

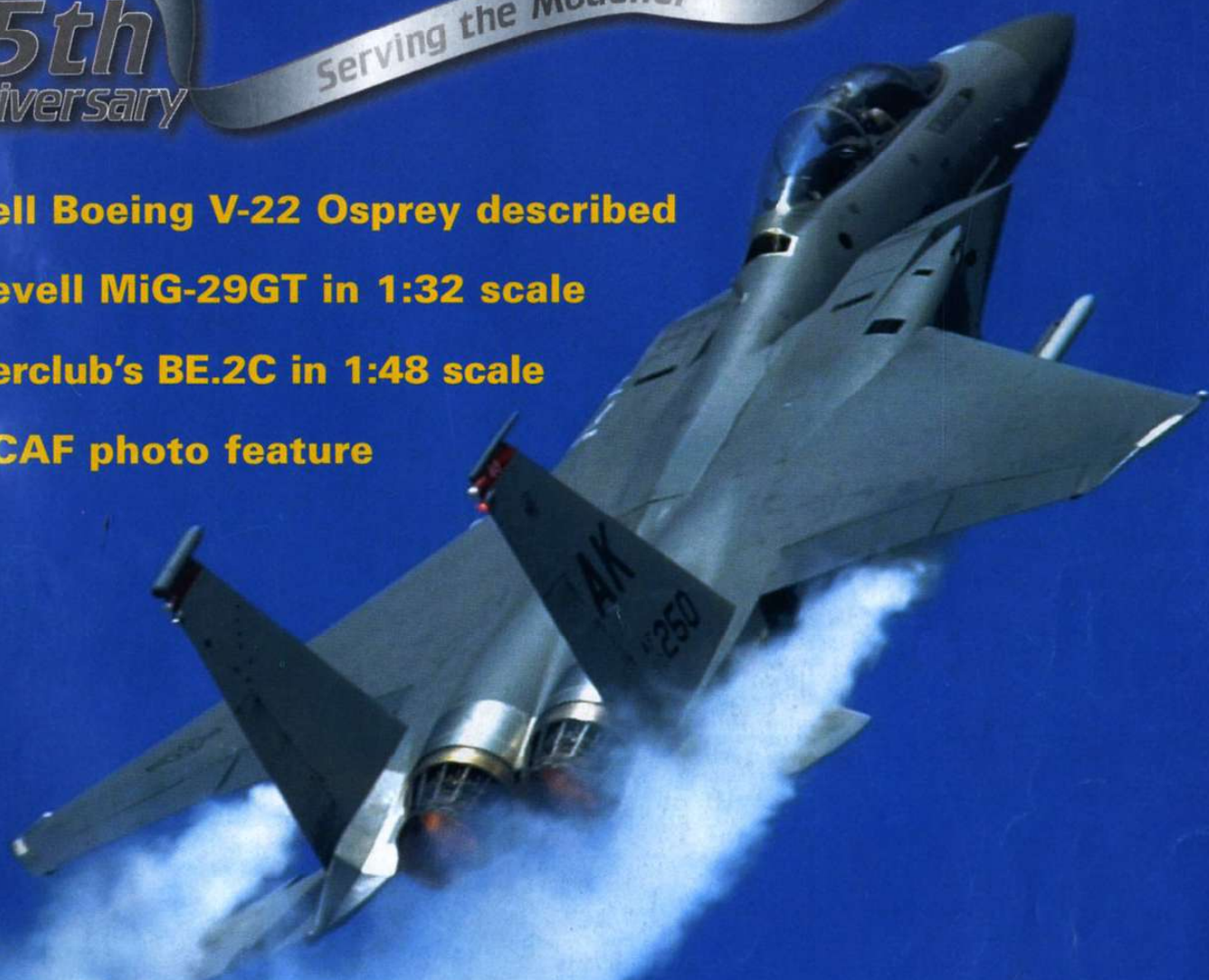
THE ORIGINAL AND BEST AIRCRAFT
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Scale[®] Aircraft Modelling

25th
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- Bell Boeing V-22 Osprey described
- Revell MiG-29GT in 1:32 scale
- Aerclub's BE.2C in 1:48 scale
- RCAF photo feature



Aircraft in Profile
Boeing F-15 Eagle
Air Superiority and Attack Aircraft

GUIDELINE PUBLICATIONS LTD

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Plus reviews of the latest kits, decals, books and accessories



Paul E. Eden
Managing Editor

New sources

Modellers and aviation enthusiasts are great consumers of information. We accumulate countless books and magazines, often to help get that most recent build project just right, but frequently also because we feel we might need the information contained at some point in the future.

The internet, and computers in general, are becoming an increasingly important part of this data gathering process and we at SAM have decided to take note of this. Starting with this issue you will notice that we have begun to include websites as part of our regular review features. We aim to include at least one site of direct use to aircraft modellers each month, while still keeping the balance of our other review features. I hope you enjoy this added item to our ever-expanding *Market Place*, although I suspect that it won't help those bookshelves lose weight!

Contents

The In Tray A first look at the latest releases	510
Aircraft in Profile: Boeing F-15 Eagle and Strike Eagle David James brings the story of the fighter and attack Eagles up to date, while David Howley supplies colour profiles	512
Bell Boeing V-22 Osprey Andy Evans describes the high-tech tiltrotor on the eve of its entry into service	524
IPMS Column IPMS UK Liaison Officer Paul Smith provides a little history of the Nationals, while looking forward to ScaleModelworld	528
Photo Recce: RCAF in the 1940s The first batch of stunning images from the archives of John Bradley	529
Revell's large-scale MIG-29GT Michael Ullmann produces an award-winning model of the German two-seater using the 1:32 Revell kit and aftermarket accessories	534
Curtiss JN-4 (Canadair) 'Jenny' Peter Green provides 1:32 plans (reduce by 0.445 for 1:72 scale) and profile artwork	541
Occasional Colours: Bristol Beaufighter David Howley provides profile artwork	545
A multi-media B.E.2c Jacques Niot takes a close look at the Aeroclub kit in 1:48 scale	551
Inside Story: Republic P-47D Thunderbolt As a follow up to last month's article on the Tamiya kit, Graham Green illustrates the real aircraft in detail	556
Reader's Write Your chance to respond to SAM articles, or simply to air your views	559
Market Place - reviews Thirteen pages of the latest kits, books, decals and other media products - reviewed by enthusiast modellers	562
Tailpiece Mike McEvoy exchanges virtuous reality for little leaps of the imagination	574

Front cover: This impressive F-15E take-off was part of Boeing's aggressive sales drive to win South Korea's recent order for the type. For a few years yet, the F-15 will still represent the premier warplane in all its roles. (Boeing via Paul E. Eden)

Features planned for next month include:

- Aircraft in Profile:** Curtiss P-36 and P-40 in USAAC and USAAF service
- Tiger Meet:** Mark Attrill photographs this year's event, while Gert Weckx provides profiles
- 1:72 scale modelling:** Francisco Javier Gil Vidal builds the Valiant B.Mk 2
- 1:48 scale modelling:** Richard Greenwood builds and improves the Hobbycraft A-4E/F Skyhawk

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The In Tray



Firstly this month, from AML comes a **Nakajima C3N1** in 1:72. The decals cover one of the two prototypes sent for combat evaluation to China, the machine carrying the markings of the 12th Kotu-tai, Shanghai-Hankow, 1937-40.



From **MasterCraft** SAM has received an **F-84G 'Thunderbirds'** kit in 1:72. It includes what appear to be very fine decals for the team's scheme, to go onto the all-silver aircraft.



The Australian **OzMods** company has supplied SAM with a copy of its **1:144 Martin B-57B Canberra** kit. Supplied with a selection of resin parts and two vacform canopies, this is a variation on the company's Canberra B.Mk 2 kit (see SAM August, 25/6 for review) and includes markings for a camouflaged aircraft of the USAF's 13th BS, 35th TFW and an all-black machine in Pakistani service.



The latest **Pavla** kit has been received from the Czech Republic. It is a **1:72 Hawker Typhoon Mk Ib (car door)**. It is, as usual, a well-moulded limited-run product with detail parts in resin and a vacform canopy. Decals are provided for:

PR-G of No. 609 Sqn flown by S/Ldr R. P. Beamont; JE-DT of No. 195 Sqn, Ludham, July 1943, flown by S/Ldr A. C. Rabagliati; and Z-Z flown by W/Cdr Denys E. Gillam, Commander of the Duxford Wing, autumn 1942.



Moving on to **Revell**, SAM has another variant of the manufacturer's **EH Industries EH 101 Merlin** in 1:72. This time it depicts the **HM.Mk 1**. The decals cover two Royal Navy aircraft, one of No. 824 NAS, FAA, RNAS Culdrose, January 2003 and another of No. 814 NAS, FAA, HMS Ark Royal, February 2003. This latter has a disruptive scheme that is produced with the use of decals.



Four new kits have come in from **Roden** in the Ukraine. In 1:72 the company has issued the second of its **SE.5** kits, this time with the Hispano Suiza engine. Decals are provided for seven examples: D3511 of No. 40 Sqn, flown by Major R. S. Dallas, Lille, France, May 1918; B139 from No. 111 Sqn, Palestine, January 1918; D3451 of No. 6 (Training) Sqn, Australian Flying Corps,

Michinhamton, 1918; D5995 from No. 143(HD) Sqn flown by Lt L. Lucas, London Air Defence, April/May 1918; B4890 of No. 56 Sqn, flown by 2nd Lt A. Dodds, France November 1917; C9626 from No. 32 Sqn flown by Capt. S. P. Simpson, France, May 1918; and lastly two machines from No. 56 Sqn flown by Capt. J. T. B. McCudden, B4883, in France during September 1917 and B4891, in France during 1918. In the same scale, Roden has issued the **Heinkel He 111E**. Markings are supplied for three aircraft. The first is very interesting, since it depicts a Luftwaffe machine of an unknown unit that was used to drop supplies at Stalingrad, using a special under fuselage container. The second example is from 1./KG 1 'Hindenburg' in the Polish campaign, September 1939. The last subject is from Kampfgruppe 88 Condor Legion, Spain 1937-38. The last of Roden's 1:72 releases is for the **Fokker D.VIIF (Late)**. It comes with markings for Hauptmann Hermann Göring's all-white Jagdgeschwader 1 aircraft; an aircraft of the First Aviation Regiment, Ukrainian People's Republic; a D.VIIF of the Red Army Air Force and lastly a machine of the Lithuanian air force.

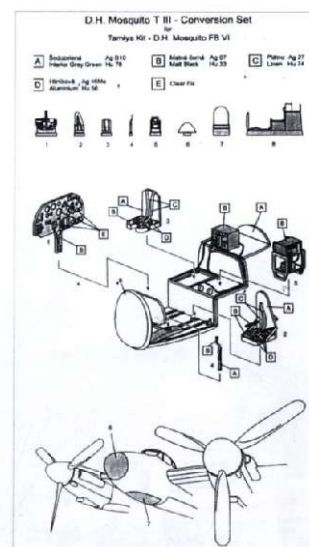


Moving to 1:48th Roden has released the **Sopwith 1 1/2 Strutter Comic Fighter**. It is fully moulded in styrene, with the addition of a brass detail fret. It has markings for two machines: B762 of No. 78(HD) Sqn, at Martlesham Heath, summer/autumn 1917 and A6906 also from No. 78(HD) Sqn, at Sutton's Farm and flown by Lt. J. S. Castle, December 1917.

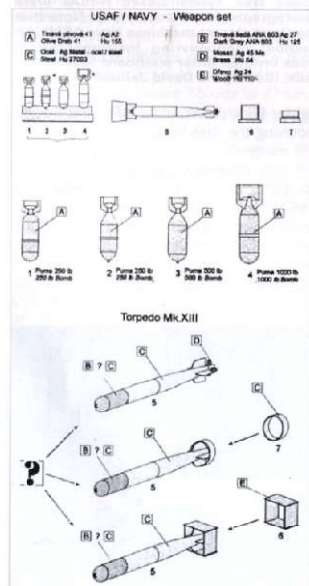


Also on a Japanese theme, **Valom** has just released its second 1:72 kit, for the **Yokosuka D3Y1-K**. Since this aircraft was only produced in prototype form, the decals are limited to Hinamaru and serial numbers. We have been informed that the next releases from this company will be the **Polikarpov TIS**, available around October and the **Boeing XF8B-1** fighter in December.

Detail sets



Pavla has also contributed some newly released resin detail sets. SAM has received four, all in 1:72, as follows: **7237** covers the **Hawker Typhoon Mk Ib (late)**. It contains Tempest tailplanes, a four bladed propeller and spinner, an armoured back plate, an entry hatch, upper decking, two drop tanks and a vac-form canopy. Although it is not stated on the packaging, we assume that this set is intended for the aforementioned Typhoon kit. Set **7236** upgrades the **TBY-2 Sea**



Wolf and is intended to compliment the **Octopus (Pavla) Sea Wolf** (see August, 25/6 *In Tray*). The set has a bomb bay, rear cockpit, dorsal gun, turret details, gun barrels, a machine-gun pod and a new vac-form canopy. Set **C72038** is a conversion package to produce the **Mosquito T.Mk III** from the **Tamiya FB.Mk IV** kit and includes the cockpit interior, belly pack and nose cone. Lastly, set **7238** is entitled **US Navy armament part 1**. This useful set contains four Puma 250-lb, two 500-lb and two 1,000-lb bombs, plus a Bliss-Levitt Mk XIII torpedo.

Figures



F48101 German pilots for Me 262 (2 figures) 1/48 scale



Moving on to figures, **CMK** has produced four new sets. Starting with 1:72 **SAM** has **F72099 RAF mechanics** for use with the Wellington. There are three figures, each in a different pose. They come with separate arms and heads, with the pieces moulded onto a resin block and care will be needed to remove them from this. In 1:48 **F48101** contains two German pilots for the Me 262, each figure coming with separate arms and head. In 1:32 there are two sets: **F32098** covers a German pilot and mechanic and **F32091** features two World War II US Army mechanics.

Lastly, **Dragon** has issued a Luftwaffe **Day Fighter 'Battle of Britain' Ground Crew and Equipment Set** in 1:48. Compiled by Paul E. Eden and Ernie Lee



A First Look at the Latest Releases



LATEST RELEASES

All these latest releases from Revell display the superb quality and levels of detail which you have come to expect from the world's leading modelling company.



Blohm & Voss BV 222



EH 101 Merlin Mk. 3 RAF



Avro Lancaster 'Dam Buster'

Blohm & Voss BV 222 04383
1:72 Scale/Span 63.9cm/Length 51.4cm
Developed by Lufthansa, the BV 222 went into service with the Luftwaffe in 1941 as a transport and reconnaissance aircraft. Powered by 6, 748 kW engines this flying boat was able to reach speeds of 330 Km/h.

EH 101 Merlin Mk. 3 RAF 04468
1:72 Scale/Span 25.8cm/Length 27.0cm
Capable of 308 Km/h, the Merlin went into service with the RAF in 1984 as a replacement for the Sea King fulfilling a transport and anti-submarine role.

Avro Lancaster 'Dam Buster' 04630
1:72 Scale/Span 30.6cm/Length 43.0cm
With a top speed of 426 Km/h this variant of the Lancaster was used to attack German dams with its famous 'bouncing bomb'.

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Boeing/McDonnell Douglas F-15 Eagle and F-15E Strike Eagle



David James provides a brief outline of the Eagle programme, before bringing the story up to date, with a bias towards American operations.

The Boeing (McDonnell Douglas) F-15 Eagle represents one of the most potent and capable warplanes produced in modern times. Originally conceived as an all-weather air superiority fighter capable of out-flying and out-fighting any aircraft of the time, through a perfect blend of superb manoeuvrability, speed, range, advanced avionics and powerful weaponry, the F-15 has since evolved (as the F-15E Strike Eagle) into a hard-hitting, low-level strike aircraft that can not only attack the most heavily defended of targets deep behind enemy lines with pinpoint accuracy, but can also fight its way out of most air-to-air combat situations. Proven in combat on several occasions, the F-15 remains in widespread service and is still, 31 years after it first took to the air, one of the most feared and respected warplanes in service.

F-X air superiority fighter

The Eagle came about as a direct result of a 1965 USAF feasibility study for a new air superiority fighter, known as the F-X. Much political fighting and rejigging of requirements ensued, before the USAF

For America's Bicentennial celebrations in 1976, the first TF-15A prototype wore this dazzling colour scheme. (Boeing via David James)

announced, during December 1969, that McDonnell Douglas was the winner of the F-X programme.

In January 1970 the USAF ordered 20 pre-series F-15 Eagles, two of which were to be two-seat TF-15 operational trainers. The first F-15A completed its maiden flight on 27 July 1972, the first TF-15A following it into the air one year later. Testing ran so smoothly that the first of the production-standard Eagles flew during November 1974 and the first deliveries of TF-15As to the 58th Tactical Training Wing (TTW) at Luke AFB began. Initial Operational Capability (IOC) was awarded in July 1975 and from the beginning of 1976, the 1st Tactical

These four Tyndall-based F-15As were photographed in October 1984. Note that the three closest machines have ACMI (Air Combat Manoeuvring Instrumentation) pods on their outer starboard Sidewinder rails. (Boeing via David James)

Fighter Wing (TFW), at Langley AFB, began receiving the first front-line F-15As.

Greater capabilities

By 1978 the USAF had received 355 F-15As and 57 F-15Bs (as the TF-15A had been re-designated in December 1977); before McDonnell Douglas switched production to the improved F-15C and its two-seater equivalent, the F-15D. The first F-15C took to the air on 26 February



Photographed over the famous St Louis arch, this F-15A, like all other USAF Eagles, was built in the city. The aircraft was on the strength of the 110th FS, Missouri ANG, in September 1991. (Boeing via David James)

NATO launched Operation Deliberate Force. This campaign saw NATO warplanes strike Serbian forces throughout Bosnia, with USAF F-15s providing round-the-clock fighter cover. The next action came in 1998 with Operation Desert Fox against Iraq.

In March 1999 NATO began Operation Allied Force against Yugoslavia. Again, USAF F-15C/D squadrons were called upon to provide cover. The Serbian air force attempted a number of interceptions during the early stages of Allied Force and on the first night of the campaign at least two MIG-29s were shot down by USAF F-15Cs. The following day a pair of Eagles from the USAF's 493rd FS shot down two more MIG-29s.

Recently, the USAF's F-15A/B/C/D force has been involved in the ongoing war against terrorism. Following the shocking attacks of 11 September 2001 in New York and Washington, DC, Operation Noble Eagle came into force to provide increased air cover over key American cities.

To hit back at Al Qaeda, the USA and other nations launched an air and land campaign against Afghanistan where the terrorists had their main bases under the protection of the ruling Taliban fundamentalist regime. As part of this mission the USAF began Operation Enduring Freedom, in October 2001. Again, F-15Cs, operating from the Gulf region, provided fighter support.

Most recently, the F-15 has been in action over Iraq once more, as part of Operation Iraqi Freedom.

Current situation

By 2003, the number of USAF F-15 Eagles has fallen. Late in 2002, Air Combat Command could call upon 126 F-15C/Ds which were designated as Primary Aircraft, ready for immediate combat. These were assigned to the 1st FW, Langley AFB; 33rd FW, Eglin AFB; 53rd Wing, Tyndall AFB; 57th Wing, Nellis AFB and 366th Wing, Mountain Home AFB. In addition, the Air Education and

When the Gulf War ended, two No-Fly Zones were imposed across Northern and Southern Iraq by the victorious Coalition. To enforce them, USAF F-15s were deployed on Operations Northern Watch and Southern Watch, respectively and these two operations have often seen Eagles intercept Iraqi aircraft.

A similar enforcement policy was conducted over Bosnia during 1994 as Operation Deny Flight. The following year



1979 and deliveries to the USAF commenced later that same year.

The F-15C/D offered greater internal fuel capacity, a higher gross take-off weight and an improved avionics package compared to the F-15A/B. To increase the aircraft's range further, the F-15C/D could employ Conformal Fuel Tanks (CFTs, originally known as Fuel And Sensor Tactical (FAST) packs) on the fuselage sides, but these were never used operationally by the USAF.

The F-15C/D also introduced upgrades for the AN/APG-63 radar and other avionics improvements. Externally it was very difficult to tell the F-15A/B from the C/D, the most reliable way being by their serial number. USAF F-15As were numbered in the series 73-xxxx to 77-xxxx, while the F-15Cs are 78-xxxx to 81-xxxx.

USAF Eagles in combat

The first real test for the USAF's F-15 force in combat came during the 1991 Gulf War (see January 2000, SAM 21/11).

These returned the increasingly heavy aircraft's performance to previous levels, but were never widespread in service.

Further improvements in the Eagle's performance have been achieved with the installation of Active Electronically Scanned Array (AESA) AN/APG-63(V)2 radar. The new radar was introduced from 1999, but has not been adopted fleetwide.

Multi-Stage Improvement Program II

In February 1983, the USAF initiated the Multi-Stage Improvement Program II (MSIP II) for its F-15A/C fleet. The first MSIP II F-15C flew in 1985 and all Eagles (from 84-001 on) were to MSIP standard. The core elements of the MSIP involved upgrading the performance of the F-15's Central Digital Computer and the addition of a new Programmable Armament Control Set (PACS). In existing aircraft the AN/APG-63 radar was modified to AN/APG-63(V)1 standard, while new-build machines received AN/APG-70. Another major component of the MSIP was the introduction of an expanded Tactical Electronic Warfare System (TEWS).

From 1986 onwards, some USAF F-15s were delivered with new 23,830-lb

84-0014 and 84-0026, both F-15Cs, make a formation approach at Eglin AFB, Florida in 1987. The aircraft hailed from the 60th TFS 'Fighting Crows' of the 33rd TFW. (David James)



F-15C 84-027, of the 493rd FS, 48th FW, is credited with a pair of MIG kills, as denoted by the flags on its nose. (FJ Photography/Steve Davies)

Training Command's 325th FW also flew F-15s for training purposes. PACAF maintained a mix of 90 F-15A/B/C/D aircraft with the 3rd Wing, Elmendorf AFB; 18th Wing, Kadena and the 154th Wing, Hickam AFB, this last being part of the Hawaiian ANG. USAFE could call upon the 36 F-15C/Ds of the 48th FW, RAF Lakenheath, England.

Apart from the 154th Wing in Hawaii, the ANG operated the F-15 in the Massachusetts, Oregon, Florida, Missouri and New Orleans Guard, plus squadrons of its Air Defence Force which have responsibility for the protection of US airspace. In total the ANG had around 116 operational Eagles.

The new F/A-22 Raptor is unlikely to fully replace the Eagle until at least 2010. However, once enough F/A-22s are in service, the USAF will have the option of converting surplus F-15s into dedicated Suppression of Enemy Air Defences (SEAD) aircraft. Originally known as F-15 HARM when first proposed (due to a primary armament of AGM-88 HARMs) this concept has since been renamed as the F-15 PDF (Precision Direction Finder).

Flight trials of the concept commenced in August 1996 using the F-15D Advanced Fighter Technology Demonstrator (AFTD) test aircraft as a prototype. This was fitted with HARMs



and a Litton-Amecon/TRW Precision Direction Finder system which was able to detect and pinpoint hostile radar sites. However, the advanced system proved difficult to develop and it remains to be seen whether or not the F-15 PDF will ever see operational service.

Of course, the fighter Eagle has also achieved limited export success, aircraft being sold to Israel, Japan and Saudi Arabia. Those of Israel and Saudi Arabia have seen combat and both countries have scored kills with the type.

F-15E Strike Eagle

Convinced that the USAF would need to replace its General Dynamics F-111s and that an Eagle development could fill the void, McDonnell Douglas began work on

F-15E 75-0082 was marked for the Commanding Officer of the 325th FW at Tyndall in 1992. The 325th was part of AETC, serving as a conversion and tactical training unit. (David James)

the Strike Eagle during the 1980s. To produce a concept demonstrator, it converted the second F-15B, 71-0291, as a Dual Role Fighter or DRF. Among other things, the conversion added a pair of larger CFTs. Penetrating enemy air defences and actively being able to engage hostile fighters at long ranges was seen as a key element in the promotion of the Strike Eagle.

To suit the aircraft to high speed missions at low levels, McDonnell Douglas considerably strengthened the basic F-15 airframe. The resultant weight

On display at Bitburg in 1981, F-15C 79-0062 wore this large stars and stripes marking for the display season. (David James)

increase, added to the weight of the CFTs, required the use of more powerful engines, the F100-PW-220 being installed as standard.

The AN/APG-70 radar, with a synthetic aperture radar (SAR) mode, was produced, with the air-to-air qualities of the AN/APG-63 radar and also able to give extremely high resolution images of ground targets.

Linked to the AN/APG-70 was a newly developed Low Altitude Navigation and Targeting Infra-Red for Night (LANTIRN) system. Originally devised by Martin-Marietta (now Lockheed-Martin), LANTIRN consists of two pods carried on the Strike Eagle's air intake stores pylons. One pod houses an AAQ-13 terrain avoidance and following navigation unit, which relies on a FLIR to allow high-speed, low altitude flying in poor weather or by night. The second pod contains an AAQ-14 targeting unit. This uses a FLIR tracking device and a laser designator to seek out and 'illuminate' ground targets. Fully integrated with the AN/APG-70's mapping mode, the AAQ-14 can be slaved to individual targets by the Strike Eagle's crew, via their radar display screens.

A fully digital, triple-redundant Lear-Siegler Astronics flight control system which incorporates an automatic terrain following mode linked to the LANTIRN pods, gives the Strike Eagle an impressive low-level flying capability. This was further enhanced by the use of a Honeywell ring-laser gyro Inertial Navigation System (INS) while night flying was made easier through making the aircraft fully compatible with AN/AVS-9 Night Vision Goggles (NVGs).

McDonnell Douglas recognised that if the Strike Eagle was to penetrate deep into enemy airspace, then it would need a highly effective self-protection capability. To this end it was fitted with a range of advanced systems, linked and co-ordinated by a TEWS.

