communication. The Vickers Gun has been removed allowing us to see the top of the empty shell chute.

Painting Guide



The very accurate Sopwith Pup replica N6160, built by EMK Aeroplanes Ltd/Skysport Engineering from 1978 to 1983, undergoing repairs at the RNZAF museum. Note the various wood tones, CDL fuselage wall interior and the empty belt winder drum for the Vickers Gun. (Photos by David Frowen)



## 2 FUSELAGE

✓ Tail skid detail from Shuttleworth's Sopwith Pup  
(converted from a Sopwith Dove)

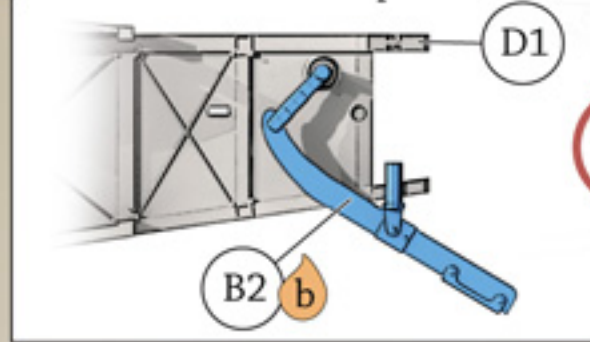
Paint tail skid **b** and metal brackets **e**

Paint interior **a** and frame **b**



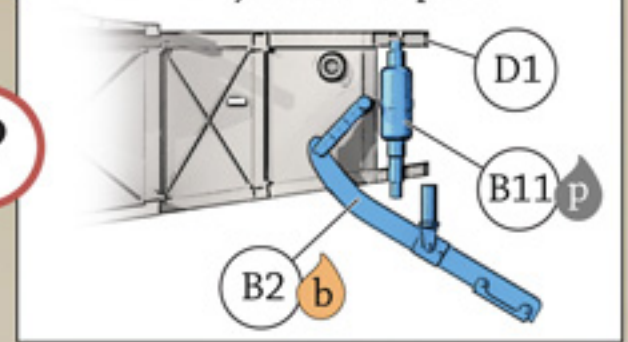
### C D E

Fixed Tailplane



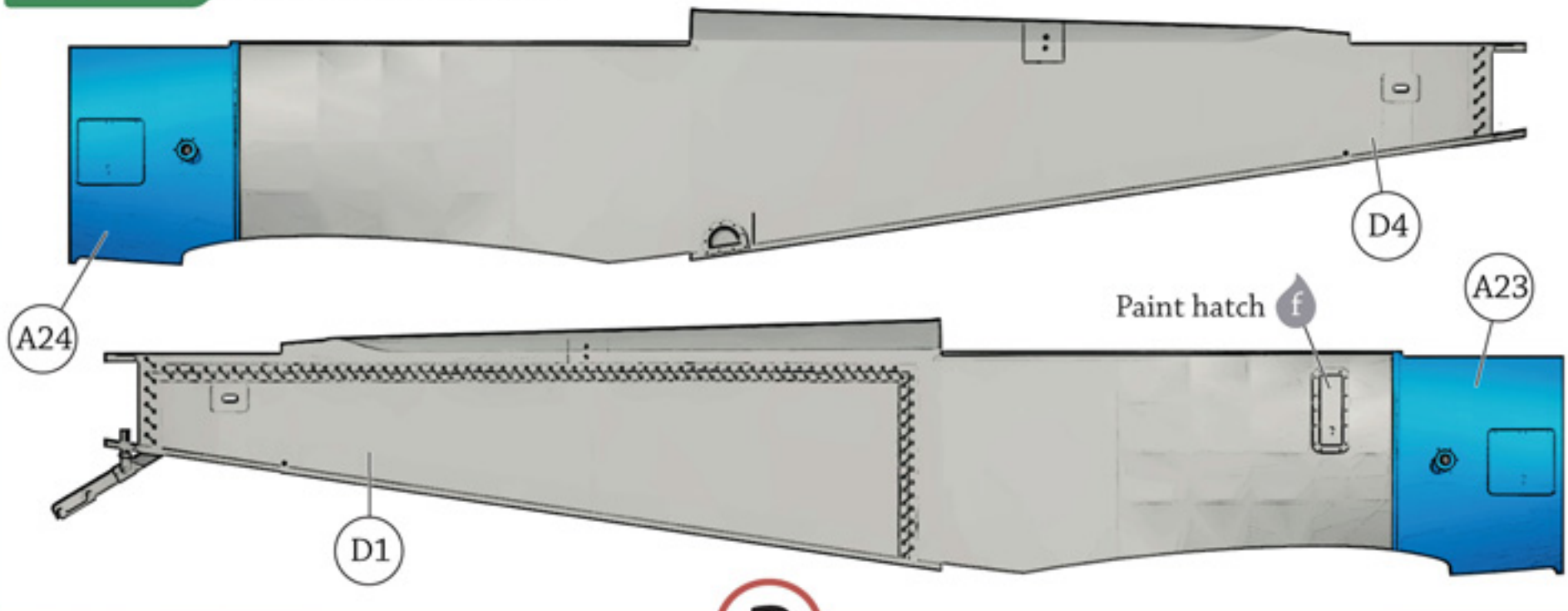
### A B

Adjustable Tailplane



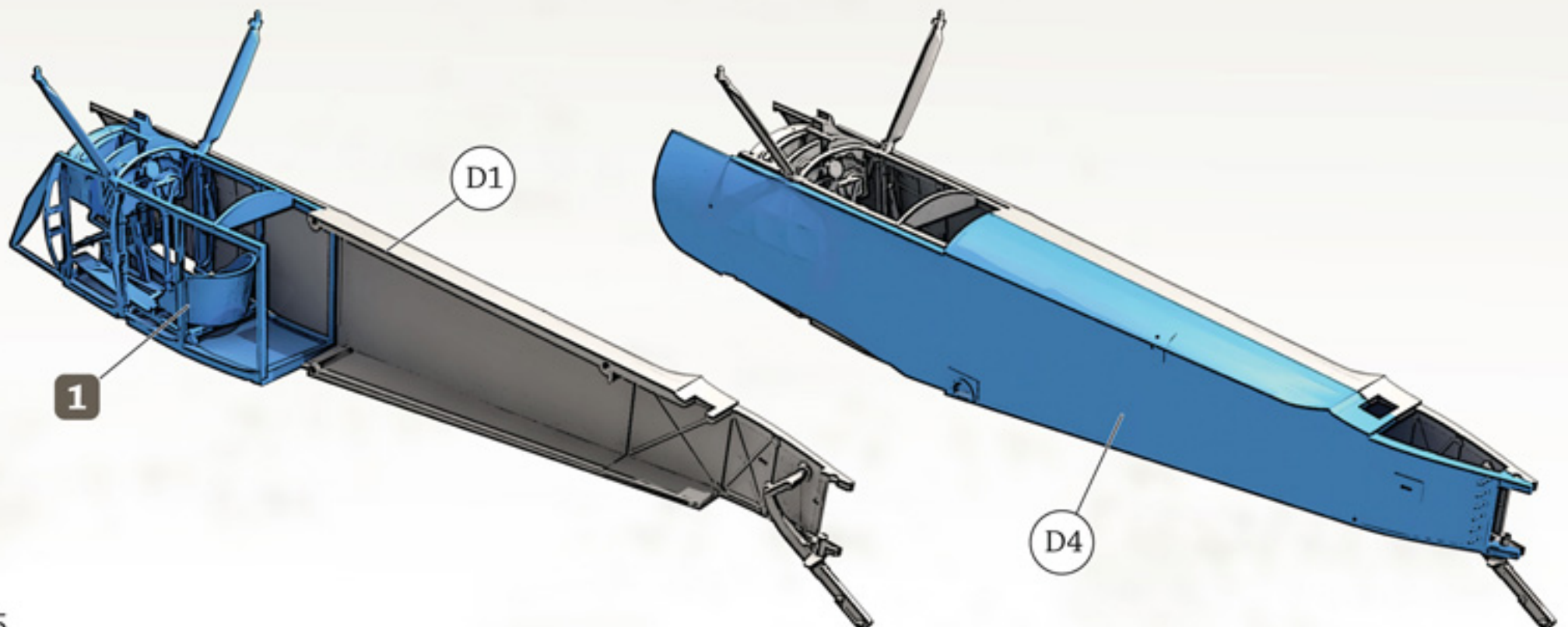
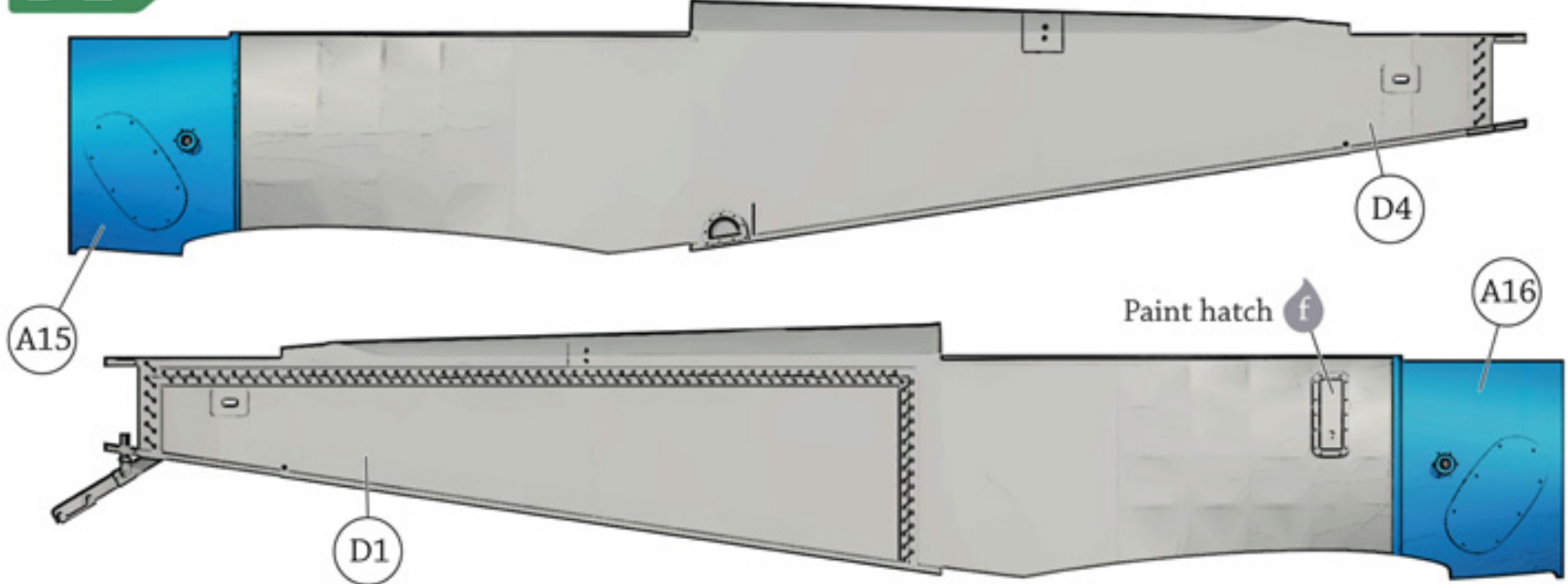
### A B C

Square side cowl hatches



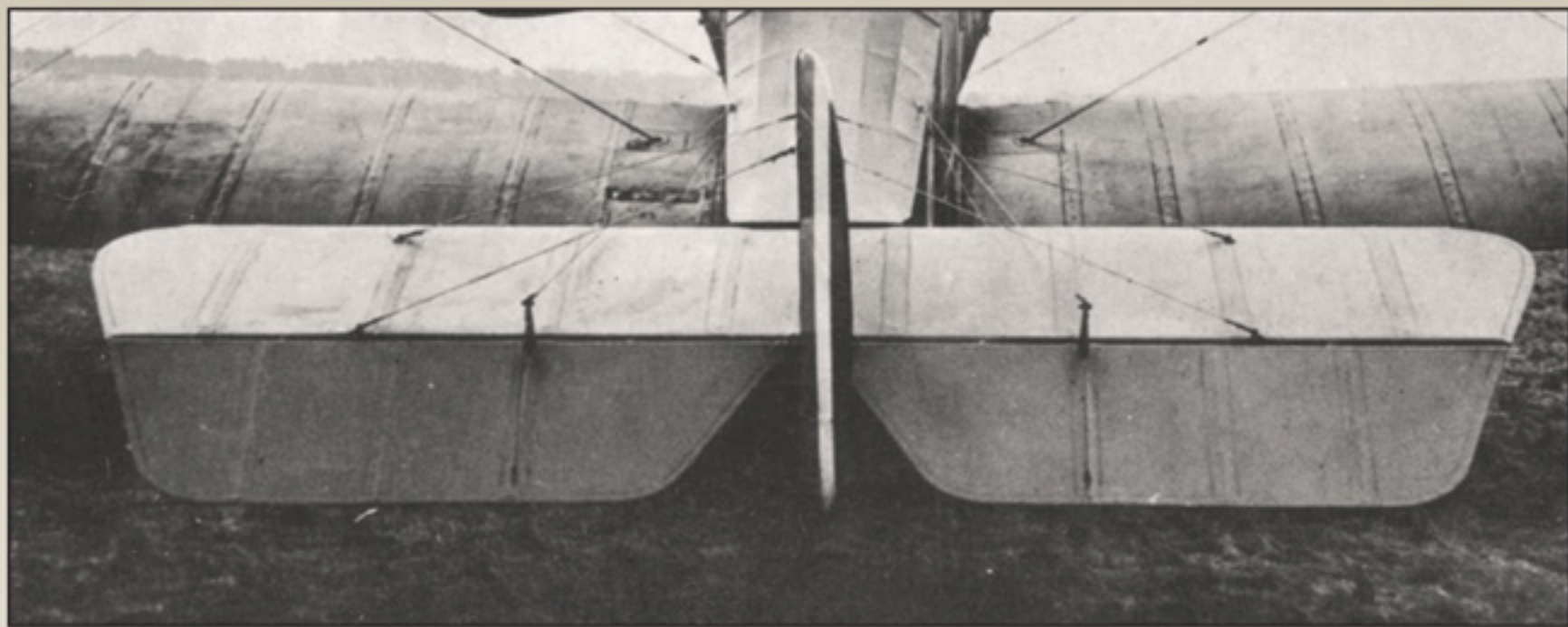
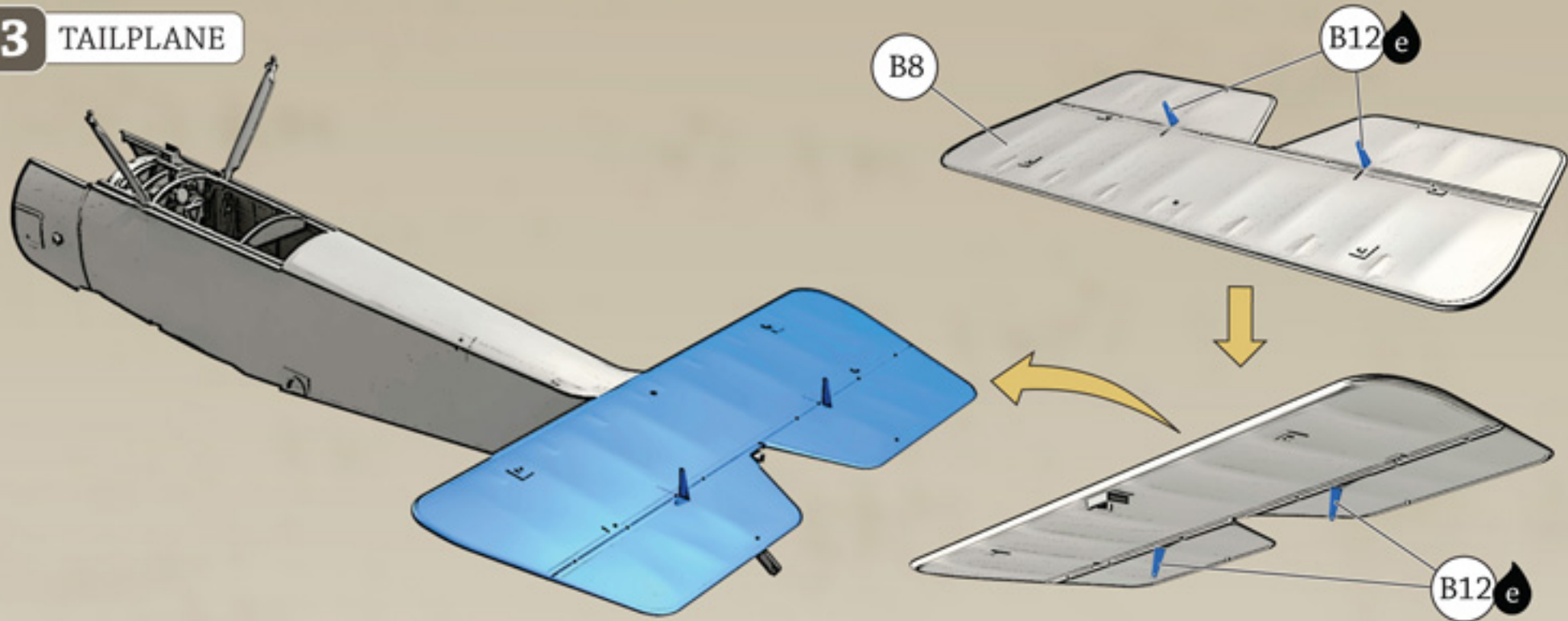
### D E

