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February 2007
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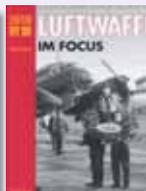
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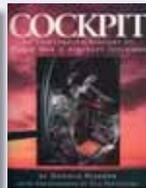
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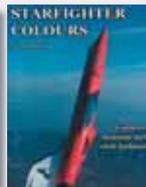
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Paul E. Eden
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Tel: 01908 274433 Fax: 01908 270614
ISDN: 01908 640154

Managing Editor:
Paul E. Eden

Design:
Steve Page
E-mail: steve@regallitho.co.uk

In-Tray, News and Reviews Co-ordinators:
Ernie Lee

Editorial Consultant:
Mike McEvoy

Editorial Assistant:
Thomas Newdick

US Correspondent:
T. E. Bell

Web Master:
James Henry

SAM Shop/Back Issues:
Jennifer Henry
Tel: 01908 274433 E-Mail: jen@regallitho.co.uk

Worldwide Advertising:
Jennifer Henry
Tel: 01908 274433 Fax: 01908 270614
E-mail: jen@regallitho.co.uk

Subscription Department:
SAM Subscriptions, Unit 3, Enigma Building,
Bilton Road, Denbigh East, Bletchley,
Buckinghamshire MK1 1HW
Tel: 01908 274433 Fax: 01908 270614
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Mastering new skills

It's no doubt a strange admission to come from the editor of a modelling magazine, but, through the generosity of our US Correspondent I now have my first airbrush. He has moved onto bigger and better things, leaving his original 'brush redundant and so he passed it on to me. In fact, it's not really my first airbrush. I had a Humbrol 'airbrush set' as a child, but just as I was getting the hang of it it broke - something to do with seals hardening apparently. My local shop took it for service, staff moved on unexpectedly and the whole package was lost never to be seen again.

Now I'm ready to have another go. I've taken the airbrush and its hose and connectors out of the box. I looked at them, then hurriedly put them away again. I can't tell you what type or make of airbrush it is because the whole experience was just too scary. However, I will take it out again and get to grips with it. The airbrushing techniques described by Robin Carpenter in this month's issue, as well as in the past and in forthcoming issues, are likely to help a lot, once I've got over that initial fear. Now I have the tools and the instruction/inspiration, all I have to find is the space and time to experiment. A hoped for move later this year should see us with more space and me with a dedicated modelling/work area, so that should help things along. As for the time, I'll just have to make it. I understand that in the US the airbrush is seen more as a standard modelling tool, but here in the UK I suspect it's something that only the more dedicated modeller aspires too. I'll keep you updated on progress.

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Mike McEvoy and a sudden serendipitous swoop of Swifts	

Front cover: Main picture: Spain is trailing the other Eurofighter partner nations in its deployment of Typhoon. The first operational Spanish unit is expected to stand up in 2007. (Eurofighter); Inset left: Jonathan Burns built his Venom FB.Mk 4 using the 1:72 scale Aeroclub kit. (Roger Brown); Inset right: Great things can be accomplished with Czech Model's JRF and a great deal of modelling skill (David H. Minton)

Features planned for next month include:

Aircraft in Profile: In the last of a four-part series, Adrian M. Balch relates the history of the US Navy's 'Blue Angels' team, while David Howley provides colour artwork

Plus: RAF Sea King walkaround; 1:32 Pearl Harbor P-36; Yoav Efrati describes how he built his award-winning 1:72 scale F-16I Sufa; Scale Aircraft Modelling's 'Big List' of new kits scheduled for release in 2007; Modelling Masterclass Part 17 deals with preparations before painting; Robin Carpenter describes how to airbrush camouflage patterns; and much more



AML's latest **1:72** scale release, kit **No. 72035**, is devoted to an Israeli-operated version of the Czechoslovak-built, post-World War II vintage Messerschmitt fighter. The box art makes use of recent findings made by IAF vintage fighter historian Alex Yaffe who determined that the IAF's first air to air kills, scored by No. 101 Sqn commander Modi Alon, were made in **Avia S-199 D-107**. The box art depicts the downing of one of two Royal Egyptian Air Force C-47s flying as make shift bombers that were attacked over Tel Aviv and Rishon Le Tzion on the afternoon of 3 June 1948.

The kit consists of 47 plastic parts with recessed detail, 21 cast resin parts and two vacformed clear canopies. Plastic parts 3, 19, 20, 21 and 26 are not applicable to the Avia and neither are the fuel tank parts 15 and 30, although these can be used if one wishes to depict a Villetta I or II Spitfire. The instruction sheet line drawings are very well done, showing clearly the positioning of the centerline bomb rack, optional lower nose cowling intake and upper fuselage wire antenna. The painting and markings sheet is printed in colour and depicts four options including D-107, D-108, D-120 and D-123, with D-107 and D-123 showing both early- and late-type markings. Please note that the fuselage colour, RAL6013, available in the Revell range of paints, is not quoted in the instructions; the F.S.34258 quoted is too vivid to represent the actual colour applied to the Avia. Do not be misled by the instruction sheet's suggestion of a dark green for the propeller blades – they should be painted the same RAL6013 green as the fuselage. The decal sheet is beautifully printed with no registration errors and offers markings for six different options. Alternate colour options are provided for the fuselage numbers and stepped arrow, although my research led me to the conclusion that the aircraft numbers were the same blue colour as that on the Star of David roundels. The stepped arrow was painted black, as stated by former Avia pilot Ezer Weissman.



Classic Airframe continues to expand its **1:48** Canberra range with a new **Martin B-57B** kit at £39.95.



Czech Master Resin has a number of new kits in the pipeline. In **1:144** scale expect a **Fokker F.VIIIb/3m** trimotor and **Lisunov Li-2 civil and military** kits.

Modellers in **1:72** scale can look forward to **Blackburn Buccaneer S.Mk 1**, **Boulton Paul P.111/P.111a** (due imminently), **Fokker C.VE** Finnish version, **Douglas Dolphin**, **Blackburn Firebrand**, **Boulton Paul P.120**, **Midget Mustang** (racer), **York C.Mk 2**, **Buccaneer S.Mk 2/2C/2D** in FAA service, **Vampire Mk I**, **Vampire F.Mk 30/FB.Mk 31**, **Spitfire Mk XVII** (due imminently), **Cessna 150**, **Piper PA-18/L-18 Super Cub**, **Spitfire F.Mk IX** (early version), **Spitfire Tr.Mk 9**, **Spitfire Mk IXE/Mk XVII** (foreign users), **Spitfire Mk VII/HF.Mk VII**, **Bristol Sycamore HR.Mk 14/Mk 52**, **MD 900 Explorer**, **Laister-Kaufman TG-4** (glider) and **Pratt-Read LNE-1** (glider) kits.



New from Eduard is the latest in its much-lauded series of **1:48** scale **Fw 190** kits, this time the **A-5** version, the first of the 'long nose' radials in this type (in fact, the nose was only extended 5 in (12.7 cm) longer than that of its forebears). The kit includes a complete engine and detailed gun bays all round, generous colour frets, as well as masks and markings for four machines. Kit **No. 8174** is priced at **£21.60**.

Also, the **Fw 190A-8** kit (**8173**, £21.60), which sold out almost immediately, is once again available after a new run was quickly cranked out by the prolific Czech firm.

Also from Eduard, in its **Limited Edition** series, is a second release of its treatment of the American firm **Accurate Miniatures'** **Yak-1B** (kit **No. 1126**), this time with five more quite colourful markings choices, as well as the trademark Eduard colour photo-

etched fret, separate painting and markings booklet, and adhesive masks. The first Eduard release of the kit last summer sold out in a record two weeks. The new offering is priced at £21.60.

The company has also created a new kit of the **Me 262B** in **1:144** scale, which will be released as a two-kits-for-the-price-of-one offering in mid-February and will include photo-etched parts and decals for several colour schemes.



New releases from Hasegawa are once again prolific. To **1:72** scale the company has **F-4F Phantom II JG 72 'Westfalen Special 2001'** (£17.99), **MiG-29 'Fulcrum' 'German Special'** (£13.99), **RF-4E Phantom II 'Israeli Air Force/IAF'** (£17.99), **Grumman S2F-1 Tracker 'USN/US Navy'** (£13.99), **AH-64A Apache 'Iraqi Freedom'** (£8.99), **F/A-18C Hornet 'VFA-97 Warhawks'** (£13.99), **F/A-18F Super Hornet 'VFA-102 Diamondbacks CAG aircraft'** (£13.99) and **F-14D Tomcat 'VF-31 Tomcatters'** (£19.99).



To **1:48** scale it has **F-4J Phantom II 'Colourful USMC'** (£25.99), **Douglas A-4M Skyhawk 'VMA-311 Tomcats'** (£17.99), **Nakajima Ki-44-II Shoki (Tojo) '85th Flight'** (£16.99), **Lockheed CF-104 Starfighter 'Tiger Meet'** (£17.99), **F/A-18E Super Hornet**

A First Look at the Latest Releases



'VFA-14 Top Hatters' (£32.99), F-4F Phantom II 'JG 74 Molders' (£25.99), P-40 Kittyhawk Mk III (£15.99), P-47D Razorback 'Rescue Squadron' (£17.99), Nakajima B5N2 Type 97 ('Kate') Model 3 (£16.99) and F-14D Tomcat 'VF-2 Bounty Hunters Last Cruise' (£32.99).



ICM has added to its recent 1:48 scale Bf 109F-2 with a Messerschmitt Bf 109F-4 at £13.99.



New kits from MPM include a 1:72 Gloster Meteor FR.Mk 9 to partner the Xtrakit Mk 8, at £15.50.



To 1:48 scale the company has a Heinkel He 177A-5 Hi-Tech version at £64.25.



Revell must surely rank among the world's top model kit producers thanks to its regular output and excellent new release programme. The latest 1:72 scale kits from Revell to reach SAM are both from brand new models. The C-160 Transall kit costs £19.99 and amazes in the box. It includes full internal detail – with a large 'capsule' to be enclosed within the fuselage halves for the cargo hold – detailed undercarriage units and a full flightdeck. Its 72-stages of instructions include guides to the colouring and application of markings from its huge decal sheet, for five aircraft. Four of these are German: the subject of the box art, 50+96 in special colours to mark the 30th anniversary of its parent unit, LTG 61, Penzig, Bavaria, November 1987; 51+09, LTG 61, Penzig, Bavaria, November 1980; 50+42, LTG 63, based at Hohn Schleswig-Holstein, but as it appeared at Volant Rodeo 1982, summer 1987; and 51+01, LTG 62, Wunstorf, May 1981. The fifth aircraft depicted is a French machine, 64-GQ, 64^{ème} ET 2/62 'Anjou', Reims, Champagne. The Transall offers exceptional value for money, while the second of Revell's new subjects, Eurocopter Tiger UHT/HAP is also an excellent buy at £6.99. It includes some unbelievably fine components and thankfully its large transparency is separately bagged. A full weapons load, with alternative stores, is provided, along with decals for Tiger UHT 74+04, 74+07 or 74+08, Heeresflieger, Franco-German Pilot School, Le Luc, southern France, October 2006; Tiger HAP ATA, ATB or ATE, French army, Franco-German Pilot School, Le Luc, southern France, October 2006; and HAP demonstrator F-ZWWY.



Roden also has great plans, with the following 1:72 scale kits in development: Staaken R.IV (Schule 27/16) (open

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Contact Paul E. Eden at the editorial address

The In Tray



cockpit) and **Sopwith Comic Fighter**.

To **1:48** scale the company plans **B.E.12a**, **DH-4 (USA)**, **DH.4**, **DH.9**, **B.E.2c**, **B.E.2e**, **Bristol Fighter F.2b Mk IV**, **DH.4 passenger**, **DH.4 Puma engine**, **DH.4 (with RAF 3a engine)**, **Junkers D.I (early)**, **Junkers D.I (late)**, **DH.9c passenger**, **DH.9 ambulance** and **OV-1C Mohawk** kits.

Roden is also working on **S.E.5a (Hispano Suiza)**, **SPAD VII C.1** and **Albatros D.III (OAW)** kits in **1:32** scale.



RS Models has **1:72** **Tachikawa Ki-94-II** **prototype/four blade propeller** and **Tachikawa Ki-94-II high-altitude interceptor/six-blade propeller** kits available at £19.50 each.



Special Hobby has **1:72** scale **C-60**



Lodestar (£17.70) and **F2A-2 Buffalo 'Yellow Wing'** (£11.25) kits on offer.



To **1:48** scale it has **Fairey Albacore Mk I** (£30.50) and **Vought F2G-1/2 Super Corsair** (£20.99) kits.



Trumpeter has more sets in its **1:700** scale aircraft series designed for its aircraft-carrier kits. At £2.99 per set, these include **F2F**, **F2A**, **SBC scout**, **SB2U**, **F3F**, **BFC fighter-bomber**, **SBU scout bomber** and **TG-2 torpedo bomber** (above) sets.

To **1:72** scale Trumpeter has a **Fairey Gannet T.Mk 2** (£12.99).

In **1:48** scale it has expanded its



Vickers Wellington range with a **Wellington Mk III** on offer at £49.99.



Finally, to **1:32** scale Trumpeter has a **Grumman F4F-3 Wildcat late** version kit at £29.99.



Zvezda has a **1:72** scale **Junkers Ju 88G-6** kit priced at £11.50.

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Eurofighter Typhoon Europe's superfighter

Steve Davies overviews Typhoon's inception, its development, and its entry into service with the four partner nations of the United Kingdom, Germany, Spain and Italy. He concludes with a breakdown of the jet's various 'Tranches' and 'Blocks'.

At the 1982 Farnborough International Air Show, the UK government announced that it would contribute financially to the private development by British Aerospace (BAe) of an experimental aircraft technology demonstrator. A contract for the demonstrator was signed in May 1983, with the cost being shared between the UK Ministry of Defence, British Aerospace, Aeritalia and partner equipment companies in the United Kingdom, Italy and West Germany. The

Right: A No. 3 Sqn Typhoon FMk 2 rests on the ramp at RAF Leuchars. No. 3 Sqn is the RAF's first operational Typhoon squadron and is tasked with operating this capable swing-role fighter in an offensive support capacity that involves a range of air-to-air and air-to-ground mission types. The RAF's newest operator, No. 11 Sqn, operates the aircraft in a pure air defence capacity. (Paul E. Eden).

Top: The Aeronautica Militare Italiana formed its first operational Typhoon squadron at Grosseto in January 2006. The AMI was first to use the aircraft operationally as part of an air defence structure protecting such events as the Genoa G8 summit, the burial ceremony for Pope John Paul II and the coming into seat of Pope Benedictus XVI. (all Eurofighter unless otherwise credited)





This No. 29 Sqn RAF Typhoon T.Mk 1 is in 'clean' configuration with the exception of a pair of simulated ASRAAM IR missiles.

Experimental Aircraft Programme (EAP) was born.

EAP was the forerunner to what would eventually become known as the Eurofighter Typhoon/EF2000, and its primary purpose was to take the very latest aerospace technologies, previously partially developed in isolation, and to combine them to help define the European Fighter Aircraft (EFA). EFA was a 4th generation jet fighter that would replace front-line fast jets (Tornado, F-4, F-104 and Jaguar) equipping the air forces of the UK, West Germany and Italy. EAP's technologies included carbon fibre composites, a co-bonded wing, and an advanced cockpit with all the data required by the pilot shown on multi-function colour displays.

EAP was spawned by BAe's private venture into what it called the Agile Combat Aircraft, itself driven by the 1970s'

Right: The low-weight and high-thrust of Eurofighter makes afterburner take-offs unnecessary, although a number of factors are involved in deciding whether to use 'augmentation'.

requirements of the UK and West German governments for new a fighter. Between 1979 and 1984 the UK, West Germany, France, Italy and Spain tried repeatedly to work cooperatively to develop a common fighter, but France eventually left the partnership to pursue its own ACX programme (which matured as the Dassault Rafael).

The sole EAP, ZF534, first flew in August 1986 and over the course of the

next 5-years would prove pivotal in allowing the key concepts, technologies and attributes of the EFA to be validated. In 1985 the UK, Germany, Italy and Spain had signed up to the EFA programme, with initial requirements of 250, 250, 165, and 100 aircraft, respectively.

DPAs and IPAs

March 1994 saw the first ever flight of EFA (Development Aircraft 1 – or, DA1 for



The Ejercito del Aire Espanol's Ala (Wing) 11 is currently the only Spanish Typhoon operator. It is based at Moron Air Base and took delivery of its first aircraft in October 2003.



short), by that time known simply as EF2000. EF2000 featured a cranked delta wing and foreplane (or, canard, although Eurofighter calls these surfaces fore-planes) configuration which was inherently aerodynamically unstable, and therefore lent itself well to superb manoeuvrability. Overall, it bore a strong resemblance to EAP, although the vertical stabiliser was redesigned and the square intake cheek boxes had been sculpted to form a 'smile'. Weighing in at 24,250 lb (11000 kg) empty, and 51,809 lb (23501 kg) at maximum take-off weight, EF2000 was very light for its size (the F-15C Eagle's maximum take-off weight is 68,000 lb/30845 kg, for example).

Despite overcoming major hurdles in the years prior to its first flight – agreement on the selection of the ECR-90 radar had proved particularly challenging, and in 1992 the German government tried without success to leave the programme altogether – arguments over the EFA's specifications and workshare continued well into the decade.

Between 1994 and 1997 a further six DAs were built and flown by the partner nations, with these aircraft each being used to undertake critical aspects of the flight test programme. These were followed between 2002 and 2004 by five Instrumented Production Aircraft (IPAs), all twin-seat models, whose role in the overall development programme is to test and prove the production capabilities of both avionics systems and software.

When the final production contract was signed in 1997, the revised procurement totals were 232 for the UK, 180 for Germany, 121 for Italy, and 87 for Spain.

Eurofighter Typhoon, the official name given to the jet, is characterised by BAE Systems as 'a highly agile air superiority and air-to-surface, multi-role weapon system'. In excelling as a 'swing-role' fighter, the Typhoon benefits from superb performance as a result of its low wing loading and high thrust-to-weight ratio; stealthy design technology that reduces its frontal radar cross section, and reliance on passive sensors; a supercruise capability that allows it to easily cruise above the speed of sound without having to use afterburners; a sophisticated array of attack sensors and weapons with which to reach out and kill the enemy; and a strong airframe built from carbon fibre composites, lightweight alloys, titanium and glass reinforced plastics. Add to this an intelligent fly-by-wire flight control system that gives the pilot care-free handling across the flight envelope, and you have all the right ingredients to make Typhoon one of the most lethal jet fighters out there.

Royal Air Force Typhoons

The Royal Air Force received its first aircraft in June 2002, following which No. 17 (Reserve) Squadron converted to type in 2003. It was followed by No. 29 Squadron, and then No. 3(F) Squadron. The initial batch of two-seat aircraft are designated as Typhoon T.Mk 1 machines, while the single-seater is the

Typhoon is some 30 percent lighter than it would have been had conventional materials and techniques been used in its construction. Some 70 percent of its airframe surface area is made up of carbon fibre composites, 15 percent of lightweight alloys and titanium, and 12 percent of glass reinforced plastics. As this No. 29 Sqn F.Mk 2 suggests, this reduction in weight, coupled with two gutsy EJ200 motors, lends the jet a superb thrust-to-weight ratio.



Three No. 3 Sqn F.Mk 2s and a single No. 29 Sqn F.Mk 2 enter the break over Coningsby's runway. The standard load for Tranche 1, Block 1 F.Mk 2s is twin ASRAAM training rounds and a single centreline fuel tank. The RAF put up its first multi-aircraft Typhoon formation – a 'diamond nine', including the aircraft shown here – in November 2006.



Typhoon F.Mk 2. It is expected that the RAF will operate a total of 137 Typhoons, keeping 95 others in reserve as attrition replacements.

Under an agreement known as Case White, No. 17(R) Sqn was initially based at Warton airfield – where the Typhoon is assembled by BAE – in a bid to make its entry into service that much smoother. No. 17(R) Sqn is the Typhoon Operational Evaluation Unit, and as such is responsible for evaluating Typhoon's capabilities and defining standard tactics for its employment. No. 29 Sqn, which also operated from Warton under Case White, is the Operational Conversion Unit that teaches new pilots how to fly the jet and operate its weapons systems. Both Nos 17(R) and 29 Squadrons remained on site at Warton until 2005, when they moved to their permanent residence, RAF Coningsby.

In May 2004 No. 3(F) Sqn became the first front-line Typhoon squadron, also based at Coningsby. Come October, 2006, No. 11 Squadron had formed at Coningsby, becoming not only the second operational Typhoon squadron, but also the first to be dedicated exclusively to air-to-air duties.

Typhoon will replace the RAF's Tornado F.Mk 3 air-defence, and Jaguar ground-attack fighters. Using its swing-role capabilities, the RAF has defined three key roles for the aircraft: Counter-Air (CA), also known as Air Defence; Air Interdiction (AI), which consists of low-



The Typhoon has been optimised to offer a reduced radar cross section from frontal aspects, but it otherwise lacks the all-round stealthy design that is the hallmark of the F-22A Raptor and appears to have no infra-red signature reduction devices.

and medium-altitude attacks using precision-guided, freefall, or retarded bombs; and Suppression of Enemy Air Defences (SEAD), whereby Typhoon engages enemy air defence systems such as surface-to-air missile radars with the Air-Launched Anti-Radiation Missile (ALARM). Tertiary roles include close air support (CAS) of troops on the ground,

and maritime attack. According to the RAF, typical loadouts:

Air Interdiction: 2 x Storm Shadow, 2 x ALARM, 4 x AMRAAM, 2 x ASRAAM, 2 x 1,500-litre (330-imp gal) fuel tank, 1 x 1,000-litre (220-imp gal) fuel tank

Close Air Support: 18 x Brimstone, 4 x

AMRAAM, 2 x ASRAAM, 1 x 1,000-litre fuel tank

SEAD: 6 x ALARM, 4 x AMRAAM, 2 x ASRAAM, 1 x 1,000-litre fuel tank

Maritime Attack: 4 x Penguin, 4 x AMRAAM, 2 x ASRAAM, 2 x 1,500-litre fuel tank, 1 x 1,000-litre fuel tank

The RAF announced controversially in 2001 that its Typhoons would be delivered with the 27mm Mauser canon deleted, but this decision was reversed when it became clear that the resultant changes in mass and centre of gravity would require costly reprogramming of the jet's flight control computers. Instead,

the RAF insisted, the canon would remain but there would be no investment in ammunition for it. Then, in October 2006, the RAF finally relinquished to pressure from within the ranks, and announced that its Typhoons would, after all, make full use of the cannon.

European Typhoons

By the summer of 2006, the four Air Forces of Germany, Italy, Spain and the United Kingdom had flown over 9,600 hours in the Typhoon, and 84 aircraft had been delivered to the four nations. In addition to Germany's 23 aircraft, Italy had received 16, Spain was operating 14, and the United Kingdom had 31 jets on strength.

The Luftwaffe received its first Eurofighter in August 2002, prompting conversion from the MiG-29 by Rostock-Laage based Jagdgeschwader 73 in April, 2003. In July 2006, Jagdgeschwader 74 was also equipped with the jet, forming Germany's first operational squadron, located at Neuburg Air Base. German Typhoons are delivered by EADS at Manching and known as EF2000s in service.

Jagdgeschwader 74 is focused on operational and tactical flying, whereas JG 73's responsibilities include both operational flying and the conversion training of Luftwaffe pilots. The Luftwaffe has already accumulated over 2,000 flying hours on EF2000.

Germany intends to operate 135 EF2000s in the air defence role. These have already replaced the small fleet of MiG-29s inherited with the reunification of Germany in 1989 and will also replace

Left: An Italian air force Typhoon engages both afterburners for a sporty take-off from Grosseto AB. Even with full internal fuel and a full load of missiles, the time from brake release to lift-off using afterburner is less than 8 seconds.

Below: Although rapidly gaining a reputation as 'a pilot's aircraft' on account of its excellent man-machine cockpit interface and care-free flight controls, the Typhoon is also an order of magnitude easier for engineers to maintain.





Large leading-edge slats improve manoeuvrability at low-speeds and high angles of attack. These are scheduled automatically by the Typhoon's flight control computers, which also provide the pilot with two automatic recovery modes at the push of a button on the stick.

Germany's F-4F Phantoms; 40 other EF2000s will assume multirole operations, replacing older Tornado IDS and ECR attack aircraft that are slated for retirement beginning in 2012. The remaining Luftwaffe squadrons set to receive the jet are Jagdbombergeschwader 31 at Norvenich AB, JBG 33 at Buchel AB, and JBG 71 at Wittmund AB.

The Aeronautica Militare Italiana (Italian air force) formed its first operational Typhoon squadron at Grosseto Air

Base in January 2006, and is expected to take delivery of 121 Typhoons from Alenia. 4° Stormo received its first aircraft in early 2004, and once its two squadrons are fully equipped, 26° Stormo is expected to follow suit.

The Ejercito del Aire Espanol's (Spanish air force's) Ala (Wing) 11 took delivery of its first Eurofighter at Moron Air Base in

Sporting a weapon load representative of a Block 5, Tranche 1 Typhoon, this Luftwaffe example totes the Iris-T IR air-to-air missile on its outboard wing pylons, AIM-120 AMRAAM missiles on its wing and fuselage stations, and two 1,500-litre fuel tanks.



flame out at 45,000 ft (13716 m), repeated efforts by the crew to relight them failed. Both men ejected successfully.

Export Eurofighters

The Austrian air force was the Typhoon's first export customer. Its 18 Eurofighters will replace the recently-retired Saab 35 Draken. Austria is expected to receive its first Eurofighters later this year, and its pilots are being trained at Rostock-Laage in Germany by JG 73. Austria's F-5E Tiger IIs will continue to provide its air defence until the arrival of the Eurofighter. The first two Austrian jets are currently being manufactured.

Saudi Arabia has confirmed an order for 48 Eurofighter Typhoons (with an option of increasing that to 72), but there are currently no details available on a delivery time line. However, there is some speculation that Typhoons slated for delivery to the RAF will be diverted to Saudi Arabia in order to expedite introduction to service of the type with the Royal Saudi Air Force.

Tranche 1

The Typhoon has entered service using a phased, building-block approach defined by three distinct 'Tranches'. Certain systems and capabilities are thus installed gradually, helping to spread out programme costs over time. In addition, each Tranche features several 'Blocks' of aircraft, and each new Block features significant improvements. As such, a Tranche 1, Block 1 Eurofighter will be less capable than a Tranche 1, Block 5 jet. However, as new Blocks roll-off the production line, older Blocks will eventually

Right: Austrian dignitaries and the country's first three pilots pose in front of the first Eurofighter being built to fulfil its order for 18 examples. Austrian pilots will visit Rostock-Laage AB to undergo conversion to type under the Luftwaffe's JG 73 conversion unit.

Below: In spring 2006 the Eurofighter consortium began developing and testing the aircraft's air-to-ground capabilities with a view to incorporating laser guided bomb compatibility in Block 5 jets.

be retrofitted to meet the same standard.

Block 1 aircraft have the CAPTOR radar but do not have the DASS (defensive aids sub-system). In addition, they have only basic armament abilities, with limited AIM-9L and AIM-132A ASRAAM employment capabilities to supplement the BK27 gun. These aircraft are designated T.Mk 1 and F.Mk 2 by the RAF.

Block 2 sees the introduction of full software to employ the gun and AIM-9/ AIM-132A missiles. It also adds Direct Voice Input to the cockpit; a data link system; a basic version of the DASS (with radar warning sensors and chaff/flare dispensers); plus some basic electronic countermeasures capabilities. These are designated T.Mk 1A by the RAF.

Block 5 confers full air-to-air capabilities and some 'austere' air-to-ground capabilities. A version of the Iris-T and the AIM-120B AMRAAM will be available to Block 5 jets. A missile approach warning system will equip all Block 5 aircraft, with RAF aircraft also benefiting from a laser warning system. GBU-10 and GBU-16 Paveway II laser-guided bombs will be integrated, as should be the Rafael Litening III and Litening II target pods selected thus far by Britain and Germany,

respectively. Full sensor fusion in the avionics suite, full Direct Voice Input, and full air-to-surface carefree handling complete the Block 5 changes.

All Tranche 1 jets but those for Germany, will receive the PIRATE IRST sensor, and every jet will be equipped with a complete version of the DASS.

Tranches 2 and 3

Tranche 2 Block 8 jets will feature all of the Block 10 hardware, albeit initially supporting only limited capabilities. Block 10 will get the AIM-120C-5, a digital Iris-T, GBU-24 Paveway III bombs, an enhanced digital map, embedded GPS navigation, and an enhanced DASS.

Block 15 assumes that the MBDA BVRAAM Meteor advanced air-to-air missile will be ready for integration, and will introduce Taurus and Storm Shadow air-to-ground cruise missiles. Similarly, compatibility with Paveway IV and GBU-31/32 Joint Direct Attack Munitions is likely. Delivery of Block 15 jets is expected to be complete by 2015.

Tranche 3 is as-yet-undefined, but should include the CAPTOR-E advanced electronically scanned array (AESA) radar.