USAF interest

The USAF began to have second thoughts about the Strike Eagle once the design's capabilities and potential became clear. In 1978 it issued its Tactical All-Weather Requirements Study (TAWRS) to evaluate



various contenders as a replacement for the F-111. McDonnell Douglas submitted the Strike Eagle while arch rival General Dynamics proposed the F-16XL. Panavia offered Tornado IDS, which had already been selected as a low-level strike aircraft by Britain, Germany and Italy.

Tornado IDS was quickly rejected due to its lack of air-to-air capabilities, leaving the Strike Eagle and F-16XL to slug it out. Since both possessed outstanding air combat performance, the USAF was forced to redefine its requirements under the Enhanced Tactical Fighter (ETF) project. This sought to assess both proposals in respect of their own air-to-ground capabilities and against those of the F-111.

It came as no surprise when the USAF declared the Strike Eagle the winning ETF contender during 1984, the Strike Eagle, among other things, being cheaper in terms of development costs.

A contract for 200 production aircraft, known to the USAF as F-15E Eagles, was awarded to McDonnell Douglas. The first F-15E entered service with the 461st Tactical Fighter Training Squadron (TFTS) of the 405th TFW at Luke AFB on 12 April 1988. The following year the 366th TFS, 4th TFW was declared as the first fully operational, front-line F-15E unit.

Strike Eagle's first blood

F-15E deliveries were in full swing when Iraq invaded neighbouring Kuwait in August 1990. The US-led Coalition commenced Operation Desert Shield



days after Kuwait had fallen, to provide military protection for the Saudis. As part of this mission the USAF rushed several units to the Gulf region and two F-15E squadrons were deployed.

The aircraft performed well in the subsequent hostilities of Desert Storm in 1991, but was somewhat hampered by the lack of LANTIRN pods and the limited range of stores that had been cleared for it. Nevertheless, the F-15E became deeply engrossed in the anti-'Scud'. Two of the jets were lost in combat, while an airborne Iraqi 'Hind' was destroyed by a GBU-10 LGB.

Since the Gulf War, the F-15E has seen further combat during Operation Deliberate Force, over Iraq during Operation Desert Fox, in Operation Allied Force, against Al Qaeda terrorists and their Taliban protectors in Operation Enduring Freedom and during Operation Iraqi Freedom in 2003.

USAF service today

To replace combat and attrition losses, the USAF ordered a further nine aircraft and after those had been delivered the F-15E production line was closed down. However, the USAF began to realise that its resources were over-stretched; by its own estimates, it really required as many as 392 F-15Es. The US Government refused to sanction such a large buy, but did agree to let the USAF purchase a further 17 new-build aircraft.

Production of the Strike Eagle duly restarted at St. Louis where the new aircraft were referred to as E-210s, after they were allocated the McDonnell Douglas construction numbers 210 to 226, although they were built by Boeing after its 1995 take over of McDonnell Douglas. When they entered service, most of the E-210s were assigned to the 48th FW at Lakenheath, except 96-0200, which went to Nellis AFB, Nevada for test purposes.

These F-15Js were part of the Japan Air Self Defence Force's 204 Hiko-tai in 1994. Japan is the largest F-15 operator outside the US, having licence-built the type and upgraded it with indigenous systems. (David James)



For all its capabilities, the F-15E is not a stealthy machine. Any efforts at masking parts of the airframe can do little to detract from the radar-reflecting qualities of the aircraft's fins. (Boeing via David James)

For the future the USAF has been considering a replacement for the F-15E's AN/APG-70 radar which will feature a far more advanced synthetic aperture function. New generation FLIR targeting sensors are also being discussed as is the integration of an Advanced Display Core Processor (ADCP).

New generation weapons are also on offer to boost the F-15E's hitting power. Already the Strike Eagle can deploy some of the USAF's most advanced conventional munitions including the AGM-130 TV-guided stand-off weapon, the GBU-32/33 JDAM and the AGM-154A JSOW. However, the Lockheed-Martin Joint Air-to-Surface Stand-Off Missile (JASSM), the Wind Corrected Munitions Dispenser (WCMD) and the AIM-9X Sidewinder are among the weapons likely to come into the aircraft's inventory in the near future.

The USAF intends to maintain the F-15E in service until at least 2030, with a dedicated strike variant of the F/A-22 Raptor, based upon the cancelled F-22B two-seat operational trainer, a likely candidate as its replacement.

Export Strike Eagles

Israel was the lead export customer for the Strike Eagle, taking the F-15I Ra'am (Thunder), which is closely based on the PW-229-powered F-15E. The first two of 25 aircraft were handed over to the IDF/AF during January 1998 with the final

Later, the USAF placed an order for a further ten F-15Es. Known as E-227s, these Strike Eagles started joining the USAF in June 2002 with the 48th FW again the initial recipient. Final deliveries are planned to take place in December 2004. In service the E-227 batch has been assigned the serial codes 00-3000 to 00-3004 and 01-2000 to 01-2004.

Of the F-15Es produced so far, 134 were fitted with F100-PW-220 engines. The remainder (including the E-210 and 227 aircraft) have 29,000-lb (128.97-kN) thrust F100-PW-229 Improved Performance Engines (IPEs).

After operations during Enduring Freedom, this 391st FS, 366th Air Expeditionary Wing F-15E gained distinctive nose art and a sizeable mission scoreboard. Note that one mission involved the use of the GBU-28 penetrating bomb. The aircraft is home based at Mountain Home. (FJ Photography/Steve Davies)



Boeing F-15 Eagle and Strike Eagle



examples arriving by the close of the following year.

The second overseas Strike Eagle customer was also an existing F-15 operator. The Royal Saudi Air Force (RSAF) was initially offered the Strike Eagle as the F-15XP, which was later redesignated as the F-15F. This was a single-seat variant of the USAF's F-15E and at first the Saudis considered buying 24 examples, together with 48 of a two-seat, combat-capable trainer derivative.

However, the F-15F was not built and instead the RSAF purchased a downgraded version of the F-15E known as the F-15S. The first aircraft was delivered in 1995 and all 72 ordered had entered service by November 1999.

After much debate and many test evaluations, South Korea announced in April 2002 that the Strike Eagle had been selected to fulfil the Republic of Korea Air Force's (RoKAF's) F-X Fighter Programme as a replacement for its F-4 Phantom II and F-5E Tiger II fighter-bombers. The RoKAF ordered 40 aircraft under the designation F-15K for delivery between 2005 and 2008. The F-15K is the first Strike Eagle variant with the General Electric F110-GE-129 engines that had first been tested by the USAF in the late 1990s.

Photographed during pre-delivery testing in the US, this Ra'am is shrouded in a sonic shockwave. The F-15I joined the IDF/AF's No. 69 Sqn in 1998 and the aircraft was soon in combat. It has continued with an active combat role ever since. (Boeing via David James)

This pair of F-15Es nicely demonstrates the asymmetric loadouts commonly associated with the type. Both aircraft have an AIM-120 to one side and an AIM-9 to the other. Their underwing pylons are carrying SUU-20 practice bomb carriers, while the pod visible below the port intake trunking is the AAQ-14 component of the LANTIRN system. (Boeing via David James)

Among the very advanced features fitted to the F-15K will be the new Joint Helmet-Mounted Cueing System (JHMCS), while weapons will include JDAM, AGM-130, AGM-84 Harpoon and SLAM-ER.

Even though the basic design features of the Strike Eagle and its Eagle forebears stretch back over 30 years, the aircraft is still a formidable foe. The low-

level, long-range Strike Eagle represents the zenith of this design process. Still in production and still a match for even the latest generation of potential rivals, the Strike Eagle truly represents the supreme fighter-bomber in use today. Repeatedly proven in combat, the Strike Eagle will remain a feature of the world's aviation scene for many years to come.

David James



Boeing F-15 Eagle drawings by David Howley



In 1975 the USAF changed from the 'Air Superiority Blue' scheme (FS 35450/15450) to the 'Compass Ghost' colours of FS 36320 Dark Grey over FS 36375 Light Grey. In 1989, the 'Mod Eagle' scheme of FS 36176 over FS 36251 was introduced by the Pacific Air Force and has since been widely adopted. The F-15E is FS 36118 Dark Grey overall, whilst the F-15I in Israeli service has a unique finish of FS 33531 Sand / FS 30219 Tan / FS 34424 Light Green over FS 36375.

F-15A 71-0289, F10 test vehicle

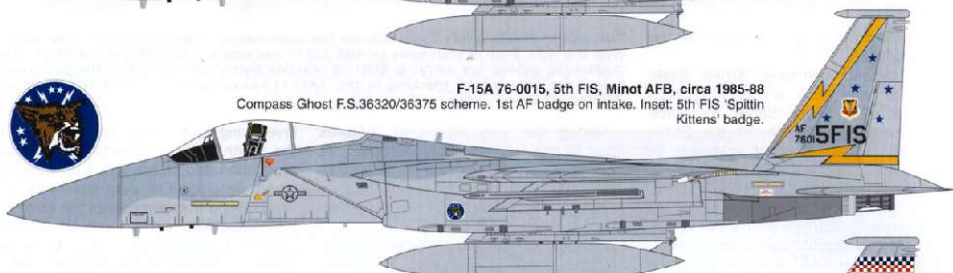
F10 was used for tactical electronic warfare system, radar and avionics development. It was originally finished in an F.S.36540/Daglio Red scheme. In September 1982 it wore this white and F.S.15044 Blue scheme.



F-15A 76-0089/LA, 405th TFW flagship, Col Huntley Commanding, March 1983
Compass Ghost F.S.36320/36375 scheme. TAC badge on fin, 426th TFS badge on intake. Inset: 426th TFS and TAC badges.



F-15A 76-0015, 5th FIS, Minot AFB, circa 1985-88
Compass Ghost F.S.36320/36375 scheme. 1st AF badge on intake. Inset: 5th FIS 'Spittin Kittens' badge.



F-15C 83-0039/OT, 53rd FW, Eglin AFB, May 1986
Compass Ghost F.S.36320/36375 scheme. 53rd Wing badge on intake. Inset: 53rd FW badge.

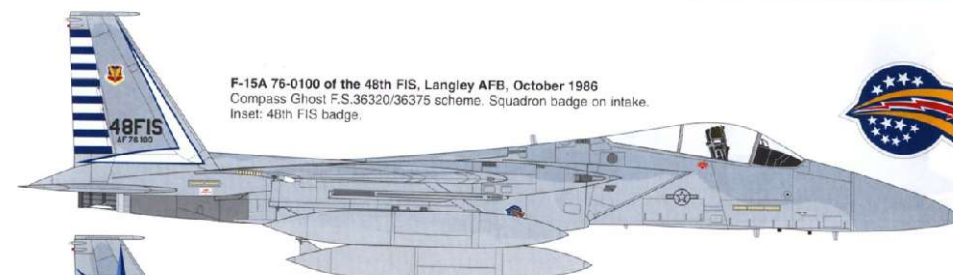


F-15C 79-0036/BT, flagship of the 36th FW, Bitburg AB, West Germany, July 1986
Compass Ghost F.S.36320/36375 scheme. 36th FW badge on intake. Inset: 36th FW badge.



F-15A 76-0100 of the 48th FIS, Langley AFB, October 1986

Compass Ghost F.S.36320/36375 scheme. Squadron badge on intake. Inset: 48th FIS badge.



F-15A 76-011, 318th FIS, Castle AFB, October 1988

Compass Ghost F.S.36320/36375 scheme. 1st AF badge on intake. Inset: 1st AF badge.



F-15B 76-0139, 173rd FW, Oregon ANG, Kingsley Field, Klamath Falls, circa 1998-99
Mod Eagle F.S.36176/36251 scheme. Fin in 'Eagle' Dark Gray and possibly F.S.36375.



F-15A 76-0089/LY, 48th FIS, Langley AFB, January 1990

Compass Ghost F.S.36320/36375 scheme. 1st AF badge on intake.



F-15C 83-0017/FF, 71st TFS/1st TFW, Dhahran, Saudi Arabia, Operation Desert Storm, 1991
Flown by Capt. Steven 'Tater' Tate, this aircraft shot down an Iraqi Mirage F1 with an AIM-7M on 17 January 1991. Mod Eagle F.S.36176/36251 scheme. Inset: 71st TFS badge.



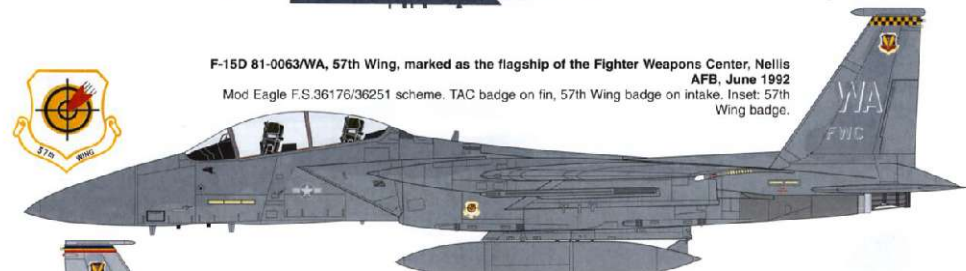
F-15E 88-1691/SJ, 336th FS, Seymour-Johnson AFB, April 1991

Overall F.S.36118. This aircraft carried seven Desert Storm mission marks on its nose. A TAC badge appeared on the fin and a 336th FS badge on the intake. Inset: 336th FS badge.





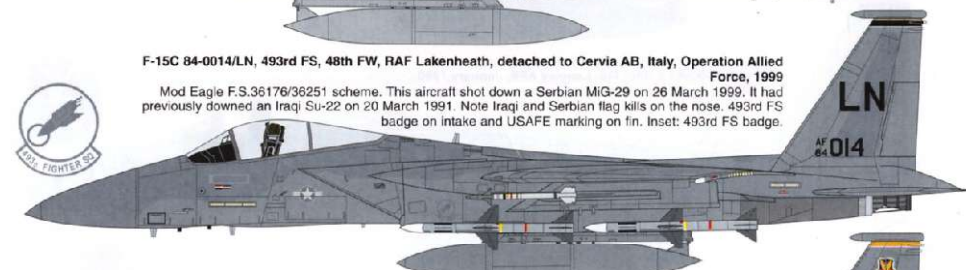
F-15E 87-0185/LF, 56th FW, Luke AFB, May 1992
Overall F.S.36118. 56th FW badge on intake, Training Command badge on fin. Inset: 56th FW badge.



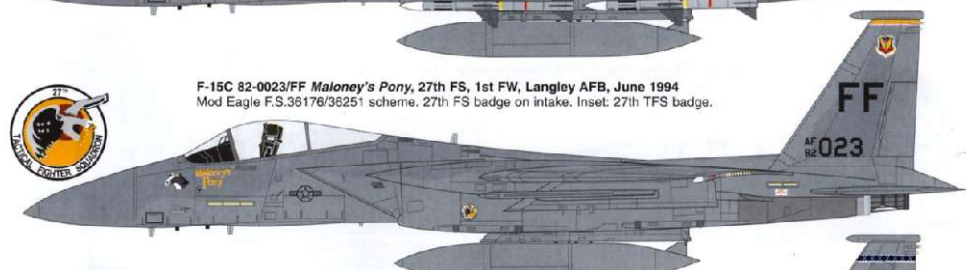
F-15D 81-0063/WA, 57th Wing, marked as the flagship of the Fighter Weapons Center, Nellis AFB, June 1992
Mod Eagle F.S.36176/36251 scheme. TAC badge on fin, 57th Wing badge on intake. Inset: 57th Wing badge.



F-15A 77-0081 City of Alamogordo, 49th TFW, Holloman AFB, October 1992
Compass Ghost F.S.36320/36375 scheme. 49th TFW badge on intake. Inset: 49th TFW badge.



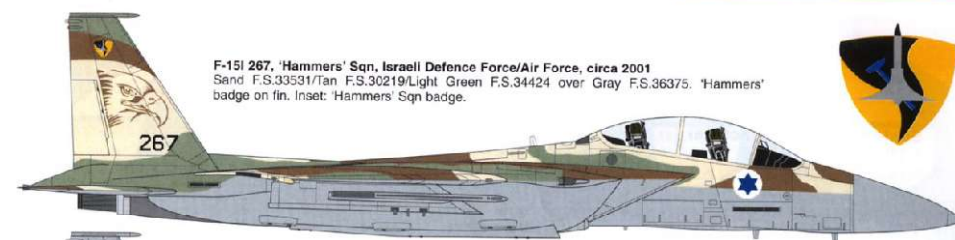
F-15C 84-0014/LN, 493rd FS, 48th FW, RAF Lakenheath, detached to Cervia AB, Italy, Operation Allied Force, 1999
Mod Eagle F.S.36176/36251 scheme. This aircraft shot down a Serbian MiG-29 on 26 March 1999. It had previously downed an Iraqi Su-22 on 20 March 1991. Note Iraqi and Serbian flag kills on the nose. 493rd FS badge on intake and USAF marking on fin. Inset: 493rd FS badge.



F-15C 82-0023/FF Maloney's Pony, 27th FS, 1st FW, Langley AFB, June 1994
Mod Eagle F.S.36176/36251 scheme. 27th FS badge on intake. Inset: 27th FS badge.



F-15D 84-0046/ED The Wizard, US Air Force Flight Test Center, Edwards AFB, August 1995
Mod Eagle F.S.36176/36251 scheme. Inset: US Air Force Flight Test Center badge.



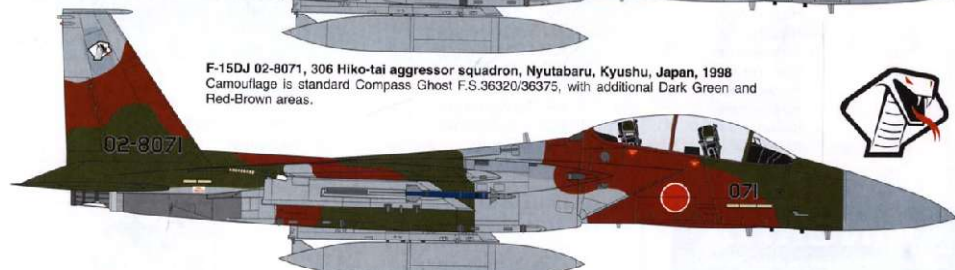
F-15I 267, 'Hammers' Sqn, Israeli Defence Force/Air Force, circa 2001
Sand F.S.33531/Tan F.S.30219/Light Green F.S.34424 over Gray F.S.36375. 'Hammers' badge on fin. Inset: 'Hammers' Sqn badge.



F-15A 706, 'The Second F-15' Sqn, Israeli Defence Force/Air Force, Tel Nof, Israel, at Red Flag 02-4, Nellis AFB, September 2002
Compass Ghost F.S.36320/36375 scheme.



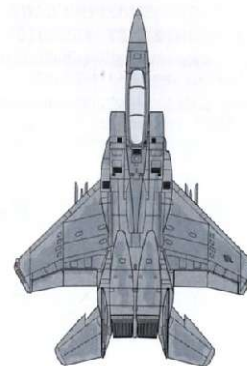
F-15J 82-8903, 204 Hiko-tai, 7 Koku-dan, Japan Air Self Defence Force, Hyakuri, Japan, 1998
Compass Ghost F.S.36320/36375 scheme. Note toned down fin marking and stylised eagle head on nose.



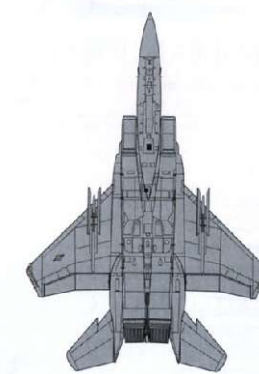
F-15DJ 02-8071, 306 Hiko-tai aggressor squadron, Nyutabaru, Kyushu, Japan, 1998
Camouflage is standard Compass Ghost F.S.36320/36375, with additional Dark Green and Red-Brown areas.



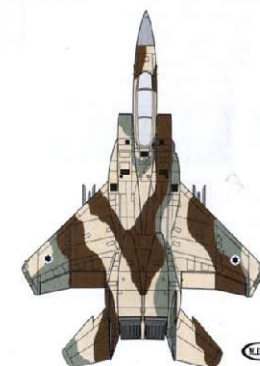
Upper surfaces of Compass Ghost and Mod Eagle scheme.



Upper surfaces F-15i scheme.



Lower surfaces of Compass Ghost/Mod Eagle scheme.



Boeing F-15 Eagle kit list

Kits

Scale	Manufacturer	Subject	Status
1:144	Minicraft	F-15A Eagle	Available
1:144	Revell	F-15A Eagle	Available, two releases
1:72	Academy	F-15C Eagle	Available
1:72	Academy	F-15D Eagle	Available
1:72	Academy	F-15E Strike Eagle	Available
1:72	Airfix	F-15A/B Eagle	Discontinued
1:72	Airfix	F-15E Strike Eagle	Discontinued
1:72	Hasegawa	F-15A/C Eagle IDF/AF	New release
1:72	Hasegawa	F-15J Eagle 'Aggressor'	Future release
1:72	Hasegawa	F-15B Eagle	Available, multiple releases
1:72	Hasegawa	F-15C Eagle	Available, multiple releases
1:72	Hasegawa	TF-15 Eagle 'Bicentennial'	Available
1:72	Hasegawa	F-15J Eagle	Available, multiple releases
1:72	Hasegawa	F-15D/DJ Eagle	Available
1:72	Hasegawa	F-15E Strike Eagle	Available
1:72	Hobbycraft	F-15C Eagle	Available
1:72	Italeri	F-15E Strike Eagle	Available
1:72	Italeri	F-15C Eagle	Available
1:72	Matchbox	F-15C Eagle	Discontinued
1:72	Revell	F-15D Eagle	Discontinued
1:72	Revell	F-15E Strike Eagle	Available
1:48	Academy	F-15C Eagle	Available
1:48	Academy	F-15D Eagle	Discontinued
1:48	Academy	F-15E Strike Eagle	Available, two releases
1:48	Hasegawa	F-15C Eagle '58th FS'	Future release
1:48	Hasegawa	F-15J Eagle '303 TFS'	Future release
1:48	Hasegawa	F-15A/C Eagle 'IDF/AF'	New release
1:48	Hasegawa	TF-15A Eagle 'Bicentennial'	Available
1:48	Hasegawa	F-15A Streak Eagle	Available
1:48	Hasegawa	F-15J Eagle Aggressor	Available
1:48	Hasegawa	F-15DJ Eagle Aggressor	Available
1:48	Hasegawa	F-15E prototype	Available
1:48	Hasegawa	F-15C Eagle	Available
1:48	Hasegawa	F-15E Strike Eagle	Available
1:48	Italeri	F-15E Strike Eagle	Future release
1:48	Italeri	F-15A/C Eagle	Available

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Bell Boeing V-22 Osprey



High-tech tiltrotor

A series of crashes, allegations of malpractice and political wrangling have marred the Osprey, almost from its inception. Now, however, the machine is finally maturing into a combat aircraft ready for service. It should enter become operational with the US Marine Corps in 2004.

Despite some serious setbacks, the Bell Boeing V-22 Osprey continues to be developed to meet the United States' Joint Multi-Mission Vertical Lift Aircraft or 'JMVX' requirement, for an advanced-concept aircraft able to operate in a variety of roles and combat situations. The JMVX programme called for an aircraft that would provide the US Marine Corps and the US Air Force with the ability to conduct assault and support missions over long-ranges at high-speeds, as well as combat search and rescue (CSAR), undertakings that require vertical take off and landing capabilities. Furthermore, JMVX was to provide the US Navy with a logistical, rescue and utility platform.

The successful contractors, Boeing Helicopters, and Bell Helicopter Textron, building on their existing knowledge, addressed these varying requirements in a unique way, by designing the V-22 Osprey as a tiltrotor aircraft, able to transition in flight and thereby combining the attributes of both a helicopter and a fixed-wing aircraft. The helicopter aspect comes into play when the Osprey is taking off and landing vertically and the fixed wing attributes become apparent when its engine

A long flight-data boom has characterised the prototype and pre-production aircraft. The antennas aft of the boom are related to the aircraft's self-defence systems. (Boeing via Andy Evans)



Ground crew attach a Humvee vehicle to an MV-22 during underslung load tests. (Boeing via Andy Evans)

cally with a payload of 8,300 lb (3765 kg) of cargo for a range of 253 miles (407 km). It is self-deployable worldwide, with a ferry range of more than 2,418 miles (3891 km) and a normal operating range of some 1,267 miles (2039 km).

In the joint build programme, Boeing is responsible for the fuselage, landing gear, avionics, electrical and hydraulic systems and performance and flying qualities checks, while Bell is responsible for the

nacelles, which are mounted at the extremities of its wings, are rotated 90° forward, basically turning the Osprey into a turboprop aircraft.

The Osprey can undertake VTOL (vertical take-off and landing) missions with a payload of 24 troops, or 6,000 lb (2722 kg) of cargo over a 495 mile (797 km) combat range, or take off verti-



wing, nacelles, propulsion, rotor, tail unit, ramp, overwing fairing and dynamics. The airframe itself is constructed primarily of

graphite-reinforced epoxy composite material, giving improved corrosion resistance, which is vital for amphibious assault.



High-tech tiltrotor

Left: According to current plans, during 2004 the USMC's VMV-204 should be able to carry out an operational evaluation of the MV-22B. The USAF is not due to field its first CV-22Bs until 2009, although it may look to accelerate the type's entry into service.