Oval side cowl hatches

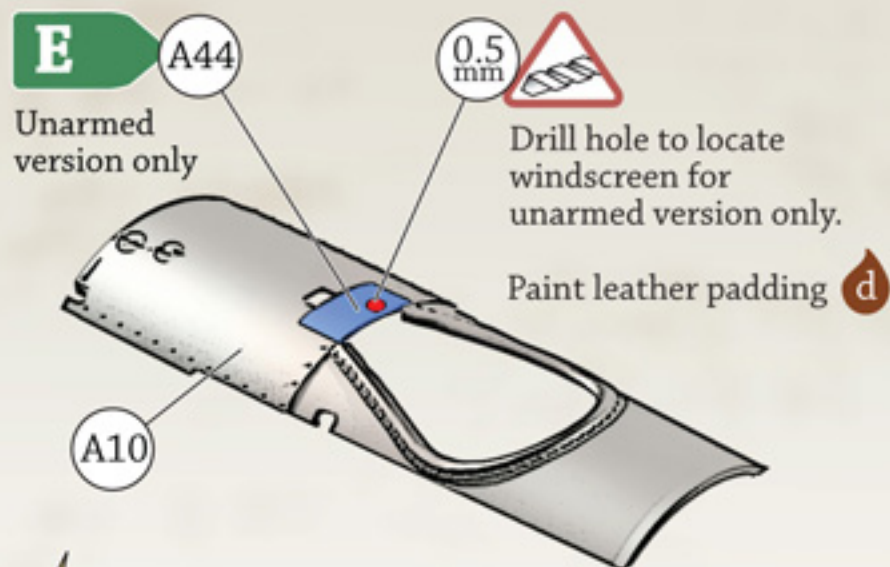




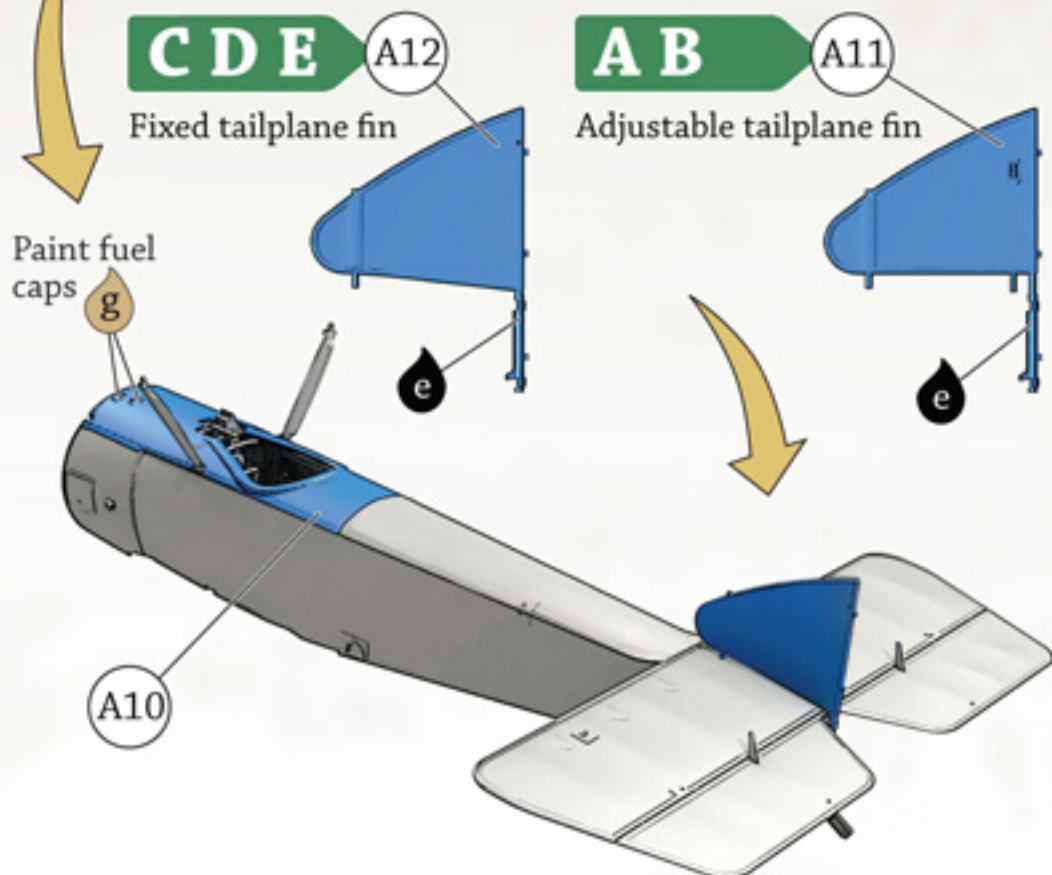
### 3 TAILPLANE



Tail plane details from Standard built Sopwith Pup A653 showing the prominent rib tapes and rigging details. The dark lines either side of the ribs are caused by the rough edges of the tapes not reflecting light as well as the rest of the smooth glossy surface.



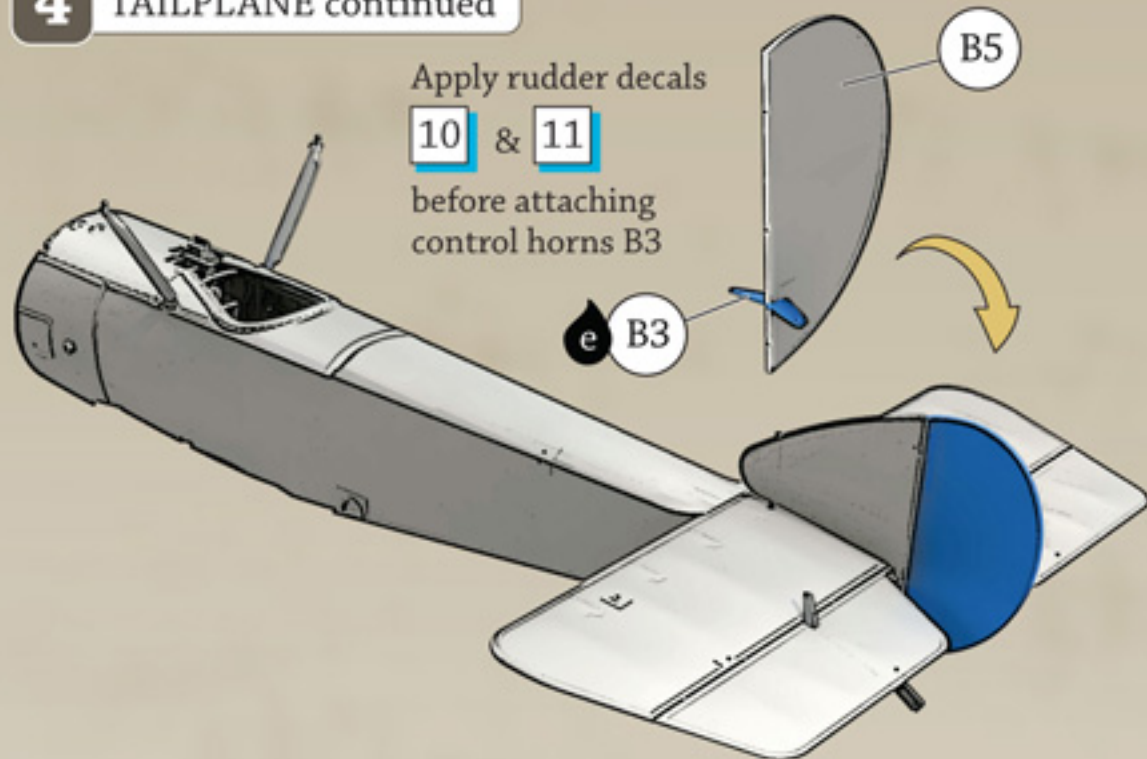
Fixed tailplane detail from Whitehead built Pup A6214.



Adjustable tailplane detail from Standard built Pup B1704.



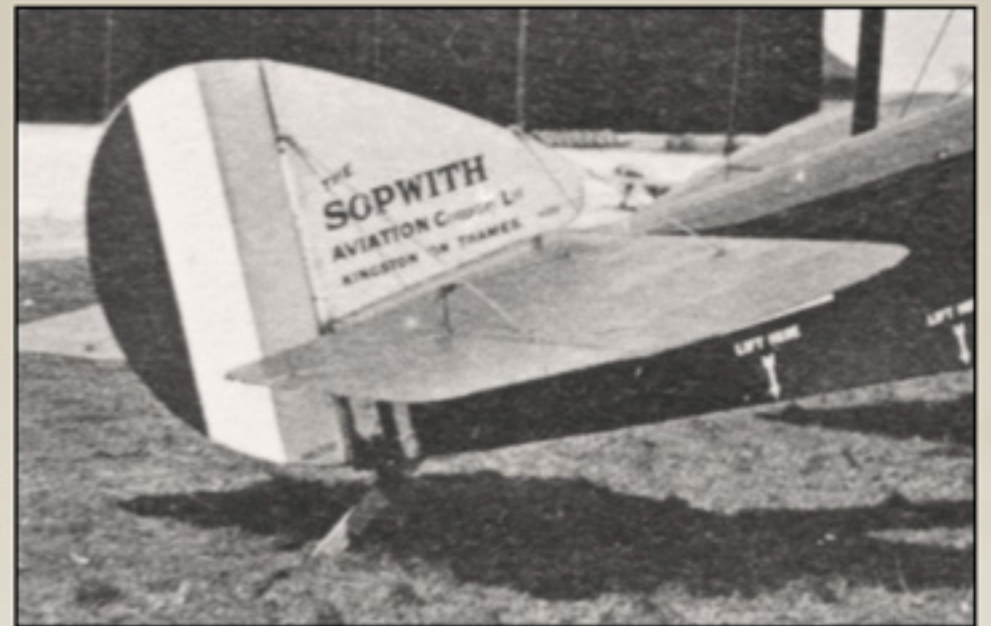
#### 4 TAILPLANE continued



Adjustable tail plane detail from Sopwith built Pup N5186.

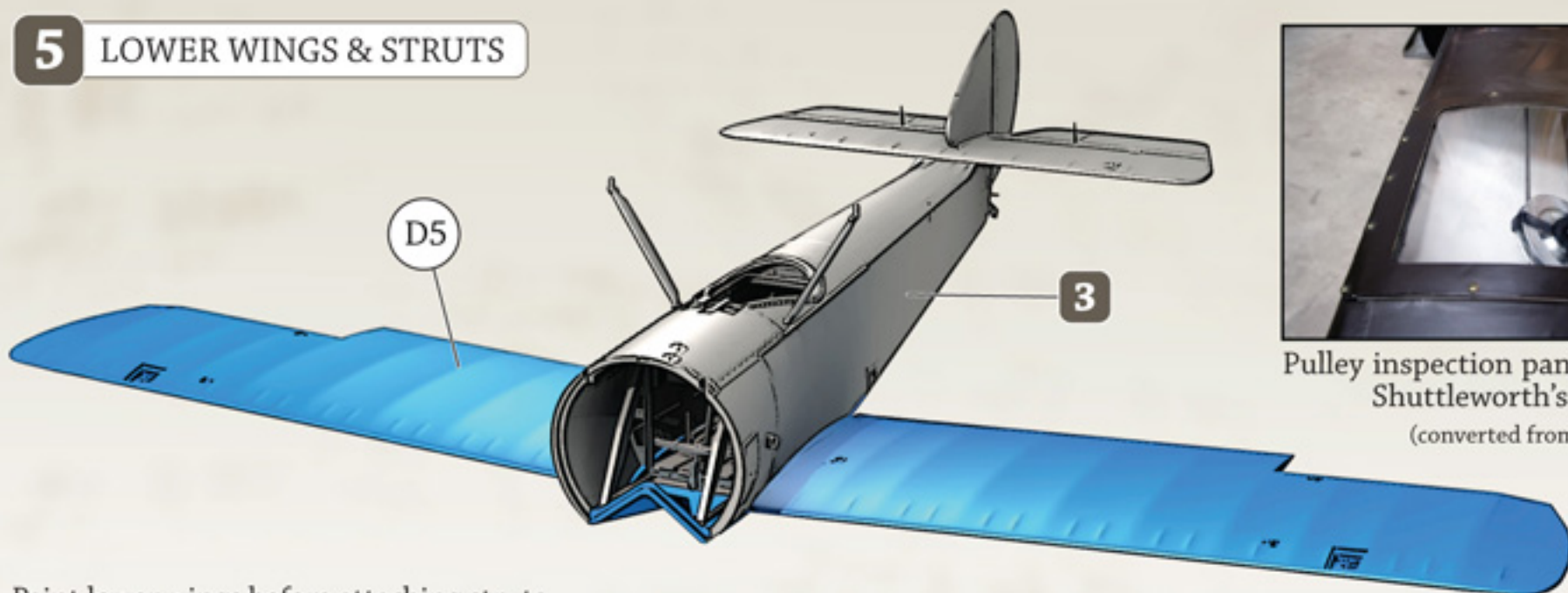


Sopwith Pup replica N6160 displays the general arrangement of its fixed tail plane fittings. (Photo by David Frowen)



Note the sloping lower edge of the fixed tail plane fin of this Sopwith built Pup.

#### 5 LOWER WINGS & STRUTS

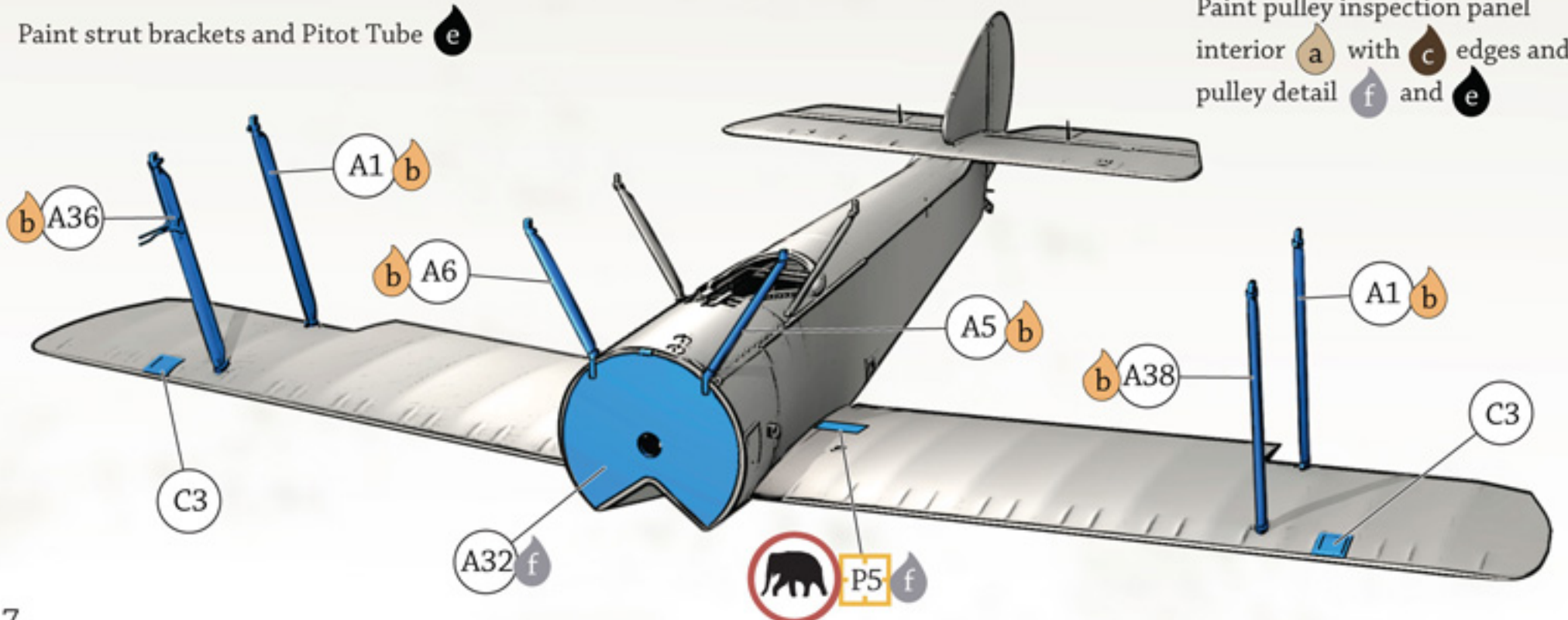


Pulley inspection panel detail from Shuttleworth's Sopwith Pup. (converted from a Sopwith Dove)

Paint lower wings before attaching struts

Paint strut brackets and Pitot Tube e

Paint pulley inspection panel interior a with c edges and pulley detail f and e





**6** ARMAMENT

**A**

Vickers Gun with Sopwith padded windscreen



Sopwith pattern Vickers Gun padded windscreen.

