

WINGNUT WINGS



Bristol F.2b Fighter (Post War)

1/32 Scale

Initially conceived in early 1916 as the Bristol R.2a reconnaissance aircraft to replace the RFC's aging BE2 series, Frank Barnwell's design evolved into the Bristol Fighter in July 1916 following the incorporation of the brand new Rolls Royce 190hp 'Falcon' engine. An order was placed for 50 aircraft and the first production Bristol F.2a Fighter (A3303) made the types maiden flight on 9 September 1916.

Deliveries of this new aircraft to 48 Squadron RFC started in December 1916 and continued through to March 1917 at which time they flew their 18 new Bristol F.2a Fighters to France. Their operational debut on 5 April 1917 was somewhat less than successful. Despite having the Bristol Fighter on strength for 3 months 48 Sqn thought it to be structurally unsound and, despite its name, flew them in a rather sedately manner similar to two seat reconnaissance aircraft, slow and steady as a platform for the rear gunner. Not surprisingly they were shot down just like slow and steady reconnaissance aircraft. It was soon realized that Bristol's fighter was actually a very sturdy aircraft that could, and should, be maneuvered as if it were a single seat fighter with rear protection. And a fighter it was, with over 240 pilots and gunners achieving ace status in the type before the end of the Great War. Further refinements to the design, of which the most obvious was angling the front longerons downwards to improve pilot visibility, resulted in the F.2b appearing in April 1917.

Several different engine types, including 150-200hp Hispano Suiza and Sunbeam's 200hp Arab, were fitted to the 'Biff' (as it became affectionately known during the First World War) or 'Brisfit' (in the post war years) but by far the most common and successful were the 190-275hp V12 Rolls Royce 'Falcon' 1, II & III. A misguided attempt to build a version in the USA powered by the overly heavy 400hp Liberty engine came to naught. The Bristol Fighter continued to serve long after the First World War with numerous countries including the UK, Belgium, Ireland, the Netherlands, Peru, Mexico, Canada, Greece, New Zealand and even China. Post war modifications, as featured in this model, were numerous and included modified engine cowlings and radiator slats for improved cooling, longer exhaust manifolds, an auxiliary 'tropical' radiator, modified instrument board and a larger balanced rudder. Some very late serving aircraft could also be found with variable pitch propellers, a larger horizontal tailplane and leading edge slats on the top wings. The Bristol Fighter was not withdrawn from RAF service until April 1932 and wasn't finally withdrawn from Commonwealth service until it was retired by the NZPAF in 1936.

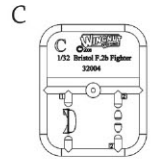
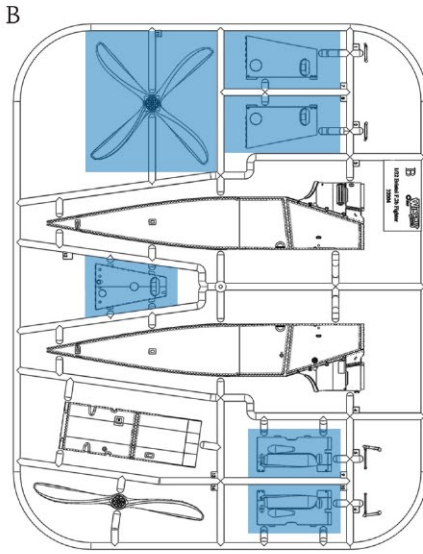
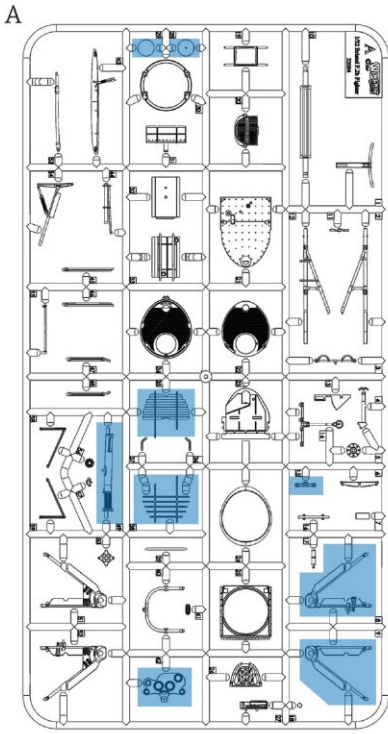
Early aircraft colours are contentious at the best of times and we have done our best to provide what we consider to be accurate painting information. War time Bristol Fighters were generally finished in PC10 (Protective Covering number 10) on the upper surfaces, CDL (Clear Doped Linen) on the undersides and BSG (Battleship Grey) on metal cowlings etc. Very late war aircraft upper surfaces were often finished in AMAPD (AMA Protective Dope) which contained pigments giving a 'dark chocolate brown appearance'. Surviving RAF aircraft could still be found wearing these colours post war but newly built aircraft or those having undergone conversion to Mk.II status could be finished in AMAPDT (AMA Protective Dope Tropical) dark reddish brown on the upper surfaces for service in the tropics or silver doped overall. Engine cowlings were painted BSG or unpainted and highly polished. Steel components, fittings and brackets were usually painted black. All fabric surfaces exhibited a gloss appearance when new which would lose its shine relatively quickly in service.

Richard Alexander 2015

Wingspan:	Length:	Max Weight:	Max Speed:
39' 3" (11.96m)	25' 9" (7.85m)	2800lb (1270kg)	113mph (182kph)
No. Manufactured:	Production:	Engine:	
Approximately 4350	Aug. 1916 to Aug. 1919	Rolls Royce Falcon 1 (190hp), II (220hp) & III (275hp)	
Ceiling:	Armament:		
20000' (6096m)	.303" (7.7mm) Vickers and 1 or 2 .303" (7.7mm) Lewis guns. Up to 300 lb (136kg) of bombs		

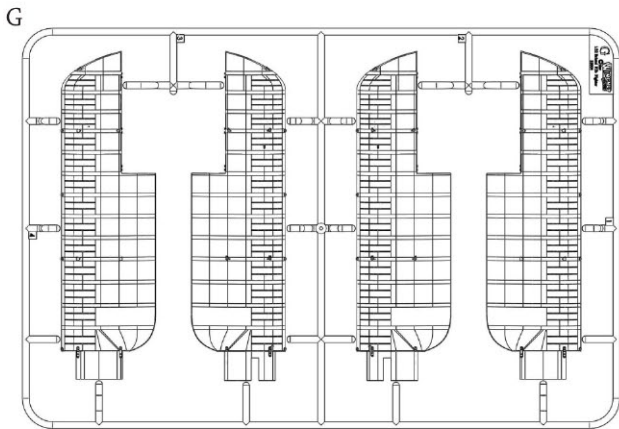
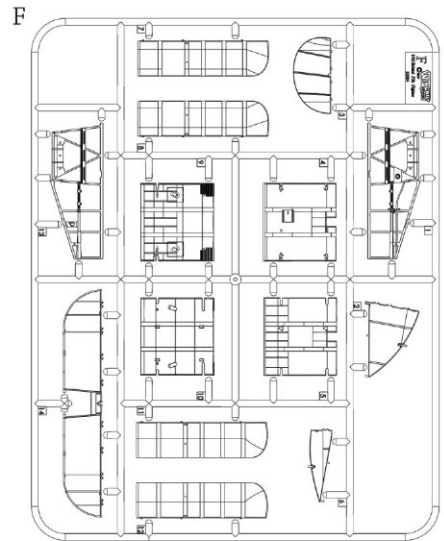
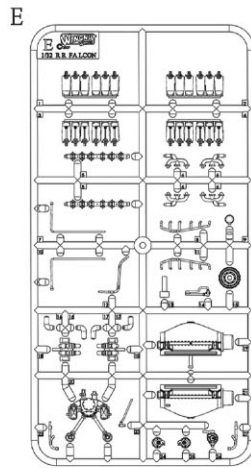
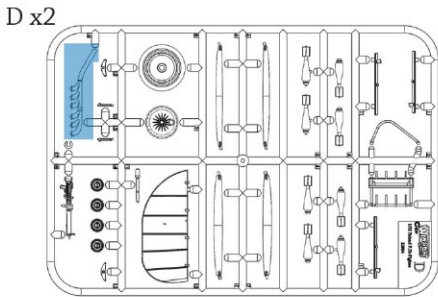
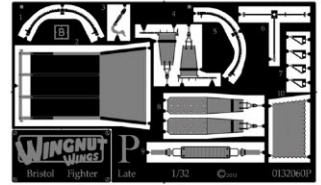
References:

Windsock Datafile Special volume 1 & 2, JM Bruce 1997 & 1998 - The Bristol Fighter. (Old and New Type), Air Ministry, March 1922
 Bristol F2B Fighter 'King of Two-Seaters', Chaz Bower, Ian Allan LTD 1985 - Squadron Signal Bristol Fighter in Action, Peter Cooksley, 1993
 RAF Museum Hendon, England - The Vintage Aviator Ltd - 1914-18 Aviation Heritage Trust - Colin Owers - Private Collections

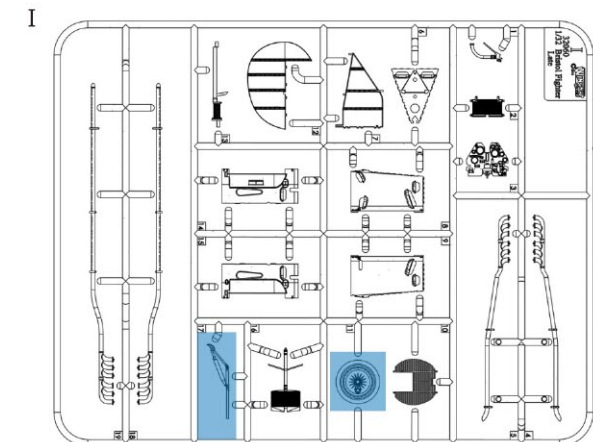


■ = Not Used

Photo Etch



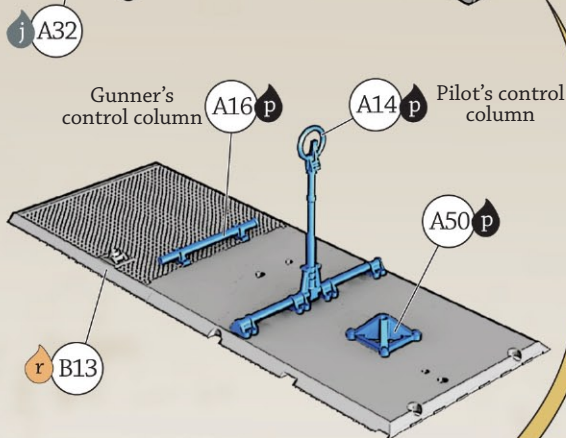
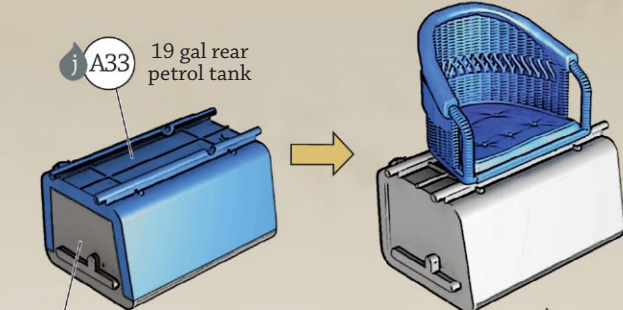
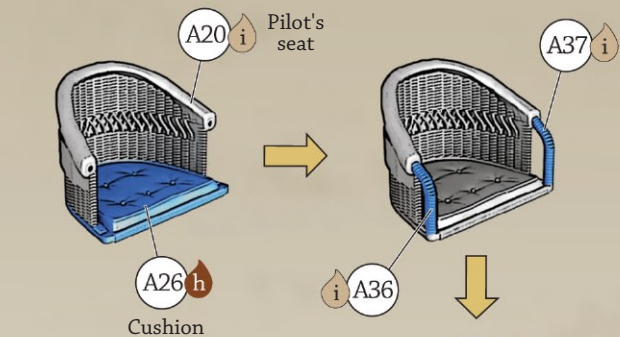
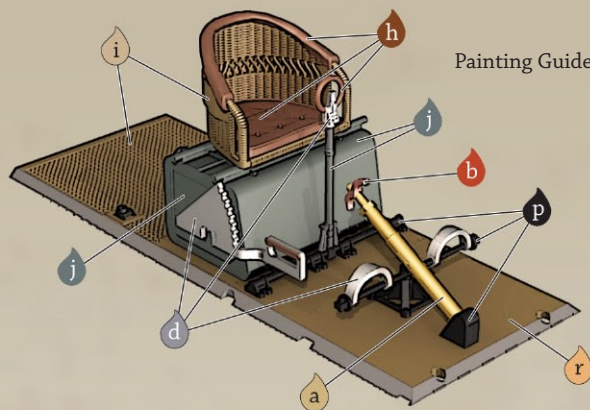
Decals



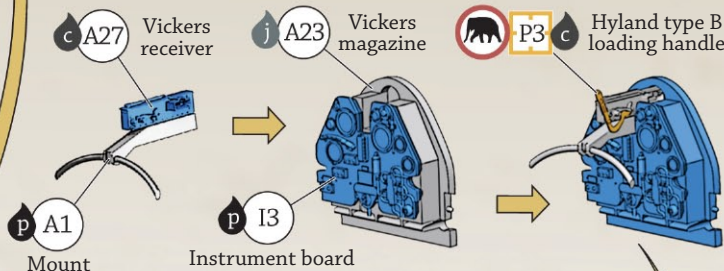
1 COCKPIT

Please visit our website for hints & tips on improving your seat detail

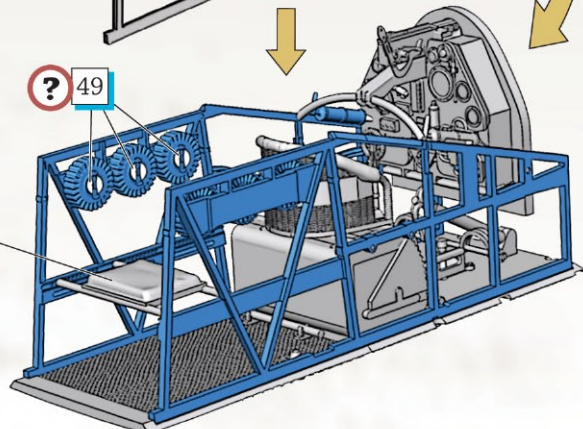
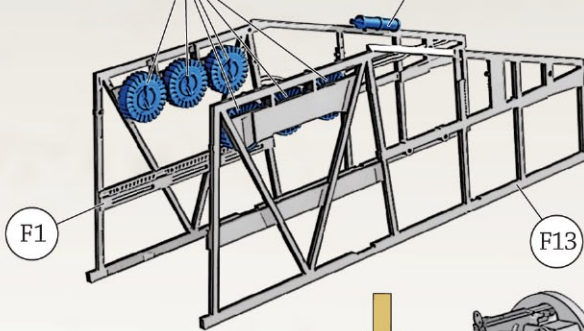
Painting Guide