Below: The Osprey's unusual shape is evident here, as are its 'helicopter' attributes, as this aircraft undertakes a confined-area landing. (both Boeing via Andy Evans)

The Osprey has been planned in three initial variants and looks set to revolutionise traditional rotary-wing flying. In its US Marine Corps combat assault and assault support guise, the MV-22B will replace the CH-46E Sea Knight and CH-53D Sea Stallion, which are the Corps' current medium-lift assault helicopters. The USAF will receive the CV-22B, which will replace the MH-53J/M Pave Low and MH-60G Pave Hawk and augment the MC-130 Combat Talon fleet in Special Operations Command. The US Navy will receive the HV-22B, for SAR, special warfare and fleet logistic support. Some 360 MV-22 and 50 CV-22 aircraft are required, with 48 HV-22s for the Navy. Following the well publicised crash of one of the Osprey evaluation aircraft in December 2000, a number of upgrades have been implemented, including redesign of the hydraulics and wiring runs in the nacelles and improved flight control software. The V-22 is fully ship compatible, with the world's first complete blade

A rear to front view of the Osprey's complicated wing and rotor fold mechanism. The aircraft illustrated is a Marine Corps MV-22B. (US Navy)



Seen here held in a low hover, the Osprey is an imposing sight for groundcrew as they attach an underslung load. (Boeing via Andy Evans)

propeller. The propellers are connected to each other by an interconnecting shaft that maintains rotor synchronisation and provides single-engine power to both units in the event of an engine failure. The thermal signature of the aircraft is minimised with infrared emission suppression units, which are installed on the nacelles near the engine exhaust.

For self protection the V-22 carries the AN/AAR-47 missile warning system, which consists of four electro-optic sensors located on the fuselage, together with a signal processing unit and a cockpit display. The aircraft is also equipped with radar and infra-red threat warning systems and chaff and flare dispensers are fitted with a 60 round launch capacity for dispensable countermeasures. The CV-22 will also have the Integrated Radio Frequency Measures system installed.

US Navy and Marine Corps Ospreys will, in all probability, retain the conventional two-tone low-visibility grey finish, with contrasting subdued markings as currently used on the evaluation aircraft. The only other outstanding colour concerns the propeller blades and spinners, which are matt black.

Despite well publicised problems and crashes, the V-22 continues to mature, and aircrew have commented how surprisingly easy the Osprey is to fly. Apparently, however, some pilots have found that seeing two huge rotors turning

fold and wing stowage system. It is able to operate from all of the US Navy's 'L'-class amphibious ships and LHA/LHD assault carriers, and can be operated from and stowed aboard the full-size CV/CVN aircraft-carriers. For stowage, the wings are rotated to lie above and parallel to the fuselage. The automatic wing and rotor folding sequence can be completed in 90 seconds in winds up to 70 mph (113 km/h). During this sequence the two outboard blades of each rotor are folded inboard; the nacelles are rotated forward and the wings are rotated by 90° clockwise.

Inside the Osprey

In the cockpit both helicopter- and fixed-wing-type systems are available. The flight deck has a pilot's night-vision system and an integrated helmet display and is equipped with six night-vision goggle compatible displays. The cockpit and the rear cabin are NBC (nuclear, biological and chemical warfare) protected, with a positive-pressure air system. The USAF and US Navy variants will have AN/APQ-186 terrain-following, multi-mode radar and an AN/AAQ-16(V-22) FLIR, which is mounted on the nose. The Osprey can also be equipped with a 0.5-in (12.7-mm) turret-mounted gun system. The aircraft is powered by two Rolls-Royce T406-AD-400 turboshaft engines with a

At sea with the amphibious assault ship USS Saipan (LHA 2) an MV-22 Osprey conducts tests on the ship's flight deck. The large size of the aircraft is readily apparent in this view. (US Navy)



Above: Four V-22 Ospreys sit on the flight line at NAS Patuxent River during recent tests. (US Navy)

Right: A forward view of the complex wing-swing and rotor-fold systems for shipboard stowage. This view also gives a good indication of the forward fuselage contours and camouflage demarcation. (Boeing via Andy Evans)



just outside the cockpit when the aircraft is in turboprop mode takes some getting used to. Test pilot Lt Colonel Steve Gross described a 'typical' approach to the USS Saipan during a test flight: 'With the nacelles fully forward, we flew up the starboard side of the ship at 220 kt [253 mph; 407 km/h] before rolling left and performing a 180°, 3-g level turn. From there, any resemblance between a fixed-wing 'break' manoeuvre and the V-22's approach ended as we tilted the engines from airplane to helicopter mode. Seconds later, we were hovering over deck spot nine and, with a signal from the LSO, we smoothly touched down on the non-skid surface. Even with a lot of wind across the deck, the airplane handled with ease'.

Andy Evans

Acknowledgments

Thanks are due to Bob Everett at Bell Helicopter Textron Media and to Lt Commander Jack Papp, US Navy Fleet PAO for their invaluable help.

More than two-years after its last accidents, the Osprey returned to sea in January 2003. This MV-22 was aboard USS Iwo Jima on 14 January. (US Navy)



Paul Smith looks forward to the 40th Anniversary Scale ModelWorld

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RCAF in the 1940s

A selection of historic images

Above: Spitfire Mk IX DB-R, serial unknown, of No. 411 (F) Sqn has its invasion stripes re-touched by LACs Ken Allen and Stan Rivers on 22 June 1944. Note the crude demarcation between the stripes, and between the stripes, the codes and the roundel.

John Bradley provided these rare photographs from his extensive collection. Many of the images have never been published before.



Below: Spitfire Mk IIA P7923 DB-R Venture, of No. 411 (F) Sqn was at Digby on 10 October 1941. The fuselage/wing joint is noteworthy. DB-G was P7595.

Above: These Hurricane Mk IIBs of No. 401 (F) Sqn. were photographed during a scramble. The known aircraft are: YO-B Z3655, YO-X Z3020 and YO-J Z3577. This last aircraft crash landed at Horncastle on 8 August 1941 after receiving fire from a Ju 88. It was subsequently repaired.



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Above: Hurricane Mk IIB Z3658 YO-N was photographed undergoing a maintenance run-up on 24 July 1941. The location is thought to be RAF Digby. The white chalk marks on the fuselage and on the cowling panel on the ground are comments made by the groundcrew indicating various aircraft systems are ok.

Right: The Spitfire LFMk XVI in the foreground is SM635 DN-M, while DN-G in the background is believed to be TB377. The circumstances surrounding this fire and the explosion which caused it, remain unknown.

Below: John's collection includes some stunning colour material. Spitfire FR Mk XIV NH757 was probably photographed at either B.108 Rhine, Germany, or B.116 Wunstorf, Germany, in April 1945, while it was with No. 414 Sqn. It is interesting to note that the fuel tender has an RAF serial and a large Canadian maple leaf roundel on its tank. By May 1945, the unit was based at Celle, along with No. 430 Sqn, as part of No. 2 TAF's No. 83 Group in Germany.

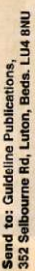


Above: This No. 400 Sqn Spitfire PR Mk XI, PL975, is seen departing B.90 Petit-Brogl, Belgium on 5 April 1945.

Top: MH779, a Spitfire LFMk IX of No. 403 (Fighter) Squadron, was damaged on operations on 14 July 1944. It is shown here during the recovery process on 11 August 1944. The state of the aircraft would suggest that its flying days were over, but it was in fact repaired.

Right: Shown here at Ayr, South Ayrshire, Scotland, Defiant Mk IF V1123 was serving with No. 410 (Night Fighter) Squadron on 10 September 1941. It appears that the upper engine cowling is either a replacement, or has been repainted. Note how the turret guns lie either side of the cockpit canopy with the turret in the full forward position.





Revell's large-scale MiG-29GT



Using Revell's 1:32 MiG-29UB kit as a basis, Michael Ullmann produced a stunning MiG-29GT model. It won second place in its class at Germany's biggest modelling event, in Offenbach, in 2002 and a 'Commended' at the IPMS UK Nationals in the same year.

After reunification, Germany inherited 24 former East German MiG-29 'Fulcrums'. After evaluation proved them to be capable warplanes, they were introduced into the inventory of the German air force.

Among these aircraft were four MiG-29GT two-seaters. The little-known MG-29GT designation, referring to MiG-29 'German Trainer', reflects the level of modification incorporated into the MiG-29UB to suit German requirements. Similarly, the single-seat MiGs are properly designated MiG-29G.

East Germany's NVA/LSK (Nationale Volksarmee/Luftstreitkräfte, or National People's Army/Air Force) received four two-seat MiG-29s in 1988. The aircraft I chose to build carried the black tactical number '148' during its NVA/LSK service and serial number 50903006448. The aircraft's date of manufacture is given as

21 March 1988 and it was initially taken on strength by II./Jagdgeschwader 3 in April 1988, making its first flight with the unit on 5 May 1988. It was the only NVA/LSK MiG-29GT to adopt the tactical five-colour camouflage of the single-seat MiG-29s. After reunification the aircraft gained the German air force tactical number 29+22.

The kit

Revell released the MiG-29UB in 1:32 scale during 1991. The company took into account that the two-seater's fuselage is 0.10 m (3% in) longer than that of the single-seat aircraft by modelling an entirely new fuselage. In addition, with the UB kit, the biggest problem of Revell's original MiG-29 kit was solved. The single-seat kits exhaust nozzles were inaccurate, but new parts were given to replace them in the UB.

The surface detail and general fitting accuracy of the model is, even today, up with the best. Only the detail in the cockpit area is not up to today's standards. Accordingly, I immediately

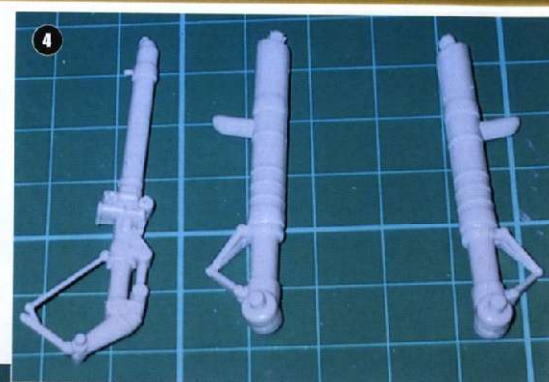
Michael used CAMDecal resin and scratch-built parts to produce his fine MiG-29GT model. (All Michael Ullmann)

decided to completely revise the cockpit. Since no two-seat resin cockpit is available, I produced a two-seat unit from the only available cockpit set for the single-seater.

As usual, Revell's instructions are very clear on the model's construction. Unfortunately, however, the painting instructions are not up to scratch and the individual tones of the five-colour camouflage are very difficult to pick out.

As we have come to expect from Revell kits in recent years, the decal sheet is extensive. Five markings variations are catered for, as well as two possible stencil variations. The decals are well printed and have good colour saturation, such that once in place on the model the underlying colour does not show through. They do contain a mistake, however, in that the two possible tactical numbers for the NVA/LSK MiG-29 are printed in red; they should be black. NVA/LSK combat aircraft carried red tactical numbers, while trainers carried them in black.

As already mentioned, this is a relatively modern kit, with accurately fitting parts. Extensive use of filler is not therefore necessary, care in construction meaning that most seams will merely



need to be cleaned and polished. There is, however, flash, which must be removed from some parts.

Engine air intakes

Unfortunately, after assembling the air intakes, large gaps remain, which have to be filled (Photo 1). With this work completed, I fitted the intake covers.

In fact, the air intakes are a real problem. As seen in (Photo 2), they sit too high. I remedied this by sanding their undersides until they fitted the fuselage properly. After fitting, large gaps still remained (Photo 3) and I filled these with cyanoacrylate glue.

On my kit, the forward sections of the fuselage side walls were bent inward. I tried placing the fuselage in warm water to soften the plastic so that I could bend the side walls outward, but the result was unsatisfactory. Therefore, I glued together one fuselage side with liquid cement and left it to dry over night. The next day, I cemented together the other side and fixed the forward area with cyanoacrylate glue. I was thus able to minimise the gap between the upper and lower fuselage halves as far as possible. After filling the

remaining gap and sanding, I had to restore the engraved panel lines that had been sanded away.

Other air intakes and exhaust are also supplied, but they fit together very badly and require filling. After sanding the parts, their openings had to be reworked with a Dremel tool.

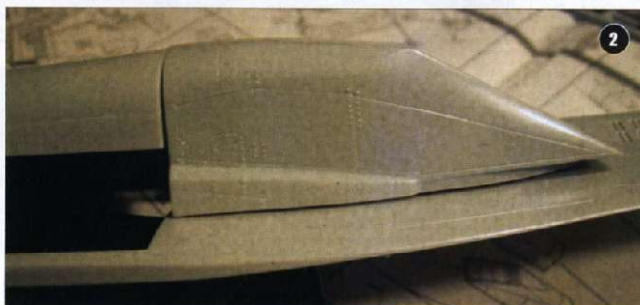
Undercarriage work

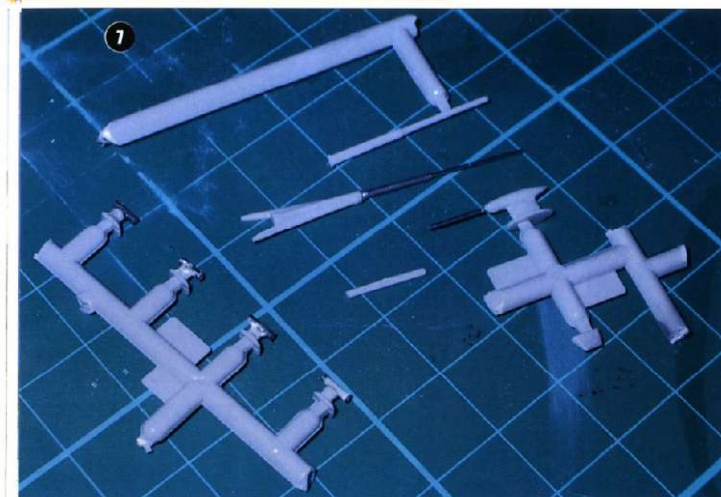
In accordance with my own photographs of the real aircraft, I left out the mudguard and the landing light on the nose gear assembly. Comparison with photographs also shows that the kit undercarriage parts are not well detailed. After assembly, flash removal and sanding, even more landing gear details are lost (Photo 4). I therefore restored the reinforcing rings on the gear legs using thin masking tape and reproduced the hydraulic pipes and electrical cables that run outside the legs using thin copper wire. To produce the clamps on these pipes and cables I cut the insulation from the copper wire, before pushing small pieces back onto the wire to represent the clamps (Photo 5). With this work complete, the legs were painted in their

basic grey and silver base coats (Photo 6). The cable for the landing lights was reproduced from thin solder.

Wing assembly

After I had assembled the wings, I removed the rudders for later reassembly. I also cut off the conductors for the electrostatic discharge wicks. Later, I replaced these with pieces of thin wire with drops of white glue at their tips. I also removed the position lights and antenna covers from the wingtips, for replacement with parts made from thinly stretched sprue. In order to generate their hemispherical shape, I cut the sprue in the middle and carefully placed the cut end against a candle flame. As the sprue heats, it begins to bend backwards and contracts into a hemispherical form. I coloured the hemispheres for the antenna covers black, while the position lights were painted in clear green and





with the canopy placed over this, dipped the forward end into a glass of near boiling water. After 10 minutes I took the canopy out and let it cool for 30 minutes. The canopy now fitted the model, but unfortunately this treatment was bad for the Future polish that I had previously applied and it became milky. I had to use Tamiya polish to restore the part's clarity. After a new coat of Future, the canopy was returned to perfect transparency.

New cockpit

Besides the exhaust nozzles in the original MiG-29 release, the cockpit area is the major weak point of Revell's kit. While the ejection seats and control columns are still quite passable renderings of the originals, the rest of the cockpit is poor. The head-up display in the front cockpit bears no similarity to the original, while the instrument panels and the area between the cockpits are also wrong. The area behind the rear cockpit is not represented at all and the aft section of the canopy is too short.

Unfortunately there is no aftermarket replacement cockpit available for the MiG-29UB. However, a set for the single-seater is available from CAMDecals.

After studying photographs of the original aircraft, I realised, not surprisingly, that the front cockpit of the UB is identical

clear red. The sprue had a bright grey colour which, under the clear colours, gives the effect of a coloured light.

Pitot tube detail

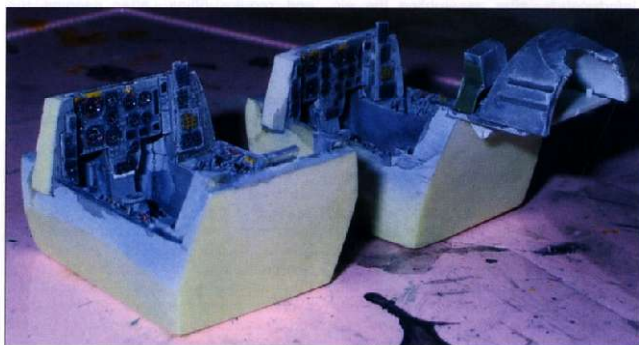
In order to produce a detailed pitot tube, I replaced the plastic component with two sections of syringe needle, one pushed inside the other. The perfectly round and also dead straight needles give the pitot tube a very realistic look.

For the sensors installed on the rudders I used a very similar technique. The moulded sensor was removed from its mounting and replaced with a small piece cut from a syringe needle (Photo 7).

Canopy problems

The forward part of the cockpit canopy appeared to be collapsing inward and only

if I spread it open would it fit onto the model. I decided to warm the part in hot water so that I could open it to the correct shape permanently. I used a piece of circular-section material of the same diameter as the canopy as a former and,



These images show the plastic removed forward of the cockpit area (above left) to allow the new resin coaming and HUD mounting to be fixed in place (left). The new cockpits, including the modified rear tub, were dry fitted into the fuselage with the help of tape (top). The completed cockpit tubs, with the rear cockpit to the right, looked most effective thanks to the CAMDecals details and Michael's expert finishing.



Left: The finished HUD is absolutely spectacular and includes the cables which transmit power and information to the unit on the real aircraft.

Below left: Here the aperture in the canopy for the instructor's periscope is shown, along with components for the periscope itself.

The item therefore need to be built from scratch, with the help of photographs and drawings. For the mirror surfaces I used Bare Metal Ultra Bright Chrome Foil. I produced the hydraulic servo-motors from electrical wire whose core was silver-plated wire and insulation light-grey. This saved me from having to paint the parts.

Preparations for painting

The painting of my models usually proceeds in several steps and this MiG-29 was no exception.

After sanding I cleaned the model carefully with a toothbrush and detergent, carefully brushing sanding residue away from the engraved panel lines, before rinsing the model under running water. Those areas of the model that I had reworked were given a thin coat of silver paint. This shows up every flaw on the model's surface. Thus, visible flaws could now be easily recognised, filled with Gunze's Mr. Surfacer 600 and sanded away. As a double check, I sprayed a second coat of silver paint when the work was complete, before cleaning with the toothbrush and detergent again.

Now I sprayed gloss black along all the engraved panel lines (Photo 8). This pre-shading technique produces shaded panel lines beneath a lighter top colour, for a very realistic finish. With the pre-shading dry, the model is ready for its top coat.

Original source material

When I visited JG 74's open house at Neuburg in the summer of 2001, I photographed a MiG-29GT. The aircraft was finished in the type's most recent camouflage scheme.

I always attempt to achieve the most accurate paint finish as possible and as such I use original drawings showing the

to that of the single-seater. More importantly, the rear cockpit is also very similar, with the only differences confined to the upper area of the instrument panel. It was therefore possible to use two single-seater cockpit sets to furnish the two MiG-29GT cockpits.

The resin components fitted into the aperture for the forward cockpit without reworking, but the resin needed some sanding to fit the rear aperture. The forward cockpit was built completely according to the CAMDecals instructions. In the rear cockpit, many of the instruments, screens and the HUD were not required, so I used the kit parts, modified in accordance with photographs of the real aircraft. The instruments were reproduced with parts from my spares box. I built the area behind the rear cockpit completely from reference to original photographs, using some of the Revell parts as a basis. Pneumatic and hydraulic pipes and their valves, as well as electric switchboxes, were built from scratch using copper wire and plastic.

The periscope

One of the most prominent features of the MiG-29GT is the periscope for the

Instructor in the rear cockpit, which gives the instructor a better view forward. Similar periscopes were also installed in two-seat MiG-21s and MiG-23s.

However, the kit does not contain the complete periscope, providing only a slot in the canopy and the periscope cover.





camouflage pattern paint tones. Still, I had brought photos from Neuburg 2001 of a newly painted MiG-29GT. The new camouflage of the MiG-29GT corresponds to the original camouflage that the aircraft received after its introduction to the German air force, with the differences based on RAL7021 areas on the upper and lower surfaces of the aircraft. On the underside an impression of the cockpit is painted (Photo 9) and on the upper side, rectangles represent the opened air intakes. These deceptions are intended to momentarily fool an opponent in a dogfight, leaving the enemy unclear as to which side of the aircraft is visible. The hope is that the opposing pilot might become confused as to where the MiG will manoeuvre next, providing the MiG-29 pilot with a crucial advantage in close combat.

Applying the Xtracolour

As always, I used Xtracolour paint to finish the model. The MiG-29GT's camouflage consists of FS.35237 (Xtracolour X126), FS.36320 (X135), FS.36375 (X136) and RAL7021 (X262). It is no problem to obtain the three FS. colours, since these are standard USAF and US Navy colours, but obtaining RAL7021 was far more difficult. This colour has been produced by Xtracolour, but was deleted around three years ago. Fortunately I found an old tin in a hobby shop.

When thinning Xtracolour, it is important to use white spirit, since other thinning agents react badly with the paint. Dark colours should be thinned especially, the first coat being applied to the model almost as a mist, to be followed by further coats until the paint covers the model surface. This technique is very time consuming, but has several advantages. Applying the paint in light coats avoids applying too thick a layer of paint which might otherwise obscure surface details. Also, any pre-shading shows up well beneath the top colour. When Xtracolour is applied in several light coats, it also reaches its highest gloss finish.

With the top coats well dry, I brushed a



mixture of water, artist's ink and dish washing liquid into the engraved panel lines (Photo 10). It is important to choose ink that is waterproof after drying, while the water is used for diluting and the dish washing liquid breaks the surface tension of the mixture. After approximately 2 hours, the dry model was polished with toothpaste. This leaves the dried ink mixture in the engraved panel lines and simultaneously polishes the model's surface, removing the 'sticky' feel that is a characteristic of Xtracolour after it has dried (Photo 11).

Bare metal

As with most jet aircraft, parts of the MiG-29 remain as unpainted bare metal. To simulate these surfaces on a model, I

use three different techniques. Firstly I might choose to paint with polishable metallic colours. My favourite brand is Metallizer from Model Master, although the big disadvantage with these paints is that they are not touch resistant. Another problem is that you cannot mask them, since the masking tape peels off particles of the metal paint. I therefore tend to use these colours only for surfaces with complicated structures that have pronounced curves or overlaps, which would cause foils to crease. In general then, I prefer to use either the self-adhesive foils from Bare Metal or household foils. Bare Metal's foils are available in different shades and since they are very thin, they can be fixed across the most rounded surfaces.



Household aluminium foils are the other option and they have to be stuck to the model with clear varnish or special foil glue. I use a foil glue from Bare Metal, but it is worth remembering that these foils are relatively thick, so it is difficult to use them on very curved surfaces.

On the MiG-29GT model, I used Metallizer for the exhaust nozzles (Photo 12) and three different shades of aluminium foil on the fuselage (Photo 13).

Michael Ullman

Below: Michael's use of the modified CAMDecals cockpit set to produce a fully furnished rear cockpit really paid off. His efforts with the periscope and corrective work to the canopy can also be seen to have been worthwhile in this shot. Also worthy of note are theIRST (infra-red search and track) sensor ball ahead of the MiG's windscreen and the results of pre-shading on the panel lines.



Bottom: A high-elevation view shows the MiG-29's unusual upper fuselage air intakes to advantage.

Below: The model was finished with a load of missile training rounds, with R-73s on the inner pylons and R-60s outboard.



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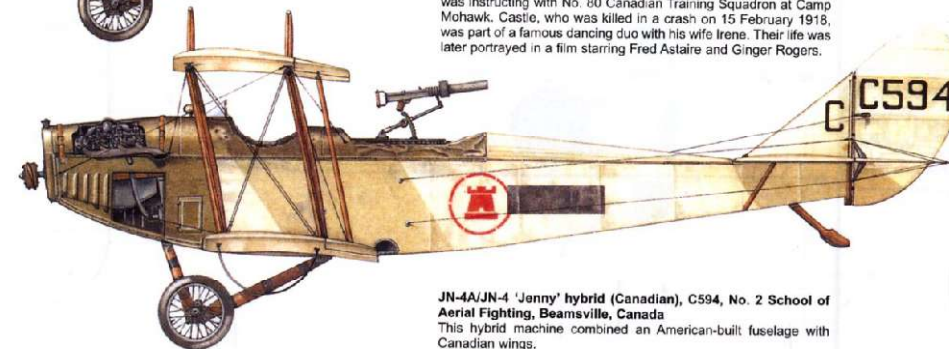
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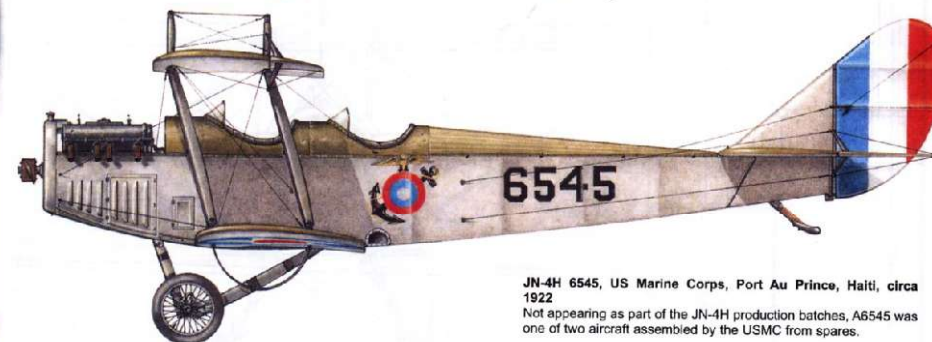
JN-4 'Jenny' C696, No. 80 Canadian Training Squadron, Camp Mohawk, Deseronto, Ontario

C696 was the personal aircraft of Capt. Vernon Castle while he was instructing with No. 80 Canadian Training Squadron at Camp Mohawk. Castle, who was killed in a crash on 15 February 1918, was part of a famous dancing duo with his wife Irene. Their life was later portrayed in a film starring Fred Astaire and Ginger Rogers.