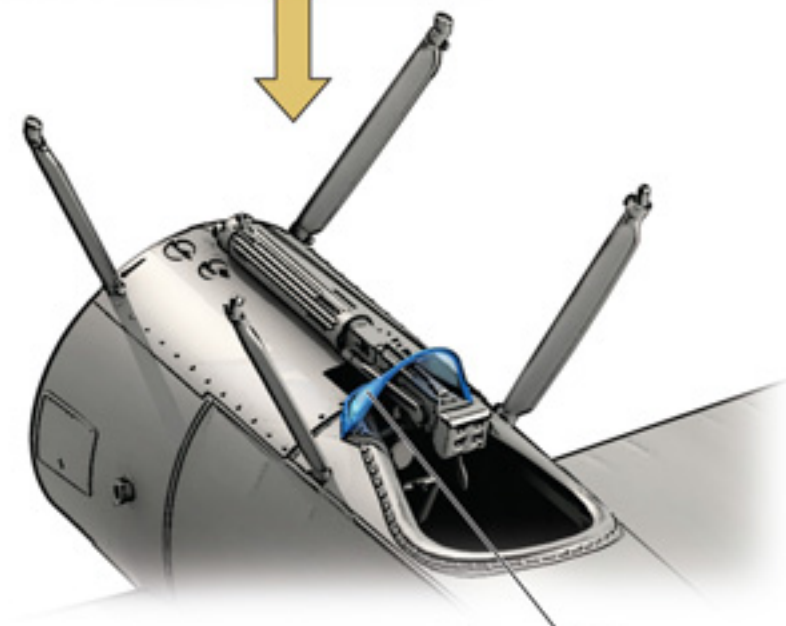
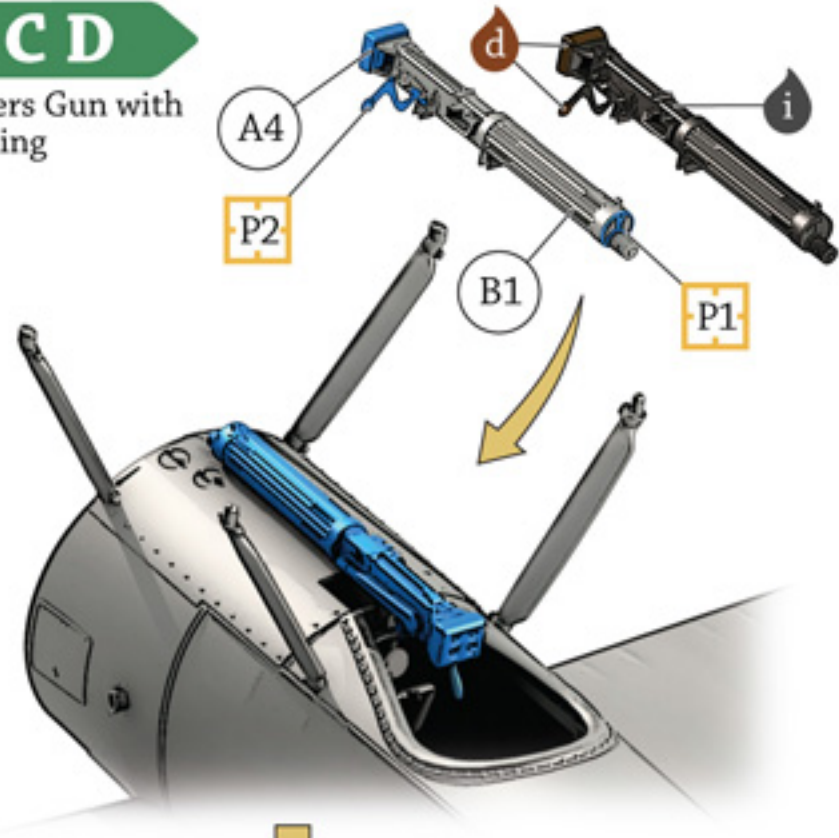


Vickers Mk.1\* showing the brass breech block, muzzle details and air vents cut into the cooling jacket. Note that this gun features a Hyland type B loading handle of a different design to the Hyland type E commonly fitted to the Pup and featured in our model.



**BCD**

Vickers Gun with padding

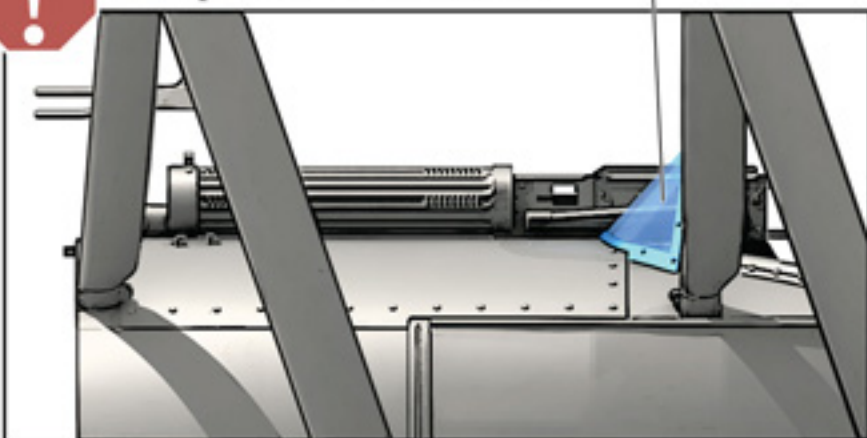


Paint edge of windscreen **f**

**C2**

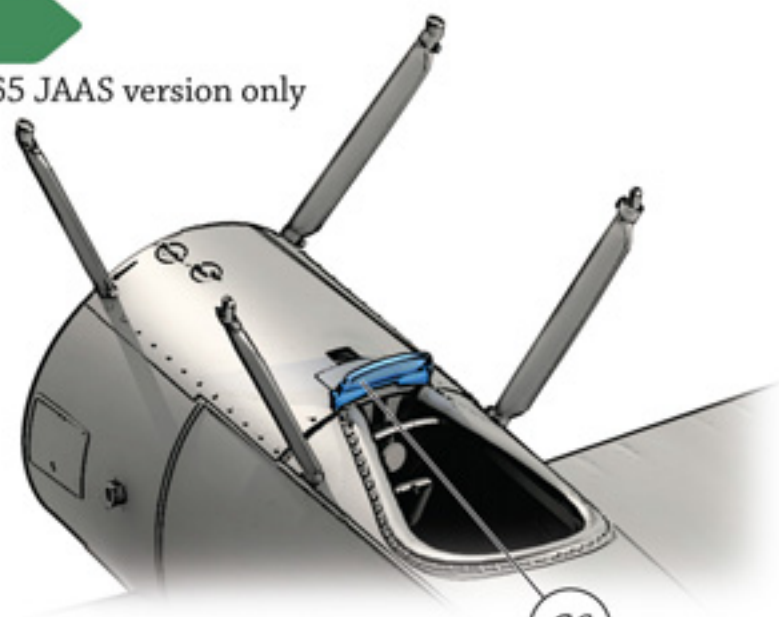


Note position of windscreen.

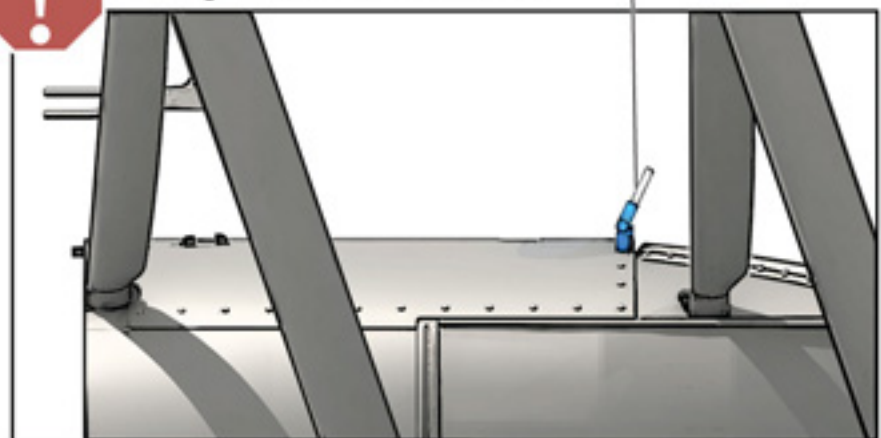


**E**

D4165 JAAS version only

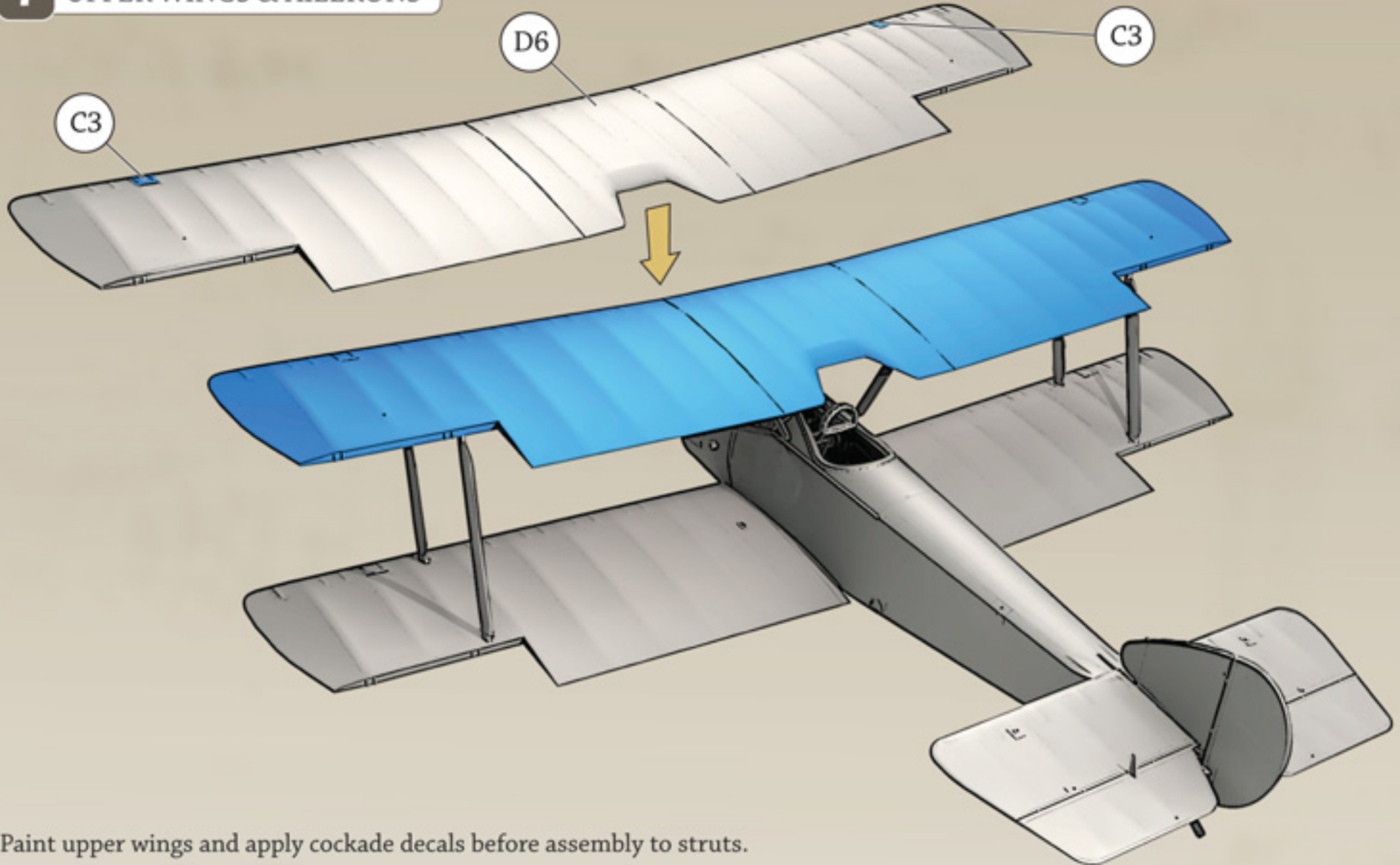


Note position of windscreen.

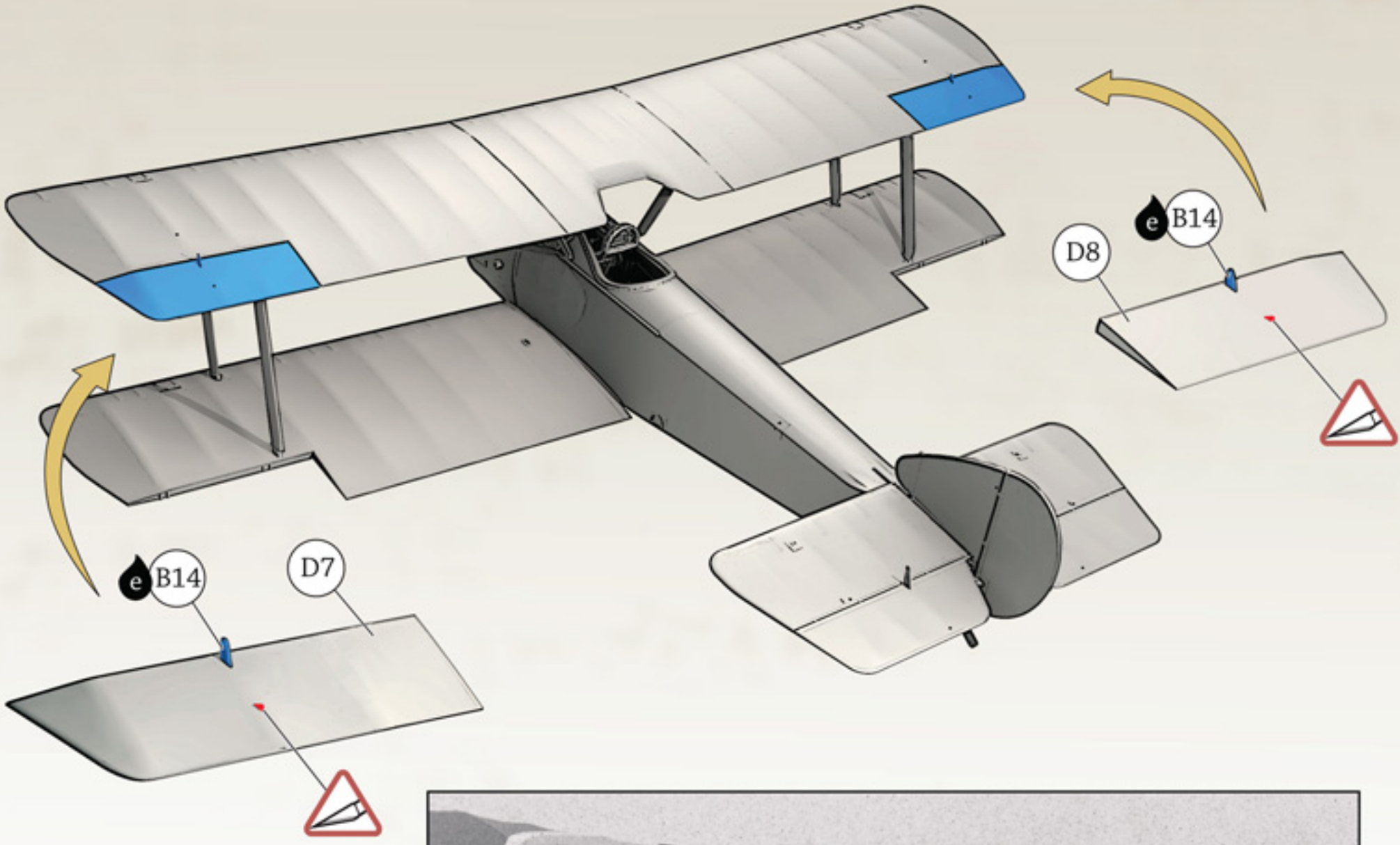




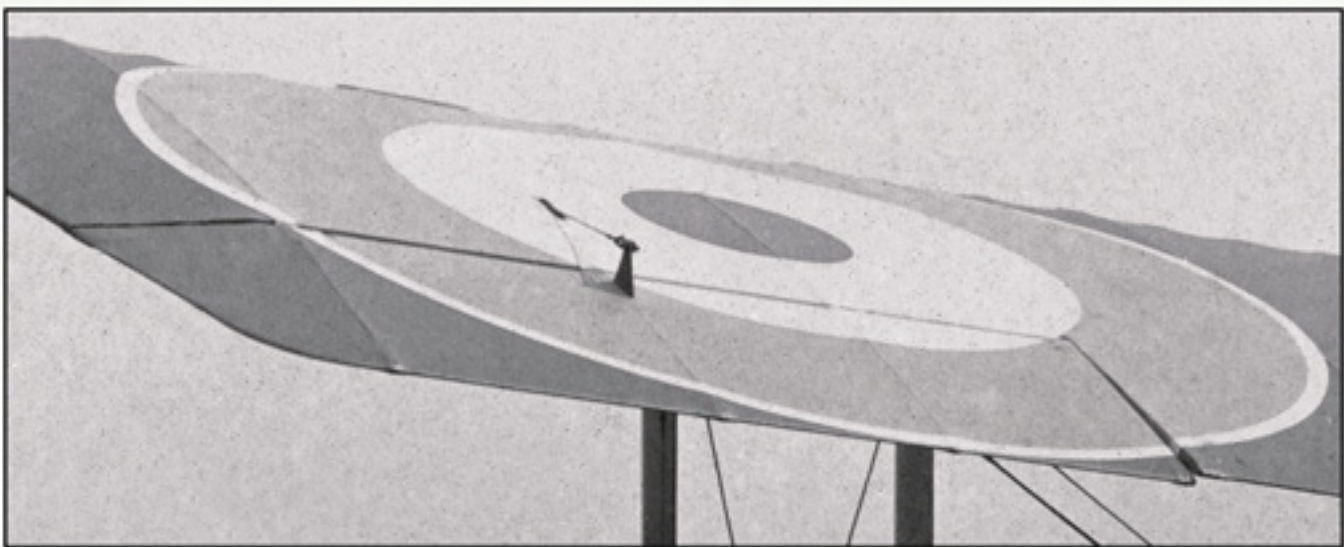
**7** UPPER WINGS & AILERONS



Paint upper wings and apply cockade decals before assembly to struts.



