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MAGAZINE FOR SCALE AIRCRAFT MODELLERS

Scale Aircraft Modelling®

VOLUME 22 NUMBER 12

AIRCRAFT IN DETAIL
Finnish Air Force
Part One: 1918 - 1939



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- Electronic Warfare Destroyer - 1:72 EB-66C
- Blitz Bomber - KGr 100 Pathfinder He 111H-3
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EDITORIAL COMMENT.....



Frustrated Biggles!

At a local model meeting I attended recently, we got to talking, (as you do), about what started us into model making. I started at about 8 yrs of age, as most little boys did back then in the late 1950s and despite 'discovering women', studying for my GCEs (as they were known then) and A levels, going to college and ultimately my first full time job, I 'kept with' the hobby from childhood into manhood without the traditional 'teenage years' break.

I don't model to competition standard, and am never totally satisfied with the completed product, but I do enjoy reproducing my miniature aeroplanes as realistically and authentically as I possibly can. I suppose I'm a frustrated Biggles - I can't have the real thing, so I'll have the next best, a model of it!

My eyes aren't what they used to be, (they used to be my ears - no sorry, an old Goons' joke!), so as I get older maybe I'll have to 'go up' another scale to be able to see what I'm modelling, but unless I become infirm or blind, I imagine I'll be building aeroplanes until it's time for me to 'shuffle off my mortal coil', then hopefully I'll have wings of my own!

Happy New Year

Neil

Neil Robinson
Managing Editor

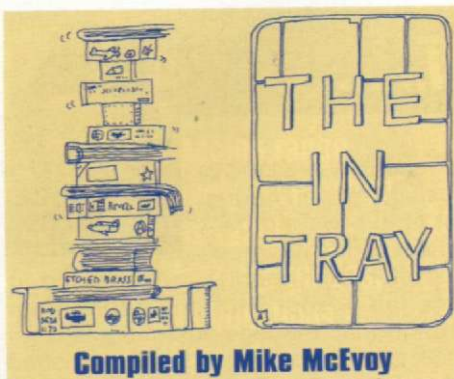
Contents

The In Tray	686
New to us; new to you? The monthly column covering new items received by SAM	
Aircraft in Detail	688
The Finnish Air Force - Part One: 1918 to 1939	
George Lowe chronicles the birth, development and growth of the embryo Finnish Air Force and the many and interesting aircraft it used up to World War Two, whilst Peter Scott offers eight pages of colour schemes.	
Events Calendar	706
Events of interest to SAM readers in 2001	
Electronic Warfare Destroyer	708
Trevor Glover modifies Italeri's 1:72 EB-66E into an EB-66C using the Airwaves conversion set.	
SAM plans	712
1:72 scale He 177A-5 plans plus two pages of colour profiles from the pen of Mark Rolfe	
Airline Liveries	718
Karl-Heinz Morawietz illustrates some Colombian airline schemes for the DC-3	
Blitz Bomber	722
Paul Hughes describes the creation of Kampfgruppe 100, the Luftwaffe's premier pathfinder unit, and builds a Revell/Monogram He 111 used in the Blitz of 1940/41	
Simply the Best	726
An interview with IPMS (UK) Scale Modelworld 2000's first international Senior Champion, John Alcorn, and photos of his award-winning DH 9A	
Operation Dillinger - Part One	730
Paul Lister describes the USAAF's mission to shoot down Admiral Yamamoto - and in Part One of this two-part feature, models Rex Barber's P-38G	
Market Place	734
Kits, accessories, books and decals reviewed by enthusiast modellers	
Readers' Write	739
More fascinating photographs and feedback on previous articles in SAM including Len Plog's MiG-killing Panther, Battle of Britain Hurricane pilot identified, and the Luftwaffe's maritime greens.	
Tailpiece	742
Mike McEvoy puts it together, bit by bit, page by page.....	
On the front cover: IPMS (UK) Scale Modelworld 2000's first international Senior Champion, John Alcorn's magnificent 1:24 scale scratchbuilt DH 9A	
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After something of a lull, **Revell** have sent us a substantial selection, starting with the long awaited 1:48 Monogram/ProModeller Dornier Do



217E. Looking seriously impressive even in its plastic bag, and drawing instant praise from Neil, (who claimed Editorial prerogative to review it), the kit includes a Hs 293 anti-shiping missile and a counter-balance underwing fuel tank. The decals - which thoughtfully include gaps for the underwing pylons - are for two aircraft of KGr 100 operating the Bay of Biscay in 1943 - one with a mirror wave 'scribble' camouflage for an airbrusher's pleasure.

Under the Revell name but also in 1:48 scale, their Eurofighter Typhoon is



the single-seat version. Markings are for the British prototype 002 in its grey scheme with the shield of the English Rugby Union on the fin, and two German aircraft, 005 in the colours in which it appeared at Farnborough in 2000 with multi-national roundels and a production aircraft in overall light grey serialised 39+04 with the badge of JG 73. Stores include AMRAAMs, AIM-9s and fuel tanks.

Its contemporary Rafale is now in the two-seat B version, with markings for



prototype and pre-production, and putative service, aircraft and as well as Magic and Mica missiles and drop tanks, the warload includes a pair of Apache stand-off weapons, with retractable wings.

Modellers who prefer 1:72 are also catered for, with a GD - Lockheed Martin, if you insist - F-16A MLU, with a positive



plethora of Belgian and Dutch markings, two of the Belgians celebrating NATO's 50th anniversary plus aircraft of 2 and 10 Wings. The Dutch examples are from 313 and 322 Squadrons, and an anniversary marked one from the MLU evaluation unit at Leeuwarden. The Revell boxing of the Sikorsky H-19 Chickasaw covers an A-



model in the high-visibility scheme of the US Coast Guard, and a UH-19F of the Dutch Navy carrying the unlikely name - for an aircraft which the French called *Éléphant Joyeux* - of Cleopatra!

The Revell boxing of the F-22 Raptor in 1:72 scale is a product of their long-



running cooperation with Italeri; it has the same mouldings, with a similar substantial selection of weaponry for its internal bay and underwing pylons. Markings are for aircraft 001 and 003, although the latter is labelled in the instructions as the second prototype. The ED tailcode is included for both aircraft, with the big eagle an option for the fins of 001. You might like to speculate on the possibility of the FF tailcode of the 1st Fighter Wing for its operational introduction.

Finally, to add to last month's listing from **Revell**, which I gather covers releases up to April 2001 in the UK, there will also be an Fw 190F-8 in 1:32, and the Spitfire in that scale will be a Mark I/II and include markings for a presentation aircraft from the London Borough of Enfield; and the 'Stukas' in both scales are Ju87B-2s.

Minicraft have the first of what will surely be another family of airliners in their 1:144 series. Their MD-80 is in the current colours of Trans World Airlines -



however shrunken their present world.

If you're considering making one of the less likely types, your best hope probably lies in resin. The Percival Prentice must have its adherents, and **Dujin**, who have taken to producing kits in this material, of some unlikely British aircraft as well as French, have produced this three-seat basic trainer in 1:72, on which many hopeful pilots, and later signallers, learned their trade in the early 1950s. Modellers will need to find not only their own decals, but colour and marking information too.

Tamiya's latest entry in to the 1:72 WW II ranks is an F4U-1D Corsair, with



markings for three all-blue aircraft from the closing months of the Pacific war, of VF-84, VMF-112 and VMF-312 - this last with checkerboard cowlings and rudder. There are two alternative canopies, and from a quick look at the kit breakdown it is apparent that there must be more variants to come.

Azur continue their run of 1:72 kits of interesting aircraft in French service at the start of the second World War, and their latest is of the Vought V-156 Vindicator with decals for two *Aéronavale* aircraft of *Escadrilles* AB1 and AB3, and a considerable amount of resin detail including interior parts, tailplanes and bombs, and etched metal dive brakes.

Accurate Miniatures had intended to issue a kit of the B-25G version of their 1:48 Mitchell, with the 75mm gun. Instead they have put out a conversion kit - (which means you'll need to buy one of the kits already out) - which consists of the big cannon and two machine guns; their mountings; upper and lower nose cones, and bulkhead plus a pair of replacement cowlings. Decals are included for 'Little Joe', from the Central Pacific Theatre, and a sharkmouthed B-25G based at Langley.

The first of the **Pegasus** new 1:48 **Silver Cloud** series of modern - (well, relatively modern) - aircraft is the Supermarine Spitfire, and Chris Gannon has sent us a photo of his completed



model. For availability check with Pegasus at PO Box 50 Whitstable, Kent CT5 2UX.

We have an early copy of **PJ's Hunter**



F.4, for which he has taken care to fatten the nose slightly from his earlier marks. The kit is expected to be available, (with either Belgian or RAF decals), soon after these words appear, and I shall hope to persuade the Editor that I could be just the reviewer it deserves.

Another *Mike's Bird* has also flown in; this time its the F-86F-30 from **Academy**



in 1:72 scale. The marking in question, which is one I've always meant to get around to using, (not least because it includes a Sylvesterish *puddy tat*), was 'worn' by the aircraft of Capt Charles McSwain of the 39th FIS/1st FW at Suwon in Korea in 1953, complete with yellow/black ID bands and chequered fin. The other marking option is the well-known *Paper Tiger*, with sharkmouth and flown by Capt Harold E Fischer of the same unit. This kit has the 6-3 wing, but as there are a pair of redundant slats on the sprue there will doubtless be other variants to come.

Italeri, bless their *puro cotone* socks, have followed their Boeing JSF very rapidly with the 1:72 Lockheed Martin X-



35, a less odd looking aircraft but one which is likely to bear more resemblance to its putative operational development.

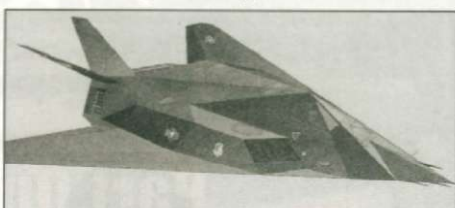
Somewhat to my surprise, and delight, this kit is of the X-35B STOVL variant with front lift-fan and swivelling rear nozzle; so start looking out your USMC and Joint Harrier Force decals!

Kit markings are for the demonstrator, and I shall be looking more closely at the colour scheme for the review. Unlike the X-32, this has no weapons. The HH-60H is the US Navy's Combat Search and Rescue version of Sikorsky's Seahawk, and comes with additional lumps and bumps which no doubt cover sensors, a door-mounted machine gun and infra-red suppressing exhausts. Markings are low



visibility, for HCS-5 and HS-7.

For the large in spirit and space, the 1:32 Lockheed F-117 - correctly described on the box as a *stealth bomber* - has alternative smart and dumb bombs for its weapons bay, and decals for



aircraft 798 and 828 of the 37th TFW when they were based at Tonopah.

Also from **The Hobby Company Ltd**, importers of Italeri, comes the **Shanghai Dragon** Sukhoi Su-24 Fencer C, which



I've always considered one of the less industrial-looking Russian designs. The kit has a considerable load of external weapons, and markings for camouflaged blue '03' and grey/white '39' and is I suspect identical to the earlier Dragon boxing.

As mentioned in the Airfix 1:24 scale Harrier review, (in the December issue), **Aardvark Models.com** have now sent us their 1:24 Sea Harrier FRS.1 conversion set (£34.99) which includes a new forward fuselage and nose cone; two AMRAAM missiles (£6.99); and a pair of 190 gallon fuel tanks (£7.99). These are to be followed in the New Year by a Sea



Harrier F/A.2 conversion set (£39.99); Harrier T.2/T.4 conversion set (£TBA); and GR.3 cockpit detail set (£9.99) - all to 1:24 scale - so some good news for 'large scale' modellers!

Don't miss next month's issue of SAM, for the additionally detailed Index to Volume 22: issues 1 - 12



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The Finnish Air Force

AIRCRAFT
IN DETAIL

Part One 1918 - 1939

George Lowe chronicles the birth, development and growth of the Finnish Air Force, and the aircraft it used, from March 1918 until the eve of World War Two in September 1939

The Finnish Air Force was founded on 6 March 1918 as the Aviation Force, (*Ilmailuvoimat*). From the very beginning it was independent from the other branches of the Finnish Armed Forces which makes it one of the oldest of the world's air forces, predating the Royal Air Force by almost a month! This was to provide a sound base for its development in the years to come.

Before the Russian Revolution of 1917, Finland had been a Grand Duchy of the Russian Empire, therefore when the Bolshevik Revolution broke out in October 1917, the Finns took the opportunity to declare their independence - on 6 December 1917. A short civil war followed between the White Forces under General Gustav Mannerheim and the Finnish Red Forces who were sympathetic with the Bolshevik cause.

Finland's first aircraft

The first aircraft delivered to the Finns was a Thulin Type D, (*aka* Morane Saulnier Type L), which was flown from Umeå in Sweden to Vaasa on 6 March 1918 by Nils Kindberg with Count Eric von Rosen, (who presented the aircraft to

the Finns), as a passenger. This machine was marked with von Rosen's personal markings of a blue swastika (*hakaristi*) on a white field, and was adopted by the Aviation Force as the National Marking on 18 March 1918. There was no relationship between this marking and the swastika used by the German Nazi Party from 1933 onwards.

Over the next few weeks more aircraft were acquired from various sources and as the numbers increased, the first units were formed. *Lento-osasto 1* (L.Os.1) at Kolho near Tampere on 10 March, and L.Os 2 at Antrea on 24 March. The first Commander of the Aviation Force was a German *Kapteeni* (Captain), Carl Seber, who was appointed on 24 April 1918. These units were equipped with a heterogeneous collection of aircraft from various sources consisting of two Thulin Type Ds, three NAB Type 9s, (Albatros B.IIs license-built in Sweden), one NAB Type 17 (modified Albatros B.II) one Thulin LA, two DFW C.Vs, three Friedrichshafen FF 33S, five Friedrichshafen FF 49B and Cs, one Friedrichshafen FF 41AT, two Rumpler 6Bs and one Rumpler C.VIII, acquired

from Sweden and Germany, as war booty, and by other methods from Russia where three Nieuport 10s, one Nieuport 16.C1 (Duks built), two Nieuport 23.C1s, one Schtettin M-5, nine Schtettin M-9s, two Schtettin M-15s, six Schtettin M-16s and one SPAD S.VII (Duks Built). A total of forty-eight aircraft of nineteen different types!

By the time the civil war had finished in May 1918 the Aviation Force had flown some seventy sorties mainly reconnaissance and photographic, but also bombing and the dropping of leaflets. Although the Aviation Force's contribution to the civil war was small, the value of military aviation was appreciated and steps were taken to expand and develop the Aviation Force into a more modern and efficient service, even though these plans were sometimes hampered due to lack of funds. However, this did not effect the training or the efficiency of the personnel.

Initial Training

The surviving aircraft were to soldier on for a further two or three years before being replaced with more modern types. Air bases built by the Russians when they still controlled Finland were adapted by the Finns to suit their own requirements and German advisers were invited in and a training programme was established. A number of personnel were sent to Germany for training. After the German surrender in November 1918, the

Heading: Typical of the Finnish State Aircraft Factory's products in the mid-1930s is this VL Tuisku general purpose biplane of which some thirty examples were built and served from 1935 until 1948

Left: The first aircraft type to enter Finnish Air Force service, in March 1918, was the Thulin Type D - a license built Morane Saulnier Type L parasol - two of which were delivered.





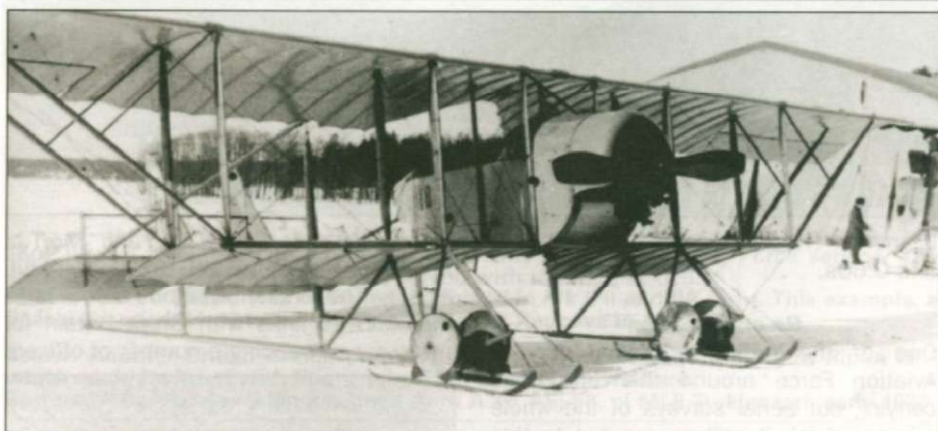
Amongst the heterogeneous collection of aircraft that equipped the *Ilmailuvoimat* in the first few months of its existence was a variety of flying boats. This Russian-built Schtettin M.9, (above), was photographed at Santahamina in May 1922. The Friedrichshafen FF 49C, (right), belonged to L.Os 2, circa 1922.

Below right: Caudron G.3, of L.Os 1 photographed at Utti, circa 1922

students training there returned to Finland and an approach was made to France instead.

A French mission arrived in Finland in early 1919. Their influence became apparent with the first major order for the Aviation Force, the delivery of twelve Georges Levy R flying boats in 1919, thirty-eight Breguet 14.A2s between 1919 and 1922 and twelve Caudron G.3s in 1920. Another six were built under license between 1921 and 1923 and one more was purchased privately. 1920 also saw the establishment of the Aviation Force Aircraft Factory (*Ilmailuvoimain Lentokonetehtäs*, IVL).

The first major contract was a license to build 120 Hansa-Brandenburg W.33 floatplanes. These aircraft were delivered



Following their Mission in 1919, the French influence became very apparent with major orders for such types as the Breguet 14.A-2, in wheeled, floatplane and, (as above top), ski-equipped configuration. This example, coded 2B.477, was photographed in the winter of 1919/20. The Georges Levy R flying boat, (immediately above), was coded 3B.407 of L.Os 1, and was photographed at Sortavala in the summer of 1920.

to the Finnish Air Force between 1922 and 1925 as the IVL A.22.

More aircraft from French sources were to follow, twenty Gourdou-Leseurre GL.22C-1 fighters were delivered between 1923 and 1924, along with three Caudron C.59s and thirty Caudron C.60s. Thirty-four more were license-built in Finland, and finally six Morane-Saulnier MS 50C were delivered in 1925. The first aircraft were also purchased from Great Britain in 1923. A Martinsyde F.4

Buzzard was bought from the Aircraft Disposal Co., to be followed in 1927 by fifteen more. These aircraft were used in the advanced/fighter training role.

1924 also saw the first fighter training course established, run by an ex-German World War One ace, *Oberleutnant* Emil Thuy. This year also saw the formation of the first fighter squadron, equipped with the Gourdou-Leseurre GL.21s.