JN-4A/JN-4 'Jenny' hybrid (Canadian), C594, No. 2 School of Aerial Fighting, Beamsville, Canada

This hybrid machine combined an American-built fuselage with Canadian wings.



JN-4H 6545, US Marine Corps, Port Au Prince, Haiti, circa 1922

Not appearing as part of the JN-4H production batches, A6545 was one of two aircraft assembled by the USMC from spares.



JN-6H A 6287, Second Aviation Group US Marine Corps, NAS North Island, California circa 1926

This JN-6H, fitted with ailerons on both wings, carried a JN-4H serial number. Many JN-4Hs were converted to the later standard as bombing trainers, but the resulting JN-6Hs were apparently allocated new serial numbers.

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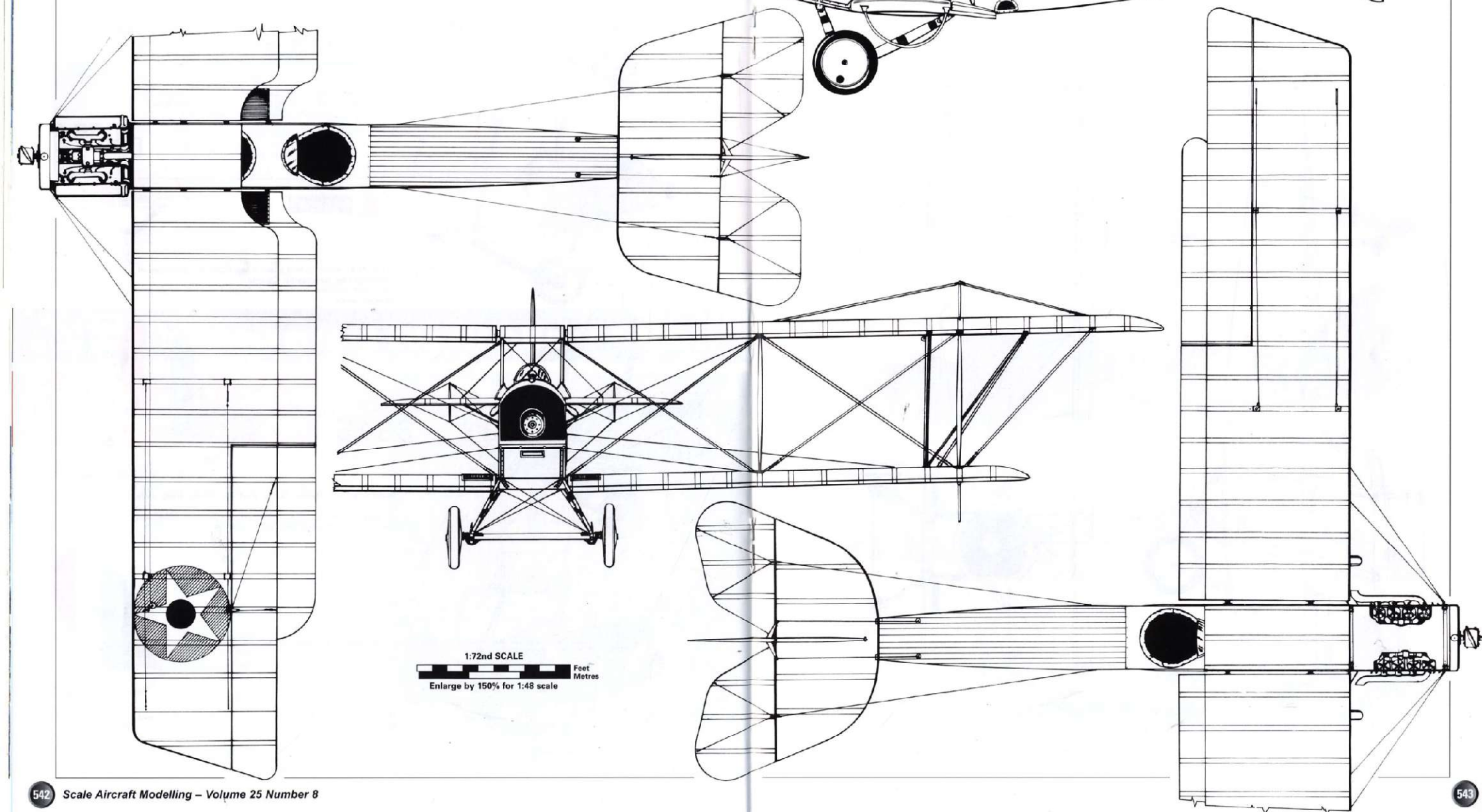
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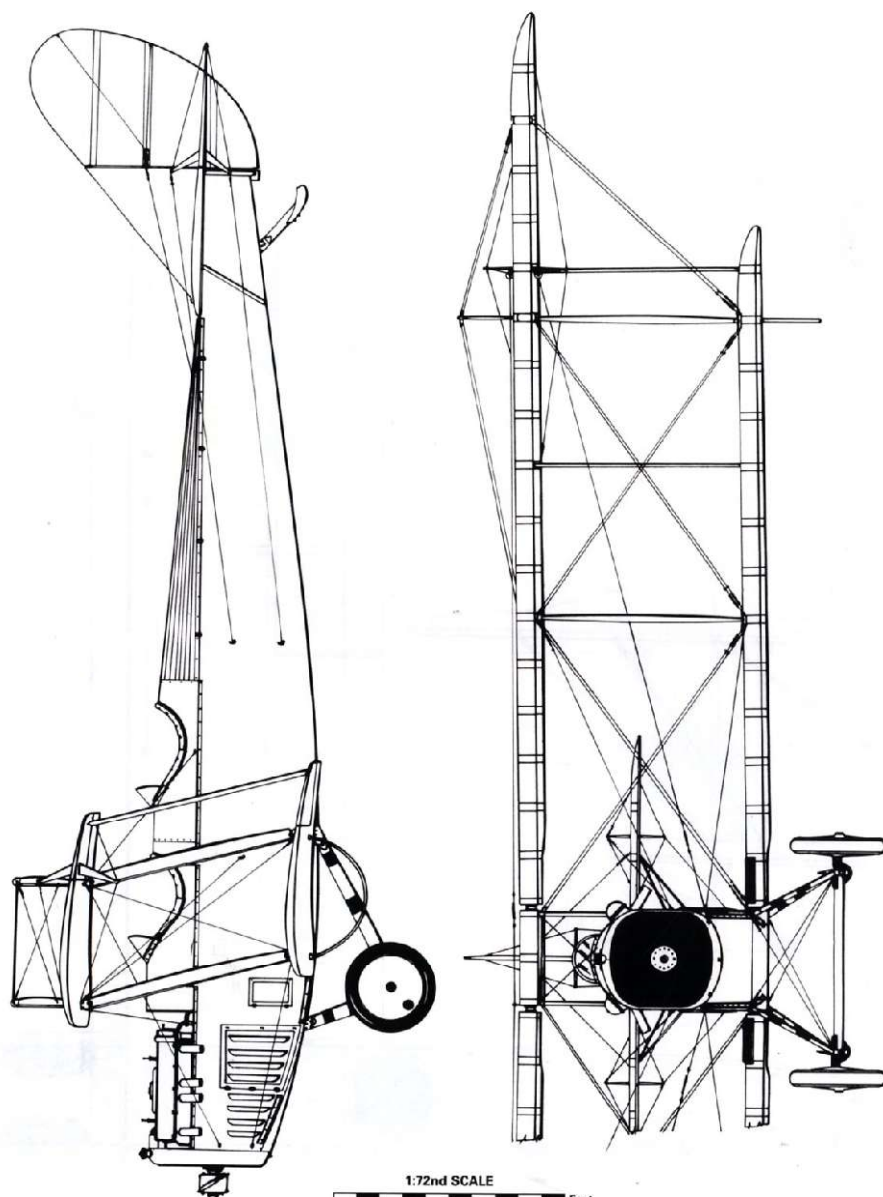
Curtiss JN-4 (Canadair) 'Jenny'

1:72 scale plans by Peter Green



Curtiss JN-4 (Canadair) 'Jenny'

1:72 scale plans by Peter Green



1:72nd SCALE
Enlarge by 150% for 1:48 scale

Peter Green

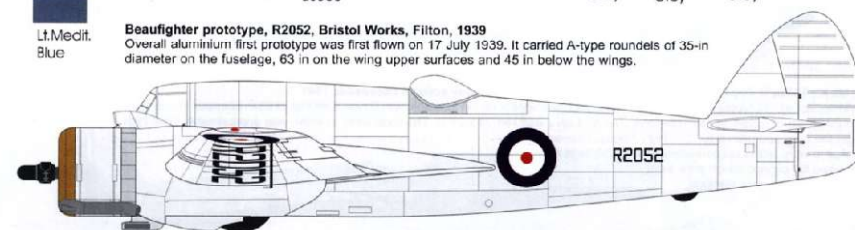
Bristol Beaufighter

drawings by David Howley



Beaufighter prototype, R2052, Bristol Works, Filton, 1939

Overall aluminium first prototype was first flown on 17 July 1939. It carried A-type roundels of 35-in diameter on the fuselage, 63 in on the wing upper surfaces and 45 in below the wings.



Beaufighter Mk IF, R2059/ZK-A of No. 25 Sqn, RAF North Weald, September 1940

Finished in Dark Green/Dark Earth/Sky. 35-in A1 roundels appear on the fuselage, with B type markings of 63-in diameter above the wings. The lower wing roundels are of A type, in 45-in diameter. Codes are in Medium Sea Grey and approximately 36 in high. Note the initial style of canopy.



Beaufighter Mk IF, R2101/NG-R '3' of No. 604 Sqn, RAF Middle Wallop, September 1940

Overall RDM2 Night. 35-in A1 roundels appear on the fuselage, with B type markings of 63-in diameter above the wings. The fin flash measured 24 x 27 in. Codes are in Sky Grey, with 8-in high serial in Roundel Red. 3 on cowl in white. Flown by Flt Lt John Cunningham. Note the initial style of canopy.



Beaufighter Mk IF, R2153/PN-W of No. 252 Sqn, RAF Chivenor, December 1940

Dark Green/Dark Earth/Sky. 35-in A1 roundels appear on the fuselage, with B type markings of 63-in diameter above the wings. The lower wing roundels are of A type, in 45-in diameter. The fin flash measured 24 x 27 in. The underwing roundels had been overpainted. The codes, in Sky, were approximately 36 in high. Note the initial style of canopy.



Beaufighter Mk V, R2306/RO-O of No. 29 Sqn, RAF West Malling, June/July 1941

This machine is shown as it may have appeared for operational trials with a Boulton Paul four-gun turret. Overall RDM2 Night. 35-in A1 roundels appear on the fuselage, with B type markings of 63-in diameter above the wings. The fin flash measured 24 x 27 in. The Medium Sea Grey codes were approximately 36 in high, while the 8-in high serial was in Roundel Red.



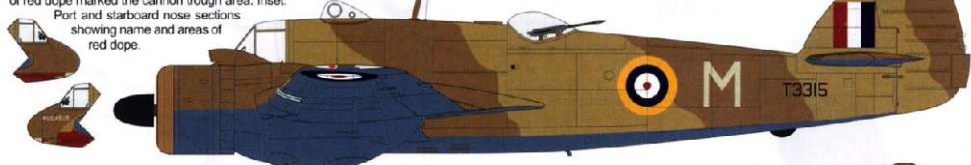
Beaufighter Mk IF, R2158/PN-B of No. 252 Sqn, Det. Abu Sueir, Egypt, circa Autumn 1941

Dark Green/Middle Stone/Light Mediterranean Blue. An overspray of light colour onto the darker colour suggests that Light Stone has been applied over the Dark Earth. Light coloured ailerons indicate remainder of undersurface probably painted Azure Blue, leaving ailerons in original Sky. 35-in A1 roundels appear on the fuselage, with B type markings of 63-in diameter above the wings. The lower wing roundels are of A type, in 45-in diameter. The fin flash measured 24 x 27 in. Codes are in Medium Sea Grey and approximately 32 in high. Note the initial style of canopy.



Beaufighter Mk IC, T3316/M Pegasus of No. 272 Sqn, Idku, Egypt, lost to enemy action 6 September 1941

Dark Earth/Middle Stone/Light Mediterranean Blue. 35-in A1 roundels appear on the fuselage, with B type markings of 63-in diameter above the wings. The lower wing roundels are of A type, in 45-in diameter. The fin flash measured 24 x 27 in. The code letter, in white, was approximately 28 in high and was repeated under the nose approximately 12 in high. Pegasus appeared under the cockpit in white letters approximately 5 in high. A large area of red dope marked the cannon trough area. Inset: Port and starboard nose sections showing name and areas of red dope.



Beaufighter Mk IC, T4767/BT-T of No. 252 Sqn, Edku, Egypt, 1942

Dark Green/Dark Earth/Sky. 35-in A1 roundels appear on the fuselage, with B type markings of 63-in diameter above the wings. The lower wing roundels are of A type, in 45-in diameter. The fin flash measured 24 x 27 in. Codes are in Medium Sea Grey and approximately 25 in high.



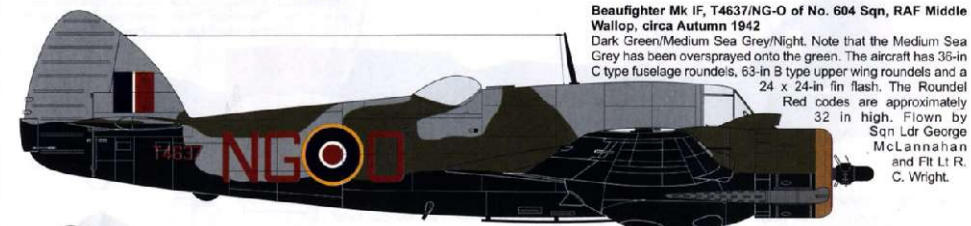
Beaufighter Mk IC, T4800/ND-C of No. 236 Sqn, RAF Wattisham, June 1942

Probably in Extra Dark Sea Grey/Dark Slate Grey/Sky with 36-in C type fuselage roundels, 63-in B type upper wing roundels and a 24 x 24-in fin flash. The serial was 8 in high and the codes approximately 36 in high in new fresh Sky. The aircraft was flown by Flt Lt A. K. Gatward and Sgt D. Fern on 12 June 1942, when it dropped a Tricolour on the Arc de Triomphe.



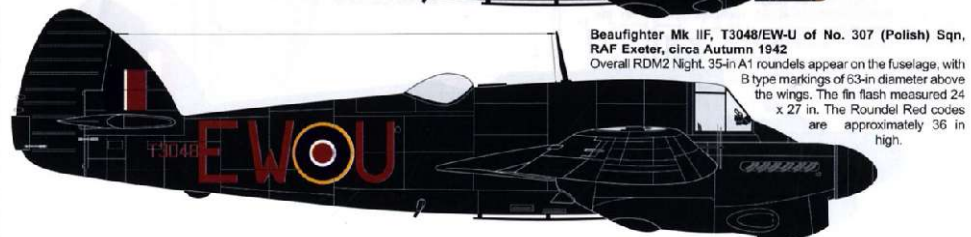
Beaufighter Mk IF, T4637/NG-O of No. 604 Sqn, RAF Middle Wallop, circa Autumn 1942

Dark Green/Medium Sea Grey/Night. Note that the Medium Sea Grey has been oversprayed onto the green. The aircraft has 35-in C type fuselage roundels, 63-in B type upper wing roundels and a 24 x 24-in fin flash. The Roundel Red codes are approximately 32 in high. Flown by Sqn Ldr George McLannahan and Flt Lt R. C. Wright.



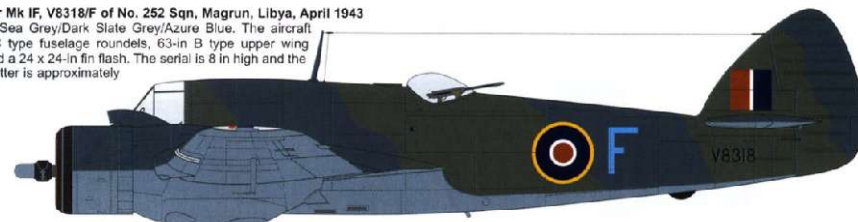
Beaufighter Mk IIF, T3048/EW-U of No. 307 (Polish) Sqn, RAF Exeter, circa Autumn 1942

Overall RDM2 Night. 35-in A1 roundels appear on the fuselage, with B type markings of 63-in diameter above the wings. The fin flash measured 24 x 27 in. The Roundel Red codes are approximately 36 in high.



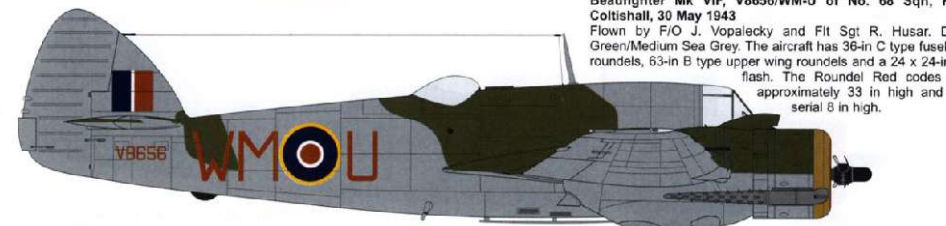
Beaufighter Mk IF, V8318/F of No. 252 Sqn, Magrun, Libya, April 1943

Extra Dark Sea Grey/Dark Slate Grey/Azure Blue. The aircraft has 36-in C type fuselage roundels, 63-in B type upper wing roundels and a 24 x 24-in fin flash. The serial is 8 in high and the Sky code letter is approximately 32 in high.



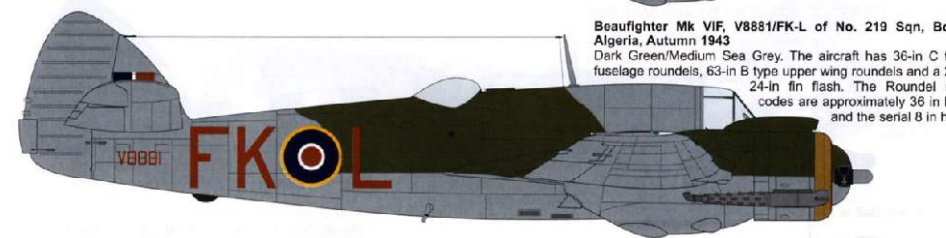
Beaufighter Mk VIF, V8656/WM-U of No. 68 Sqn, RAF Coltishall, 30 May 1943

Flown by F/O J. Vopalecky and Flt Sgt R. Husar. Dark Green/Medium Sea Grey. The aircraft has 36-in C type fuselage roundels, 63-in B type upper wing roundels and a 24 x 24-in fin flash. The Roundel Red codes are approximately 33 in high and the serial 8 in high.



Beaufighter Mk VIF, V8881/FK-L of No. 219 Sqn, Bone, Algeria, Autumn 1943

Dark Green/Medium Sea Grey. The aircraft has 36-in C type fuselage roundels, 63-in B type upper wing roundels and a 24 x 24-in fin flash. The Roundel Red codes are approximately 36 in high and the serial 8 in high.



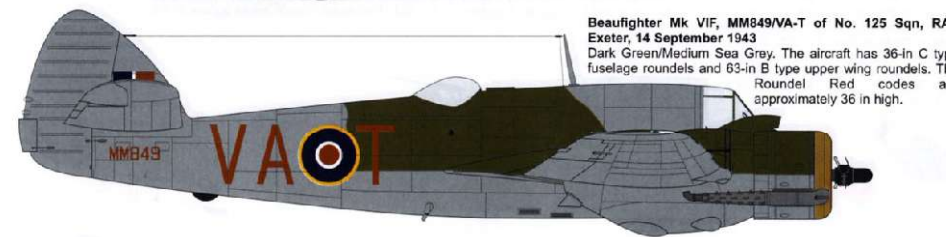
Beaufighter Mk VIF, X8005/EW-R of No. 307 (Polish) Sqn, RAF Exeter, 1943

Crewed by Karol Ranozek and C. Krawiecki. Dark Green/Medium Sea Grey. The aircraft has 36-in C type fuselage roundels and 63-in B type upper wing roundels. The Roundel Red codes are approximately 36 in high.



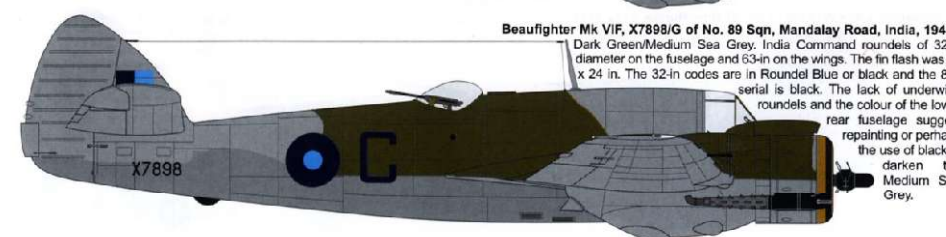
Beaufighter Mk VIF, MM849/VA-T of No. 125 Sqn, RAF Exeter, 14 September 1943

Dark Green/Medium Sea Grey. The aircraft has 36-in C type fuselage roundels and 63-in B type upper wing roundels. The Roundel Red codes are approximately 36 in high.



Beaufighter Mk VIF, X7898/G of No. 89 Sqn, Mandalay Road, India, 1943

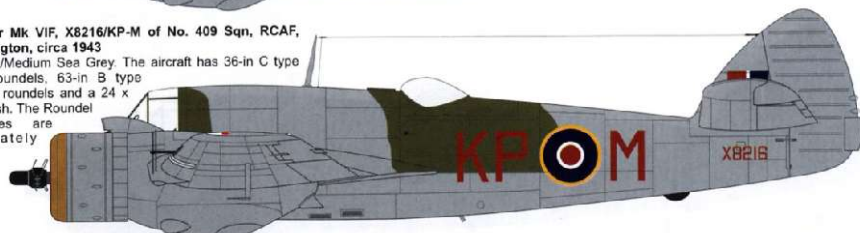
Dark Green/Medium Sea Grey. India Command roundels of 32-in diameter on the fuselage and 63-in on the wings. The fin flash was 22 x 24 in. The 32-in codes are in Roundel Blue or black and the 8-in serial is black. The lack of underwing roundels and the colour of the lower rear fuselage suggest repainting or perhaps the use of black to darken the Medium Sea Grey.



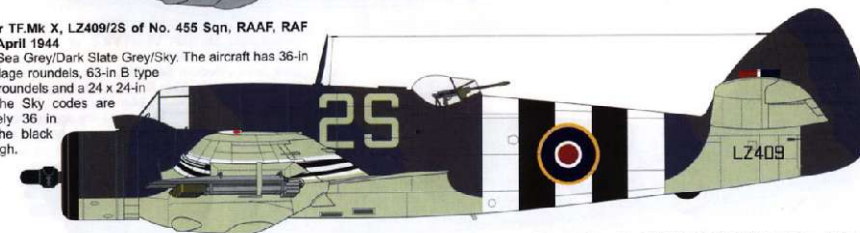
Beaufighter Mk VI, V8388/6-Y of No. 256 Sqn, RAF Scorton, circa late 1943
Dark Green/Medium Sea Grey. The aircraft has 36-in C type fuselage roundels, 63-in B type upper wing roundels and a 24 x 24-in fin flash. The Roundel Red codes are approximately 32 in high.



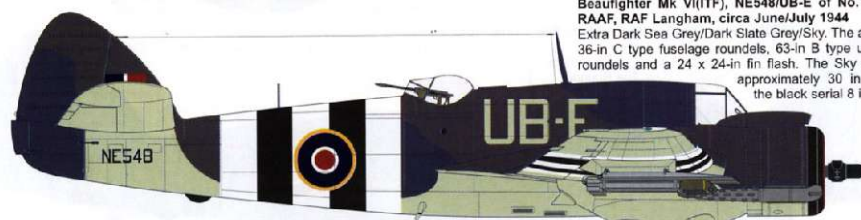
Beaufighter Mk VI, X8216/KP-M of No. 409 Sqn, RCAF, RAF Acklington, circa 1943
Dark Green/Medium Sea Grey. The aircraft has 36-in C type fuselage roundels, 63-in B type upper wing roundels and a 24 x 24-in fin flash. The Roundel Red codes are approximately 32 in high.



Beaufighter TF Mk X, LZ409/2S of No. 455 Sqn, RAAF, Langham, April 1944
Extra Dark Sea Grey/Dark Slate Grey/Sky. The aircraft has 36-in C type fuselage roundels, 63-in B type upper wing roundels and a 24 x 24-in fin flash. The Sky codes are approximately 36 in high and the black serial 8 in high.

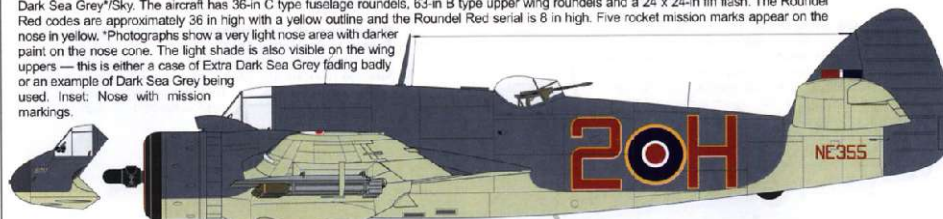


Beaufighter Mk VI (TF), NE548/UB-E of No. 455 Sqn, RAAF, RAF Langham, circa June/July 1944
Extra Dark Sea Grey/Dark Slate Grey/Sky. The aircraft has 36-in C type fuselage roundels, 63-in B type upper wing roundels and a 24 x 24-in fin flash. The Sky codes are approximately 30 in high and the black serial 8 in high.