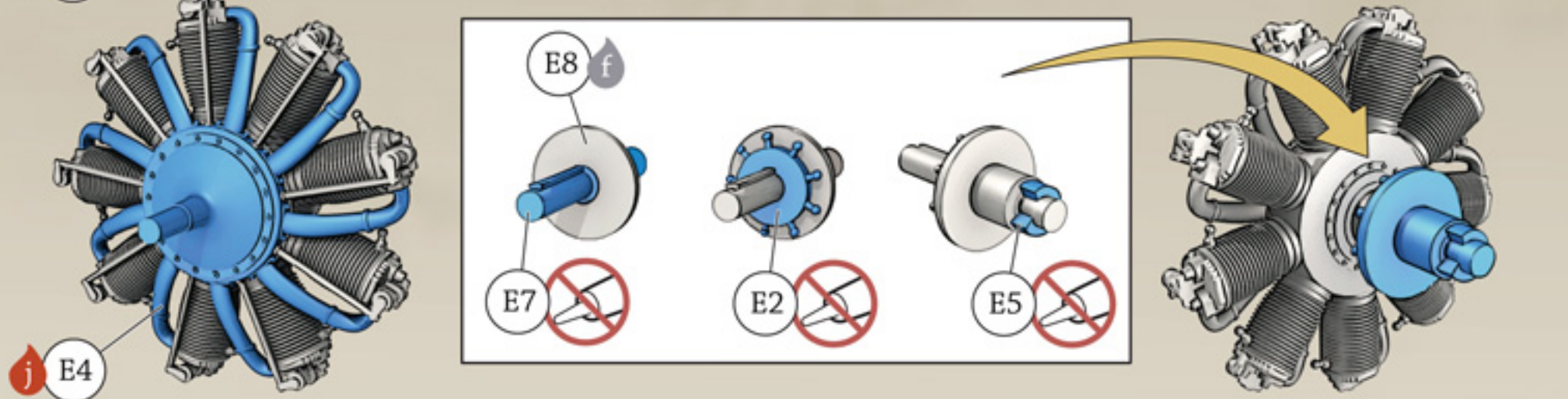
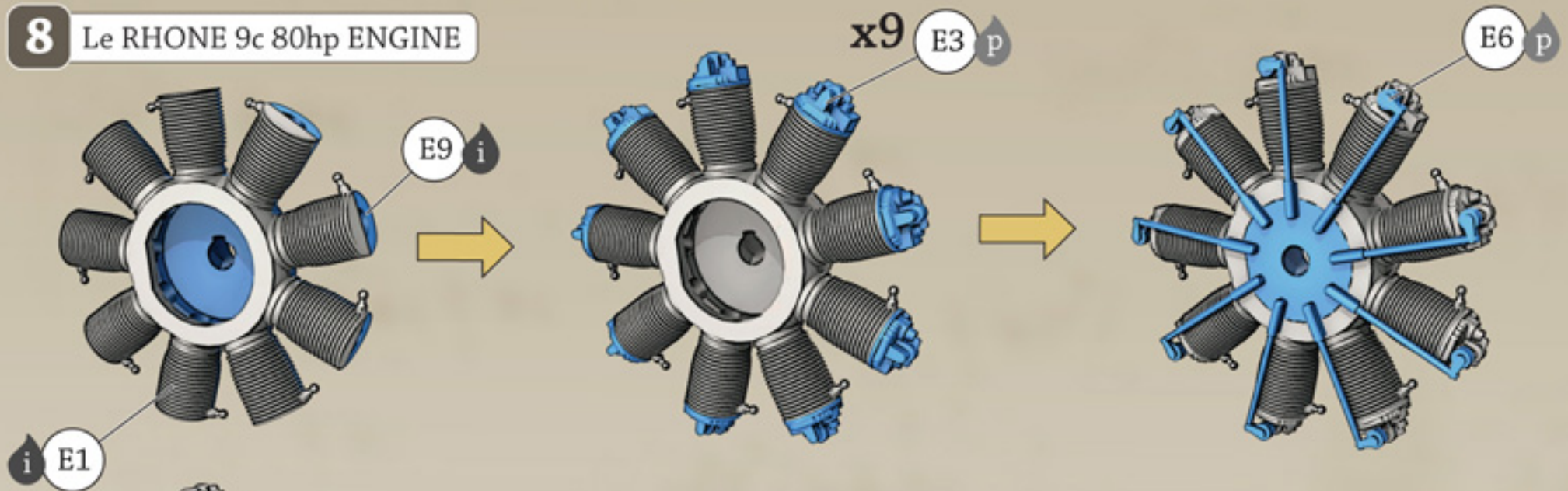
Paint ailerons and apply cockade decals before attaching control horns (B14)



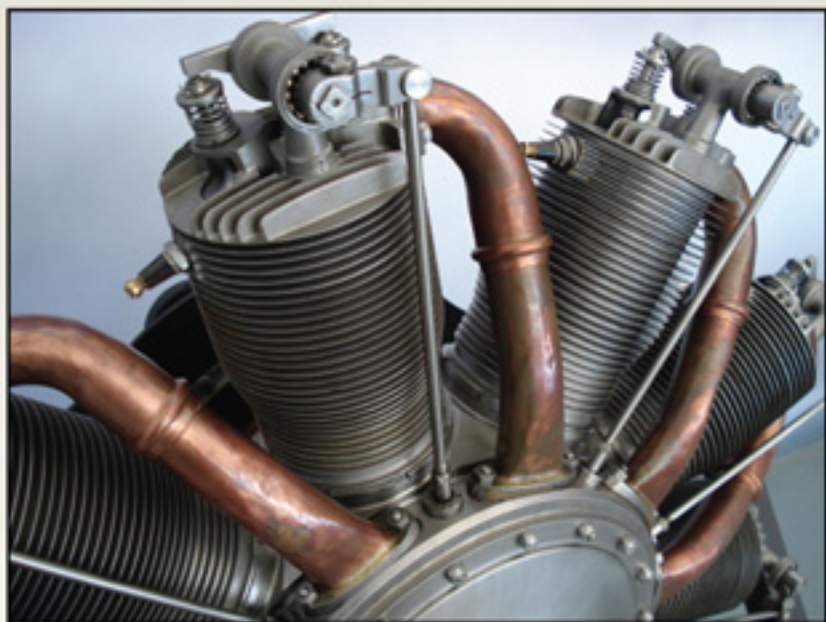
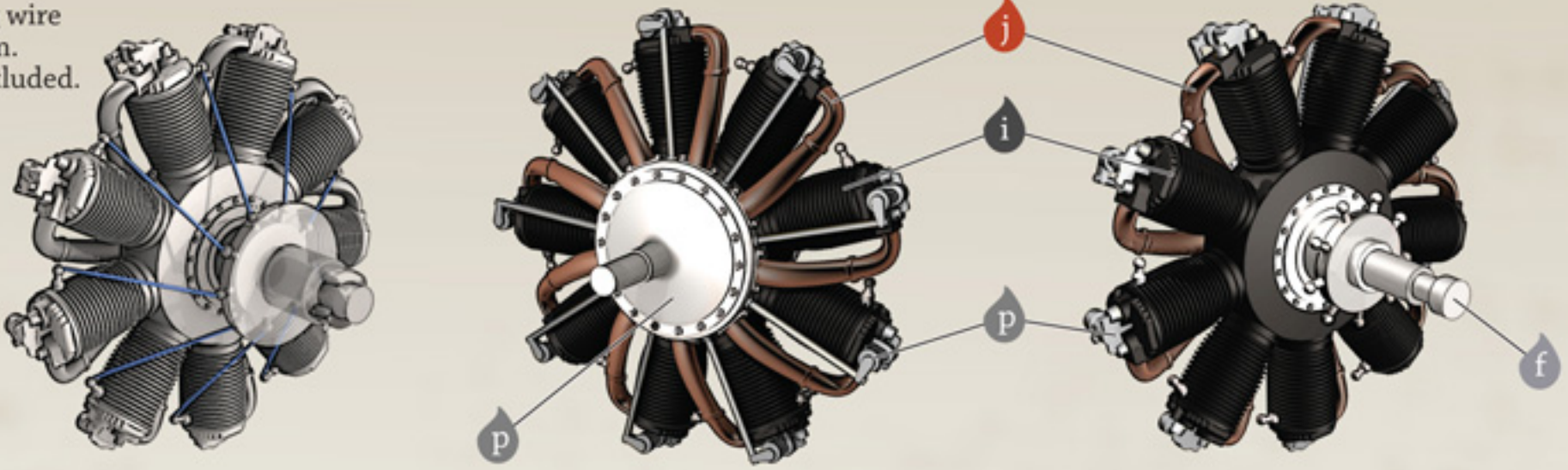
Port upper aileron detail from A6214 showing control horn detail. Note how the cockade is carried down into the hinge area.



**8** Le RHONE 9c 80hp ENGINE



Spark plug wire diagram.  
Wire not included.

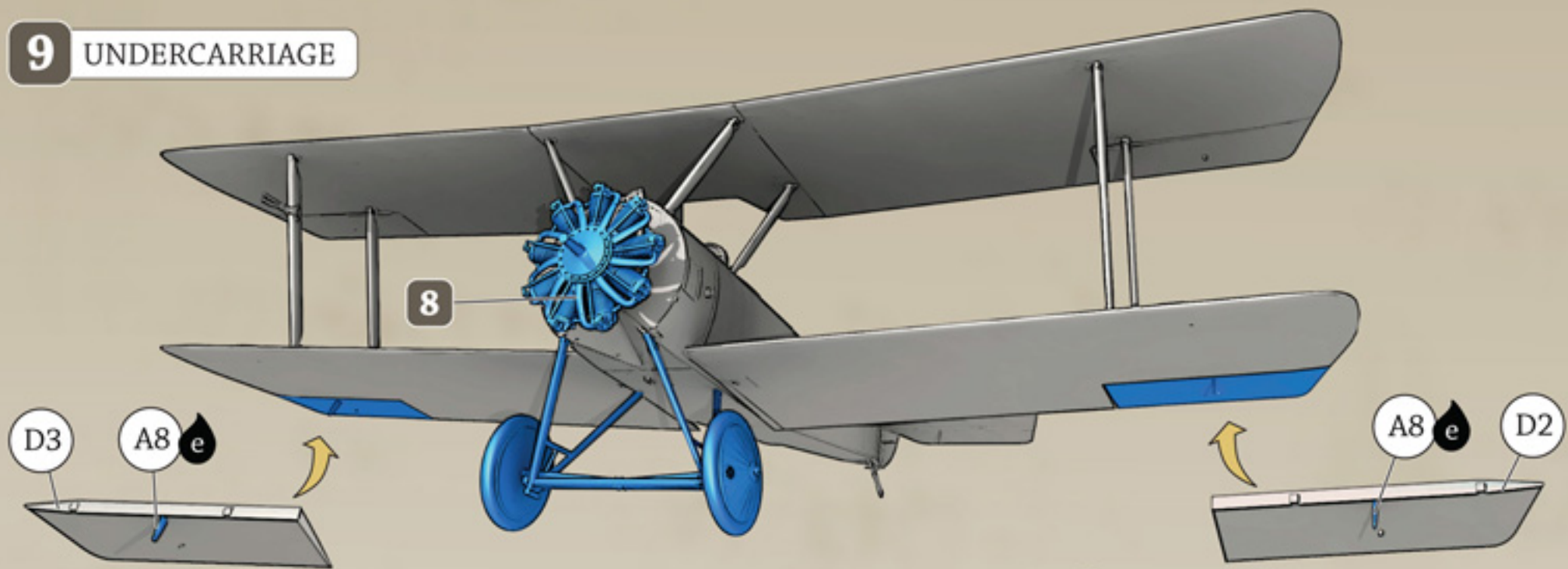


LeRhone 9c 80hp engine. Note the copper intake header assemblies.

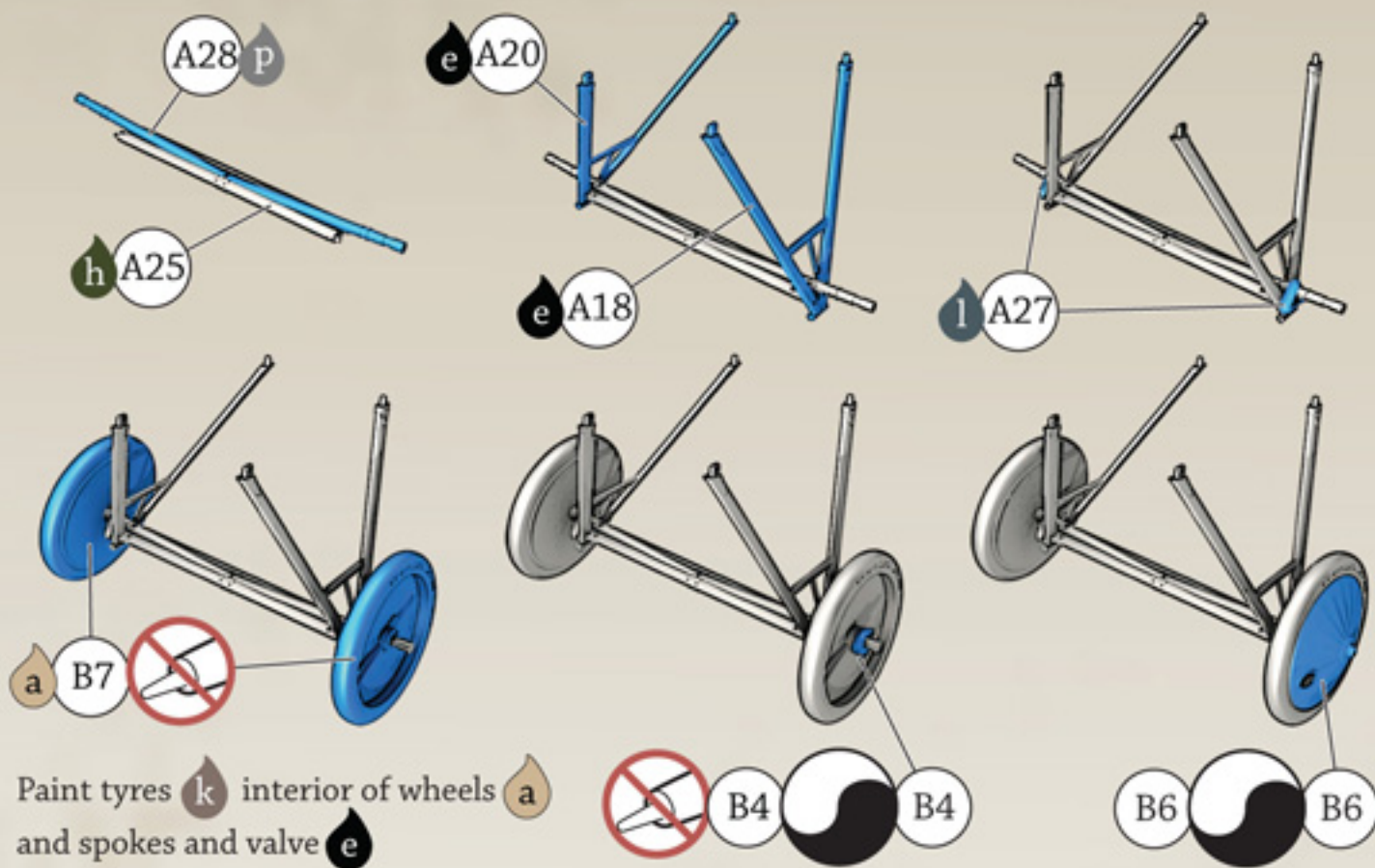




# 9 UNDERCARRIAGE



Paint ailerons and apply cockade decals before attaching control horns **A8**



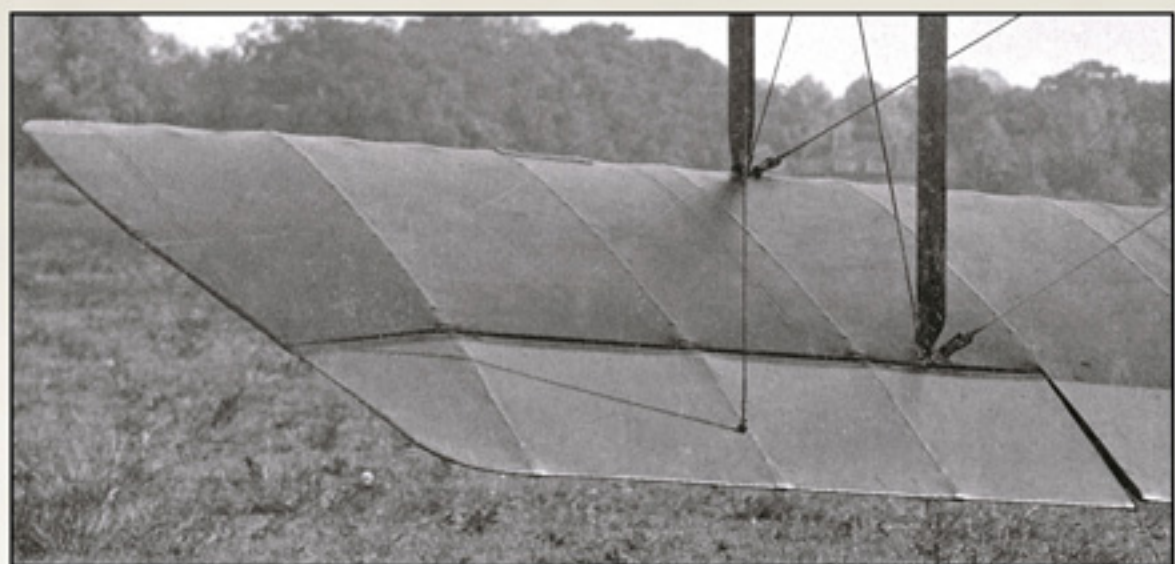
Paint tyres **k** interior of wheels **a** and spokes and valve **e**



Undercarriage detail from Sopwith Pup replica N6160. Note that it is not typical for the split axle to be flat as shown here unless the aircraft is in flight, they should angle upwards under the weight of the aircraft as shown elsewhere. (Photo by David Frowen)



Undercarriage details from Sopwith built pup N5186. Note tyre marking and manufacturers logo decal on front undercarriage leg.



Port lower aileron detail from A6214 showing aileron connecting wire and rigging attachment details.



11 Undercarriage detail showing the usual angle of the split axles when absorbing the weight of the aircraft on the ground.



Note the extreme engine exhaust and caster oil staining on the lower sides of this pranged Pup.