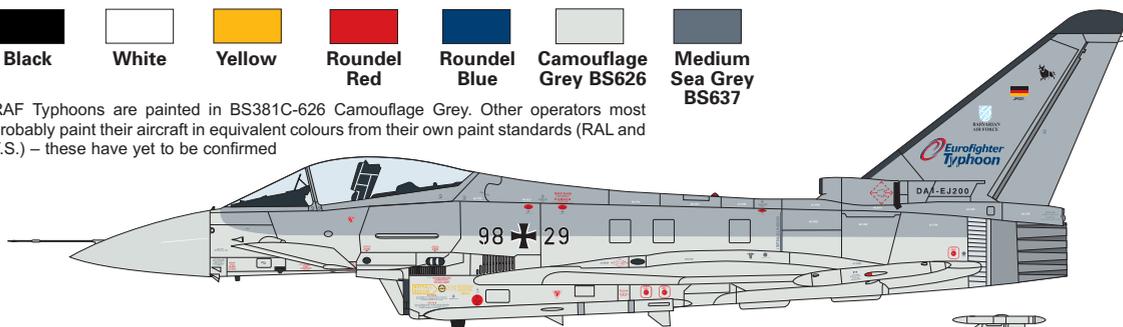
Steve Davies



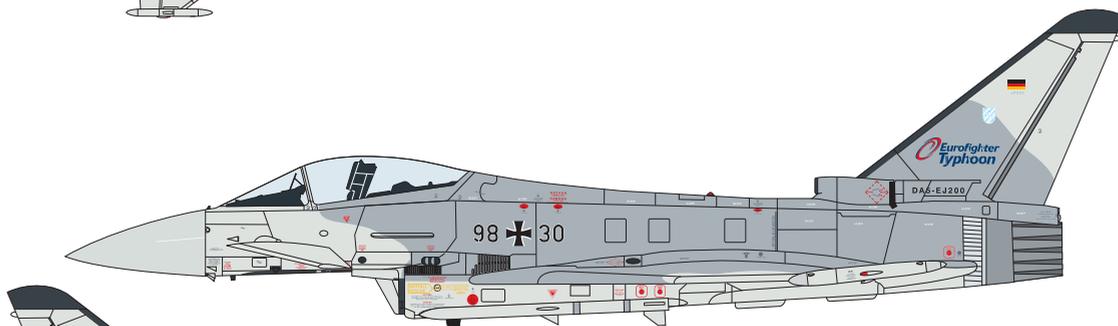
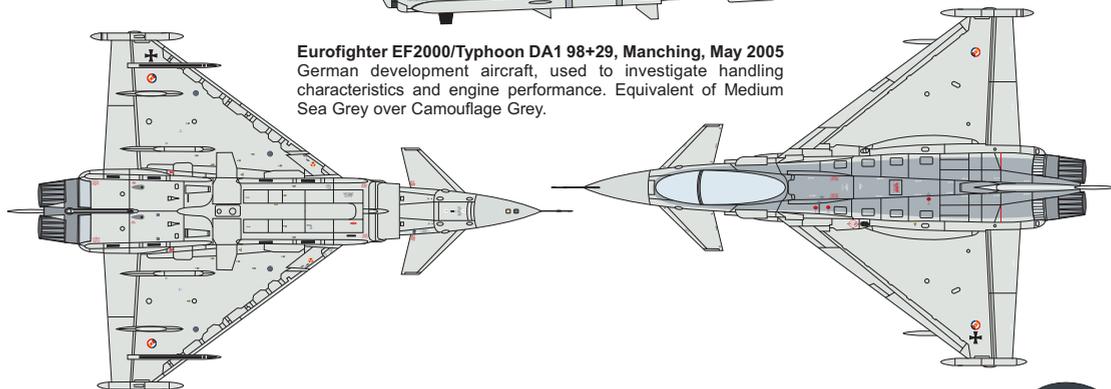
Eurofighter Typhoon drawings by David Howley



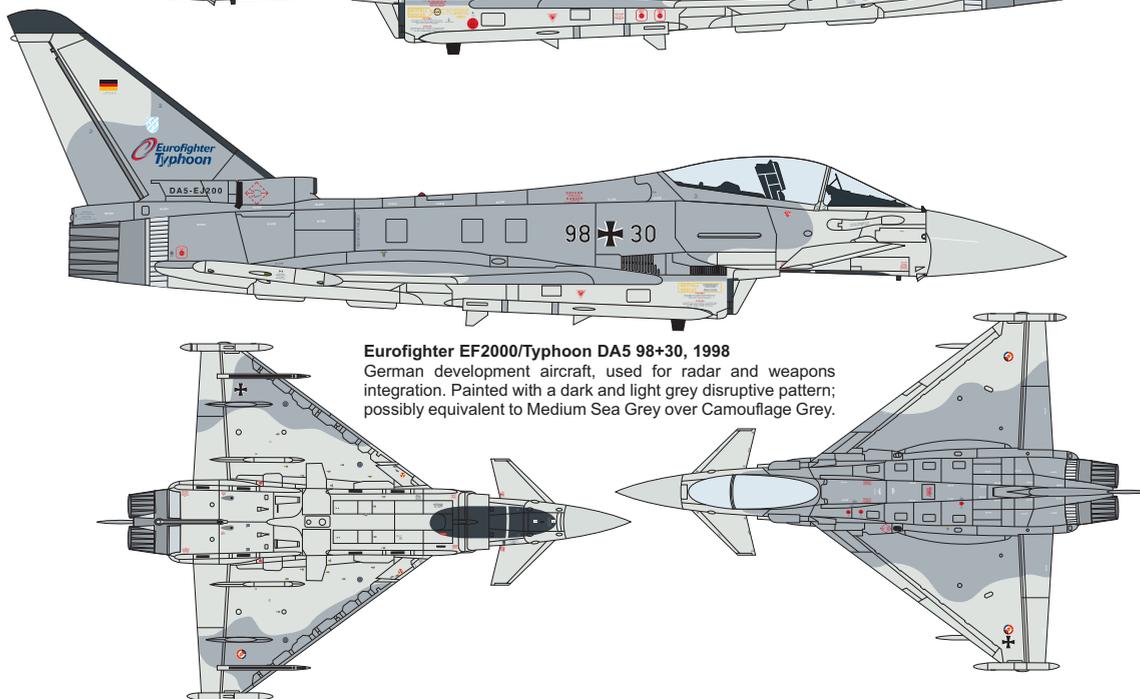
RAF Typhoons are painted in BS381C-626 Camouflage Grey. Other operators most probably paint their aircraft in equivalent colours from their own paint standards (RAL and F.S.) – these have yet to be confirmed

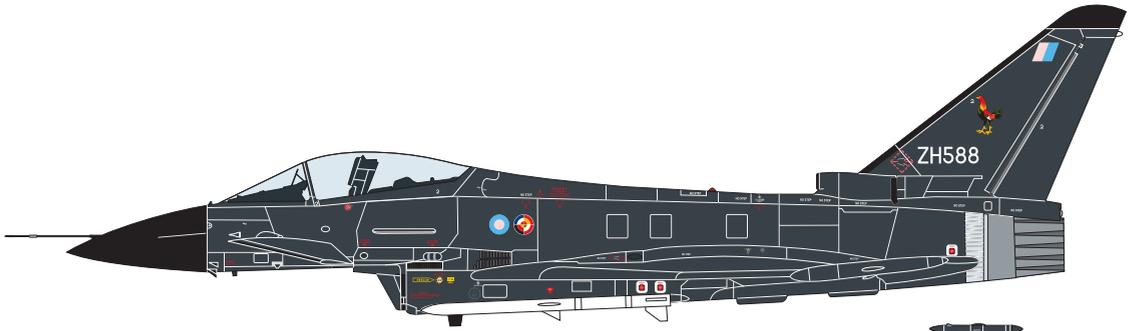


Eurofighter EF2000/Typhoon DA1 98+29, Manching, May 2005
 German development aircraft, used to investigate handling characteristics and engine performance. Equivalent of Medium Sea Grey over Camouflage Grey.



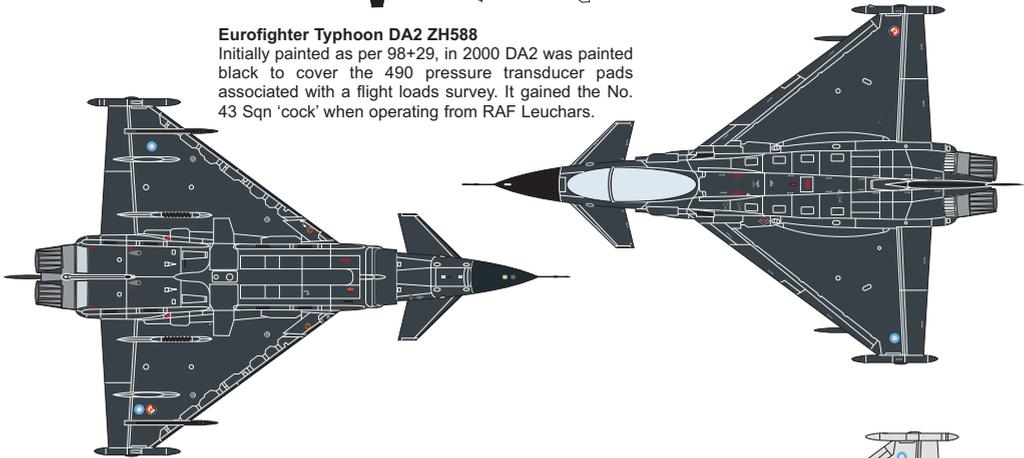
Eurofighter EF2000/Typhoon DA5 98+30, 1998
 German development aircraft, used for radar and weapons integration. Painted with a dark and light grey disruptive pattern; possibly equivalent to Medium Sea Grey over Camouflage Grey.





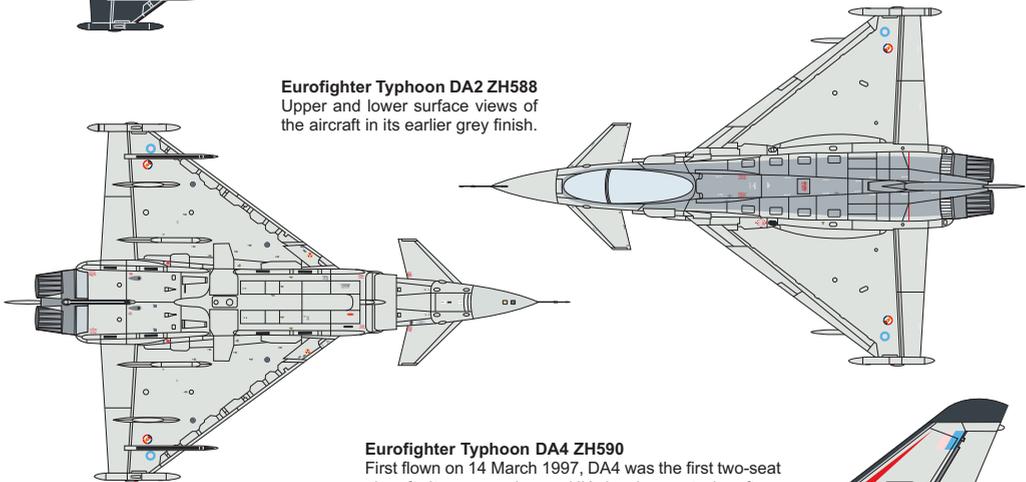
Eurofighter Typhoon DA2 ZH588

Initially painted as per 98+29, in 2000 DA2 was painted black to cover the 490 pressure transducer pads associated with a flight loads survey. It gained the No. 43 Sqn 'cock' when operating from RAF Leuchars.



Eurofighter Typhoon DA2 ZH588

Upper and lower surface views of the aircraft in its earlier grey finish.



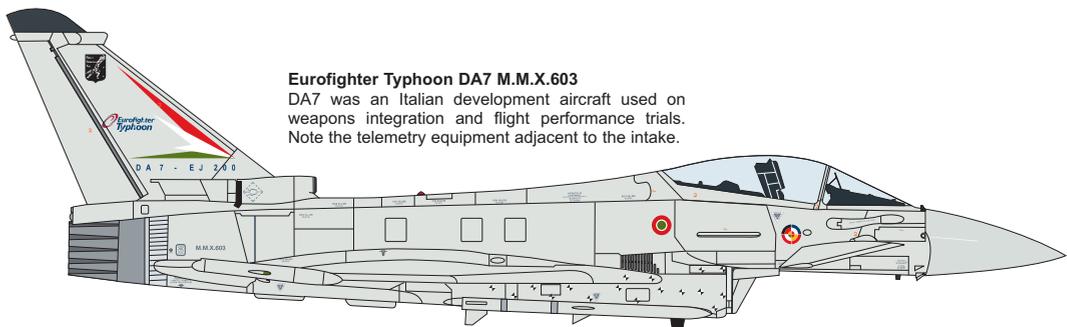
Eurofighter Typhoon DA4 ZH590

First flown on 14 March 1997, DA4 was the first two-seat aircraft. It was used as a UK development aircraft on handling characteristics trials. Overall Camouflage Grey.



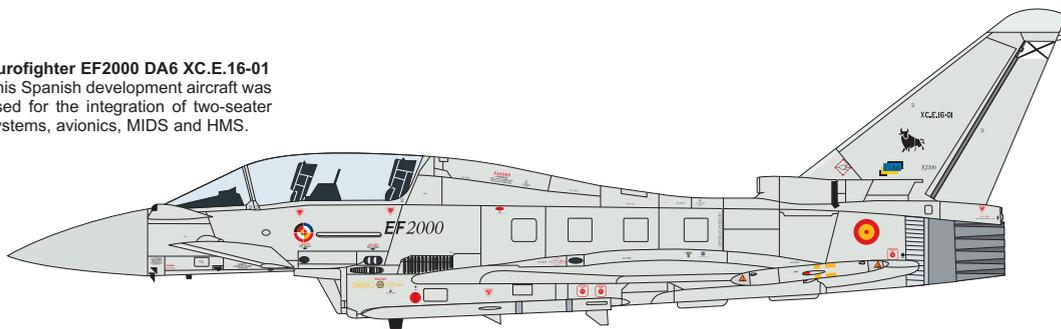
Eurofighter Typhoon DA7 M.M.X.603

DA7 was an Italian development aircraft used on weapons integration and flight performance trials. Note the telemetry equipment adjacent to the intake.

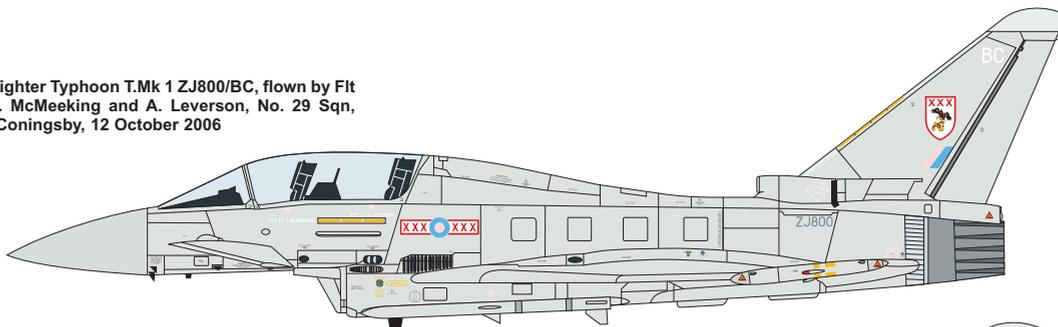


Eurofighter EF2000 DA6 XC.E.16-01

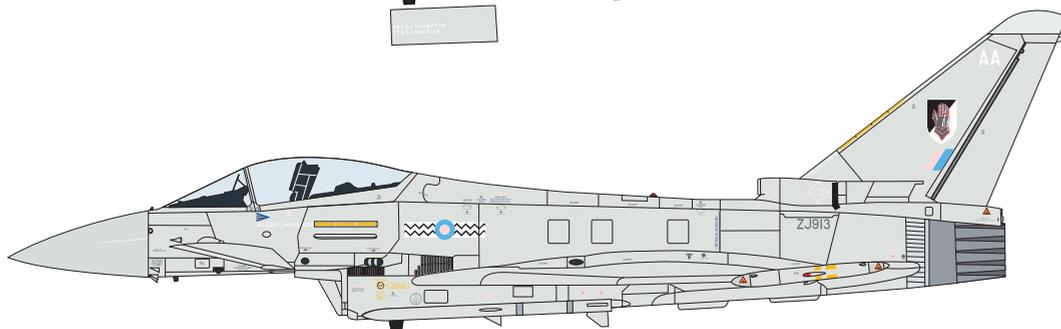
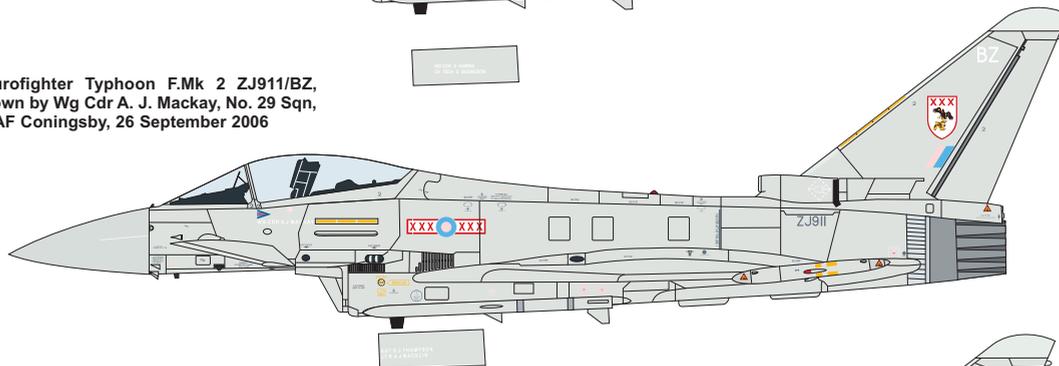
This Spanish development aircraft was used for the integration of two-seater systems, avionics, MIDS and HMS.



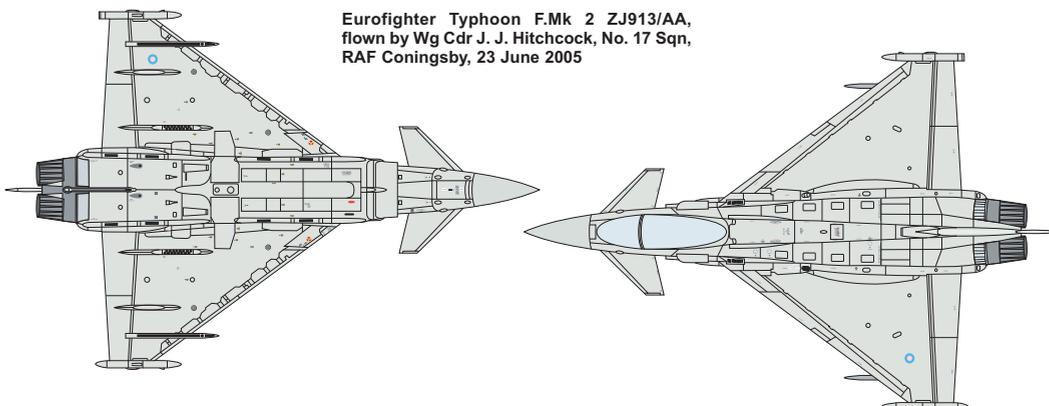
Eurofighter Typhoon T.Mk 1 ZJ800/BC, flown by Flt Lts J. McMeeking and A. Levenson, No. 29 Sqn, RAF Coningsby, 12 October 2006



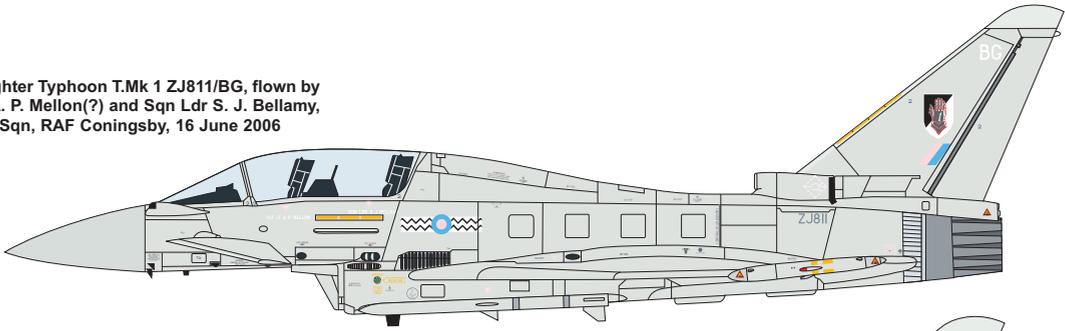
Eurofighter Typhoon F.Mk 2 ZJ911/BZ, flown by Wg Cdr A. J. Mackay, No. 29 Sqn, RAF Coningsby, 26 September 2006



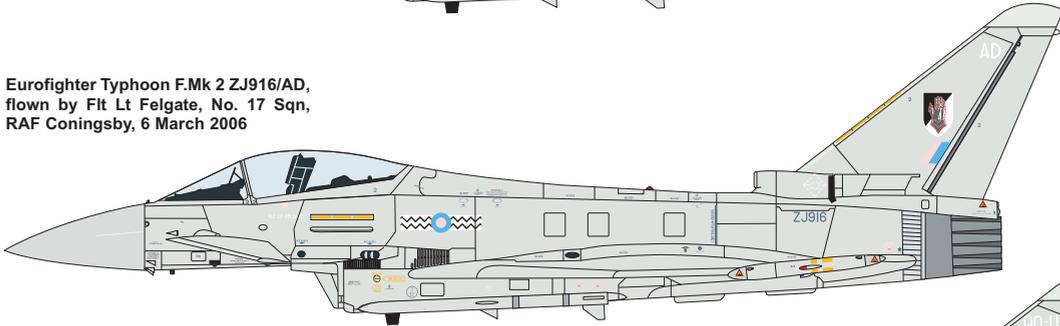
Eurofighter Typhoon F.Mk 2 ZJ913/AA, flown by Wg Cdr J. J. Hitchcock, No. 17 Sqn, RAF Coningsby, 23 June 2005



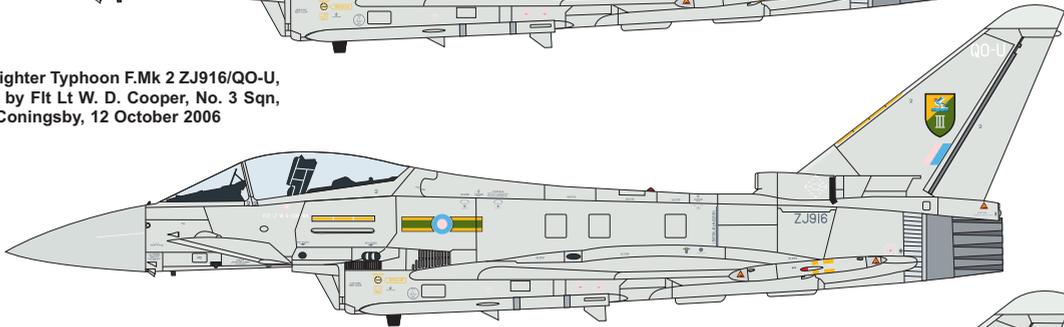
Eurofighter Typhoon T.Mk 1 ZJ811/BG, flown by Flt Lt A. P. Mellon(?) and Sqn Ldr S. J. Bellamy, No. 17 Sqn, RAF Coningsby, 16 June 2006



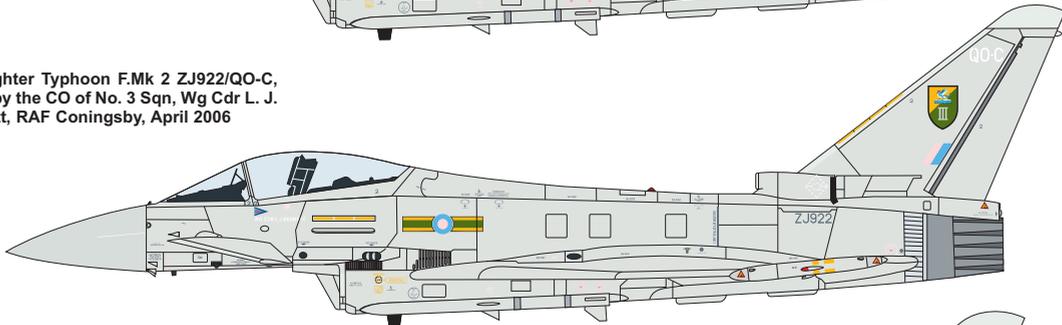
Eurofighter Typhoon F.Mk 2 ZJ916/AD, flown by Flt Lt Felgate, No. 17 Sqn, RAF Coningsby, 6 March 2006



Eurofighter Typhoon F.Mk 2 ZJ916/QO-U, flown by Flt Lt W. D. Cooper, No. 3 Sqn, RAF Coningsby, 12 October 2006

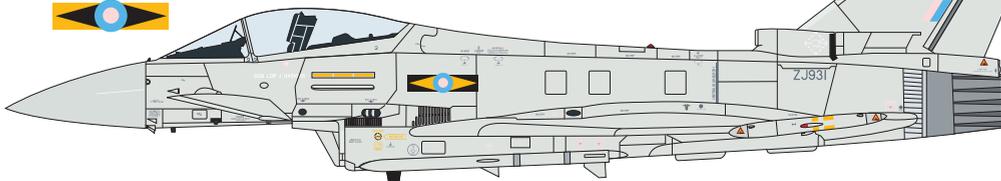


Eurofighter Typhoon F.Mk 2 ZJ922/QO-C, flown by the CO of No. 3 Sqn, Wg Cdr L. J. Bennett, RAF Coningsby, April 2006

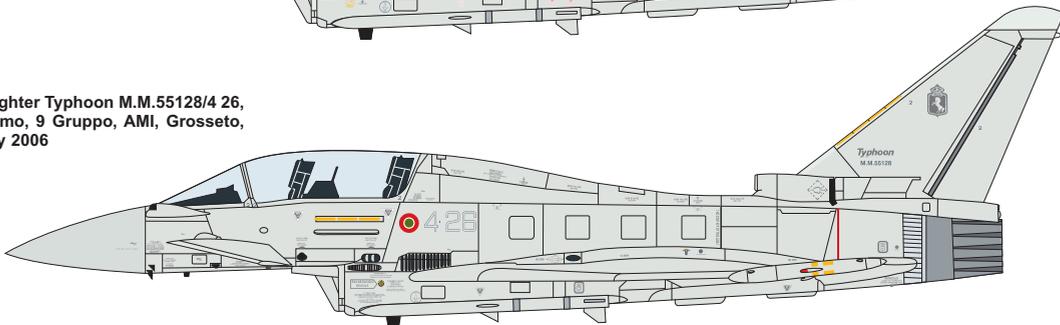


Incorrect bars when delivered to Squadron in October 2006

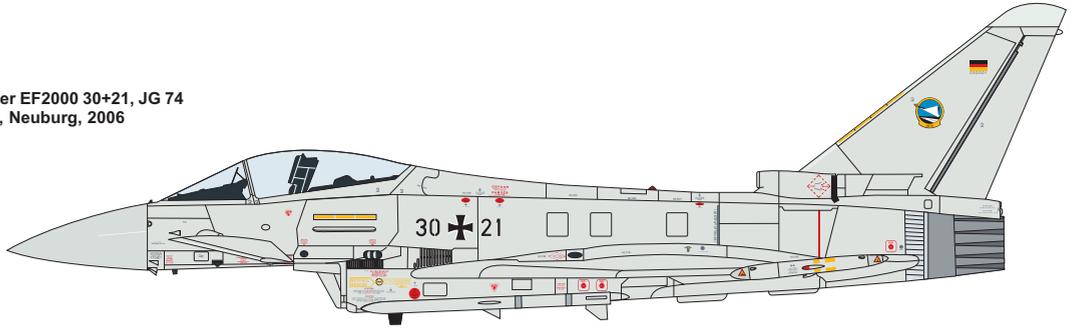
Eurofighter Typhoon F.Mk 2 ZJ931/DA, flown by Sqn Ldr J. Haskins, No. 11 Sqn, RAF Coningsby, October 2006



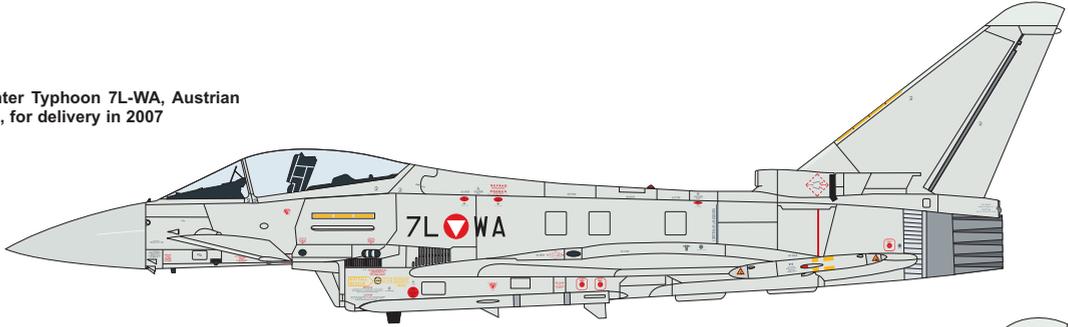
Eurofighter Typhoon M.M.55128/4 26, 4 Stormo, 9 Gruppo, AMI, Grosseto, 23 May 2006



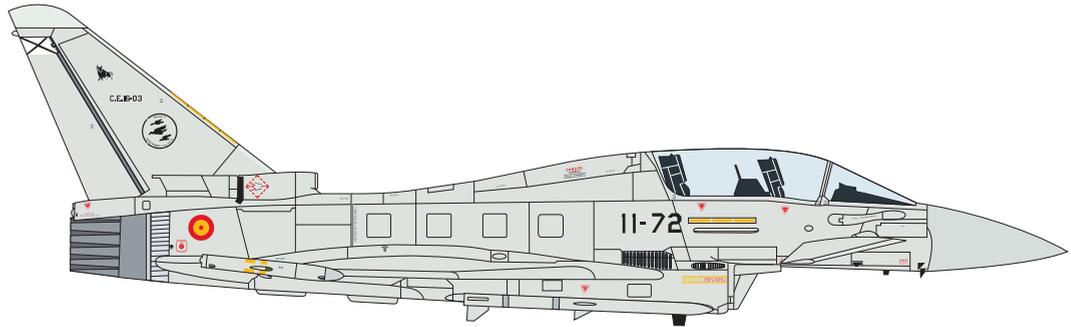
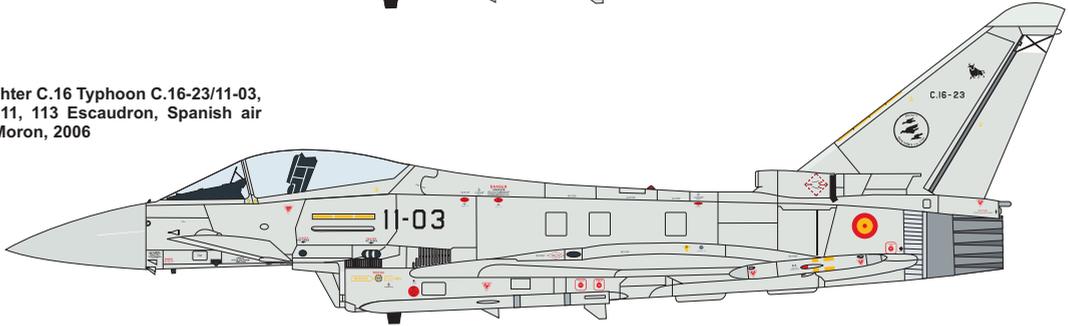
Eurofighter EF2000 30+21, JG 74
'Molders', Neuburg, 2006