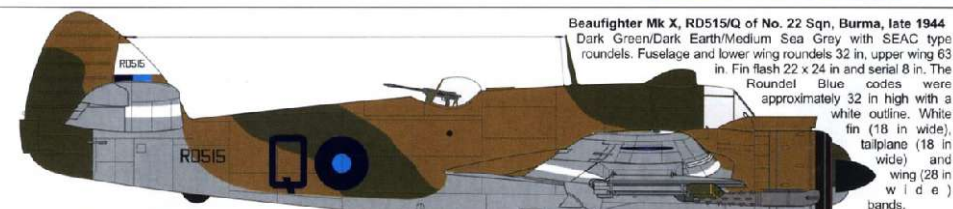
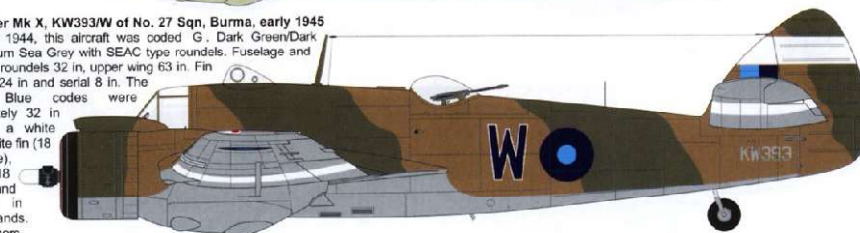


Beaufighter Mk X, NE355/2-H of No. 404 Sqn, RCAF, RAF Davidstow Moor, 21 August 1944

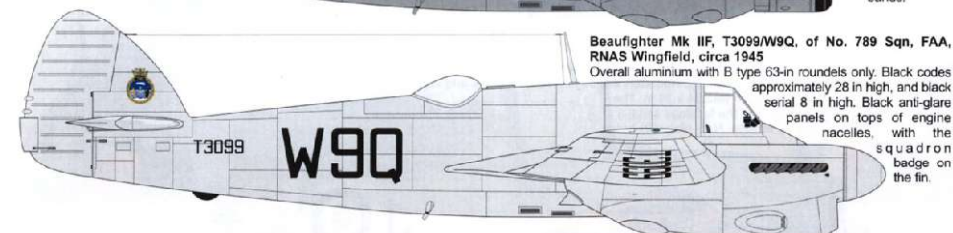
Dark Sea Grey/Sky. The aircraft has 36-in C type fuselage roundels, 63-in B type upper wing roundels and a 24 x 24-in fin flash. The Roundel Red codes are approximately 36 in high with a yellow outline and the Roundel Red serial is 8 in high. Five rocket mission marks appear on the nose in yellow. Photographs show a very light nose area with darker paint on the nose cone. The light shade is also visible on the wing uppers — this is either a case of Extra Dark Sea Grey fading badly or an example of Dark Sea Grey being used. Inset: Nose with mission markings.



Beaufighter Mk X, KW393/W of No. 27 Sqn, Burma, early 1945
In October 1944, this aircraft was coded 'G'. Dark Green/Dark Earth/Medium Sea Grey with SEAC type roundels. Fuselage and lower wing roundels 32 in, upper wing 63 in. Fin flash 22 x 24 in and serial 8 in. The Roundel Blue codes were approximately 32 in high with a white outline. White fin (18 in wide), tailplane (18 in wide) and wing (28 in wide) bands. White spinners.

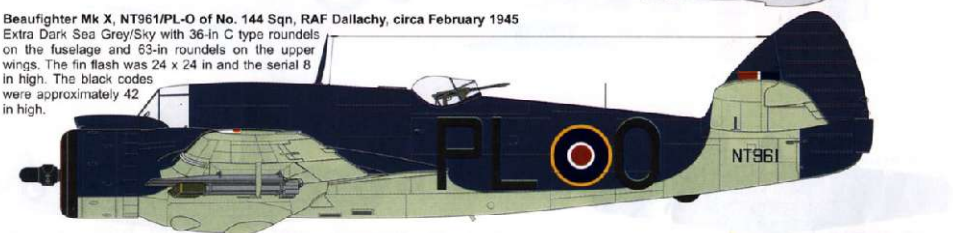


Beaufighter Mk X, RD515/Q of No. 22 Sqn, Burma, late 1944
Dark Green/Dark Earth/Medium Sea Grey with SEAC type roundels. Fuselage and lower wing roundels 32 in, upper wing 63 in. Fin flash 22 x 24 in and serial 8 in. The Roundel Blue codes were approximately 32 in high with a white outline. White fin (18 in wide), tailplane (18 in wide) and wing (28 in wide) bands.



Beaufighter Mk IIF, T3099/W9Q, of No. 789 Sqn, FAA, RNAS Wingfield, circa 1945
Overall aluminium with B type 63-in roundels only. Black codes approximately 28 in high, and black serial 8 in high. Black anti-glare panels on tops of engine nacelles, with the squadron badge on the fin.

Beaufighter Mk X, NT961/PL-O of No. 144 Sqn, RAF Dallachy, circa February 1945
Extra Dark Sea Grey/Sky with 36-in C type roundels on the fuselage and 63-in roundels on the upper wings. The fin flash was 24 x 24 in and the serial 8 in high. The black codes were approximately 42 in high.



Beaufighter Mk 10, RD858/OB-A of No. 45 Sqn, Negumbo, Ceylon, suffered a fatal crash at Butterworth on 11 February 1949
Probably Dark Green/Dark Sea Grey/Sky. The aircraft has C type roundels; 36 in on the fuselage, 32 in underwing and 63 in upperwing, with a 24 x 24 in fin flash. The underwing serial was 32 in high and the fuselage serial 8 in. Codes were 24 in high and in black. Red spinners and an 18-in wide white band around rear fuselage. This may have been CO's machine, with a squadron badge on the nose on a white disk.

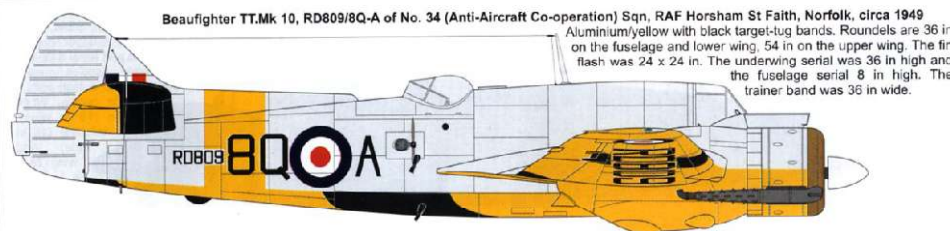


Beaufighter Mk 10, RD776/OB-B of No. 45 Sqn, Negumbo, Ceylon, February 1947
Aluminium overall. The aircraft has C type roundels; 36 in on the fuselage, 32 in underwing and 63 in upperwing, with a 24 x 24 in fin flash. The underwing serial was 32 in high and the fuselage serial 8 in. Codes were 24 in high and in black. Black spinners.

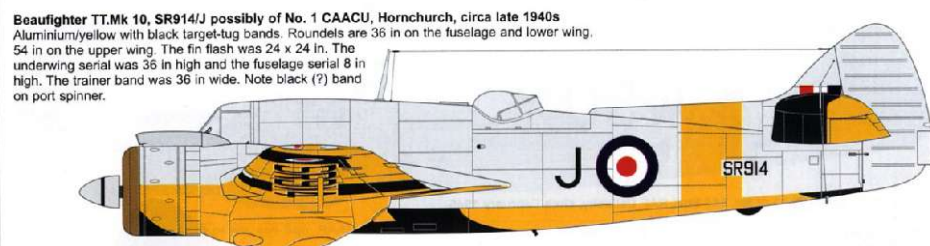


Beaufighter Mk 10, RD857/OB-R of 45 Sqn, Kuala Lumpur, Malaya in 1949
Medium Sea Grey/Night with D type roundels of 36-in diameter on the fuselage and 63-in diameter on the upper wings. The fin flash was 24 x 24 in and the white underwing serial was 32 in high and the fuselage serial 8 in. White fuselage codes were 24 in. No spinners.

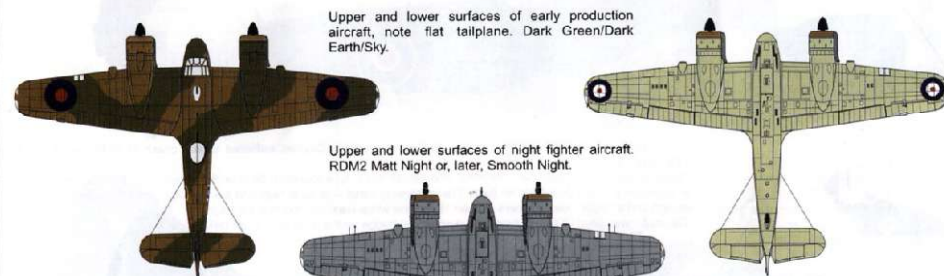




Beaufighter TT.Mk 10, RD809/8Q-A of No. 34 (Anti-Aircraft Co-operation) Sqn, RAF Horsham St Faith, Norfolk, circa 1949
Aluminium/yellow with black target-tug bands. Roundels are 36 in on the fuselage and lower wing, 54 in on the upper wing. The fin flash was 24 x 24 in. The underwing serial was 36 in high and the fuselage serial 8 in high. The trainer band was 36 in wide.



Beaufighter TT.Mk 10, SR914/J possibly of No. 1 CAACU, Hornchurch, circa late 1940s
Aluminium/yellow with black target-tug bands. Roundels are 36 in on the fuselage and lower wing, 54 in on the upper wing. The fin flash was 24 x 24 in. The underwing serial was 36 in high and the fuselage serial 8 in high. The trainer band was 36 in wide. Note black (?) band on port spinner.



Upper and lower surfaces of early production aircraft, note flat tailplane. Dark Green/Dark Earth/Sky.



Upper and lower surfaces of night fighter aircraft. RDM2 Matt Night or, later, Smooth Night.



Upper and lower surfaces of Coastal Command aircraft. Note: When C type roundels were carried to port and starboard underwing, they were either positioned as shown or at approximately 1/2 span. Extra Dark Sea Grey/Dark Slate Grey/Sky.

Upper and lower surfaces of TT.Mk 10. Aluminium uppersurfaces with 24-in wing and 36-in fuselage yellow trainer bands, yellow undersurfaces with 3-ft wide black bands at 60° to line of flight, set 6 ft apart.



A multi-media B.E.2c

Jacque Niot takes a close look at the Aeroclub B.E.2c in 1:48 scale.

The B.E.2c was produced in 1914 by the Royal Aircraft Factory as a reconnaissance machine offering the characteristics of stability and ease of handling that its intended role demanded. The aircraft first flew in the Summer of 1914, fitted with a 70-hp (52-kW) Renault engine and retaining the fuselage and tail skid undercarriage of its predecessor, the B.E.2b, but with staggered wings and modified tail surfaces.

Over 1,300 B.E.2c and 2d aircraft were eventually produced by almost 25

contractors, although many of companies had never built aircraft before and it was April 1915 before No. 1 Sqn received the first B.E.2c.

The aircraft was now being built with the 90-hp (67-kW) RAF 1a engine and a V-type steel tube undercarriage. The B.E.2c was far superior to any contemporary reconnaissance aircraft, but was no match for the Fokker monoplanes. Nevertheless, more orders were placed and the B.E.2c soldiered on on the Western Front even though it was now proving a failure in its intended role.

Conversely, it achieved considerable success in the home defence and night-fighter roles, with the front cockpit faired

Jacque built his B.E.2c more or less straight out of the box, adding only a few parts from strip plastic, stretched sprue and wire. (All Jacque Niot)

over and a Lewis gun, a landing light and flare holders fitted. Some five German airships were shot down by pilots of Nos 39 and 36 Sqn, the machine depicted here in model form (4112) being responsible, in the hands of Lt Frederick Sowrey, for the destruction of Zeppelin L32.

The B.E.2c and 2d also saw service with the Belgian 6th Escadrille and served in the Middle East, India, Africa, Australia and Macedonia.

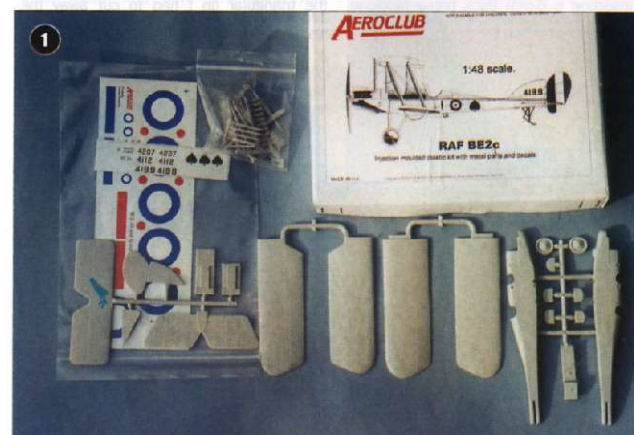
The kit

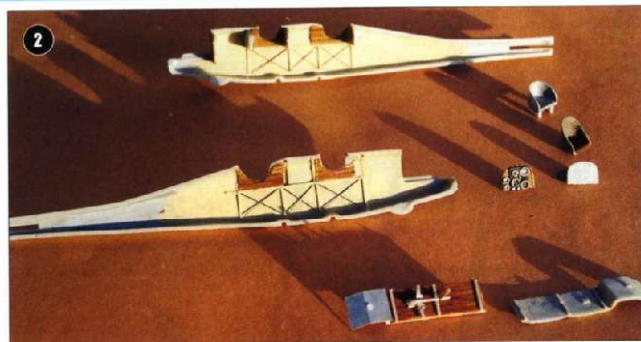
The model comes in a small cardboard box (just a few days after ordering – congratulations Aeroclub). The contents consist of four injected sprues for the main components, a bag of white metal parts, a large decal sheet with a separate addendum, a small acetate fret for windshields, lengths of plastic rod and strut and several instruction sheets (Photo 1).

The extreme crispness of the injected parts is immediately apparent, the stitching and wrinkling of the fuselage fabric is a real delight, as is the delicate sagging of the wing structure. The white metal parts are superb and the decals are very well printed, with dense colours for three marking possibilities.

The instructions include 1:48 scale five-view drawings, two side views for marking aircraft 4112 and 4199, construction details and general instructions. I feel that step-by-step drawings and/or additional comments, particularly on alternative parts for other versions, are sorely needed, since even though I've been building models for 45 years, I still succeeded in making a few mistakes with this one.

As for all World War I aircraft, purchasing





each wingtip before the glue had set. Once the lower wings were firmly attached to the fuselage, it was time to install the struts, the cabane units being cemented and wired first. Their correct positioning was essential for the following steps and the utmost care was used to fix them perfectly upright. In addition, I had to make sure they matched the locating holes of the upper wing undersurface.

Before gluing the main struts onto the lower wings, they had to be carefully sorted out so that the four wider ones could be installed inboard and the narrower ones outboard. In addition, the four longer struts had to be placed aft. Since the difference in shape and dimension is minimal one has to be very careful – I think that some sort of identification on the moulding block would be of great help. All of the locating depressions on the upper surface of the lower wing had to be slightly deepened by careful work with a 1-mm drill bit, without going all the way through the plastic. With this done, all eight main struts were glued in place, taking care that their upper ends were in line with those of the cabane struts. The soft nature of the white metal allows for some adjustment, but the attachment points are very weak and the less you move the struts the better.

The upper wing comes in three parts with an alternative centre section (short or long chord). It is up to you to decide, or guess, which suits your model because there is no indication. I first installed the long-chord unit until I discovered in a picture appearing p34 of the *Windsock* book, that the aircraft I wanted to reproduce (4112) had the short one. Rather than taking apart the three wing sections, I preferred to cut away the offending portion, a much simpler operation than swapping the centre part. Again, the strut locating holes were deepened and with everything fitting satisfactorily, the upper wing was temporarily put aside (Photo 4). I now turned my attention to the tail unit and undercarriage.

Tail surfaces

Aeroclub supplies two types of fin and two types of tailplane. As 4112 was fitted with the triangular fin I had to cut away the

For the latter a mixture of brown wash and pale yellow drybrushing brought all the fine detail out. After carefully airbrushing the inside of the fuselage – with Humbrol 74 Linen, much lightened with white and a dab of black (Photo 2) – and positioning the internal components, I cemented the fuselage halves together, taking care to achieve the best join possible. This care would avoid excessive sanding that would spoil the nice surface detail, particularly on the upper rear decking. In order to make sanding the front upper cowling easier, its raised strap was sanded flush and replaced later with a length of Evergreen strip. The firewall (part FW) was covered with adhesive aluminium, with the engine being installed much later.

Wings

Before beginning work on the lower wing, I spent some time trying to decide on the function of a white metal piece looking like a square frame. Eventually I identified it as the attachment for joining the lower wing to the fuselage. Everything became clear when I found that it actually consisted of two spar portions with two wing ribs, but no mention is made of it in the instructions. In fact, the part fits nicely into two locating grooves on the fuselage undersurface and the lower wings were butt jointed to either side of it. The correct dihedral was obtained by inserting a 6-mm thick balsa block at



the relevant *Windsock Datafile* (No. 42 in this case) is essential. A glance at Issue 81 Vol. 7 (June 1976) of *Scale Models* (containing the same drawings as the *Datafile*), plus, for the lucky residents of London and Paris, a visit to the Imperial War Museum or l'Musée de l'Air, respectively, where real machines are displayed, will be of the utmost assistance.

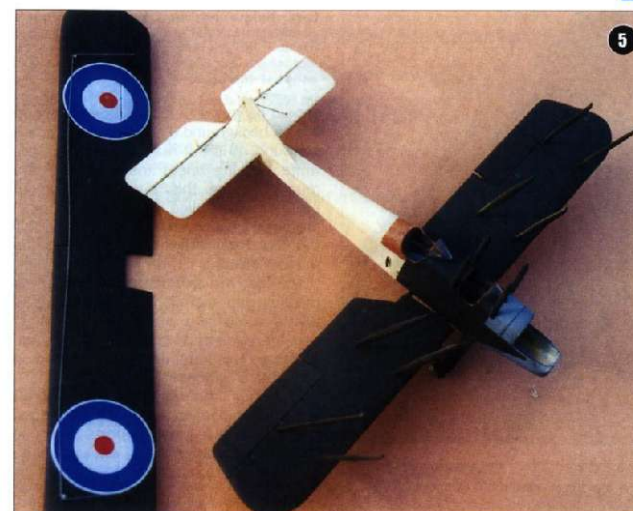
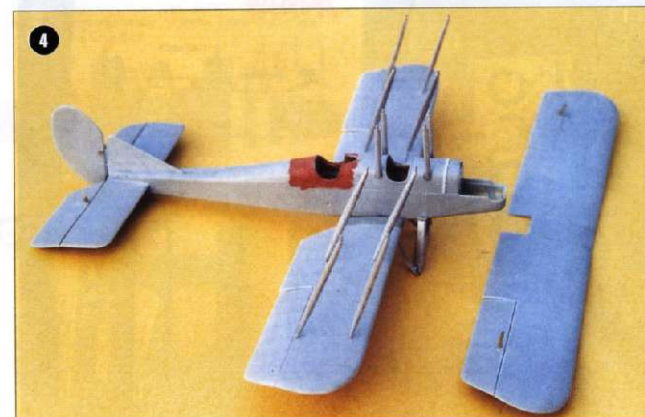
Fuselage

The cockpit components consist of a floor, a control column, a rudder bar, two seats (that of the observer having a nice depiction of wickerwork), an instrument panel with raised bezels and four bulkheads identified by letters scored on them and repeated on the instructions – no mistake should be possible here.

I first sanded flush all the detail on the inside of the fuselage halves and replaced it with pieces of Evergreen rod and 0.3-mm music wire. Since I wanted to duplicate wooden parts of the structure with real wood, I tried to use veneer, but this worked badly on the curved surfaces because it is very fragile and disintegrates when you try to bend it. I am therefore not happy with the result on the upper coamings, but the flat surfaces such as the floor and bulkheads look fine (the veneer must be sanded to reduce its thickness almost to nothing).

The instrument panel was replaced with a piece of veneer, complemented with a black plastic central panel supporting the instruments. These were made from thin slices of aluminium tubing and Reheat instrument decals. The front part of the floor corresponding to the fuel tank was covered with adhesive aluminium foil, but little of this could be seen on the completed model.

The seats were painted according to the material of their construction, aluminium for the pilot's and wicker for the observer's.



to the upper decking and masked them, I matt varnished the model, still minus its upper wing (Photos 5 and 6).

Upper wing assembly

Bringing the upper wing into position with its locating holes corresponding to the struts was no easy task, although a certain amount of tweaking is possible. I found it easier to cement the four cabane struts first, before locating the main units progressively into their respective holes using fine tweezers. Surprisingly, everything (dihedral, angle of incidence and wing alignment) fell square and straight without any further adjustment, a testament to the accuracy of Aeroclub's production.

Rigging

I rig my models with 0.3-mm stressed music wire, which is available from flying-model shops. I know it is a little too thick and 0.1-mm would be much better, but this smaller section wire only comes in rolls and straightening it is almost impossible. When rigging, I apply no tension and so the piece of wire has to be perfectly straight inherently. My method has the great advantage of being fairly easy to work. I measure the necessary length with dividers, cut the wire accordingly (with some adjustment always possible) and apply a small dab of cyano glue at each contact point.

On the real aircraft, all the flying wires were doubled but I thought the end result on the model would be too thick and spoil its overall appearance, so a single wire was installed. It should be noted that aileron control on both wings was achieved via a long connecting wire running spanwise on the upper wings and under the lower wings, and directed to the ailerons via a pulley. The rudder control cables originated from long holes in the fuselage sides, just below the pilot's cockpit. Those for the elevators were actuated via rocking levers located a little further aft, to either side of the fuselage. Two tiny white metal parts are supplied by Aeroclub for these levers.

rudder, although this should really be done anyway, since on the real aircraft there was a space along the hinge line. Two lengths of 0.5-mm wire were inserted in holes drilled in the fin edge and acted as hinges. With the tailplanes, you are once again left to decide which part to use. For 4112, the *Windsock* drawings show the rectangular one, but if you chose to model a different aircraft you will have to check reference material. As with the ailerons, the elevators were detached and re-cemented at an angle. All of the moving surfaces should be fitted with the control horns supplied in white metal by the manufacturer, but mine were cut from spare photo-etched framing for the simple reason that I realised the role of the parts supplied in the kit too late.

Undercarriage

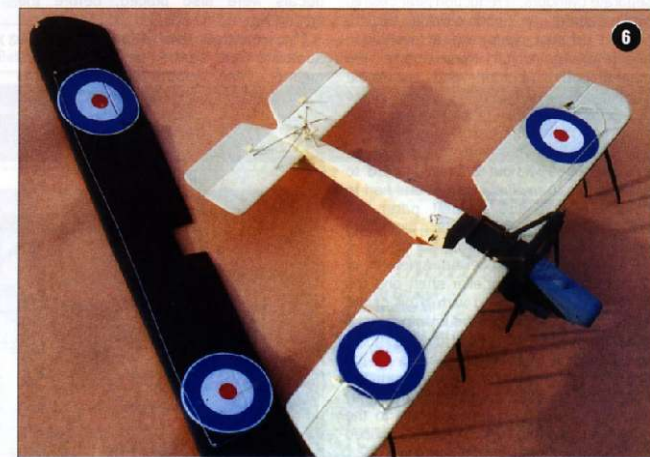
With the aircraft depicted being of the later type, the model received the V-shaped undercarriage legs with a streamlined cross axle. All the parts were nicely produced in white metal and were assembled very easily. The plastic wheels are beautiful and just needed a hole to be drilled at their periphery for the tyre valve.

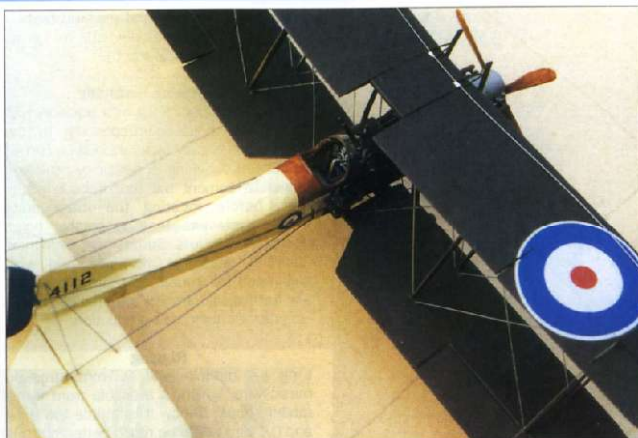
A nice white metal tailskid is also provided, but needs to be complemented with extra struts made from wire or stretched sprue. A step was made from 0.5-mm brass wire and cemented in pre-drilled holes in the lower left angle of the fuselage. Two loop skids, also made from fine wire, were installed on the lower wing undersurface. Note that they are angled outward to clear the aileron control cables.

Painting

After the pre-drilled locating holes for bracing wires had been deepened with a 0.3-mm drill bit, the first part of the painting process was carried out, since it would be impossible with the upper wing in place.

The decking aft of the pilot's cockpit was painted to simulate wood, using a light cream base gently 'brushed' with a foam





Engine assembly

The white metal parts supplied for the engine consist of a crankcase, eight separate cylinders, a reduction gear casing, two breathers, an upper cowling, two 'L'-shaped exhaust pipes and a four-bladed airscrew. Again, all these parts are magnificently moulded and assemble without any fuss. The utmost care has to be applied when gluing the cylinders either side of the crankcase, since perfect alignment is necessary for fixing the exhaust tubes without trouble. I failed to achieve this at my first attempt and had to detach and re-glue several parts, an annoying mistake with everything glued with cyano and carefully painted.