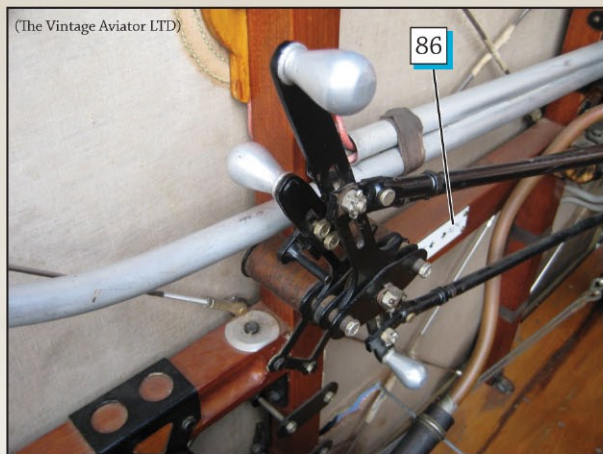
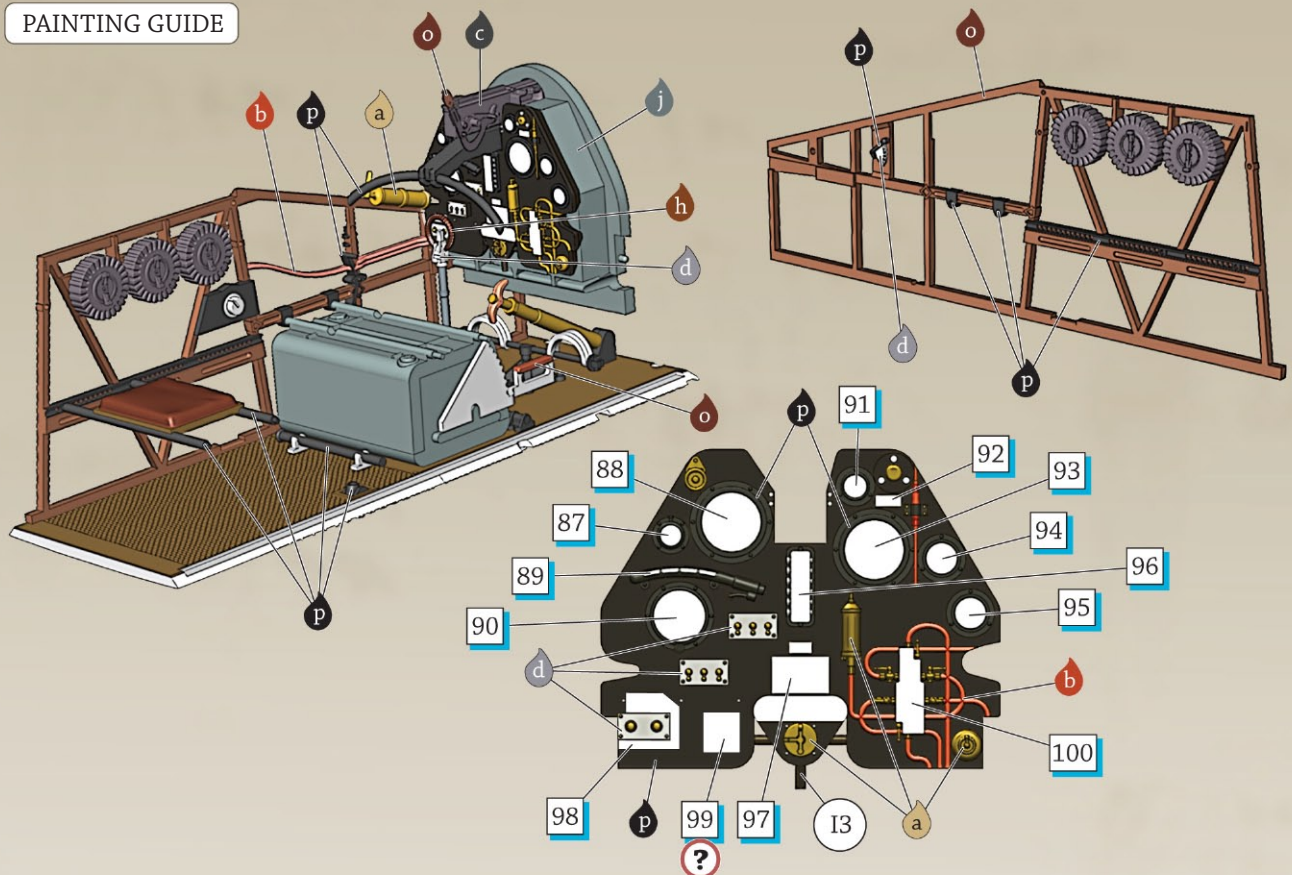
Pilot's wicker seat details, note the 'modern' 4 point Sutton safety harness not appropriate for our model.



ADE **BC** **D14** **A17** **A19**



PAINTING GUIDE



(The Vintage Aviator LTD)
Left side of pilot's cockpit showing the throttle, mixture and spark advance control levers.



(The Vintage Aviator LTD)
Rear of observer's cockpit showing the cloth screen and storage pockets, usually used for Lewis gun magazines. The 4 point safety harness shown here is not appropriate for our model.



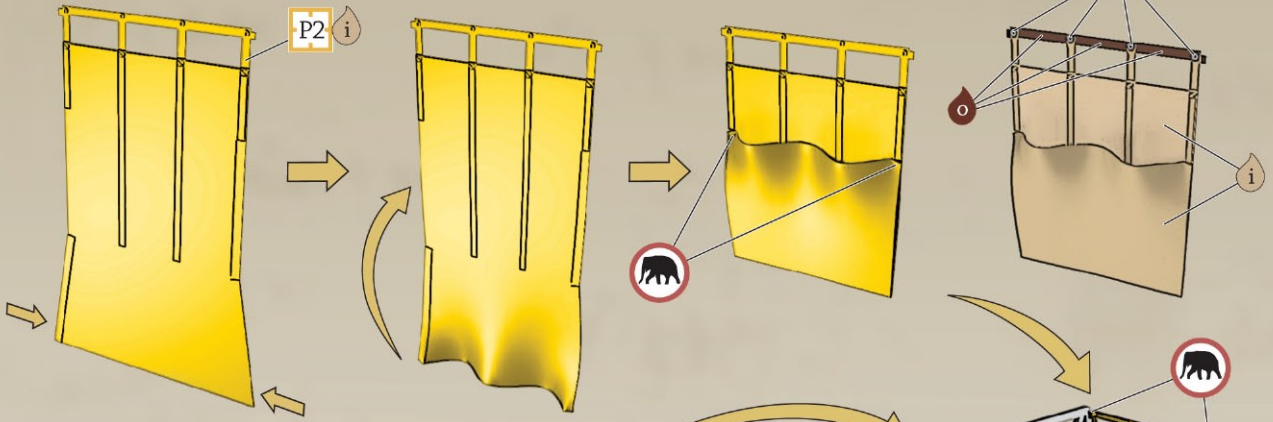
(The Vintage Aviator LTD)
Rear of pilot's seat showing the rear fuel tank and fuselage foot step details.



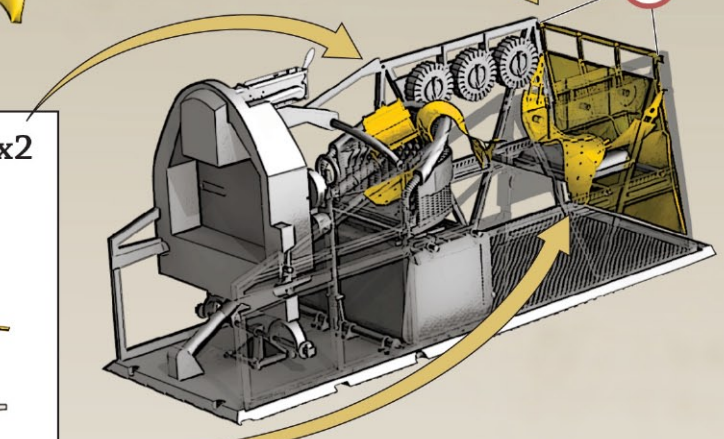
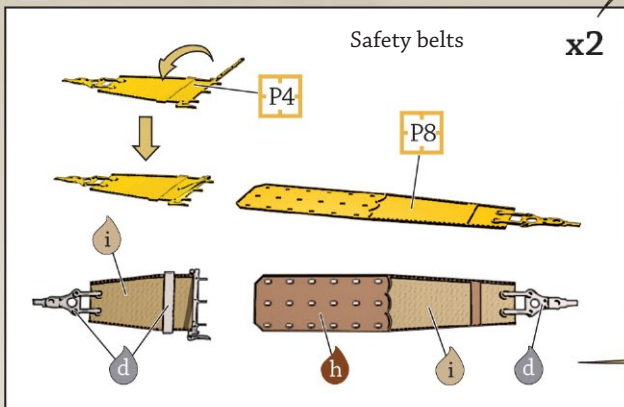
(The Vintage Aviator LTD)
Right side of observer's cockpit showing mounts for spare Lewis gun magazines. Note the interior colour of the fuselage linen.

2 COCKPIT continued

Screen & stowage pockets for empty magazines etc

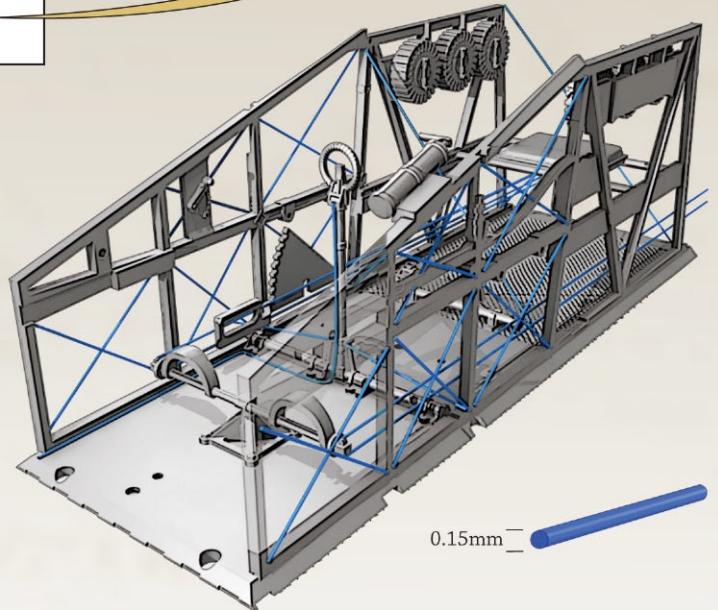
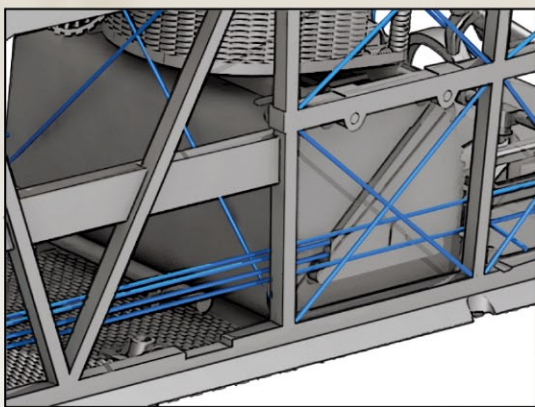


! Anneal photo-etched 'fabric' parts to make them more flexible

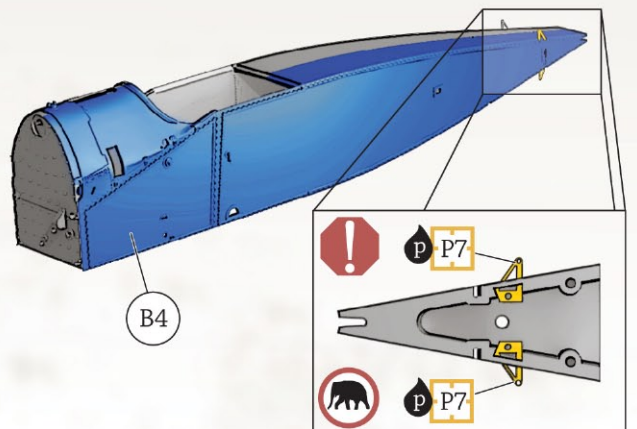
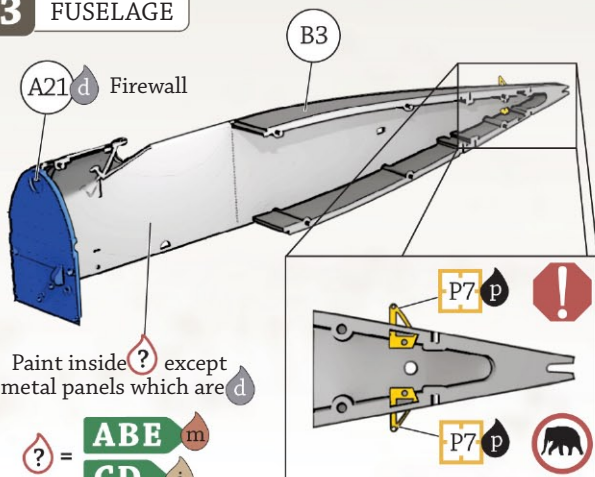