By 1924 the Aviation Force was well established with good training programmes in place. All the older aircraft had now been replaced and each unit was equipped according to its role, with one type of aircraft per squadron and was organised as follows:-

Ilmailuosasto 1, (Ilm.Os 1), at Utti

- The Fighter Squadron (*Hävittäjäeskaderi, HE*), with Gourdou-Leseurre GL.22C-1s
- The Land-based Reconnaissance Squadron (*Maatiedusteluläivue, MTL*), with Breguet 14.A2s.

Ilmailuosasto 2, (Ilm.Os 2), at Viipuri

- The Bomber Squadron (*Pommituseskaaderi, (PE)*, with Breguet 14.A2s.

Ilmailuosasto 3, (Ilm.Os 3), at Sortavala

- The Maritime Reconnaissance Squadron (*Meritiedusteluläivue, Me.T.L.*), with IVL A.22s.

There was also the Flying School (*Ilmailukoulu, Ilm.K.*), at Santahamina, an



Left: Some twenty Gourdou-Leseurre GL 22C.1s were acquired from France in 1923/24. This particular example, coded GL.21, was photographed at Santahamina in the winter of 1925/26.



Below left: Following the purchase of a single example in 1923, a further fourteen Martinsyde F.4 Buzzards were purchased in 1927 to be used in the advanced/fighter training role, exemplified by MA-33 of the Air Fighting School at Kauhava in 1937.

island off Helsinki, with Caudron C.59s and C.60s.

Re-organisation

One of the duties allocated to the Aviation Force around this time was carrying out aerial surveys of the whole country, a job it still carries out to this day. 1924 saw the arrival for the first time of a delegation from the UK to advise the Finns on organising the Aviation Force. Taking into account the large number of lakes available, they advised the forming of more floatplane units. This made sense, considering the economic climate of the time, operations from water being much cheaper than building airfields. Consequently, as a result of this advice, 1926 saw the Fighter Bomber Squadrons at Utti amalgamated into one unit, the Land-based Squadron, (*Maalentoeskaderi*, *M.L.E*). The Bomber Squadron at Viipuri relinquished its Breguet 14s for IVL A.22s and became Maritime Squadron 1

(*Merilentolaivue*, *M.L.L.1*), and Me.T.L. at Sortavala became M.L.L.2 still with IVL A.22s. The Finnish Aviation Force was to maintain its links with Great Britain for many years, sending a number of officers

Re-equipment

The late 1920s saw a major re-equipment programme. Eight Koolhoven FK 31 two-seater fighters were purchased



from Holland in 1926 to be followed by four license-built examples in 1929-30. These aircraft equipped the *M.L.E* at Utti. 1927 also saw the Breguet 14s of the *M.L.E* being phased out of service to be replaced by the Aero A.11 reconnaissance-bombers - eight of these machines being purchased from Czechoslovakia during 1927. The Aviation Force liked the Aero A.11 so much, that a further sixteen of an improved variant, the Aero A.32, were bought 1929-30.

Above: Gloster Gamecock II, GA-45, of the MLE based at Utti in 1927.
Left: Fokker C.VE, FO-69, also of the MLE based at Utti in 1927.

In 1928 IVL became the State Aircraft Factory, (*Valtion Lentokonetehtäs, V.L.*), and was responsible for the first indigenously designed aircraft to enter service with Aviation Force in quantity, the VL *Sääski* (Gnat) trainer - the prototype *Sääski I* flying for the first time in 1928, to be followed with a production order for thirty-three *Sääski* IIs and IIAs during 1929-32. One de Havilland DH 60X was bought from the UK in 1928 and the same year a license for a further eighteen was granted. Three more Moths were acquired from Karhumäki Oy bringing the total number of Moths in service to twenty-two. VL at this time also acquired a license to build the Blackburn Ripon IIF as a replacement for the IVL A.22. The first aircraft was sent from the UK in 1929, to be followed in 1931 by twenty-five VL-built aircraft. These differed from the Fleet Air Arm aircraft by being powered by a variety of radial engines.

There were changes to the training organisation in 1927, when Santahamina ceased to be the main pilot training centre, the Flying School, (*Ilm.K.*), being transferred to Kauhava in East Bothnia. The first Reserve Officers Training Course was set up in 1931, followed three years later by the first course for NCOs. Courses were also started at this time for prospective Squadron Commanders. This highly trained Reserve was to prove its worth in the years ahead.

By 1930, two more units had been established. M.L.L.3 at Turkinlahti and a Detached Maritime Squadron, (*Erillinen Merilentolaivu, Er.M.L.L.*), at Suur-Merijoki equipped with the, by now venerable, IVL A.22. This year also saw the arrival of six Junkers K.43 reconnaissance bombers, these aircraft being capable of operating on either skis or floats as conditions demanded.

Production at the State Aircraft Factory (VL) was by now in full swing with production orders for Blackburn Ripons, DH Moths, *Sääskis* and *Smoliks* filling the order books. Because of initial production problems with the Ripons, VL were asked in May 1930 to design a lightweight reconnaissance aircraft as a stopgap until Ripon production had been sorted out. The result was the *Kotka I* (Eagle), the prototype of which first flew on 1 October 1930, only five months after the initial order. Five *Kotka* IIs were built in 1931 entering service with Er.M.L.L. at Suur-Merijoki.

Ilmavoimat

In the early 1930s, the Aviation Force was re-named the Air Force (*Ilmavoimat*), the older name being regarded as old fashioned. The Finnish Air Force was still predominantly equipped with floatplanes and it was becoming obvious that land-based aircraft were far superior in performance than their seaplane counterparts. Consequently, the Air Force was expanded and re-organised with new air bases being set up, designated as semi-autonomous Air Stations, (*Lentoasema, L.As.*), each



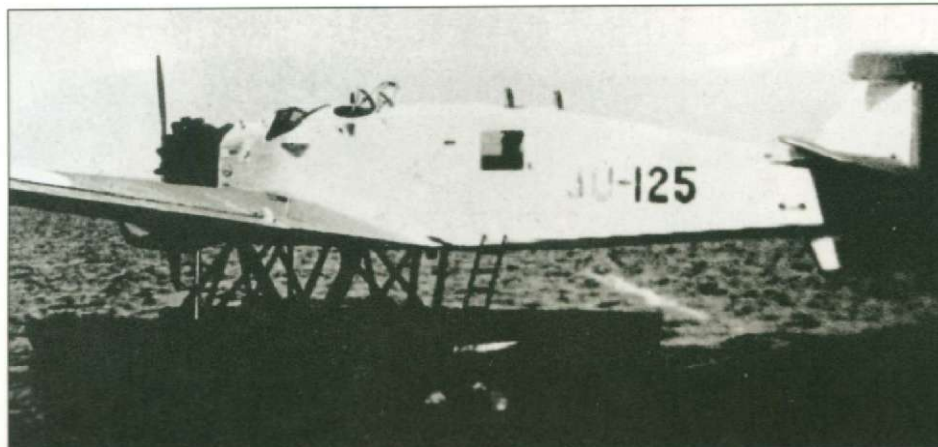
Top: Twelve Koolhoven FK.31s found their way in to Finnish Air Force service. The aircraft photographed here, in 1927, served with the MLE at Utti.

Above: The VL *Sääski* was designed in Finland in Mk I, II and IIA form. This example, a *Sääski* II, coded SA-121, of L.As 3 was based at Kauhava in 1934.

Below: Another British design popular with the Finns was the Blackburn Ripon IIF - which could be fitted with floats, wheels or skis, as shown here.

Bottom: A Czechoslovakian-designed Aero A.32, AEj-53, of MLE Turkinlahti, early 1930.





Above: One of six Junkers K-43s, coded JU-125, acquired from Germany in 1930/31, in its floatplane form.

Right: MO-110, circa 1929, one of twenty-two license-built de Havilland DH 60X Moths to serve in the Ilmavoimat.

having a number subordinate of Flying Squadrons, (*Lentolaive, LLv*), these units being allocated numbers for the first time.

Although the planned expansion programme was somewhat curtailed by the economic depressions which affected most of Europe and the USA at this time, an order for seventeen Bristol Bulldog IVA fighters was placed with the UK. These were delivered in 1934.

By the mid-1930s the Ilmavoimat was organised as follows:-

L.As 1 at Utti

LLv 10 (Reconnaissance and Close Support). with VL *Sääski* IIs and De Havilland Moths. (Still awaiting re-equipment).

LLv.24 (Fighter) with Gloster Gamecock IIs

L.As 2 at Santahamina

LLv 36 (Maritime Reconnaissance) with VL A.22s and Blackburn Ripons IIFs.

L.As 3 at Sortavala

LLv 38 (Maritime Reconnaissance) with VL A.22S *Kotka* IIs and Blackburn Ripon IIFs

L.As 4 at Turkinsaari

LLv 34 (Maritime Reconnaissance) with VL A.22s and Blackburn Ripon IIFs.

L.As 5 at Suur-Merijoki

LLv 12 (Reconnaissance and Bombing) with Fokker C.VEs



LLv 26 (Fighter) with Bristol Bulldog IVAs

L.As 6 at Viipuri

LLv 44 (Maritime Reconnaissance and Bombing) with Junkers F.43s

The Air Fighting School (*Ilmasotakoulu, ISK*), at Kauhava was equipped with an assortment of types including Letov S.218 *Smoliks*, VL *Sääski* IIs, De

aircraft unit was able to cover more sky than the conventional tight vic formation of the time. This type of loose formation was also less visible to an enemy, and therefore being more able to achieve surprise. It should be noted that the Finns adopted this tactic two to three years before it was used by the 'Condor Legion' in Spain during the Civil War. It could



therefore be said the Finnish Air Force was the father of modern fighter tactics!

Modernisation

With the rise of Hitler in the 1930s, and all the major European powers striving to modernise their Air Forces, the Finns launched an urgent modernisation programme. In 1936, three Avro Ansons were ordered from the UK along with four Fokker C.Xs and seven D.XXIs from Holland. A further thirty C.Xs and thirty-five D.XXIs were license-built by VL during 1936-7. Eighteen Bristol Blenheim Is were received

Above: Bristol Bulldog IVA, BU-75 of LLv 26, circa 1936.

Left: Fokker C.X, FK-85, circa 1937/38.

from UK in 1937-8 and a license was granted to VL for another forty-five Mk Is.

1938 saw an end to the semi-autonomous Air Stations, (L.As), with their attached units and their replacement with Flying Regiments, (*Lentorykmentti, LeR*), the new structure was as follows:-

LeR 1 at Suur-Merijoki

LLv 10 Dive Bombing with Fokker C.Xs

LLv 12 Reconnaissance and Army Co-operation with Fokker C.Xs

LLv 14 Reconnaissance and Army Co-operation with Fokker C.Xs and C.VEs

LLv 16 Maritime Reconnaissance and Bombing with Blackburn Ripon IIFs and Junkers K.43s

LeR 2 at Utti

LLv 24 Fighter Defence with Fokker D.XXIs

LLv 26 Fighter Defence with Bristol Bulldog IVs

LeR 4 at Immola

LLv 44 Long Range Bombing and Reconnaissance with Bristol Blenheim Is.

LLv 46 Long Range Bombing and Reconnaissance with Bristol Blenheim Is and Avro Anson Is.

Detached Maritime Squadron

Er.LLv at Santahamina with Blackburn Ripon IIFs and Junkers K.43s.

The Air Force was to remain at approximately this level until late 1939 when the Soviet Union started their threatening gestures towards Finland. Ill-equipped as it was, the Finnish Air Force was still a well-trained and highly motivated force and was to find itself being put to the ultimate test over the next few years.

Serial Numbering System

When the first aircraft was delivered to Finland in the spring of 1918, it was allocated the serial number F1, subsequent aircraft being F2, F3, F4, F5 and F6; after that, only even numbers were used up to F40. These numbers were only used for administration

Right: Two of the first seven Fokker-built D.XXIs to reach Finland. The Finns went on to build another ninety under license. Below: One of eighteen Bristol-built Blenheim Mk Is, BL-120, delivered in 1938. The Finns eventually operated almost one hundred Blenheims, (both Mk Is and Mk IVs), in *Ilmavoimat* service.

purposes and were never actually painted onto the aircraft themselves. This system was used up until 20 June 1918, when an order was issued by the Chief of Flying Troops that, "The registration number must be painted in black on both sides of the tail in 20cm high digits. The registration is to consist of one letter and one number exceeding 50'. In this context, the tail meant the rear fuselage, where the serial was usually hand painted. An example being Friedrichshafen FF 49C C72/18 - the letter designating the role of the aircraft, the numeral 72 being consecutive and the numeral 18 denoting the year the aircraft was accepted on charge.

The aircraft categories were as follows:-

- A - Unarmed monoplane
- B - Unarmed biplane
- C - Armed biplane
- D - Single seat armed biplane
- E - Armed monoplane
- M - Biplane with fixed gun
- S - Trainer

This system was in use until 20 August 1919, by which time about forty aircraft had been so marked.

The new style of serial used one numeral followed by a letter followed by three more numerals. An example being Fokker D.VII, 1C.357. The first numeral showed the number of seats, the letter 'C' showed the role, (ie fighter), the next numeral - 3 - identified the country of origin and the last two numerals - 57 - was the aircraft's serial number. When the first numeral of the serial was greater than '5' it denoted a landplane, and below '5' a seaplane.

The categories were as follows:-

Aircraft category

- A - trainer
- B - scout
- C - biplane fighter
- D - monoplane fighter
- E - twin-engined aircraft

Country of origin

- 1 - Russia
- 2 - Sweden
- 3 - Germany
- 4 - France

This method did not last long as it proved too complex and was replaced in early 1922 by yet another system. This consisted of a numeral followed by a letter which was followed by another numeral. An example was Breguet 14A-2 serial number, 3A.1, where the first numeral identified the role of the aircraft, the letter the year of acquisition, and the following numeral was the aircraft's serial number which was consecutive.

The categories were as follows:-

Aircraft category

- 1 - trainer; 2 - trainer; 3 - land plane scout; 4 - seaplane scout and 8 - fighter

Year acquired

- A - 1919; B - 1920; C - 1921; D - 1922; E - 1923; F - 1924; G - 1925 and H - 1926

Finally on 9 May 1927, the system of applying the serial which is still in use today was introduced. This consisted of two letters followed by a consecutive number, ie Gourdou-Leseurre GL-22 serial number, GL-21, where the letters 'GL' were derived from the aircraft manufacturer's name and the following number being the aircraft's individual serial number. From now on it was possible to identify each type of aircraft from its serial number.

George A Lowe



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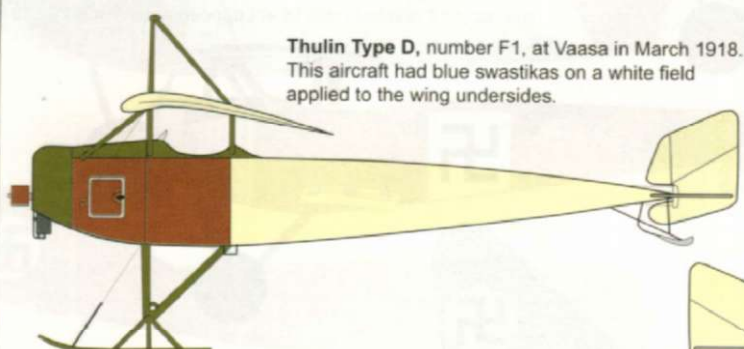
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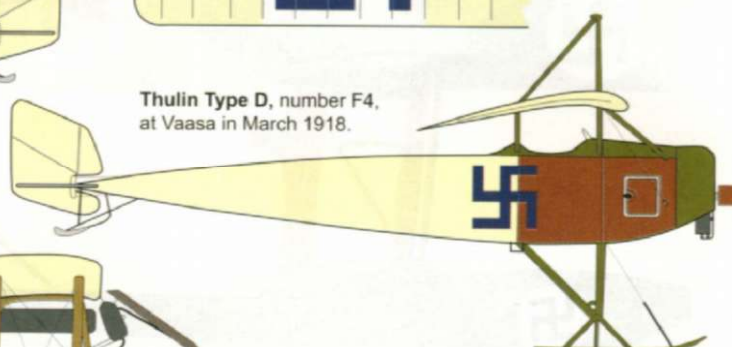
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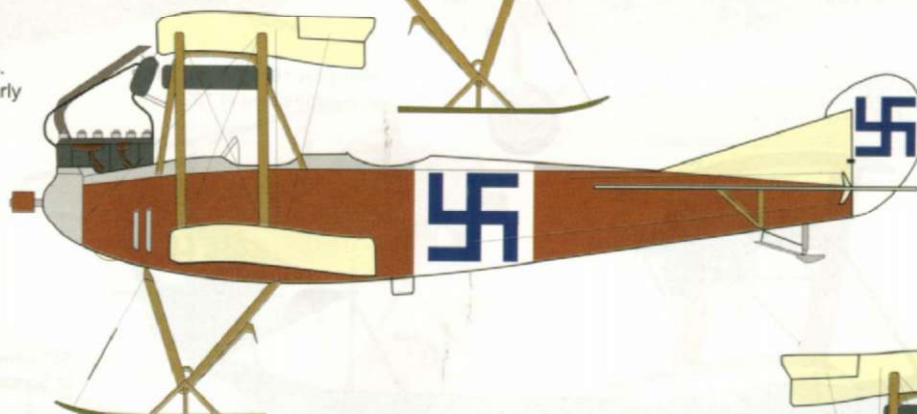
FINNISH AIR FORCE - 1918 to 1939 by Peter Scott.



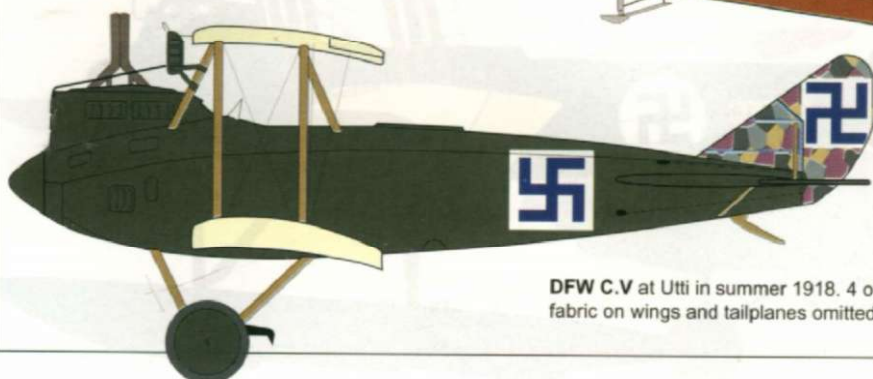
Thulin Type D, number F4, at Vaasa in March 1918.



N.A.B. Type 9, in spring 1918.
Aircraft F3 and F5 were similarly painted.