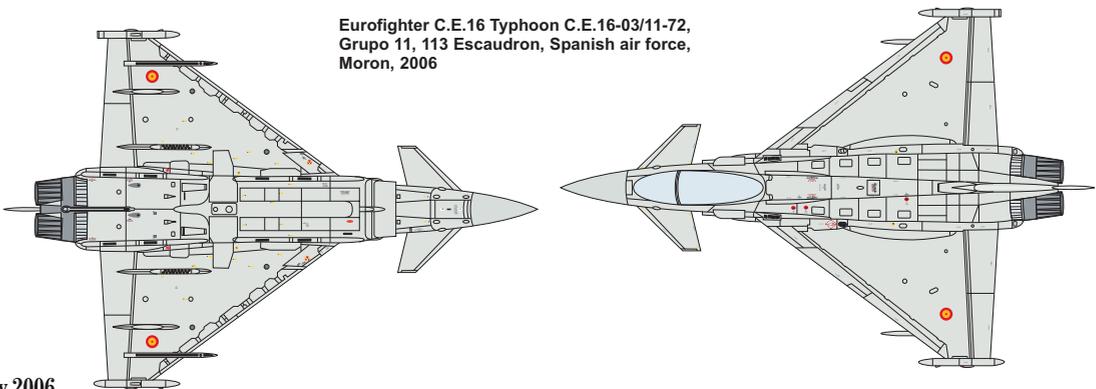
Eurofighter Typhoon 7L-WA, Austrian
air force, for delivery in 2007



Eurofighter C.16 Typhoon C.16-23/11-03,
Grupo 11, 113 Escaudron, Spanish air
force, Moron, 2006



Eurofighter C.E.16 Typhoon C.E.16-03/11-72,
Grupo 11, 113 Escaudron, Spanish air force,
Moron, 2006



Eurofighter Typhoon Kit, Decal and Accessory List

Kits

Scale	Manufacturer	Subject	Status
1:100	Revell	Eurofighter Typhoon (easykit which appears to depict EFA rather than Typhoon)	Available
1:72	Italeri	EF-2000 Eurofighter Twin Seater	Available
1:72	Revell	Eurofighter Typhoon single-seater	Future release
1:72	Revell	Eurofighter Typhoon twin-seater	Available
1:48	Revell	Eurofighter Typhoon single-seater	Available

Decals

Scale	Manufacturer	Reference	Sheet title/contents	Status
1:72	Model Alliance	MA-72137	UK Air Arm Update 2005-2006 – Part 1: includes Typhoon F.Mk 2 ZJ918/QO-L, No. 3(F) Sqn, RAF Coningsby 2006	Available
1:72	Model Alliance	MA-729003	RAF Eurofighter Typhoon T1: includes ZJ802, No. 17(F) Sqn and ZJ822, No. 29(R) Sqn	Available
1:48	Model Alliance	MA-48137	As MA-72137	Available
1:48	Model Alliance	MA-489003	As MA-729003	Available

Accessories

Scale	Manufacturer	Reference	Description	Status
1:72	Eduard	CX104	Mask set for Revell two-seater kit	Available
1:72	Eduard	SS154	Photo-etched set for Italeri single-seater kit	Available
1:48	Eduard	48353	Photo-etched set for Italeri two-seater kit	Available
1:48	Eduard	48376	Photo-etched set for Italeri single-seater kit	Available
1:48	Eduard	49341	Colour photo-etched set for Italeri single-seater kit	Available
1:48	Eduard	49367	Colour photo-etched set for Revell single-seater kit	Available
1:48	Eduard	FE341	Colour photo-etched set for Italeri single-seater kit	Available
1:48	Eduard	FE367	Colour photo-etched set for Revell single-seater kit	Available
1:48	Eduard	EX150	Mask set for Italeri single-seater kit	Available
1:48	Eduard	EX191	Mask set for Revell single-seater kit	Available
1:48	Eduard	XF093	Mask set for Italeri two-seater kit	Available
1:48	Eduard	XF144	Mask set for Italeri single-seater kit	Available



ZJ699 was the first of the Instrumented Production Aircraft. It is shown here engaged in further trials work in April 2006, with an inert loadout of six 1,000-lb Paveway II laser-guided bombs, two AIM-9 AAMs and a pair of 220-lmp gal (1,000-litre) drop tanks. These operations were carried out from BAE Systems' Warton airfield. Note the extended inflight refuelling probe. Eurofighter flew clean and Paveway-armed Typhoons at 2006's SBAC Farnborough show. The heavily loaded aircraft was still able to demonstrate remarkable agility, albeit somewhat diminished compared to that of the clean machine.

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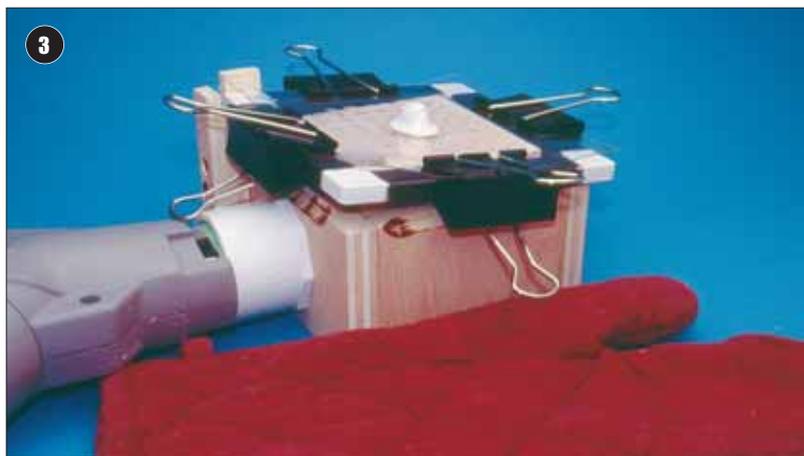
Modelling masterclass

Part 17: Dealing with vacform transparencies

Vic Scheuerman continues his back-to-basics series using a Seafire as his example, describing the techniques he uses in making and working with vacformed transparencies.

Picking up from last month where I described how to deal with transparent parts, here I discuss the subject of canopies further. The first step in acquiring these more advanced techniques is to gain the skills needed for working with vacformed transparencies, both those you have made yourself and those you have purchased. In order to make your own

canopy you will require some form of master. Since most of us will be using the kit part as a master let's start there. In this case the clear part has been mounted onto a blob of Milliput Fine putty. During set up, the Milliput is trimmed away from the canopy edges so that a sharp edge will be produced to clearly define the canopy part (Photo 1). When the putty has cured, drill some holes around its base so that the clear sheet will be sucked right down onto the surface and edges (Photo 2).

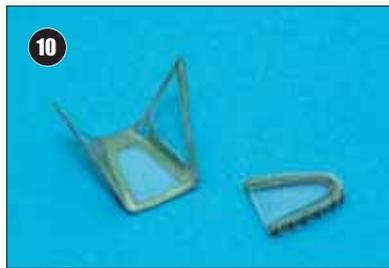
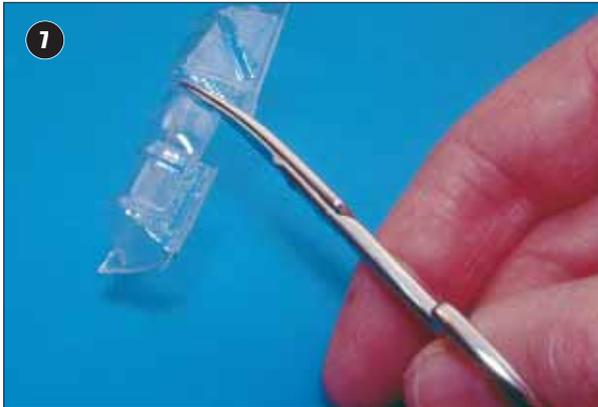
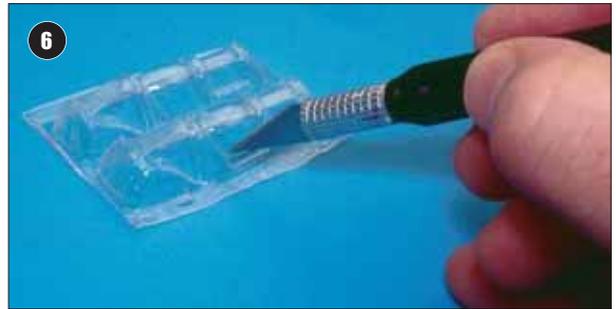


Ensure that the canopy is polished, clean and ready to be put to use. One can either make a small vacforming 'box' or purchase one. I made my own but it ended up being too large for small pieces like canopies, so I took advantage of a small one produced by Kingston Works. This ready-made unit comes complete with frames that clamp together and clear sheets so that it can be put to immediate use. One also requires a vacuum machine, along with a heat source – a pair of oven gloves is also a good idea (Photo 3).

When setting up for production, ensure that all the objects needed are within a tight circle so that they can be readily accessed. In this case use was made of the electric stove and our portable vacuum cleaner. One must ensure a tight fit of the vacuum hose to the machine's outlet and in this example Duct tape was wrapped around the hose until a tight fit was achieved. Next, a section of clear plastic is mounted in the clamps and one of the stove heating elements is turned on to high heat. Ensure that the part to be vacformed is in the centre of the perforated surface and then hold the clear sheet over the element until it softens and droops. With the vacuum on, carefully but quickly place the heated sheet of plastic over the canopy and down to the perforated surface; ensure the gloves are being worn! With practice, you should be producing useable clear parts. Once the plastic has cooled, then the new canopy can be cut away using the Milliput mount as a great cutting guide (Photo 4).

Aftermarket canopies

Needless to say, there is a plethora of aftermarket vacformed replacement canopies available. The first step in using these is to mark the cutting edge of the individual piece, in this case with an inexpensive fine-tipped pen from a drafting store (Photo 5). With the edge clearly marked, carefully use this as the cutting guide and lightly pass the back of a new No. 11 blade along the line until it cuts the thin plastic (Photo 6). An alternative is to use a pair of the small, good quality scissors that can be found in the ladies' make-up section of many stores (Photo 7). Another alternative is to use a very fine-toothed razor saw (Photo 8). Not shown in the photographs is the use of tape that not only marks the edge to be cut but can also protect the plastic from stray cuts. Any corrections to the cut edges can be carried out with sandpaper or, better still, a small steel file.



and any excess glue can be carefully removed with a water-moistened paint brush. Once the permanently attached canopy sections (windscreen and rear panel) are in place, then they can be either attached with the PVA, or, as I normally do, with a 'swipe' of five-minute epoxy. The latter will not only give a secure joint, but it is an excellent filler and with practice will produce a smooth transition from fuselage to framing. The trick here is to use a small amount of spittle on your finger tip and in one smooth and even motion slide it along the joint (Photo 12).

After masking and painting are completed any additional detail can be added before the sliding canopy section is added to the model. In this case the PART photo-etched release handle was mounted and a cable joining its two small holds was added from fine copper wire. The emergency release handle was fabricated from wire and a 'dollop' of five-minute epoxy for the ball (Photo 9). The Seafire features an armoured glass panel on the inside of its windscreen and

this was made from a section of clear injection-moulded plastic. The attachment points around its perimeter were made from stretched sprue and the painted assembly can be seen in Photo 10 before being added to the model.

Fixing the canopy in place

While there are several options for gluing the canopy to the kit, I normally start with PVA (white) glue (Photo 11). This allows the part to be moved into place

Painting and polishing

Once the masked parts are attached to the frame, spray a coat of the cockpit interior colour over the entire area (Photo 13). This is done for two reasons. First, it ensures that when you look into the cockpit interior the canopy framing is painted the appropriate interior colour



Techniques

and not the exterior camouflage colour. Second, it acts as a primer and any flaws can be corrected before the exterior coat is applied.

With painting and weathering complete it is time to remove the masking. This is normally done with a wooden tooth pick that has its tip cut into a chisel shape. The removal process is carefully started at one corner (Photo 14) and the masking is steadily encouraged away from the part. Depending on what masking material you have used (in my case mainly bare metal foil) there can be a sticky residue left on the canopy face. One of the best and easiest ways to remove this is to spray a cotton bud with some WD-40 graphite lubricant (Photo 15) and rub it off. Once the parts are cleaned they can be carefully polished in place, or for even better results apply a



13

coat of Klear/Future (Photo 16), which will give a sparkling finish.

Very few things wreck a model more than poorly painted and attached clear parts. Judging by local competitions, it is one area of aircraft model building that

requires more attention from many model makers.

Next month

Preparing the model for painting.

Vic Scheuerman



14



15

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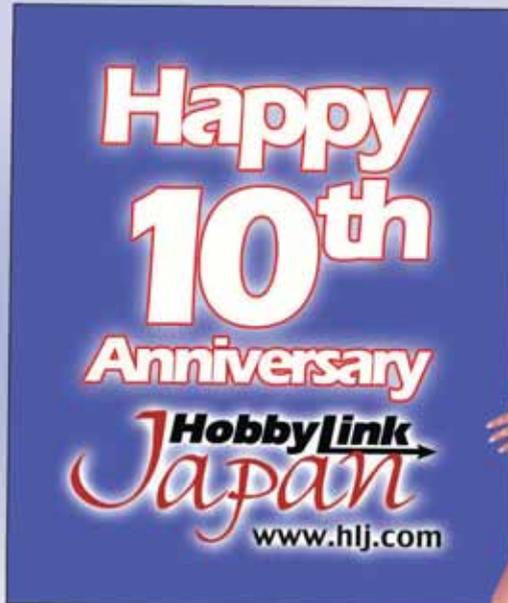
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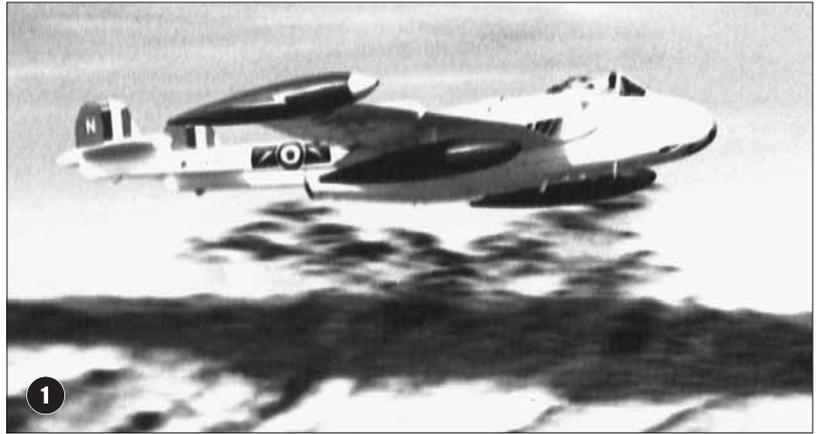
November, Queen of the Skies

A very special Venom

Featured as part of SAM's aerobatic teams series, this striking red and white Venom FB.Mk 4 was flown by Peter Williams of No. 60 Squadron's display team in the late 1950s. Jonathan Burns recreated the aircraft using the Aeroclub kit.

The inspiration for this model came from a profile artwork in a *Scale Aircraft Modelling* feature on RAF aerobatic teams (SAM 27/1, March 2005), which featured Venom FB.Mk 4 WR496/N. It turns out that a friend of mine, Peter Williams, flew this very aircraft while he was with No. 60 Squadron, RAF. This unit operated an aerobatic team made up of six Venom FB.Mk 4s in 1957-58, when the squadron was based at Tengah, Singapore. The serials of the six aircraft were WR537/A, WT564/B, WR407/C, WR533/L, WR496/N and WR421/P. The team flew at the Manila airshow with great success. WR496/N was apparently a much-loved aircraft, popularly referred to as 'November, Queen of the Skies'.

The aircraft wore a very attractive scheme of overall gloss white. The tanks, both wingtip and pylon mounted, were red, with the tip tanks sporting a white lightning flash. The rudders were also red, as were the serials on the booms. Peter very kindly sup-



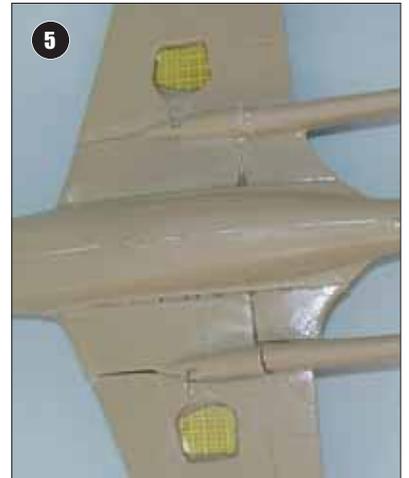
plied me with a copy of a photograph of his aircraft taking off which, although blurred, clearly shows the main features (Photo 1). In this image the four tanks appear to be much darker in shade than the fin and rudder, although all sources state that they were all painted red. The photograph also shows that only the starboard tip tank had a white front portion.

Aeroclub's Venom FB.Mk 4

The only available Venom FB.Mk 4 kit in 1:72 is that made by Aeroclub (Photo 2). The kit is typical short-run, with caramel-coloured main components, a vacformed canopy and white-metal undercarriage

(Photo 3). The decals are good, but in my example they had yellowed (Photo 4). The kit decals were therefore not used, apart from the red 'no step' markings on the upper wing. The modeller must fabricate many details, including the undercarriage doors, pitot tube, ejector ports and aileron mass balances. However, the overall build is inexpensive and presents a nice challenge – the perfect way to while away a few evenings.

I started by carefully detaching the components from the sprue gates using a razor saw, and then cleaned them up and test fitted the fuselage halves. I noticed that, although it looked correct, the kit



1:72 Scale Modelling

and the plastic around the intake openings needs to be thinned somewhat. I offered the wings up to the fuselage and realised that they would sit with too much dihedral, so the wing roots were trimmed until I was happy with the angle.

Tail surfaces

I made a mistake with the tail booms and tailplane: the latter consists of a main central section, which requires mass balances to be built, and two outer winglets. The location for the central section is a little vague, and when I came to add the outer winglets I realised that I'd got it in the wrong position and had to separate the glued components. In future, I would add the outer pieces first and use these as a guide to position the main tailplane. As it was, all the adjustment threw the tail booms slightly out of alignment.

I assembled all the components and saw that some gaps remained (Photo 6), and so I applied (rather too much) filler around the wing to fuselage join and also around the tail booms (Photo 7). After sanding this down, I re-scribed some of the lost surface detail. Luckily the Venom had quite a smooth airframe so there are relatively few panel lines required.

Scratch-built detail

The kit leaves the modeller to fabricate a great deal of detail. I started by making the tail pitot tube mounting out of scrap plastic, the cannon shell ejector chutes and the intake vanes from 10-thou plasticard. I drilled the booms and added whip aerials from copper wire, which was able to stand up to much handling as the model progressed. I realised that the nosewheel door has an inner lining with prominent lightening holes, which I simulated by using two layers of plasticard, with holes drilled in the inner layer. The tailplane requires an elevator actuator fairing on its upper surface and the mass balances underneath, while the rear fuselage



needs a tail bumper. I also took the opportunity to lengthen the air intake behind the cockpit. A new jet pipe was made from the 'corrugated' section of a bendable drinking straw (Photo 8).

I assembled the four fuel tanks and then noticed that the leading edge mini-slats could be improved. I therefore carved them away and, after studying the Venom preserved at the Mosquito Aviation Museum at London Colney, fabricated new examples from slivers of plasticard (Photo 9). After this, I added the tip tanks: these have a hole drilled in their outer edges to represent the recess for the mounting bolts.

Red and white finish

With most of the airframe complete, it was time to prepare the model for spraying. A coat of Halfords automotive primer revealed a few blemishes, which I sanded before applying a couple of coats of appliance white paint from a can. The cockpit was painted Revell Matt 9 Anthracite, followed by some gentle dry-brushing with

greys and a few blobs of colour to represent switches. The seat came up very well – seat cushions were olive drab with seat straps in light tan; the yellow and black firing handles were made from fuse wire. The tip tanks, underwing tanks and fins received about five coats of Humbrol acrylic red, the sort that is provided in 'starter' Airfix sets, and this gave a pleasing dark colour.

The decals had to be assembled from various sources. The roundels came from Model Art sets, the No. 60 Squadron fuselage bars from Modeldecal sheet 101 (one of these became detached and lost – I replaced it with some black decal film and a rather clumsily painted lightning flash – Photo 10) and the underwing and tail-boom serials from various other Modeldecal sets. The white lightning flashes on the tip tanks came from the spares box – in fact, St Andrew's crosses originating from the Spanish version of Revell's 1:48 Ju 52/3m. Since the starboard tank has a white front, I assumed that the flash would be slightly shorter on this side.

The model was given a couple of light coats of Xtracolor matt varnish and then the canopy and formation lights were added. I'm very pleased with this little model – it provided a bit of a challenge and that made the final result more worthwhile. With Classic Airframes' new 1:48 Venoms recently announced, I do hope that a decal manufacturer makes the markings for 'November, Queen of the Skies'!

Jonathan Burns

Acknowledgements

Thanks to Derek Pennington and Peter Williams, both formerly of No. 60 Squadron, RAF, for help, advice and encouragement. Also to Roger Brown, of IPMS Harrow, for photography.

References

Study of Venoms preserved at RAF Cosford and the Mosquito Aircraft Museum.
Warpaint 44: de Havilland Venom & Sea Venom, Guideline Publications
Scale Aircraft Modelling, 17/4, June 1995 and 27/1, March 2005
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Inside Story: Irish Air Corps EC135

Among the latest aircraft to enter service with the Irish Air Corps is a pair of Eurocopter EC135P2s. Replacing the SA342L Gazelle, the EC135 is primarily in use for pilot training. Having gained their wings on the Pilatus PC-9M, pilots selected for rotary-wing training start in the EC135 with basic handling and navigation work, before undergoing instrument training. They then move on

to winch training. Sling loading and fast-rope training are also undertaken on the EC135. Before the arrival of the EC135, these areas of training were divided between two aircraft, the Gazelle and the Alouette III. Now, for the first time, a new pilot will receive training in all these areas of rotary-wing flight in one aircraft type, thanks to the capabilities of the EC135. Secondary roles for the EC135 include VIP transport, air ambulance flights and fast-rope training for the Ranger Wing of the Irish Army.

Pratt & Whitney-power

While the Irish Air Corps already operated an EC135T2 on behalf of An Garda Síochána (the Irish Police), the model chosen for the Air Corps was the Pratt & Whitney-powered EC135P2. This version features similar engines to those used in the Beech King Air 200 and the Pilatus PC-9M. Both EC135s are fitted

with FADEC, a weather radar, a fully-coupled autopilot and EFIS cockpit, along with a fully-integrated flight management system.

The instrument panel is black with the rest of the interior in light grey. Seats are light grey with black seatbelts. The floor is black, as are the cyclic and collective controls, and yaw control pedals. Externally, the overall colour is matt Olive Green (Humbrol No. 116) with various aerals in black or white. The main rotor blades



are 'gunship grey' with yellow tips. The fenestron blades are silver. The winch is black, with the skid undercarriage in very dark grey. A small roundel is painted on the sliding cabin doors, with the aircraft's serial number and a tricolour on the tail-fin. 'Eurocopter' and 'EC135' titling feature on the engine housing and main rotor pylon, respectively.

A single air ambulance kit has been delivered, along with a winch and one set of pop-out floats. The winch can be swapped between the machines as required. Wire-strike protection blades are fitted above and below the windscreen, with wire guides bolted onto the front of the standard low skids. The left skid foot-step is kinked inwards under the cabin door. This allows the winch operator to stand on the skid and affords him an unobstructed view of the winchman below during winching manoeuvres. The winch is in the stowed position in the photographs here and swings outwards when in use. The aerial fit is standard for this type except for the large black aerial situated on the extreme tail. This is an aerial for the SINCGARS VHF radio system which is used for communications with ground vehicles.

Deliveries

The delivery of serial numbers 270 and 271 took place on 3 November 2005 and early operations saw the instructor pilots getting acquainted with the flying characteristics of the EC135 by way of a little hour-building. The next EC135 due for delivery to Baldonnell is an EC135T2 destined for the Garda Air Support Unit. Likely to be allocated the Air Corps serial



Inside Story

number 272, it may now arrive in summer 2007. Aerospatiale Gazelle SA342L No. 241 was retired at the end of December 2005 and the first four student pilots commenced training in the EC135 around March 2006, along with two of

the Alouette III pilots, who were to convert onto the type. The EC135 is not likely to take over any of the roles of the Alouette fleet, the unenviable task of replacing the Alouette III falling to the AgustaWestland AW139, the first two of which were delivered on 28 November 2006. It is expected that the Alouettes will remain in operation until the final AW139 arrives at Baldonnel.

Liam Aherne

Acknowledgements

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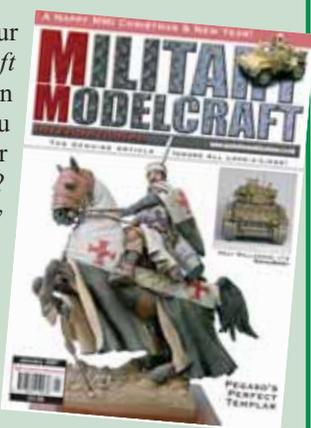
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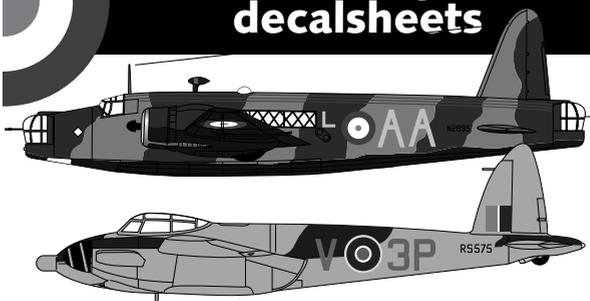
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The modeller's painting guide

Part 3: Getting started

Using an airbrush is like writing – everyone's style and technique is slightly different. In order to develop yours, practice, practice, practice. Begin by choosing an easy fluid that does not need complex mixing and is easily cleaned, such as ink or food colouring and practice on paper or plastic card.

Before you start using paints, I suggest you begin your airbrush apprenticeship by using a little colouring agent such as food colouring in the airbrush (Photo 1). Then, even before the first 'squirt', think about the following points.

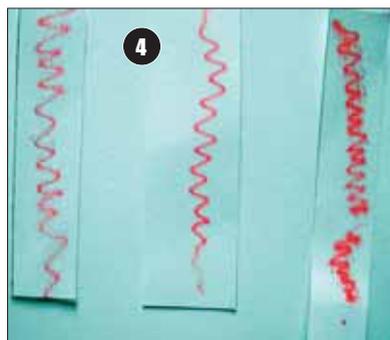


If you have an airbrush with psi calibration, I recommend starting with low pressure, 12-15 pounds per square inch. (A useful tip on pressure gleaned from my own experience is that it shouldn't be necessary to use more than 25 psi for painting models and only go over 20 psi if you are painting a large area and need to move quickly in order to prevent the working edge from drying out.)



If you are like most modellers and own a single-action airbrush (Photo 2), start by fully closing the needle so that no fluid can escape. Then open the needle a fraction and gently push the trigger to release a small quantity of fluid in the direction of your paper. If no colour appears, open the needle a fraction more and try again. By opening and closing the needle you begin to see how the flow of fluid can be controlled (Photo 3).

Drawing and joining the dots



Now start having some fun – draw lines across your page. Doesn't sound like much fun, but while you are learning aim for a clean line as if you were writing with a biro. If you get a spotted or grainy effect at the edge of your line, you need to increase the air pressure out of the airbrush by using the trigger as described in your manual. If the fluid is wet and 'spiders' away from the nozzle, you have too much colouring agent and too much pressure (Photo 4).

Once you have the pressure/fluid flow correct, try pulling the airbrush away from the page and opening the needle further, to increase coverage. Practice making dots, then joining them together with a fine line, a fat line and then tapered lines. You are aiming to get a smooth edge to your coloured area. The purpose of all this practice is to put you in control of your airbrush, to give you confidence and to begin your enjoyment of your new technique. Even the cheapest airbrush should be capable of producing fine lines when the pressure is correctly adjusted. When you are comfortable and achieving what you set out to achieve, you can start using paints, but first thoroughly clean your 'brush.

Cleaning

Inks and food colouring are easily flushed



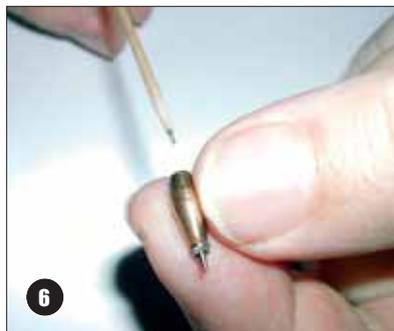
through the airbrush with water. First empty any excess colouring agent back to its pot, then take out the worst of any residue by brushing the colour cup with a bristle brush (the type used for oil painting). Rinse the airbrush thoroughly with a thinner compatible with the colouring agent until no trace of colour can be seen when the fluid is forced into a clean tissue. Stopping and restarting the airflow will agitate and remove stubborn traces. This cleaning technique is usually enough between colour changes, but at the end of the session or between different types of colouring agent (eg enamels to inks) it is necessary to be more thorough (Photo 5).

With acrylics I use an 'active foamer' and for enamels a liquid reamer. The latter is xylene-based and therefore quite noxious; make sure you have adequate ventilation and take care when handling it. Spray around the needle/crown cap on the exterior of the 'brush as well as inside the colour cup to remove any traces of colouring agent.

I remove the needle and wipe it in a tissue soaked in the appropriate cleaning agent and re-lubricate using an airbrush oil or a very tiny quantity of Vaseline, before reassembly.

Strippers

Some modellers dismantle their airbrushes every time they use them and I agree that every so often it is a good idea to strip down the airbrush and thoroughly clean every part, but I would never recommend you strip your airbrush over the sink, as small parts have been known to disappear down the plughole! When the airbrush is in pieces, you can soak small nozzles overnight in cleaner, but never stand the whole airbrush in a pot of solvent because this will destroy the seals. If you have had a blockage in your nozzle, you can use a cocktail stick to help dislodge stubborn congealed paint (Photo 6), but don't use wire since it may distort



the aperture and damage the airbrush. When you reassemble the airbrush make sure the needle is seated fully home by rotating it, then close the needle locknut. Be very careful not to damage the fine point of the needle during this process.