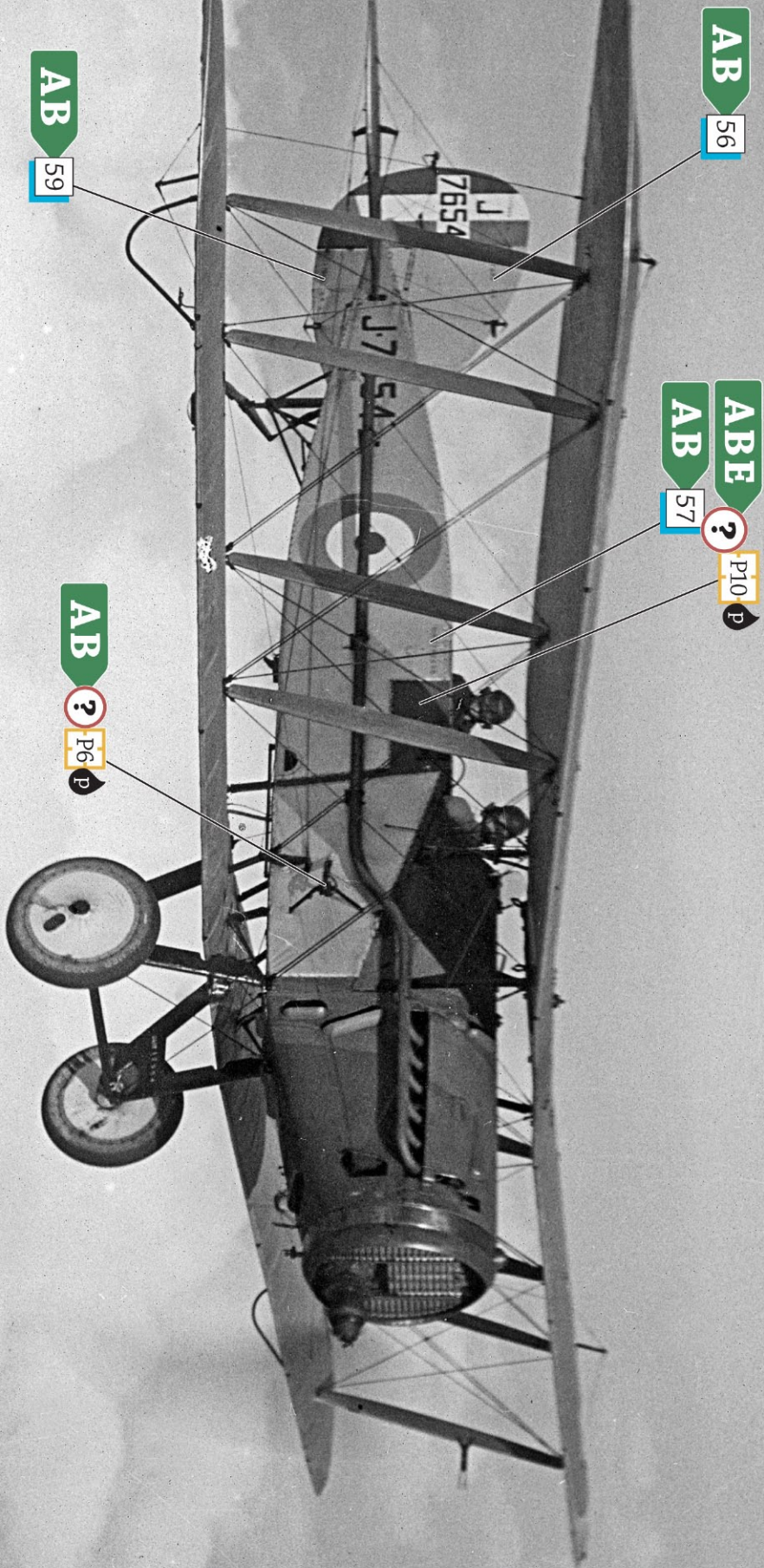
RIGGING GUIDE

Rigging material not supplied



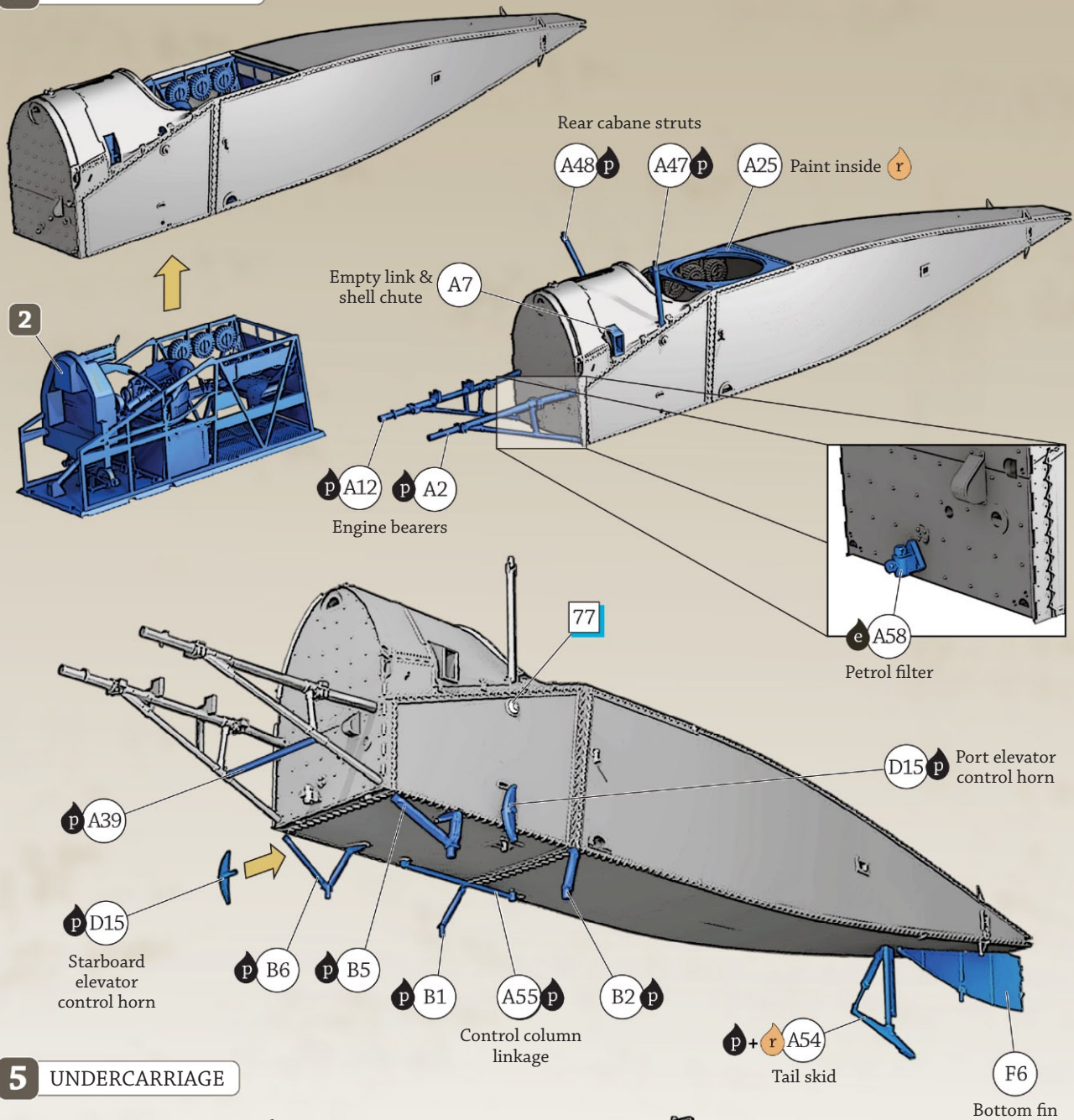
3 FUSELAGE



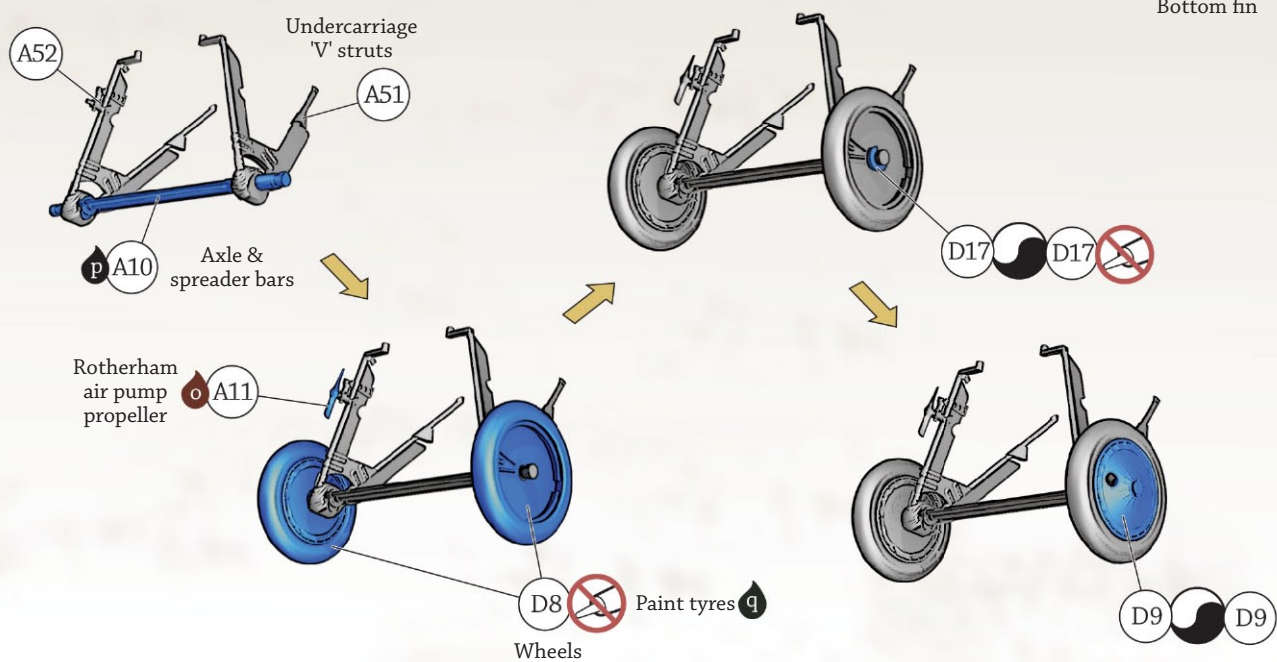


Bristol F.2b Fighter Mk. II J7654, possibly of 4 Sqn, in flight. Note the empty generator mount **P6** and metal panel **P10** under the gunner's cockpit. The rear gunner's Scarff ring has been removed.

4 FUSELAGE continued



5 UNDERCARRIAGE





(The Vintage Aviator LTD)

Wind driven air pump for providing pressure to the fuel system.



(The Vintage Aviator LTD)

Fabric Palmer detachable wheel shield.



(The Vintage Aviator LTD)

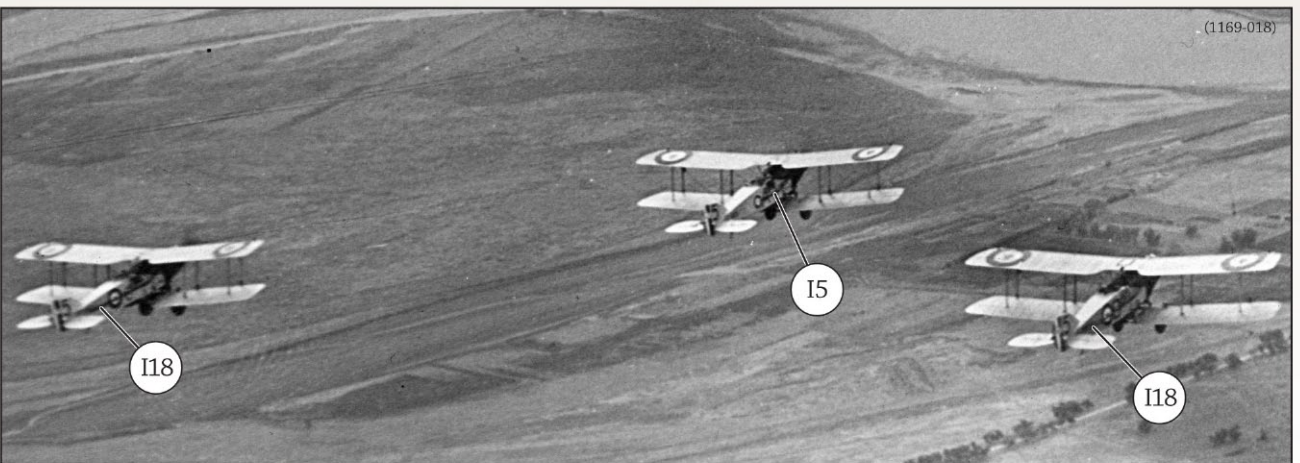
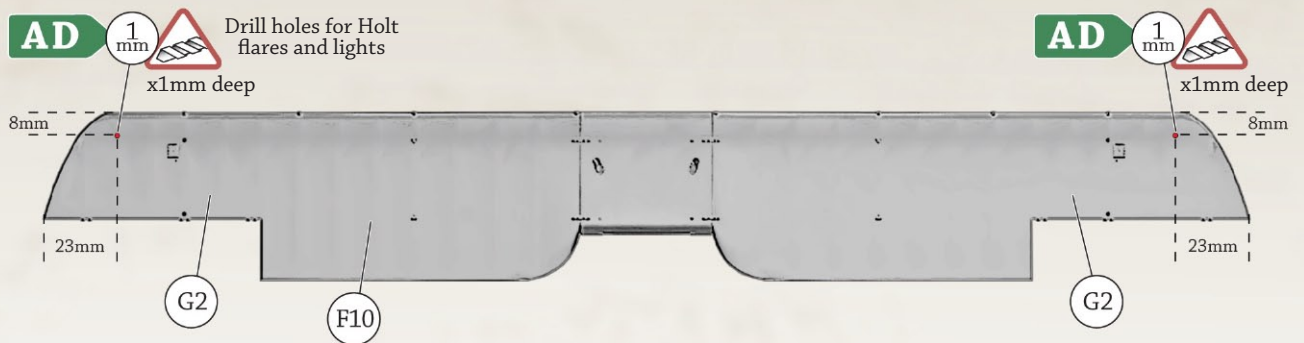
Right side wheel detail showing re-inforced undercarriage struts. Note the bungee shock cord and axle retaining wire.



(The Vintage Aviator LTD)

Tail skid showing bungee cord and retaining wire details.

6 BOTTOM WINGS

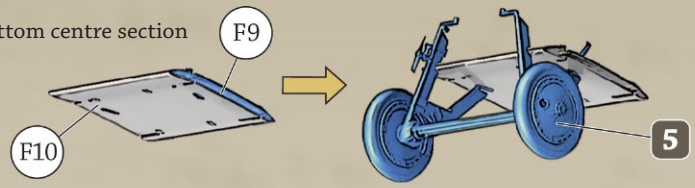


(1169-018)

Three Bristol F.2b Fighter Mk.II of 5 squadron in flight including 'C' on the left, 'A' in the middle (with the shorter exhaust (I5)), and possibly 'D' on the right. All 3 aircraft are fitted with Holt landing lights on their top wings.

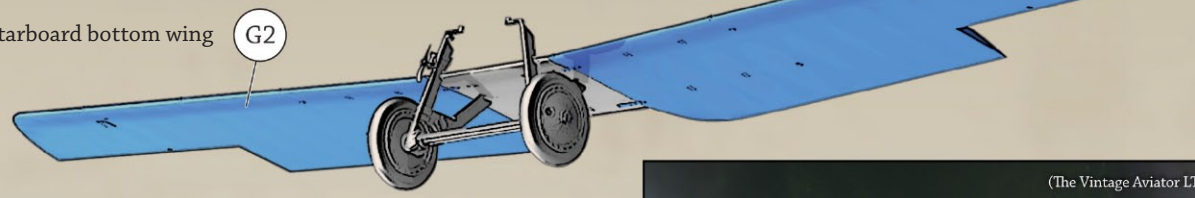
7 BOTTOM WINGS continued

Bottom centre section

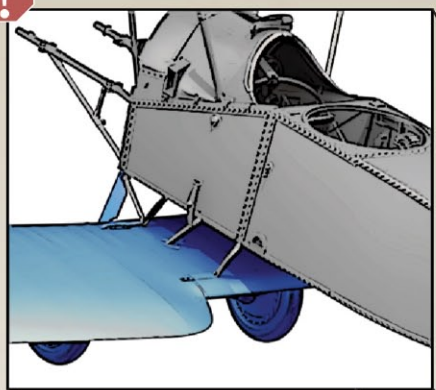


G3 Port bottom wing

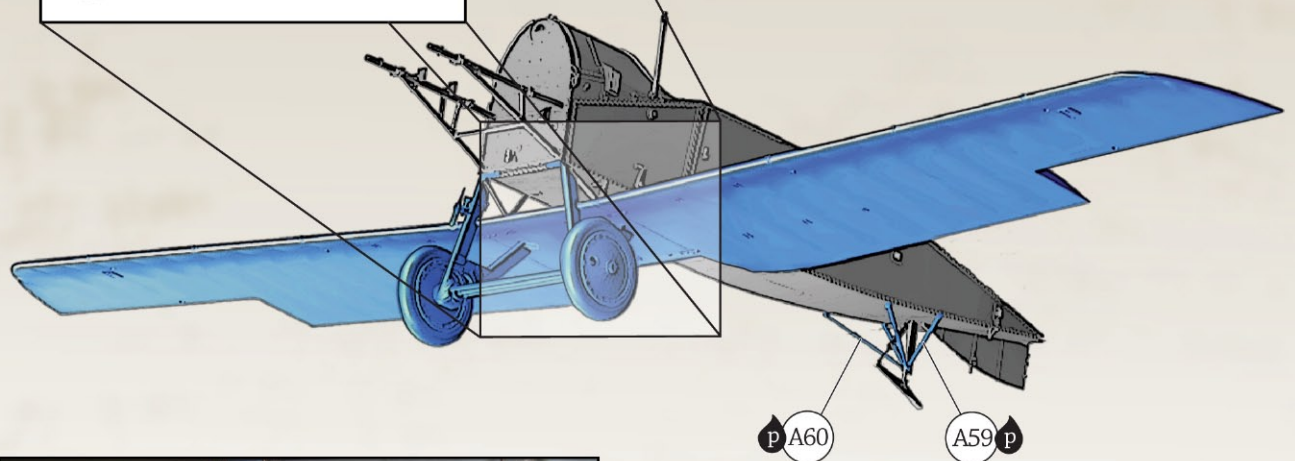
Starboard bottom wing



! Note the positions of the small struts.



A view from the front showing the gap between the fuselage and lower wing.

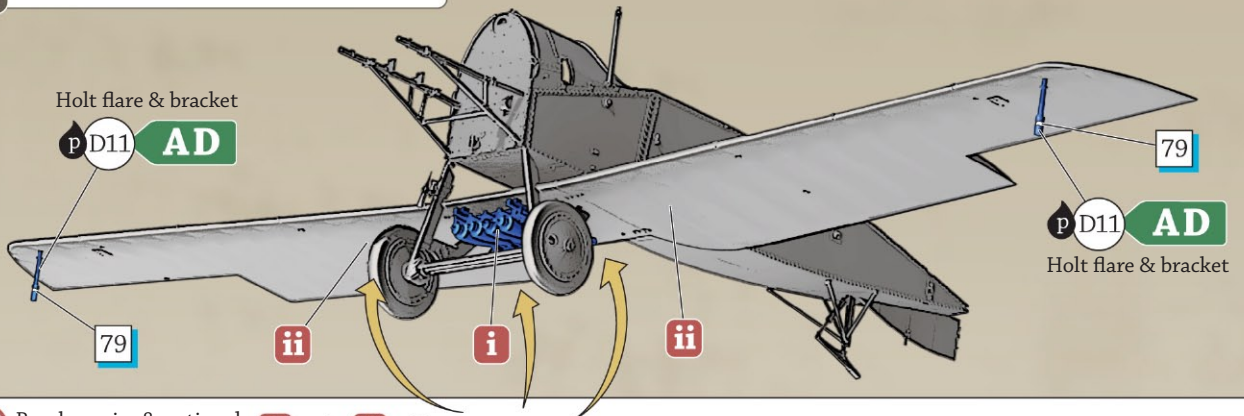


Starboard lower wing center section showing reinforced metal steps and elevator controls. Also note the lacing between the fabric and metal fuselage sections.



Port lower wing joint showing the tubes running out to the pitot head.

8 OPTIONAL BOMBS & HOLT FLARES

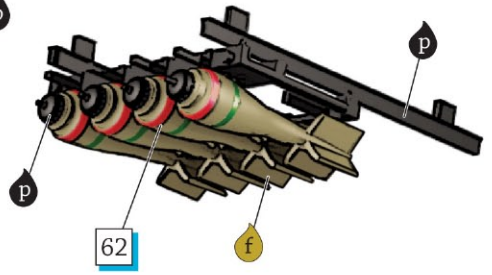
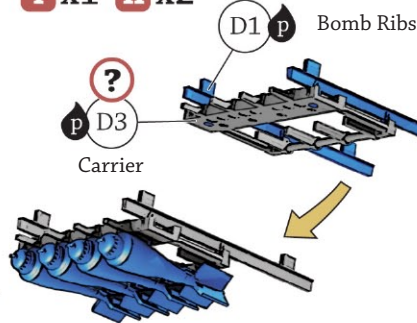
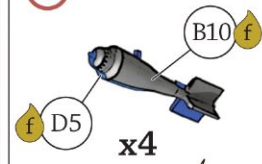


? Bomb carrier & optional 20lb Cooper bombs

i x1 **ii** x2

PAINTING GUIDE

? 20lb Cooper bomb



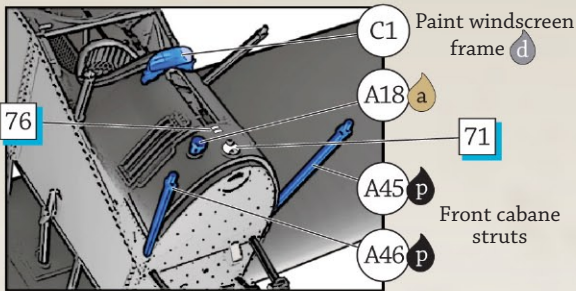
9 TAILPLANE AND STRUTS

ABCD F2

Fin

ABCD F3

Rudder



E I7

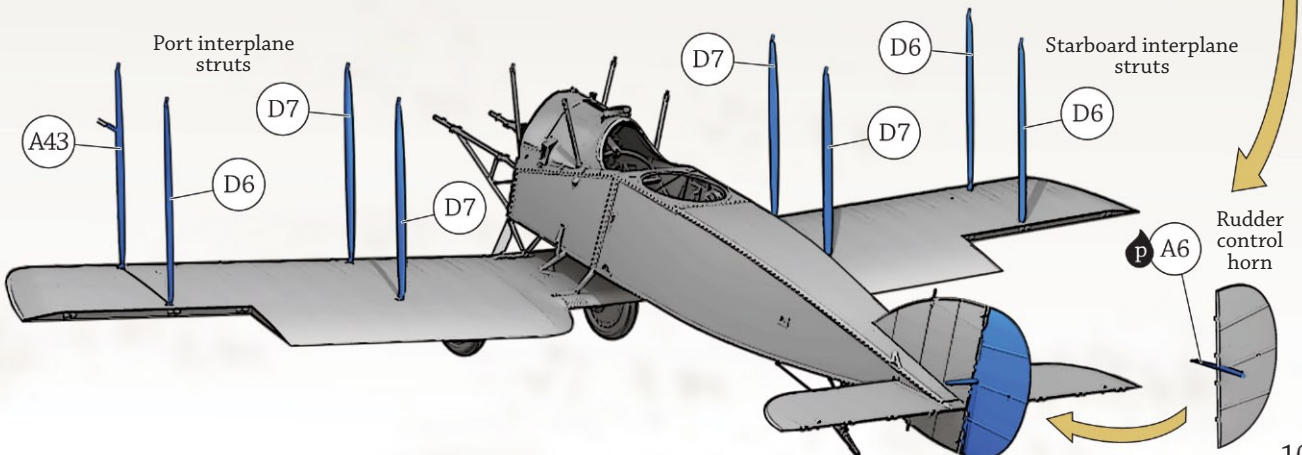
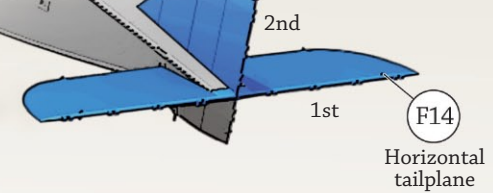
Mk.IV fin

E I12

Mk.IV rudder



Aldis sight, front fuel tank filler cap and Vickers gun magazine loading hatch details.