**10 FINAL ASSEMBLY**

**AE** A2 f

Common Cowling



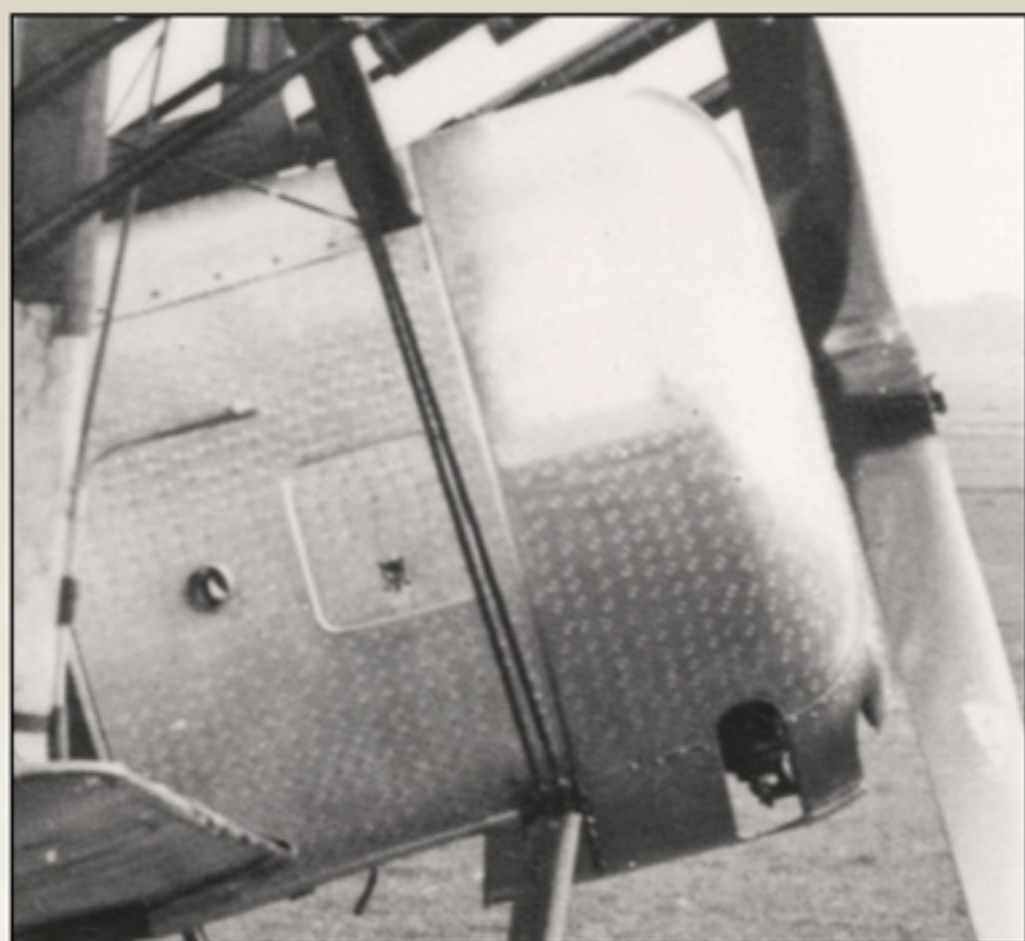
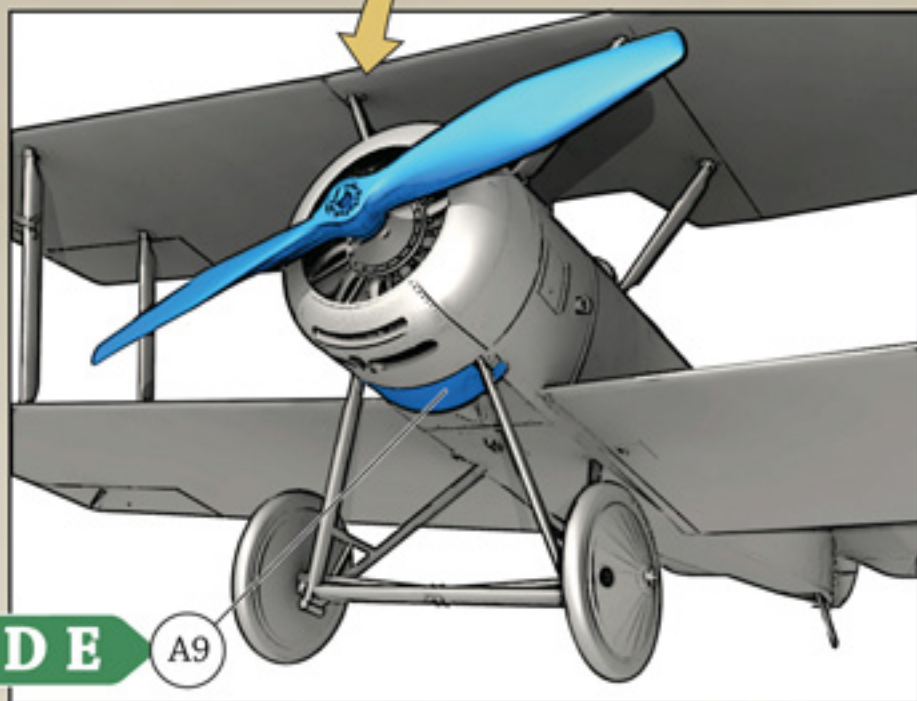
**BCD** A35 f

Standard Motor Co. Cowling



**BE** A22 c

**ACD** A14 c



Common cowling shape of Sopwith, Beardmore and Whitehead built Pups, in this case from Sopwith built Pup N5186 showing the Sopwith factory treatment of the metal panels.

Flat faced cowling shape peculiar to Pups built by the Standard Motor Co Ltd.

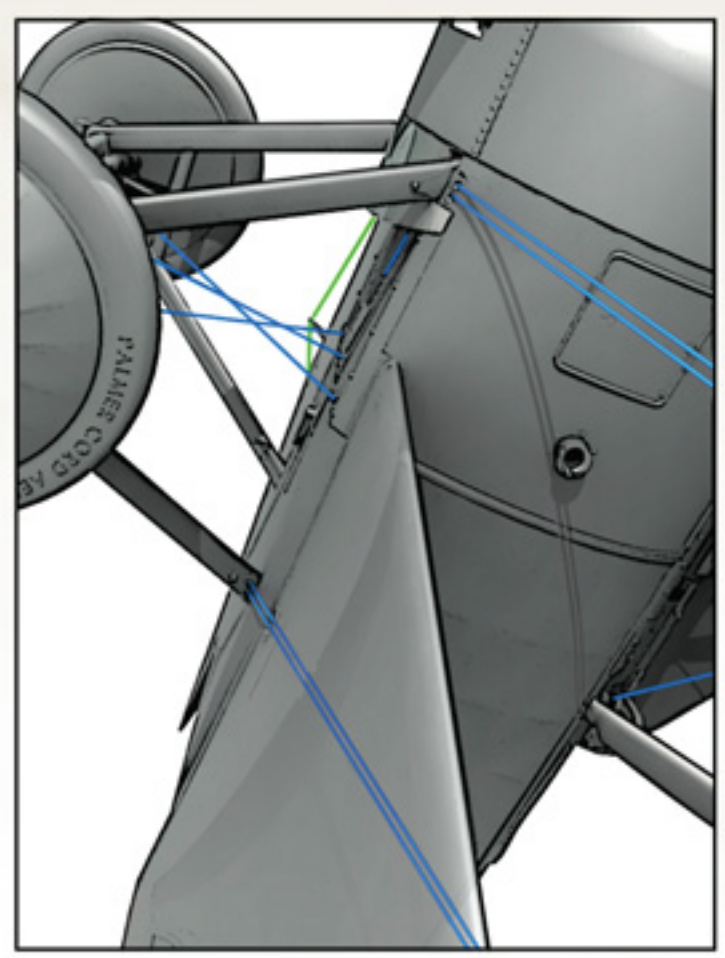
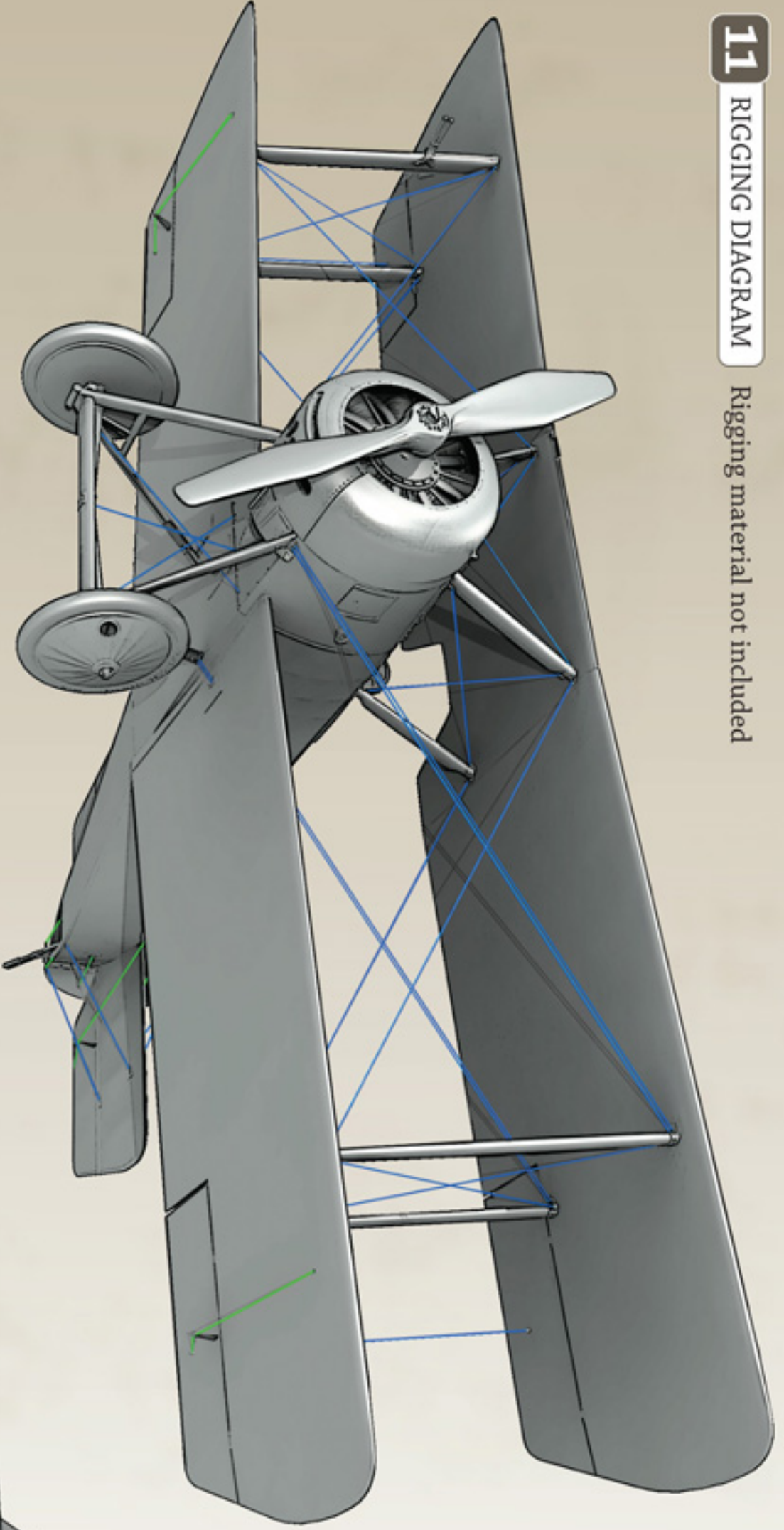


Standard built Pup A648 'YES' shown in the markings of 54 Sqn December 1916. It has an adjustable tailplane and Sopwith padded Vickers Gun windscreen.



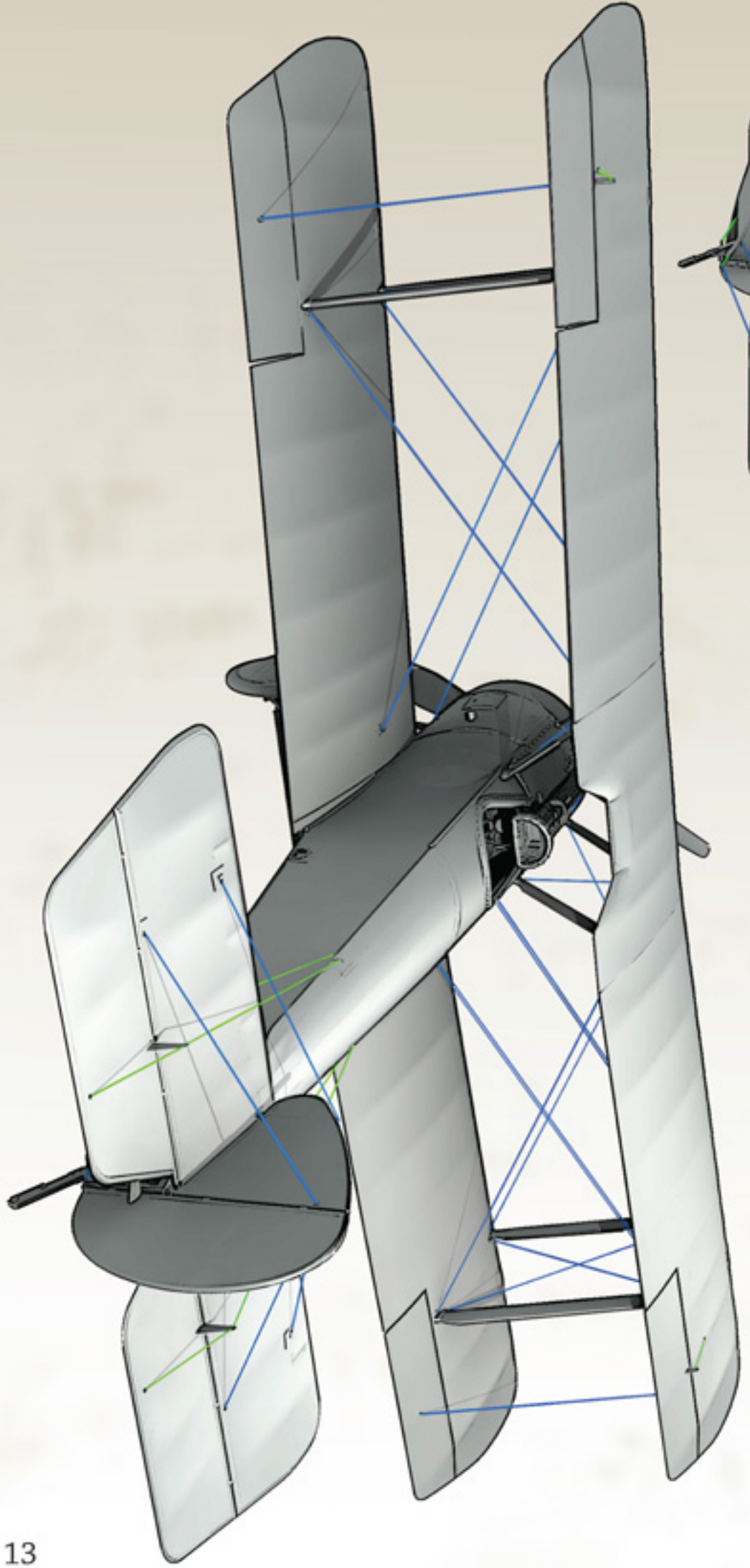
**11** RIGGING DIAGRAM

Rigging material not included



Control Cables  
0.15mm

RAF Aerodynamic Wires  
0.1mm  
0.3mm



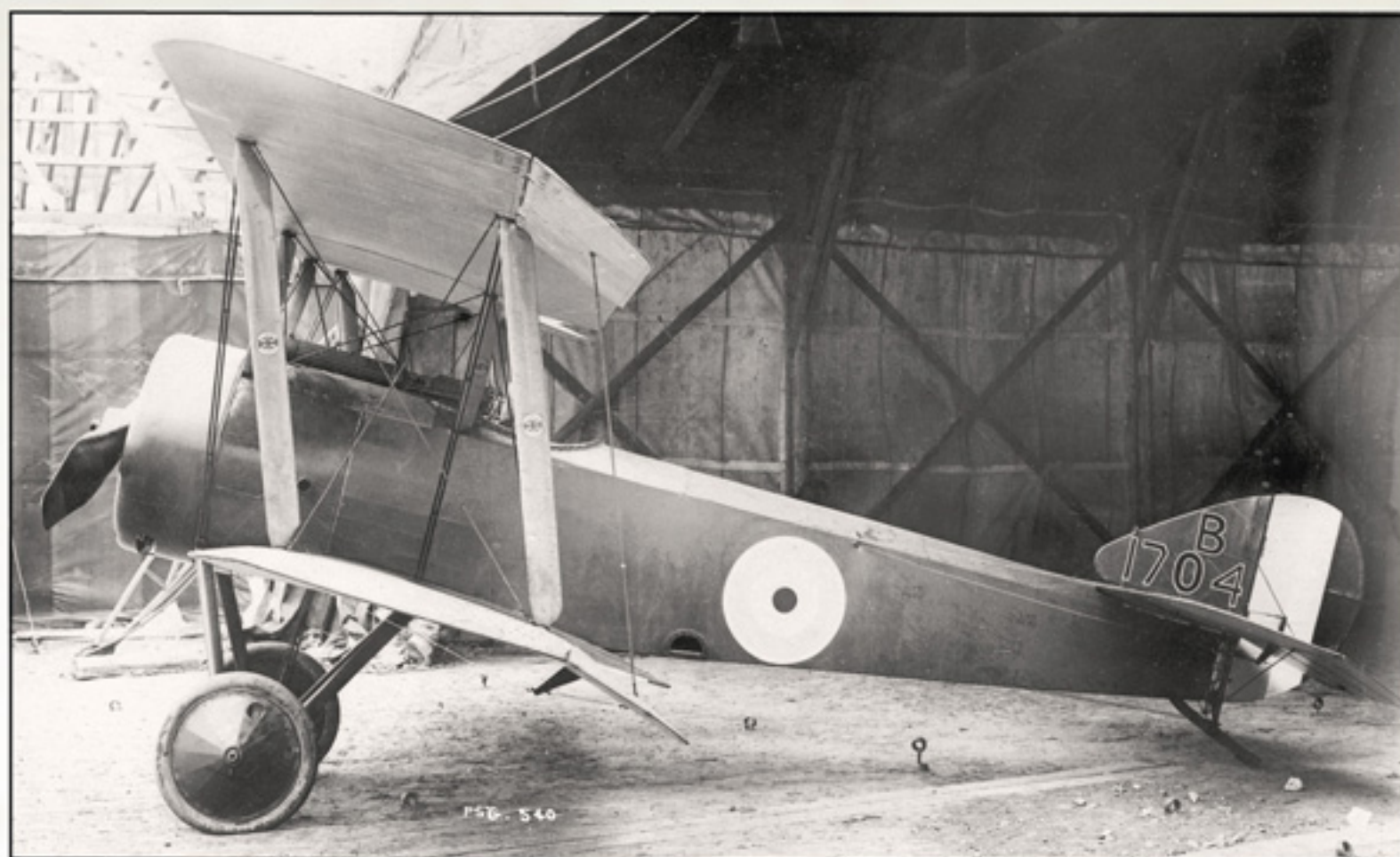




Whitehead built Pup A6231 of 63 TS (Training Squadron) at Joyce Green mid 1917. Note the fixed tail plane and lack of armament.