Priming

Many modellers choose a proprietary car



aerosol primer and this is perfectly adequate, except that you have little control over the volume of spray. Priming can show up defects in the build, which can then be corrected before the application of the final finish. It is not strictly necessary to prime if using enamel paints, but you must use one for water-based paints because they do not adhere directly to plastics. There are now some very good primers made especially for the model market, rather than the ubiquitous Halfords primer! (Photo 7)

Mixing paints

I'm often asked about mixing paints for airbrushing and it certainly can be confusing because there is no hard and fast rule



about how much thinner to use to get the right consistency. It is not a black art, however, and can be mastered as soon as you know what you are aiming for. Some airbrushing colouring agents, for example the Alclad and Vallejo Air ranges do not require thinning at all. For those types that do need thinning, the amount of thinning agent to use will depend upon the viscosity of the paint to be thinned. Not all paints of the same range will be of the same consistency when you first open the jar and of course they thicken and age at differing rates also. What you are aiming for is a liquid the consistency of milk. What does this mean? Put simply, when you have thinned the paint with an appropriate thinning agent, you should, when swirling it inside a glass jar, get a film of liquid adhering to the side of the jar which is not transparent but lets light through the colour and which does not leave spots of solid pigment (Photo 8). Gravity fed airbrushes can operate successfully with paint that is slightly thicker than those with side feed or suction cups, because the force of gravity is also engaged in pushing the paint into the nozzle and this is the reason some modellers prefer them. If you manage to over-thin your paint, it is better to throw it away rather than add more paint to rescue it, because you will use far more paint than if you were to start again. Once your paint is ready, practice again on plastic card to improve your technique and to ensure the mix is good.

Application of primers and top coats follows the same general principle. Start in the least accessible parts of the model, inside tight corners, so that you avoid getting patches of grainy over-spray in highly



visible areas and end with an evenly coated piece of work, instead of trying to paint gaps after you've covered the main part of the model (Photos 9 and 10).

When you run an airbrush over an area painted previously, the expelled air dries the paint applied earlier, since it creates airflow in pockets and corners. As you work larger areas, work in a methodical way, increasing the coloured area by extending it at the wet edge of the paint the whole time.

It helps if you have a plan of your work and know exactly where you are going to paint next. On flat areas, where you



change the direction of your stroke you will end with a high build up of paint, so ensure your stroke goes across and then beyond the model (or onto a masked area which is to have a different colour), in order to avoid this.

If, having applied an area of colour, your work looks dry and grainy, you need to increase the amount of paint you are applying. If, in contrast, it accumulates into drips, you need to reduce the quantity you are putting on.

The viscosity as well as the colour of the paint will dictate how many coats are needed for good coverage. For example, strong pigments like black may cover in one coat, but yellows or whites may look transparent after one coat and need several more for good coverage.

Robin Carpenter

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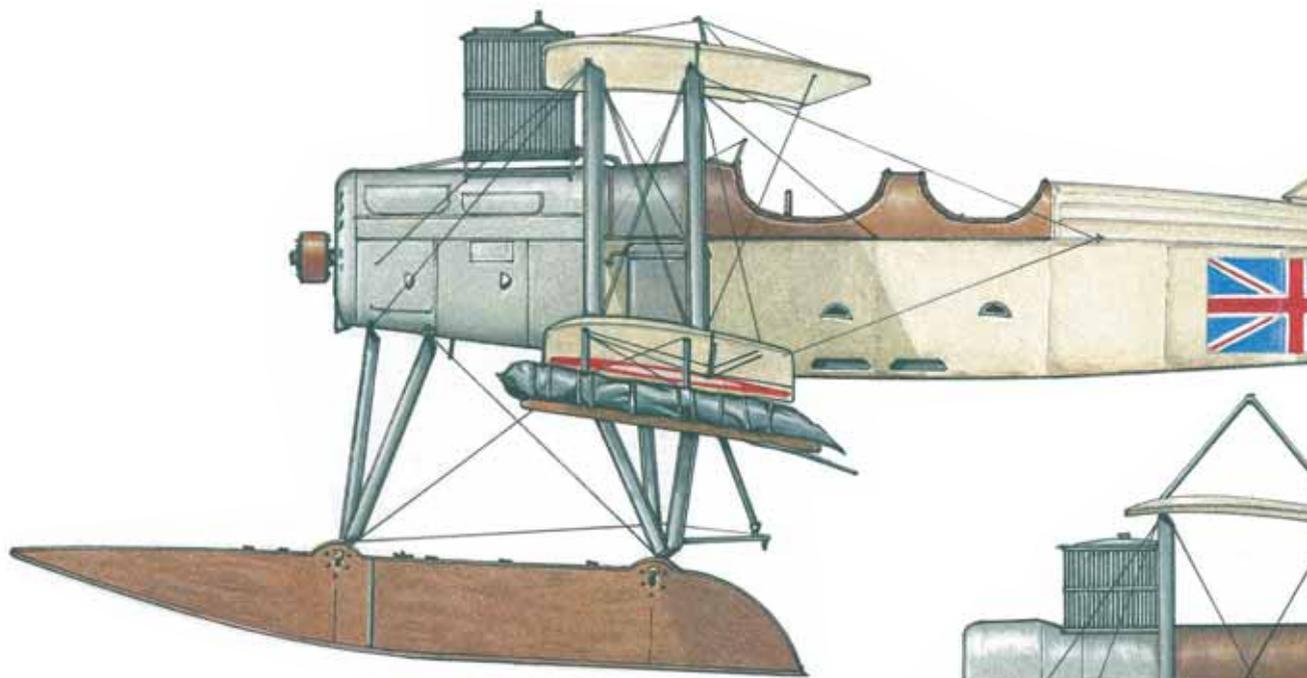
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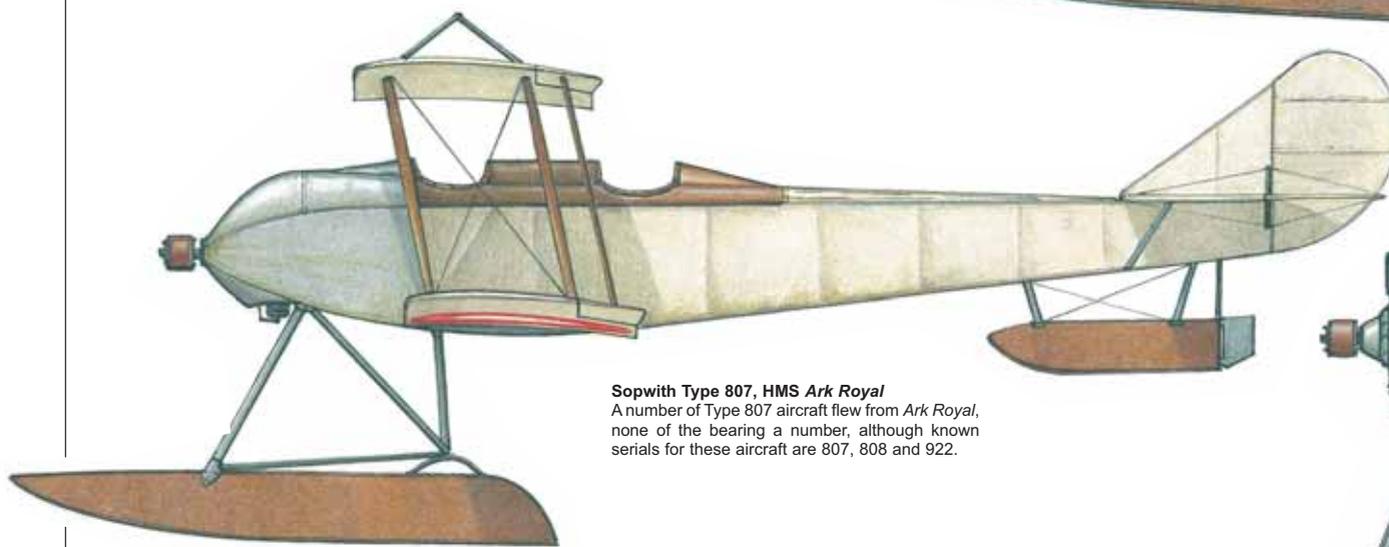
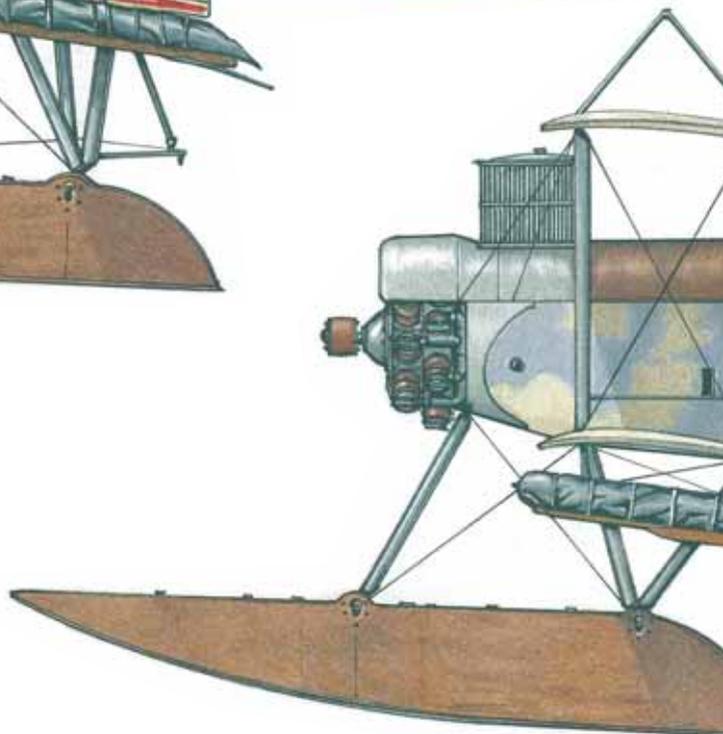
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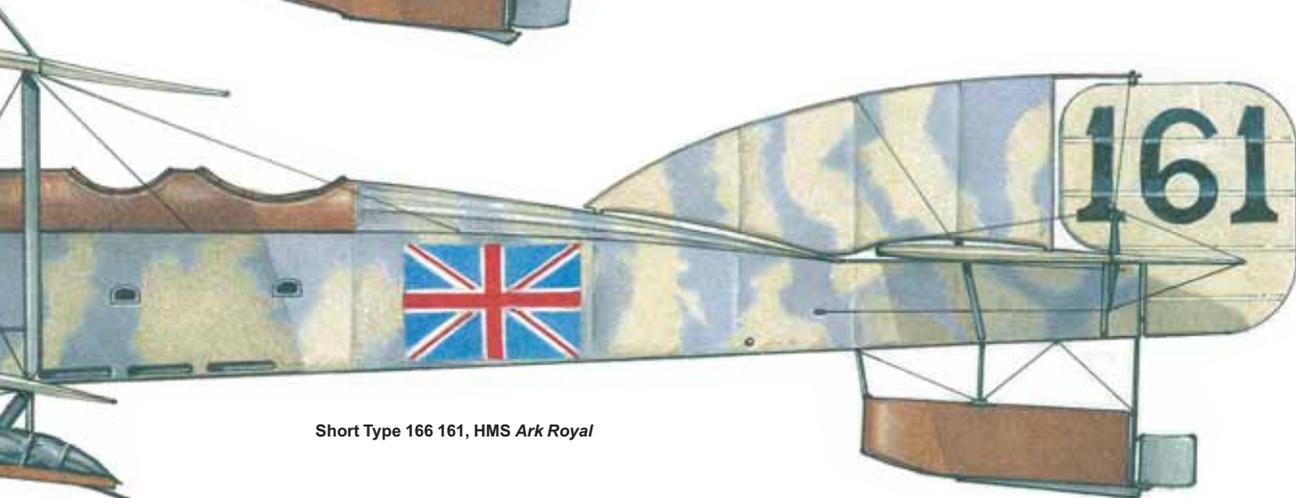
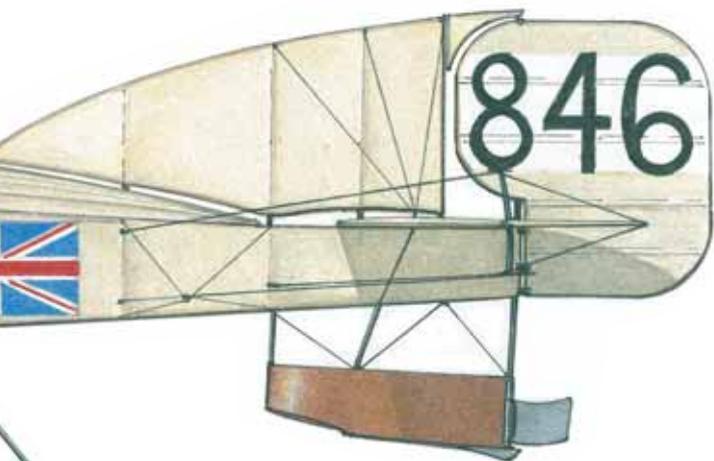
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Short Type 184 846, flown by Dance and Childers, HMS *Ben-my-Chree*
Childers wrote 'Riddle of the Sands' and was later executed by the British for his part in the Irish fight for independence.



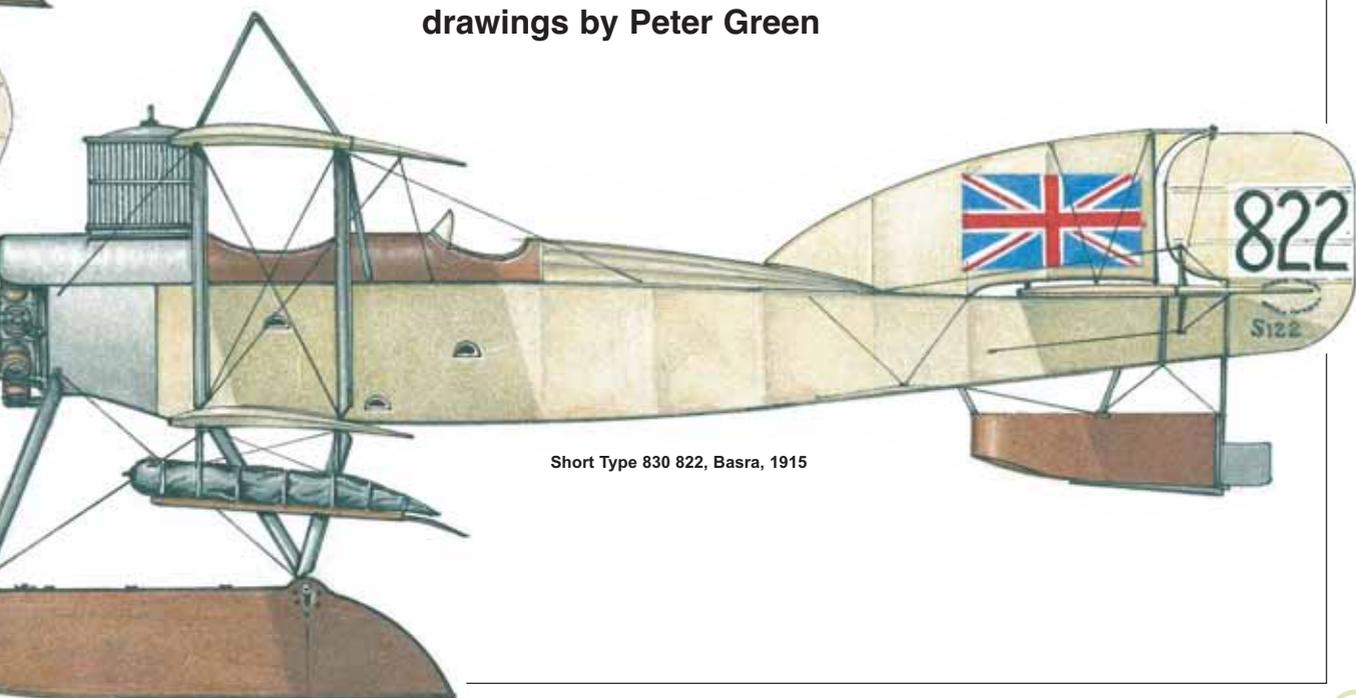
Sopwith Type 807, HMS *Ark Royal*
A number of Type 807 aircraft flew from *Ark Royal*, none of the bearing a number, although known serials for these aircraft are 807, 808 and 922.



Short Type 166 161, HMS Ark Royal

RNAS seaplanes

drawings by Peter Green



Short Type 830 822, Basra, 1915

DC-4 to Argonaut Converting the Mach 2 kit



A license-built DC-4 with Merlin engines, the Canadair North Star was operated as the Argonaut by BOAC from 1949. Simon Lind recreated the airliner with Mach 2's DC-4 kit as his starting point.



The Mach 2 DC-4 is the only kit of this subject currently available in 1:72 scale, so if it's a DC-4 or Argonaut you want to build, you will have to use this kit. You will also have to be prepared to do a lot of work – even taking into account the fact that this is a short-run limited edition,

this is not the greatest of kits. I have now built two examples: a Douglas DC-4 in Trek Airways markings (Photo 1) and this subject: a BOAC Argonaut. The kit comes in a large box with fairly good artwork on the top. Decals are provided, primarily for the C-54 military version. The kit parts



are supplied in a large plastic bag and on first appearance the content looks quite impressive. It is only when you make a dry run or test fit the parts that the production values become apparent.

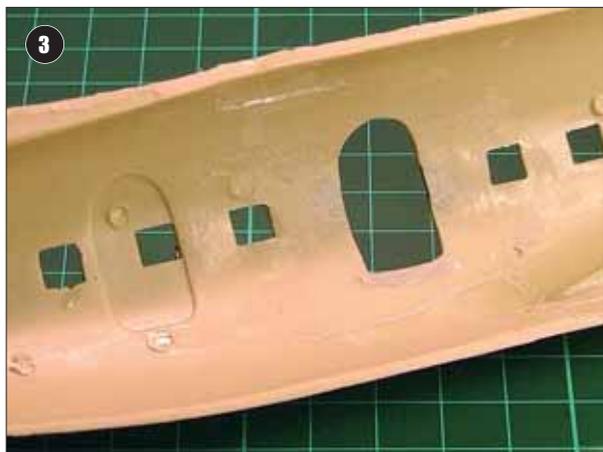
Cockpit and cabin

I started by marking and cutting out the windows and passenger door (Photo 2). The plastic is very soft and drills and cuts easily. It was then necessary to reposition the passenger door (Photo 3). The plastic in this area is very thick, but soft. I then put together the cockpit and detailed it (Photo 4). I also added weight, but not enough, as it turned out. Although the plastic is thick and heavy, ensure that you add enough weight to prevent tail-sitting. Unfortunately the undercarriage is not very sturdy, and it would be useful if Aeroclub produced white-metal replacement parts. Not a great deal of detail will be visible through the windows, but I at least added the basics. I then built up the passenger cabin area that is visible immediately inside the door (Photo 5). For reference I used plans found in the book *BOAC – An Illustrated History*.

After detailing and painting the cockpit and cabin it was time to try and fit the fuselage halves together. There are no lugs or pins so you will have to make your own location tabs. The fuselage halves ready for joining are seen in Photo 6. The work needed to produce a decent joint stretched even my patience! Note also the amount of weight that has been added; in the event, it still wasn't enough.

The cockpit 'canopy' is almost opaque; no amount of polishing would render the windows clear, so I ended up cutting them out (Photo 7). The fit of the 'canopy' itself was very poor and it required a lot of filling and filing. I also had to reshape the nose to obtain the characteristic Douglas look.

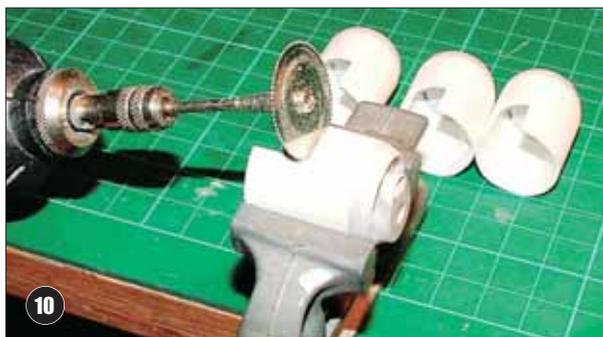
I then turned my attention to the engines. I used the engine fronts from a Shackleton kit as a basis (Photo 8) and



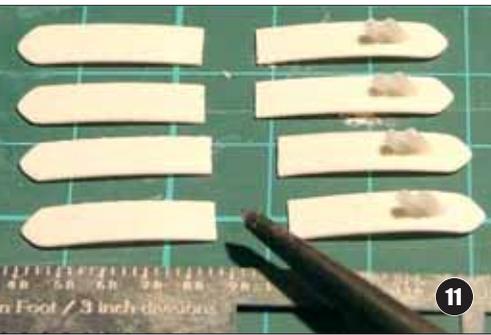
built up the nacelles from plasticard (Photo 9). The exhausts and cooling gills were all scratch built. Making the nacelles from plasticard required careful measuring and cutting. I built up the nacelles using layers of card, since these proved easier to shape compared to trying to obtain a curve using a single thick piece of card. The cooling flaps were then cut out (Photo 10). A mini rotary tool proved invaluable here, as did a moveable mini vice. I am not sure that I provided the correct number of exhaust stubs, but the end result looks acceptable (Photo 11). I provided some rivet detail in this area, but it was lost during the final finishing.

Wing and nacelles
The next area requiring attention was the wing. I knew I would have to alter the diameter of the nacelles and remove the intake strakes, but I didn't expect to have to straighten the wings as well. I also elected to remove all the flying surfaces for later re-attachment at different angles. This did not hinder the straightening process, but it did give me more work than I had expected when it came to re-profiling them to fit. Removing the intake strakes and re-profiling the nacelles is seen in Photo 12. The intakes are not aligned correctly, so care must be taken when fitting the engines to get them all pointing in the same direction. In Photo 13 it can be seen just how 'straight' the wing is. Cutting,

filling, clamping and patience were eventually rewarded by a reasonable looking model. In order to straighten the wing, I cut near the nacelle, bent it open and inserted a plastic wedge, before gluing and shaping as required (Photo 14). Various blemishes and indentations on the surface of the wing then required filling and sanding.



1:72 Scale Modelling



The major wing components were now ready to be matched (Photo 15), but there was still a lot of work to do yet. All the control surfaces were separated from the wings and tail surfaces, and the hinges remade (Photo 16). Despite carefully aligning them, I still had to move some of the control surfaces again to fit perfectly. In the end it was worth doing as it looks much better than leaving them in their original state. Photo 17 provides some idea of the work needed to obtain a decent finish.

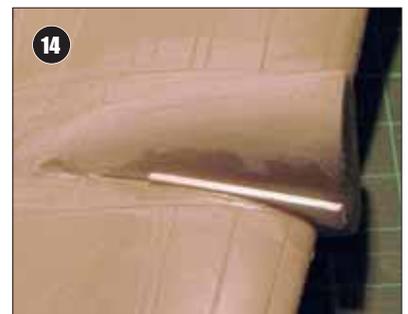
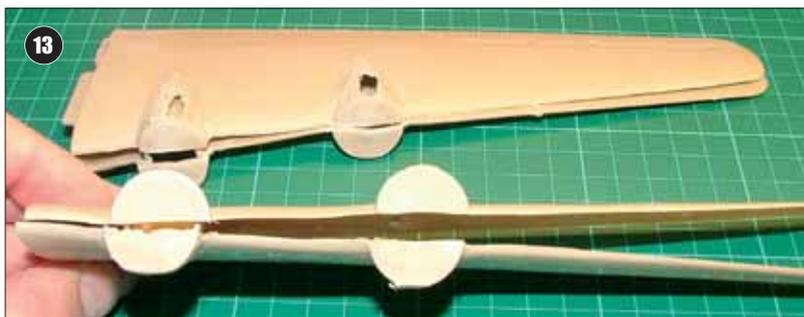
Painting and finishing

The model was now ready for painting (Photo 18). Prior to painting I filled all the windows with PVA glue. When the painting was complete I cut this away and refilled the windows with Humbrol Clearfix. When using car spray paints I have found that placing the model flat on

a turntable in a spray booth is not the best way to achieve good results. I now fashion a stand from a wire coat hanger so that the model is held vertically on the turntable (Photo 19). The advantages are numerous: the spray cans work better; coverage is more even; revolving the turntable is easier; and more spraying can be achieved before the paint dries, so

there is no danger of overspray spoiling the finish. I now use this method on all large-scale painting projects. Initially a black undercoat was sprayed on to carry the Alclad silvers. Keeping the model vertical and using a trigger on the can made life much easier and produced a far better finish. Using different shades of Alclad also helps to provide a good final appearance (Photo 20). I completed the model by painting the flying surfaces in different shades of aluminium and then applied the decals. The undercarriage was then detailed, painted and attached (Photo 21), the propellers added (Photo 22) and various aerials fitted.

I am quite pleased with the completed product. A great deal of work went into



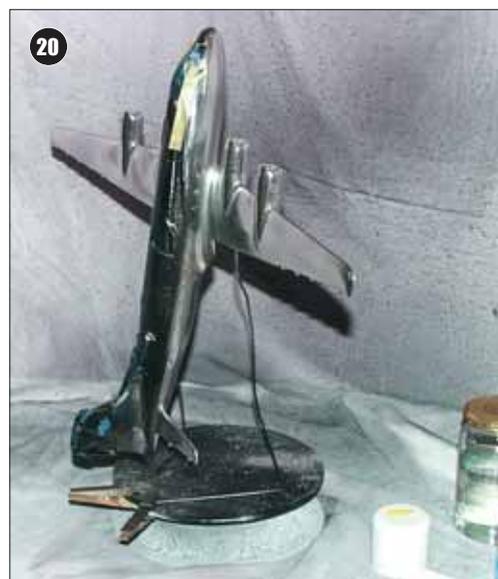


constructing this kit and the finished article, while far from perfect, makes a great addition to my collection.

Simon Lind

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www.airliners.net/
www.bamuseum.com/



Think Goose! Getting to grips with Czech Model's Grumman JRF

Czech Model's Goose presented David H. Minton with a challenge at almost every stage of the build. Combined with Xtradecal's RCAF markings, the final result was, however, a very satisfying one.

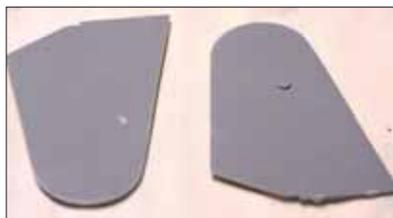
The basic aircraft was painted Spray-n-Plate Silver overall, with Humbrol Satin Black used for the undersides of the hull, and with Floquil Grimy Black for the anti-dazzle panel. Testors Italian Red was used for the engine cowlings, although it could not be confirmed that these were red on the original RCAF Goose. (all David H. Minton)

Czech Model's Grumman JRF Goose is made primarily of injection-moulded plastic, with a single clear sprue and 31 resin detail components (although a couple of resin parts were missing from my kit). The plastic is of the soft, grey type associated with low-pressure, limited-run

injection-moulded kits. The injection gates are generally quite large, and there is a tendency for the plastic to shatter when cutting or drilling. Many of the detail

parts are provided only in plastic, and some of these parts, I felt, were much too large for the scale. Parts provided in both plastic and resin include the engines, wheels, and some exhaust fittings. In each case, I felt the resin parts were better and I used them instead where possible. A parts map is supplied with the instructions, but in my case it did not always match with the parts supplied in the kit. The kit decal sheet provides for four schemes: three US Navy and one RAF.

Construction must be approached in three major subassemblies: the interior,



Above: Two of the horizontal tail components reveal some of the fit problems encountered throughout the kit. The ejection pins have to be removed, the mating surfaces evened and the edges dressed before the parts can be glued.



Left: Czech Model's propellers can be used as a basis, but the flash will have to be removed, the edges thinned and the blades filled where the injection-moulded plastic is incomplete. There is also a problem with the propeller hubs, which are inaccurate. The modeller will either have to scratch build new propeller hubs, or cover them with the spinners.



Above: Having glued the two rudder halves together, the process of cleaning out the hinge locations and adding the pivot arm can begin.



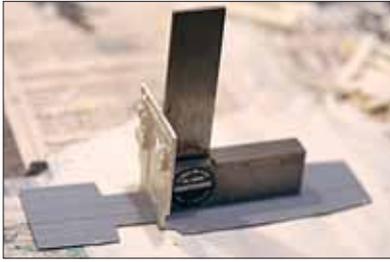
Above: Throughout the assembly of the model, the fit quality was found to be generally poor. After the wing leading and trailing edges had been firmly glued together, the engine mounts were clamped and glued. Significant time and glue were required during this process to ensure very strong, smooth joints.



Above: In addition to the problems with the injection-moulded plastic, there were also missing and malformed resin parts on David's model. The interior cabin door was incompletely moulded and required cleaning up and rebuilding.



Above: The upper and lower wing halves had very thick edges, which required sanding on a flat surface to ensure a true mating surface for glueing. Considerable time was spent thinning the trailing edges with a knife before sanding smooth.



Above: Whenever parts assembly required the application of a right angle, David used a steel square as a jig to ensure that the angle was correct as the glue dried.

the flying surfaces, and the engines and nacelles. The rest of the parts can be attached later. I started with the engines and nacelles. The nacelle halves are provided as tops and bottoms. They are quite thick and have significant fit problems along the seam line, both inside and out. First, I recommend sanding them along the mating seam with 400-grit wet and dry. This smooths down the seam so that the parts will align flat and glue well against each other. Don't sand too much, however, or you will lose the round nacelle shape. Once the joint is smooth, cement the halves together and immediately you face the problem of dressing the joint. I focused on getting a good fit at the front and then dressed the rest of the joint



Above: Once the wing is attached to the fuselage, the problems of attaching the windscreen become readily apparent. There is no easy solution here, just a lot of fitting, filling and sanding.



Above: Ordinarily, David compensates for a poor fit by attaching the components from top to bottom or from front to back. In this case, the fit was so bad that he elected to fit the wing from back to front. A great deal of cutting, sawing, filling and sanding were needed to get a good fit. Once the wing had been fitted correctly, the panel lines had to be rescribed.



Above: The cockpit was painted Testors Interior Green, with highlighting and shading as usual. Details where picked out using Humbrol Black and Testors Silver. The seat belts for the pilot and co-pilot were added from a third-party source as none were provided in the kit.

as necessary. This entailed a programme of careful sanding and filling.