(The Vintage Aviator LTD)

Port lower wing inner front strut showing rigging wire detail.



(The Vintage Aviator LTD)

Pitot tube detail on port wing outer front strut.



(The Vintage Aviator LTD)

Port lower wing outer struts showing yellow reinforcing tape which should probably be Clear Doped Linen ⁱ.



(The Vintage Aviator LTD)

A pilot's eye view along the starboard wing showing strut decals and aileron control cable details.



(The Vintage Aviator LTD)

Starboard wings showing useful rigging details. See page 22 for a discussion on the over application of Bristol factory decals.

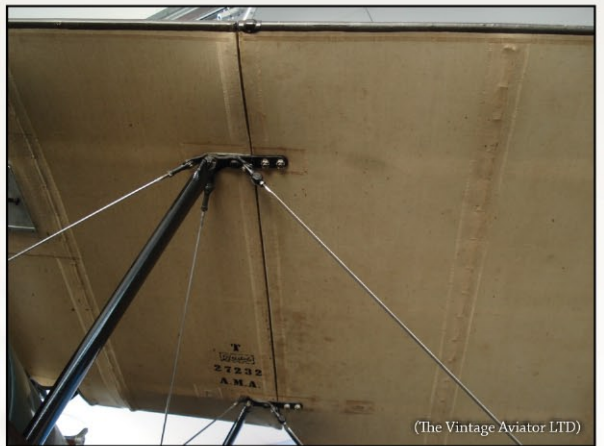


(The Vintage Aviator LTD)



(The Vintage Aviator LTD)

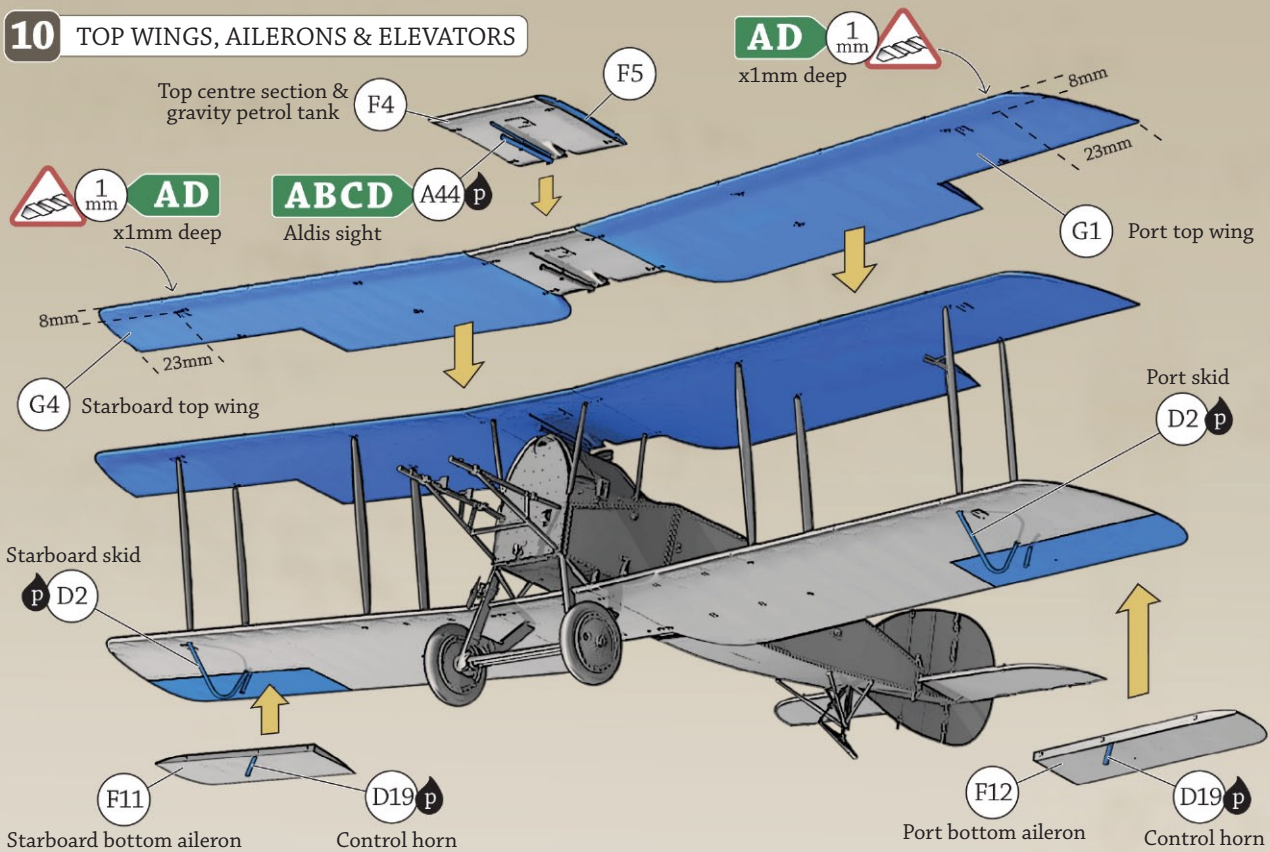
Starboard upper wing and aileron.



(The Vintage Aviator LTD)

The join between the port upper wing and center section.

10 TOP WINGS, AILERONS & ELEVATORS



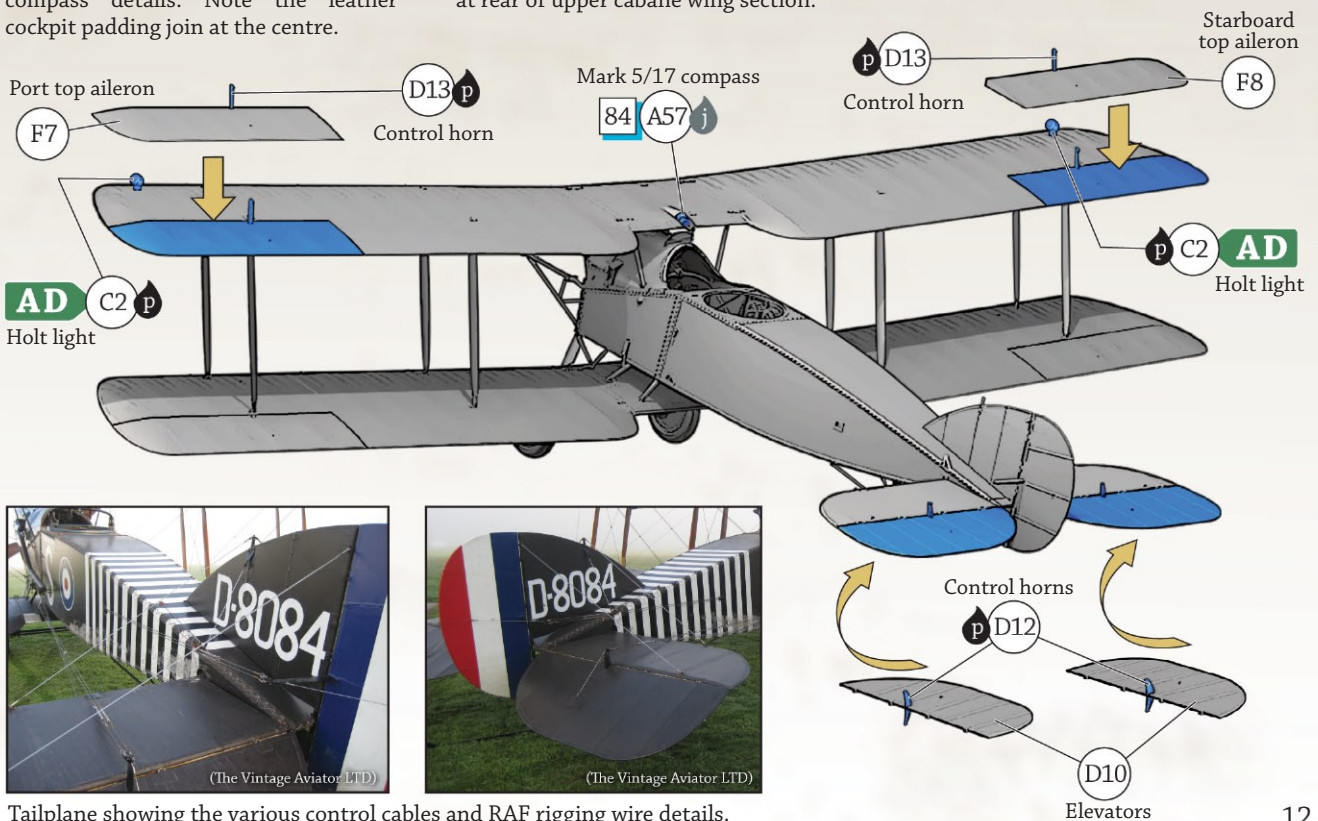
(The Vintage Aviator LTD)
Windscreen, Aldis sight and Mark 5/17 compass details. Note the leather cockpit padding join at the centre.



(The Vintage Aviator LTD)
Mark 5/17 compass mounted in cut out at rear of upper cabane wing section.



(The Vintage Aviator LTD)
Wing skid detail.

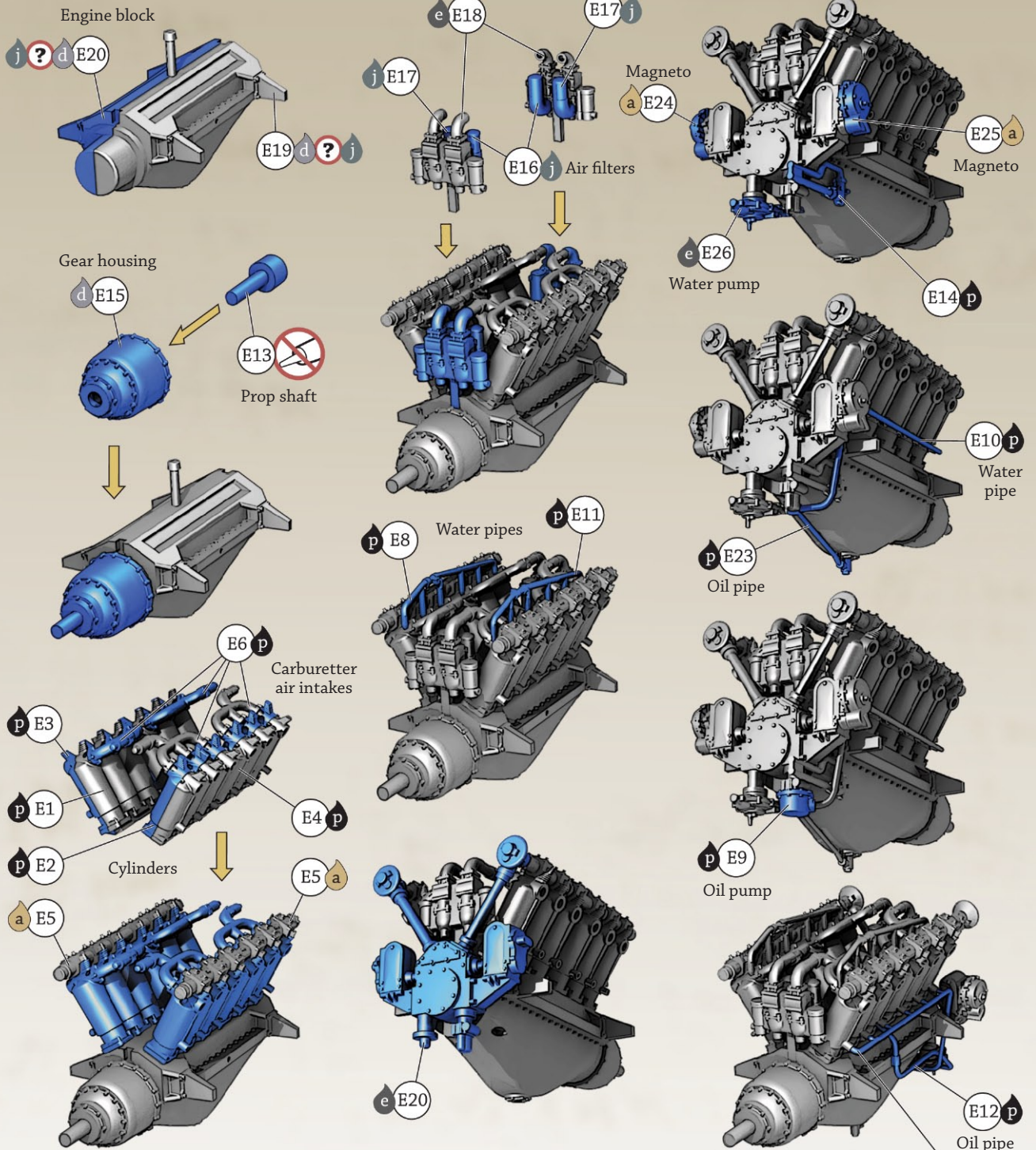


(The Vintage Aviator LTD)
Tailplane showing the various control cables and RAF rigging wire details.