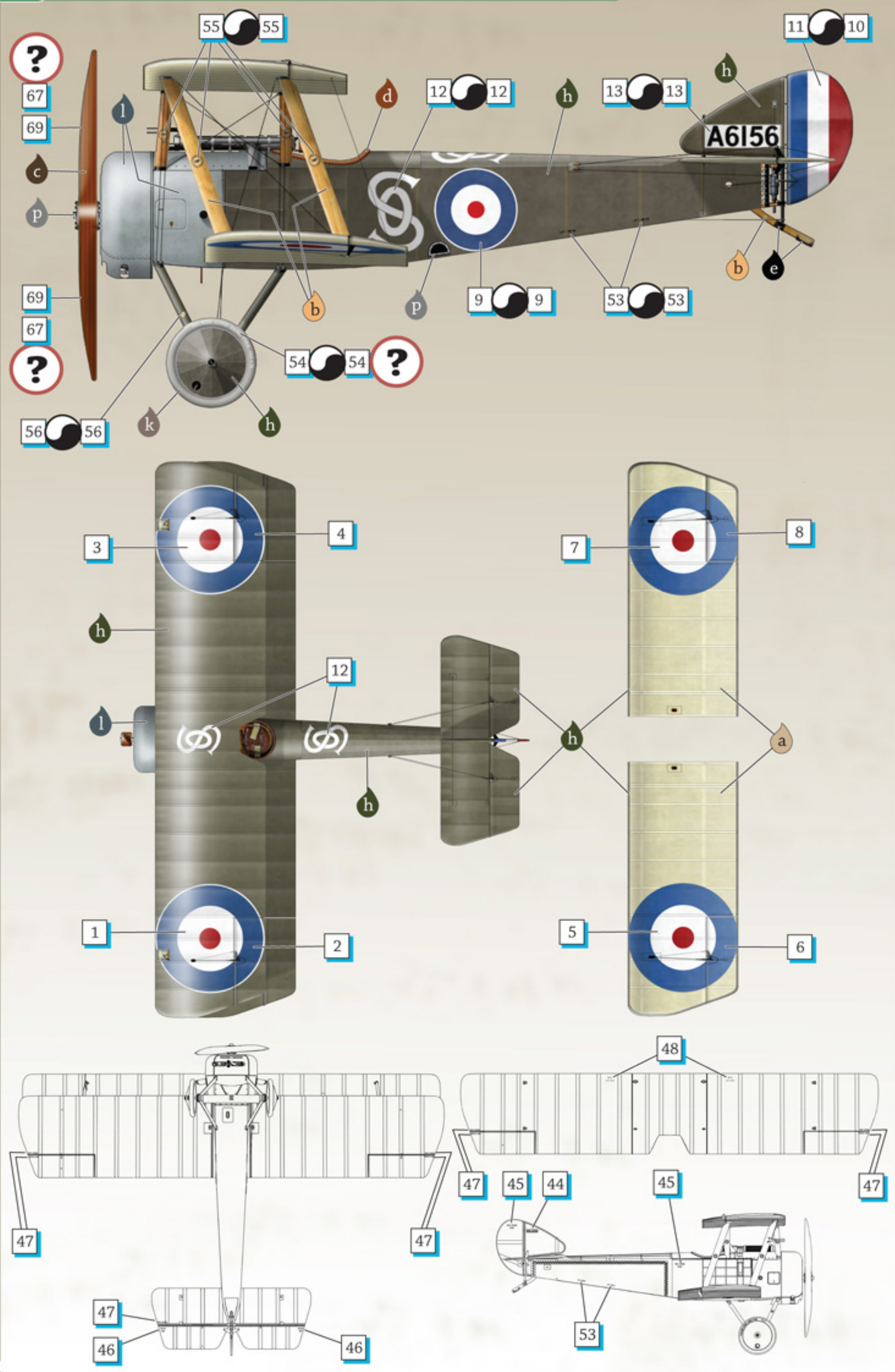
Standard built Pup C305 'The Oriole'. The lack of armament indicates that it is pictured while at 189 (Night) TS in early 1918 rather than at 44 HD (Home Defense) Sqn where it later served.



A nice study of Standard Built Pup B1705 pictured before serving with 46 and 54 Sqs. Note the Standard Motor Co Ltd decals on the struts and small stencil details. The bright sunlight has completely bleached out the blue from the cockade and upper rudder, while the shade provided by the elevator allows us to see it on the lower portion of the rudder.

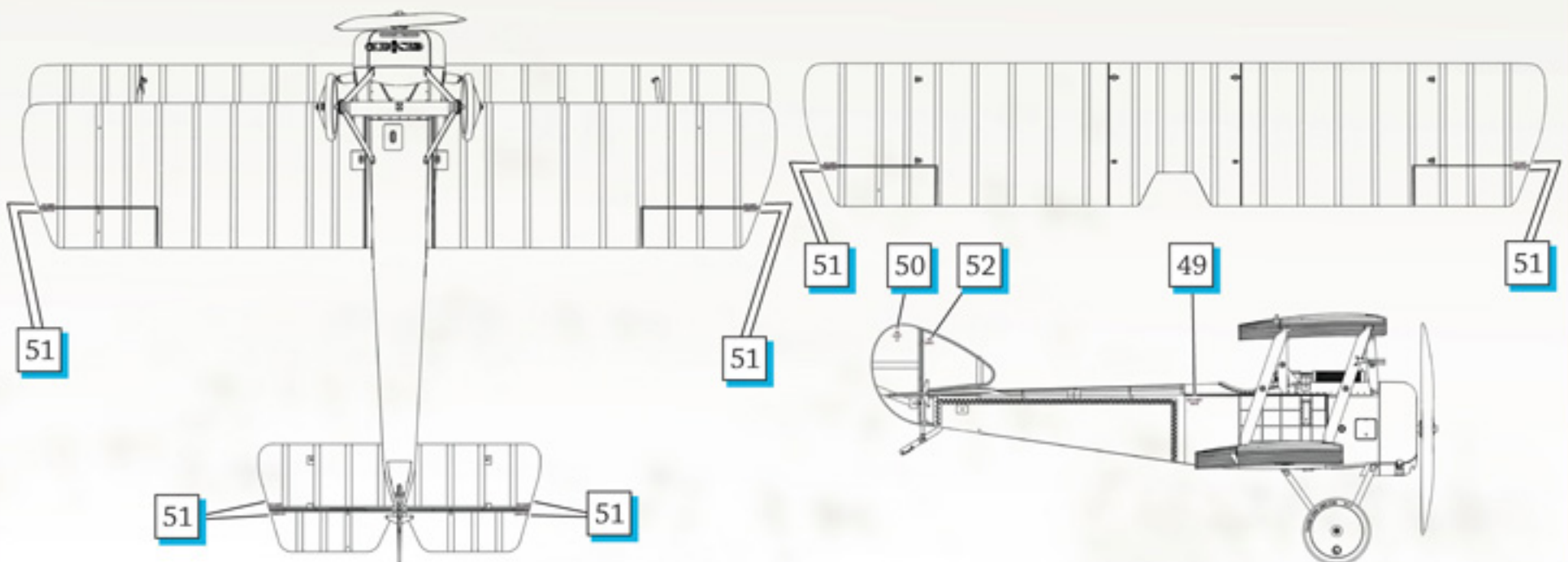
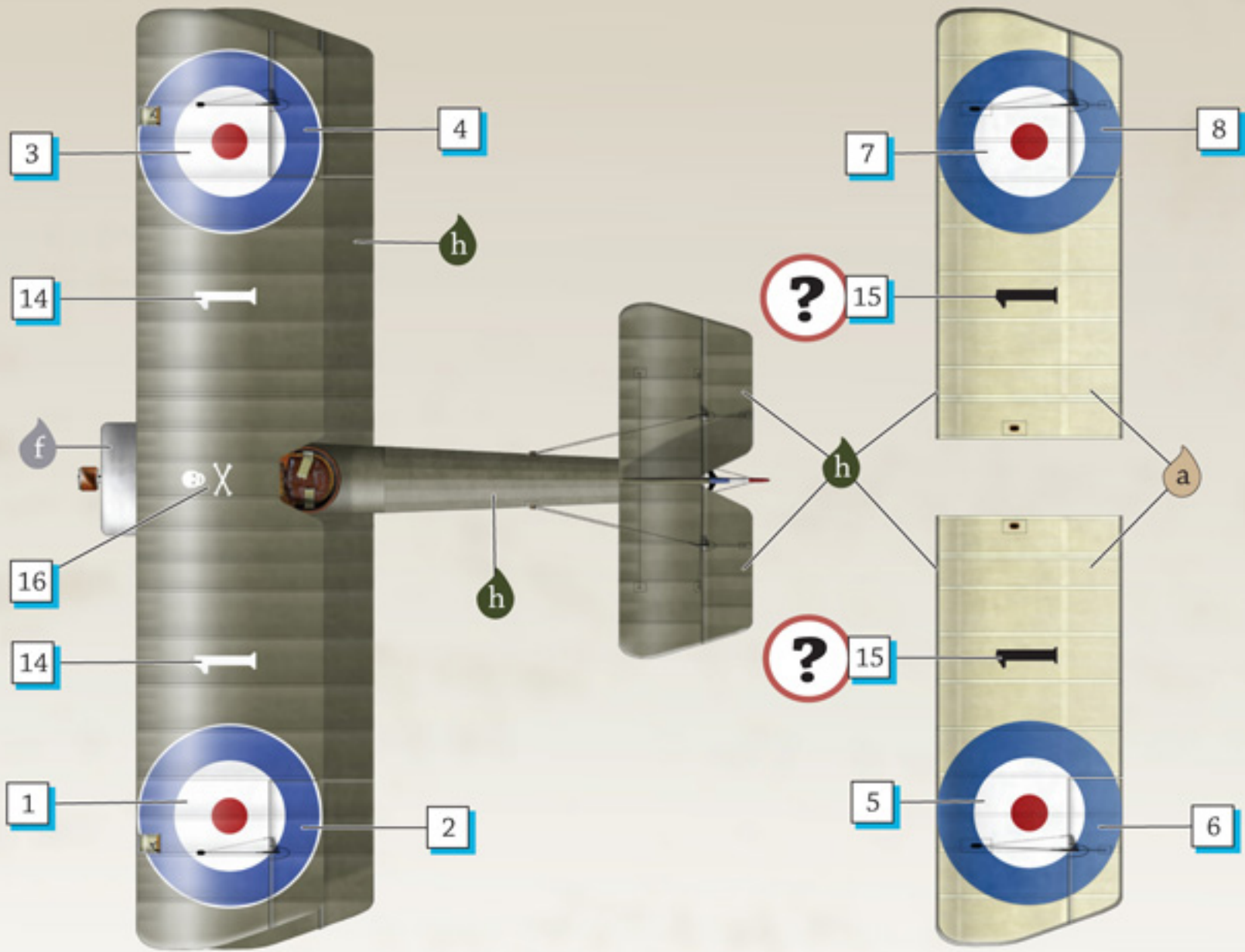


**A** A6156 "OS", Whitehead built, 54 Sqn, Lt O. Stewart, April-May 1917



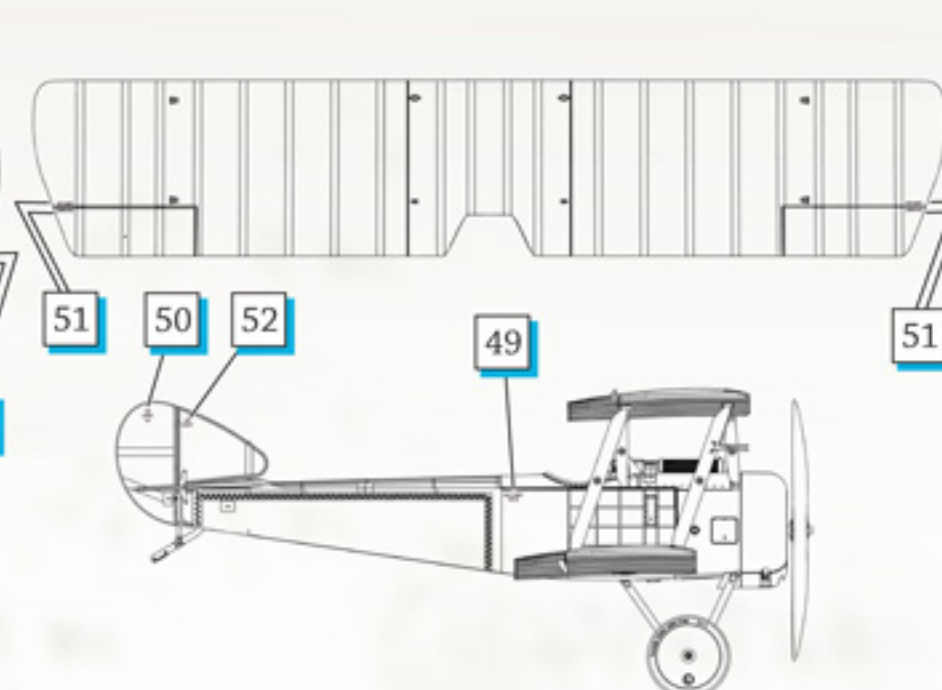
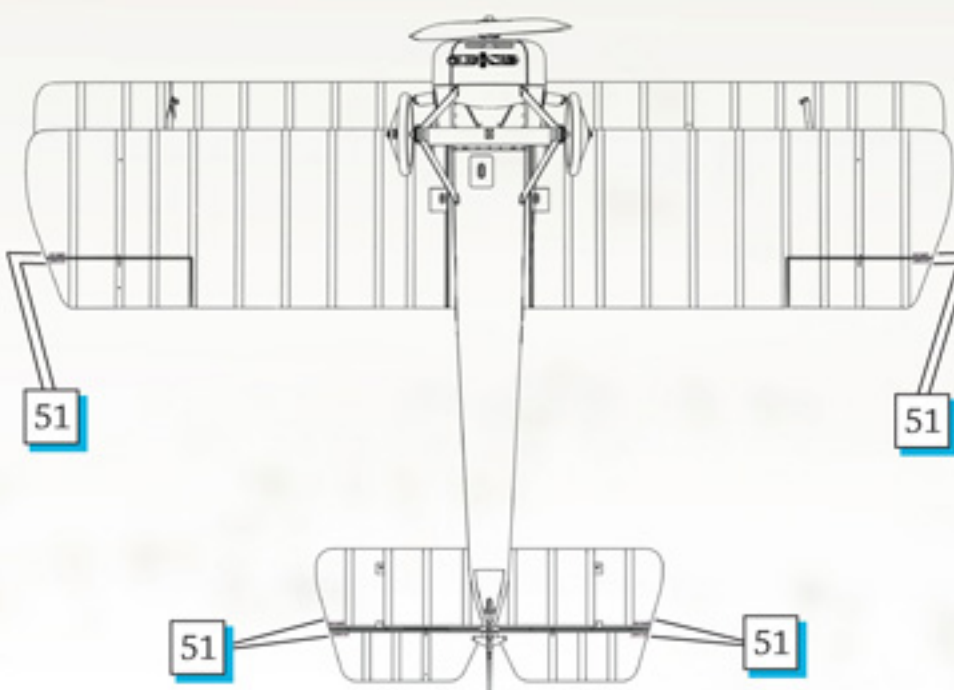
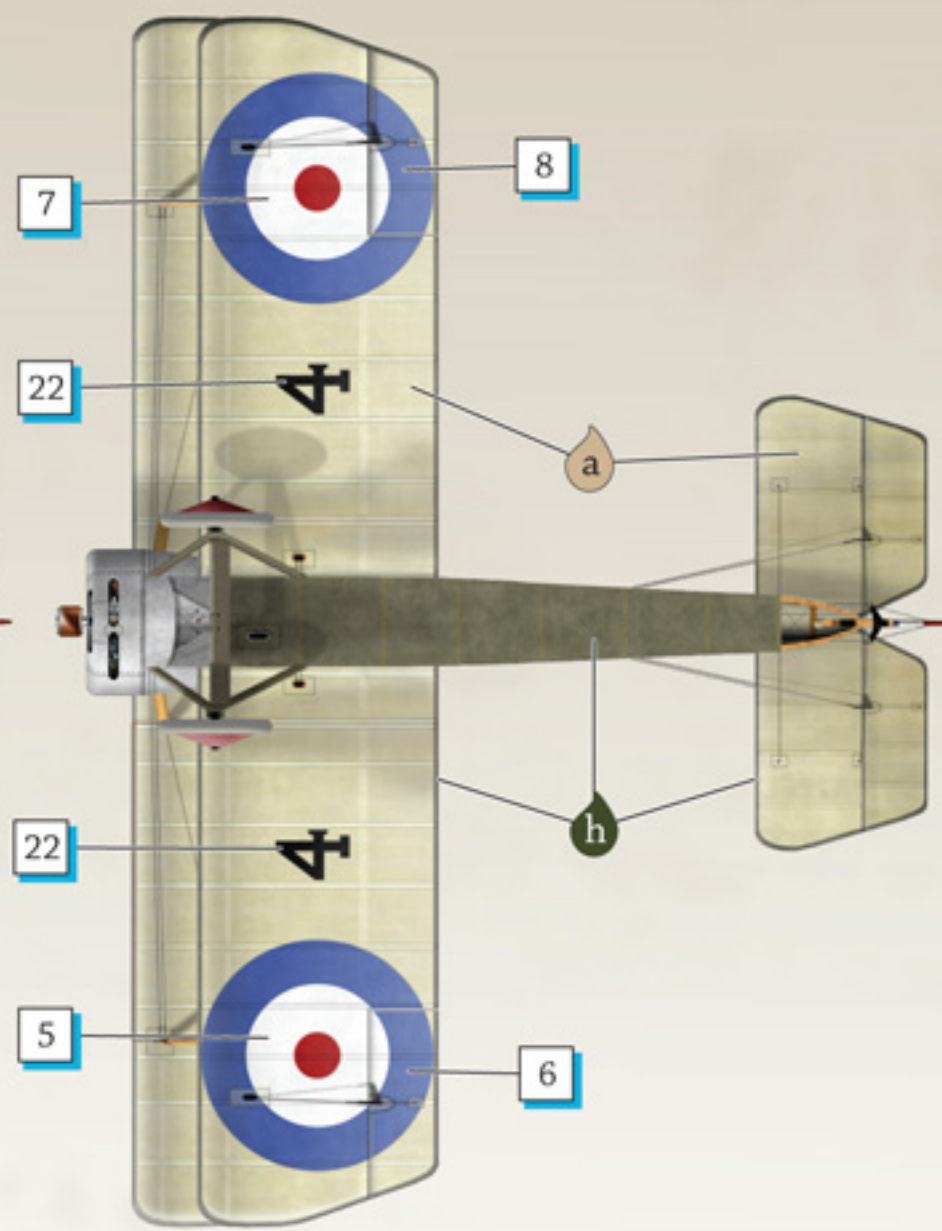
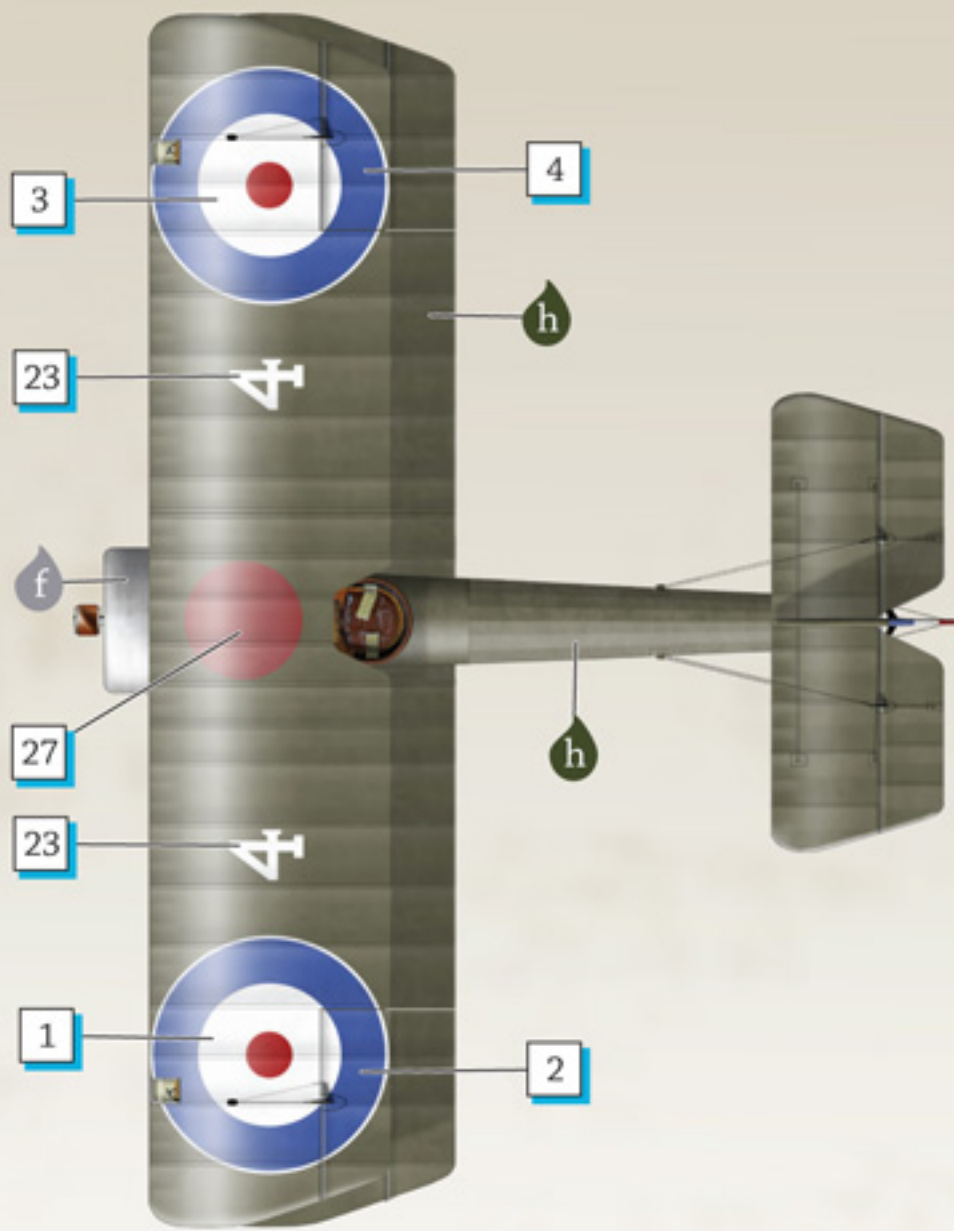