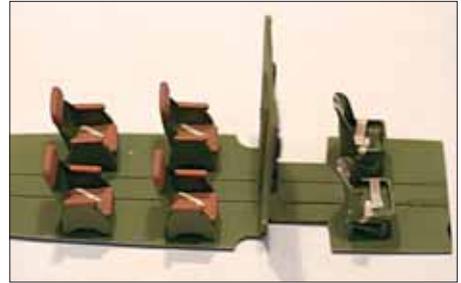
There are four choices when it comes to the engines. First, you can use the poor kit-provided, injection-moulded engines. Second, you can use the kit-provided resin engines; these are fairly inaccurate, but at least look like engines. Third, you can obtain aftermarket nine-cylinder R-985 Wasp Junior engines (for example, from Engines and Things or Aeroclub). Fourth, you can scratch build the engines. Since my available third-party engines didn't fit very well into the existing nacelles, I elected to use the resin parts. These fit well and looked the part after some wiring and painting.

Interior painting

Planning on building a military version of the Goose, I painted the interior of the engine nacelles zinc chromate. I painted the engines Spray-n-Plate aluminium, an airbrush metallic paint, and then washed them with Humbrol flat Black. I painted the gear reduction housing engine grey. The copper ignition wiring that I added remained in copper colour. Satisfied that I could fit the nacelle subassemblies to the



Above: Finally, the two front windscreen components are in place. Since most of this component does not remain clear on the final model, a lot of time can be spent filling and sanding, as long as care is taken to protect the clear (window) areas.

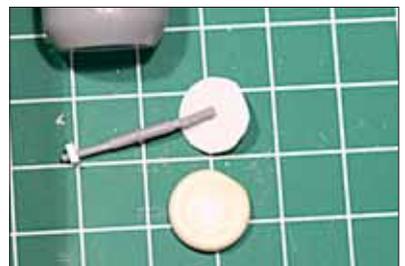


Above: The cabin interior was painted in much the same manner as the cockpit, with Interior Green used as the basic colour and Testors Leather used for the seat cushions and arm rests. The seat belts were moulded into the kit's resin seats and were painted with Humbrol Linen and detailed with Testors Silver.



Above: The control yokes attach to resin arms that project out from the respective sides of the instrument panel. This is an accurate representation of the primary flight controls on the actual aircraft. The area was painted in various shades of Humbrol black. However, it is virtually invisible when the model is completed.

wing, I moved on to the interior. In doing this, I may have made a mistake in the construction sequence, since I hadn't yet dealt with the propellers, thinking that they could be treated after the basic model had been constructed. In retrospect, it may have been easier to deal with them at this point. The kit provides two-bladed propellers, but, as with the engines, they are virtually unusable. Unfortunately, there are



Above: Once the basic airframe has been assembled, it is time to tackle the problem of the landing gear. A small square fitting was made for the top of the gear, to replace the hole in the gear well which did not seem to align with any of the kit parts. Wheel shapes were made from 40-thou plastic, which were used to set the gear heights and check the alignment for the front and rear components.

1:48 Scale Modelling



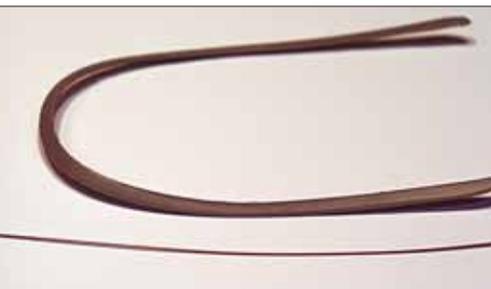
Above: Using just the main gear parts, the size and alignment was established against the outside of the aircraft.



Above: The main gear strut was cut to remove excess length. By slowly and carefully fitting the parts inside the gear well, the length was adjusted through the square fitting made at the top. This was achieved by cutting off small lengths of excess until everything was even.



Above: The main gear is glued together, adding both the upper and lower struts. After cleaning up and resizing all the fittings, liquid glue was used to attach all the components. After the glue had dried, another coat was applied and it was left to dry again over a period of a couple of days. The result was an adequately strong joint, although the plastic itself is not very resilient and the wheel attachment arm was replaced with metal rod.



A large spray deflector provided in the kit is intended to go on the hull chine. Although some commercial aircraft were apparently fitted with this large deflector – especially those flown in the Long Beach, California, area – most aircraft encountered in the author's references did not have such a device. It was therefore replaced with stretched sprue.

no resin detail parts. The kit provides the propeller, the spinner, and a shaft on which to mount the propeller. I could not determine a way to use the mounting shaft. In any event, the shaft was not entirely round and nor was it the right size. To get around this, I used copper tube and brass rod. I drilled out the propeller to accept the tube and then inserted a small section of brass rod inside the tube to fill it and provide for the cap on the end of the propeller shaft. Then I made the counterbalances from scrap plastic, using a small rectangle as the link arm, and punched out discs for the weights. In the end I think it looks fine, but I did have a problem in that the second propeller broke after I successfully drilled out the first one. All of this work was a bit of a nuisance as I was now working on the completed subassembly, and I think it would have been much easier if I had done the propeller work before I attached the engine parts to the wings.

Having successfully got this much done, I moved on to the interior. Although quite straightforward, there are still several factors to consider, especially regarding the fit of the parts. The entire interior is made up of a combination of resin and plastic. I used superglue for the resin-to-plastic joints and liquid plastic cement for the plastic-to-plastic joints. I first mounted the wheel-well assemblies to the interior of the wheel openings. The



Above: The hull drainage component to be glued under the hull step was inaccurate. A new item was therefore fabricated using scrap 20-thou plastic.

fit here is important for two reasons. First, you will soon have to fit the rest of the cockpit around it. Second, the main gear will eventually fit into the top of the interior of the wells and will need to be aligned. I found that I was able to get a strong bond by cleaning up the joints carefully and using a lot of liquid cement – remember that eventually this will be one of the main joints holding up the entire weight of the model.

Next the instructions suggest assembling the tailwheel parts and cementing them to the interior. I did not complete the steps in this sequence because there are no good locating references for the tailwheel height at this stage. Instead I completely drilled out the hole for the tailwheel location, which I then planned to add later. I used Tamiya tape to locate the tailwheel assembly where I thought it should go, then test fitted it with the two fuselage halves held together. By using this method, I was able to move it until I found a location that closed all of the gaps and at the same time provided a reasonably accurate tailwheel location. Then I continued with the fore and aft interior bulkheads and, after cleaning up, these were glued inside the model. Although the forward part fits well, the aft part caused the fuselage to bulge, and a lot of filing and sanding was necessary in order to provide a good fit.

Cockpit details

During the interior assembly process I used a small stainless steel square as a jig when I needed a 90° angle. You could do the same thing with a piece of scrap plastic, but be sure to attend to getting a good right angle. Next was the instrument panel, which attaches directly to the front of the fuselage. I painted this Humbrol Flat Black. The yokes fit on resin arms that fit directly into holes in the panel, which is accurate for the aircraft, but you will



Propeller counterbalances were scratch built using a Waldron punch set and scrap plastic. Even if spinners are used, this part of the propeller assembly can still be seen on most examples of the Goose.

have to clean things up. I painted the yoke assemblies Humbrol satin Black. I made the individual instruments using Reheat instrument decals placed on white discs that I punched out with a Waldron punch and die tool. There is a wide variety of instrument decal choices that would work equally well. The decals were settled down using Micro setting solution. When dry, I added a drop of Future to each instrument face to simulate the glass. On the completed model, the instrument panel is not really visible.

On this aircraft, the 'heads up' flying instruments are in front of the pilot on the left side of the panel. There is a gyrocompass and an artificial horizon in the centre. On the co-pilot's side there are some switches, levers and indicators, but no instruments. The engine instruments and controls, including the throttles, fire extinguishers, mixture controls and temperature gauges are located overhead, between the pilot and co-pilot, as is often the case on Grumman seaplanes. These are not provided in the kit and since they wouldn't be visible in the model unless you turned it upside down and put a spotlight on it, I did not model them.

The rest of the interior is made up of mostly resin parts with plastic parts at the front and rear. On the whole, the parts



Above: The bow cleat as provided in the kit was much too thick, so a new scratch-built example was produced from lengths of stretched sprue.

went together fairly easily. I first fitted the sidewall parts to the cockpit, and then glued the resin parts to the floor. One cabin bulkhead in my kit wasn't fully moulded, so I filled and sanded it.

The cabin seats are resin and come with the seat belts already moulded on them. The pilot and co-pilot have separate seats that mount on small frames and there are no seat belts provided. One of the missing resin parts was the mounting for one of these seats, so I made a replacement from scrap to match the other. I sourced the seat belts from my spares box, using a dry transfer Mylar type of belt, but there are again a variety of solutions available. Following my military theme, I painted the interior Model Master Interior Green, with the seats in the cabin in leather and the various details in silver and black. The cockpit seats were sometimes padded and sometimes not. It looked to me as if these examples were padded, so I painted them leather, rather than interior green.

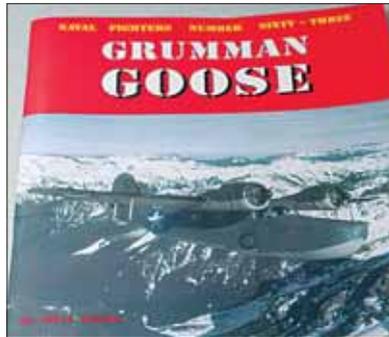
Once all of the interior had been completed, I sealed up the entire fuselage assembly. According to the instructions, before doing this you should add the interior windows. I didn't think the clear parts were quite clear enough, so I used Micro Kristal Klear to make replacements. This meant that I first put the glazing in the model after I had glued it all together, but before I started filling and sanding. Later, after painting, I took the windows out with tweezers and replaced them with new Kristal Klear examples. I generally find this a more satisfactory way to replicate the windows when the kit-supplied clear parts aren't very satisfactory.

Scratch-built additions

At this point in the instructions (step 5) it is recommended that you attach the bow chock and the bow spray shield. I did not use the bow chock because it was much too large, so I fabricated a replacement from stretched sprue. I did not attach it until the end, although now is a good time to drill some holes for it. It is installed in the centre of the fuselage, just forward of the bow hatch, under which are the mooring lines and anchor if you decide to open it up. The spray shield in the kit doesn't resemble anything like the very fine line at the chine of the actual aircraft, so I again replaced this part with stretched sprue. I have seen photographs of some experimental and commercial aircraft with fairly large



Above: The kit decal sheet (right) provides for both US Navy and RAF Coastal Command aircraft. However, David chose to use a Rareplanes sheet, seen here on the left, which also provided for RAF Coastal Command, as well as US Coast Guard, Japanese and Canadian aircraft.

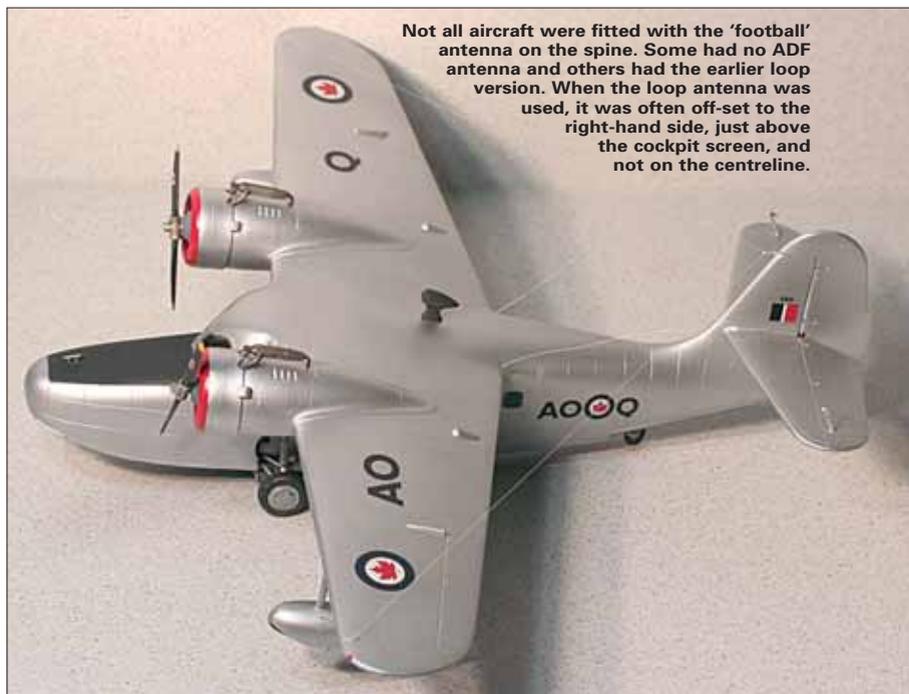


Left: Without a doubt one of the finest references for the Grumman Goose is Steve Ginter's book. Although it has a very nice collection of detail photographs, the selection of general aircraft studies is not especially large, and only a handful of Canadian and RAF aircraft are included.

spray shields, but the only production aircraft that had anything resembling it were the various Catalina Island aircraft. The more common configuration runs from nearly the tip of the bow to the wheel well, and I glued it in place and then feathered it lightly to the fuselage using 1200-grit wet and dry.

With the fuselage basically complete, except for filling and sanding in various places, it was time to begin assembling the wings, tail components, and floats. Basically, these are made up of top and bottom halves, except for the rudder and floats, which are provided as left and right

components. I spent some time sanding the mating surfaces and thinning the trailing edges of the flying surfaces. However, since the horizontal tail surfaces are basically just slabs of plastic, it probably didn't help much. But with the other parts, it did succeed in thinning the trailing edges a little. The fit of the wing parts to one another is very poor, so I first lined up the wing leading edges and glued them firmly together with little regard for the engine mounts, in a similar manner as I had with the nacelles. Next I did the same with the trailing edges. Once the entire interior had been completed, I sealed up the whole fuselage assembly. According to the instructions, before



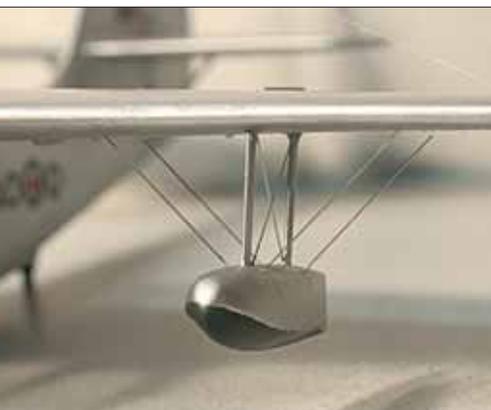
Not all aircraft were fitted with the 'football' antenna on the spine. Some had no ADF antenna and others had the earlier loop version. When the loop antenna was used, it was often off-set to the right-hand side, just above the cockpit screen, and not on the centreline.

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doing this you should add the interior windows. When everything was dry, I filled in the several gaps with scrap styrene sheet. Then I cleaned everything up, filled, sanded, and re-scribed where necessary. Following the kit assembly plans, I then attached the wings and tail assembly to the model. Except for some cutting and filing to get the back of the wing assembly to mate smoothly to the upper fuselage deck, these parts all attached fairly well. As usual, make sure that everything is aligned. I also fabricated a mounting post for the rudder from scrap plastic rod and assembled it in the slots, which I sawed out. In truth, however, this is barely visible on the completed model and you might achieve similar results by painting the rudder slots black. After setting everything aside to dry, this is probably where I made my second mistake. Upon returning I noted that I still had the floats and horizontal tail braces to add, but the next step was to add the windscreen and engine nacelles. The engine nacelles were no problem, as I'd completed them first, but the windscreen would be difficult. Before attaching the wing, there hadn't really been anywhere to put it, but now there was and it didn't look good.

Cockpit glazing

On my kit the windscreen was provided as two halves split down the centre. In itself, this isn't a particular problem because a large brace exists where the seam is – so as long as you are fairly neat there shouldn't be a problem. I lightly tacked the windscreen together and fitted it in place. The fit of this part was by far the worst so far. The general approach I always use is to fit it from front to back or top to bottom. Since the clear parts aren't all that clear, the first thing I did was polish and then treat the front and side window areas with Future. Making sure no Future was on any of the joints, I then applied glue down the entire centre seam of the windscreen. Before it was dry, I located it in the correct position on the fuselage. When I had achieved the best fit I could, I glued the front of the windscreen to the fuselage. While still movable, I next spread the parts a bit to align the outside of the rear of the windscreen part to the outside of the fuselage. Then I glued it to the rear of the fuselage.



On all of the reference photographs used there was virtually no exhaust staining from the rather 'lightweight' engines. Only powders were used to add weathering to the exhaust area.



It was a mess. I let it dry and put more glue on the existing joints. When all of the joints were strong, I slowly but surely filled in all the gaps with styrene scrap. Although it was a slow and tedious process, it was made more difficult by the fact that the engine mounts were in the way. When it was almost finished, I put-tied, sanded and finished it and the final result was acceptable. In retrospect, an alternative might be to fit things together and then build up the forward part of the fuselage where it fits to the windscreen, and only then glue the wings in place.

I next attached the horizontal tail braces, the floats, engine nacelles and the elevator horns. Except for the engine nacelles, which I had previously fabricated, nothing fitted as provided. The tail braces were too short, so I made new items from Evergreen strip. The mounts for the floats were not very strong, so I cut them off, drilled out holes and used small sections of brass rod. There were no mounting locations on the wing, so these had to be drilled out as well. Finally, the elevator counterbalances were much too large and had to be scraped and sanded down to something more resembling the scale. Thinking I was nearly done with the assembly and about to begin painting, I attached the counterbalances at this point. It was my third mistake. You should mount them later. The engine nacelles glued in place with no problems. I recommend completing this step before glueing the resin cooler intakes in place. This is because the cooler intakes are too large and will have to be cut down, and they also stand proud of the engine nacelles. They are located just in front of and almost centred in respect to the access panel on the engine mounts. Because I built a post-war search and rescue version, I did not mount the bombs, but the resin parts look good. Following the instructions, at this point I would have added the

Although the painting guide provided with the decals indicated that the float bottoms were not painted with anti-fouling, most references indicate that when the hull was painted with anti-fouling the floats were treated accordingly. The rigging was completed using steel wire.

rigging for the floats, the ADF 'football' antenna, the propellers and the exhaust. However, I chose to move on and completed the next steps instead, painting the model before adding the finished smaller parts. Depending on the version you model, the rigging may actually pass through the national insignia, so this should be added after the decals. Some aircraft have an ADF loop instead of the 'football', or neither, so pay attention to your references.

Undercarriage

The landing gear doesn't fit, to put it simply. The mounting hole at the top of the wheel-well assembly is in the wrong location and is far too big. The first step is to just clean everything up and get rid of all the moulding marks and seam lines. Next, thin the bracing struts somewhat, since they are much too heavy. I couldn't find a way to use any of the mounting holes provided, so I drilled my own. There is also an observation window so that the occupants can look out and observe the condition of the gear; I drilled this out at the same time. When correctly mounted, the main gear is angled slightly away from the vertical reference line through the centre of the fuselage. However, the locating hole for the main strut in the wheel well will not permit this, so I didn't use it. What I did was to make a fitting out of a scrap of 10-thou sheet plastic. I drilled a hole in it that was slightly smaller than the size of the main gear strut at the top and then cut out a small square around the whole, somewhat as you might make a scratch-built instrument bezel. Then I fitted the main strut through it and also positioned the lower three-armed brace at the bottom of the main strut. Fitting everything together on the outside of the gear well first, I cut off the excess end of the main strut. Then I slowly pushed a bit of the main strut through the square fitting and cut it off while I fitted the assembly into the main wheel well. By using this approach, I was able to slowly bring it into alignment. I test fitted each time I did this, cutting off perhaps a tenth of an inch each time until



A good view of the completed main landing gear showing the three-armed assembly at the lower joint and the two-armed assembly at the upper joint.

the pieces fitted together correctly in the wheel well. It is a bit fiddly, but it only took about 15 minutes. Then I repeated the process for the other side of the aircraft, making sure they both lined up, and finally glued it all together with liquid glue. Next I tended to the tailwheel. As I planned to use the flattened resin wheels from the kit, I made flattened discs from scrap sheet styrene for the main gear. After creating a brace for the tailwheel similar to the ones I used for the main gear, I fitted it in the hole until the aircraft stood correctly on its gear, and then glued it in place. Although I didn't attach the main gear until after I'd painted the model, I replaced the mounts due to the brittleness of the plastic. I cut off the plastic items and drilled out both the wheels and the strut and replaced them with metal rod. Step 10 is the final stage and it did not disappoint – nothing worked according to the drawing for this phase either! One of the resin parts was missing from my kit, so I scratch built one from sheet plastic. However, the main problem was the injection-moulded part for the drainage holes, which did not match any photographs that I've seen. As provided with the kit, there are eight relatively large holes on each section or half. From the photographs I've seen, there should be 10 smaller holes on each half. To remedy this, I scratch built replacements using 20-thou sheet plastic. Now the basic model was complete and I was finally ready to start painting.

Decals and painting

By now I had long since determined that I was going to build the RCAF option for which I had bought the decal sheet from Rareplanes. This provides for five different markings. As well as the Canadian machine I built, there are also options for a light grey Japan Maritime Self Defence Force aircraft, a Gloss Sea Blue US Navy scheme, Royal Navy Dark Slate Grey and

Overall, the Grumman JRF Goose offers a pleasing example of the transition of aircraft to more modern structures, although it still retains 'archaic' external bracing for the floats. Some later aircraft were modified with folding floats.

Extra Dark Sea Grey examples, and a US Coast Guard machine in silver with red, white, and blue rudder stripes. The Canadian Goose is overall doped silver with black anti-fouling on the undersides. I was unable to find a photograph of this particular aircraft, or indeed, of this particular scheme. However, I have no trouble trusting the Rareplanes decals, so I followed the painting guide that was provided. The first thing I did was paint the bottom of the hull black. Although the drawing provided with the decal indicates that the floats are silver on the bottom, study of photographs of the Goose and other seaplanes led me to conclude it is likely that the bottoms of the floats were painted with the same anti-fouling compound as the hull. After the undersides were painted, I masked them off and proceeded to paint the rest of the model. The aircraft seems to have been primarily painted silver and I represented this using Spray-n-Plate. There are a variety of other metallic airbrush paints available and I'm sure any one of them would work. After all of the basic airframe was painted, I masked and sprayed the anti-glare panel. This I did in Floquil Grimy Black, which seems to me to be just the right level of flat. I used Humbrol Satin Black with some flat black added for the bottoms of the anti-fouling

components. Once the basic painting was done, I masked the engine nacelles and added the red. To make this area stand out, I used Testors Italian Red. The end result is quite pleasing.

The primary reference I used for building this model was Steve Ginter's book, *The Grumman Goose*. As is common with Ginter's other books, there is a colour cover with a couple of photographs and a fairly nice collection of black and white imagery within the book. Many of the photographs are detail shots showing various antenna and ADF arrangements and there are several depicting the cabin interior, including the toilet and camera locations for the reconnaissance version. There are several commercial and US government schemes illustrated, but very few RAF or Canadian machines. These days, if you are connected to the internet, you are likely to find very useful information here as well, and for the Goose this is no exception. The site www.grumman-goose.com has an excellent collection of photographs and listings of many of the individual aircraft. Altogether, the Czech Model Goose was a satisfying build, resulting in a very pleasing model.

David H. Minton

On most photographs of the JRF the propellers are stopped in various uneven or asymmetrical positions when the engines are not running. This seems to be typical of the rather small, relatively high-compression Wasp Junior engines.



Reviews of the latest kits received by *Scale Aircraft Modelling*

eduard

Kit: Weekend Edition: Hanriot HD.1

Scale: 1:48

Kit type: Injection moulded

Decal options: (one) 85 Squadriglia, Albania, late 1918

UK price: £6.80/US\$10.95

Website: www.eduard.cz

I was recently given the assignment of determining whether this kit, using normal techniques and without rushing, could really be built in a weekend. The editor deliberately chose a biplane from this new no-frills series from Eduard, so that the struts and rigging would add extra levels of difficulty.

The answer, as it turns out, is yes, it can be done by a modeller of moderate skills. The kit is very straightforward (no photo-etched or resin parts) and in fact, the basic assembly of the airframe and

wings only took about four hours, with a little care. The rigging took another two-and-one-half hours, but only because it had been about 10 years since I'd done any serious biplane rigging.

Painting took the most time, and this was due to some of the techniques I employed (this also included masking and painting the trademark Italian tricolour flag motif of the period, which appeared across the undersides of both wings on many of the country's single-engined aircraft). All in all I spent about 20 hours on this kit – two thirds of it watching the paint dry – and I am happy with the result. I am even pleased with my admittedly ham-fisted attempt at rigging, with jeweller's wire and invisible thread.

The kit is not without a few pitfalls. The way to avoid the first problem is to make certain that you deepen the holes for the cabane and outer wing



struts. You will also need to lengthen the rear hole in the top wing, nearest the trailing edge, for the centre cabane attachment point. The locating hole is just a tiny bit forward of where it needs to be. I also found the green and red inks used on the decals to be off a few shades when compared to the characteristically well-researched MisterKit World War I paints I used. I also used these acrylic colours to paint the Italian roundels on the wings and tail, instead of using the decals with their questionable colours. (In the Weekend Series, Eduard prints the overall painting diagram and colour callouts directly on the box top.)

I further painted the fuselage stripes with MisterKit as well as the rest of the model, including the clear doped linen which covers most of the airframe. The exceptions were the exposed wood struts and metallic areas, where other paints were employed.

Another small quandary is presented by the tail stripes. The box art shows, from front to back, green, white, and red, while the decals are printed red, white and green. Since I found the decal colours suspect, I masked and painted them according to the box art. I have been told that it was not uncommon for the tail stripes to be reversed because of the way the airframes were painted – the Hanriot, of course, was a French import – prior to delivery, but I had no way of verifying that this was the case for the aircraft portrayed here.

I can highly recommend this kit to beginner and expert alike. It really is a fun, fast build that results in an attractive replica of one of the less commonly modelled fighters of World War I.

Bud Highleyman

Thanks to Eduard for the review sample



Revell

Kit: Republic F-84F Thunderstreak

Scale: 1:48

Kit type: Injection moulded

Decal options: (four)

JaboG 33, Buchel, Germany 1962 and JaboG 31, Norvenich, Germany, 1959, Luftwaffe; No. 12 Wing, Belgian air force, Kleine Brogel, Belgium, 1960; 'Dash Four' aerobatic team, KLu, Nellis AFB, Nevada, USA, 17 April 1959

UK price: £12.99

Website: www.revell.de

It is always good to welcome back old friends, and this kit is

certainly no exception. First released in 1984 by Monogram, with markings for two USAF machines, Revell Germany has now re-issued it with four European air force markings.

Checking the moulds indicated no problems or signs of tool wear, and the transparencies, always a high point in Monogram kits, are wrapped separately to protect them from scratching. Surface detailing is by fine, raised panel lines, characteristic of Monogram kits at that time. The instruction sheet is greatly expanded, now running to eleven pages, and the decal sheet, of which more anon, features well over 250 items.

Construction starts with the

cockpit area, comprising a one-piece bath, to which is added the control column, emergency hydraulic pump assembly, a multi-part ejection seat and instrument panel. All these parts are well detailed, and will repay careful painting. The decal sheet features instrument panel detail, but as the mouldings have a wealth of fine engraved and raised detail, this is probably best discarded and paint used instead. I suspect that it would be a nightmare trying to get the decals to accurately align and settle onto the plastic parts.

Some additional cockpit detail is also moulded into the fuselage sides. After completing the intake splitter and

tailpipe assemblies these are added to the fuselage halves before joining. Revell has also wisely advised the placing of at least 35 g (1.2 oz) (not provided) of weight in the forward fuselage to avoid the model tail sitting when completed. You may find that a little trimming is required, particularly around the intake splitter/nose wheel bay assembly, to ensure a good fit for the fuselage halves.

Wing and tailplane assembly follows, and the interlocking tabs on both ensure accurate fitting of these to the fuselage. A minimum of filler was needed, and this only on the underside of the wing/fuselage joint. The fuselage mounted speed

brakes can be positioned open or closed, and fit very well in either position, with good interior detailing. The wing pylons are multi-parted, and care should be used when fitting these to the wing underside since the location holes will need to be opened up a little, and there are slight gaps, which need attention, between the wing underside and pylons. A nice touch is the inclusion of sway braces on the pylons, although these are a little on the heavy side. A full load of both 450- and 230-US gal fuel tanks and two 1,000-lb bombs is provided.

While working on the underside of the model some of the undercarriage components can be fitted, but I would suggest that you leave off the nose gear and main wheels until after painting has been completed. If you are posing the cockpit canopy in the open position, I would advise that this also be left off until later, although now is the time to fit the windscreen and aft canopy.

As a bonus, Revell has also provided a ground handling trolley, which has obvious possibilities for a diorama.

Painting comes next, with options for two natural metal and two camouflaged

machines. The instructions only provide details for the relevant Revell paints, and no German RAL or American F.S. details. This is really rather frustrating, since German Thunderstreaks had at least two different colours applied to their undersides at various times while in service, as well as an overall natural metal finish. Careful double-checking of available references is needed, and I ended up painting my JaboG 33 machine with Xtracolor Olivegrun (RAL6003) and Basaltgrau (RAL7002) upper surfaces, and Silbergrau (RAL7001) on the underside. It is possible that this particular machine may have had Weissaluminium (RAL9006) on the underside at some point in its career.

Decal placement comes next, and this decal sheet is a tour de force, being much more comprehensive than that offered in the original issue of this kit. As well as the major markings and national insignia, all the stencilling is represented, and is legible. The instruction sheet gives details of each item's placement, and I reckon you will need between four and five hours just to get everything in place! I would give two tips here, firstly, as each item is positioned, cross it off on the



instruction sheet, so you know that a particular decal has been used, and secondly carefully trim the decal film from the inside of the warning markings around the intakes on the fuselage – this will ensure that the decal will fit snugly when applied. The decals settled down easily on to the Xtracolor gloss surface without the need for decal setting solutions. A surprising omission was the yellow lining to represent the jointing compound around the transparencies, which was so prominent on these aircraft. Stencils are also provided for the drop tanks, but not for the bombs. ProModeler, by Monogram, issued a rather nice decal sheet for World War II/Korean War ordnance (88101200200) which would

remedy this deficiency, if you can find it. Once all the decals are in place, an overall coat of Xtracolor matt varnish tones everything down nicely.