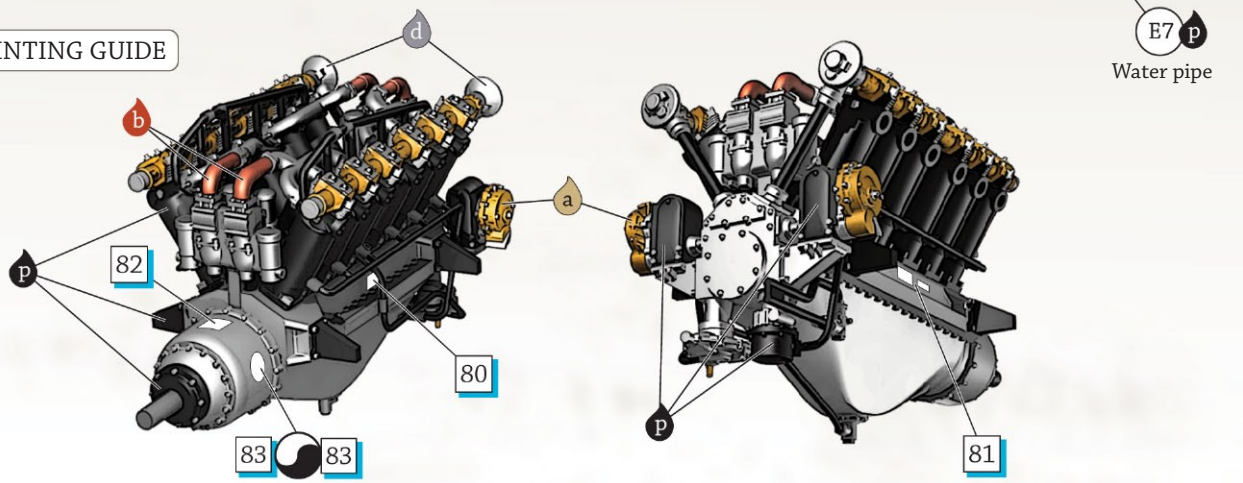


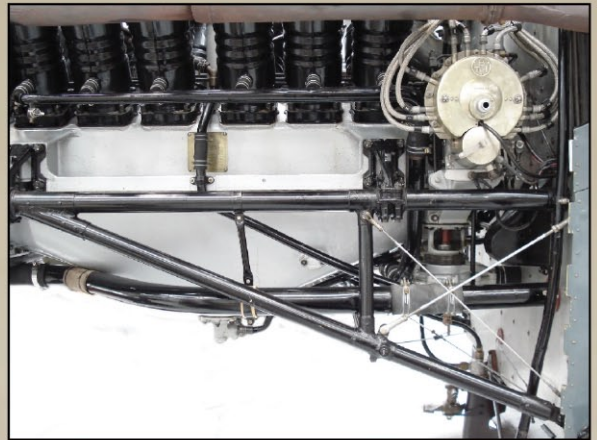
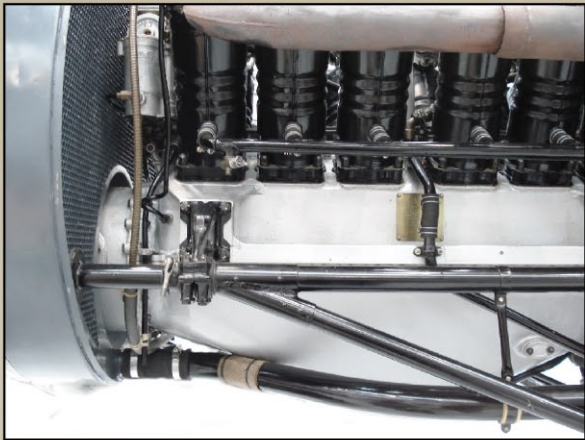
(The Vintage Aviator LTD)

11 ROLLS ROYCE FALCON ENGINE

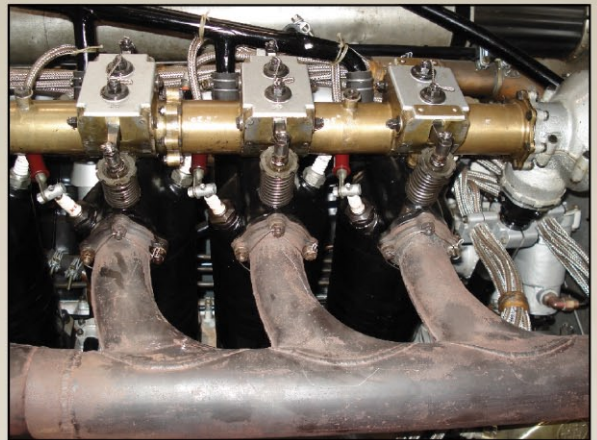
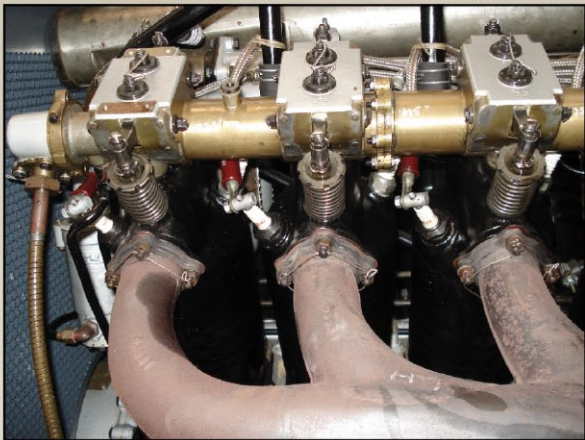


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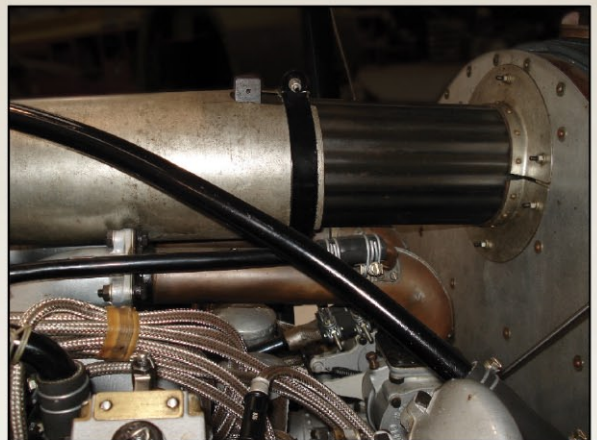
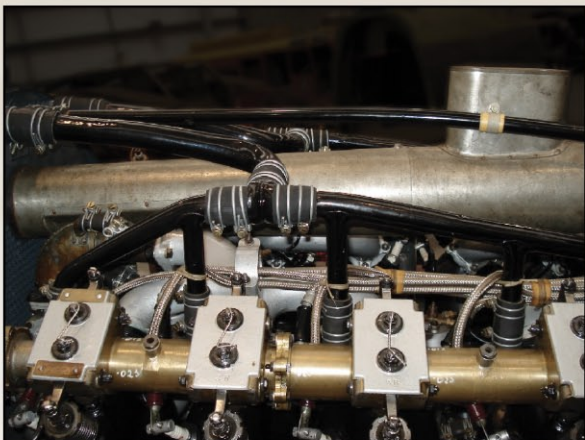




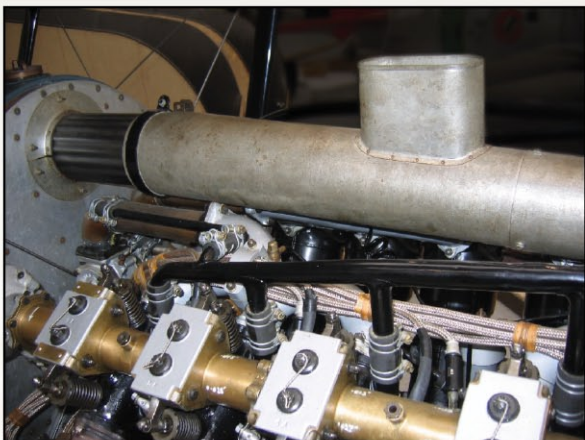
Left side showing engine bearers and lower water pipe details.



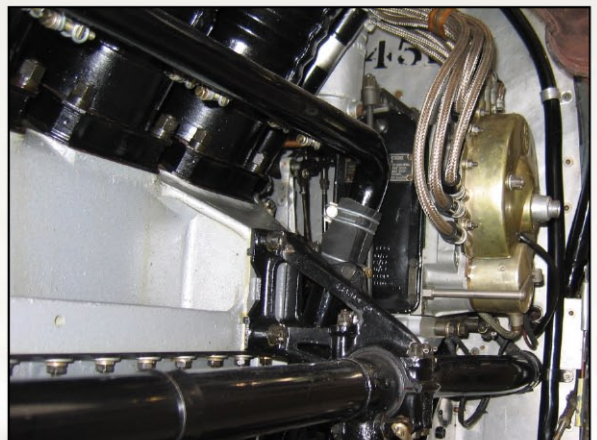
Top left of engine showing exhaust and camshaft & rocker box colours.



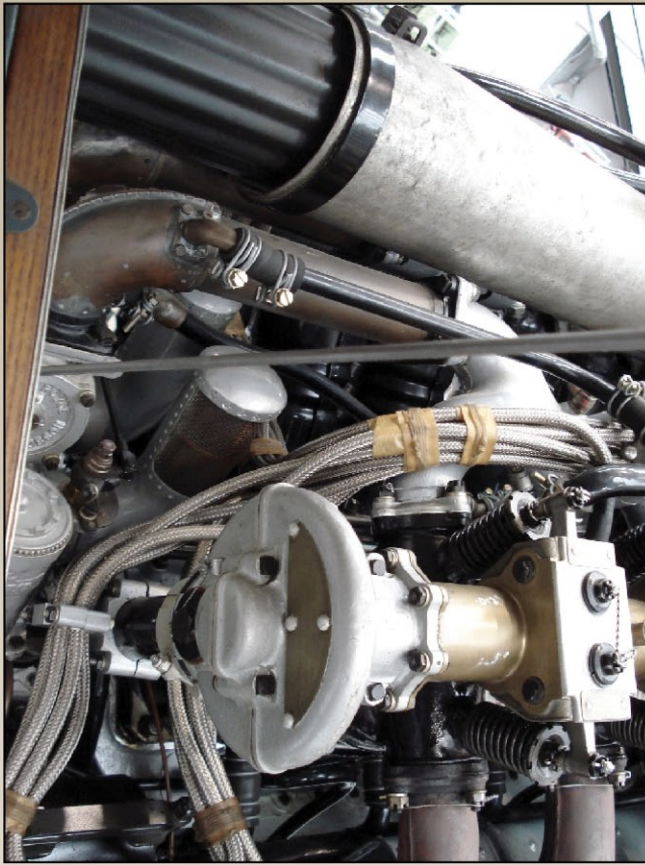
Upper water pipe details and rear of WW1 style Vickers blast tube not applicable to this model.



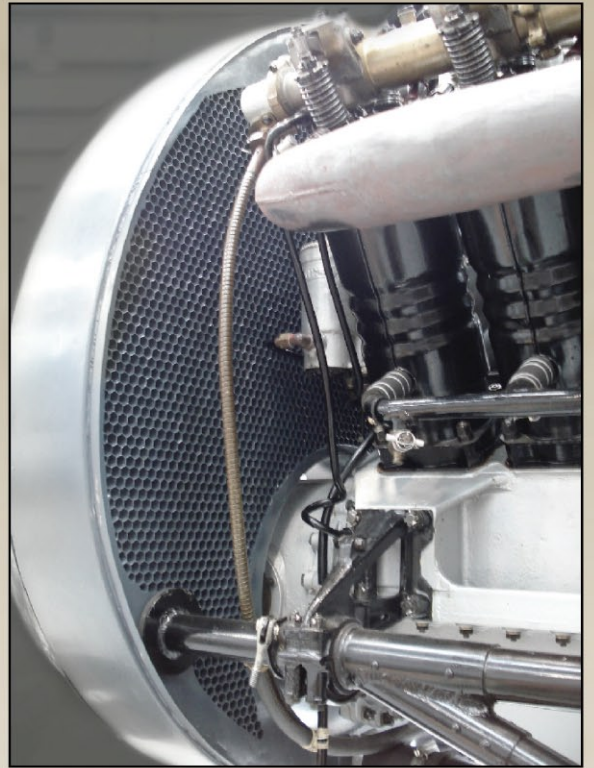
WW1 style Vickers gun blast tube, note the gas exhaust outlet on top.



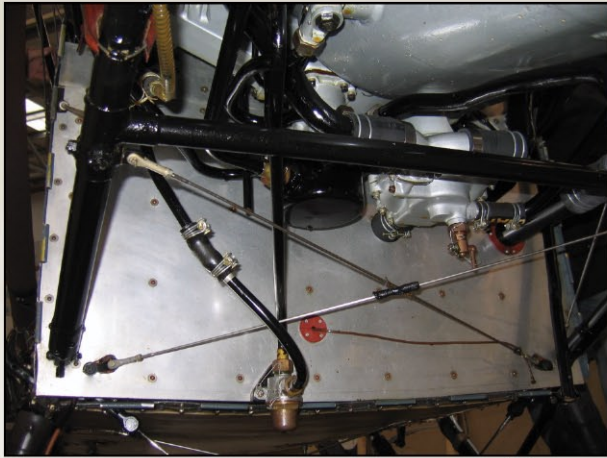
View of the left magneto showing plug leads and colouring



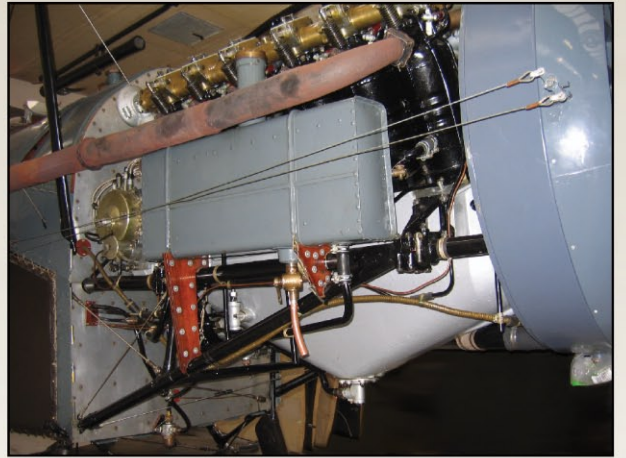
Top right rear view showing carburetor and filter details.



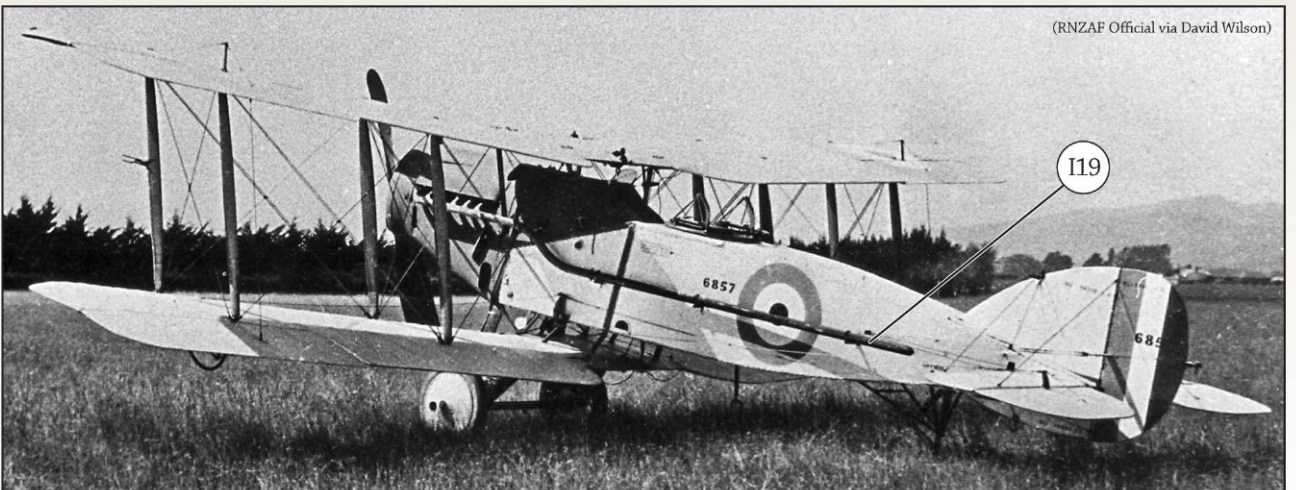
Rear view of the radiator in D8084.



Firewall and water pump details. Note petrol filter (A58).

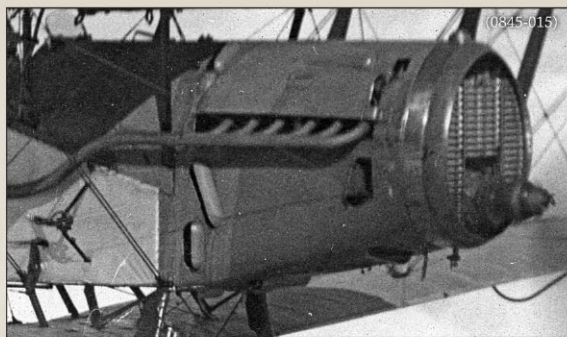
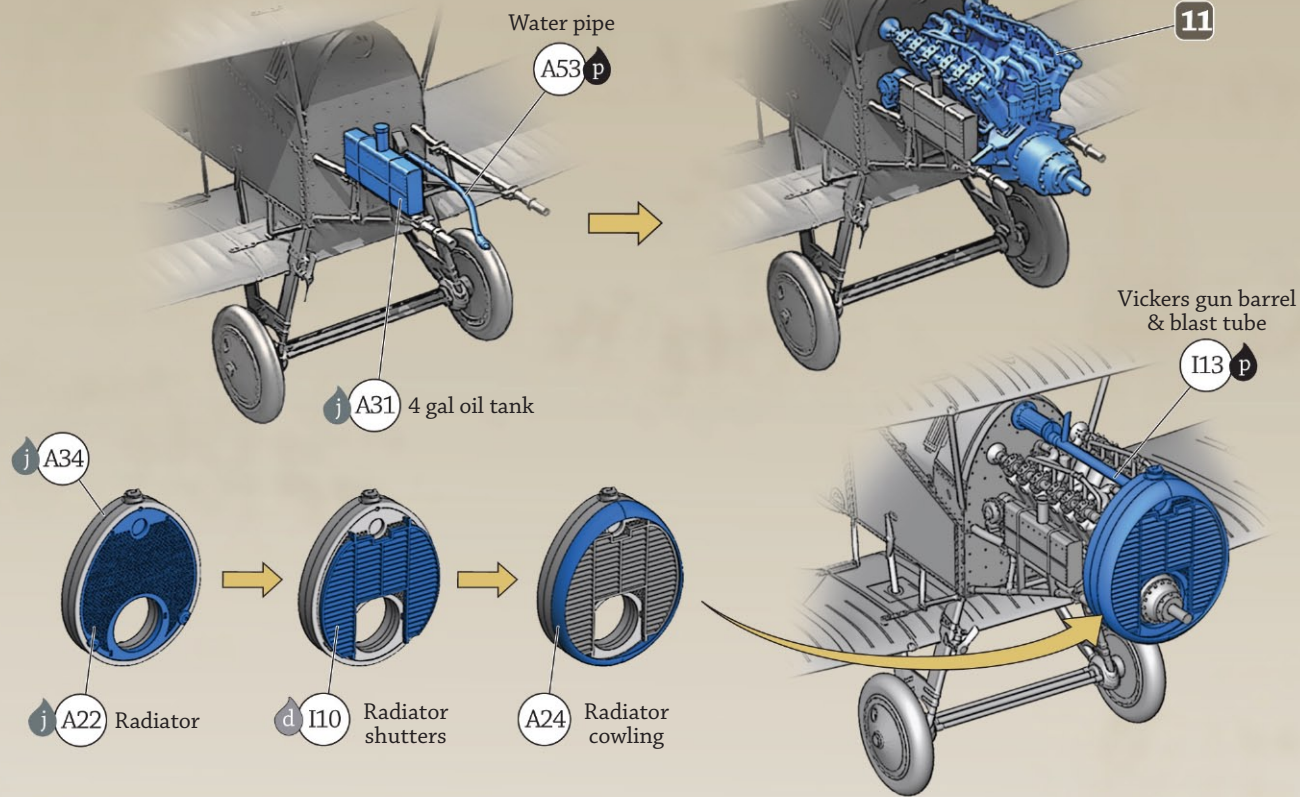


Engine bay showing oil tank and mount details.