**B** A7327 "1", Standard built, 46 Sqn, Capt S.H. Pratt, June-July 1917



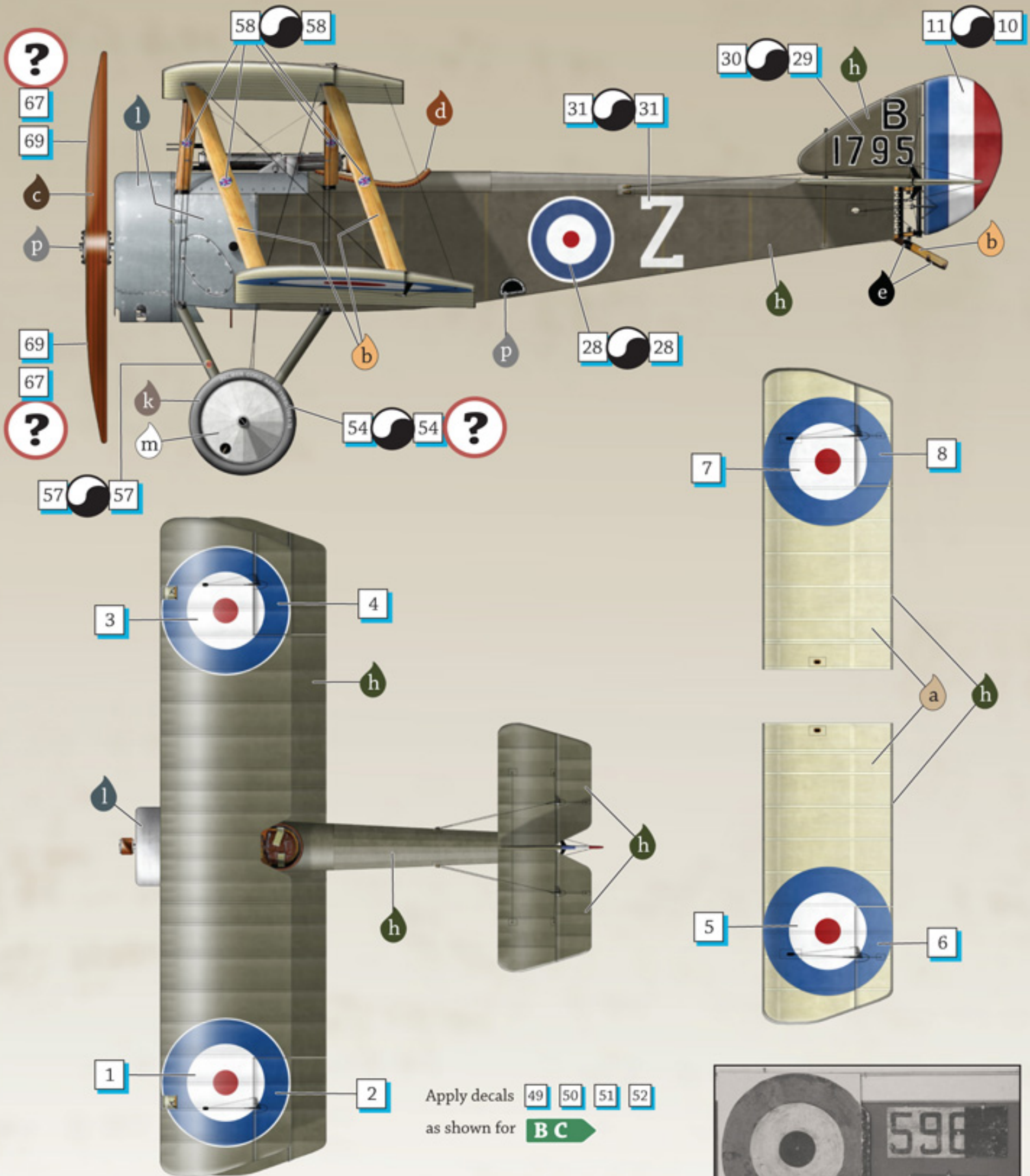


**C** B1777 "Chin Chow", Standard built, 46 Sqn, Lt A.S. Lee, July-August 1917





**D** B1795 "Z", Standard built, 46 Sqn, Lt A.F. Bird, August 1917



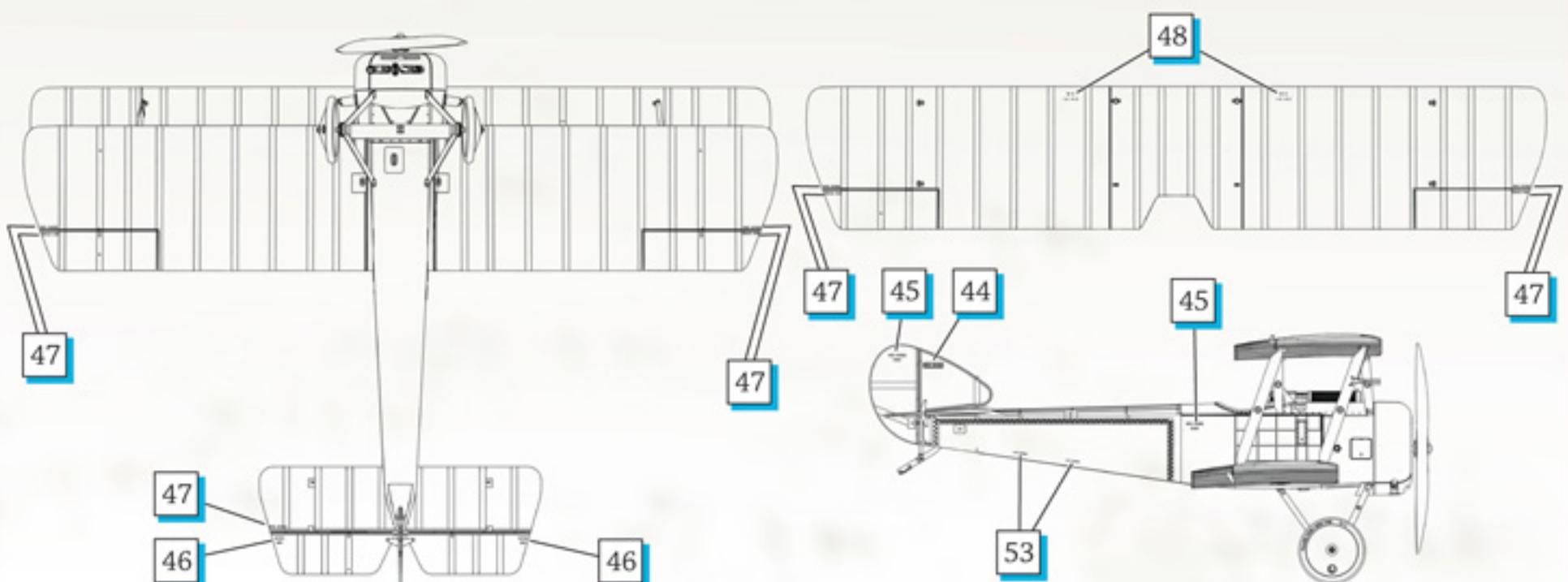
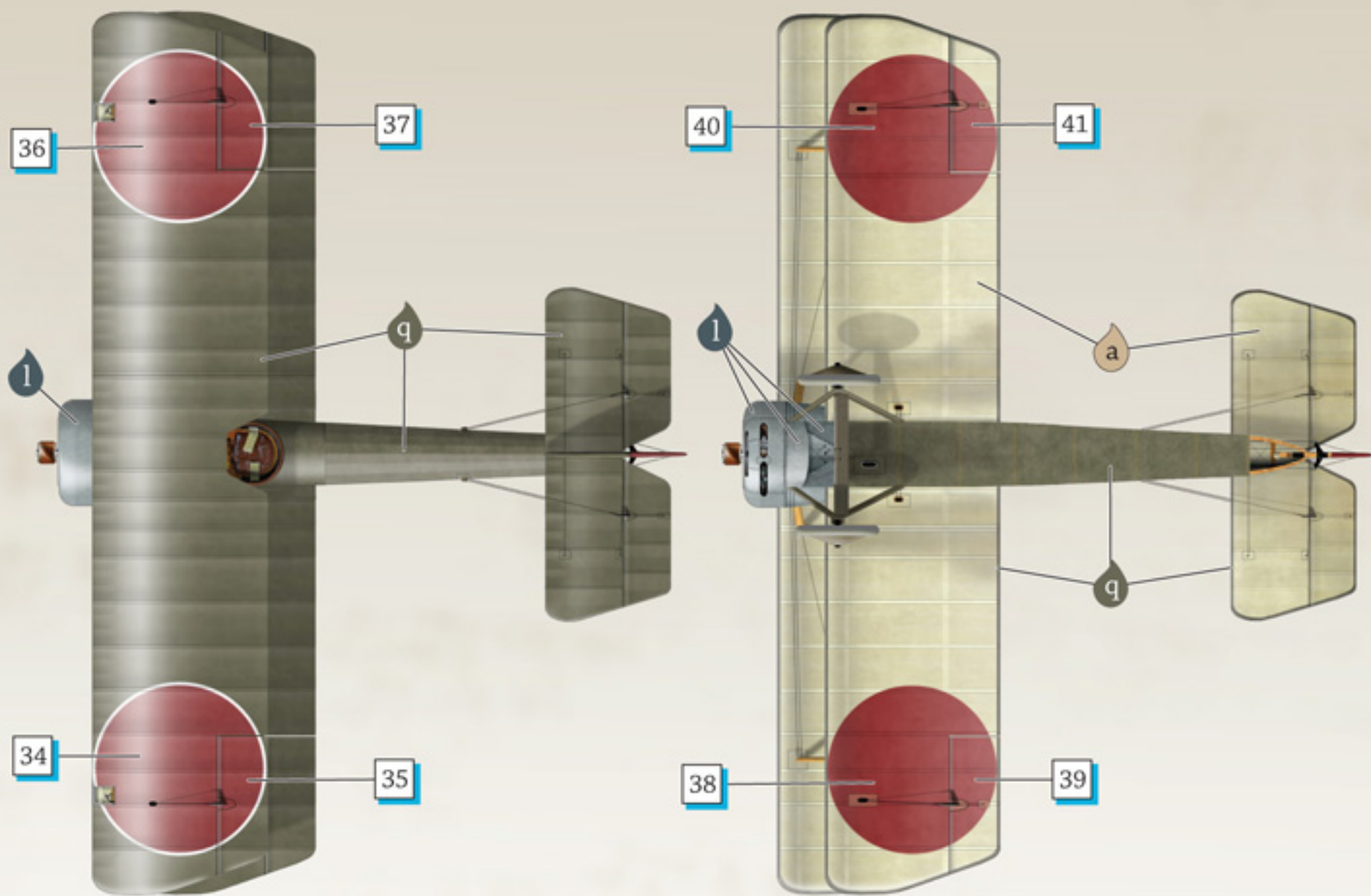
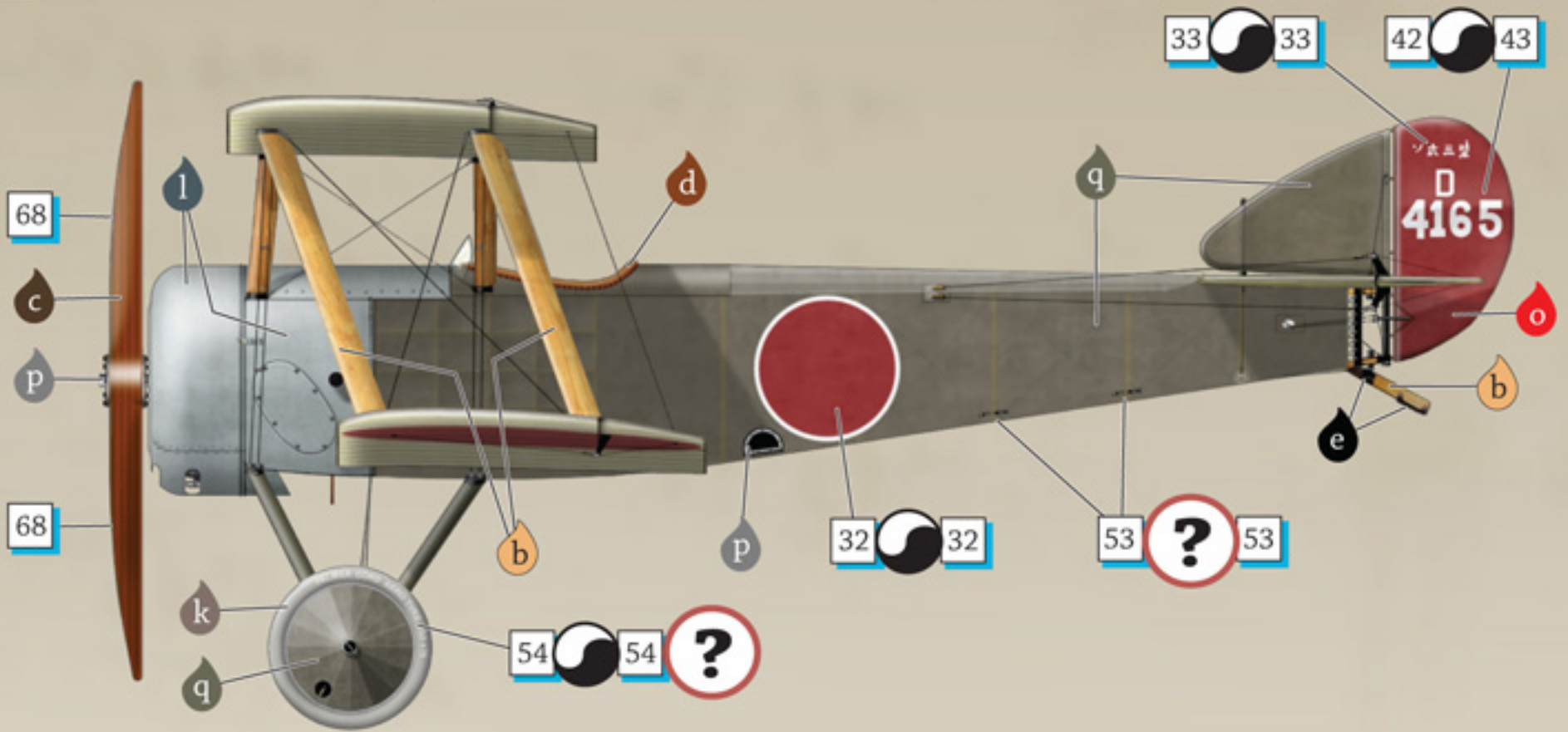
Anthony Fokker poses with Manfred von Richthofen against the fuselage of Lt A.F. Bird's Standard built Pup B1795. Shot down and made POW on the morning of 3 September 1917, Bird was von Richthofen's 61st victory.