A useful reference when modelling this aircraft is the *Aerofax Minigraph 15*, which gives wide photographic coverage, as well as an interesting text describing development and service history. This aircraft was certainly a very political animal.

This is an excellent example of a re-issued kit that has stood the test of time well, with a good fit of parts, attractive finishes and a superlative decal sheet. Welcome back.

Julian R.B. Edwards

Thanks to Revell for the review sample



Kit: Lockheed Super Constellation

Scale: 1:72

Kit type: Injection moulded

Decal options: (three)

VH-EAD, QANTAS, 1958;

VH-EAG, Historical Aircraft

Restoration Society, Australia,

1996; N1009C, Irish

International Airlines, 1960

UK price: £19.99

Website: www.airfix.com

For certain this new Airfix kit is based on the old Heller kit. The Heller logo appears on the inside of the fuselage and the parts are interchangeable with the Heller L-1049G. Thus, it is reasonable to assume that the intent of the kit is to represent the L-1049G, even though it is simply called the Super Constellation. The L-1049G was certainly the most common of the L-1049, or Super Constellation, series. Since this boxing is based on the Heller kit, many of its prob-

lems are well known, but I also found a couple of new ones. In keeping with the spirit of a review, I did not replace any parts and simply fixed kit parts as required.

There are 77 pieces moulded in light grey, 12 moulded in white, and 13 clear parts. The opaque plastic is soft and somewhat flaky. The primary difference between the original Heller L-1049G and this kit is that this kit has optional parts for the nose, which can be modelled with or without radar. The instruction sheet is a little over 8 x 11 in (20 x 28 cm) and consists of detailed assembly drawings covering a total of 14 pages, three of which are given to decal placement. Fairly detailed drawings are provided for each step, and the location of difficult to decide parts, such as the landing gear pieces, is clear from the drawings. Humbrol colors are used. Raised lines are provided for details, but the main cabin doors are engraved. Assembly begins with the flight deck,

which consists of an instrument panel, two seats, two control columns, a floor and a rear bulkhead, all of which attach to the nose gear well. I assembled these, painted black and highlighted, and installed them in the fuselage. Virtually nothing will be visible when the fuselage is buttoned up. Next the fuselage halves were glued together. Whether from the age of the moulds or the thinness of the plastic, or a combination, the parts didn't just click together. As a result, I started at the top centre and glued the halves together first using liquid cement. When the joint was good and hard, I glued the top front together, followed by the rear. Then I used a heavy coat of Zap glue along the inside of the top of the fuselage everywhere I could reach through the hole in the bottom for the wing. Once all was good and dry, I glued the bottom of the fuselage together. By taking this incremental approach I did not end up with any part of the joint I couldn't fix by either sanding or

with a little filler, and the join is quite strong. Because I decided to use Kristal Klear for the cabin windows, I did not assemble the clear parts. The cockpit windscreen appears incorrect, I believe because when moving from the L-749 to the L-1049, Heller simply made the part bigger and did not do what Lockheed did, which is make the area larger and raise it. To remedy this, I raised the windscreen about twenty thousandths of an inch, using sheet plastic. Then I built up the area to the rear of the part and blended it into the fuselage to give the heavy brow appearance so obvious on the real aircraft. In retrospect, I believe I'd raise the part about twice as high and perhaps make the windscreen panels larger. All the tail parts fit alright, but I used Mr Surfacer 500 for most, if not all of their joints.

The wing went together fine, although some filler was needed along the leading edge, particularly around the nacelles. If you elect to build



an aircraft without the tip tanks, as I did, you will have to saw the tip tank off the bottom wing and then fill the resulting hole in the bottom wing with layered sheet plastic. If you do decide to use the tip tanks, be advised that they are too small and you will want to widen them about an eighth of an inch and extend them in length by about the same amount in the centre. The raised lines for the de-icer boot are much too large for the scale and should be filed and sanded away. The nacelles themselves have problems, some of which are easy to remedy. They are too long and the oil cooler intake and carburettor air intakes are too short. I remedied this by sawing about an eighth of an inch from the back of the nacelles and extending the intakes using 40 thousandths sheet plastic. They are also slightly too tapered at the front, which I ignored. Alternatively, you could completely replace them, a couple of replacement sources of which I am aware are to be found at www.HaHen.de and www.djparkins.clara.net. The props and spinners need some fixing as well. The spinners are too long, so I cut about an eighth of an inch from their backs and the propeller blades are too wide, being for the earlier version of the Connie. I thinned these while I was cleaning the flash off the spinners. Since I decided to make the Irish version, I also straightened the blades and squared of their tips, since these aircraft used the later style high-thrust take-off propellers. Whichever version of the aircraft you decide to make, you will want to thin the blades for the L-1049 series. There is an

intake cooling afterbody needed behind the propeller which I made from the plastic on the tree with the engines. I drilled out the exhaust pipes. The landing gear is crude, or maybe more politely said, over simplified, somewhat bulky and the wheels are too large. There was significant flash on every landing gear part. I used the wheels as they came, although smaller, thinner replacements would be more to scale. I drilled out the centre of the landing gear and inserted brass rod in it for added strength because I was worried about how well the rather soft plastic would hold up after I added about 2 oz (57 g) of lead to the nose.

I painted the de-icer boots first, using Floquil Grimy Black, then masked and painted the rest of the model. I painted the model using Testors PLA white for the crown and, after polishing the rather pebbly wing surfaces, Alclad II Polished Aluminum for the wings. Although the instructions show the wing walk areas in grey, I was unable to determine that this was accurate and painted mine instead using Alclad II White Aluminum.

Decals are provided on a rather large decal sheet (11¼ x 18½ in; 28.6 x 47 cm) and cover three aircraft and various hull markings, such as the wingwalks and some of the de-icer boots. Specific decals are for VH-EAD, VH-EAG, and N1009C. VH-EAD, hull number 4607, is a QANTAS L-1049E and the markings provided are for the delivery scheme with the red cheat line and the winged kangaroo on the tail. VH-EAG, hull number 4539, was an L-1049C and was also, previously, a QANTAS aircraft. The markings for it provided in

the kit, however, are for the restored aircraft belonging to the Historical Aviation Restoration Project, which have a red kangaroo on the tail and the titles 'CONNIE' on the fuselage. It shares the red cheatline with the QANTAS aircraft, along with the tip tank flashes and the Australian flag on the tail. Both of the Australian aircraft operated with tip tanks, so you could model the wings as they come. To model the 'E', you can use the kit as provided. To model the 'C', which was a freighter, you will have to scratch build the cargo door and as far as I am aware, all the 'C's were delivered without any cabin windows. N1009C, hull number 4807, was a Seaboard and Western L-1049H, which was wet leased by Aerieta for flights between New York, La Guardia, and Shannon, starting in spring 1958. In order to use these decals with any accuracy would require a conversion of the kit to L-1049H standard, the latter being a convertible freighter version of the aircraft. Externally, the main difference between the 'H' and the 'G' is the presence of cargo doors on the port side, a large one at the front and a huge one at the rear, and a bunch of differences in the windows. The passenger doors were mounted in the cargo doors, for when the aircraft were operating as airliners, as when Aerieta used this example.

Aerieta also leased two other aircraft from Seaboard and Western during the same period, N1008C and N1005C. '8C was another L-1049H, of which Seaboard operated a number. But '5C, hull number 4557, was an L-1049E. It was originally leased to Cubana as

CU-P573, but was later taken up by Seaboard and Western as N1005C. It was returned to Seaboard in 1961. Except for some differences in the window arrangement and the door arrangements, the 'E' appears very similar to the 'G'. The forward cabin door on the Heller kit is actually more like that of an 'E' rather than that of most 'G's, although some 'G's did operate with the same type of door as the 'E'. This is the one I decided to make. I ignored the window problem because the cheat line came with the windows already cut out.

There was another major problem I found with the decals, besides them being for the wrong aircraft. The titles on the decal sheet read 'Irish International Air Lines'. My references agree that these titles were carried on the port side, which was often the boarding side. But on the starboard side, the titles should read 'Aerlínte Éireann'. This was not an uncommon practice in the 1960s, many aircraft having English titles on one side and native language titles on the opposite side. I made these new titles by cutting the letters apart and reassembling them. I had to hand paint extra arms for a couple of 'E's, made using some extra 'I's. The final problem was that the window borders are provided in silver-grey for this aircraft, which is accurate, but they did not fit. The problem is that there is not enough green above the windows at the top of the cheatline for the frames to fit, so I left them off. The cheatline comes in three pieces for each side, a centre, front and rear part and that is how I assembled them, centre first, then the front and the rear. There is extra material to fill in any gaps and I did end up with one on either side. Although the decals are opaque enough, they have a white background, there were some problems with the fit which I made up for by painting the areas around the window frames that were not adequately covered. If I had it to do over again, I would probably just paint the cheatline. There are two shamrock logos provided for around the rear entry door on the left side. I can say that on most L-1049Hs there are circular view windows at this location. On '9C, however, sometimes at least, these windows were covered by the

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shamrock. For the L-1049E I assumed the markings would be the same, so included them on the model. Decals are provided for some of the de-icer boots, but I did not use any except on the propellers. The Hamilton Standard logos do not appear on the later, square-tipped propellers. The wing walk decals generally went on well, but didn't exactly fit around the complex

nacelles and I ended up hand painting that area. I couldn't find any photographic reference for the strange engine nacelle decals and so didn't use them. After the decals dried, I coated the model with Future and it was done.

Scalewise, I would estimate that the model is a bit overstated, by which I mean it is heavy. True, the tip tanks are a bit small, but the wingspan

is a bit large and I believe the fuselage is even larger still. Without the tip tanks, I measured the span at about 125 ft 6 in, compared to the actual 123 ft. With the tip tanks it is even larger. I didn't measure the fuselage because of the radar dome, of which there were different variations and so there are a number of different fuselage lengths reported. I was not certain

which came without the radar dome. In conclusion, if you like the Connie, you can't not like this model and it is good to have it reissued. Although it doesn't exactly click together, there is nothing a modeller with average experience can't handle.

David H. Minton

Thanks to Airfix for the review sample



Kit: SB 2M-100 'Katiushka' Spanish Air Force Bomber

Scale: 1:72

Kit type: Injection moulded

Decal options: (four) No. 5, 12 Grupo, 1937, No. 46, Barajas, 1938 and No. 1, Grupo 24, 1937, all Spanish Republican air force; and 20W+I, Spanish Nationalist air force, Logrono, 1940

UK price: £10.99

Website: www.italeri.com

When the Tupolev SB 2 first flew in 1934 it marked quite an advance, not just in Soviet, but in world aircraft design. Its mid-wing monoplane layout, smooth alloy skin and retractable undercarriage all added up to justify the aircraft its initials SB – Skorostnoy Bombardirovshchik, or High-Speed Bomber. By 1937 the first production aircraft fitted with the M-100 engines and capable of achieving 263 mph (423 km/h) were entering service. The SB 2 made its combat debut during the Spanish Civil War. Operated by the Republicans it was nicknamed 'Katiushka' and 'Martin Bomber' by the Nationalist forces.

The product reviewed here is one of three versions of this kit released to date by the Ukrainian company ICM. It contains parts and decals for four Spanish options for both the Republican and Nationalist forces. It represents a welcome choice of subject by ICM since previous kits by FROG and MPM both have issues with quality and accuracy.

The ICM kit comprises a surprising 164 parts on six grey plastic sprues. Surface detail is comprehensive and very fine, although a little flash is present on some parts. The clear sprue has several different canopy options and is thin and acceptably transparent. The

small decal sheet carries four options, three Spanish Republican and one captured Nationalist aircraft. The instructions give clear and precise assembly diagrams and reference is made to Model Master paints for cockpit colours, etc. Before any assembly can begin excessive mould release oil has to be washed from all the plastic items.

Surprisingly for such a small aircraft, the fuselage is broken down into three sections. This, I believe, is due to moulding limitations. The wing centresection assembles first. The open bomb bay is well detailed and several bomb load options are provided. There is also plenty of internal structure provided in the undercarriage bays. The nose compartment for the navigators is well furnished and fits nicely onto the completed centresection, as does the rear fuselage. The rear gunner's position is very well detailed. The outer wings are assembled next and these slot onto spars which give a good joint. The last major items are the engines. Care is required to achieve a decent fit with these since each comprises six parts and they must be correctly aligned or you will have problems



attaching them to the wings. All the control surfaces are separate so that you can offset them if desired. Finally, the transparencies were fitted and the model was prepared for painting. I substituted Xtracolor and Humbrol paints for those given in the detailed camouflage guide.

Markings are provided for the three Republican aircraft in green and brown mottled camouflage with red identification bands, green and brown disruptive camouflage and sandy brown upper cam-

ouflage, respectively, and for the Nationalist machine in green, brown and grey splinter camouflage.

I enjoyed making this model. It is accurate, the level of detail is very good and if care is taken the many sub-assemblies come together to give a nice representation of the SB 2. This is another good offering from ICM and I hope more versions will follow in the future.

John Nicholls

Thanks to The Hobby Company for the review sample





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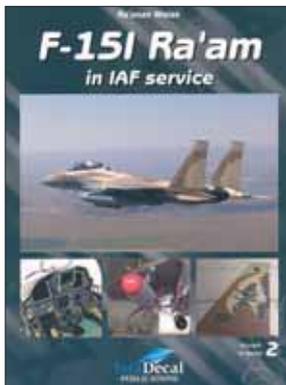
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Reviews of the latest books received by *Scale Aircraft Modelling*



**Aircraft In Detail 2:
F-15I Ra'am in IAF service**
Ra'an Weiss
IsraDecal Publications
US\$30.00
Website:
www.isradecal.com

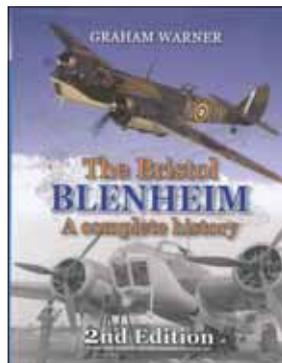
The F-15I Ra'am is an export version of the Boeing F-15E Strike Eagle, perhaps the most capable multi-role jet fighter currently in service. Ra'an Weiss' book on the Ra'am offers an exclusive pictorial insight into Israel's camera-shy and ultra-secretive No. 69 'The Hammers' Squadron, the Israeli Air Force's sole F-15I unit.

The book is divided into logical sections beginning with a brief introduction and then developing into five photo chapters before closing with two foldout line drawings to 1:48 and 1:72 scales. It is an excellent reference book that will help modellers convert their F-15E kits into high fidelity F-15Is, and comprehensive photographs of all the Ra'am's nooks and crannies will please even the most fastidious of superdetailers to boot. On the downside, in keeping with all of the IsraDecal books I have read, this book is let down by poor reproduction quality, a general standard of photography that is found wanting, irritating political undertones when discussing Israeli operations and other nations, and poor editorial standards.

F-15I Ra'am in IAF Service is a utilitarian publication – it does what it says on the cover and makes no apologies for its simplicity. If you plan on modelling the F-15I Ra'am, it is a must.

Steve Davies

Thanks to Ra'an Weiss for the review sample



The Bristol Blenheim: A complete history – 2nd Edition
Graham Warner
Crécy Publishing Limited
£34.95/US\$54.95
Website: www.crecy.co.uk

The first edition of this fine book was hailed by reviewers as undoubtedly the finest book on the Blenheim yet produced and by some as one of the finest aircraft books of all time. It would be splendid to think that all the major types could be given such a thorough treatment by such an acknowledged expert in their field, but alas that could never be so.

The additional material in this second edition has largely been compiled through correspondence – much of it from ex-Blenheim crewmembers and their families – that resulted from the publication of the first book. Being unfamiliar with the original version I can't say how comprehensive this new material is, but as a package this book certainly does show exactly what an aircraft type history should be.

I was a little disappointed to notice errors in a few captions, however, the caption to the book's second photograph being typical of these – it notes the aircraft depicted as K7597 when its serial can clearly be read as K7557; it is *Britain First*. The inclusion of a cutaway with numbers but no key on page 637 also struck me as odd and it appears that the captions to the photographs in the second colour section were not updated when the additional material was added. Still, this book is unreservedly recommended to modeller and enthusiast alike.

Paul E. Eden

Thanks to Crécy Publishing Limited for the review copy

Blackburn Buccaneer
Kev Darling
Crowood Press
£29.95

Website: www.crowood.com

With the issue of two Buccaneer kits from Czechmaster Resin and modellers' stock piles of 1:48 Airfix kits, this could be a useful reference title. I have a few books on this aircraft but this is certainly the biggest, and in many ways the most comprehensive, with some 190 pages. The first chapter discusses early Blackburn naval aircraft, the photographs of which bring back memories of some pretty odd-looking machines, and in some case unsuccessful ones; the Blackburn Blackburn in the



first category and the Roc in the second.

Next the author covers the 1953 specification M.148T contenders for a two-seat aircraft powered by two jet engines. Each entrant is dis-

cussed, complete with drawings. Because of the environment that this machine would have to operate in, it had to be very strong. Unfortunately there was no suitable machinery in the UK to produce some of its parts. Overtures were made to the USA which used such equipment, but none could be made available for three years. As the author says, Blackburn suspected that this could have been a delaying tactic to aid sales of US aircraft (shades of TSR.2?). Whatever the reason, Blackburn decided to build its own and so the Buccaneer was born.

The book covers all aspects of the development and operational service of all the variants, so much so that

there is a serial by serial section. The book includes a wealth of photographs in colour and monochrome, plus a number of manual drawings, covering such things as the seats, bomb bay, airbrakes, control surfaces, etc. This book is as good as any I have seen and better than most. To be honest, as far as the modeller is concerned, I have yet to see a book that has as much information regarding the various Buccaneer modifications as that which can be found in the CMR instruction leaflets, but nevertheless, I am sure that the Buccaneer buff will love this book.

Ernie Lee

Thanks to Crowood Publishing for the review copy

Farnborough: 100 Years of British Aviation
Peter J. Cooper
Midland Publishing
£24.99/\$44.95

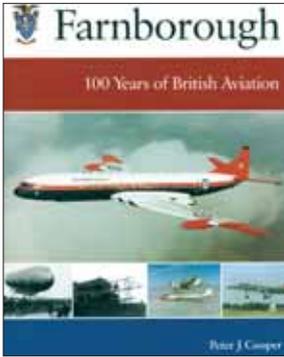
Website:
www.ianallanpublishing.com

Peter J. Cooper has been an aviation enthusiast in North Hampshire since the mid-1960s to my personal knowledge; what I didn't realise until I read the introduction to this book is that he worked at the RAE (and its

alphabet soup successors) before becoming increasingly involved in aviation journalism. It's ten years since he produced the profusely illustrated *Forever Farnborough*, and in this new volume he tells the story of the airfield and its

central role in British aviation.

After an opening chapter on the kite and balloon era, the story is told a decade at a time, with each of these chapters having yearly narratives. The chapters are interleaved with accounts of individual



sections, such as the Empire Test Pilots' School and the Institute of Aviation Medicine.

One such chapter covers the SBAC displays which were the public face of Farnborough, and where the taxpayer could search for some return on his investment; each year has a list of notable (but not all) participants. These sections, like the whole book, are extensively illustrated, and are a nostalgic joy to those of us who lived through the era. Towards the end of the book colour photographs become increasingly common, but the modeller will have little difficulty in recognising the colour schemes of most of the aircraft shown, perforce, in black

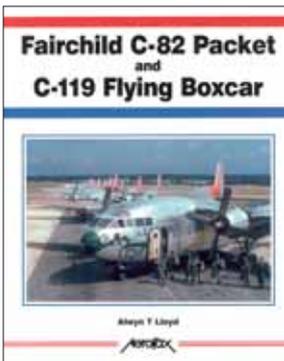
and white. Because of Farnborough's function many of the aircraft, like those at Boscombe Down, are one-offs, not – yet, at least – available in kit form (Sperrin, anyone?), or requiring vary degrees of modification, but both text and pictures are potential sources of inspiration to those of us who model British aircraft. Peter Cooper has done a first-class job in pulling the strands of Farnborough's history together, and has been well-served by his production team and publisher; I'm sure that some of the pictures look rather better in these pages

than they do in the original. The text is full of odd anecdotes, such as that of the commanders of Nos 2 and 3 Squadrons on their joint formation, who organised a simultaneous line abreast take-off of their B.E.s so that neither unit could claim primacy in the future! Fair play still ruled, then.

This is a book both to read at your leisure and to dip into, or just to aid inspiration; I recommend it very highly.

Mike McEvoy

Thanks to Ian Allan for the review copy



Fairchild C-82 Packet and C-119 Flying Boxcar
Alwyn T. Lloyd
Aerofax/Midland Publishing
£19.99
Website:
www.ianallanpublishing.com

Prior to the arrival of the C-130 Hercules, the C-82 and the more numerous C-119 formed the backbone of the tactical transport fleet of the US and its allies, with well over 1,300 examples being built. Noted author and historian Alwyn Lloyd has written this long-anticipated book on these often neglected aircraft in unprecedented scope and detail.

The Packet and Boxcar story, presented in 23 chap-

ters and six appendixes, is well researched and a pleasure to read. It is packed with over 300 black and white and colour photographs (many of them never previously published) depicting all variants and operators – some displaying interesting colour schemes and nose art.

The Packet stemmed from a 1941 US Army requirement for a freight carrier having a large, uninterrupted cargo hold with direct ground level access. The XC-82 prototype first flew in September 1944 but by the time the first of 220 C-82A aircraft had entered service in May 1945, World War II was nearly over and the large production runs that Fairchild had anticipated never materialised. A contract for 782 North American-built C-82Ns was terminated on VJ-Day after only three had been built.

The first two chapters are thus dedicated to the development, technical description and short operational history (1947-1953) of the C-82 with the USAF, including its service during the Berlin Airlift.

Fairchild's effort to further improve the C-82 led to the XC-82 being modified with a redesigned flight deck and

empennage, and more powerful engines. The modified airframe, re-designated as the C-119, would prove to be more successful than its predecessor.

Three chapters are devoted to the production, flight test and technical description of the C-119 and its numerous production variants, including those that never reached the production stage – among them the YC-119H Skyvan and XC-120 Packplane.

Most of this book is, however, dedicated to the Boxcar's service history with the USAF, USN, USMC and foreign operators, with separate chapters devoted to its use in Korea, in Indochina with the French and with the RCAF.

The author has left no stone unturned in presenting some of the more unusual uses of the C-119, such as those that were modified for the inflight snatching of high-altitude balloons and spy satellite film capsules under Operations Grayback and Dragnet.

Perhaps the type's most recognised special role came during the Vietnam War, which saw a number of aircraft converted into AC-119 'Shadow' gunships – equipped with Miniguns, cannon, flare

launchers and special sensors. Here too the author has done an excellent job in describing and illustrating these black/camouflaged aircraft and the special missions that they flew – a role since assumed by the AC-130.

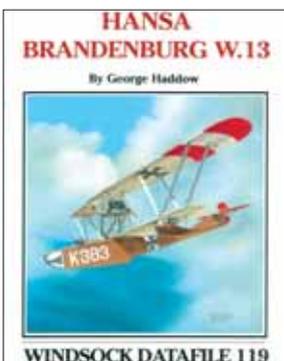
When the Packet and Boxcar became surplus to military needs, many airframes found renewed service with civilian cargo and fire-fighting operators and here too the author has done a fine job in documenting and illustrating all civil registered airframes.

This book is crammed with many service manual illustrations, detail photographs and line drawings, with six appendixes presenting tables of units and their markings, service histories and production/serial numbers.

Space unfortunately did not permit inclusion of a glossary or references, but the author was more than happy to provide them to this reviewer. This book is very well researched and will appeal to historian and modeller alike. Highly recommended.

Terry Panopolis

Thanks to Ian Allan for the review copy



Windsock Datafile 119: Hansa Brandenburg W.13
George Haddow
Albatros Productions Ltd
£10.50
Website: www.windsock-datafilespecials.com

The elegant W.13 flying boat was a product of the Heinkel design team, but as it did not fill the requirements of a German specification for a large general-purpose flying boat, the German military showed no

interest in it. However it was thought that it would be suitable for use by the Austro-Hungarian Empire. At least 130 were thus built and good use was made of them.

This monograph follows the usual pattern for this series of development and operational history, complemented by a large number of photographs. Like many such machines the W.13 had an uncowled engine, so it is fortunate that there are some good close-ups of it. One

interesting fact was that the support struts for the engine were steel tubes covered in sheet metal to form an aerofoil section and, for some reason, they were painted to represent wood, even on aircraft that did not have such a finish on the rest of their struts.

As always, 1:72 and 1:48 scale drawings are included, plus three colour profiles on the rear cover, all illustrating different colour schemes. Added to these is a cover

Market Place

painting that is a most useful reference for both building and painting. The high-visibility markings carried on these machines make them

an extremely attractive subject to model.

Simply the announcement of a new *Datafile* is enough for many World War I modellers to

open their wallets, but if you are new to the game then you will not find a better reference than these products from Albatros Productions.

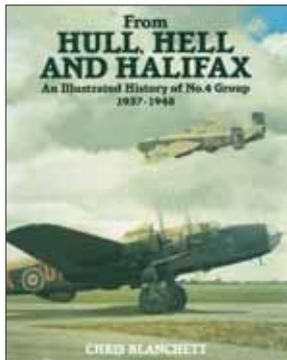
Ernie Lee

Thanks to Albatros Productions Ltd for the review copy

From Hull, Hell and Halifax

Chris Blanchett
Midland Publishing
£24.99/\$44.95

Website:
www.ianallanpublishing.com



This history of No. 4 Group, RAF, was originally published in 1992 and its reprinting is very welcome. It isn't concerned solely with the use of the Handley Page Halifax in the Bomber Command offensive against Germany, but this is probably the aspect which will be of most appeal to modellers, especially those contemplating the Fonderie Miniatures kit. At the end of 1939 the Yorkshire-based Group squadrons were equipped with Wellingtons and

Whitleys, the latter not having had all that much coverage over the years. As with other books of this type the considerable number of photographs that accompany the chronological text are concerned with

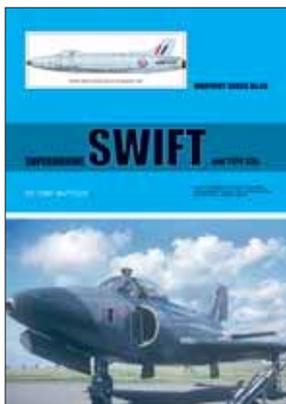
the people, aircrew, ground-crew and support services as much as the hardware, winged and wheeled. All the illustrations, with the exception of the splendid Keith Woodcock dust jacket painting, are in black and white and therefore occasionally subject to interpretation or reference to other sources.

Even with more modern equipment the casualty rate among bomber crews was terrible, and it's right that we should be reminded from time to time what the young men – at a time when aircrew in their late twenties were the elders of their crews – went through. Subjects covered by appendices include bases, units with their moves and types, nose

art and Halifax tail markings, the four Halifaxes that carried out 100 or more missions, and Victoria Cross winners. In May 1945 the Group was transferred to Transport Command and its squadrons re-rolled, and modellers considering the Magna Stirling Mk V conversion will find useful information and photographs here. I don't know why I missed this book the first time round, but I'm very grateful for its reappearance and I recommend it highly, not least because it sheds deserved light on a type which is sometimes overshadowed by others.

Mike McEvoy

Thanks to Ian Allan for the review copy



Warpaint No. 58:
Supermarine Swift
Tony Buttler
Warpaint Books Ltd
£12.00

Website:
www.warpaint-books.com

A monograph on this aircraft has been a long time in coming. Although not exactly a successful machine there has certainly been an abundance of Swift kits, most of the short-run variety, but some of high quality.

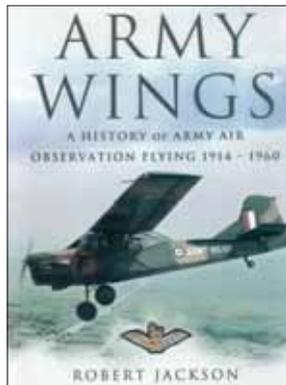
The book's format is well known to the enthusiast, being a development and operational history, supplemented by a

large number of photographs. These books are also designed for the modeller. The detail shots in colour reflect this, as do the 1:72 scale drawings. Artwork has always been a prominent feature of *Warpaint* books, and this is no exception; there are two five-views and 24 profiles. As you might expect the artwork covers machines from the three squadrons with which the Swift served, but also non-operational units, thus allowing the modeller to produce, with a little modification to the kit, more unusual schemes and configurations, such as Mk 7 XF114 flown by the College of Aeronautics, Cranfield. This aircraft was black overall with a 'Mickey Mouse' motif on its nose, or a Mk 7 of No. 1 Guided Weapons Development Squadron, RAF Valley, complete with Fairey Fireflash air-to-air missiles.

This is a cost-effective little profile, worthy of a place in any aviation enthusiast's library.

Ernie Lee

Thanks to Warpaint Books Ltd for the review copy



Army Wings – A History of Army Air Observation Flying 1914-1960

Robert Jackson

Pen & Sword – Aviation

£19.99

Website:

www.pen-and-sword.co.uk

This book's subject is usually tagged onto, or forms part of, a unit or campaign history and it is nice to see it being given its full due.

The book's first chapter delves into pre-World War I observation work. It seems that the first aircraft involved could have been man-lifting

kites in around 549AD in China. Balloons were deployed in the American Civil War, the British used man-carrying balloons from 1880 and by the time of World War I, airships used for observation were commonplace. Also, by then, the first task of heavier-than-aircraft was seen as reconnaissance. The operational history of Allied machines used in this role is well chronicled. Chapter three covers AOP machines between the wars, with aircraft from major European countries and the United States. World War II follows this, where flying in a hostile environment was challenging to say the least. The last three chapters deal with trouble spots, Korea and Vietnam.

The whole book, of some 176 pages, is a mine of information and, complemented by a large number of monochrome photographs, it presents an unusual facet of aviation history. I recommend you find space for it on your bookshelves.