The front casing received a length of 0.5mm wire as a propeller shaft and the airscrew hub was drilled with a bit of the same size. Lastly the exhaust pipes were glued in place, their four locating holes corresponding to small protrusions on the cylinder heads. Note that seen from the front, their 'vertical' portions lean slightly inward and that they are attached to the upper wing leading edge by small V-shaped brackets (made from stretched sprue).

Final steps

The model was now nearing completion, having been painted and varnished. The decals were also placed, before the rigging was attached.

The roundels are supplied with a separate red centre to ensure good register. Their colours are perfect and their adhesive properties very good. It

Left, below left and bottom: Jacque's completed model of B.E.2c 4112, showing his carefully applied rigging, as well as Aeroclub's excellent airscrew, cockpit and exhaust castings.

should be noted that only those going on a dark background (PC10) have the white surround. It is not readily evident on the white backing sheet that some of the roundels have this surround. Tricolour stripes are supplied for the rudder, but I preferred to airbrush the white, using only the blue and red decal to match the roundel colours.

The last two additions were the Lewis machine-gun, installed just in front of the pilot's windshield on a wire mounting, and the camera on the right side of the fuselage. This latter item was installed on two vertical 'wooden' rails.

I cannot confirm that this aircraft carried both or even either of these items, but the white metal parts are so beautifully moulded that I felt it would be a shame not to use them.

Conclusion

This is my third attempt at a World War I-period aircraft. I feel that this project was complicated by oversimplified instructions, especially the lack of step-by-step drawings or at least of accurate part identification. For instance, I remained ignorant of the use of a white metal part (shown by the arrow on Photo 3) looking like a 1940s drop tank, until this was latterly confirmed to be an underwing tank for the subsequent B.E.2e version of the kit.

In addition, a last minute closer look at the drawings and photographs revealed that 4112 had its front observer's opening faired over, but it was too late for my model. This was my fault, the profile drawing on the instruction sheet being very clear, but a word of warning would have prevented the mistake.

That said, this is not my first Aeroclub model and I am glad to report that the company has now achieved the highest degree of accuracy, ease of building and thorough research, not to mention its excellent after-sales service. I am now concerned that I might want to add further to my small collection of World War I aircraft.

Jacque Nlot



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

Sunday 21 September 2003: Modelfest 2003 Model Show, organised by IPMS Farnborough. Frogmore Community Campus, Yately, Hants. (Off the A30 - 2 miles from J4 M3). Contact Pete Readman, tel 0118 978 2910 or e-mail preadman@compuserve.com

Sunday 21 September 2003: ROCON 24 'Great movies - Great Models' Model Show/Contest, organised by IPMS Rochester. 40 & 8 Club, 933 University Avenue, Rochester, NY, USA. Contact Jim Kloeck, tel (585) 385-3899 or e-mail jkloeck1@rochester.rr.com

Sunday 27 September 2003: Shoreham Aeromart at Shoreham Airport, West Sussex. 10am Books, kits, memorabilia, models, etc. Admission: £4.00 adults, children free.

Sunday 28 September 2003: St Edmundsbury Scale Modellers Club Show at the Moreton Hall Community Association and Club, Moreton Hall, Bury St Edmunds. Signposted from A14. Club & Trade stands. New bigger, better venue. Bar & bar food, big FREE car park. 10am to 5pm. Contact: Dominic Stevenson, 7 Silverdale Close, Ipswich, IP1 4JF. Tel: 01473 743 189

Thursday 2 October 2003: The Chelmsford and Essex Scale Model Society Open Evening at The Cricketers Inn, Moulsham Street, Chelmsford, Essex. FREE buffet, competition (open to all) and model displays. All welcome. Contact: Nigel on 01376 518515, Chris on 01376 553211, or Phil on 01245 476786

Friday/Saturday 3/4 October 2003: IPMS Northern Virginia is sponsoring the IPMS Region II Convention A History of Flight at The Sheraton Reston Hotel, 11810 Sunrise Valley Drive, Reston, Virginia, USA. Contact: Vince Mankowski on (301) 863 2999 or modelbuilder@earthlink.net

Saturday 4 October 2003: IPMS Glasgow Glasgow Open Model Show and Competition at The Kelvin Hall, Argyle Street, Glasgow. 10 am-4 pm. With a 42-class open competition, club stands and at least 12 traders. Admission: £1.50 adults, £0.50 children/concessions, family ticket (two adults and two children) £3.00.

Saturday/Monday 4/5 October 2003: IPMS Belgium 35th Anniversary Modellers' Party and National Convention 2003 at Wieze, Belgium. Open model and figure competition, club stands from Belgium and swap tables. Further information from Didier Waelkens, Esdoornlaan 33, B-1850 Grimbergen. E-mail didier.waelkens@skynet.be or telephone/fax 02/251 3310. www.ipms.be

Sunday 5 October 2003: International Model Exhibition at RAF Halton, Wendover, near Aylesbury, Buckinghamshire. 10 am-4.30 pm. Admission: £5.00 adults, £2.00 children and senior citizens. For more information call 01494 881437

Sunday 5 October 2003: Expo 2003 organised by Lincoln Model Club, IPMS Lincoln, Newark Model Club, IPMS Newark and The Spitfire SIG IPMS/UK. The Grandstand, Southwell Racecourse, Southwell, Nottinghamshire. FREE admission, FREE car park, on-site catering, competitions, displays, traders, raffle. Contact Ted Harris on 01636 812430 or e-mail comp@newarkmodelclub.co.uk (clubs), Steve Hesse on 01522 541146 (traders), or Ian Crawford on 01522 804661 or e-mail expo@newarkmodelclub.co.uk (general)

Saturday/Sunday 11/12 October 2003: Maquetteexpo 2003, 13th 'Eurosud' International Model and Figure Show organised by Association Maquetteiste Varoise/AMV 83. Forum Casino hall, Hyeres Les Palmiers, France. Contact amv83kit@wanadoo.fr for more information, or go to www.amv83.org

Saturday 18 October 2003: Abingdon IPMS model show, Abbey Halls, Abingdon town centre, Oxfordshire. 10 am-4.30 pm. Admission: £2.00 adults, £1.00 children and senior citizens. For more information call Simon Fisher on 01893 774034, Gary Madgwick on 01235 769746, or Steve Lovelock on 01235 815571

Saturday 1 November 2003: North Surrey Military Modelling Group presents its Open Day and Competition. Thomas Wall Centre, Benhill Avenue, Sutton, Surrey. Doors open 10 am. Admission: £1.50 adults, £0.75 children and senior citizens.

Saturday 8 November 2003: Heathrow Aircraft Enthusiast's Fair at Feltham Community College, Brownells Lane, Feltham, Middlesex. TW13 7EF. For enquiries and stall bookings contact Keith Manning on 01372 725063 (evenings) or e-mail keithmanning01@e2.co.uk

Saturday 4 January 2004: Croydon Airport New Year Aviation Collectors Fair at Airport House, Purley Way (A23), Croydon, Surrey. Aeronautical collectors fair including models, toys, books, paperwork, uniforms, militaria, plastic model kits, etc. For enquiries contact Aceball Aviation on 01737 822200

Sunday 1 February 2004: IPMS Milton Keynes ModelKraft 2004 at Bletchley Leisure Centre, Milton Keynes. The first major model show of 2004, with up to 40 clubs and societies and 25 traders

Saturday 22/Sunday 23 November 2003 IPMS/UK Scale Modelworld 2003 - THE BIG ONE! at the Telford International Centre, Telford, Shropshire. IPMS/UK's 40th Anniversary Show. Bigger and Better than ever before!!! Make a date in your diary NOW!! Watch this space for further details. SAM

Publicise your event

If your modelling group, club, branch, chapter or society would like their 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, 352 Selbourne Road, Luton, Bedfordshire, LU4 8NU. United Kingdom

25th Anniversary *Serving the Modeller*

5 year subscription to
Scale Aircraft Modelling Celebration Competition

Over the twelve issues of this 25th Anniversary Volume, we are featuring a monthly, ongoing 'running competition' asking one question in each issue. All you have to do is to answer each of the twelve questions, (the first of which was in the March 2003 issue), and then send all twelve answers, by 1 June 2004, to:-

SAM's 25th Anniversary Celebration Competition,
352 Selbourne Road, Luton, Bedfordshire, LU4 8NU. United Kingdom

Question No 8:- What is the main material used in Planet Models 1:48 scale Messerschmitt Bf 109Z kit?

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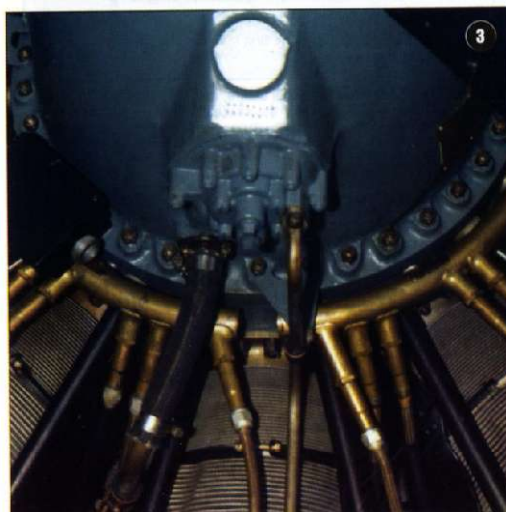
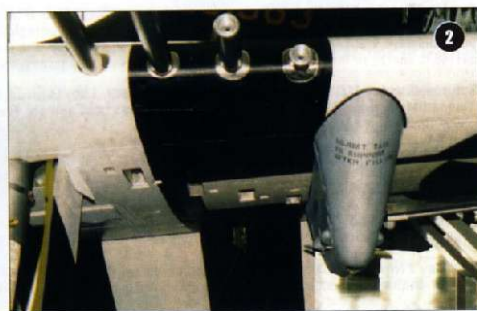
166 Brantville Lane • North Andover, MA 01845 USA
(978) 838-7283 / FAX (978) 838-0223
www.collectaire.com



Republic P-47D Thunderbolt

As a follow up to his build article on Tamiya's 1:48 P-47 in the September (25/7) issue of SAM, Graham Green photographed of some preserved P-47s.

Above: *No Guts No Glory* belongs to The Fighter Collection, at Duxford, Cambridgeshire, UK. The aircraft is P-47D 42-26671 and remains a star attraction at air displays in the UK and Europe. Preserved aircraft may not be the best reference for modellers due to their rather pristine finish, but in many cases their colour schemes have been meticulously researched. (All Graham Green)



1. Starboard underwing pylon and machine-gun barrel detail.

2. Here the port machine-gun barrels are visible, along with the underwing pylon and its shackles. Also worth noting are the cartridge ejection outlets below the wings.

3. Intimate view of the lower engine area.

4. This shot reveals the adjustable cowling flaps.

5. Useful detail of the underfuselage drop tank and its attachments is revealed here.

6. Low down on the starboard forward fuselage, the variable shutter for the oil cooler exhaust is visible (forward), along with the fixed deflector plate (middle) ahead of the excess exhaust gas outlet (aft).

7. Details of the drop tank's filler cap and markings.

8. This shot shows the passage of the elevator torque tube into the rear fuselage.

9. A rather pristine port undercarriage leg. The configuration of the various lines and connectors is interesting, as is the fact that the leg has been compressed by the weight of the aircraft. Note also the tread pattern on the tyre.

10. The starboard flap is shown deflected in this image.



11



12



13



14



15

11. A view into the port undercarriage bay shows pipe work and rivet detail to excellent effect. Note also the inner gear door and its associated strut.

12. Starboard navigation light and its glazing.

13. Not only is the starboard outboard elevator hinge visible in this shot, but rivet detail is also apparent.

14. The cockpit air conditioning intake (inboard) and camera gun port (outboard) are positioned in the starboard wing.

15. Inner starboard undercarriage door in detail.

Your chance to write to SAM with topics of interest to Scale Aircraft Modellers

Dear Paul

I refer to the letter from David Di Odoardo in the June (25/4) issue of SAM, regarding the markings carried by Royal Navy Fireflies in the Korean War. A friend of mine served on HMS *Theseus* during the carrier's highly successful deployment in Korean waters, which ran from 29 September 1950 to 23 April 1951. He has many photographs from this tour and I enclose six of them depicting Fireflies of No. 807 Squadron in action. Three of the aircraft carry Korean stripes, all applied in slightly differing styles, while three do not. While not specifically showing Fireflies of No. 827 Sqn off HMS *Triumph* as mentioned in David's letter, I nevertheless hope that these photographs may be of some assistance to him, and also of interest to fellow modellers.

Geoff Fletcher, Wickhampton, Norfolk



Dear Paul,
I have been given a copy of the excellent *SAM Colours* publication *Combat Colours No. 2 – The Hawker Hurricane 1939 to 1945*.

At the bottom of page 19 reference is made to the colour scheme for Hurricane Mk IIC, BN230 (FT-A) of No. 43 Squadron (RAF). We proudly display the former RAF Bentley Priory gate guardian, LF731, as 'BN230' at Manston. The restoration was undertaken by the Medway Aircraft Preservation Society (MAPS) at Rochester Airport on behalf of (initially) the RAF.

As Managing Director of MAPS at the time, I undertook very careful research into the finish of both du Vivier's BN230 and also of No. 43 Squadron Hurricanes involved in the Dieppe Raid. I was most fortunate to involve Jim Beedle who was a member of the ground crew at Tangmere and who kept immaculate and detailed notes of his time with the 'fighting Cocks'.

At the time of the Dieppe Raid there was no Sky paint available for the Squadron codes so all of the No. 43 Squadron codes were uniquely painted in white. I believe this practice may have continued with the unit until the end of the war.

In addition, du Vivier's ground crew became so fed up with constantly having to paint the Belgian national colours and the chequered flag on the sides of his aircraft (du Vivier crashed so many of his fighters) that they made up removable plates to make their task easier. Mrs du Vivier donated one of the plates for display in the Spitfire & Hurricane Memorial Building following her husband's passing in a car crash.

I enclose some photos of BN230 for your information. I hope you find this information useful. Having so far rebuilt four Spitfires and two Hurricanes, I know what criticism can be levelled at one's efforts. I can only imagine the amount of research that went into your publication, which I found most informative.

Lewis E. Deal, MBE, Aviation Adviser



Please send your letters to:
The Editor, Guideline Publications, 352 Selbourne Road,
Luton, Bedfordshire LU4 8NU
or by e-mail: steve@regalltho.co.uk

Dear Paul,
My reason for writing is that I thought the readership might find the following notes on the North American Mustang useful, following the two articles in the July *SAM* (25/5).

To obtain the desired laminar flow, the front 40 per cent of the Mustang's wing was primed and finished with Airfoil Smoother, the area being sprayed with sufficient coats of Acme Gray Surfer No. 53N5 to cover all irregularities. Then the skin butt joints were filled with Acme Red Vellunite glazing putty No. 58485. After completion of assembly, the wing was covered with one coat of camouflage enamel (or silver on P-51D and K aircraft). I presume that when camouflaged P-51s were striped, they had their wings cleaned and painted silver. The only panel lines visible would have been the armament access hatches.

This information comes from Ducimus' *Camouflage & Markings No. 2 – RAF Mustangs*, by the late R. C. (Bob) Jones.

The rear spar was Zinc Chromate Yellow, but only the part immediately in front of the radiator intake. The longer angled piece was silver. On all P-51s prior to the P-51D, the main undercarriage doors stayed closed when the aircraft were parked, since there was an uplock.

Regarding the paint shades, Olive Drab ANA 613 and Light Gray ANA 602 were acceptably close to their MAP equivalents. However, Sea Gray ANA 603 was identical to Extra Dark Sea Grey. All Mustang Mk III aircraft were resprayed with Ocean Grey, presumably at Maintenance Units, prior to issuing to squadrons. I believe that some Mk I and II aircraft remained in their delivery colours, since they were operated at very low level across the English Channel. The Sky fighter band and yellow leading edges were added at the Maintenance Units.

I hope that the forgoing is of interest to my fellow modellers.

R. J. Wearn, Blackpool, Lancashire

Dear Paul

This letter is very late: I should have written as soon as I had read the excellent April (25/2) edition.

While I accept that your prime task must always be to sell copies in the largest possible numbers, rather than to pander to the wishes of a few enthusiasts, it would be very welcome if you could eventually cover some of the more esoteric subjects. These might include the Baltimore/Maryland, the Bombay/Harrow, the London/Stranraer (and perhaps Lerwick and Singapore), the Vildebeest/Vincent, and possibly even the Albemarle and the sad old Botha. Actually, the latter would probably be impossible unless you have been more successful in finding reference photos than I have. None showing a Botha with bombs or a torpedo, or with ASV radar, or serving with the TTU (as opposed to the TDU) have passed my eyes in over 30 years of searching. But now to the main point of writing – and here I am sticking my neck out. It is the Mosquito colour profiles on pages 128 and 129 that puzzle me. Not having entered the RAF until the National Service days of the mid-1950s, I have no first hand knowledge of SEAC markings, but my 37 years of research into the Beaufort have put me in touch with many who did. Although I cannot claim all of the following as fact, I have been led to understand that Azure Blue was a bright light blue and that Hendon's Beaufort is correct for a factory-fresh machine. It was certainly not the grey shade shown in your profiles. As with certain other colours, Azure Blue quickly faded to a lighter shade under tropical conditions. The chart in *British Aviation Colours of World War Two* seems to be correct. I also understand from veterans that the centre of SEAC roundels was usually white/whitish but sometimes Azure. No reason is known for this, but it may simply be due to fading. Given all the shortages in the Far East, it does seem unlikely that a special paint (SEAC white – a new colour to me) would have been available. Based on

photos of over three dozen SEAC Beauforts, I can safely say that their code letters varied from black to mid black and white tones, but always at least as dark as the darkest roundel centres and never the whitish shade of most.

I believe that what I have been told, and therefore what I have said above, is correct, but please shoot me down if I am wrong: I seek only the truth. It could just be that wartime aircrew assumed that the light blue on roundels and codes was meant to be the same as the aircraft undersurfaces, and accepted minor differences as being due to weathering. I cannot comment on Mosquitos, but all Beauforts delivered to the Far East appear to have carried UK-style roundels on arrival. The red and white areas were painted-out locally (with Azure Blue?) after the creation of SEAC, but the outer 2-in yellow ring was retained on the fuselage roundels. A combination of film type and the extreme fading of Extra Dark Sea Grey can play havoc with tonality in black and white. Photograph 16 in Roy Nesbitt's *The Armed Rovers* illustrates this. The yellow on J/217's roundel looks darker than the background Dark Slate Grey and much darker than the badly faded Extra Dark Sea Grey to its right. The J is lighter than the Blue.

In *The Beaufort File* the photograph on page 27 shows what appears to be Azure on the markings. The colour of the code letter 'B' ahead of the roundel is not known, but could be green (it is lighter than the Matt Blue of the markings). A photo of X/22 (not used) also shows the mid-tone centre and the code in the same or similar tone. V/22 on page 38 appears to show the more usual (faded?) lighter colour on the roundels and a Blue code, similar to Q/217 on page 55 (green code?).

Roger Hayward, Slough, Berkshire

Dear Paul,

Not long after I sent in the copy and photos for the August (25/6) *Tailpiece*, my thoughts on Tucano markings came back to haunt me. The two reserve squadrons that comprise No. 1 FTS and Nos 72 and 207 Sqns, have devised and applied markings to some of their aircraft (four of each, I believe). An example of No. 207 Sqn's was on show at the Classic Jets display at Kemble, ZF137 wearing both the motif from the squadron badge on the fin and 'fighter-type' bars either side of the fuselage roundel. The fin badge, which made a brief appearance on Bassets, but was more associated with the unit's Marham Valiant incarnation, is a winged lion (not unlike St Marks, although I haven't yet found a Venetian link). The unit's marking never having included bars before, the yellow and red from the lion colours have been used. They are probably a considerable aid to visibility! I am told that No. 72 Sqn's aircraft carry the unit's swift on the fin, and the red/blue rectangles on the fuselage; we can only hope that some kindly decal producer takes note of both.

Mike McEvoy, via e-mail



Interested in contributing to *SAM*?
We are looking for good quality modelling articles, preferably
with stage-by-stage build photos.
Contact Paul E. Eden at the above address

Dear Paul,

With reference to Mike McEvoy's *Tailpiece* on the subject of hand-painted artwork (August, 25/6), I'm sure that you are aware that there is a modern alternative: the PC and colour printer allow modellers with sufficient artistic talent to create their own decals, without the risks of working directly onto the model.

Personally, I'm not that talented, but fortunately I have a friend who is. Mike Grant started by creating decals for his own models, then printed copies for his friends, and now has a small business producing custom decals which he sells via his website: www.mikegrantdesign.com/decals. He has created markings which have allowed me to model the Utterly Buttery An-2, and the B-24 *Delectable Doris*, among others. If there are particular markings that you'd like, but don't feel confident to hand paint, then you could check out his website or e-mail him at decals@mikegrantdesign.com to discuss them. The website includes a gallery of models made using his decals, so you can get an idea of the quality of his work.

Bob Wolfenden, via e-mail

Dear Paul,

With reference to Geoff Trenholme's query on anti-flash white I would like to say that the 'colour' was referred to as Anti-radiation Flash Gloss White and shows in good photographs as a high sheen, somewhere between satin and gloss. At any rate, on a 1:72 model it is better to represent a high gloss finish with a satin paint anyway, since high gloss looks wrong at this small scale.

The reference to 'matt white on top of gloss white' may simply have meant matt white on the top surfaces and gloss underneath and, since white is the heaviest pigment, it would be unlikely and somewhat unnecessary to apply two coats. However, looking at photos it would appear that gloss was used all over. Considering a white car, no matter how well you polish it, it will never look as shiny as a black car and it does not show reflected colours and tones very well, even at low angles of incidence. This effect can make gloss white appear to be matt but some photos of Vulcans in full-colour markings very definitely show a gloss finish.

As the 'white' Vulcans were intended to deliver their weapons from altitude it would seem odd to use a matt finish on the upper surface, since matt is intended to stop aircraft being spotted from above [or below] by preventing sun flash giving away their position.

Incidentally, Anti-radiation White is not white but a very light primrose yellow. There is no exact equivalent match in F.S. or BS.381C but BS.4800 shade Pale Primrose 10 E 49 is not too far away. For those with the Methuen book the colour is about 2A/B3.

As ever, it is not wise to get too pedantic or precious about exact colour reference but, as an aviation artist and modeller, I find it helpful to have a reference as a starting point even though the exact match will never appear in a painting due to ambient lighting, weathering, reflections, etc.

Models, too, benefit greatly from a little aerial perspective and I think aircraft modellers could benefit by taking a lead from figure modellers who use lighter and darker tones of the basic colours to bring to life folds in clothing, etc.

There is a lot more to scale representation than multiplication, division and a set of colour swatches, even more if you make a working model. You cannot have 'scale water' for a model ship or scale air and gravity either.

So, therefore, I think that the reality of models can be greatly improved by using artists' techniques of suggestion, or trompe l'œil as it is known. This is more important to the reality of a model than loading it with photo-etched and resin parts.

Iain Wylie, via e-mail

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



Mil Mi-4A 'Hound-A'

1:35 injection moulded

The Mi-4 entered service in 1953, having been developed to the flight-test stage in just seven months on a personal edict from Stalin. Initially considered to be a copy of the Sikorsky S-55, it was soon realised that it was considerably larger and more capable than the S-55, with its clamshell rear doors that could accommodate a jeep-sized vehicle or a decent number of troops. Another distinctive feature was the navigator's ventral gondola, which was often equipped with a 7.62-mm (0.3-in) machine-gun. In all its variants several thousand of the type were built, including the Chinese Shenyang H-5.

The kit

Lifting the lid on Trumpeter's latest large-scale release revealed a box packed full to the brim. The five main sprues of light grey plastic hold a total of 189 finely detailed parts and there is also a sprue of commendably thin clear parts, a set of clear instructions, a small photo-etched fret, a film for the instrument panel and a sheet of decals. If first impressions are anything to go on then this looks a first class model kit.

Construction

The rotor head was built up first. The level of detail is very good indeed, however, all the parts do have a very slight seam running around them, which needs cleaning up. After this is done, the parts go together well. With a 0.6-m (1-ft 11-in) diameter, the rotors are huge. The only improvement I found they needed was the addition of some droop to each blade.

The cockpit was built up next, careful painting, following the notes on the instructions, bringing out the wealth of detail. The instrument panel benefits from the photo film provided for the dials. Unfortunately, no seat belts are provided on the photo-etched fret.



The fuselage halves really are impressive, not just in terms of their sheer size, but also the quality of the engraved detail. Of particular note are the raised rivet heads around the cabin area. By contrast, all of the larger parts have awkward moulding gate attachments, but this only really means that you have to take a little extra time and care when removing each piece. Detail for the main cabin is limited to a representation of the internal frames, a floor, a roof and a forward bulkhead. It is adequate, but leaves plenty of scope for improvement, especially if the clamshell door are fixed open. Unfortunately, the cabin and engine areas are blighted by lots of sunken ejection marks, which are unsightly and need careful filling to remove them.

At this stage the large piston engine is built up ready to go in the nose. Thirty eight parts go into making the engine and the result looks very good.

Since the entire nose area is provided as eight separate panels, some of which you can leave off or open to reveal the engine, it's worth taking some time over the construction in this area. After fitting the cabin windows the fuselage can be brought together, taking care to get the best alignment possible around the nose, because this will affect how well the engine access panels fit later. At this point I noticed a moulding flaw running along the cabin roof area, however, this ridge was successfully removed with a file

and wet & dry. The windscreen fits in place okay and the cockpit doors can be positioned open to show the detail inside. The photo-etched grilles for the engine panels are excellent and look great when fitted. With a little time and adjustment, the many nose panels can be made to fit quite well. The undercarriage is a robust affair, which is just as well with a model of this size, the locating points being quite positive. It now becomes evident that without adding some weight to the nose, this model is a 'tail sitter'. Fortunately I had not added the navigator's gondola yet, and so fixed some lead weights into it, which cured the problem.