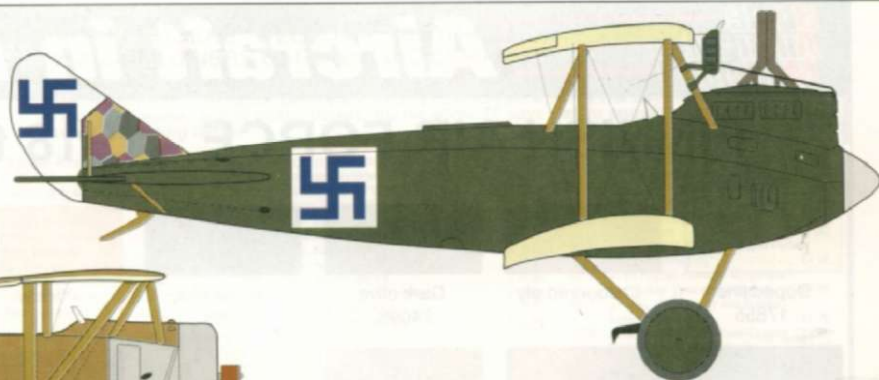


Albatros C.III (OAW built), number C.12069/17 (original German number), at Utti in March 1918.
The German crosses were modified to the swastika shape by adding extra arms.



DFW C.V at Utti in summer 1918. 4 or 5 colour lozenge fabric on wings and tailplanes omitted for clarity.

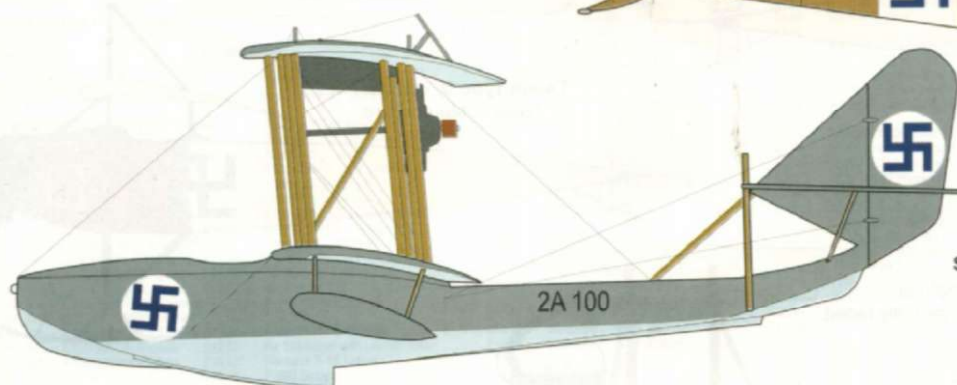
DFW C.V number C56/18, at Utti in summer 1918.
4 or 5 colour lozenge fabric on wings and tailplanes
omitted for clarity.



Nieuport 10 at Lappeenranta
in summer 1918.



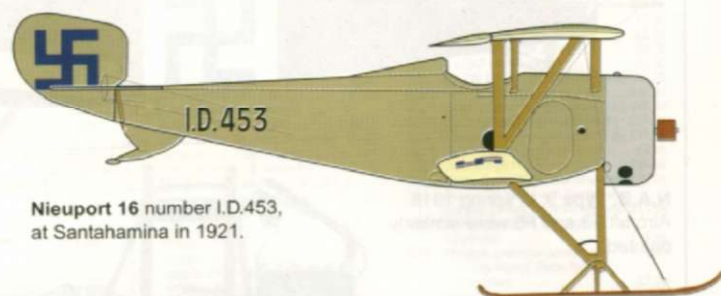
Nieuport 10 number D.63/18 at Lappeenranta in summer 1918.



Schelinen M-5 number 2A 100, at Sortalava in 1919.



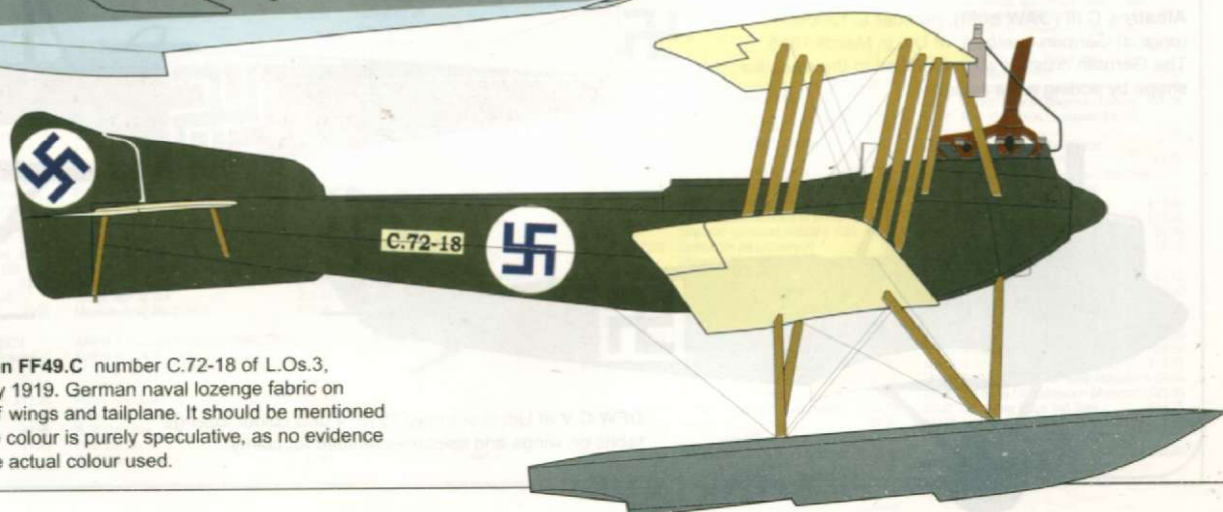
Nieuport 23 number D.61/18,
at Santahamina in May 1920.



Nieuport 16 number I.D.453,
at Santahamina in 1921.



Schelinen M-9 number C67/18,
at Santahamina in 1922.



Friedrichshafen FF49.C number C.72-18 of L.Os.3,
at Koivisto in July 1919. German naval lozenge fabric on
uppersurfaces of wings and tailplane. It should be mentioned
that the fuselage colour is purely speculative, as no evidence
now exists of the actual colour used.



Light grey
36493



Blue grey
36375



Black brown
10032



Dark blue
35405

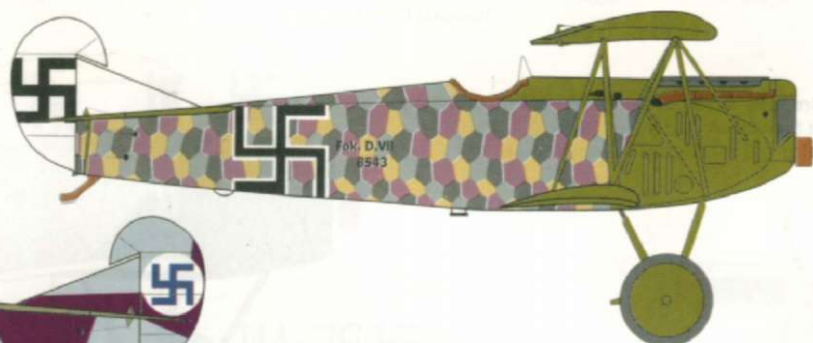


Dark green
24098

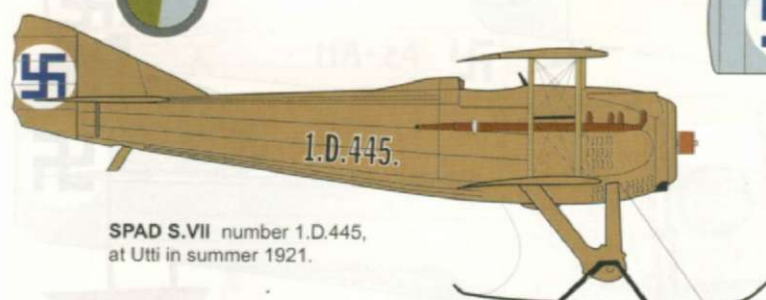


Light blue
35526

Fokker D.VII, at Utti in autumn 1919. The 4 colour lozenge fabric on wings and tailplane has been omitted for clarity.



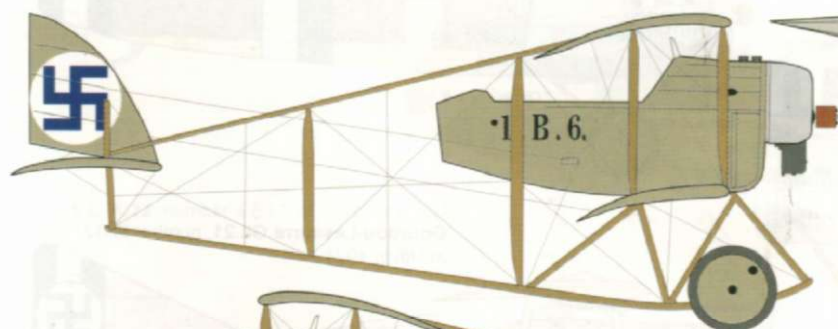
Fokker D.VII, at Utti in 1923.



SPAD S.VII number 1.D.445,
at Utti in summer 1921.



Rumpler 6B number 5A1,
at Santahamina in 1922.



Caudron G.3 number 1.B.6,
at Santahamina in 1922.



Caudron G.3 number 1.B.7,
at Santahamina in 1922.



Caudron C.59 number 2E5,
at Utti in autumn 1929.

							
Dark brown 20140	Dark green 24088	Green 24159	Black	Beige 23448	Linen 17855	Light grey	Grey green 14257

Standard French colours

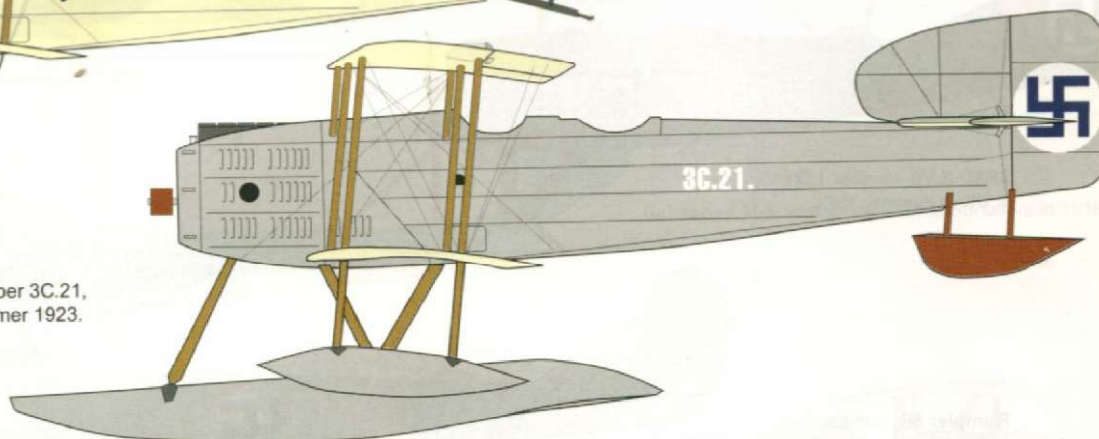
Breguet 14A-2 number 2C460 of Flying Battalion at Santahamina in winter 1919-20.



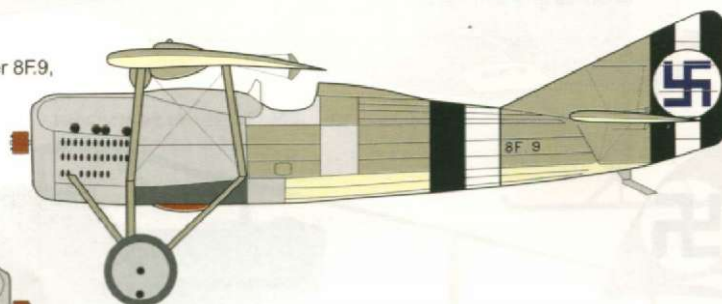
Breguet 14A-2 number 2C467 of L.Os.1, at Utti in 1921-22.



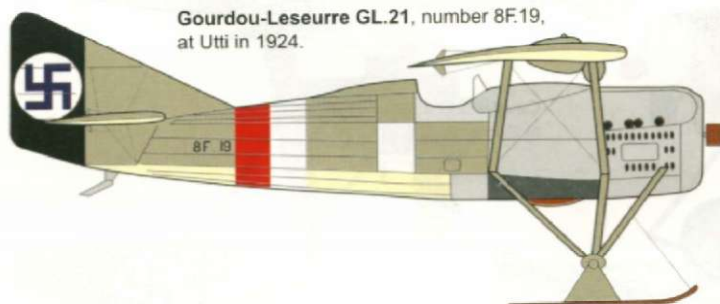
Breguet 14A-2 number 3C.21, at Kaukijärvi in summer 1923.



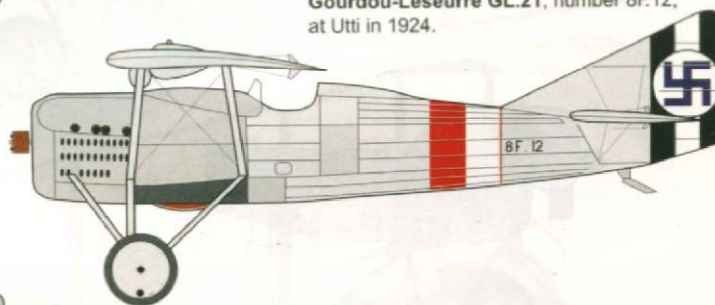
Gourdou-Leseurre GL.21, number 8F.9, at Utti in 1924.



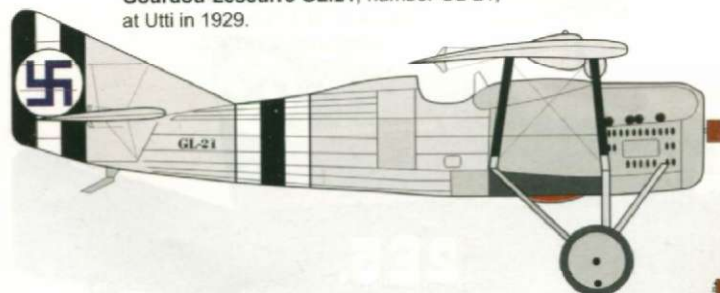
Gourdou-Leseurre GL.21, number 8F.19, at Utti in 1924.



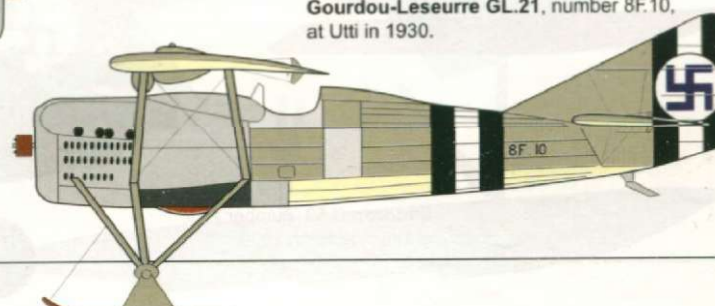
Gourdou-Leseurre GL.21, number 8F.12, at Utti in 1924.



Gourdou-Leseurre GL.21, number GL-21, at Utti in 1929.



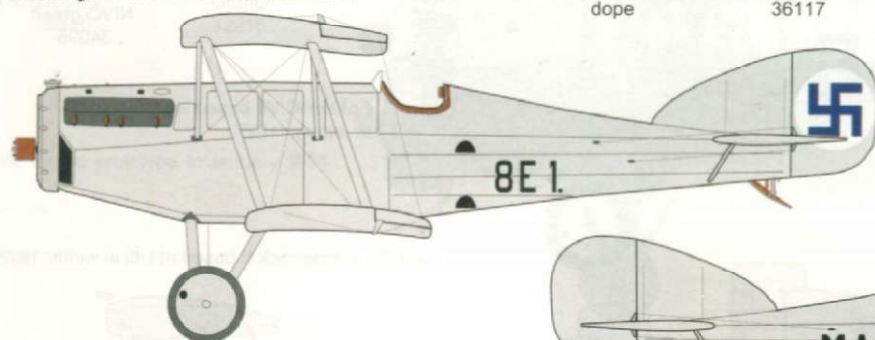
Gourdou-Leseurre GL.21, number 8F.10, at Utti in 1930.



Green-camouflaged aircraft had hand-drawn swastikas above the port and below the starboard wings.



Martinsyde F.4 Buzzard at Utti in 1923.



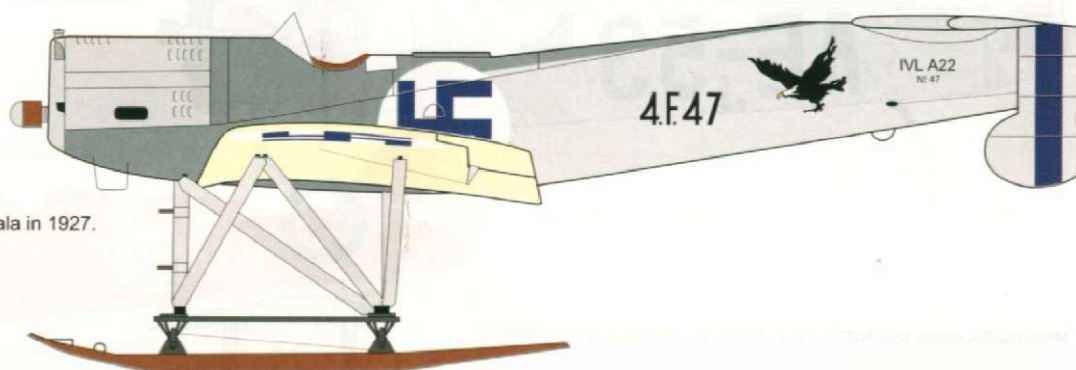
Martinsyde F.4 Buzzard at Utti in 1928.



Martinsyde F.4 Buzzard at Utti in 1930.



I.V.L. A.22 number 4.F.56, at Sortavala in 1925.



I.V.L. A.22 number 4.F.47, at Sortavala in 1927.

Caudron C.60 number 1E.20. of L.Os.1, at Utti in early 1923.



Caudron C.60 number CA-78, at Utti in 1928.



NIVO green
34096

Fokker C.VE based at Utti in autumn 1927.



Gloster Gamecock II based at Utti in summer 1927.



Gloster Gamecock II based at Utti in winter 1928.