Ernie Lee

Thanks to Pen & Sword for the review sample

Seria "Pod Lupa" No. 14:
Messerschmitt Me 163
Komet
Przemyslaw Skulski

Seria "Pod Lupa" No. 15:

PZL P.24
Przemyslaw Skulski
ACE Publication
Website:
www.ace-publication.wroclaw.pl/indexen.html

Numbers 14 and 15 are the first in this series of Polish monographs to reach me. Each consists of 36 pages between softback card covers and reproduction is reason-

able on the good quality paper used. Both books contain a large number of 1:72 scale drawings, primarily by Marek Rys. These are reinforced by drawings taken from the air-



craft manuals, with rather more of these appearing in the volume on the Messerschmitt. Also common to both are colour sections containing detail images of preserved aircraft and colour cover artwork. Seven profiles and two upper-surface colour views are supplied for the P.24, eight profiles and three computer renderings of cockpits for the Me 163.

In the Me 163 book a workable translation of all the captions is provided although only Polish body text is used.

The P.24 also includes dual-language captions, but adds a brief summary of the P.24's history. Its brevity, however, indicates that this is not a repeat of the large amount of information clearly presented in Polish.

Both books have a section on modelling the aircraft and for their plans and detail shots alone, these slim volumes must be worth considering.

Paul E. Eden

Thanks to Przemyslaw Skulski for the review copies

a Lindberg 1:48 model which may have originated even earlier. I've long thought of the PT-13 as a Tiger Moth on steroids, and was very impressed by a short trip in the back of one a few years ago and indeed by its appearances at displays in the States. This book has been compiled by an author and production team with an obvious affection for the type and its siblings; it's a real tribute to them and would be an entertaining addition to your bookshelf.

Mike McEvoy

Thanks to Ian Allan for the review copy

craft's military credentials. Other less common schemes include those of an ambulance aircraft; a British Airways machine in military colours; a Mk III of No. 279 Sqn in the standard sea scheme, complete with lifeboat; and a couple of Mk Is in Camotint and Light Slate Grey, respectively.

Add to this 1:72 scale drawings of all the variants, a unit list, a production list and even a list of U-boat kills, and you have an excellent reference for both enthusiast and modeller, at a very reasonable price.

Ernie Lee

Thanks to Warpaint Books Ltd for the review copy

used well, with the exception of one or two poor crops.

Overall this is an excellent summary of the Vulcan, whose 'Did you know?' sidebars, while not for the serious enthusiast, should help it appeal to a wider audience.

Paul E. Eden

Thanks to Sutton Publishing for the review copy

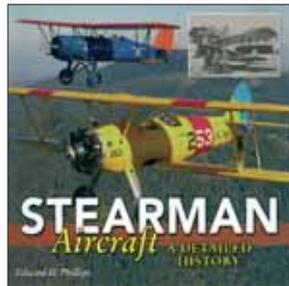
Stearman Aircraft – a detailed history

**Edward H. Phillips
Specialty Press/Ian Allan
£24.99/\$39.95**

Website:

www.ianallanpublishing.com

The Stearman/Boeing Kaydet – you remember the Revell boxing, surely – is probably best known for its task of training USAAF (PT-13) and USN (N2S) aircrew during World War II, although this book shows just how much more there has been, and still is, to the type, and indeed to the company from its biplane beginning in 1926 to its clo-



sure as the Wichita division of Boeing in 1962, by which time it had progressed to building B-52s!

While the backbone of the book is the legendary Model 75 biplane trainer, the strands

of development that culminated in that aircraft are very well laid out, starting with Lloyd Stearman's work with Lockheed and Beech. Both text and illustrations are well deployed to show the chronological history, and while the majority are in black and white there is a 24-page colour – indeed colourful – section in which a great proportion of the subjects are museum or preserved aircraft, including one of the 'Utterly Butterly' machines in what is now a historic scheme. Apart from the 1960s' Revell 1:72 kit already mentioned I can only recall, in injection moulded kits at least,

Warpaint No. 59: Lockheed Hudson Mk I to Mk VI

Alan W. Hall

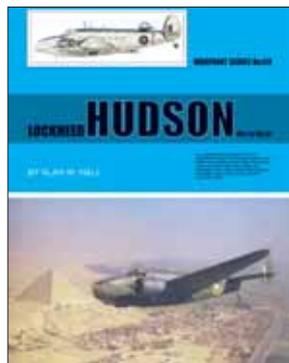
**Warpaint Books Ltd
£12.00**

Website:

www.warpaint-books.com

This monograph could not come at a more opportune time, with two new 1:72 Hudson kits issued by MPM (one under the Italeri label) and two in 1:48 from Classic Airframes.

The book's first chapter describes the development and operational service of the aircraft, followed by a description of each mark. The Hudson was used in all theatres of opera-



tion, in many guises. This is reflected in the book's many photographs and artwork. A photograph on page one is perhaps the most infamous of all.

It shows the precursor of the Hudson, the Lockheed 14, of Neville Chamberlain fame, while the rest follow the Hudson through its wartime service and back to peacetime again.

I think the large number of colour profiles, 36 in all, will stimulate the modeller most. There are so many variants and colour schemes illustrated that I can only give a snapshot of them. The most colourful is a Mk IIIA of the RNZAF in overall natural metal with yellow wingtips, cowlings, fuselage band and lifeboat. Wing and fuselage markings consist of a black circle with a yellow cross, with only the serial number and tail stripes betraying the air-

The Vulcan Story

Peter R. March

Sutton Publishing

£8.99

Website:

www.suttonpublishing.co.uk



This small landscape-format book has been produced in association with the Vulcan to the Sky Trust and its sale supports that organisation.

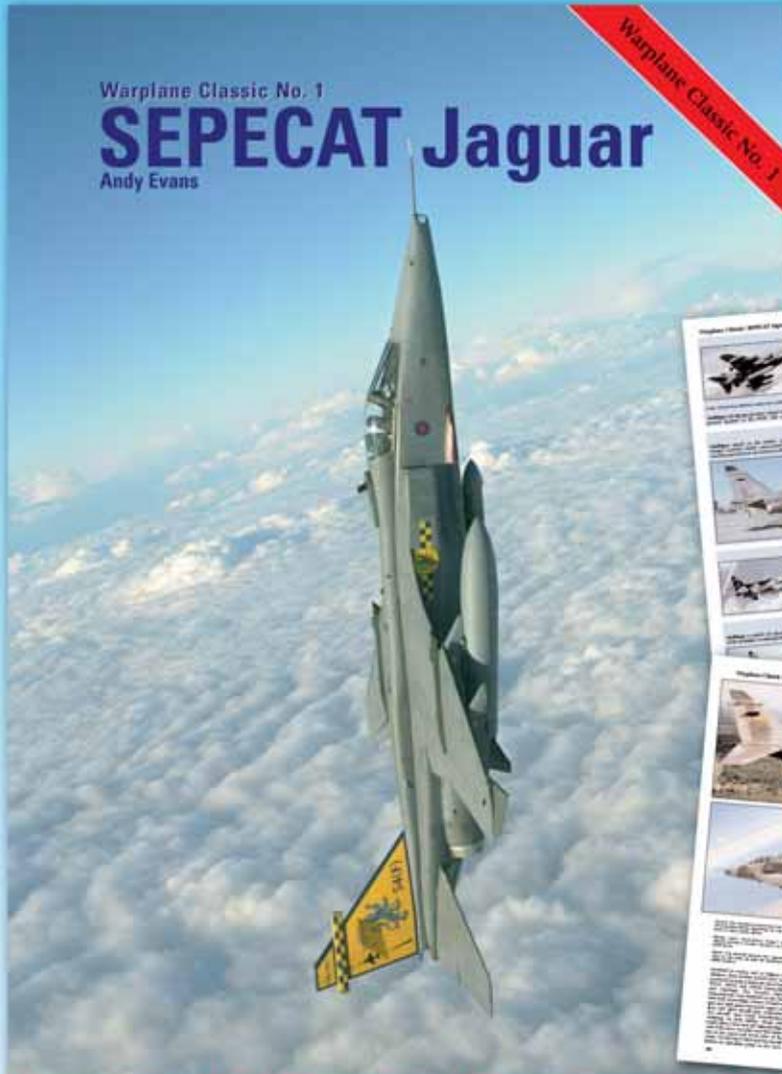
Peter R. March is known throughout the aviation world and he has done a fine job in

cramping a huge amount of information into such a small package. Some of the Vulcan story has had to be abbreviated owing to space restrictions, but the book still provides a very readable account.

There isn't a great deal new in the way of illustrations, many of the black and white and colour photographs being familiar, although generally

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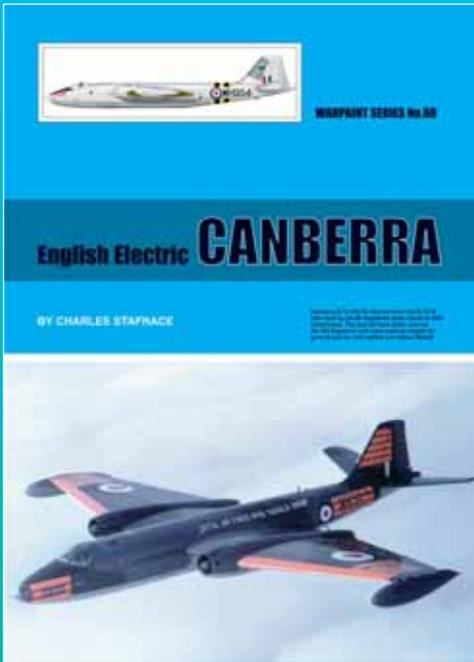
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WARPAINT No.60

English Electric CANBERRA



All major credit cards accepted. Orders can be placed by mail, telephone, fax or through the web site. (www.warpaint-books.com) Postage on UK orders is free. Overseas readers pay postage at air mail printed paper rate.

THIS massive book on everything there is to know about the Canberra came about because the aircraft has been the longest serving bomber ever to fly in RAF service. Written by Charles Stafface, who wrote the F-104 earlier in the series, it has produced the most comprehensive account of the Canberra's long service from the first prototypes to the last Marham-based TT.18. All of the-to-be-expected Warpaint contents are included such as a comprehensive squadron and unit chart with representative serials, a detailed production list, and kit, decal and accessories information. In addition the Canberra achieved many records in its earlier career and these have been listed. The book is 84 pages in length and has a set of 1:72nd scale drawings of all Canberra variants. There are over 130 pictures many in colour illustrating the Canberra's service not only with the RAF but all of the other countries which bought them over the years. The only conflict in which Canberra faced Canberra in the Falkland Islands is also described along with all other actions in which it has taken part. Pages of colour side and plan views by Richard J.Caruana add so much to the immense value of this book.

£15.50



Sample pages of Canberra book drawings by Richard J.Caruana

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Avro Anson £11.50, Westland Whirlwind £9.95, Hawker Tempest £11.50, Blackburn Firebrand £12.00, Hampden £12.00 (only a few left), Supermarine Swift £12.00, Lockheed Hudson £12.00.

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Reviews of the latest accessories received by Scale Aircraft Modelling

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Big Ed

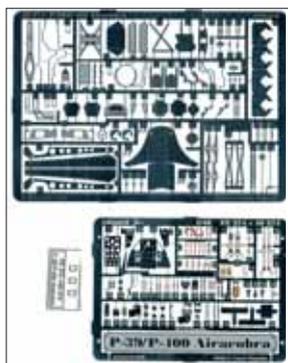
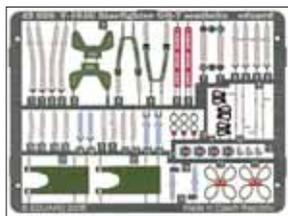
The latest from Eduard is topped by three new Big Ed sets, containing a bargain-priced collection of all the photo-etched frets and adhesive masks the company makes for a particular kit. **BIG7226** (£16.70) provides frets and masks for the **Italeri SM.79 Sparviero serie 1**.



In 1:48 scale, **BIG4872** (£44.90, above) is for the **Revell/Accurate Miniatures SB2C-1 Helldiver** and **BIG4873** (£73.50) is a massive set for the **Revell B-17G** kit.

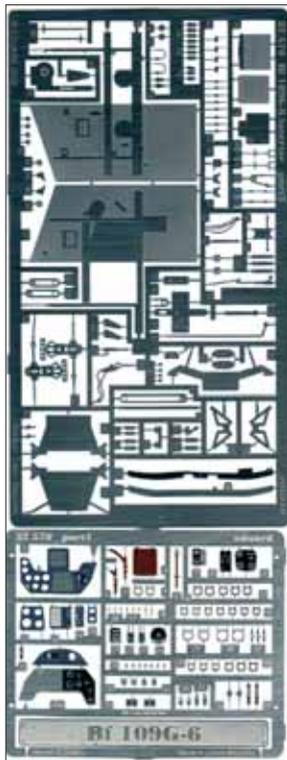
Colour photo-etch sets

New items in colour from Eduard begin with fret **73269**, an interior set for the **Italeri A-26C Invader (bomber nose version)** priced at £13.50.



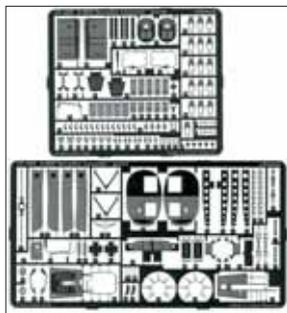
In 1:48 scale colour are **49036** (above top), a **seatbelt set** for the **Hasegawa F- and TF-104G kits' GQ-7 ejection seats**, priced at £4.99, while **49368** (£11.75) is a complete **colour interior set** for the

TF-104G kit. Set **49366** provides parts for the **Airfix Spitfire Mk IXC/XVII** (£10.50), while **49374** (£8.75, above) covers the new **Hasegawa P-39/P-400 Airacobra** kit.



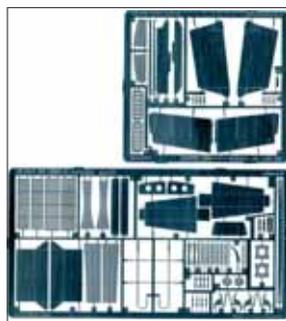
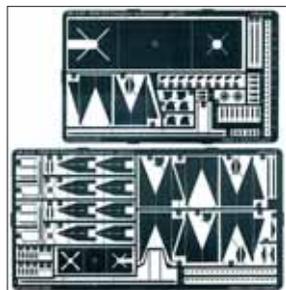
In 1:32 scale is a colour set for the **Hasegawa Bf 109G-6 interior** (**23570**, £11.75, above); **seatbelts** for the same kit in fret **32589** (£5.60); and frets for the **Roden Albatros D.III** (**32583**, £11.75).

Non-colour frets



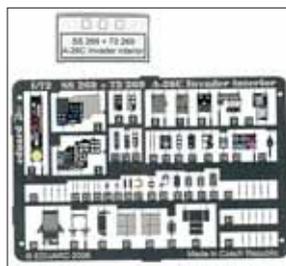
Other new frets from Eduard include an exterior set for the **Italeri 1:72 scale A-26 Invader** (**72460**, £13.50).

In 1:48 scale is a set of **armament parts** for the **Italeri MiG-23** kit (**48545**, £11.75, below).



Sets in 1:32 scale include **exterior parts** for the **Trumpeter CH-47D Chinook** (**32159**, £11.75); **exterior frets** for the **Tamiya A6M2 Type 21 Zero** (**32162**, £11.75) and **landing flaps** for the same kit (**32166**, £10.50). Also in 1:32 is an **exterior set** (**32164**, £11.75, above) rounding out frets for the **Hasegawa Bf 109G-6** kit.

ZOOM



In the bargain ZOOM series of colour interior frets are **SS269** (£3.70) for the **Italeri A-26C Invader**.



In 1:48 ZOOM are sets for the **Airfix Spitfire Mk IXC/**

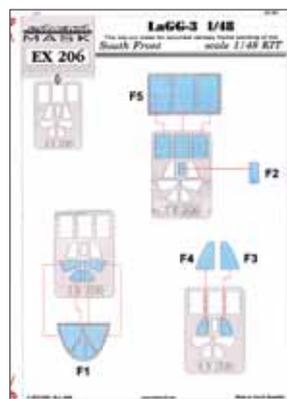


XVII (FE366), the **Hasegawa TF-104G (FE368)** and **P-39/400 Airacobra (FE374)**, all priced at £4.99.

Masks



New pre-cut, adhesive mask sets have been cut in 1:72 scale for the **Hasegawa Mosquito** series (**CX164**, £3.15); **Italeri B-25C/D Mitchell (CX165)**, £2.50, above); and **Hasegawa F-16A (CX166)**, £2.50). Other 1:72 masks include a set for the **Trumpeter An-2 'Colt' (CX168)**, £3.15), and **I-28 'Beagle' (CX169)**, £3.15). Finally, in 1:72, is a set for the **Italeri A-26C (CX170)**, £3.15).



In 1:48 scale masks are sets for the **Italeri F/A-18** series (**EX203**, £3.70); the **Trumpeter Mi-24 'Hind' (EX205)**, £3.70); the **South Front LaGG-3 (EX206)**, £2.50, above); and the **ICM Bf 109F-2 (EX207)**, £2.50).

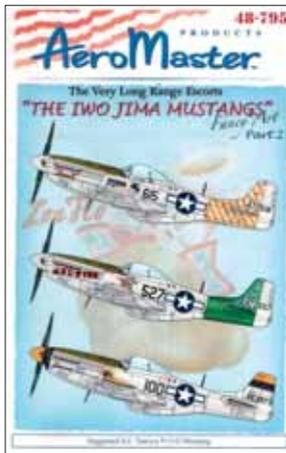
Thanks to Eduard for the review samples

Aeromaster

48795

1:48 The Iwo Jima
Mustangs Pt 2
£6.95

www.aeromaster.com



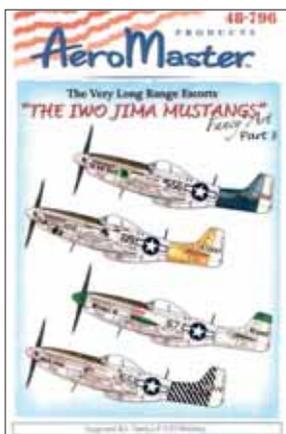
Three aircraft feature on this sheet: P-51D-20-NA *Dinny*, flown by Lt Willie Willis, 462nd FS, 506th FG, Iwo Jima, summer 1945; P-51D-20-NA *Hel-eter*, shared by Lts John Winnen and Phil Alston, 457th FS, 506th FG, Airfield 3, Iwo Jima, summer 1945; and P-51D-15-NA *Jeanne VIII*, flown by Maj. Jim Vaude Hey, CO of the 78th FS.

Aeromaster

48796

1:48 The Iwo Jima
Mustangs Pt 3
£6.95

www.aeromaster.com



Four aircraft feature on this sheet: P-51D-15-NA *The Neat Package/The Boll Weevil*, flown by Lts Bennett Commer and Henry Seegers, 458th FS, 506th FG, Airfield 3, Iwo Jima, summer 1945; P-51D-20-NA *Hon Mistake*, flown by James Bercau and William Ebersole, Airfield 3, Iwo Jima, summer

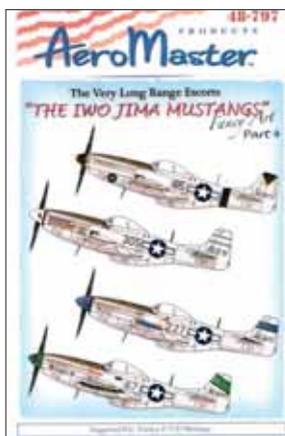
1945; P-51D-20-NA *Stinger VII*, flown by Maj. Robert W 'Todd' Moore, 45th FS, 15th FG, South Field, Iwo Jima; and P-51D-20-NA *Delta Queen*, flown by Capt. J. B. Baker, 458th FS, 506th FG, North Field, Iwo Jima, April 1945.

Aeromaster

48797

1:48 The Iwo Jima
Mustangs Pt 4
£6.95

www.aeromaster.com



Four aircraft feature on this sheet: P-51D-20-NA 44-63972, flown by Lt Spartks, 47th FS, 15th FG, Airfield 1, Iwo Jima, May 1945; P-51D-20-NA *Shrimp IV*, flown by Capt. Betz, 531st FS, 21st FG, Airfield 2, Iwo Jima, May 1945; P-51D-20-NA *Stinger VII* (earlier markings), flown by Capt. Robert W. Moore; and P-51D-20-NA *Mary Alyce*, flown by Lt Louwres, 46th FS, 21st FG, Airfield 2, Iwo Jima, June 1945.

Eagle Strike

48255

1:48 Mirage F1 Pt 2
£7.25

www.eaglestrikeproductions.com



This sheet has markings for 12 aircraft, including two F1Q4 machines of the Iraqi air force; an F1EH and CH of the Moroccan air force; two F1CK machines of the Kuwaiti air force; an F1CJ and EJ of 462 Esc, Ejercito del Aire, Las Palmas, Canary Islands; an F1CE, Ejercito del Aire; and an F1ED and AD of the Libyan air force.

Galdecal

72-010

1:72 Finnish air force

Part 10

£7.00

e-mail:

george@galdecal.supanet.com



72-010 continues Galdecal's homage to Finnish military aircraft with decals for Blackburn Ripon IIF RI-152, LLv 36, Santahamina, May 1939 and RI-156, LLv 36, Lahdepoja, March 1940 in doped aluminium, and RI-137, LeSK, Kauhava, July 1941 and RI-140, 2/LeLv 30, Rõmpõtti, 1943 in camouflage (the recommended kit is from Broplan). Mil Mi-1 (SM-1SZ) (Amodel kit), Mi-4A (KP or Maquette) and Mi-8 (KP) helicopters are also covered. The Mi-1s are HK-1, KulijLLv/HekoLtue UTTI, summer 1963 and HK-2, KulijLLv/HekoLtue UTTI, 1964. The Mi-4s are HR-2, KulijLLv UTTI, summer 1969 and HR-3 of the same unit, July 1975. Two Mi-8s are covered, HS-2, KulijLLv HALLI, May 1984 and HS-4, KulijLLv UTTI, summer 1987. Finally, the Saab 35 Draken (Hasegawa) and F-18 Hornet (Italeri) are covered. The Saabs are J 35FS DK-201, Lapin Lennosto, Rovaniemi, April 1994 and J 35S DK-223, HävLLv 11, Rovaniemi, mid-1994. The Hornets depicted are all F-18Cs and although codes enabling any aircraft to be modelled are included,

those illustrated are all from HävLLv 21 as HN-401, Pori, 1998; HN-457, Pori, 2001; and HN-465, Pirkkala, 1995.



Galdecal has also produced a correction sheet for its earlier 72-009 (above). This includes Blenheim and Viima markings and can be had for free by purchasers of the full sheet, either from the e-mail address above or by writing to George A. Lowe, Galdecal, 22 Gowanhill Gardens, Stirling, FK8 1SG, UK.

Thanks to Galdecal for the review samples

Lima November Decals

72-501

1:72 Noorduyv Norseman
£7.00/€10.00/US\$13.00

e-mail:

ruben.husberg@online.no

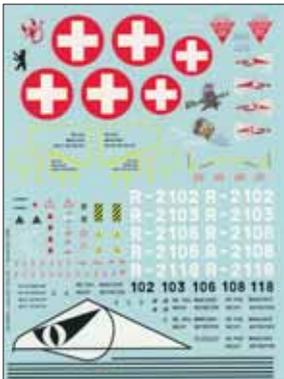


Designed by Nils Mathisrud, this sheet has markings for six aircraft and can be applied to either the Formaplane vacform kit or the injection-moulded Matchbox product. Norseman Mk VI LN-PAE is covered in three forms, all in service with Widerøe's Flyveselskap. Two of its incarnations are in aluminium, one with red trim, one black. The other is for an overall green finish with cream trim. Aluminium LN-PAB is also included, along with green LN-BFE. Finally, Mk IV LN-BIT can be finished in white with grey floats.

Thanks to Lima November Decals for the review sample

MC48002 provides decals for the Mirage IIIRS in the latter part of its service. Painting details and decals are pro-

Matterhorn Circle
MC48002
1:48 Mirage IIIRS
www.mc-one.ch
e-mail: info@mc-one.ch

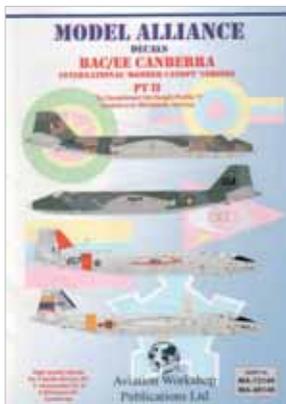


vided to allow any standard-scheme aircraft to be modelled, with additional markings and masking templates provided for five 'specials'. R-2118 has *Matahari* owl artwork, R-2108 wears a 'Berlin bear', R-2102 has a scorpion marking, R2106 has 'Bye Bye Schnägg' artwork and R-2103 has a bird's head tail marking to celebrate 3,000 flight hours in 2003.

The sheet is printed on an ALPS printer and comes already coated in Johnson's Klear. However, it is advised that a further protective coating is applied before use. Full instructions and aircraft history are included.

Thanks to Matterhorn Circle for the review sample

Model Alliance
MA-72140/MA-48140
1:72/1:48 BAC/EE
Canberra: International
'Bomber Canopy' version
Part II
£9.00/£13.00
www.theaviationworkshop.co.uk



Issued, like all the Model Alliance sheets reviewed here, to complement *On Target Profile 11*, this sheet has decals for eight aircraft: B.Mk 52 353, Imperial Ethiopian Air Force, Direidawa, 1970s; B.Mk 52 354, Imperial Ethiopian Air Force, Direidawa, 1970s; T.Mk 4 457, No. 12 Sqn, SAAF, Waterkloof, South Africa 1960s; B.Mk 2 457, No. 12 Sqn, SAAF, Waterkloof, South Africa, 1970s (this is the T.Mk 4 after conversion); T.Mk 4 458, No. 12 Sqn, SAAF, Ysterplaat, South Africa, late 1991; T.Mk 4 0621, Escuadron 39, Fuerza Aerea Venezolana, Barcelona AB, Venezuela, 1972; B(I).Mk 82 1233, Escuadron 38, Fuerza Aerea Venezolana, Barcelona AB, Venezuela, 1980s; B(I).Mk 12 1425, Escuadron 40, Fuerza Aerea Venezolana, Barcelona AB, Venezuela 1980s.

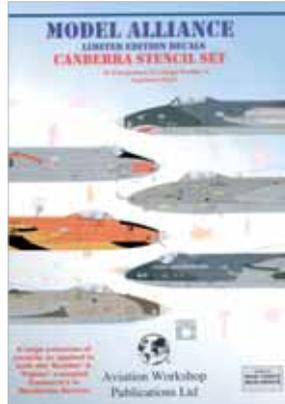
Model Alliance
MA-72141/MA-48141
1:72/1:48 BAC/EE
Canberra: International,
'Bomber Canopy' version
Part III
£9.00/£13.00
www.theaviationworkshop.co.uk



This sheet has decals for seven aircraft: B.Mk 62 B-109, Grupo 2 de Bombardeo, II Brigade Aerea, Fuerza Aerea Argentina, General Justo Jose de Urquiza AB, Argentina, 1977; B.Mk 62 B-111, Grupo 2 de Bombardeo, II Brigade Aerea, Fuerza Aerea Argentina, Trelew Naval Base, Falklands War, May 1982.; and Government Aircraft Factory-built Mk 21 A84-201, No. 2 Sqn, RAAF, Amberley, Australia, mid-1950s; Mk 20 A84-125, Aircraft Research and Development Unit (ARDU), RAAF, Edinburgh, Australia 1960s; Mk 20, No. 1 Sqn,

RAAF, Amberley, Australia, early 1960s; Mk 20, No. 2 Sqn, RAAF, detached to 35th TFW, USAF, Phan Rang AB, Vietnam, 1970; and Mk 20, No. 6 Sqn, RAAF, Amberley, Australia, 1964.

Model Alliance
MAS-729018/MAS-489018
1:72/1:48 Canberra Stencil
set Part 2
£7.50/£9.00
www.theaviationworkshop.co.uk



This sheet contains a huge number of stencils for both 'bomber'- and 'fighter'-canopied Canberras.

Thanks to The Aviation Workshop for the review samples

Model Art
72/056
1:72 Dassault Mirage IVA,
Hawker Hurricane Mk I and
Hawker Hunter GA.11
£7.50
e-mail:
modartdec@btinternet.com

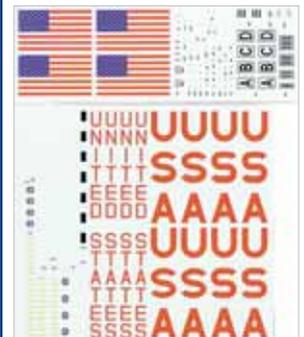


This sheet contains decals for eleven aircraft: Dassault Mirage IVA No. 9/AH, EB 1/91 'Gascogne', Hao-Juillet, 1966 and at Coupe Fantasia, circa 1967; Mirage IVA No. 5/AD, EB 3/91 'Beauvaisis',

Solenzara, circa 1964; Mirage IVA No. 48, Coupe Fantasia, Solenzara, circa 1964; Hawker Hurricane Mk I Z4757, flown by Capitaine Tulasne, GC 1 'Alsace', May 1942; Hurricane Mk I Z4434, GC 1 'Alsace', Fuka, July 1942; Hurricane Mk I Z4230/4, flown by Aspirant Maiffert, GC 1 'Alsace', Maaten-Baguish, June 1942; Hurricane Mk I BG707/1, flown by Commandant Pouliquen, GC 1 'Alsace', Canal de Suez, September 1942; Hawker Hunter GA.Mk 11 WV374/ 647-BY, No. 738 NAS, Brawdy, 1965; Hunter GA.Mk 11 WT809/696-LM, No. 764 NAS, Lossiemouth, 1970; and Hunter GA.Mk 11 XE685/861-VL, FRADU, Yeovilton, 1990.

Thanks to Model Art for the review sample

New Ware
NWD007/NWD006
1:144/1:96 Saturn V
decals
US\$8.00/US\$10.00
www.mus.cz/~ales/newware/



These two identical sheets are designed to replace the sparse and inaccurate kit decals in the 1:144 Revell/Monogram or Airfix kits, and the big 1:96 scale Revell kit. The Saturn moon rockets were huge machines, and carried countless stencils, US flags and national insignia on them.

Here, New Ware has done excellent research and on both sheets has included 154 separate decals for these elaborate kits, which periodically go in and out of production, so are not hard to find. Included with the decals are comprehensive placement diagrams and drawings, as well as helpful text on marking the craft.