Here we see the trophyed fuselage code Z from B1795 hanging on the wall of the Richthofen Museum in Schweidnitz (now part of Poland). Hanging above this is the rudder code (5964) from Lanoe Hawker's DH.2. Less fortunate than Bird, Hawker was shot down and killed on 23 November 1916 to become Richthofen's 15th victory.



**E** D4165, Whitehead built, JAAS Sopwith Type 3, Lt Kawaida, May 1921



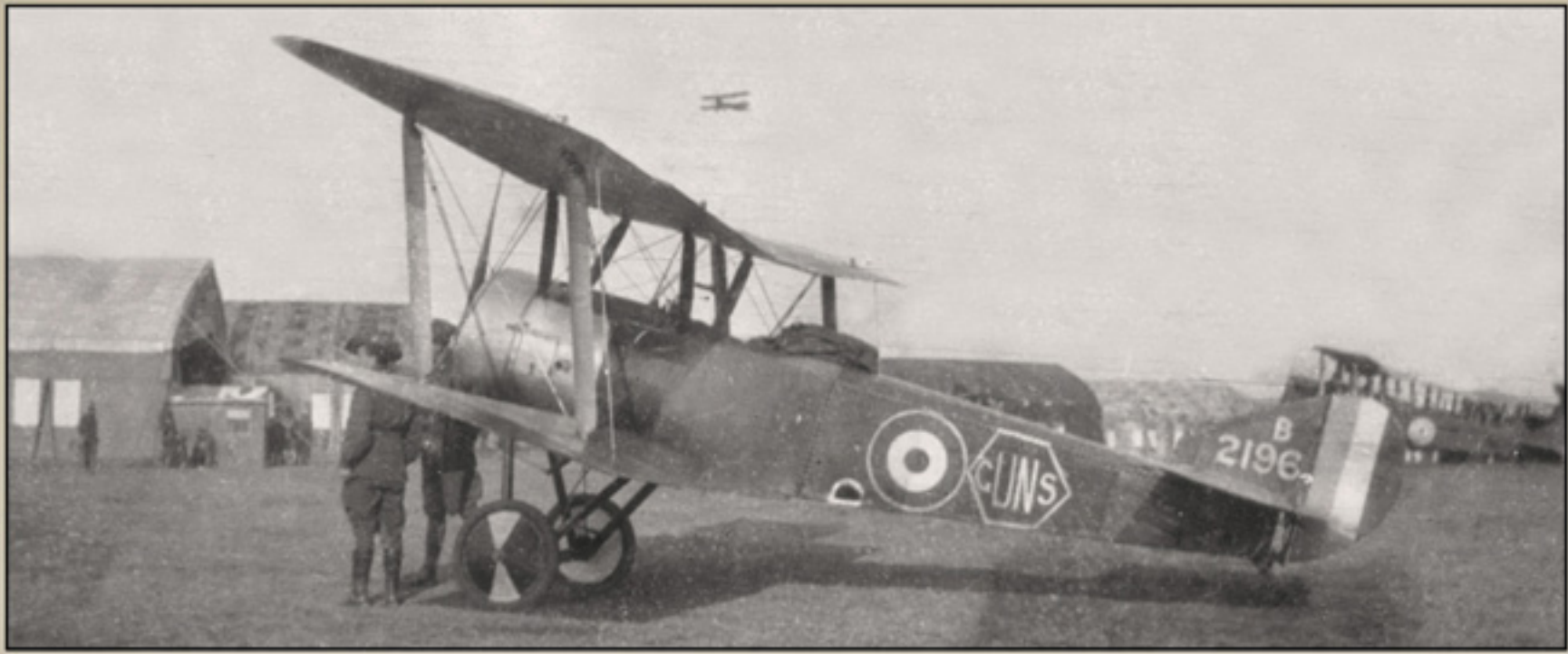




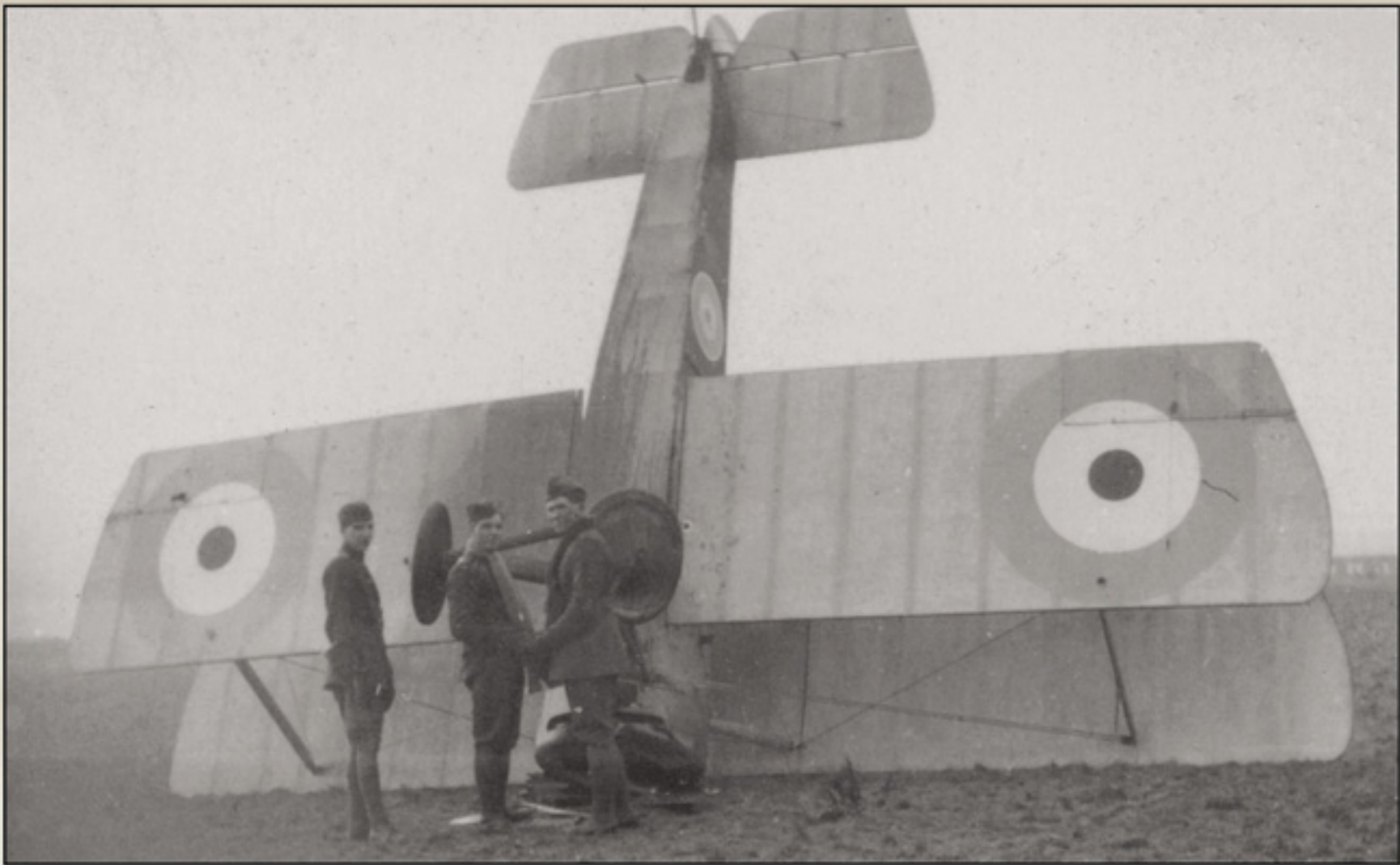
SOPWITH AEROPLANE.

Whitehead built A6214, displaying the clean lines which defined the Sopwith Pup. Most likely photographed here before delivery to 56 RS (Reserve Sqn) in May 1917, no gun is fitted and a makeshift windscreen has been installed. Note the orientation of the ailerons.

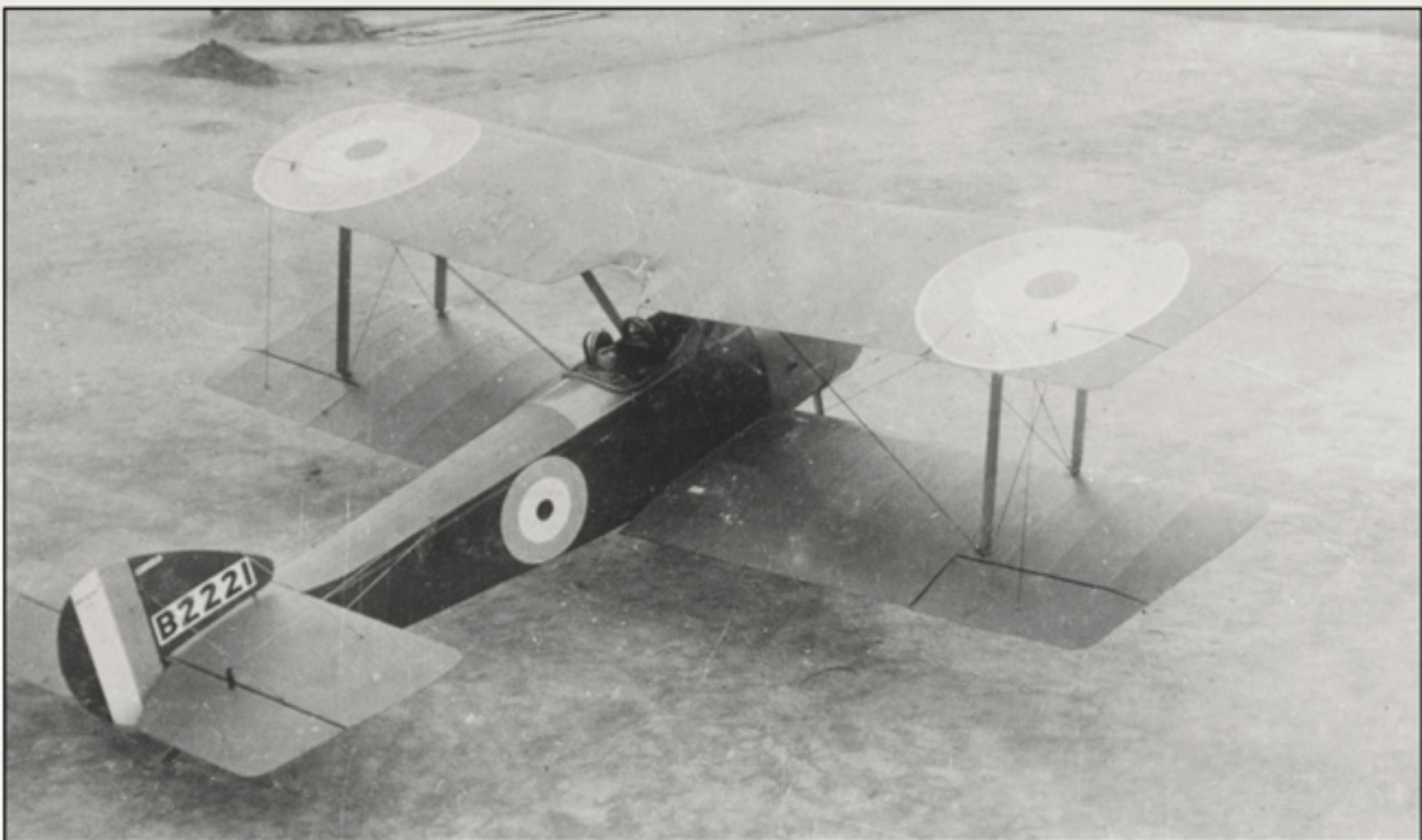




Whitehead built B2196 'Guns'. The lack of armament indicates it is most likely on strength with 55 TS in late 1917.



This pranged Pup allows us to see the relatively fresh application of castor oil staining emanating from the engine. This is a common feature of rotary engine powered aircraft and the staining shown here could be the result of just one or two flights. Note that the fuselage underside appears to be CDL, not PC10 and the wings do not appear to be edged in PC10.



Whitehead built Pup B2221 pictured prior to delivery to 66 Sqn in September 1917. Note the fixed tail plane and small Whitehead component numbers on the fin and rudder.





Standard built Pup A635 of 66 Sqn after being shot down by LtN Quandt of Jasta 36 on Oct 12 1917, 2Lt M Newcomb made POW. Note the white edging to the rudder, roughly painted fuselage stripe and cockade. The damaged pitot tube and one missing propeller blade are testimony of a less than textbook landing.



#### *3-D Modelling by Mark Miller*

A background in technical illustration and long term passion for modelling and early aircraft has enabled Mark to produce some of the most stunning 3D renderings of aircraft anyone is likely to see. His artwork has appeared in numerous books and publications from Cross & Cockade, Over the Front, Schiffer and Windsock amongst others.

To see some examples of Mark's work please visit <http://www.wwi-models.org/Images/Miller/render/index.html>



#### *Box Art by Steve Anderson*

Steve Anderson is an avid historian of military aviation, with a special interest in the many beautiful biplanes and triplanes of World War I. The aircraft and battles of famous World War I aces such as Baron Manfred von Richthofen (better known as the "Red Baron"), James McCudden, Raoul Lufbery, Ernst Udet, Werner Voss, and other pioneers of dogfighting are among Steve's favorite subjects.

An Artist Fellow of the American Society of Aviation Artists, Steve creates works that reflect scrupulous attention to historically accurate detail, from the colorful markings on the fuselages to the time of day of an actual battle.

Visit Steve's website at: [www.anderson-art.com](http://www.anderson-art.com).



#### *Profile Art by Ronny Bar*

Ronny Bar developed a keen interest in airplanes from an early age, living close at the El Palomar Air Force Base in Buenos Aires. He first flew in the back seat of a T-34 Mentor trainer at the age of ten, and was soon drawing airplanes and building models: Spitfires and Messerschmitt first... Camels and Fokkers later.

He became a successful bass player with a career lasting over 35 years in several Rock bands, recording ten albums (one of them being a National hit selling more than 100,000 copies) and performing countless concerts, TV shows and tours all over Argentina.

Now retired from the R'n'R scene, his interest returned to his early passion: Aviation Artwork. Visiting the WW1 aircraft collection at Hendon focused his already growing interest for that historic period. His artwork is regularly appearing in journals and publications like Windsock Worldwide, Windsock Datafiles, Cross & Cockade and Over the Front.

Visit Ronny's website at: [www.ronnybarprofiles.com](http://www.ronnybarprofiles.com)



#### *Project Co-ordinator, Richard Alexander*

A native of Wellington New Zealand, Richard Alexander has a long term interest in military history, race cars & local drivers from motor sports golden era of the '60's. Other interests include mountain biking, scotch and cigars.

An accomplished modeller Richard's models have twice been awarded Best Overall in Show at IPMS(NZ) National Conventions and earned him the inaugural TamiyaCon(NZ) Master Modeller award (along with the associated trip to Japan) in 2001. Many of his works are in private collections around the world, though he no longer accepts commissions.

Richard has been in the model and hobby industry since 1991 and brings with him a keen eye for detail and a passion for ensuring our models are enjoyable to build. So if there is anything you don't like about this model, you can blame him.

If you do have comments, requests or suggestions, Richard is contactable at [richard@wingnutwings.com](mailto:richard@wingnutwings.com)





32013	1/32 Sopwith Pup RFC	Qty
0132013A	A parts	1
0132013B	B parts	1
0132013C	C parts	1
0132013D	D parts	1
0132013P	Photo-etched metal parts	1
132E0006	E parts LeRhone 9c 80hp Engine	1
7132013	Instructions	1
9132013	Decals	1



32009 - 1/32 Albatros D.V



32015 - 1/32 Albatros D.Va



32016 - 1/32 Sopwith Pup RNAS

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