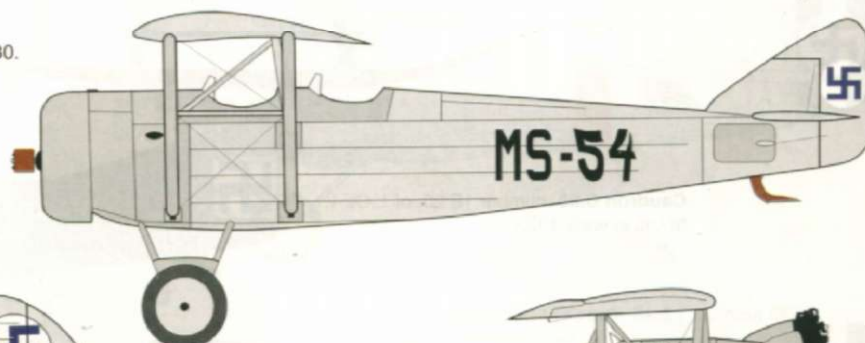
Aero A.11 based at Utti in March 1928.

de Havilland DH.60X Moth
based at Suomehlinna in
February 1929.

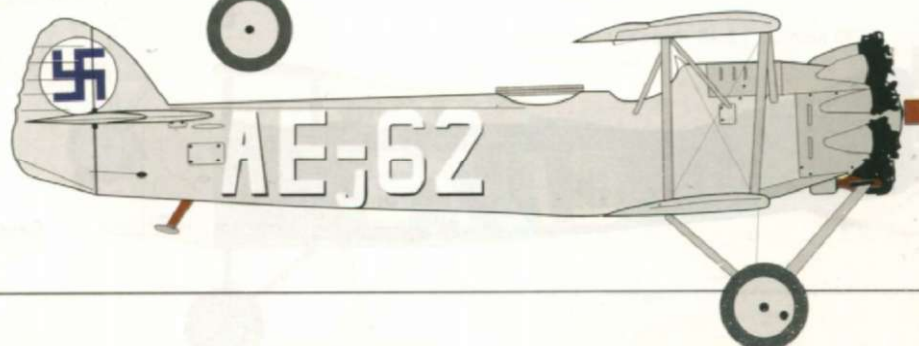


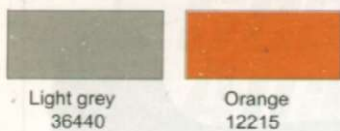
Aero A.32 based at Turkinlaari in early 1930.

Morane Saulnier MS.50C based at Kauhava in September 1930.



Aero A.32 based at Suur-Merijoki in June 1930.

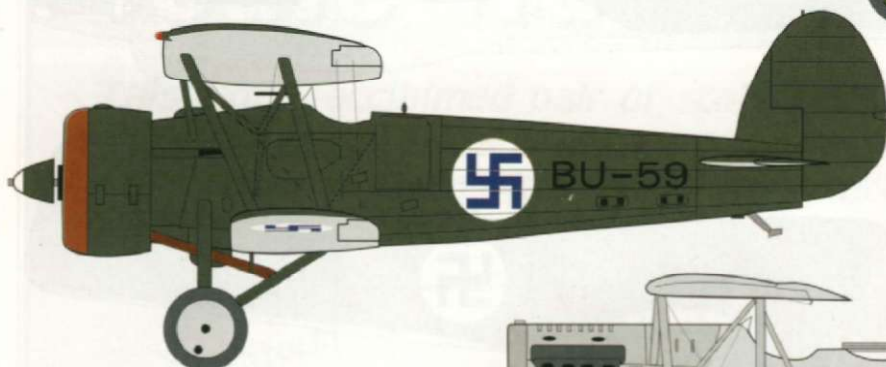




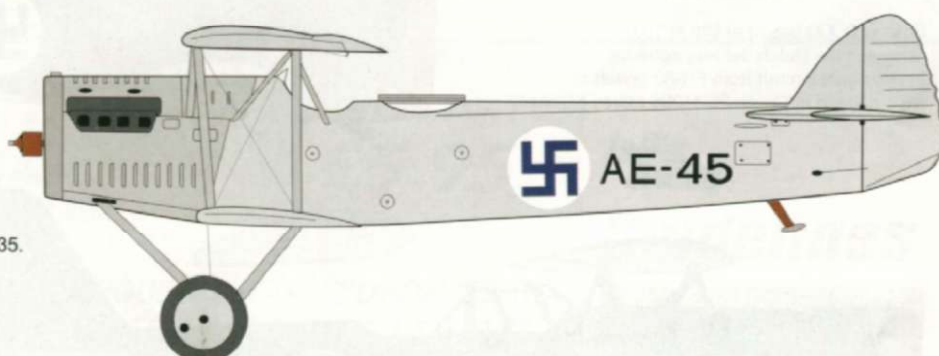
VL Tuisku prototype, in January 1934.



Gloster Gamecock II based at Utti in 1935.



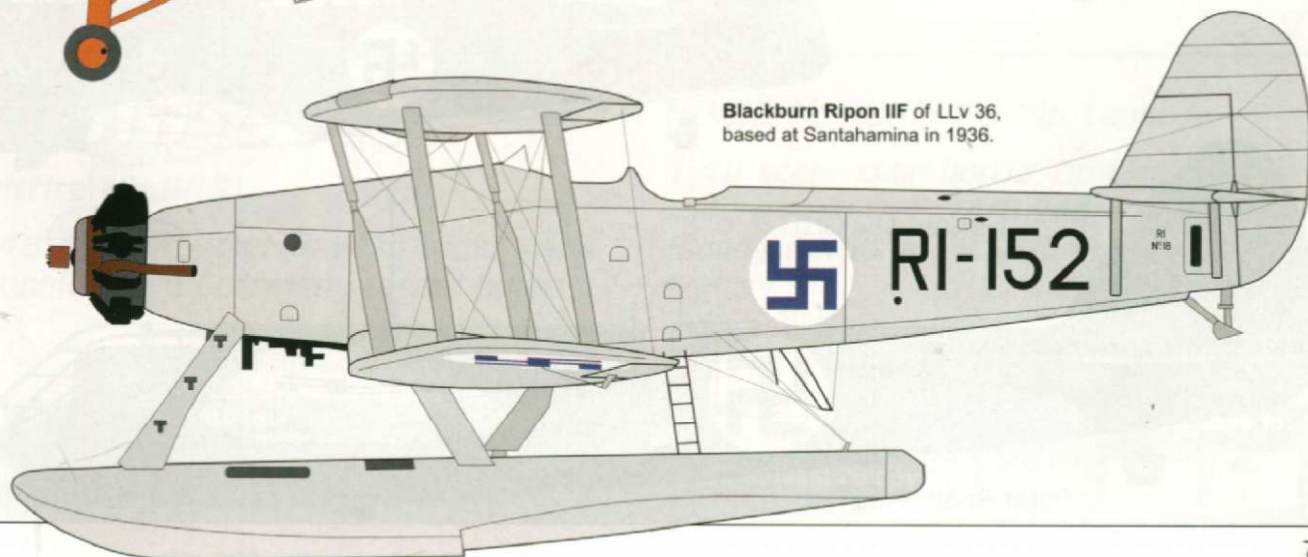
Bristol Bulldog IVa of LLv 26,
based at Suur-Merijoki in 1935.



Aero A.11 at Utti in March 1935.



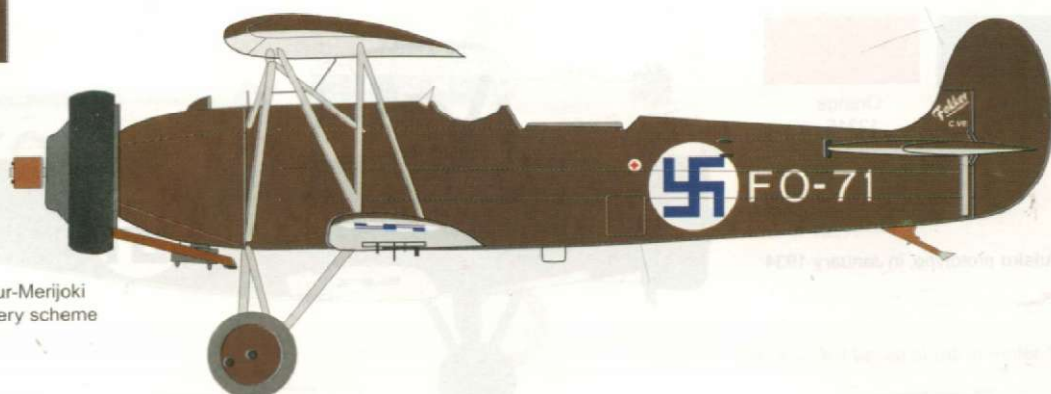
VL Viima prototype, in 1936.



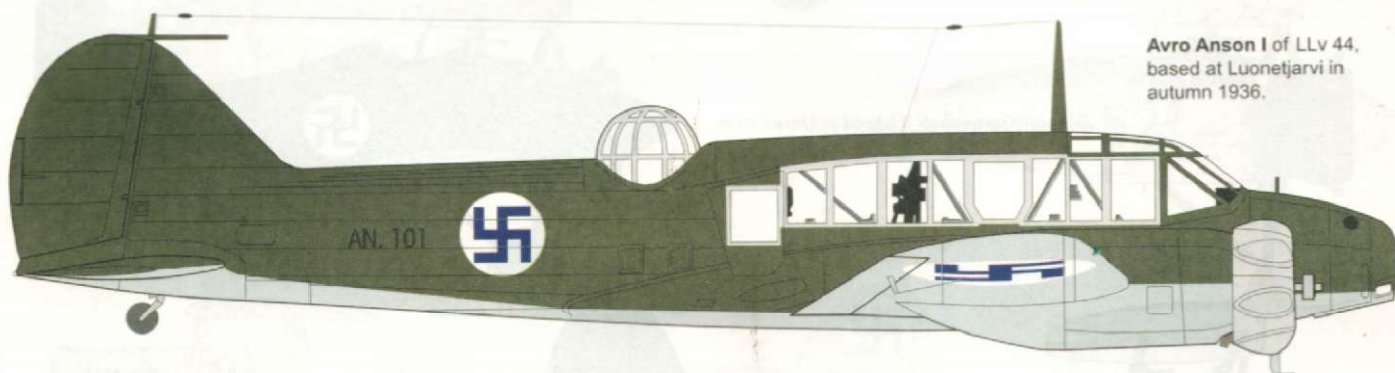
Blackburn Ripon IIF of LLv 36,
based at Santahamina in 1936.



Fokker C.VE of L.As.5, based at Suur-Merijoki in February 1935. Shown in the delivery scheme applied by the Dutch at the factory.



Avro Anson I of LLv 44, based at Luonetjärvi in autumn 1936.



Fokker D.XXI based at Utti in 1937. Shown in the Dutch delivery scheme. Finnish-built aircraft from FR-83 onwards were painted in Green FS34096 / Grey FS36440.

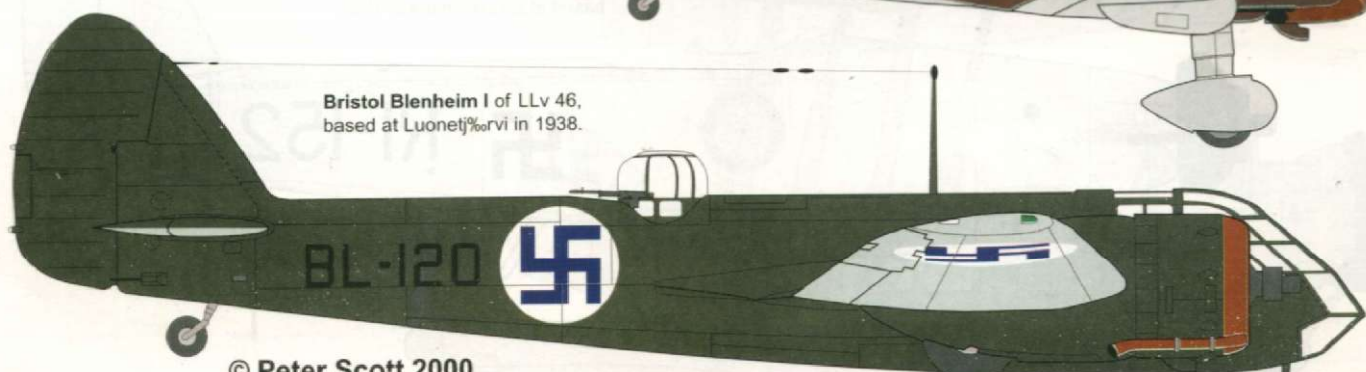


Fokker C.X of TLv 10, based at Lappeenranta in 1938. The earlier aircraft (numbers FK-78 to FK-81) were painted in the same colours as Dutch-built Fokker D.XXIs. All subsequent C.Xs were painted in the standard Finnish camouflage.

Fokker D.XXI based at Utti in 1938.



Bristol Blenheim I of LLv 46, based at Luonetjärvi in 1938.



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Decals

**Albatros D.III (Oef) -
Insignia Colour Guide
No 1 - 7201
Price £9.50**



This booklet is published by Blue Rider and comes complete with the personal insignia decals for no less than **thirty** different pilots! Separate booklets and decals are available in 1:72 and 1:48 scales.

This booklet is 210mm by 147mm with 52 pages, and if you are a student of World War One German aircraft you will love it. The Austro-Hungarian version of the Albatros D.III (Oef) was well known for the personal emblems carried.

The first thing you see is the packed decal sheet with its thirty sets of insignia and aircraft numbers, (national markings are not included). This in itself would be more than enough for most modellers, but in there is also information on no less than 143 different machines! These are all shown in monochrome side views with notes and drawings on the wing colours and markings illustrated on separate pages.

If you are now all 'fired up' but don't have a kit, then don't worry, Blue Rider provide a kit and decal list to get you started.

This booklet has arguably the most comprehensive decal sheet ever produced for a WW I aircraft type and I have only one problem with this package - which ones shall I model first!?

Ernie Lee

**IsraDecal Sheet IAF-15
Israeli Air Force F-16A/B
1:72 Scale
Price £7.99**



To coincide with the launch of their second book *'The General Dynamics F-16A/B Netz'* (see review in SAM January 2001, Vol 22/11), IsraDecal have released two decal sheets dedicated to the F-16 in Israeli Air Force Service. They are extremely accurate and should appeal to modellers interested in the versatile F-16 in addition to those interested in the IAF.

The first of these deals with the single-seat F-16A and its two-seat version, the F-16B. Decals are provided for the six Squadrons that have operated the F-16A, and cover the period 1980 until today. Markings and numbers are provided to enable any individual F-16A/B to be modelled, and complete national insignia and stencil decals are provided for two complete aircraft. The decal instructions, in full colour, give information on all the Squadron markings and cover no less than seventeen individual aircraft.

The decal sheet has many new and unique features including for the first time, the oversize National Insignia stars used on F-16s engaged on Dissimilar Air Combat Training. Also included are the markings for the Test and Evaluation Squadron.

These decals are very well produced with excellent colour reproduction and registration and retail around £7.99 from leading UK Model Shops.

**IsraDecal Sheet IAF-16
Israeli Air Force F-16C/D
1:72 Scale
£7.99**



The second decal sheet is devoted to the IAF's single seat F-16Cs and their unique two-seat F-16Ds with the fuselage Spine 'hump'.

The F-16Cs arrived in 1986 and the Squadrons operating the type soon began to individualise their aircraft by introducing artwork on the fins. Like the earlier sheet, all the Squadron markings are represented on the sheet including aircraft of the Test and Evaluation Squadron.

Numbers and markings are provided to enable any F-16C/D used by the IAF to be modelled, with stencil information again provided for any two aircraft. The instruction sheet is in full colour giving details of fifteen individual aircraft.

Unique features of this decal sheet include representations of the chaff and flare dispenser box fronts seen on these aircraft, which give an accurate appearance to the finished model. Again the oversize National Insignia of Air Combat Training aircraft are also included as is the 50th Anniversary of Israel Marking carried by the F-16C/Ds during 1998.

Another excellent decal sheet retailing around £7.99 in the UK from leading stockists. Both decal sheets are highly recommended.

NOTE

SAM has been informed by IsraDecal that early prints of Decal Sheets IAF-15 and IAF-16 have unfortunately been printed in the wrong shade of Sand representing FS 33531, resulting in inaccurate, (darker), sand coloured Squadron

markings. These decals were sold during the IPMS(UK) Scale Modelworld exhibition at Telford. All stocks of these decals will be replaced with new accurate decal sheets.

IsraDecal apologise for this error and any modeller who has purchased the inaccurate decal sheet can return them direct to IsraDecal at PO Box 581, Bat Hefer 42842, Israel, and will be sent an accurate replacement by return of post.

**IsraDecal Sheet IAF-5
Israeli Air Force
National Insignia
£7.99**



This double decal sheet is a reprint of the popular National Insignia (Magen David - Shield of David) sheet which covers most of the aircraft types used by the IAF over the years. The sheet contains an assortment of accurate sizes, types and colours of National Insignia in 1:144, 1:72, 1:48 and 1:32 scales. Many of which are interchangeable; eg. 24 inch insignia in 1:48 scale = 36 inch insignia in 1:72 scale. As a bonus, the sheets also contains numbers for Spitfires and other early types in both 1:72 and 1:48 scales.

Highly recommended.

Ray Ball

References

Osprey
'Jagdgeschwader 2
'Richthofen'
 by John Weal
 and
'56th Fighter Group'
 by Roger A Freeman

Price: £13.99/\$19.95 each
 Not content with adding to the invaluable Osprey Aviation series it already issues, Osprey Publications have started a new one titled 'Osprey Aviation Elite'.

The two units chosen to start this new series off are well-known to all World War Two modellers, and it is their service in this conflict which is covered in both books,

although the 1930s origins of the *Richthofen* Geschwader are included.

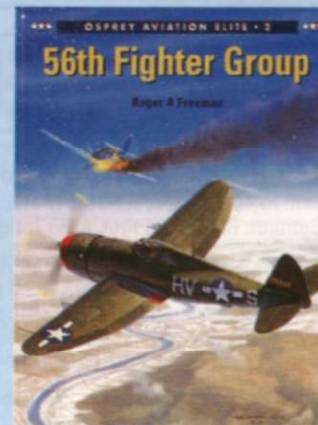
The coverage of each is fully illustrated with black and white photos, accompanied by forty colour profiles for the *Luftwaffe* unit, and fifty-eight for the American, plus fifteen and four examples of unit artwork respectively.

The *Richthofen* aircraft start with an Arado 68 and Heinkel 51s, and progresses through Bf 109s and Fw 190s, whilst as well as its celebrated Thunderbolts the 56th's examples include a Norseman and the captured and redecorated He 111H-23, which I never realised is the He 111 currently in the RAF Museum at Hendon.

For modellers the 56th



featured some different camouflage schemes on their Thunderbolts in the last year of the war, and JG 2's Fw 190s wore in whole or in part that stylised *eagle*, muting their exhaust stains.



It will be interesting to see what follows in this series, but these two are an excellent start, which will no doubt feature increasingly on my shelves in the coming years.

Mike McEvoy

Osprey
'Allied Aviation of World War I'
 by Hugh Cowen

Price: £ 13.99/\$19.95

Following an earlier volume on German and Austrian aviation of the period, this gives the picture - quite literally - on the western side of the lines, both of the aircraft and the people involved.