Sheet 48009 has decals for two night-fighter related air-

SAM's Monthly diary of modelling related events worldwide = Events at which SAM will have a trade stand or presence

Southern Expo 2007: It has been confirmed that the UK's Southern Expo show will not be taking place in 2007, owing to the refurbishment of its regular venue

Saturday/Sunday 3/4 February: IPMS Moorsele hosts a model show and competition at **OC De Neerbeek, Bissegem-Kortrijk, Belgium**. For further information contact P. Debaere, Wulpendammestraat 15, 8630 Veurne, Belgium, call +32 58 31 73 58, or e-mail filsoft@pandora.be

Sunday 4 February: Milton Keynes Scale Model Club hosts **ModelKraft 2007** at **Bletchley Leisure Centre, Milton Keynes**. Doors open 10 am to 5 pm. Over 50 clubs and numerous traders promise to make this show a highlight of the model maker's year. For further information call Brian Porter on 01582 660984, or e-mail secretary@mksmc.co.uk, or go to www.mksmc.co.uk 

Saturday 9 February: Fleet Air Arm Model & Aviation Collectors Show at the **Fleet Air Arm Museum, RNAS Yeovilton, Yeovil, Somerset**. Doors open 10.30 am

Sunday 11 February: IPMS Wakefield & District hosts **Huddersfield 2007**, its annual model show and competition at **Huddersfield Sports Centre, Southgate, Huddersfield, HD1 1TW**. Doors open 10 am to 4 pm. For further information call Haydn Hughes on 01924 263803 or e-mail huddersfieldshow@aol.com

Sunday 25 February: Modeller's Swapmeet at **Hurworth Grange Community Centre, Hurworth, Darlington**. Doors open 10 am; 9.30 am for stall holders. Stalls/tables £2.00 each, £0.50 each thereafter. Traders welcome. For further information call Sam on 01748 824702 or e-mail westonsam12@aol.com

Saturday 10 March: Flanders Modelling Festival and Contest 2007 at **Don Bosco Technical Institute, Salesianenlaan 1, B-2660 Hoboken (Antwerp)**. The largest plastic modelling show and competition on the continent. For further information e-mail Eddy Marivoet at eddy.marivoet@versateladsl.be, write to Eddy Marivoet, Zwanebloemlaan 10, B-2900 Schoten, Belgium, or call +32(0)3/685.05.46 (before 8 pm). Also, for further information and registration go to www.ipms-antwerpen.be

Thursday 15–Sunday 18 March: 13th Faszination Modellbau at the **Sinsheim Exhibition Centre, Sinsheim, Germany**. For further information go to www.faszination-modellbau-messe.de

Saturday 17 March: North Somerset Modellers' Society (IPMS North Somerset) presents the **12th annual North Somerset Model Show** at **Locking Castle Campus, Weston-super-Mare**. Doors open 10 am to 5 pm. Club displays, traders and model competition. Free parking. Admission £2.00 adults, £1.00 children, £1.50 concessions. For further information traders should call Darren Poyser on 01934 516576; clubs should call Dave Perry on 01761 462864

Saturday 24 March: Shoreham Airport Aerojumble and Aviation/Model Show at **Shoreham Airport, Worthing, West Sussex**. Doors open 10 am. For further information call 01403 252628

Sunday 25 March: The Potteries Model Show at **Meir Community and Education Centre, Pickford Place, Meir, Stoke-on-Trent**. Doors open 10 am. Club displays, traders, refreshments and model competition. For further information call Alan Ewart on 01782 388892 or e-mail on ewaal253@aol.com, or call Mick Copestake on 01782 392353

Sunday 1 April: Abingdon Model Show 2007 at **Larkmead School, Faringdon Road, Abingdon, Oxfordshire**. Doors open 10 am to 4.30 pm. For further information call Simon on 07920 875480 or Alan on 07766 691207

Saturday 21 April: Poole Vikings Model Club (IPMS Dorset) model show at **Parkstone Grammar School, Sopers Lane, Poole, Dorset**. Doors open 10.30 am to 4 pm. Trade and club stands, together with class competitions and raffle. Refreshments available all day and car parking is free. Admission £2.00 adults, £1.00 concessions, £4.00 family (two adults and two or more children). For further information call Andy Sweet on 01202 743494 or e-mail poole.vikings@virgin.net

Sunday 22 April: Gatwick Airport Aviation Collectors and Model Show at **K2 Centre, Pease Pottage Hill, Crawley, West Sussex**. Doors open 10 am. For further information call 01403 252628

Saturday 28 April 2007: Plymouth Premier Model Show in the **Main Guildhall**. Doors open 10 am to 4.30 pm. More than 20 clubs and traders, with refreshments, raffle and model competitions. For further information call Dave Watson on 01752 518287, or e-mail spotandjoe@blueyonder.co.uk

Saturday 12 May: Heathrow Airport Collectors and Model Show at **Feltham Community Centre, Browells Lane, Feltham**. Doors open 11 am. For further information call 01372 725063

Sunday 19 August: Redhill Aerodrome Collectors Fair and Fly In at **Redhill Aerodrome, Redhill, Surrey**. Doors open 10 am. For further information call 01737 822200

Sunday 16 September 2007: Sutton Coldfield's 31st Model Spectacular at **Sutton Coldfield Town Hall, West Midlands**. Doors open 10 am to 4.30 pm. Even bigger than last year! For further information traders should call Paul Grimley on 01543 481428, clubs should call Peter Haywood on 01889 578074

Publicise your event

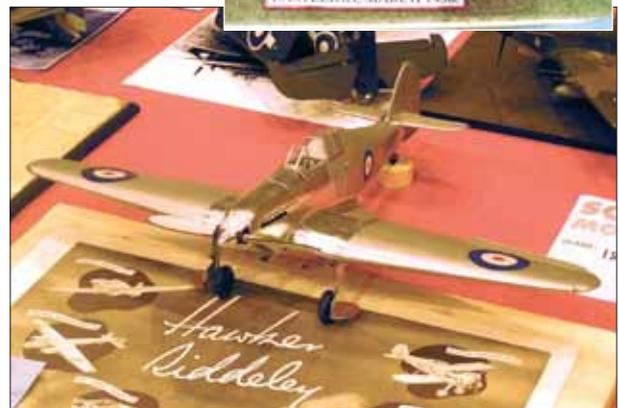
If your modelling group, club, branch, chapter or society would like its event (or even regular meetings) publicised in SAM simply drop us a line with all the relevant information: date, venue, opening times, entrance fee(s), who's displaying, how to get there, and who to contact for further information. We'll leave all the details in right up to the date of the event, so the earlier you send it in, the longer it will be publicised. Don't miss out on FREE PUBLICITY, send your details today to: SAM's Events Calendar, Guideline Publications, Unit 3, Enigma Building, Bilton Road, Denbigh East, Bletchley, Buckinghamshire MK1 1HW, United Kingdom, or e-mail: steve@regallitho.co.uk

Events

For many modellers the model show is the cornerstone of their hobby, while others have never been to a show. SAM's editorial team and contributors get to more shows than most and even for those who would claim that shows really aren't their thing, there's always something inspiring to see. To give readers an idea of what they might expect at their local

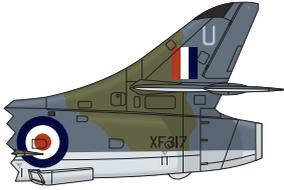
show and in a demonstration of just how international a hobby scale aircraft modelling is, here we present some of our favourites from three shows across the world in 2006 – the UK's own Scale ModelWorld, IPMS New Jersey's MosquitoCon 2006 in Wayne, New Jersey, USA, during April, and the IPMS Israel National Convention that took place in December.

Scale ModelWorld



MosquitoCon 2006





Mike McEvoy and a sudden serendipitous swoop of Swifts

One of those 'war stories' which I probably trot out more often than I should is of a visit to Geilenkirchen sometime in the late summer of 1956. This was the most southerly of the four 2TAF 'clutch' airfields close to the German/Dutch border, and along with the Hunters of 3 and 234 Sqns, was home to 'Shiny Two' and their Swift FR.5s. This last type was still suffering under the clouded reputation that had followed its somewhat premature introduction to squadron service, with F.1s and F.2s wearing the red and white checks of 56 Squadron. This reputation had been reinforced by my instructor on my 'How to fly in England' course at Middleton St George at the beginning of the year. Al Martin had been with 56 for the type's introduction before his leaving, thankfully, I suspect, for the CFS, and told the tale that in his six flights in the F.1 he had had five full emergencies.

In the meantime the Swift had been re-invented for the low-level fighter reconnaissance role, and one of my co-students on the Chivenor course that summer had been Ken Murray – an Australian, I think – who we met when on our practice diversion to Geilenkirchen. Having looked with some interest at one of his 2 Squadron mounts, which looked as though it was one of the last of the cast-iron airframes and to which its Vickers part-parentage seemed to have bequeathed sound shipbuilding practice, Ken told us that if its afterburner didn't function as advertised, the Swift's unstick distance was 2,750 yards. The Geilenkirchen runway was the NATO standard of 2,800. I hope it's true; it's one of those otherwise useless 'facts' that has remained permanently lodged in my mind.

All this came to the surface again recently in a sequence which started when I went down to the launch of *Best of Breed*, Nigel Walpole's new book on the Hunter FR.10

(which is excellent in itself, even without taking into account the photo of J-734 in the long Chilean grass). I took the opportunity to get the revised second edition of his *Swift Justice*. As an FR.5 driver he thought that his mount had been seriously undervalued and this was his contribution to righting a few wrongs, even though he does allow that the early marks had distinct shortcomings in the intended interception role. Not long after this, Alan Hall's *Warpaint* series produced a Swift monograph authored by Tony Buttler, the same author wrote the *Swift Database* in the November *Aeroplane Monthly* and Jon Lake covered the aircraft in the same month's *Air International*, with the added bonus of a Mike Badrocke cut-away. It had also been featured in the *Variant Survey* in *International Air Power Review 19*, with the words again by Jon Lake. And then, while looking in the garage for something else entirely, I found this old Pegasus kit, which was obviously 'A Sign'.

Swift kits

The only other injection moulded kit I recall was the Hawk/Testor 'Swift K.4', distinguished even in the 1960s – or perhaps it was the 1950s – by having no undercarriage wells and four underwing bombs, a load to which I don't think any of the variants produced by Supermarine ever aspired. Since then it's appeared in vacform by Falcon and Rareplanes, and resin from Magna and Czechmaster, covering marks from F.1 to F.7 (complete with Fireflash missiles), but as far as I remember never an F.3. Some F.2s did reach 56 Squadron and were suitably adorned with red and white checks over their camouflage finish, but no F.3 ever got to an operational squadron, and I felt that this was an omission I should remedy, especially as the Pegasus FR.5 had the 'eyelid' nozzle of the afterburning Avon 114. One of the illustrations in the *Aeroplane* article was a cut-away sketch of the F.3, which showed the wing with a kinked leading edge rather than the dogtooth of the 4 and subsequent marks. I did make this change, but could not find it shown anywhere else, so I overcame my natural diffidence and with plastic card added a pair of the rather large wing



fences which the 25 F.3s had. Most of the rest of the conversion was straightforward, involving trimming the nose back and excavating two extra troughs for the four 30-mm cannon. A legacy of the Rareplanes Swift is an Aeroclub accessory package (V066, still available!) with an ejection seat and all three undercarriage legs and wheels, which I thought could, with advantage, replace the softish plastic Pegasus pieces and add a little weight in the right place. The next step was to pick a likely unit.

My old training colleague from Canadian days, Dick Snell, flew Meteors with 63 at Waterbeach, though it was after 56 had handed the Swifts back and reverted to Meteors themselves. Nevertheless it does seem possible that had the first Swift squadron been successful it would have been logical to have established the second at the same base, and that as the F.3 was the F.2 with an afterburner, 63 would have been a likely recipient, basing all the early marks in one place while the definitive F.4 was developed and entered service somewhere else. I could apply 63's black and yellow checks and add Dick's name underneath the cockpit. While I was getting the bits of the model together I read a little further into the Walpole book and was brought up short by something that I'd overlooked earlier. It seems that it was quite possible that the original choice for the Swift's introduction to squadron service was 74 'Tiger' Squadron, but at the crucial time they were to be away from their home base at Horsham St Faith while it was being worked on, and it was thought inadvisable to break in a new type in unfamiliar surroundings.

I have from time to time lamented, with apologies to 230 Squadron, the disappearance of a 'Tiger' squadron from the RAF's fighter line-up, not just for artistic reasons – someone will one day field a

yellow and black striped Typhoon, but it won't be us – but also remembering my training days when 'Tiger spirit' was something that all potential junior jet jockeys were encouraged, or even required, to aim for. And in 1977 when I was working for the International Air Tattoo I got involved with the Upper Heyford-hosted Tiger Meet, one of my fondly-remembered periods with that august organisation.

Swift revealed

At the time of writing in the run-up to Christmas, the Swift was still working its way along my workbench, but all is now revealed in the accompanying photo.

74 beckons irresistibly, though, and I think they feature on the Xtradecal Meteor sheet from which I can extract the 'tiger skin' bars. By the time of the first Tiger Meet No. 74, who were one of the prime movers in establishing this unofficial association, had Lightnings, and though it's tempting to antedate history a little with subdued extra paintwork, I'll probably stick to the standard squadron markings. Roundels and swept fin flash will probably come from the original Pegasus kit, and serials from Modeldecals set 36, at least for the fuselage. The underwing serials for the Swift seem to be of unusual proportions, being quite broad and vertically elongated.

It's a pity that a fighter with such a distinguished pedigree didn't fulfil its intended destiny, but I can thoroughly recommend the references I've quoted, and especially Walpole's book for an account of what went wrong and a view from the cockpit; he really enjoyed it in its new role.

Mike McEvoy

PS: As I write it's still just 2006, but by the time this gets to you it'll be well into the next year. So as it's a bit late for the usual greetings, let me look ahead and be the first to wish you all a Very Happy Volume 29.

NEW DECALS

NEW AVIAELOGY Decals 1:72 Scale

ADD72001 ASW B-24D Liberators, Canadian Sub Hunters. (4) 586-A; 595-X and 600-N with nose art; all 101BR) Sqn Eastern Air Command RCAF; B2792 XB-G 22ASqn Coastal Command 1944. All Extra Dk Sea Grey/Dk Slate Grey top surfaces with white undersurface £5.95

1:48 Scale

ADD48001 ASW B-24D Liberators, Canadian Sub Hunters. (4) As ADD72001 £6.95

NEW CUTTING EDGE Decals 1:32 Scale

CED32080 P-51D Mustangs Pt 1 (2) 414292 QP-A 355th FG CO Col C.H.Kinnard 'Man O' War; 463607 FT-L 353FS/354FG Lt Col Glenn Eaglestone £9.75

CED32081 P-51D Mustangs Pt 2 (2) 472922 LZ-WV 434FS/479FA Maj Robin Olds 'Scat VII'; MC-O/O 79FS/20FG Capt Jack Ilfrey 'Happy Jack's Go Buggy' Kingcliffe 1944 £9.75

NEW LIMA NOVEMBER Decals 1:72 Scale

LN72501 Noorduynd Norseman Wilderoes Flyveselskap. LN-PAB and LN-PAE in overall silver with red trim; or LN-PAE silver with green trim; LN-BT overall white with green trim; LN-PAE or LN-BFE overall green with white trim. All on floats except LN-PAE in green on wheels £7.99

NEW MODEL ALLIANCE Decals 1:72 Scale

ML72139 EE Canberra Pt 4 Bomber Canopy versions in Foreign Service (5) RRAF163 R.Rhodesian Air 1959 High Speed Silver; R2175 6 Sqn R.Rhodesian AF 1968 or Zimbabwe AF 1980 Dk Green/Dk Earth camo; WF915 or WF605 75 Sqn RNZAF Malaya 1959; F763/AM Armée de l'Air 1970s £9.00

ML72142 EE Canberra Pt 4 Bomber Canopy versions in Foreign Service (8) IP991 High Speed Silver; G1791 Jet Bomber Conversion Unit Overall Lt Aircraft Grey; Q1792 6 Sqn; F1022 Dk Green/Dk Sea Grey/Lt Aircraft Grey; All Indian AF 99+34 and 99+36 German Federal Republic; 01 and 02 F8 Wing Swedish AF 1960s with special noses in High Speed Silver £9.00

ML72143 EE Canberra Pt 1 (B1)158 Fighter Canopy versions in Foreign Service (5) IP922 No 1 Target Towing Unit 1990 Orange/Red Upper surface yellow with black bands undersurface; IP994 35(Rapier) Sqn Overall High Speed Silver; IP961 5 (Fuskers) Sqn Overall High Speed Silver with UNO in Congo 1961. All Indian AF 4839 Esuadron 39 FAV Venezuela AF 1957; No 256 Group de Bombardeo 9 FAP Peru AF 1970s Tan/Brown/Lt Grey £9.00

ML72151 UK Air Arm Update 2005-2006 Pt 2 (8) Harrier GR7 ZD407 20 Sqn black fin with large squadron badge Wittering 2009; Harrier T10 ZH660/108 800NAS Cotswoldmore 2006; Tornado F3 ZG757 43 Sqn 90th Anniversary 2006 Overall black; Eurocopter Squirrel HT 1 ZJ265/65 Defence Helicopter Flying School RAF Shawbury 2006; Puma HC 1 (3) XW2114 33 Years of the Puma 2006; XW223 2006 Both 33 Sqn; XA594/ZA 1563 Ft Op Telle 2003; Hawk T1A XX205 208 (R) 1 Sqn 90th Anniversary Display Aircraft 2006 with black and yellow trim £10.00

ML72152 UK Air Arm Update 2005-2006 Pt 3 (8) Tornado F3 ZG780 25 Sqn 90th Anniversary scheme with black fin; ZG753/HH 11 Sqn Display aircraft with black and yellow fin; Alpha Jet ZJ648 QinetiQ/ETPS Boscombe Down 1996; SAAB JAS-39B Grippen on loan to QinetiQ/ETPS Boscombe Down 2006 Blue Fin with gold lettering; Tucano T Mk1 ZF512 (7R) Sqn 'Winged Victory' Linton-on-Ouse 2006; Eurocopter SA 365N2 Dauphin (2) Fleet Officer Sea Training HMS Drake Plymouth; ZJ164 Red 2003; ZJ165 Blue 2006; Sea King ASaC; ZD636/82 849 NAS RNAS Culdrose £9.00

ML729018 Canberra Stencil Set. A large selection of stencils in black, yellow and red as applied to both 'Bomber' and 'Fighter' canopied Canberras in Worldwide Service. £7.50

ML729030 NATO Tiger Meet 2006 (2) Mirage F1M 149 Ala 142 Escuadron Spanish AF; Rafale B 330-EE EC05-330 Cote d'Argent French AF. Both in special Tiger Meet markings £7.50

ML729031 T-45A/C Goshawk (4) 165068 268/B or 1636554 254/B TW-2 Nav Kingsville; 165467 124/A V-7 Eagles T-1 NAS Meridian; 163655/205 V-23 NAS Air Pax River £7.50

ML48139 EE Canberra Pt 1 Bomber Canopy versions in Foreign Service As ML72139 £13.00

ML48142 EE Canberra Pt 4 Bomber Canopy versions in Foreign Service As ML72142 £13.00

ML48143 EE Canberra Pt 1 (B1)158 Fighter Canopy versions in Foreign Service As ML72143 £13.00

ML48151 UK Air Arm Update 2005-2006 Pt 2 As ML72151 £14.00

ML48152 UK Air Arm Update 2005-2006 Pt 3 As ML72152 £13.00

ML489018 Canberra Stencil Set. As ML729018 £9.00

ML489030 NATO Tiger Meet 2006 As ML729030 £9.00

ML489031 T-45A/C Goshawk As ML729031 £9.00

NEW RISING Decals 1:72 Scale

RD72008 Japanese Naval Carrier Bombers (8) BFN1 Kate 12 Kokutai China 1939 2 versions; B6N2 Kate 582 Kokutai New Britain 1943; Okinawa Kokutai 1945; B6N2 Jill 251 Hikotai; 131 Kokutai; 254 Hikotai; 87A2 Grace 752 Kokutai £7.05

NEW SUPERSCALE Decals 1:48 Scale

SS481148 F/A-18F (1) 165894 NF/100 VFA-102 Diamondbacks CAF with red fins and spine. Sept 2006-12-19 £6.50

SS481149 F/A-18F 166920 AG/200 CAG black fins & coloured trim; 166519 AG/204 VFA-103 Jolly Rogers low vis £6.50

SS481150 F/A-18F (2) 165910 NG/100 VFA-154 Black Knights. Alternative schemes for the same aircraft in 2005 and 2006-12-19 £6.50

SS481151 F-14H 164350 103 Full Colour and 163940 102 Low Vis VF-31 Final 2006 schemes £6.50

SS481152 P-51D Mustang (2) 472854/540 'Kwitcherbitchin'; 463291/531 'Nip Nocker'. £6.50

SS481153 P-51D Mustang (2) 139 76FS/236F 'The Dragon Lady' 1945; 463474/86 45FS/15FG 'Boxy' Iwo Jima 1945 £6.50

SS481154 P-39D/L-400 Airacobras (3) P-39D 138350/P 35 FS/8FG; P-39L 24258/23 New Guinea; P-400 80/H 35FS New Guinea 1942 £6.50

SS481155 USAF 45 degree Black Letters; 12', 18', 24' £6.50

NEW VENTURA Decals 1:72 Scale

VA7209 Sea Fury T 20 VY80/85; Seafire 15 PR479/L 803 Sqn RCN 1947; Seafire 15 PR502 13-2nd Mustang Sqn HMS Implacable Pacific 1945; Harvard Mk II NZ941/99 2 SFTS New Zealand 1942 £5.99

1:48 Scale

VA4869 Prototypes. Spitfire and XP-51 Mustang. Spitfire K5054 numbered 2 at RAF Pageant, Hendon 1936 overall pale blue; XP-51 1039 overall silver as at evaluation at Wright Field 1942 £5.99

VA4872

Australian Beaufighter Mk 21 Pacific Theatre (2) A8-23 EH-C with Tiger's Head nose art; A8-72 LY-M 'Ot as-ell'. Both overall dark green £5.99

VA4878

B-24J Liberator A72-58 MJ-E 21 Sqn RAAF 'Penelope II' Ft Lt W. Butler £5.99

VA3271

Prototype Spitfire K5054 numbered 2 at RAF Pageant, Hendon 1936 overall pale blue £5.99

VA3272

Prototype XP-51 Mustang 1039 overall silver as at evaluation at Wright Field 1942 £5.99

VA3273

Spitfire Mk V Trop. ER187 WZ-C 309th FS North Africa £3.99

NEW XTRADECAL 1:144 Scale

X44003 Hawker Hunters in RAF and Foreign Service. 15 RAF Squadrons Nos 1, 2, 4, 14, 20, 8/43, 43, 54, 63, 65, 79/230CU, 79/11WU, 32, 283, and Abu Dhabi, Belgium, India, R. Jordanian, Kenya, R. Netherlands, Oman, Qatar, R. Saudi, Rep. Singapore, Rhodesia, Zimbabwe, £6.95

NEW YELLOW WINGS Decals 1:72 Scale

YW72001 US National Insignia Pt-1 1919-1942 Star with Red Centre, 6 sizes £7.75

YW72002 TBD-1 Devastator 12 Section Leaders VT-2 USS Lexington and VT-3 USS Saratoga £8.50

YW72004 SB2U-12 Vindicator 12 Section Leaders and all Wingmen VB-2 USS Lexington and VB-3 USS Saratoga £8.50

YW72026 TBD-1 Devastator 12 Section Leaders VT-5 USS Yorktown and VT-6 USS Enterprise £8.50

1:48 Scale £8.50

YW48001 TBD-1 Devastators. USN 12 Section Leaders aircraft from VT-2 USS Lexington and VT-5 USS Yorktown £5.75

YW48002 TBD-1 Devastators. USN 12 Section Leaders aircraft from VT-3 USS Saratoga and VT-6 USS Enterprise £5.75

YW48003 USMVC Stump Jumpers USN Wing Chevrons and Fuselage Bands in 6 section colours and Squadron badges for VT-2, VT-3, VT-5 and VT-6 £7.15

YW48004 Black and White Linch Pin Stripes £5.75

YW48005 US National Insignia. Pt 1 1919-1942 Star with Red Centre 7 sizes £6.50

YW48006 US National Insignia. USN Complete markings for VT-5 and VT-6 with green or black section bands £7.15

YW48007 SB2U-1 Vindicator USN 12 Section Leaders aircraft and all wingmen from VB-2 USS Lexington and VB-3 USS Saratoga £6.75

YW48008 SB2U-1 Vindicator USN 12 Section Leaders aircraft and all wingmen from VB-4 USS Ranger and VB-72 USS Wasp £6.75

YW48009 SB2U-1/2 Vindicator USN Wing Chevrons and Fuselage Bands in all 6 section colours £8.50

YW48011 SBD-1 Dauntless USMC 12 Section Leaders aircraft and all wingmen from VMB-1 and VMB-2 £6.75

YW48012 SBD-1 Dauntless USN 12 Section Leaders aircraft and all wingmen from VS-1 and VS-2 both USS Lexington £6.75

YW48013 SBD-1/2 Dauntless USN Wing Chevrons and Fuselage Bands, Wingwalks and Rudder Strips £8.50

YW48015 F2A-1/2 Buffalo USN 12 Section Leaders aircraft and all wingmen from VF-2 USS Lexington and VF-3 USS Saratoga £6.75

YW48016 F2A-1/2 Buffalo USN Wing Chevrons and Fuselage Bands in 6 section colours and VF-2 and VF-3 Squadron Badges £8.50

YW48018 US National Insignia Pt 2 1919-1942 Neutrality Patrol Stars with Red Centres £8.50

YW48023 USN Squadron Designators and Standard 12' Numbers Black £6.50

YW48024 USN Squadron Designators and Standard 12' Numbers White £6.50

YW48025 USMC Squadron Designators and Standard 12' Numbers Black £6.50

YW48026 USMC Squadron Designators and Standard 12' Numbers White £6.50

YW48036 U. S. Navy lettering in 4 sizes Black £6.50

YW48037 U. S. Marines lettering in 4 sizes Black £6.50

YW48038 U. S. Navy lettering in 4 sizes White £6.50

YW48039 U. S. Marines lettering in 4 sizes White £6.50

YW48040 US Naval Air Station Names Pt 1 '4' and '6' £6.50

YW48041 US Naval Air Station Names Pt 2 '4' and '6' £6.50

YW48042 SB2U Vindicator Overseas National Insignia with Tail stripes £7.75

YW48048 US National Insignia 1942-43 without Red Centre 7 sizes £7.75

YW48049 US National Insignia Nov 1942 Operation Torch 6 stripes £8.50

YW48050 Planes of the Movie 'Die Bomber' Bumper pack of seven decal sheets to model most of the aircraft used in the 1941 film. Includes Vindicator, Devastator, Helldiver, F2F-3, BT-1, SOC-1 Seagull etc. £19.50

1:32 Scale

YW32001 SBD-2 Dauntless No 2106. Historic aircraft survivor of Pearl Harbour and Battle of Midway that still exists in the National Museum of Naval Aviation at Penscola. Includes five schemes from 1941 to 1943. Excludes National Insignia £8.50

YW32002 US National Insignia Pt 1 for Dauntless, Buffalo and Wildcat 1919-1942 Star with Red Centre 4 sizes £7.75

YW32012 US National Insignia Pt 2 1919-1942 Star 30', 36', 40' and 45' Star with Red Centre 24' £7.75

YW32016 National Insignia and Rudder Bands for use on Dauntless No 2106 on YW32001 £8.50

NEW ZOTZ Decals

ZTZ5P5 Posters of the World Pt 5 Middle East. Set of five decal sheets with markings in three sizes for Bahrain, Dubai, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syria, United Arab Emirates, Yemen £14.50

1:72 Scale

ZTZ72014 B-26 Marauder 584BS/394BG Nose Art (5) 42-96026 K5-B 'Victory Reed II'; 42-96077 K5-F 'Ladies Delight'; 42-96072 K5-C 'Dina Might'; 42-96028 K5-O 'Faith Prelude to Victory' All OD/Neutral Grey; 43-34571 K5-Y 'Roundy Too' Natural Metal. £10.00

ZTZ72025 ACH-47A Chinooks in Vietnam (4) 64-13149 'Easy Money'; 64-13154 'Birth Control' 64-13151 'Stump Jumper' All 28th Assault Support Helo Battalion; 64-13145 'Cost of Living' Edwards AFB. This decal includes markings for all aircraft in 1:72 and 1:48 scales £10.00

1:48 Scale

ZTZ48014 B-26 Marauder 584BS/394BG Nose Art (5) As ZTZ72014 £10.75

ZTZ48025 ACH-47A Chinooks in Vietnam (4) As ZTZ72025 £10.00



AMU14415 A MODEL 1:144 Hu-16E £10.25



AMU14418 A MODEL 1:144 CC-115 Buffalo £10.25



CF4130 CLASSIC AIRFRAME 1:48 Martin B-57B (Canberra) £39.95



KY72012 KARAYA 1:72 Supermarine Sea Lion III £24.50

NEW KITS

A MODEL Aircraft kits (injection)

AMU14415 1:144 Hu-16E £10.25

AMU14418 1:144 CC-115 Buffalo £10.25

ANIGRAND CRAFTWORKS Aircraft kits (resin)

ANIG7269 1:72 Republic XP-69 + Vultee XP-68 Tornado conversion. £27.65

CLASSIC AIRFRAME Aircraft kits (injection)

CF4118 1:48 Avro Anson Mk.1 Late Version. 500 Sqn RAF Deltling 1940, RCAF 1942 £37.50

CF4119 1:48 Avro Anson Mk.1 Late Version canopy export Version Decals for Greek AF 1941, RAAF AF 1940, 5 SFTS RAAF 1945, Turkish Survey Flight 1946 £37.50

CF4130 1:48 Martin B-57B (Canberra) £39.95

CZECH OMEGA MODELS Aircraft kits (resin)

COM32003 1:32 MiG-3B bi Russian Fighter Monoplane £76.50

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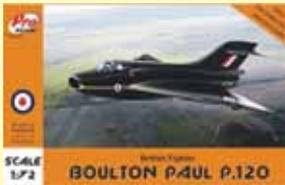
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