Bristol F.2b Fighter Mk.II 6857 of the NZPAF (New Zealand Permanent Air Force) appears to be finished in silver dope with BSG metal panels. Note the long exhaust (I19).

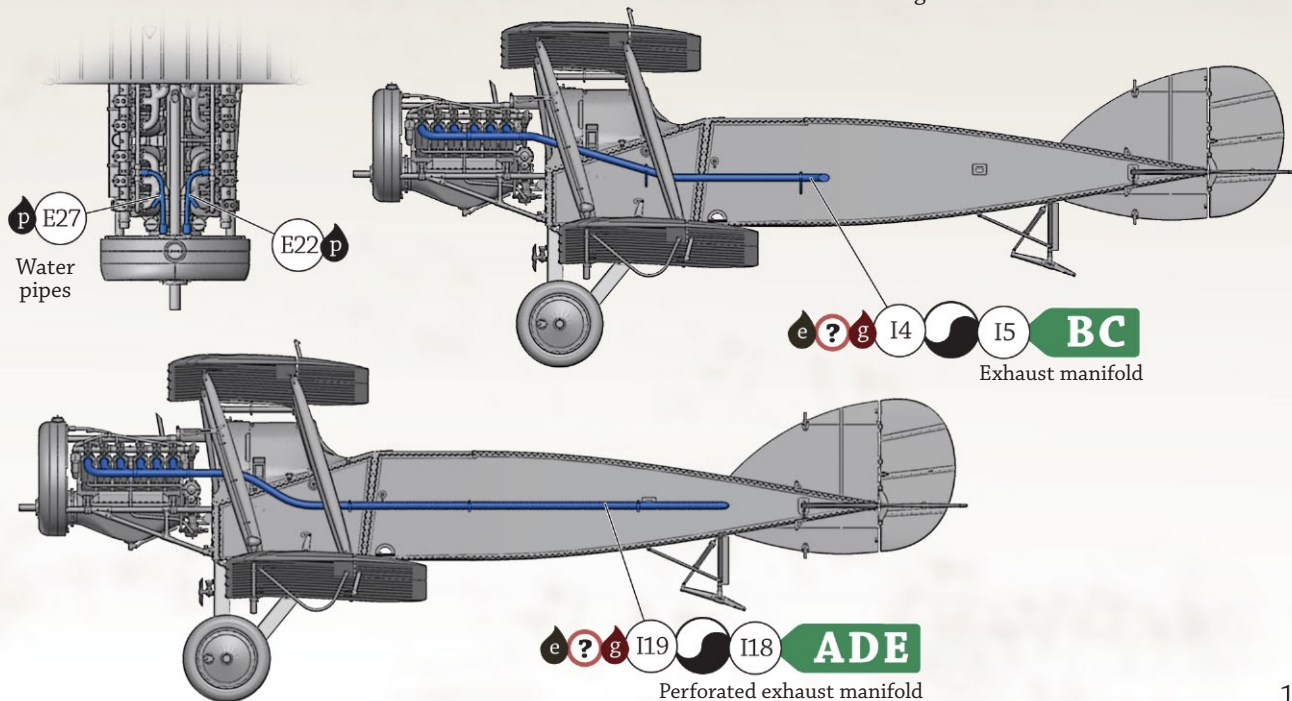
12 ENGINE BAY & EXHAUST



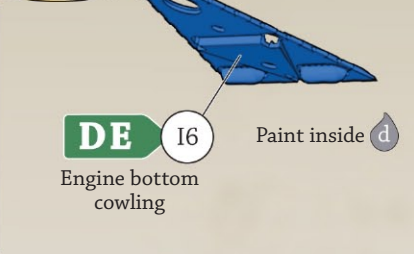
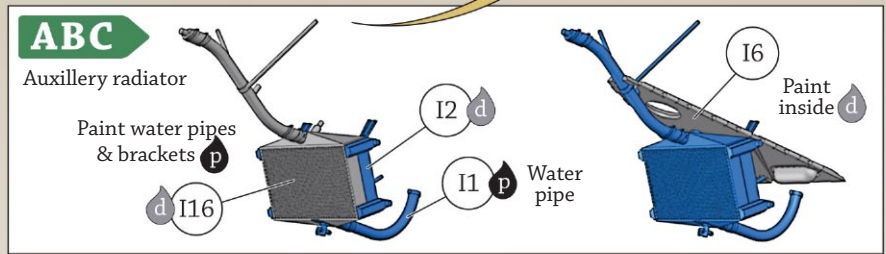
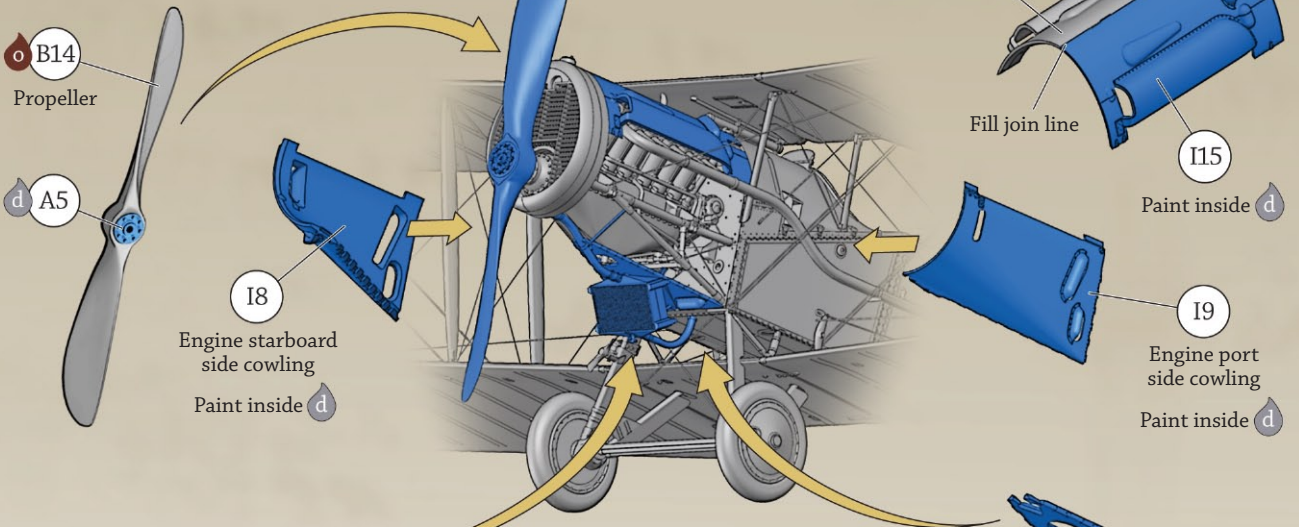
Radiator and engine cowling detail from Bristol F.2b Fighter Mk.II J7654 as seen on page 6. Note the empty brackets for the Aldis sight and generator.



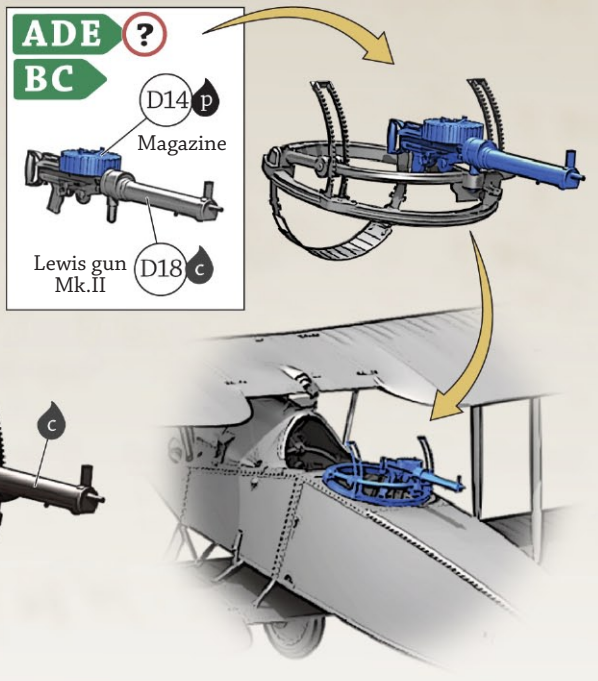
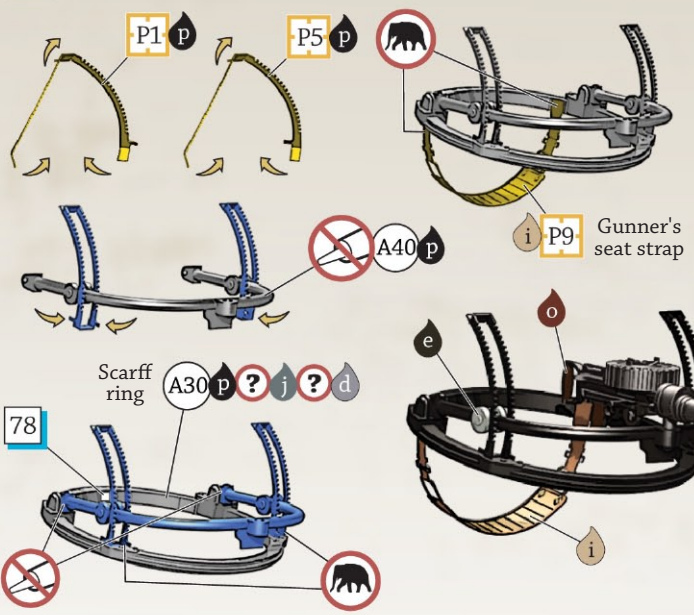
Engine cowling details from Bristol F.2b Fighter Mk.II J6611 as seen on pages 22 & 26. Note the slightly reduced size of the front cooling slot.



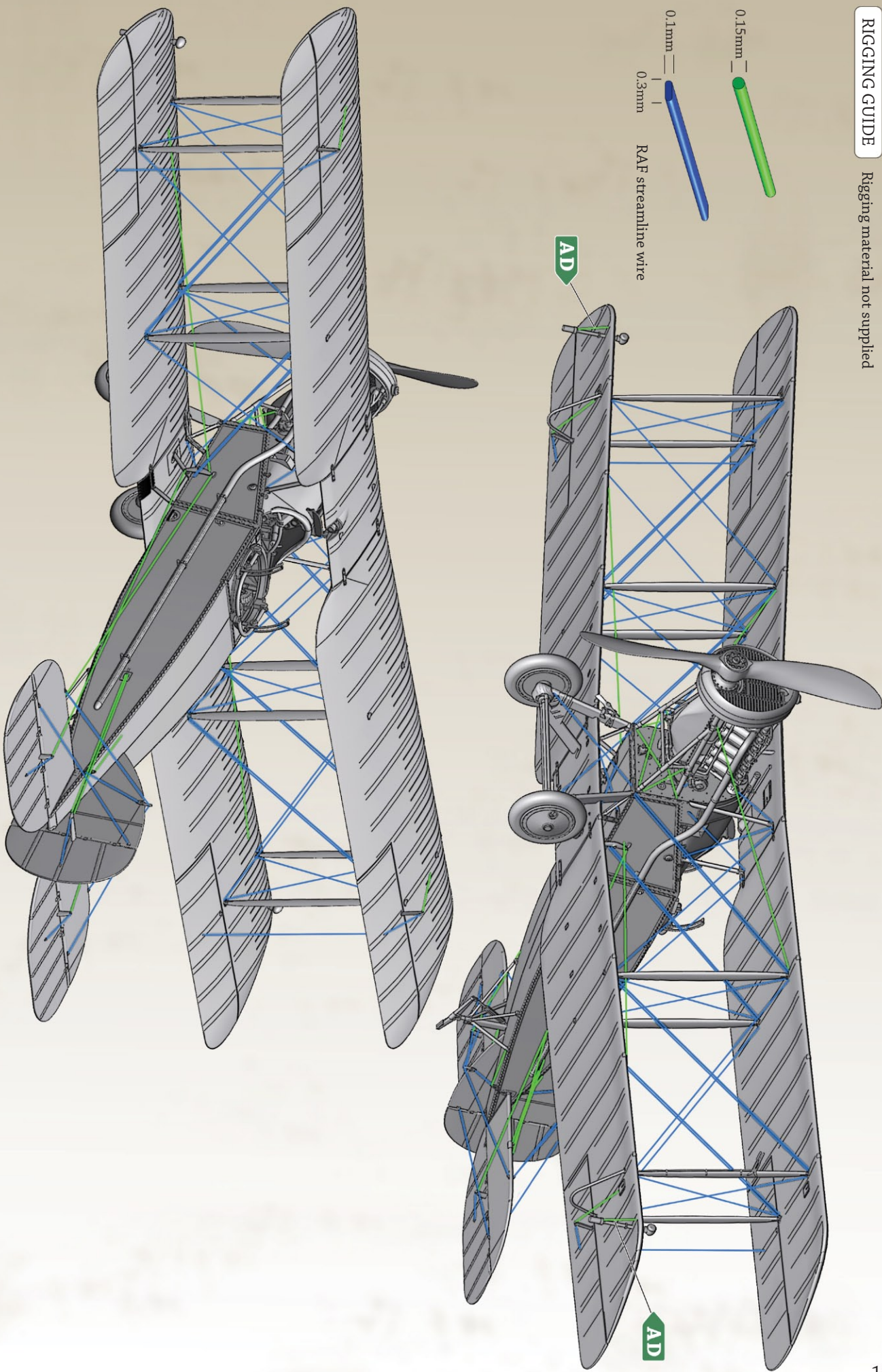
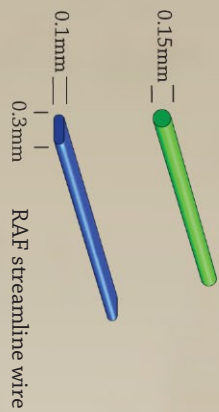
13 PROPELLER & ENGINE COWLINGS