Final touches

There is a lot of detail moulded into the clamshell doors and after the various struts have been added, the doors cry out to be fixed in the open position, as does the cabin side door. Once the tail rotor head assembly, and the tail rotor itself have been made up, it's just the final details such as aerials, steps and the tail skid that are needed to finish off assembly.

With regards to accuracy I have no scale plans for the Mi-4, but when compared to pictures of preserved aircraft and a general arrangement drawing, the model's appearance is pretty good. With the H-5 being produced in China, I'm sure Trumpeter will have run its tape measure over the real thing.

A separate painting and markings guide contains six colour profiles of the camou-

flage schemes on offer. The guide refers to paints from the Gunze Mr Color range of paints. The first three machines all have the same basic dark green and blue finish and give the option of Russian, Czech and Chinese air force machines. Next is an East German option in two-tone green and a Polish machine finished in an attractive multi-colour camouflage scheme. I chose the final option, a Chinese civilian aircraft. This version is depicted without the navigator's gondola on the profiles, but no alternative blanking piece is provided in the kit. Thus, the options are either to fit the gondola or somehow cover a large hole in the model's belly.

The decals are very well printed but on continuous carrier film, so each item needs to be carefully cut out. They went on with no problems at all and the carrier film disappeared under the final coat of satin varnish. Only basic national markings and numbers are included, with no stencils or cheat lines, etc, but this may reflect the simplicity of finish found on Warsaw Pact helicopters of the time.

I used Halfords white primer followed by Appliance White and Humbrol Sky to finish my model, the blue cheat line coming from Xtradecal stripes.

Conclusion

This is a very impressive rendition of this large Soviet helicopter. The need to clean up the smaller parts and the awkward attachment gates are

soon forgotten when this huge model starts to take shape. Overall, this is a very good quality kit. Although I don't nor-

mally work in these large scales, I could very easily become a convert if this is a sign of things to come. I know

this not a cheap model to buy and the scale is unusual, but don't be put off by either, since this is a very enjoyable model

to build. Now, if the gentlemen from Trumpeter were to scale this model down to 1:48...

John Nicholls



Boulton Paul Defiant Mk I

1:72 injection moulded

Since the early Airfix Defiant, modellers have been waiting for a new kit of this aircraft. Over the last few years we have had a few short run kits, and now MPM has released the first of three variants that it will be producing. Opinions on the accuracy of previous kits have filled many magazine pages and, although my views on plans are well known, I did check this kit against published drawings. I found that it was quite reasonable, although a little short on length. I then checked against published dimensions. The model was still short, but the drawings were also wrong – I rest my case!

The kit is moulded in the usual grey plastic with incised panel lines. It has been manufactured using steel moulds and consequently all the detail

parts are produced as injection parts – including the transparencies.

As per usual, construction starts with the cockpit assembly. This consists of a floor, a rear bulkhead, a seat with a separate cushion, rudder pedals, a control column and an instrument panel. The cockpit sidewalls have embossed detail to which various panels and switches are fixed. After completing the cockpit interior and fixing it to one side of the fuselage, the halves are cemented together.

The next step is the wings. The bottom half is a one-piece construction with port and starboard upper surfaces. Before cementing the wings together, detailed wheel wells are fixed to the inside of the bottom wing. The wings and horizontal stabilisers were then fixed in place and the intakes glued under the fuselage. I suggest that at this stage you assemble the turret and do not forget to fix the gun assembly to the front half before cementing the whole turret together. I did not do this and had to do a little light surgery to prise it apart to get



the guns in. The next stage is to fit the upper rear coaming. I found this a little long so I gradually trimmed it at the rear end, constantly test fitting the turret until it dropped into place. This done, I fixed the coaming and filled any slight gaps in the assembly. Just one job was left before painting – filling small gaps in the leading edge for the landing lights. It was now time to fit the undercarriage, the pre-painted exhausts and the underfuselage aerial masts. A quick coat of Halfords clear and it was time to add the

decals. These are excellent. They are thin and strong and the colours are solid. The tail stripes fooled me at first, since they do not have the corner cut off to conform to the leading edge of the fin. However, this is intentional because the decal wraps around the front edge on both sides, eliminating the need to touch in with paint. After a coat of matt varnish I fitted the pre-painted transparencies and assembled and fitted the propeller, which I found a little over complicated. With the kit being produced as it is, I would have thought that the propeller could have been moulded as a single piece, with a separate spinner and back plate. Instead, there is a hub to which each blade is butt jointed, which means that you have you to keep a check on the angle and pitch of each blade. With the blades fitted, the propeller is fixed to its back plate and the spinner cemented in position. However, any problems with the propeller are a minor concern compared with having a decent Defiant in my collection at last.

Ernie Lee

Suggested reference:
The Turret Fighters,
Crowood Press



North American F-86F Sabre

1:72 injection moulded

This kit is a re-release of the

Heller F-86F, which was originally released back in 1979. Despite the age of the mouldings, it remains a very good representation of the subject, and the slightly raised detail does not spoil the model. A light rub-down with your favourite fine abrasive will soon polish the lines down if required. The kit offers both

early and late drop tank styles, although the early style has fins that are not typical of the type commonly used in Korea.

The worst feature of this kit is, unfortunately, the decal sheet. *MIG MAD MARINE* was a late model F-86F-30, and was fitted with the hard '6-3' wing with fences. Airfix correctly shows this on the box

top, but the kit mouldings are unmodified, having the earlier leading edge slats. The decal sheet also contains errors. The diagonal fuselage and wing markings are orange instead of yellow, the name on the fuselage side lacks some of the black detail of the original, and the red bar above the fin chequers is too narrow. If



you want to build MIG 17 MARINE accurately, you will have some work to do.

I used the kit decals for the purposes of the review, despite their inaccuracies.

The kit actually went together well, despite the plastic being rather soft, and needed only a little filler, mainly on the underside of the wing to fuselage joint. I took the easy option and used an aluminium car spray paint for the basic finish. Incidentally, Airfix



quotes Humbrol paint numbers, but does not name the colours required. The decals are very thin, and require careful handling. You may note the lack of wing root line markings

on my effort, as a result of ham-fisted application work. The orange wing and fuselage markings look a little odd, but could, I suppose, be over-painted.

I hadn't tackled the Heller/Airfix Sabre before, but will certainly have a go at another, probably in a camouflage finish.

Bill Anderson



Panavia Tornado F.Mk 3 1:72 injection moulded

This is a re-release of the Airfix Tornado F.Mk 3 kit of some ten years ago, with a new decal sheet. The kit allows for three different finishes, the first is for an aircraft of No. 111 Sqn in 85th anniversary markings, the second is for No. 56 Sqn and the third is for 36th Stormo, Italian air force.

Firstly, I assembled the cockpit tub and painted it grey and black. The instrument decals were applied after the paint had dried, using Klear floor polish. They look nice on the sheet, but are ill-fitting on the main instrument panels. I would suggest making a blanking plate to rectify this.

Next came assembly of the wings, air intakes and tail fin, remembering to open up the small air scoop on the fin before assembling. The cockpit was then fitted to the fuselage and weight added to the nose. The wings were then fitted without the linkage and bushes, since I elected to omit the wing-sweeping facility, then the fuselage halves (top and bottom) were put together. Surface detail is in the form of fine raised lines, but after I had finished filling and sanding they had been totally removed.



I then fitted the air intakes, tail fin and tailerons, which had to be filled with PVA wood glue to hide the joints. At this point I also set the wing sweep angle in the full forward position. I then assembled and fitted the pylons and filled the holes in the wings for the GR.Mk 1 outer pylons and for its chaff dispensers in the underside of the rear fuselage. The drop tanks were then assembled and the Skyflash missiles were de-burred. The canopy was masked with Tamiya tape and the model was mounted on an old brush handle through the open jet

exhaust hole to ease spraying. All the main parts were then sprayed with Halfords matt black car spray, before the tail fin was masked for the nice bright No. 111 Sqn scheme. I sprayed the radome with grey primer, and the Skyflashes and undercarriage in white. I found that there is confusion in the painting instructions at this point, since, according to the key, the colour scheme is Light Aircraft Grey on the upper surfaces (Humbrol 166), and Barley Grey (Humbrol 167) on the underside. This is, of course, the wrong way round. I used CompuColor's Barley

Grey, which was all that I had to hand, and Humbrol Light Aircraft Grey for the underside. After painting I removed the masking and hand painted the thrust reversers, using matt black, with steel dry brushed over the top. I then drew out the wing-fold area in pencil and hand painted the area grey.

I cut a fillet of thin plastic strips to fit in the fuselage behind the trailing edges of the wings. These were then painted grey and marked out in pencil to represent the wing skirt. Starting on the final finish, I sprayed Klear over all the main parts. I then applied the main decals. The decal on the tail comes in two parts: a white backing and a coloured overlay. Care must be taken in lining these up. I had problems with the extensive decals supplied for the lines and stencilling. Due to the

thinness of the decals, the narrow white dotted lines on the wings folded up when I tried to position them. I suggest that it may be possible to avoid this problem by applying from the wingtip first, or cutting the decal into smaller pieces. Lastly, I painted the tyres and fitted the undercarriage. I added the doors, using fine brass wire to assist the fit, and painted the exhausts as per the

reversers. I then fitted the seats with straps made from tape, added the control column and fitted the canopy. In my opinion, this kit has developed into a fairly presentable product, although I

feel that it should be tackled by a reasonably experienced modeller, since it requires a lot of patience to achieve satisfactory results, and a fair amount of effort.

Tony Martin



Fokker D.XXI

1:72 injection moulded

This is the first MPM kit incorporating the company's 'new technology' that I have built. The only things you will notice that are different are that the canopy is now injection moulded and there is a bare minimum of resin needed. The kit is moulded in the usual light grey plastic, with fine incised panel lines and fabric effect. Starting with the cockpit interior, MPM supplies a detailed floor, two bulkheads with the radio between them, a seat, a control column, rudder pedals, a firewall and an instrument panel. Once assembled and painted, the cockpit was fitted into one side of the fuselage. The corresponding area of the fuselage has raised spar detail. If you work through the model step by step as per the instructions, I suggest that you look at step 5 before cementing the fuselage halves. The aircraft depicted is a Finnish-built version, with an extra window in the upper fuselage and I think it would be prudent to cut out the upper fuselage to accommo-

date it at this stage. Next came the horizontal tailplanes and rudder, the former having locating pegs. At this stage, watch out for the support struts on the underside of the tailplanes. Depending on which scheme you use, they are either single or double. Before moving on I drilled a small hole in the top of the rudder and cemented in a short length of wire to represent the aerial mast.

The wing assembly is orthodox, with a single bottom section and two upper wing halves. Having fitted this, I moved on to the cowling, which comes in three sections - the joints of which

match those on the real aircraft. After fitting the intake and cowling ring the unit is ready to cement in place. Since the cowling on the scheme I had chosen was overall the same colour as the upper surfaces, I painted it and fitted the exhaust stub, but left it off until I had painted the rest of the aircraft. There was one more intake to fit and then I moved on to the wheel spats. These come in two halves with the wheels trapped in between. All other details I left off until after painting. I then fitted the engine and the cowling, wing guns, pitot and venturi. The decals give you three alterna-

tives on four aircraft, since one machine has two different schemes. For the review kit I have chosen an aircraft of 4/LLv 24 in 1940. The decals are a little fiddly, because a separate centre has to be used for each of the blue swastikas. After a coat of matt varnish I fixed the transparencies and the propeller in place, made an aerial out of stretched sprue and the job was done.

I had no trouble with this kit, apart from cutting out the extra window it was a 'stick together' project, and one any competent modeller will have no difficulty with.

Ernie Lee



Hawker Typhoon 'car doors' prototype/Mk IA 1:72 resin

This is another quality resin kit from the Czech Republic. As far as I am aware, the last kit of this aircraft in this scale was issued by Frog back in 1975, so to many modellers this is the first available kit. It is beautifully moulded with incised

panel lines, but with just a little flash. The first task as always is to assemble the cockpit interior. This consists of a floor, a bulkhead, an instrument panel, rudder pedals, a control column and a seat. After painting it was fixed to one side of the fuselage, the radiator front was cemented into the same half and the fuselage halves joined. The single-piece horizontal tailplanes can now be fixed in place (there are locating slots for these). Likewise, the wings are single mouldings and slot into positive locations (you will need to drill out the machine-gun holes). There are three choices of canopy,

depending on the variant you wish to model. The cockpit doors are separate mouldings

and I decided to leave just the starboard one in the open position. It is intended that you cut



the canopy to accommodate the doors, but since I was only opening one I cut the port door at the cockpit ledge and cemented the bottom half into the fuselage. I fixed the canopy in place and painted the aircraft. Since I wanted to model an early operational aircraft I chose to produce a Mk I of No. 56 Sqn in Dark Earth, Dark Green and Sky. With the painting complete I added the pre-painted exhausts and undercarriage. There are a couple of drop tanks and bombs supplied, but since my model depicted an early issue aircraft, I left it clean. After a coat of gloss varnish I applied the decals, these fitting perfectly with no silvering. The propeller and spinner is a single moulding and I had to correct a little warping on the blades with hot water before painting and cementing the unit in place. There is just one item to add –



the pilot under the wing. This has to be scratch built from wire and cemented in a hole that you will need to drill

through the roundel. This kit makes up into a pleasing little replica and is a must if you are building a

Typhoon/Tempest collection.
Ernie Lee
Suggested reference:
Warpaint No. 5



Heinkel He 112B-1/B-2 1:72 injection moulded

This company does not issue many kits, but they are always worth waiting for. RS started with resins and then moved onto styrene, with the same delicate moulding as before. This kit is moulded in light grey with fine incised panel lines and I hesitate to say that it is a 'short run' product, since all the components, down to the finest detail, are moulded in plastic. The only giveaway is the vacform canopy. As usual construction starts with the cockpit interior. This consists of a floor, a bulkhead, a seat, a control column, rudder pedals and an instrument panel. Forward of this is fitted the firewall and, strangely, engine bearers (no engine is supplied). If an engine had been included it would have been possible to show it, since the nose side panels are separate to cater for two configurations depending on which mark is being modelled. After painting the cockpit walls, which, incidentally, have rib detail, the pre-painted cockpit interior was fitted. Without the engine it is debatable whether the firewall assembly is necessary. Now just the tail wheel well needs fixing before the fuselage halves are joined. After

cementing the single piece horizontal tails to the fuselage, I assembled the wings. The lower half is a single moulding, with separate upper panels. The only other component I fitted before painting was the underfuselage radiator, which comes in three parts. I had a little trouble with this. The radiator front has a radius on two corners indicating which way it fits, but according to photographs it would be upside down, so I simply reversed it. I did not cement the engine side panels, into which the exhaust stacks are fitted from the inside, temporarily placing them in position (without the exhausts) to make matching the paint scheme easier. After painting they were removed, the exhausts fitted, and the panels replaced permanently. Watch out for the yellow wingtips and

fuselage band; they are shown on the camouflage drawing but the colour is not itemised on it. You can look at the boxtop, but if, like me, you put it down and it vanishes into the modellers 'black hole', you could miss them. Next the undercarriage was fixed and the decals applied. As you can see, the whole of the tailplane and rudder sports national colours. Each surface is a single decal so do not forget to trim off the varnish backing where they butt up to a right angle surface. They are beautifully flexible and will wrap around the leading edge, but you may need to touch up in places. I used decal fluids and the decals dropped into the recesses perfectly (if you do not fancy this scheme then you can produce an all RLM 63 aircraft with civilian codes). The canopy was cut to size and

placed in position and then, using a sharp pencil, I scribed around the outside. This gave me a line up to which I could paint the interior colour. I did not know what this was, so I painted the front RLM 66 and the rear RLM 02. The aerial fits to the fuselage with a moulded-on collar, so after drilling the canopy you need to feed the aerial from the inside and then cement the canopy to the fuselage. A quick dab of PVA glue on the hole will secure the aerial. After fitting the propeller and spinner, construction is complete.

This is a straightforward little kit to build, with no vices and one that will enhance your collection of German aircraft.

Ernie Lee
Suggested reference:
Squadron/Signal In Action
Number 159



All books reviewed
by SAM are
available from
* * *
The Aviation
Bookshop
* * *
Midland
Counties
* * *
and most good
book shops

Canadair and
Commonwealth Sabre
Steve Hazell
Warpaint Books Ltd
£12.50

This is quite a large monograph with some 52 pages, and I am sure it will be popular in the UK, since it depicts the Sabre variants used by the RAF. There is quite a comprehensive text cataloguing the development and deployment of these aircraft and a list of Sabre's in squadron and unit service world wide, plus their serial number details, is provided. These books are modeller orientated, which means that the

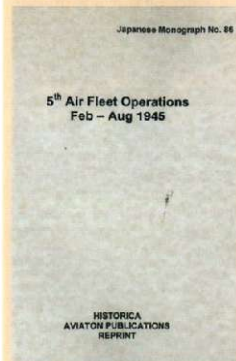


1:72 drawings and the large number of photographs will be

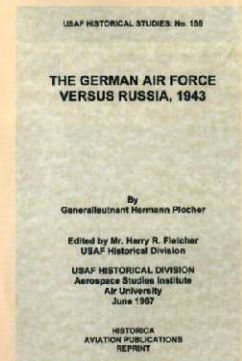
of most use. These machines were exported to a number of countries, which means that there are a lot of interesting schemes; 53 colour profiles illustrate this well. Aircraft from 12 countries, not including the originators, are depicted in them and, just in case you feel the urge to build one, there is a list of the kits, decals and accessories that have been produced. I believe this monograph does what it is supposed to do – stimulate the modeller. The power behind these books, Alan Hall, was always a modeller and it shows.

Ernie Lee

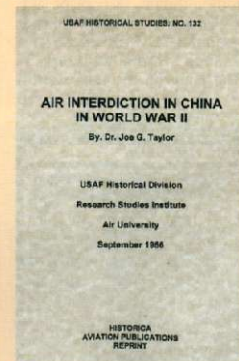
The German Air Force versus
Russia, 1943
Generallieutenant Hermann
Plocher;
Air Interdiction in China in
World War II
Dr Joe G. Taylor;
5th Air Fleet Operations
Feb-Aug 1945
Historica Aviation
Publications
\$40.00, \$16.50 and
\$18.50, respectively



These three titles represent a selection from an ongoing series of reprints. They are based on US government monographs published in the years immediately after the end of World War II and, being without illustrations, other than some charts included in *The German Air Force Versus Russia, 1943* volume, are not intended primarily as references for the use of modellers.



However, for the stories they have to tell of the operations themselves, as well as the insight they give into the doctrines and perceptions of the people involved, they are invaluable. *The German Air Force* volume, completed in 1967, by the nature of the conflict it describes, is a little complex. Nevertheless, as a blow by blow account written by a senior Luftwaffe officer, it is a



vital piece of history.

The *Air Interdiction* title really caught my imagination, with its descriptions of two-ship B-24 operations against enemy shipping and harbour attacks. Anyone looking for the inspiration to research and model something a little out of the ordinary should find ideas aplenty in this volume.

Lastly, the *5th Air Fleet* volume presents the operational record, in the form of daily notes, of the Imperial Japanese Navy's 5th Air Fleet. I was shocked to see just how much kamikaze operations had become a part of day-to-day operations, to the extent that torpedoes or bombloads might be mentioned in a similar narrative about British or US operations. The Japanese realisation that the first nuclear strike meant eventual defeat is also noted, as is the willingness of the military to fight on.

To order any of the titles, or for more information, contact Michael T. Fletcher on Historica@aol.com

Paul E. Eden

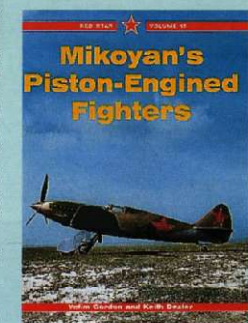
Mikoyan's Piston-Engined
Fighters
Yefim Gordon and
Keith Dexter
Midland Publishing
£18.99

This is number 13 in Midland's continuing *Red Star* series, and in describing his early fighters gives an account of Artyem Mikoyan's entry into aviation design, and why the acronym MiG, perpetuating the partnership of himself and Mikhail Gurevich, has become synonymous with Russian fighters. Starting with the I-200

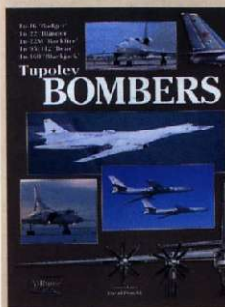
prototype and its service version the MiG-1, the larger part of this book is devoted to the MiG-3 and its steady development as the war progressed. Several prototypes, sometimes in a short series, followed, but none went in to full production. Nevertheless, their descriptions and illustrations are very interesting indeed. I particularly liked the I-250 'half-jet' – I think there's an AModel kit, but I'm not sure. I didn't know that the design collective had produced a twin-piston fighter, originally for

escort duties but, as seems to happen everywhere, with additional tasks added during its development. There are ten pages of scale drawings devoted to the MiG-3, and the six pages of colour side views cover many of the prototypes as well as the service aircraft. There seems to be no stopping this series, and it continues to make available accounts of Soviet and Russian aircraft, from both the hot and Cold War eras, in easily digestible form. Now, about that I-250...

Mike McEvoy



Tupolev Bombers



Tupolev Bombers explores four impressive families of aircraft that emerged from Andrei Tupolev's design bureau during the Cold War. A combination of expert analysis and consistently excellent photography and artwork will be familiar to readers of *International Air Power Review* (IAPR) and its antecedents. Indeed, with the exception of a specially prepared chapter discussing the Tu-16 'Badger', the sections of this book are drawn principally from IAPR and *World Air Power Journal*.

For those who missed these articles on the Tu-95/Tu-142 'Bear', Tu-22 'Blinder', Tu-22M 'Backfire' and the Tu-160 'Blackjack', or who wish for a comprehensive history of Tupolev's major post-war bomber designs, this book provides a wealth of information on the subject.

Modellers brave enough to attempt any of these impressive aircraft in kit form, and there are some obvious kits available, will no doubt find much of interest among the colour artwork, nose (and tail) art, interior photographs and well illustrated technical breakdowns.

One minor criticism is that earlier bomber variants of the 'Bear' are explored only in passing, with the focus instead on missile-carrying variants. Further, the arguably more important Tu-95 reconnaissance and electronic warfare variants are unfortunately left unexplored.

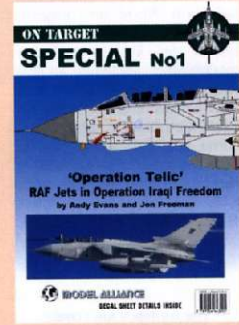
There are many highlights among a number of quality colour illustrations, with fine air-to-air studies of the Tu-95MS and operational Tu-22 'Blinder' aircraft being of particular note. The reviewer eagerly awaits the arrival of the publisher's next effort, the *Russian Military Aviation Directory*.

Thomas Newdick

On Target Special No 1: Operation Telic

For those of you not familiar with the operation name, this is the story of RAF jets in Operation Iraqi Freedom, and it's a modellers dream. This 50-page softback tells you just about all you want to know about the colour schemes and markings used by aircraft in a conflict that has only just finished. A full colour volume, this book covers all of the Tornados, Harriers, Jaguars, Nimrods, and Canberras that took part. All but four of the 39 Tornados illustrated have nose art. There are colour profiles of 12 Harriers and a four-view drawing of one with a shark mouth. There are four Jaguars, two Nimrods – complete with nose art – and two Canberra PR.Mk 9s similarly marked. Much of the artwork is shown photographically, as are the various external weapons. The icing on the cake is the

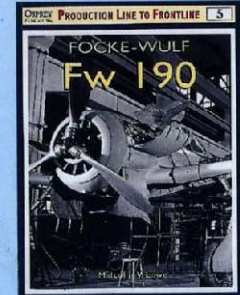
fact that decals will be available for no less than 40 of the aircraft depicted, printed in both 1:72 and 1:48. As far as I am aware this is the first book of its type to be published on this subject and within three days of me receiving this review copy it was selling fast at the Royal International Air Tattoo. This is a relatively short run book, so don't be left out. If your interest lies with modern RAF aircraft, then this is a must.



Ernie Lee

Focke-Wulf Fw 190

The title of the series of which this is the fifth book, *Production Line to Frontline*, doesn't really do justice to the scope and coverage of this book, which is a very comprehensive account of this fighter's development and use, particularly as the Fw 190 seems to me to have received much less coverage over the years than the Bf 109. Fourteen chapters and a batch of appendices tell the Fw 190's story from conception to the current construction of a new-build batch which it would be good to see represented at Duxford one day soon.



The book is illustrated throughout in black and white. Many of the photographs of aircraft under construction or in service will, notably in respect of detail and interior shots, be of considerable use to modellers, and four pages of 1:72

scale line drawings at the back give four-views of the A6 and A8, and a dozen side views of other variants. There is considerable attention paid to the different power units of the short and long-nosed variants, including the Ta 152, and to the variations in armament. One of the appendices goes into details of the Works number allocations, much more explanatory on the subject in general as well as in particular than I have seen previously, and another covers the code system by which manufacturers were identified. There are no colour artworks in this book, but Osprey may reasonably consider that these have been comprehensively covered in its 'Aces' series, with numbers 6 and 9 covering the Fw 190.

I am personally indebted to the author, who lives near the scene of this action, for including as part of a chapter on the Fw 190's service use an account of the tip and run raid on Bournemouth on 23 May 1943, by aircraft of Sqn.10. As a seven year old I saw the passage overhead of an Fw 190 pursued closely by a Spitfire (both of which I recognised loudly) while waiting in a queue to go to lunch. While I knew the resultant damage to the town, this is the first time I've seen a full account to associate with my still-vivid memory.