Some of the types, and the people, involved are familiar, but much of the pleasure in these pages is of the unfamiliar, and there was the occasional bizarre aircraft that made it to metal, wood and canvas and appears here.

There are some well known names pictured, some in unfamiliar guises such as



Geoffrey de Havilland as an RFC Captain, and, a personal pleasure for me, was the photo of Elliott White Springs. If the name is unknown to

you, he was the then anonymous author of 'War Birds - Diary of an Unknown Aviator', which was an early influence on my master plan to be a fighter pilot.

Those who are interested in World War I aviation will no doubt have added this to their Christmas/New Year list automatically, but I recommend it highly to those whose preferred period may

be different. It is a book both to read and to dip in to, and gives, with its companion volume, an excellent insight in to the formative years of military aviation and of those involved.

Hugh W Cowin and Osprey are providing a real service to those of us interested in aviation history with this series.

Mike McEvoy

PADDED CELL '46
August 2000
Price £2.00

The latest issue of this popular 'What If' magazine mainly concentrates on Allied aircraft for a change. The articles include Sea Whirlwind, Finnish float planes, Firebrands over Korea and 'Johnny' Johnson's Meteor Mk III!

There is also an article by Robert Humphreys on Speculative Spitfires featuring a 'Tiger Meet' Spitfire XIVc, proving that even the best of us can be lured into the world of 'What If'. All of the articles 2 are well written by good modellers with a very vivid imagination.

An advert for modelling paint on page 14 is one of the funniest things I've read in ages, yet how close to the truth it is!



Padded Cell '46 can be obtained from the Editor/publisher, Lee Bagnell at 130 Rothbury Terrace, Heaton, Newcastle-upon-Tyne, NE6 5DD. Tel: (0191) 2402467.

Frank Campey

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EVENTS CALENDAR

SAM's Monthly diary of modelling related events worldwide.

(SAM) = Events at which SAM will have a trade stand or presence.

Saturday 3/Sunday 4 February 2001: IPMS Space Coast presents **2001 - A Modelling Odyssey** at Elk's Lodge, SR 405, Titusville, FL. 9am to 4pm. Special Rates Motel: Ramada Inn, Route 50 & I-95, Titusville, FL. 1-800-292-1192 ONLY. Contact: Rick Bellanger, 4260 Tangerine St, Cocoa, FL 32926. Tel: 321-633-4717 (5.30pm to 9pm EST Only) E-mail: rickb@brevard.net

Sunday 4 February 2001: Milton Keynes Scale Model Club presents **ModelKraft 2001** at the Bletchley Leisure Centre, Milton Keynes. Easy access from M1 and A5. Free parking. The whole model making spectrum will be covered with many Clubs, Traders and Open Competitions. Trader Administration: David Francis, 63 Milton Drive, Newport Pagnell MK16 9BT. Tel: 01908 612 160. E-mail: david@ipmsmk.org.uk **(SAM)**
Clubs Administration: Paul Fitzmaurice, Uncle Jacks, Lavendon Road, Olney, Bucks MK46 4HH. Tel: 01234 241 675. E-mail: paul@ipmsmk.org.uk Show Manager: Phill Smith. Tel: 01908 505 988. E-mail: phill@ipmsmk.org.uk

Sunday 11 February 2001: 'Yorkshire 2001' - the biggest one day show in the North, at the Huddersfield Sports Centre. 60+ exhibitors, Open Competition, Cafeteria, Bar, Free Parking, Free admission for IPMS. **(SAM)**
Contact: Mike Robson, Squirrel Cottage, Squirrel Ditch, Huddersfield, HD4 6QF. Tel: 01484 350 612. E-mail: michael.robson@ntlworld.com

Sunday 25 February 2001: South Cheshire Militaire at the Oakley Centre, Crewe, Cheshire.
For further information contact: Phil Podmore on 01270 256 880 or Steve Grosvenor on 01270 257 813

Saturday 10 March 2001: New Jersey IPMS presents 'MosquitoCon 2001' Model Contest at the Wayne Police Athletic League (PAL), PAL Road, (off Route 23), New Jersey USA. Entry Fee \$6.00, Visitors \$4.00. From 9am to 4pm. Free Parking. Show themes are 'Pearl - Harbor - 60 years and Century Series Fighters'.
For details, send SASE to: Bill Connolly, 3 Timkak Lane, Pennington, New Jersey, 08534. Tel: 609-737-8596.
Vendor contact: Bob La Pa Dura, 81 Diamond Lane, Old Bridge, New Jersey 08857. Tel: (732) 360-9733. E-mail: rlapadura@aol.com
Visit our website at: www.njipms.org

Saturday 10 March 2001: Flanders Modelling Festival 2001 and Flanders Contest 2001, the largest plastic modelling show and competition on the continent, at Don Bosco Technical Institute, Salesianenlaan 1, B-2660 Hoboken (Antwerp). Free admission.
Contact: Rudy Binnemans, IPMS Belgium-Antwerpen, Te Couwelaarlei 103/21, B-2100 Deurne. Tel/Fax: (00) 32 3 324 22 04

Saturday 10/Sunday 11/Monday 12 March 2001: Model Expo 2001 and the Australian Open Plastic and Scale Modelling championships will be held in the Arts and Crafts Pavilion, Royal Melbourne Showgrounds, Epsom Road, Ascot Vale.
For details, write to: Model Expo 2001, c/- IPMS Australia Inc., GPO Box 1187K, Melbourne 3001, Australia, or telephone Graeme Dodd (03) 9808 0341 or Ian Vale (03) 9873 4256.

Sunday 1 April 2001: The Shropshire Scale Modellers (IPMS Telford) presents The Annual Shropshire Model Show at the RAF Museum Cosford. 10am to 5pm. Tombola; Competition; Club Displays, Make 'N' Take; Trade Stands; Free Parking; refreshments. **(SAM)**
For admission details contact: The RAF Museum Cosford, Shifnal, Shropshire, TF11 8UP. Tel: 01902 376 200.

Saturday 7 April 2001: IPMS Dorset (Poole Vikings Model Club) announce their annual show to be held at the Poole Grammar School, Gravel Hill, Poole, Dorset. 10am to 4pm. £1.50 Adults 75p OAP & Children. Family Ticket £3.50. Trade & Club stands, Open Competition, Refreshments and Free Parking. Contact: Andy Sweet. Tel: 01202 743 494. E-mail: poole.vikings@virgin.net

Sunday 22 April 2001
East Midlands Model Show to be held at the Hinckley Leisure Centre, Hinckley, Leicester.

Saturday 28/Sunday 29 April 2001: IPMS Scottish Nationals 2001 at Dewars Centre, Perth, Tayside. Scotland's Biggest Model Show. **(SAM)**
For further information contact: Bill Wood 01259 722 428, Derek Powrie 01259 753 219 or Ian Hanratty 0131 665 4087.
Competition details: Derek Powrie 01259 753 219. Traders contact: Andy Macrae 0131 669 0170. Website www.barclay006.freeserve.co.uk

Saturday 28 April - Tuesday 1 May 2001: Club Modelistico '4 Gatti' (The Four Cats) present The 21st National Modelling Contest in the Villa Brusardosco, Arzignano, Vicenza, Italy. Trade stands, model figures, AFV, aircraft dioramas, box art and civilian vehicles.
For further information please contact: Marcello Marchetti via Cesare Battisti, 8-36071 Arzignano (Vicenza, Italy). Tel: 0035-0444-670491
Website: www.quattrogatti.it

Sunday 13 May 2001: IPMS Gloucester's 2nd Annual Model Show will be held at The Churchdown Community Centre, Parton Road, Churchdown, Gloucester, near Staverton Airport. 9.30am to 4.30pm.
For further details contact: Jeff Brown on 01285 659 254 after 7pm.

Saturday 2 June 2001: IPMS Salisbury Model Club's 2001 Show, at the Wyvern College Hall, Church Road, Laverstock, Salisbury, Wiltshire. 10am to 5pm. Contact: David Lane, Tel: 01722 327 498, Fax: 01722 501 518, e-mail: d.lane@dia.pipex.com

Saturday 28/Sunday 29 July 2001: The Royal International Air Tattoo (RIAT) will be held at RAF Cottesmore, Rutland. RIAT 2001 will celebrate its 30th birthday, looking back three decades to the first Tattoo at North Weald in 1971, and will also pay tribute to Women in Aviation.
For more information contact: Patti Heady (PRO) 01285 713 300 (x3341). E-mail: press.man@rafbf.co.uk

Saturday 11/Sunday 12 August 2001: Bournemouth Model Spectacular at The Pavilion, Westover Road, Bournemouth. Sponsored by Plastic Past-Times, Dorset's Premier Model Shop. Competitions, (more classes), Model Clubs, Traders, Raffle etc.
Contact: John Bothamley 01202 527723 www.bournemouthmodelspectacular.co.uk e-mail: brian@bournemouthmodelspectacular.co.uk

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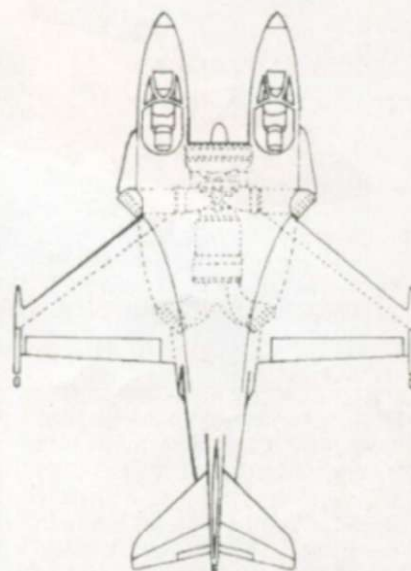
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Electronic Warfare Destroyer



Trevor Glover modifies Italeri's 1:72 EB-66E into a Vietnam War period EB-66C, using the Airwaves' resin and etch brass conversion set

Whilst looking very similar to the US Navy A3D Skywarrior, a machine from which the Destroyer evolved, the original B-66 was a very different machine under the skin. A product of the early 1950s, with the Korean War in full swing, the USAF was very impressed with the Navy's A3D Skywarrior, then under development, and decided to purchase a variant that could be adapted to USAF needs, primarily as a light bomber and night reconnaissance platform.

Modifications included a totally new wing, with the wing incidence being changed, plus a reduction in sweep and chord. The engines, whilst still mounted in pods were changed to the Allison J71, rather than the Pratt & Whitney J57. The inside of the B-66 fuselage was very different, carrying specialised equipment for whatever role was indicated.

The first B-66s came from the Douglas Long Beach plant in California, with the first flight on 28 June 1954. Entering USAF front line service in 1956, the B-66's career as a light bomber was quite short, being more successful in the reconnaissance role, however, its development as a tactical nuclear bomber extended its service life.

Electronic Warfare

With the advent of the Vietnam War in 1965, the USAF realised the importance of electronic warfare and for this reason the development of the EB-66C series gained momentum, leading to the EB-66E. The Destroyer's large fuselage proved very adaptable for future modifications from the lessons learned in the early years in Vietnam. As the war dragged on, other aircraft such as the F-105F Thunderchief 'Wild Weasel' became more and more available, and Destroyers

The Italeri EB-66 kit parts and the Airwaves resin/white metal/etch brass conversion set

were employed in combat zones where they were less likely to be targeted by the North Vietnamese anti-aircraft batteries. By the early 1970s, the end was in sight for the B-66. 1972 saw the last aircraft withdrawn from European bases, whilst a few EB-66Es saw combat until the end of the Vietnam War in 1973.

The Kits

The Douglas B-66 and its variants have never been that popular with the major kit companies, in fact I could only come up with two kits manufacturers who had actually kitted the Destroyer in 1:72 scale.

First of all there was Monogram, who released their version in the 1950s and I am told, it dropped a bomb if you pressed a button! I have never seen this kit and I imagine it will never be released again. In the mid to late 1980s, Italeri released a kit of the standard B-66 light bomber and then followed it up at a later stage with an EB-66E. The second of these two kits is still in the current Italeri catalogue, and is the kit used for this

conversion.

The Italeri kit, a product of the 1980s, is not as advanced as some of today's offerings, but is not a bad kit. A far attempt at cockpit detail includes three ejection seats, a control panel with raised dials, various black boxes and a nicely detailed cockpit floor. The exterior surfaces feature engraved panel lines which in places are a little inconsistent, but act as a good guide if you want to 'deepen' the lines slightly. I had no plans to check against, but it certainly looked like a B-66 and that was good enough for me. I would rather make a kit than count its rivets!

The Airwaves conversion set is not one of their latest, but is still a very good example of the *Cottage Industries'* art. The set features a brass fret containing consoles, ejection seat straps, engine blades and various antennas. A new resin tail and thirteen white metal pieces for various electronic pods, airdals and vents are also included.

The white metal pods are nicely moulded, but almost as a sign of their



Removal of the kit fuselage tail section

times I suppose, if this was a new product they would have probably been moulded in resin.

Construction was started by cleaning up various parts, a couple of which had quite a bit of flash. That done, I decided not to re-engrave the panel lines of the entire aircraft but only to do those areas which were not as crisp as the majority of the other surfaces.

The next step was to remove the kit's EB-66E tail section with a razor saw directly at the point below the trailing edge of the rudder. The removal of the kit parts did momentarily cause me a bit of confusion, as the instructions in the Airwaves conversion set show the original tail turret of the B-66B light bomber which was a lot shorter than the electronic warfare versions. That said, it was not that difficult to remove.

The next stage was to construct the cockpit. As I had no reference at all for the inside of an EB-66C, I decided not to



recessed lines black. Unfortunately when all this is inside the fuselage you can't really see it, and I think it would have been more useful to have had a new main control panel in etched brass to replace the kit part, which is a bit unrealistic.

Looking at the white metal parts provided for the electronic blisters and at their placement on the fuselage, mostly behind the centre of gravity, I decided to make sure that this aircraft would not be a tail-sitter and packed the nose and area behind the wheel well with lead ballast. The fuselage was then stuck together, which was not a great fit, especially around the nose, but nothing a little bit of putty couldn't put right.

The underside of the fuselage needed

Left: The cockpit interior under construction.

Below: The replacement resin EB-66C fuselage tail section in place.



go to town on over-detailing, but to build as per kit plus the extra parts provided in the conversion set. The ejection seats, each made up of three parts, were assembled and painted as per the kit instructions. They didn't look like any seat I had ever seen before, but did have a 1950s style to them, and the only addition I made to them was with brass etch seatbelts.

Various black boxes and consoles with radar scopes were painted light grey with details picked out by dry-brushing. The one console that is provided as a brass panel, is neatly engraved with lines and dials. This was also painted light grey and when dry, was covered with black oil paint, which was promptly wiped off with a lint-free cloth leaving all the

more attention than I first thought, as the middle section showed signs of more than a little shrinkage, and required a fair amount of filler to even-out the sides. This caused problems with the loss of panel lines, and as I had no plans to show where to re-engrave this section, it would have to remain a little plain.

Once all the filling and sanding had been done, a boring job at the best of times, it was time to attach the resin tail. This was not a great fit either, (probably because the tail had been designed for the original B-66B light bomber), and Milliput was used to blend the two parts together. All that remained for the fuselage section now was to fit the cockpit combing and the canopy.



The canopy was very clear and was a beautiful fit, but was marred slightly by having two, very heavy, marks where it had been attached to the sprues. These marks proved very difficult to erase without affecting other areas of the canopy.

The wings and tailplanes were next. The tailplanes were in one piece and only needed a light sanding down on the leading edges. The wings however, when glued together, needed a fair amount of sanding and filing as the two halves did not match exactly. The trailing edges were also quite thick, and were thinned down using a scalpel.

Thankfully, the kit engines have nicely moulded fan blades which were used because every attempt I made to twist the blades on the brass etch components failed completely. There is nothing wrong with the brass parts, but a steadier hand than mine was needed which ruled them out for me. The kit blades were painted dull aluminium and were then given a wash of black oil paint to add some depth.

The rear of the engines are devoid of any detail, so I added a blanking plate made from plastic card, and then used some plastic tubing carefully thinned at one end to make a jet pipe. Again, I had no clear photographs of the rear of the Destroyer's engines, but it seemed logical that it would be something a kin to this.

All the sub-assemblies were now bought together. The tailplanes fitted nicely and had the correct dihedral built into them. The wing attachment on the other hand was not a perfect fit, and needed filler both beneath and above at the point of contact. The upper surface especially was quite tricky as it wasn't a simple gap between the parts, but a slight step that ran for about two thirds of the wing/fuselage joint. Thankfully the



The rear of the engines receiving some detail in an otherwise empty space.



engines were no problem at all and a perfect join was achieved just by running some MEK down the joint.

The three white metal electronic pods were now attached. All three needed a bit of cleaning up to remove seam lines and the moulding tabs. Once fitted, only a little filler was needed to blend the pods in to the under fuselage which has a gentle upwards curve from front to back. The middle pod is off-set to the right - looking at the aircraft from the front.

The two wing tip pods were made from four white metal parts, cleaned up and joined, and needed some filler for a perfectly smooth finish. The parts all look the same, but are slightly *handed* so care must be taken. The two white metal vents were also fitted at this stage, at the rear of the aircraft on the fuselage side below the tailplanes.

I now decided to paint my model before fitting the undercarriage and the many antennas, and tacked the undercarriage doors in place 'closed' so any camouflage line would be continuous. I gave the model a light grey undercoat to show up any blemishes - (the join between the fuselage and wings

Below: The three-tone SEA camouflage pattern being masked out.
Right: The undercarriage and fuselage antenna in place.



Position of the ECM pods on the EB-66C fuselage undersurface.

used masking tape throughout. Once all the coats had dried completely, a couple of coats of Johnsons Kleer was applied to give a consistent high sheen to prepare for the decals. All detail painting was to be done at a later stage.

First of all I used a dark grey oil paint to highlight some of the more prominent panel lines - on the wings and rudder - and then the decals were applied.