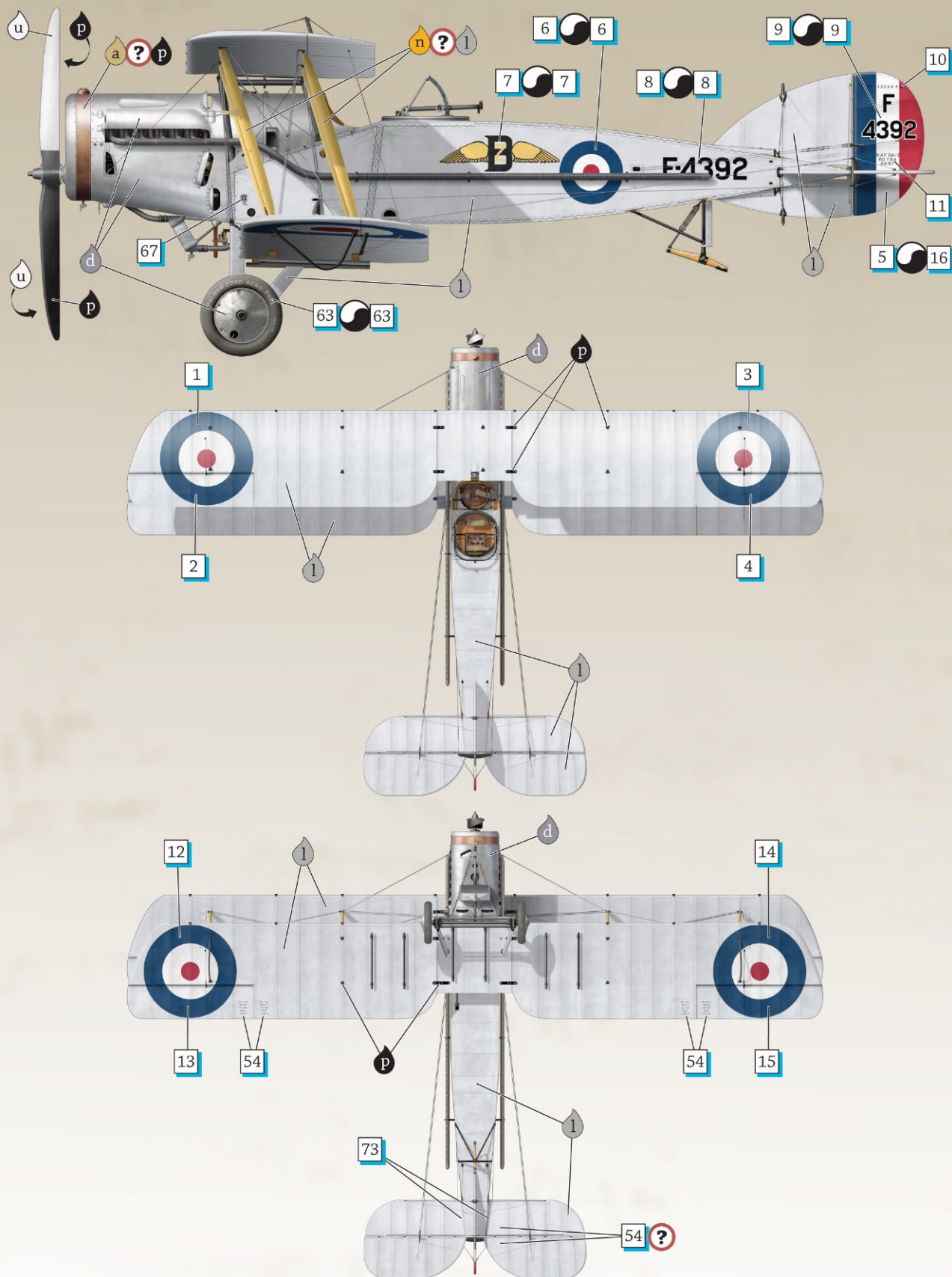
14 LEWIS GUN AND SCARFF RING



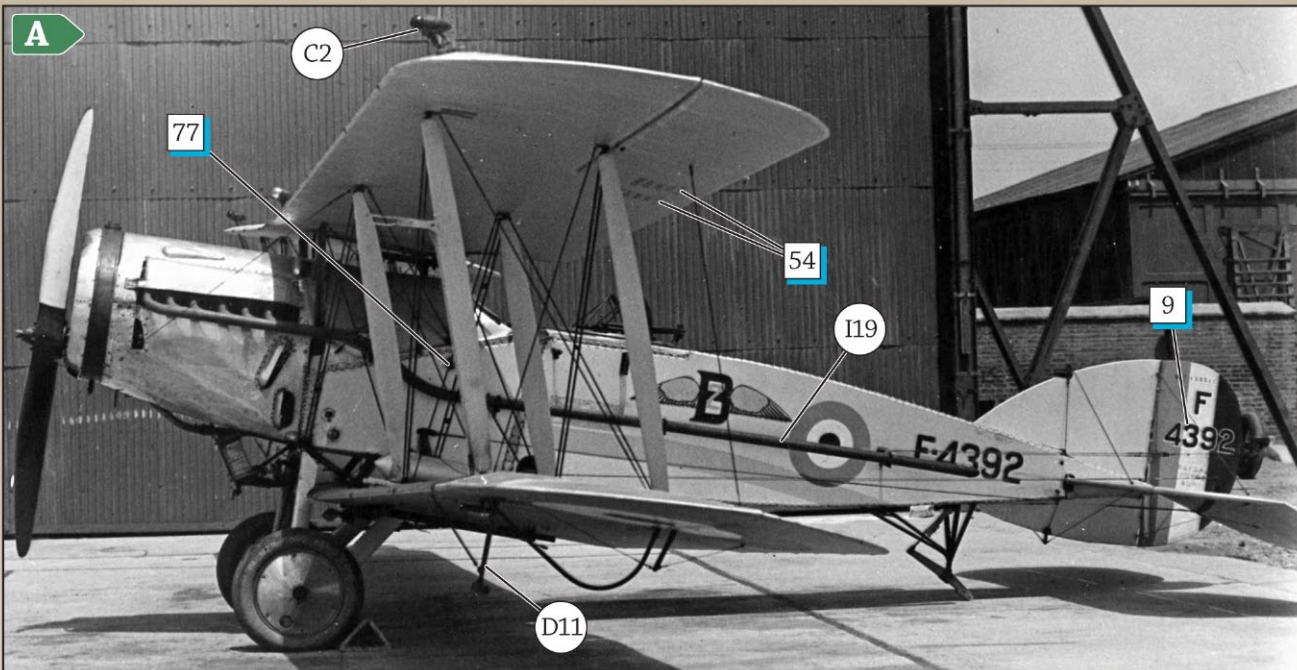
Scarff ring details, note the twin Lewis gun mounting.



A Bristol F.2b Fighter Mk.II F4392 'B2', Aboukir Egypt, 1926

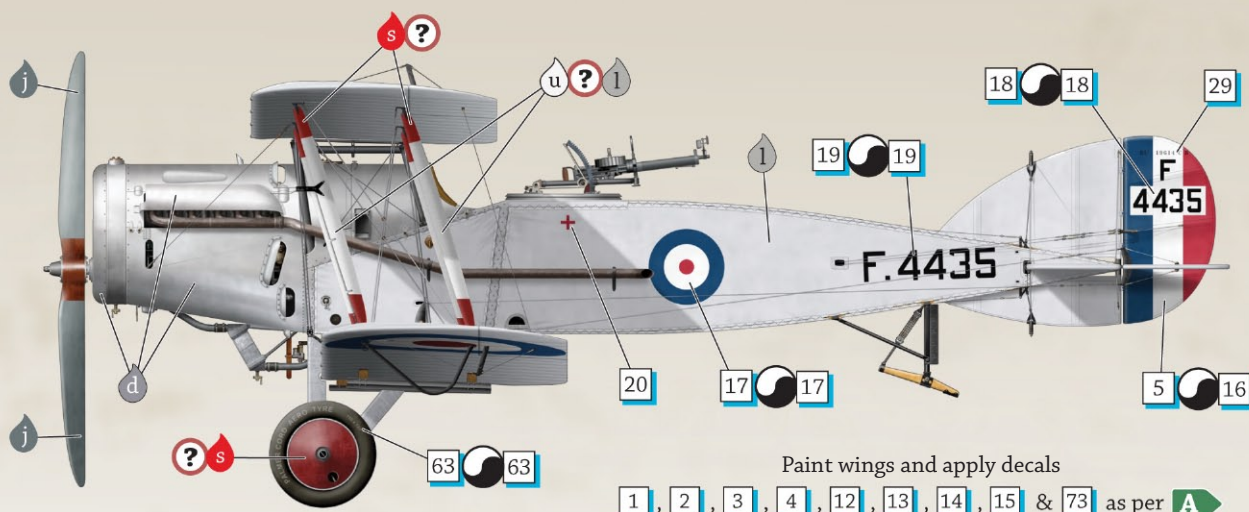


Bristol F.2b Fighter F4392 was originally delivered to the RAF in April 1919. It was reconditioned in March 1925 and is illustrated here as it appeared when photographed in 1926 at Aboukir in Egypt. Note the black and white propeller, long perforated exhaust and tropical radiator. Engine cowlings and wheel covers are polished aluminium while the fuselage (and wings) appear to be silver doped. The interplane struts were possibly silver doped or painted the same colour as the 'winged 2' of the unconfirmed squadron marking on the side of the fuselage. Holt flares are attached under the bottom wings and lights are fixed to the top wing.

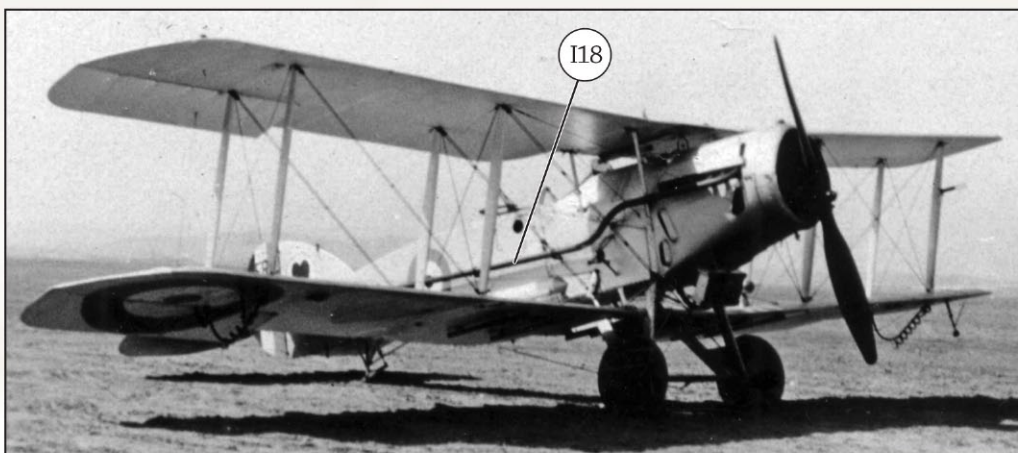


Bristol F.2b Fighter Mk.II F4392 'B2' photographed in 1926 at Aboukir.

B Bristol F.2b Fighter Mk.II F4435, 208 Sqn, Ismailia Egypt, 1925

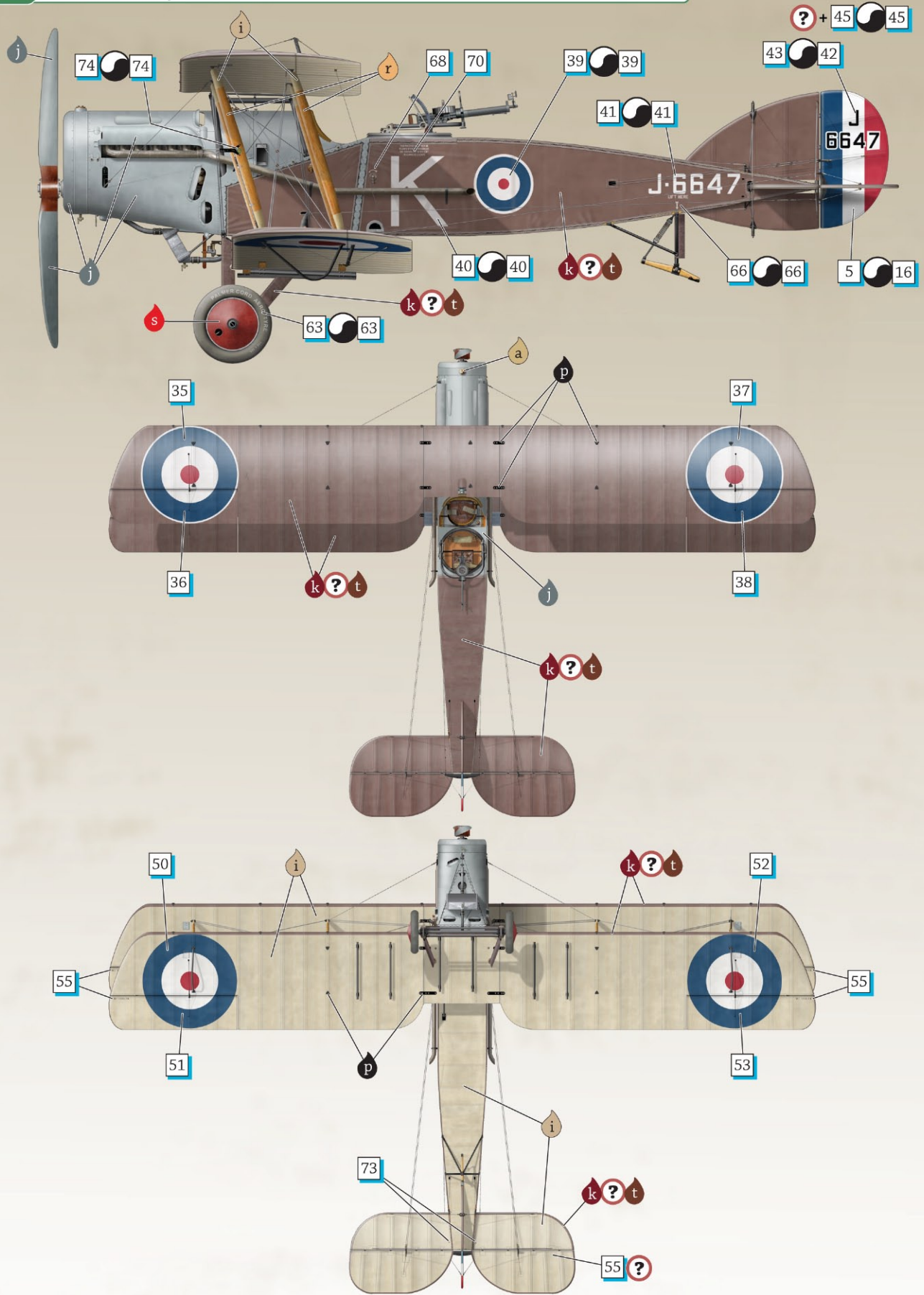


Bristol Fighter F4435 was delivered to 12 Sqn RAF while they were on occupation duties at Haumar near Cologne in September 1919. After returning to the UK in January 1921 F4435 was based at Cranwell before being sent to Egypt in December 1924. By August 1925 it was with 208 Sqn RAF where it remained until October 1929. The engine cowlings are polished aluminium while the fuselage and wings are silver doped. The dark wheel colour is unconfirmed and may have been a Squadron or flight marking which was repeated at each end of the (white?) interplane struts. Note the auxiliary radiator, shorter exhaust and the red cross under the gunners cockpit indicating the first aid kit location. When photographed in flight, F4435 was fitted with a message hook, Holt lights on the top wing and 'screw downs' for securing the aircraft to soft ground.

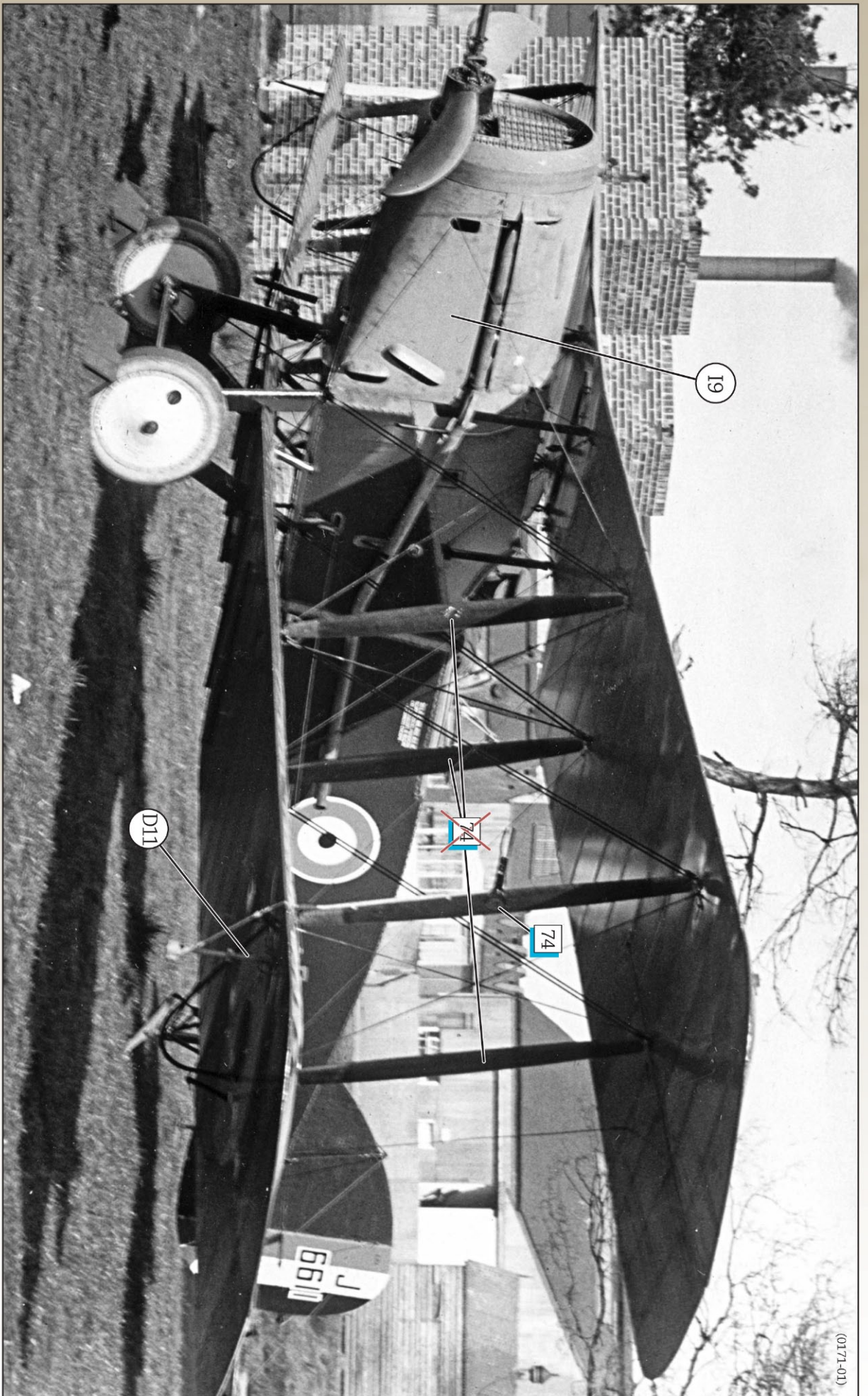


An unidentified Bristol F.2b Fighter Mk.II from 'Hearts' flight 208 sqn. Note the variable pitch propeller, long perforated exhaust, 'screw downs' lashed to the wing skids and Holt landing flare brackets.