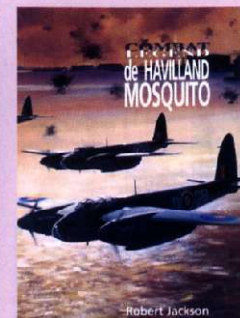
As always from Osprey this is a volume well worth adding to your shelves, however overloaded they might be.

Mike McEvoy



Combat Legend: de Havilland Mosquito
Robert Jackson
Combat Legend: F-16 Fighting Falcon
Kev Darling
Airline Publishing Ltd.
£9.99 each

In this continuing series of 96-page softbacks we have



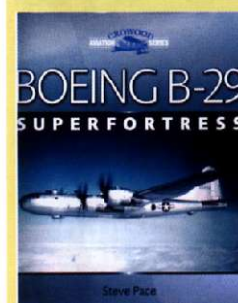
one of the best known British aircraft of World War II. The Mosquito is a massive subject for such a modest book, but the *Combat Legend* series is not intended to provide complete works on particular aircraft types, but a resumé at a reasonable price. There is a brief summary of the

Mosquito's development and operations. The various marks are discussed, accompanied by a large number of photographs. On the subject of photographs, there are some that might interest the modeller who likes to go further and produce models with esoteric schemes. For instance, there are photographs of two of the aircraft converted by Derby Aviation as photographic machines for use by Spartan Air Aviation Services. There are a few others shown with civil registrations (other than the BOAC aircraft) and even one used in the Bendix Trophy race of 1948. There are production lists and a listing of survivors, plus 22 colour profiles. This is a handy little reference, well within the pocket of most air enthusiasts.

As a current fighter that remains in production, the

F-16 has been widely exported and quite a few pages of the *Fighting Falcon* title are devoted to export customers and the type's involvement in various conflicts. There is a chapter covering variants, some of which are particularly difficult to identify. As with other books in this series there are plenty of photographs, not all of them showing the rather drab combat schemes. The artwork illustrates many aircraft with highly decorated fins and rudders, on ANG machines among others. And last but not least, an F-16C bizarrely decorated on its nose with the colours and personal insignia of Maj. George Preddy. The book has all the usual goodies – production, museum aircraft and kit lists. This is another affordable reference in the series.

Ernie Lee



Boeing B-29 Superfortress
Steve Pace
Crowood Press
£29.95

This book covers one of the great bombers of World War II, a machine which, in two sorties, brought the war with Japan to an end. It uses the same format as previous Crowood Aviation series books, this one having some 208 pages. The first chapter covers the Boeing Aircraft Company with illustrations from the Model 1 on. The

second chapter is fascinating, since it discusses the various project designs studied before Boeing settled on the B-29. A further chapter deals with structures and systems and includes a number of internal shots as well as diagrams. As you might expect, a large portion of the book is devoted to the aircraft's use in World War II, again with masses of illustrations, including nose art images, in both colour and black and white. Incidentally there is a huge

list of aircraft names, most of which are cross-referenced to serial numbers. Since this aircraft soldiered on into the Korean War, this is covered also, plus the RAF's Washington. As many modellers will know, there were some very interesting Superfortress derivatives, including the KP-29P and the SB-29.

This is a well-researched book that would make a useful addition to your bookshelf.

Ernie Lee

PZL P.11c
Bartłomiej Belcarz and Tomasz J. Kopanski
Mushroom Model Publications
£9.99

This book follows the Mitsubishi A5M title in Mushroom Model's *Yellow Series*. All of my comments

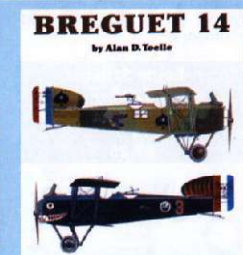


on that title (review, September, SAM 25/7) can equally be applied to this new book. The English translation is perhaps a little rougher in places, but that in no way detracts from the value of the book. Indeed, in terms of reference and value for money, this book offers artwork which, in my opinion, is even better than that in the A5M book. In addition, as an added bonus, 32 pages of colour photographs of a beautifully restored aircraft are included. And, as if it couldn't get any better, PZL P.11c runs to a whopping 128 pages, compared to 80 for the A5M. This book is unreservedly recommended. Details of the publisher's full range can be found on www.mmpbooks.biz

Paul E. Eden

Breguet 14: Windsock Datafile Special
Alan D. Toelle
Windsock Productions Ltd.
UK price £23

This is a real blockbuster, with 80 pages. The Breguet 14 was a much used aircraft, as borne out by the photographic content. Unlike the same publisher's *Datafiles*, this book does not contain drawings, but is a history of the Breguet's development and operation in World War I. There are tables listing all the French units that used the aircraft and a huge number of photographs, covering both complete aircraft and close ups. There are chapters on the engine variations, details of the bomb racks, scale drawings of the bombs and armament details. This machine carried some quite decorative schemes in its time, both during World War I and after and the 32



colour profiles illustrate this well. They cover French, American, Czechoslovakian, Polish, Belgian and Finnish machines. The section on camouflage discusses the different schemes used on the Breguet 14 and there is a table showing French aircraft colours, complete with the Methuen codes. This is yet another 'must have' volume from this publisher.

Ernie Lee

Make sure you get your copy of

Scale Aircraft Modelling

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Serving the Modeller

See our special anniversary subscription offer on page 540

Compiled by Paul E. Eden, Ernie Lee and Graham Newitt

Eagle Cals

EC40
1:72 Messerschmitt
Bf 109G-6s: JG 1, JG 11
and JG54



This sheet provides for four 'Gustavs' in a variety of finishes that will illustrate the diversity of schemes on aircraft of the Luftwaffe's fighter arm. The four aircraft featured have a selection of tactical, unit and Reich Defence markings, that go to make up a colourful quartet. The instruction sheet includes a selection of photographs that serve to validate the chosen subjects. The quality of the artwork is excellent and the standard of the decal sheet is beyond reproach. Thoroughly recommended and available from ED Models and Hannants.

Eagle Strike

7204
1:72 357th Fighter Group
Pt 3
£7.25



Four P-51Ds are featured on this sheet as follows: O-B6 *Of Flak Joe* of the 363rd FS flown by Lt Bill Fricker, UK, 1944; C5-T *Hurry Home Honey*, flown by Capt. Peterson, UK, 1944; C5-L *Arkansas Traveller* of the 364th FS, UK, 1944-45; and G4-C *Nooky Booky III* flown by Capt. Leonard Carson, UK, 2 November 1944.

Eagle Strike

7209
1:72 Blue Nose Birds of
Bodney Pt 3
£7.25



Included here are three P-51Ds from the 342nd FG: H-O-M *Petite 3rd* of the 487th FS, flown by Lt Col John C. Meyer; H-O-W *Moonbeam McSwine* of the 478th FS, flown by Capt William T. Whisner; and PZ-H *Heller* of the 486th FS, flown by Capt. E. L. Heller.

Eagle Strike

4805
1:48 357th Fighter Group
Pt 4
£8.00



This sheet covers four

P-51Ds: B6-P *Gentleman Jim* of the 363rd FS, Capt. Jim Browning, UK, 1945; G4-K *Marymae* of the 357th FS, Lt Richard Potter, UK, 1945; G4-O *Sebastian Jr* of the 362nd FS, Capt. Robert Becker, Leiston, UK, summer 1944; and C5-M *Rovin Rhoda/4 Bolts* of the 364th FS, UK, 1944.

Eagle Strike

4810
1:48 Blue Nose Birds of
Bodney Pt 4
£8.00



This sheet covers three 352nd FG P-51Bs: H-O-M *Lamble II* of the 487th FS, Col John C. Meyer, UK, 1944; D *The Flying Scot/Vicious Virgie* of the 486th FS, Lt Murdoch Cunningham and Lt Carleton Furman, UK, 1944; and PZ-J *Hot Stuff* of the 486th FS, Maj. William O. Jackson, UK 1944.

Eagle Strike

48074
1:48 Falcons Pt III
£8.50



This sheet contains insignia

for four aircraft: F-16C Block 40, OG flagship, Aviano AB, Italy, flown by Col Dave 'Limo' Scott; F-16C Block 50, 13th FS flagship, 35th FW, Masawa, Japan, flown by Lt Col Joel Malone; F-16D Block 52 of the 523rd FS, 27th FW, Cannon AFB, New Mexico, flown by Lt Michael Frost; and F-16D Block 52, 522nd FS, 27th FW, Cannon AFB, New Mexico, flown by Lt Chris Black.

Eagle Strike

48116
1:48 F9F-5 Panther
£9.00



Three aircraft are featured on this sheet: a machine of 'The Blue Angels' flown by the Flight Leader Lt-Cdr Ray Hawkins, 1953; WK/11 of VMA-224, MCAS El Toro, California, 1956; and WP/22 of VMA-223.

Eagle Strike

48117
1:48 Colorful Corsairs Pt 1
£10.00

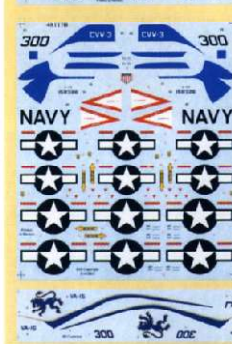
This two-sheet set has markings for three A-7Es: 159655 of VA-15 'Valions', MCAS Yuma, AZ, January 1977; 159968 of VA-87 'Golden Warriors', January 1977; and 158326 of VA-37 'Bulls', Nellis AFB, August 1973.



VA-105 'Gunslingers'; and 150880 of VA-93 'Ravens'.

Eagle Strike

48130
1:48 Texans over Korea
Pt 1
£8.50



Eagle Strike

48118
1:48 Colorful Corsairs Pt 2
£10.00



Eagle Strike

48131
1:48 Texans over Korea
Pt 2
£8.50



Again three A-7Es are covered on two sheets: 156851 of VA-174 'Hellrazors', December 1974; 158831 of

Four aircraft are covered:

FREE DECAL SHEET!

We are sorry but the FREE No.617 Squadron decal sheet is still not ready, we hope to have more positive news in the November (25/9) issue.

Exclusively printed by AIRFIX the decal subjects are:

- Lancaster B.III, NG494 KC-B
- Mosquito FB.VI, NT212 'N'
- Vulcan B.2, XL446
- Tornado GR.1A, ZA407, AJ-G

NKCB KCBN

XL446
XL446

Note: When available subscribers will get their FREE sheet in with their issue of *Scale Aircraft Modelling*

LT-6D 49-3579 of the TACP Group, Chunchon, 1953; LT-6G 49-3594 *Lil Pot* of the 6149th TACS, Chunchon, 1953; LT-6G 49-3542 *Night Train* of the 6149th TACS, Chunchon, 1953; and AT-6D 42-86011 of the 6147th TACS, Taegu, 1950.

Eagle Strike

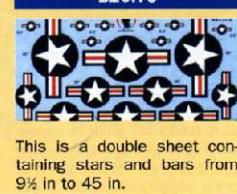
48134
1:48 Russian National
Insignia
£10.75



This is a double sheet and includes plain red, black-outline, yellow-outline, white-outline, and silver-outline stars.

Eagle Strike

48137
1:48 US Insignia 1947 to present
£10.75



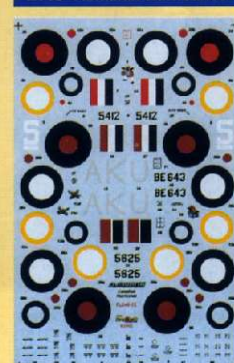
This is a double sheet containing stars and bars from 9% in to 45 in.

Flightdecs
FLD48-01
1:48 US Jets in Yugoslav
Air Force



This excellent sheet provides markings for the F-84G, F-86E, F-86D and T-33A in Yugoslav service. National markings are provided for two complete aircraft, with individual markings for 11. The instruction sheet is in full colour and includes FS. references for the painting guide.

Flightdecs
FLD48-02
1:48 Canadian Hurricanes



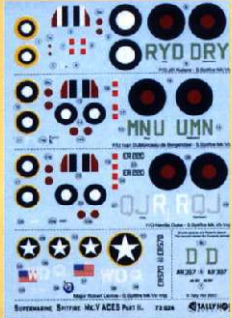
This sheet includes full markings for a Hurricane Mk XII (Mk IIB) of No. 135 Sqn, RCAF; a Hurricane Mk IIC of No. 213 Sqn, RAF; and Hurricane Mk XII (Mk IIB) of No. 13 Photographic Sqn,

RCAF. The two RCAF machines are in Dark Green and Dark Earth over Sky, while the RAF machine is Dark Earth and Middle Stone over Azure Blue. Details are provided of the simple conversion needed to create the PR aircraft of No. 313 Sqn. Again, the instructions are in colour and include F.S. references, as well as naming the colours needed.

Thanks to Flightdecks for the review items.

TallyHo 72024
1:72 Supermarine Spitfire Mk V Aces Pt 3

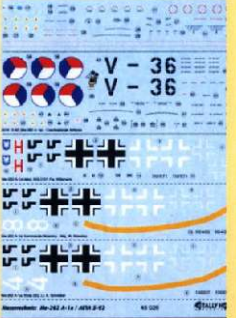
This sheet covers Spitfire Mk VB RV-D of No. 313 Czech



Trop, QJR, of No. 92 Sqn, North Africa, flown by S/Ldr. Neville Fredrick Duke, January 1942; and Spitfire Mk VB Trop D-Q of the 4th FS, 52nd FG, USAAF, flown by Major Robert Levine, January-June 1943.

TallyHo 48026
1:48 Messerschmitt Me 262A-1a/Avia S-92

This sheet covers four aircraft: Me 262A-1a 'White 4' of Erprobungskommando 262, Lechfeld, flown by Lt. Alfred Schreiber, 26 July 1944; Me 262A-1a 'White 8' of Kommando Nowotny, Achmer, November 1944, Maj. Walter Nowotny's personal



aircraft; Me 262A-1a 'Red H' of 5./KG(J) 51 flown by Fw. Witzmann; and an Avia S-92 of the Czechoslovak Air Force 1946-51.



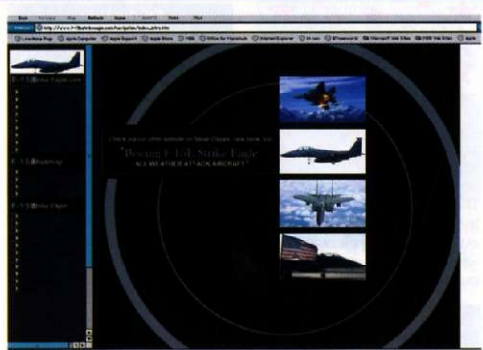
2004 Calendar Cross & Cockade International
UK price £10.00 including P&P; overseas £11.00/\$17.00/Euro17 surface mail; £12.50/\$19.00/Euro19 airmail

one per month. My favourites are January, February and December, but you'll have to wait the calendar to see what they are. Indeed, the entire profits from sales of the calendar are being donated to the British Air Services memorial that is to be established on the site of the former RFC airfield at St Omer, so if buying the calendar for its wonderful artwork wasn't justification enough, then buying it to support such a cause surely is. On a purely practical point, the date presentation doesn't

allow space for writing in those important reminders, but I suspect that most people, like me, will be content just to enjoy another beautiful painting every month. Also included is a list of the artists involved and brief caption details for each painting.

The calendars can be purchased from Roger Tisdale at 11 Francis Drive, Westward Hol, Bideford, EX39 1XE, or by telephone on 01237 474703, or by e-mail: col@blueyonder.co.uk

Paul E. Eden



www.f-15estrikeeagle.com
As its name suggests, F-15E Strike Eagle.com (homepage above) is a website dedicated to Boeing's all-weather attack aircraft. The site is owned and maintained by Lutz Gretschele as the Webmaster and Editor, and Steve Davies who also takes an editorial role. Lutz it would seem is a major Strike Eagle fan, while Davies is rapidly establishing himself as

one of the leading authorities on the F-15 in general. Having, by coincidence, had a passing involvement in one of the books featured on the site, it is fair to say that I am not unfamiliar with the F-15E and its systems, but this site surpassed my wildest expectations. There are galleries of photography, including reference collections under headings such as Airframe,

Avionics, Cockpit, Engines, etc. If you are building an F-15E and want to make sure every aspect of it is right, then this site is where you will find the information you need. In addition to the real aircraft, all aspects of modelling the jet are also covered, with overviews of available kits, decals and accessories (above) as well as some excellent modelling articles.

Where appropriate, the overviews also include comments on the product in question, while the decal overviews list all of the individual marking possibilities available on any particular sheet. The modelling articles don't only cover the F-15E either; at the time of writing the site includes an excellent piece on using Klear polish.

Continued on page 574

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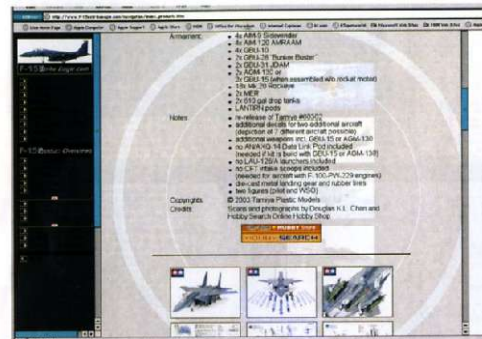
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48028 Messerschmitt Me 262A-1a (white)	£3.70	48080 Spitfire Mk I (dark green)	£3.70	48081 Spitfire Mk I (dark green)	£3.70
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48160 Messerschmitt Me 262A-1a (white)	£3.70	48212 Spitfire Mk I (dark green)			

The image below shows just a small part of the product overview of the new 1:32 Tamiya F-15E 'Bunker Buster'. It provides a full listing of the kit's decals and weapons, photographs of every sprue, every page of the instruction sheet and the decal sheet. In addition, some quite comprehensive notes mention key points about the kit and point out areas where extra detail could be added. Remaining with the

modelling theme, there is a gallery of photographs of completed models, to which you are free to add your own photographs if you wish.

Returning to the reference sections of the site, I was very impressed with the sections on weapons and stores. As with the other sections, the site guide gains a listing of subsections within the weapons category as soon as the main heading is selected.



United States Air Force: A Chronological History and Dataview No. 1: F/A-18 Hornet in United States service

These two CD ROMs contain E-books in pdf format. The USAF title provides a chronology

of the organisation and covers the vast majority of USAF aircraft types with photographs of varying quality and quantity. However, in many cases close-up images are supplied (below) and these will be of great interest to modellers. As a fine bonus to this title, an apparent-

ly excellent history of US nuclear weapons is supplied. The F/A-18 title covers the aircraft in all its variants in great detail. An introductory text is followed by some lovely images, as well as a history of the type in combat and photographs of

its weapons (below). Further details can be had from cmr707@nauticom.net or cmr707@yahoo.com

Paul E. Eden

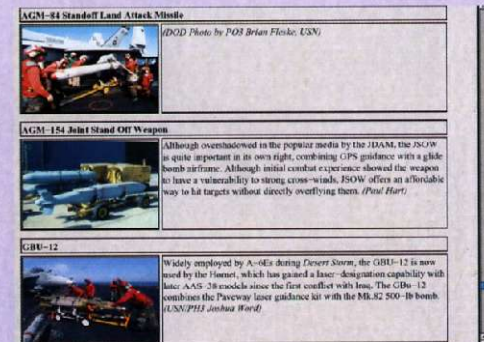
Thanks to Lutz Gretsche and Steve Davies for their permission to use the site images.



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Paul E. Eden

Thanks to Chris Reed for the review items



ner, but other than for models of curiously dressed young ladies, I've not heard a suggestion of a fantasy section. My own feeling – not that I would have the temerity to subject any of my productions to public scrutiny, especially for points – is that the projects properly belong in the relevant aircraft category, be that determined by scale, function or timeline. If you place them all under a separate category, for the unbuilt perhaps, in which would you include an aircraft that had been fully designed and built as a mock-up (the Ta 183, for instance) or one which had been started but abandoned, probably at the request of a nervous Ministry (Supermarine 545)? Following this theme, or perhaps these themes, are models from which I've recently derived much pleasure, in the concept stage as much as the actual modelling. You could consider them as three-dimensional doodles, for which I have taken my usual care with colour schemes and markings.

whether this is an unconscious omission, or whether the landing and take-off speeds of this planform were expected to make it unnecessary. The machine makes an interesting comparison with the Vought F5U 'Flying Pancake', but I find it fascinating in its own right.

Settling on a colour scheme was facilitated by the kit's decal sheet, which had stars and bars both with and without the red inserts. I've always been a fan of gloss Sea Blue, not least for its apparent capacity to conceal modelling glitches from all but the most prying eyes. The colour went on in service into the 1950s, so I figured it was reasonable to use the later national marking, not least because the alternative marking with the earlier bars would probably have been for a 'bare-metal' prototype. A Scalemaster Corsair sheet gave me the aircraft's markings, VF-41's pirate flag and the 'L.A. City Limits' sign – I reckoned that they'd be more tolerant of a strange shape in California. The serial block on the kit decals uses the wholly possible designation F9B-2.

Boeing Model 390

The odd US Navy device is a Boeing Model 390, of which I had never heard until I found the Unicraft box top on the Lone Wolf stand at Southern Expo. The accompanying instruction leaflet is unusually informative. The design was for an interceptor, and a reduced-scale version – the Model 392 – was also proposed to convince the sceptics that its shape would work. The aircraft was designed when the jet engine was of unknown practicability, the powerplant beneath the swelling in the centre fuselage being a Pratt & Whitney R-4360-3 Wasp Major, driving a six-bladed contraprop. Four cannons were mounted in the wings, and the aircraft was expected to reach 414 mph (666 km/h) (these details are from the very informative description included as part of the instructions). There is no provision in the kit of an arrestor hook; I don't know

Primeval stealth

I've been after an Armstrong Whitworth A.W.52 for some time, thinking that it would make a convincing reconnaissance platform, giving me a chance to use the Medium Sea Grey/PRU Blue scheme that looked so good on Meteor FR.Mk 10s and offering a hint of primeval stealth. A&V came up with the kit, and because I wanted to check on the undercarriage, which wasn't quite right, I went back to Barry Hygate's book on early British jets. While I knew that the type had acquired a certain dubious fame as the aircraft from which the first necessary Martin-Baker ejection was made, I didn't know that the second prototype, with Derwents instead of Nenes (I don't know if this affected the intake or jetpipe sizes) went on flying for a few years before

becoming a gunnery target. I was right about the effect of the colour scheme though, and with a pair of Canberra tip tanks from the spares box, a protruding drift/downward vision sight and a few camera ports and dielectric panels, I'm sure it could have functioned well over the Northern wastes, even if it had to start from Bodo. Working out a name for a service version is frequently part of the fun, and I thought this could become the Atalanta PR.Mk 1. Not only would this revive an Armstrong Whitworth name, but I seem to remember the goddess in question was fleet of foot.

Huntsman CC.Mk 1

Which brings us to the Hawker Siddeley Huntsman CC.Mk 1. It was known to the Kingston drawing office as the P.1128, but given the provenance of its flying surfaces I rather liked the name. The impetus came from the fuselage and nose-wheel conversion kit included by Joe Cherrie in his Spot-On range, for which I have been badgering him for some time. It had always been my intention to do a Bruggen Station Flight example, with the markings of all four units, and the initials on the fin are those of our Wing Commander Flying, to whom you will find reference in the splendid Kipp/Lindsay *RAF Hunters in Germany* book (review, September, SAM 25/8) and who was known to us all as 'Mayday Mac', though we would never have had the temerity to use the name!

The raspberry ripple aircraft was going to be allocated to ETPS, but I couldn't find Modeldecals set 79 in time (no doubt it will surface around November). I had planned that the third, in the Transport Command scheme, would be allocated to a V-bomber wing to fill the same crew ferry role as the Bassets, but none of the Vulcan marking decals were the right size, and the Victors were too late. Still, thanks to a Modeldecals Vampire set, I'm sure No. 32 Squadron would have flown it from Northolt with considerable élan. Wouldn't it have



made a good type on which to find berths for redundant fighter pilots? Discussions at a recent get-together at the Midland Counties book emporium suggested that the structure inherited from the Hunter would have made the type uneconomic in commercial terms, but I doubt if the RAF of the early 'sixties would have been unduly concerned.

The three types have in their separate ways given me a great deal of satisfaction to make, and apart from underlining the considerable significance of resin and superglue in this field, they show three quite different categories of aircraft/model. If I were so rash as to consider entering them in some form of competition, do you think they would fit properly – together or separately – in SF, fantasy or just 1:72 aircraft (kit/modified)? Perhaps this helps to make more sense of the 'What If?' grouping, though I can't say I've ever been fully convinced by the thought of a cohort of Imperial Roman Starfighters (F.104S, of course). The key must lie in the above-mentioned satisfaction; they have been, you should pardon the expression, fun. And note that I haven't even touched on the Armée de l'Air F.107, the No. 213 Squadron Vickers Venom or Flt Lt Doleys' No. 19 Squadron Griffon, currently in assembly, or the second prototype Vickers 432, which gave me the chance to paint something in Deep Sky, which my colour consultant has identified as Humbrol 25. As I said to the Immigration Officer at Minneapolis: 'Fun!'

Mike McEvoy



Mike McEvoy exchanges virtuous reality for little leaps of the imagination

We have used a fair amount of paper and print in this magazine since its first issue, ensuring that Real Aeroplanes are strongly represented. Indeed when, a year or four ago, this aim was perceived to be slipping, there were rumours of a Campaign for Real Aeroplanes to ensure that the traditional proportional mix of aircraft and models was not significantly altered.

However, once in a while a whiff of fantasy has been allowed to creep in, and I may have to confess – on a need to know basis, of course – to a smidgen of responsibility, and not just by pleading the headaches.

Wandering round my friendly local bookshop, or at least the local branch of a conglomerate, I sometimes drift towards the Terry Pratchett/Harry

Turtledove shelves (the latter for his alternate histories) and note that in some shops fantasy and science fiction are separated, and in others are as one. I think there's a similar division possible in modelling terms as well.

There have been suggestions that models of projected aircraft when entered for competitions should be placed under the science fiction ban-



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