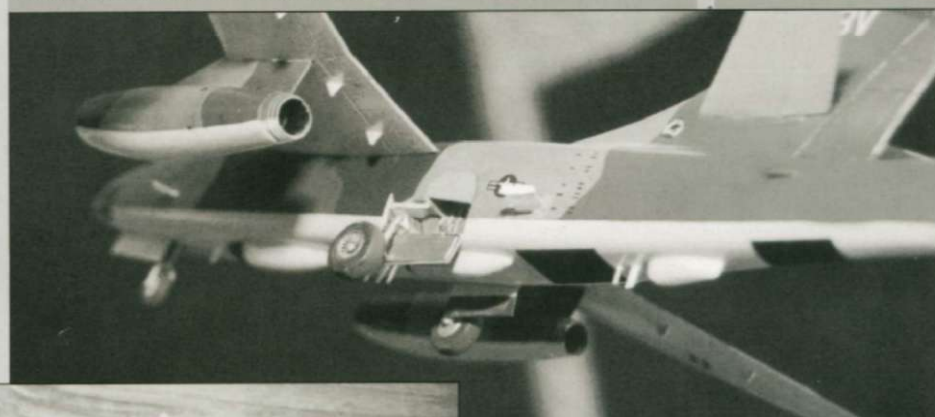
Sheet S7 from Almark includes decals for four camouflaged and four natural metal B-66 Destroyers, amongst a range of different marks of machine. My Destroyer, an EB-66C was a machine based at Bitburg AB, USAF(E) during the spring of 1970 and was assigned to the 39th TEWS, 36TFW. One note of warning. On most, if not all Almark sheets, the images are on a continuous/solid carrier film and need to be cut up. At least this allows you to control the amount of film around each image, but it can be a bit tiresome. Once all the decals had been applied and given another coat of Johnsons Kleer to seal them in place, it was time to finish the remaining kit items.

All three undercarriage units are a bit clumsy, the torque links on the main undercarriage especially being downright awful! They are moulded as a solid triangle and were quite tricky to remove. Torque links from the brass fret were used to give a far superior finish. The undercarriage doors, which in the case of the main bay covers had already been painted whilst tacked in place on the fuselage, had to be cut up into three parts - the doors themselves show

needed more attention!) - and when I was happy, applied another coat, this time to a more satisfactory finish.

My model was to be finished in the standard TO-1-1-4 SEA Scheme finish of the 1960/70s, Vietnam period. Using Humbrol paints throughout, the EB-66C was painted in FS34079 Dark Green, FS34102 Medium Green, FS30219 Tan uppersurfaces and FS36622 Pale Gray undersurfaces. These came out as Humbrol 116, 117, 118 and 28 respectively.

When I work in 1:48 scale, I tend to spray my models freehand. Despite what some 'critics' say, I think a diffused soft edge looks better in this scale. However, in 1:72 scale, I think a sharper demarcation line is more suitable and I



exactly where to cut and caused no problems. The wing tip pods were painted very dark grey as depicted in the couple of colour photos of the Destroyer that I did have, although the Almark's instructions say that these pods were an unpainted fawny-tan fibreglass, so take your pick.

The cockpit canopy was masked using Scotch magic tape cut into thin strips. The canopy has very nicely moulded frame lines to use as a guide and this worked very well. All the kit part supplied antennas and other electrical equipment were consigned to the spares box, as their white metal and brass parts were far better. Having said that, the two brass parts caused some confusion

because they are not numbered and the instructions only show an aircraft silhouette with various antennas in position, but are not drawn very well and to me didn't look like the antennas provided in brass! The colour of these antennas also caused much head scratching - white, silver or appropriate airframe colour, all being mentioned in various sources. I chose white for no particular reason other than that to provide a sharper contrast with the airframe. I only partially weathered my model, using pastels to create a few subtle streaks, and then finished it off with a coat of Xtracolor Matt Varnish.

Summary

It was good to have a break from my usual diet of WW II fighters and attempt something very different. The B-66 Destroyer as a model is something you don't see every day. I have a few niggles about the kit, some parts of which were very good, but the undercarriage seemed almost an afterthought and the wing-fuselage joint proved very difficult to get right, in fact I am still not totally happy with it.

The conversion set was good, but was let down slightly by the instructions being a bit vague. That in itself wouldn't have been too bad if it wasn't for the fact that I had virtually no B-66 references to check against, which could have saved me a lot of the frustrations I had about the 'right shape antennas' and the correct colour of various parts.

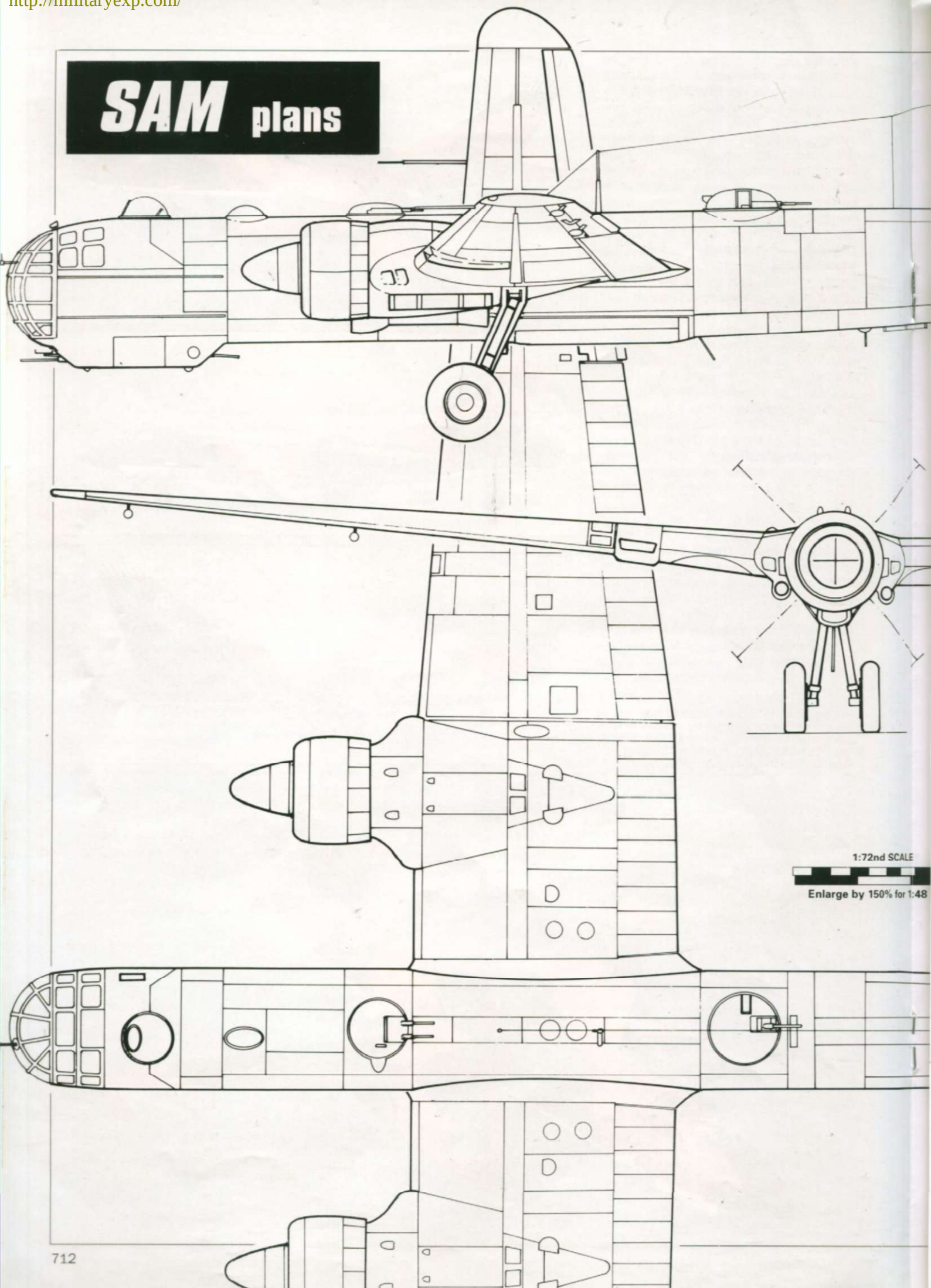
My thanks to ED Models for supplying both the kit and the conversion set.

Trevor Glover

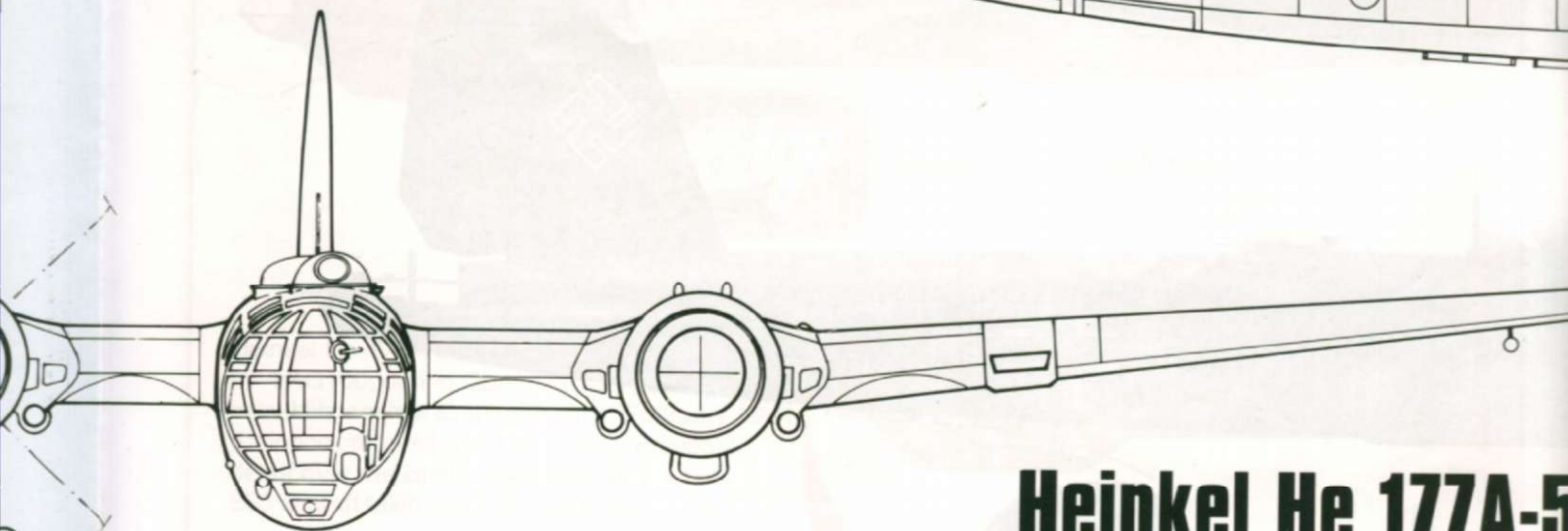
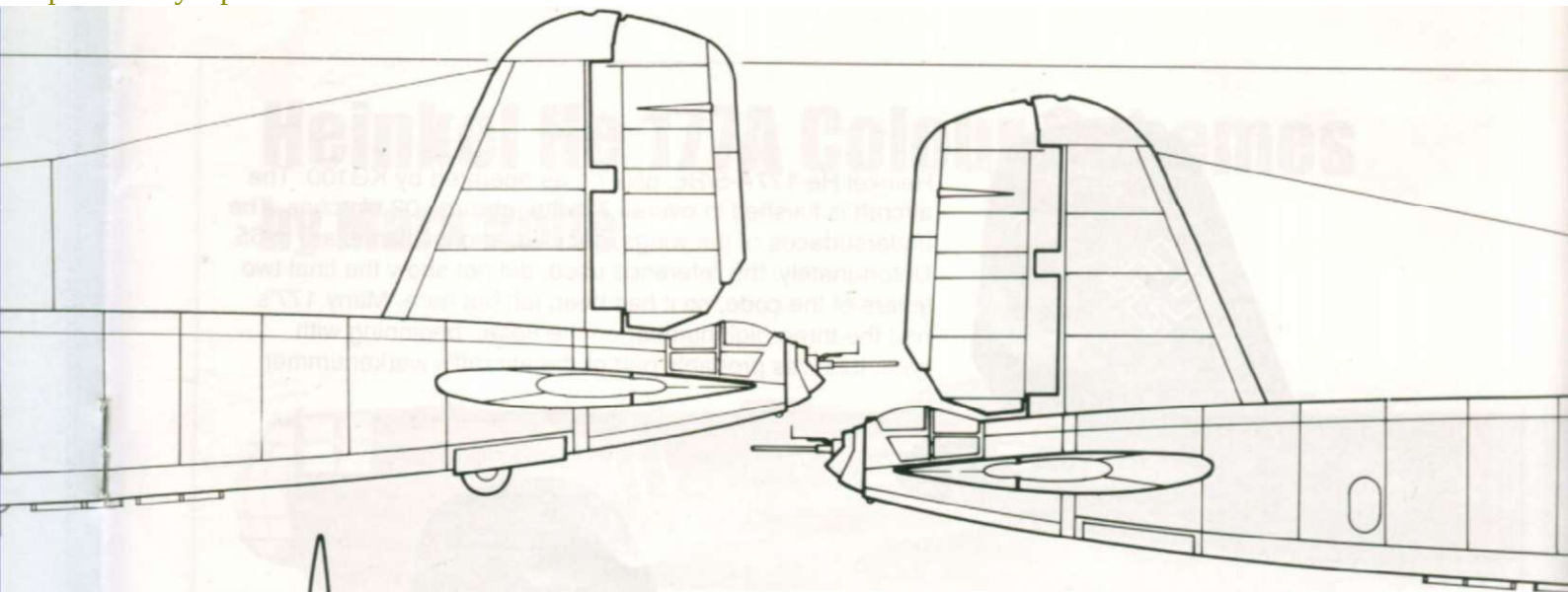
At right and below: Around the clock views of Trevor's finished model in the markings 654459/BV, of the 39th TEWS, 36th TFW, USAF(E), based at Bitburg AB, Germany in the spring of 1970.