C Bristol F.2b Fighter Mk.II J6647 'K', Gerard Combe, 31 Sqn, Dardoni India, 1923



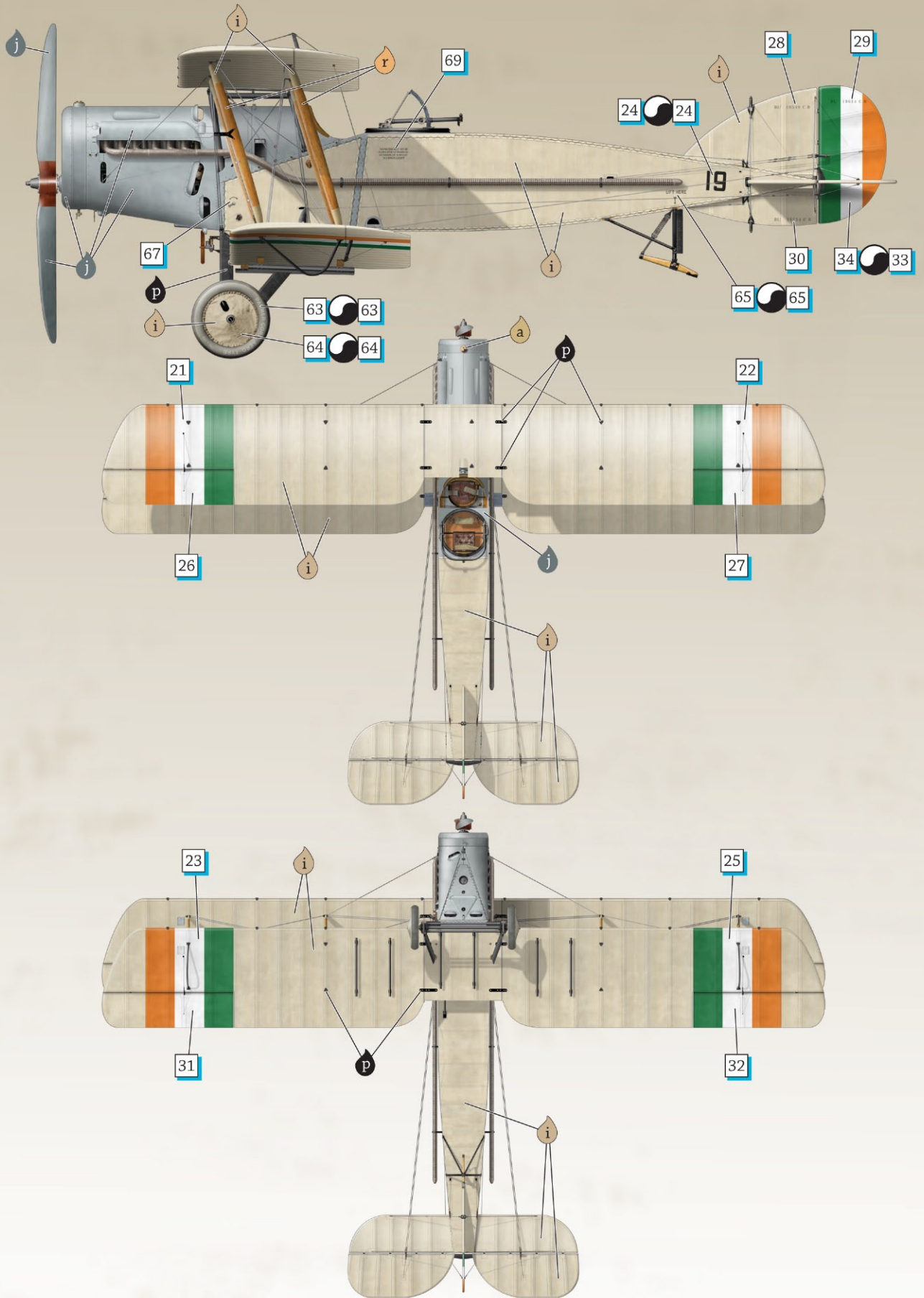
Bristol F.2b Fighter Mk.II J6647 'K' served with 31 Sqn at Dardoni in India (now part of Pakistan) and is illustrated here as it appeared when flown by Gerard Combe on bombing missions to Spinwam in North Waziristan in early 1923. Note the tropical radiator and BSG engine cowlings. We have illustrated the upper surfaces finished in dark brown AMAPD **t** but they could equally have been dark reddish brown AMAPDT **k**. The outer faces of the wheels have been painted a dark colour and, although conjectural, red is shown here. Gerard Combe eventually rose to the rank of Air Vice Marshal.



(01/71-01)

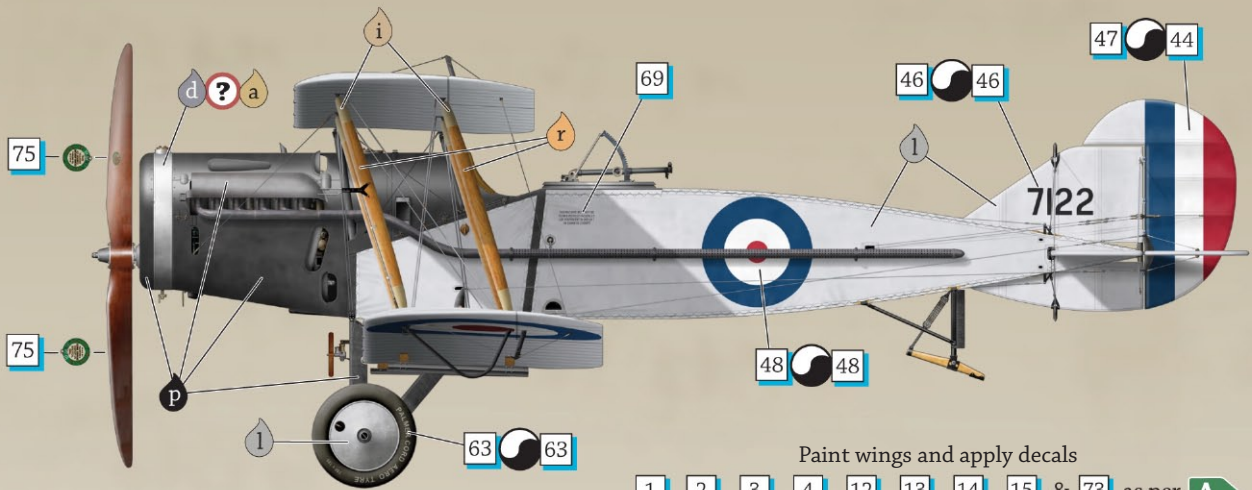
Bristol F.2B Fighter Mk. II J6611 is from the same production order as J6647 ▶ and shows how it would have looked before service in 31 Sqn. Note the BSG engine cowlings & propeller blades, shorter exhaust and Holt flares. Despite previous interpretations (ours included) the Bristol factory decals 74 appear to have been applied to only the outer front interplane struts.

D Bristol F.2b Fighter Mk.II '19', Irish Free State Air Corps, 1925



Irish Free State Air Corps Bristol F.2b Fighter Mk.II '19' is believed to have been Bristol built works number 6860 and was delivered on 20 October 1925. The Irish Free State (now Ireland) was supplied with 6 Bristol Fighters numbered 17 to 22 in 1925. Number 19 is illustrated here with BSG engine cowlings, CDL fabric, long perforated exhaust, and green, white and orange tricolour markings. At one stage it was fitted with Holt flares and lights.

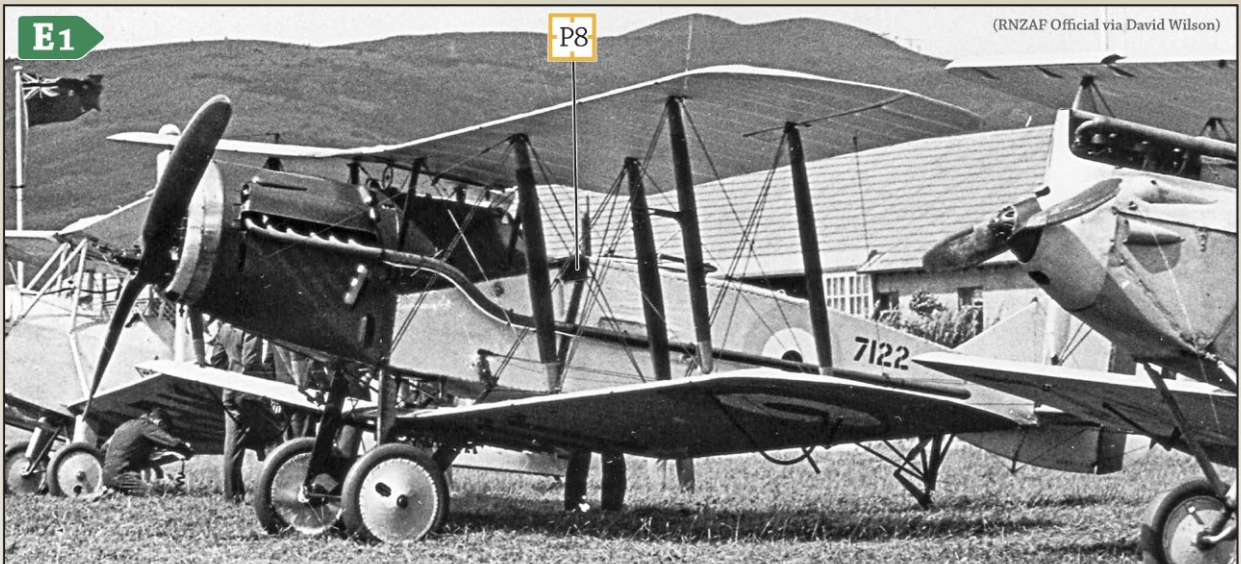
E2 Bristol F.2b Fighter Mk.III 7122, NZPAF, 1930s



Paint wings and apply decals

1, 2, 3, 4, 12, 13, 14, 15 & 73 as per **A**

Bristol F.2b Fighter Mk.III (work number 7122) is believed to be the 3576th and last F.2b manufactured by Bristol. It arrived in New Zealand in August 1927 and was the the 7th and final Bristol Fighter to be received by the New Zealand Permanent Air Force. It made it's final flight in September 1936 before being converted into an instructional airframe later that year. 7122 was finally broken up and destroyed in September 1939, marking the end of 22 years of distinguished service for the Bristol F2b.

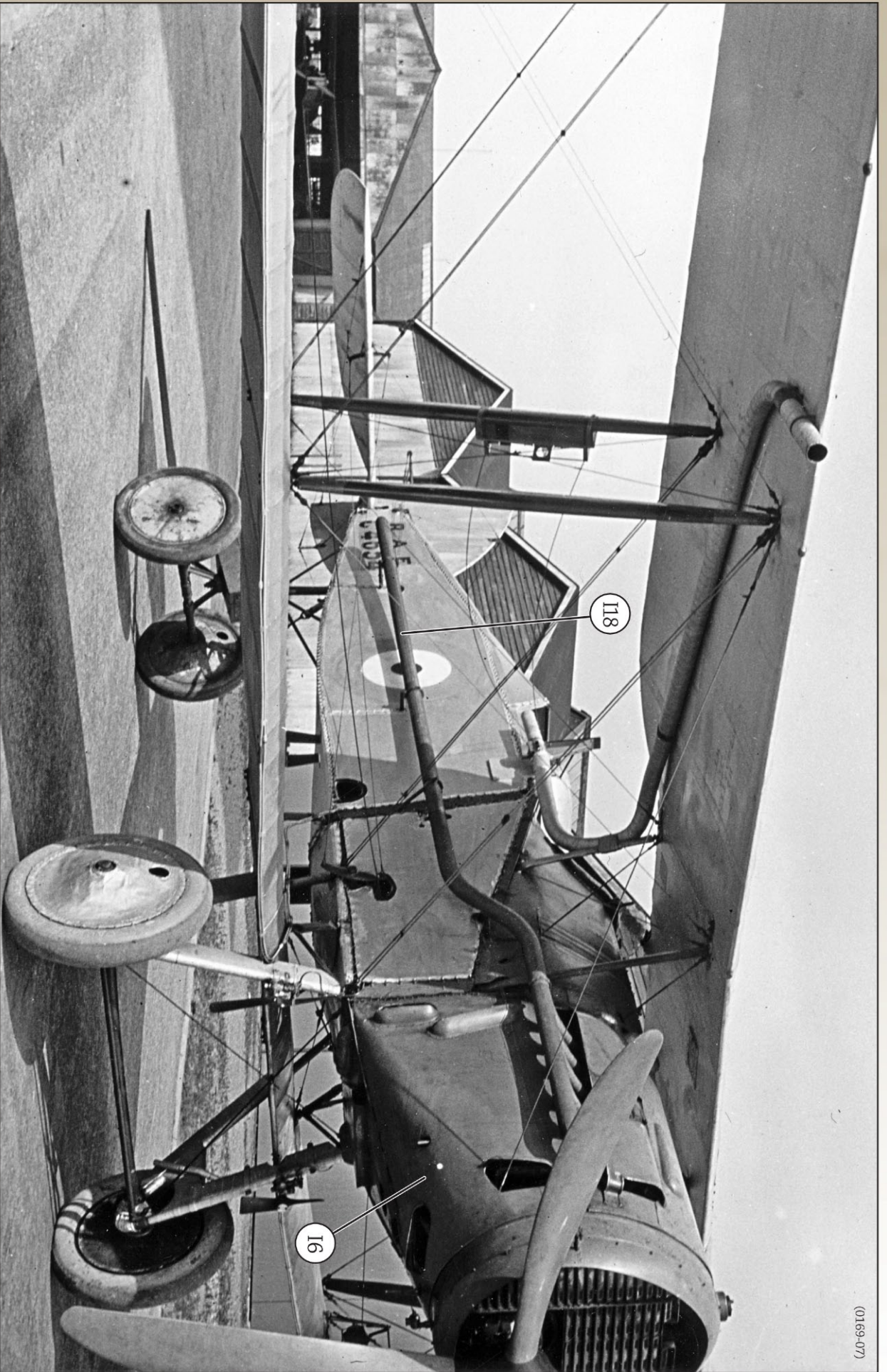


^ Bristol F.2b Fighter Mk.III 7122 is seen here in the company of a pair of DeHavilland Moths. Note the black painted engine cowlings and silver doped fabric which, although possibly just happenstance, replicates the national sporting colours of New Zealand. Note the wide safety belt **P8** just visible hanging from the pilot's cockpit, long exhaust, position of the serial number and the pale blue fuselage roundel. The interplane struts may also have been painted black. The pale blue of the fuselage cockade is notable, compared with the dark blue of the New Zealand flag - however it appears to have been darkened in a subsequent repaint, as evidenced by this photo to the right.

> Bristol F.2b Fighter Mk.III 7122 photographed in flight with 2 Hawker Tomtits dating the photo to after 1931. Compare the position of the serial number, style of tyre valve access hole on the wheel cover and colours of the interplane struts, radiator cowling and fuselage roundel with those seen in the photo above. Although 7122 is fitted with a Mk.IV fin and balanced rudder it retains the original style of tail skid.



The Bristol Fighter underwent many torturous experiments and variations in the post war period. Bristol F.2b Fighter Mk.II C4654 is festooned with numerous meteorological devices at the Royal Aircraft Establishment testing facilities. Note the bulging underside of the fuselage visible on some late service aircraft and that it is unusually fitted with a 4 blade propeller.



(0169-07)



A Hucks starter truck is about to start Bristol F.2b Fighter Mk.II J6611. Note the Holt landing flare brackets and white(?) wheel cover. The Hucks starter truck was based on the ubiquitous Model T Ford and was widely used after the First World War.



3-D Modelling by Matt Fitzgerald

As a qualified Mechanical Engineer Matt's many projects have seen him travel the world working on projects as varied as race cars in the UK, designing off roaders and golf carts in the US to advanced vehicle transmissions back home in Wellington. A keen racer in his youth, Matt started with Go-Karts achieving notable success before graduating to Formula 3 Race cars in later years.

Matt worked at Weta Digital for three years where he was able to continue his passion for challenging technologies and creative projects. For recreation Matt cycles and is an avid follower of many sports.

Additional 3-D modelling by Darren Mildenhall



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.



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



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



32060	1/32 Bristol F.2b Fighter (Post War)	Qty
0132004A	A parts	1
0132004B	B parts	1
0132004C	C parts	1
0132004D	D parts	2
132E0003	E parts RR Falcon Engine	1
0132004F	F parts	1
0132004G	G parts	1
0132060I	I parts	1
0132060P	Photo-etched metal parts	1
7132060	Instructions	1
9132060	Decals	1

If you have any damaged or missing parts please contact help@wingnutwings.com for assistance.



32038 - 1/32 Salmson 2-A2 / Otsu 1



32054 - 1/32 Sopwith Snipe Late



32007 - 1/32 DH.9a 'Ninak'

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