SAM plans

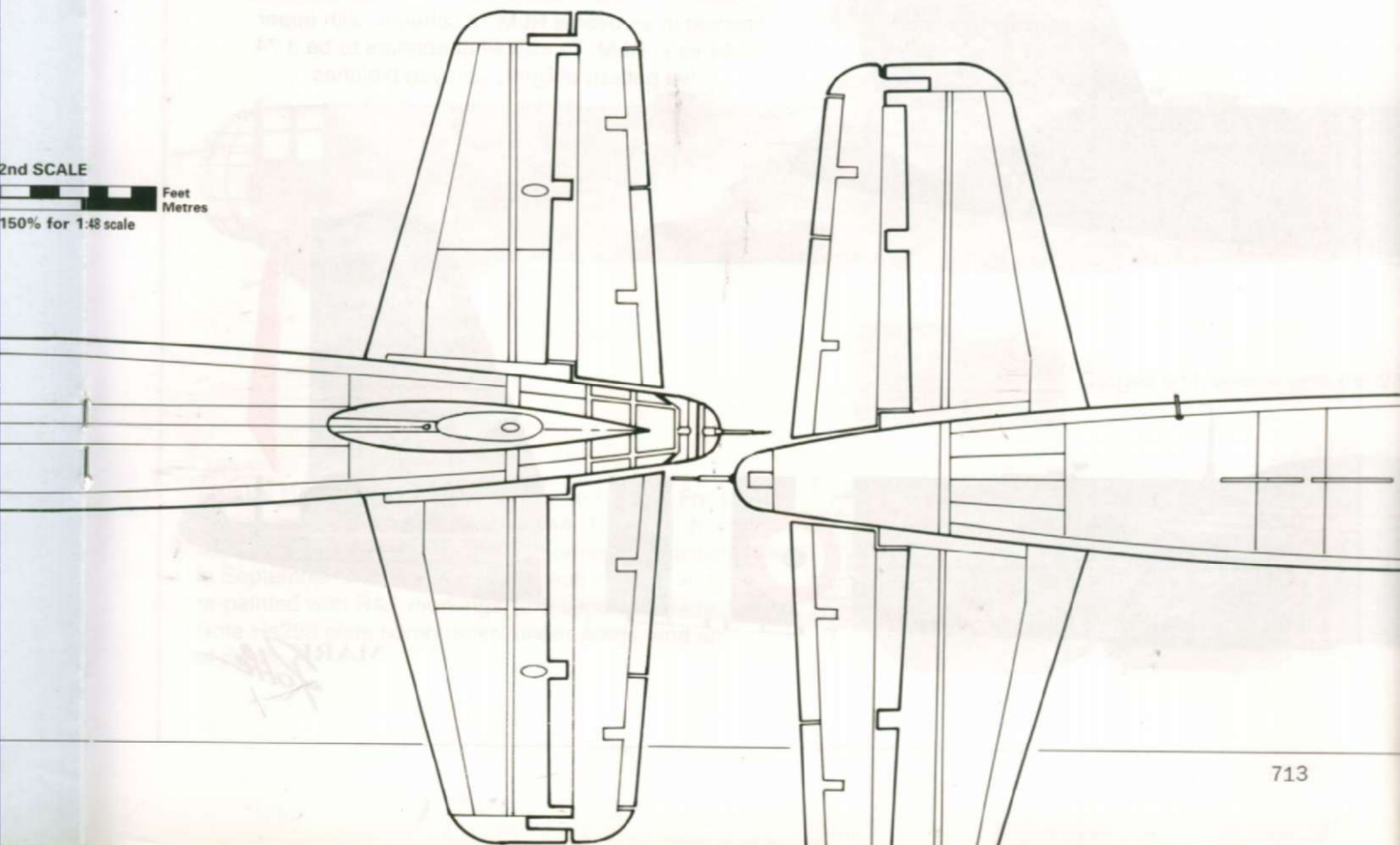


1:72nd SCALE
Enlarge by 150% for 1:48

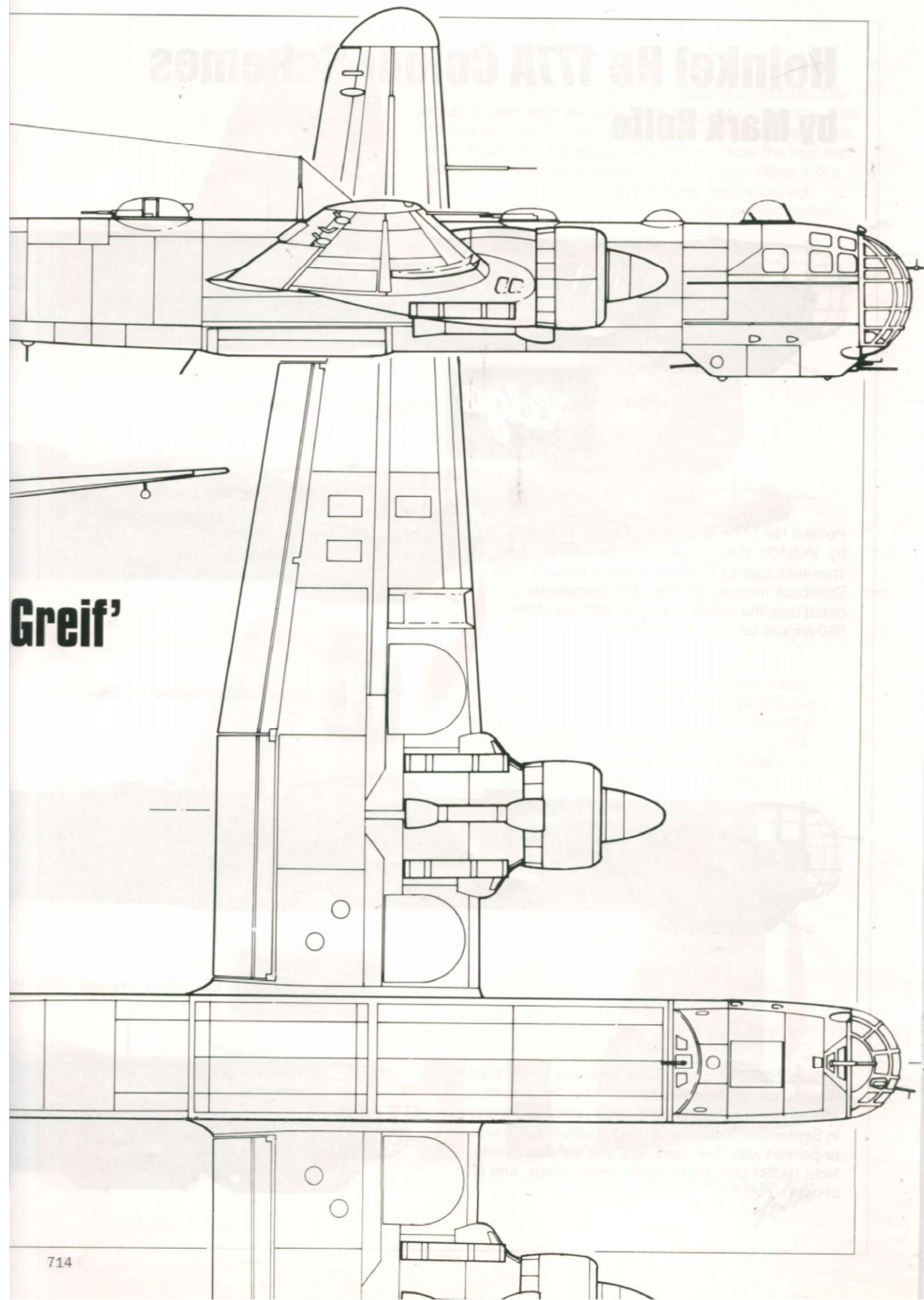


Heinkel He 177A-5

Drawings by Mark Rolfe



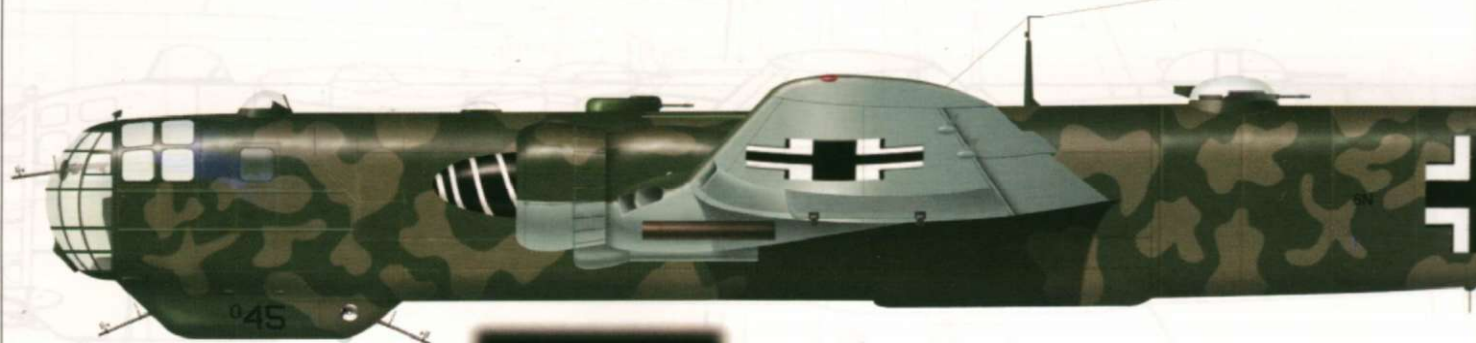
2nd SCALE
Feet
Metres
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Greif'

Heinkel He 177A Colour Schemes

by Mark Rolfe



Helga

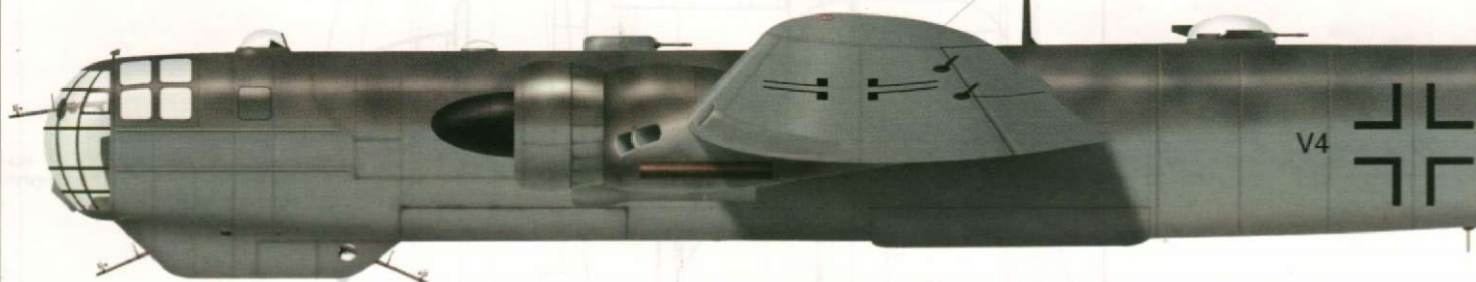
Enlargement of aircraft name.

Heinkel He-177A-3, 'Helga', 6N+HK, operated by I/KG100, during Operation 'Steinbock', (the 'mini-blitz against England'), circa February 1944. Steinbock marked the He-177's operational debut over the British mainland, and out of the 550 aircraft taking part, 35 were He-177's.



H

Aircraft letter repeated on nose



PRISE DE GUERRE

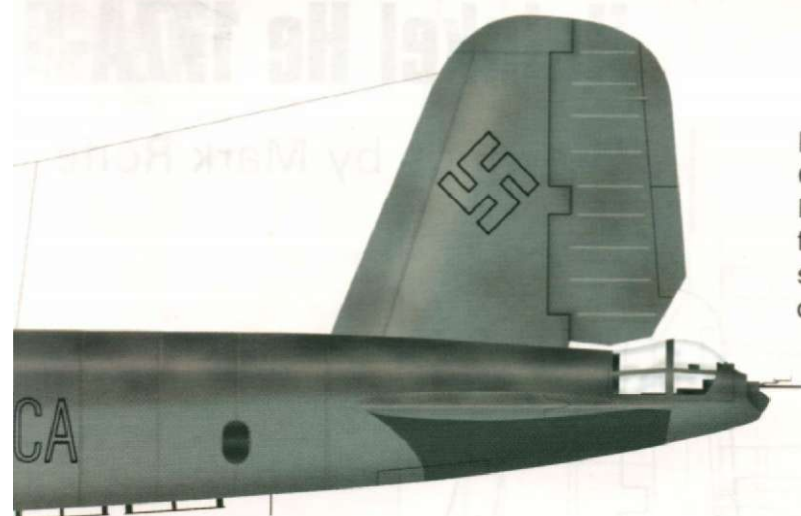
Carried on fuselage sides ('Prize

Heinkel He-177A-5, ex-KG40, captured by the French Résistance, at Toulouse during 1944. The aircraft is shown as it appeared shortly after arrival at Farnborough, in September of the same year. It was subsequently re-painted with RAF markings, and seriated TS439. Note Hs293 glide bomb racks, under wings, and aft of cabin.

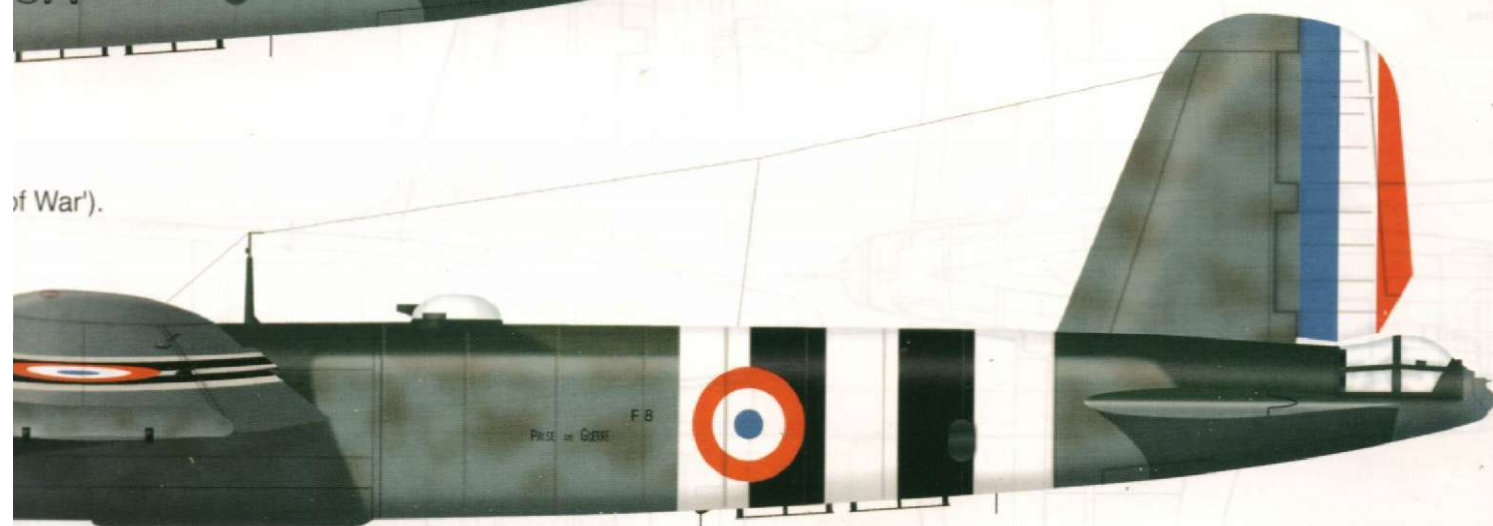




Heinkel He-177A-5/R6, 6N+??, as operated by KG100. The aircraft is finished in overall 71 with irregular 02 blotches. The undersurfaces of the wings, nacelles and tailplanes are in 65. Unfortunately, the reference used, did not show the final two letters of the code, so it has been left out here. Many 177's had the three-digit number on the nose, beginning with zero, this was probably part of the aircraft's werknummer.



Heinkel He-177A-5, V4+CA, flown by Hauptmann Otto von Ballasko, Stab. Staffel, KG 1 'Hindenburg', Prowehren, East Prussia, mid-1944. The aircraft is finished in an overall RLM 76 scheme, with upper surfaces in RLM 75 with what appears to be a 74 disruptive pattern of lightly sprayed blotches.



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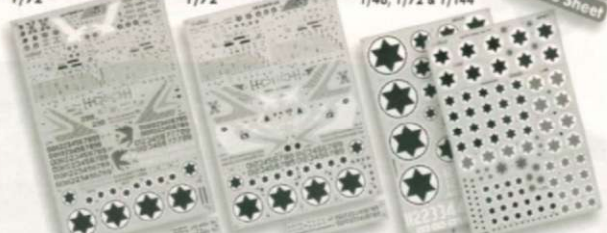
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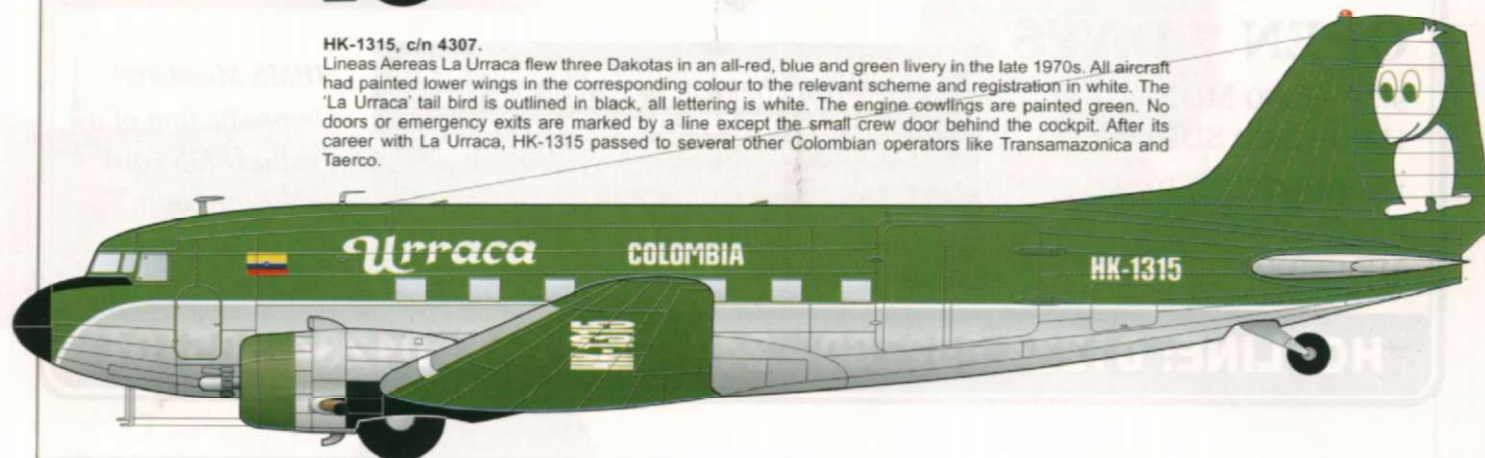
HK-122, c/n 4414.

Originally delivered to the USAAF 8th Air Force in England 1942, this aircraft arrived in Colombia in 1947 for service with Avianca. It passed through several operators inside the country and entered service with Selva in the 1980s. HK-122 carries a red and white livery with black titles and natural metal undersides and wings. All Colombian Dakotas have painted wing tips often corresponding to the airlines corporate colours. Another feature visible on all HK-registered DC-3 aircraft is the registration on lower port side wing and the company name on starboard lower wing. The procedure is repeated on upper wings with the registration on the right. Please note the antenna arrangement on the different aircraft. Each individual machine seems to have its unique installation.



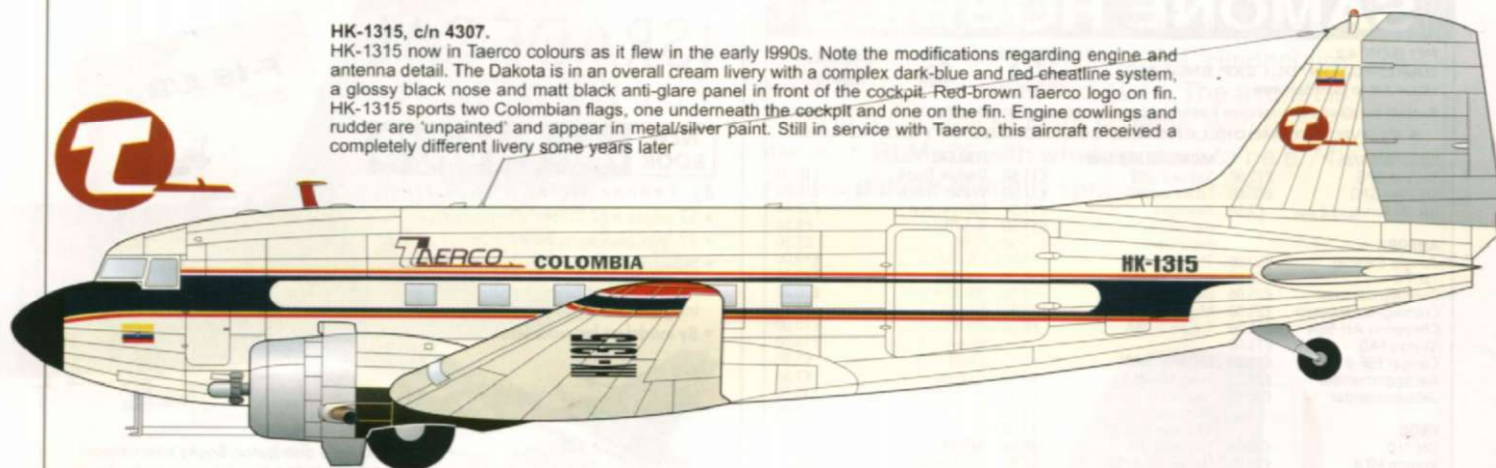
HK-1315, c/n 4307.

Lineas Aereas La Urraca flew three Dakotas in an all-red, blue and green livery in the late 1970s. All aircraft had painted lower wings in the corresponding colour to the relevant scheme and registration in white. The 'La Urraca' tail bird is outlined in black, all lettering is white. The engine cowlings are painted green. No doors or emergency exits are marked by a line except the small crew door behind the cockpit. After its career with La Urraca, HK-1315 passed to several other Colombian operators like Transamazonica and Taerco.



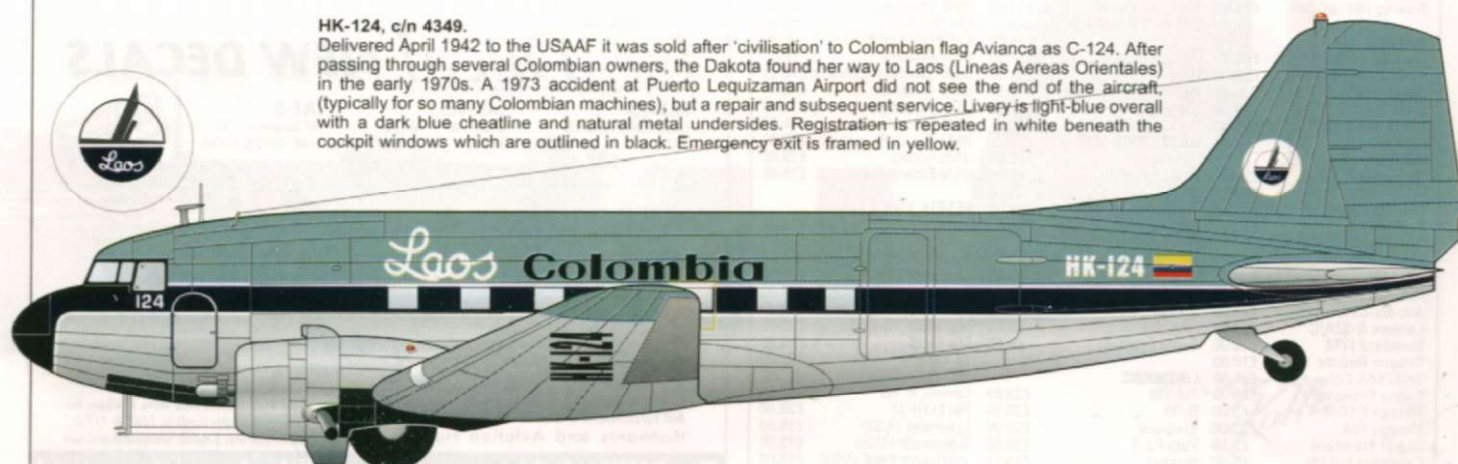
HK-1315, c/n 4307.

HK-1315 now in Taerco colours as it flew in the early 1990s. Note the modifications regarding engine and antenna detail. The Dakota is in an overall cream livery with a complex dark-blue and red-heatline system, a glossy black nose and matt black anti-glare panel in front of the cockpit. Red-brown Taerco logo on fin. HK-1315 sports two Colombian flags, one underneath the cockpit and one on the fin. Engine cowlings and rudder are 'unpainted' and appear in metal/silver paint. Still in service with Taerco, this aircraft received a completely different livery some years later.



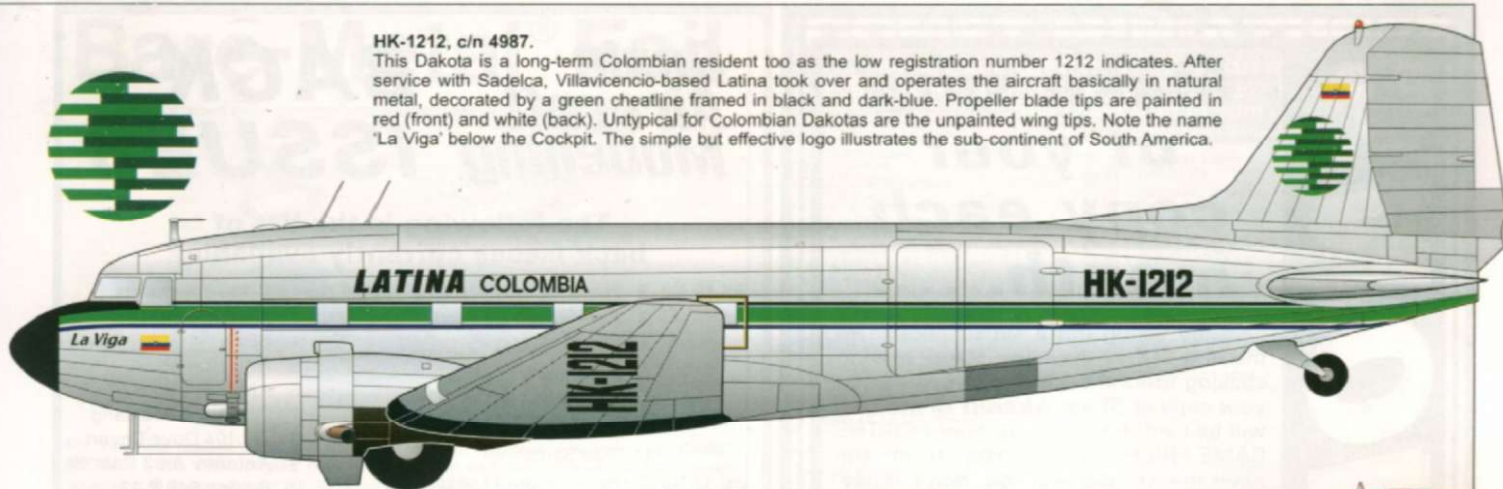
HK-124, c/n 4349.

Delivered April 1942 to the USAAF it was sold after 'civilisation' to Colombian flag Avianca as C-124. After passing through several Colombian owners, the Dakota found her way to Laos (Lineas Aereas Orientales) in the early 1970s. A 1973 accident at Puerto Lequizaman Airport did not see the end of the aircraft, (typically for so many Colombian machines), but a repair and subsequent service. Livery is light-blue overall with a dark blue cheatline and natural metal undersides. Registration is repeated in white beneath the cockpit windows which are outlined in black. Emergency exit is framed in yellow.



HK-1212, c/n 4987.

This Dakota is a long-term Colombian resident too as the low registration number 1212 indicates. After service with Sadelca, Villavicencio-based Latina took over and operates the aircraft basically in natural metal, decorated by a green cheatline framed in black and dark-blue. Propeller blade tips are painted in red (front) and white (back). Untypical for Colombian Dakotas are the unpainted wing tips. Note the name 'La Viga' below the Cockpit. The simple but effective logo illustrates the sub-continent of South America.



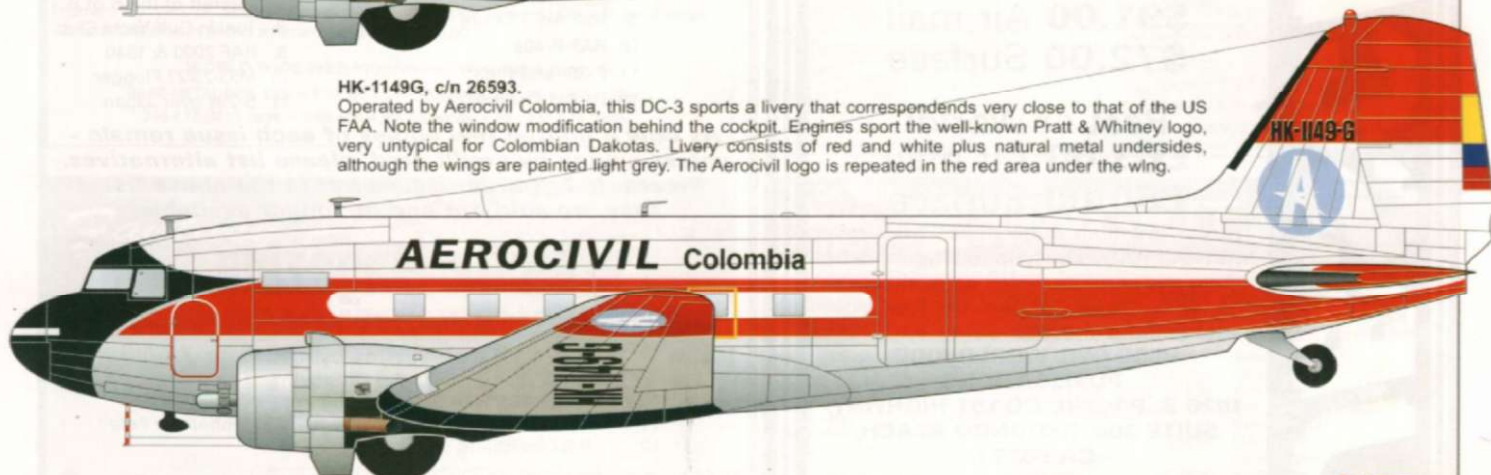
CHK-2580, c/n 19127.

This aircraft served with Iowa Air National Guard as 42100664 before civilisation in the US and subsequent sale to Colombia. Tala adopted this colourful livery on an otherwise natural metal aircraft consisting of yellow, orange and red cheatlines. Company titles are black. Note the 'fighter like' mouth painting in black and white, complete with brown cigar. Tala Colombia operated two Dakotas from its Bogota base.



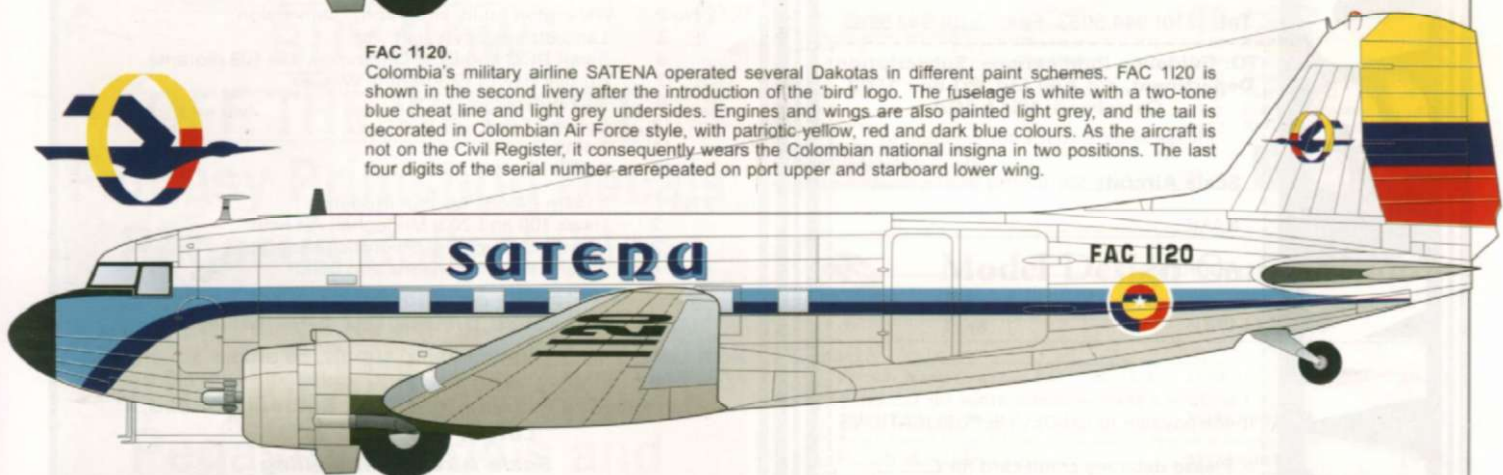
HK-1149G, c/n 26593.

Operated by Aerocivil Colombia, this DC-3 sports a livery that corresponds very close to that of the US FAA. Note the window modification behind the cockpit. Engines sport the well-known Pratt & Whitney logo, very untypical for Colombian Dakotas. Livery consists of red and white plus natural metal undersides, although the wings are painted light grey. The Aerocivil logo is repeated in the red area under the wing.



FAC 1120.

Colombia's military airline SATENA operated several Dakotas in different paint schemes. FAC 1120 is shown in the second livery after the introduction of the 'bird' logo. The fuselage is white with a two-tone blue cheat line and light grey undersides. Engines and wings are also painted light grey, and the tail is decorated in Colombian Air Force style, with patriotic yellow, red and dark blue colours. As the aircraft is not on the Civil Register, it consequently wears the Colombian national insignia in two positions. The last four digits of the serial number are repeated on port upper and starboard lower wing.



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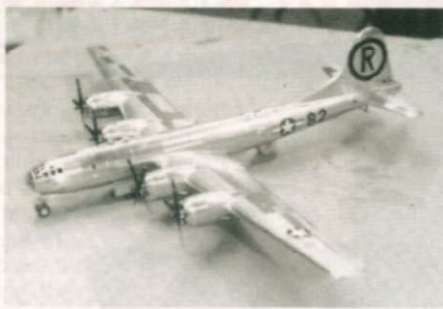
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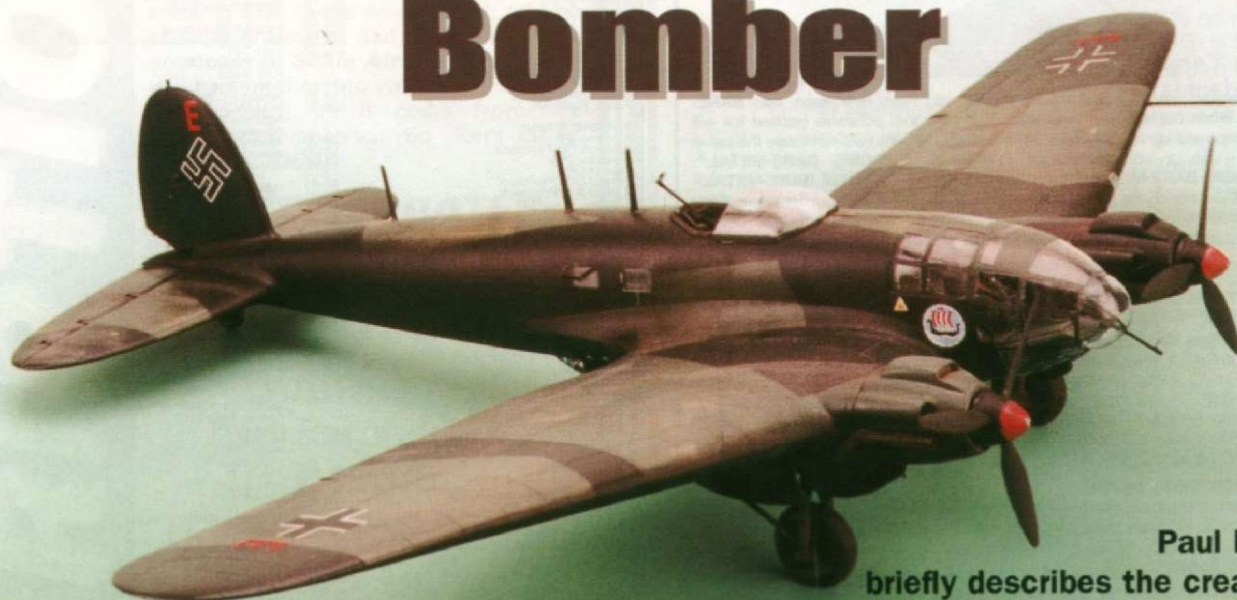
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60th Anniversary of the Battle of Britain

The Luftwaffe

Blitz Bomber



Paul Hughes

briefly describes the creation of *Kampfgruppe 100*, the Luftwaffe's premier pathfinder unit, and the 'blind' bombing systems it developed and utilised during the Blitz of late 1940/early 1941 and builds a representative He 111H-3 in 1:48 scale

Kampfgruppe 100 (KGr 100) was created on 18 November 1939 from 7 and 8 *Kompanie*, (later retitled 1 and 2 *Staffel*), of the *Luftnachrichten-Abteilung 100*, (Air Signals Section 100), or LnAbt 100. This unit was used, prior to the outbreak of war to develop a new bombing apparatus called *X-verfahren*, using Ju 52/3ms and from early 1939 the then new Heinkel 111H. Planned conversion to a totally He 111-equipped *Gruppe* was to be completed by the outbreak of war but only 8 *Kompanie*/(2 *Staffel*) was fully re-equipped by then. Neither aircraft type carried standard bomber markings at this

time retaining instead the manufacturer's four-letter factory codes, two examples of which were GD+KG on one of the Heinkels, and NQ+AY on one of the Ju 52s. (Modelling opportunities not to be missed here!?). The code 6N was allocated to the unit in July 1939 and the aircraft were then marked in the more usual manner.

Prior to the outbreak of the Polish Campaign, LnAbt 100 was continuously practising with the *X-verfahren*, flying from their base at Kothen to the bombing ranges and dropping practice bombs from heights up to 30,000ft. Although this

wasn't to be expected on fully operational flights, it does show that this twin-engined aircraft could even out-perform the later Lancaster in that one respect. They regularly flew missions at 25,000ft and how many Lancaster pilots would have preferred to be up there instead of 5,000ft lower I wonder? An accuracy of 300ft was achieved which, if you're bombing a city, is *accurate enough*.

X-verfahren

We will now take a quick look at the *X-verfahren* apparatus which most people assume is the *X-Gerate* system itself. *X-Gerate* is the system of receivers, aerials, decoders and an instrument known as the *X-uhr* (X-clock) fitted to the He 111, and doesn't include the ground stations. The *whole* system is known as *X-verfahren* and a quick summary of its operation is as follows.

A bomber, (or bombers), follow a radio beam radiated by a ground station. A series of morse code dots or dashes in the pilot's earpieces, similar to the *Knickebein* navigation aid, indicates whether he is left or right of track. As the pilot *flies the beam* he hears a signal transmitted from another station that



Above and left: Heinkel He 111H-3, 6N+EK of 2./KGr 100, circa October 1940, made from the 1:48 Revell/Monogram kit. Note the additional pair of *X-Gerate* aerials on the fuselage spine and the black paint wash applied on the fuselage sides.

Undersurface view of Paul's modified Bola type gondola with front glazing.

indicates he is 50km from the target at which point the motor on the *X-uhr* is wound up by means of a key attached to it. At 20km from the target another beam is crossed and a button on the *X-uhr* is pressed starting a hand rotating which stops when the third beam is crossed. This indicates that the target is 5km distant and at this point a second hand is started. This hand travels faster than the first one and when the two hands meet, the bombs are automatically dropped.

Providing the pilot has kept to the exact course and speed, the bombs should theoretically hit the target. A special signals unit had to be organised to set up the apparatus using a five-figure logarithm table, but the bombs could still be affected by the wind or the poor ballistics of the bombs themselves. KGr 100 were the only unit to operate this system during the Blitz, but were assisted by III/KG 26 who operated the similar *Y-verfahren*.

This system used a range measuring transponder in the aircraft that re-radiated a signal sent out from a ground station. The station could then work out the distances from the signal time lapse to plot the exact range of the aircraft. When the range matched that of the target, the bombs were dropped. This proved to be more accurate than *X-verfahren* but was limited to controlling one aircraft at a time. Apart from the codes and unit insignia these two *Gruppen* were identifiable by the two masts on the fuselage of the *X-Gerate* equipped aircraft and the single mast of the *Y-Gerate* system.

At a distance of 62 miles, the beam was measured at 305ft (100m) wide which the Germans believed was good enough to bomb specific targets in built up areas. One 'interesting' target aimed at on the night of 6 November 1940, even though there were no buildings to aim at, was 1km south of Wimbledon Park, which probably explains why nobody has ever seen a Womble - did the Luftwaffe killed them all off?

The British only had an inkling of the special nature of KGr 100's activities, but



during the Norwegian campaign they were presented with an opportunity to discover everything they needed when He 111H-3 6N+AB was forced down by two Hurricanes of No 46 Sqn. This aircraft was piloted by Wolfgang Metzke, the staff technical officer of KGr 100. To make matters worse for the Germans the *Gruppenkommandeur*, Artur Von Casimer, was also aboard and both were captured and shipped back to England. Fortunately, for the *Luftwaffe*, the British failed to discover their exact worth and they both passed through the interrogation process without divulging any useful information!

Information was gleaned from various other sources, including espionage and interrogation of captured *Luftwaffe* aircrew, and the British came to understand some of the complexities of KGr 100 operations and were able to effect countermeasures.

These didn't involve 'bending' the beams as legend would have us believe. The actual technique, effected by the newly formed 80 Wing RAF under the command of G/Cpt E B Addison, involved interfering with the signals received by the *Luftwaffe* aircraft, by sending out such conflicting signals that the aircraft's exact position couldn't be properly established, not only preventing them bombing the allocated target, but disorientating them to such a degree that they would experience difficulty in finding the correct bearing for returning to their own bases. By the time the British could

effectively nullify the threat of KGr 100 they had transferred to the eastern front and the Blitz had all but petered out.

Modelling a KGr 100 Heinkel 111H-3

There are a number of points to note that will help make several distinctive models of KGr 100's aircraft.

The Revell/Monogram kit, straight from the box, doesn't accurately portray what most KGr 100 aircraft were outfitted like. In Ken Wakefield's book, '*KGr 100. The First Pathfinders*', there is a photo of 6N+EK of 2./KGr 100, in the usual 70/71/65 paint scheme, that features the early Bola type lower gondola with the solid front section that is featured in the Revell/Monogram kit.

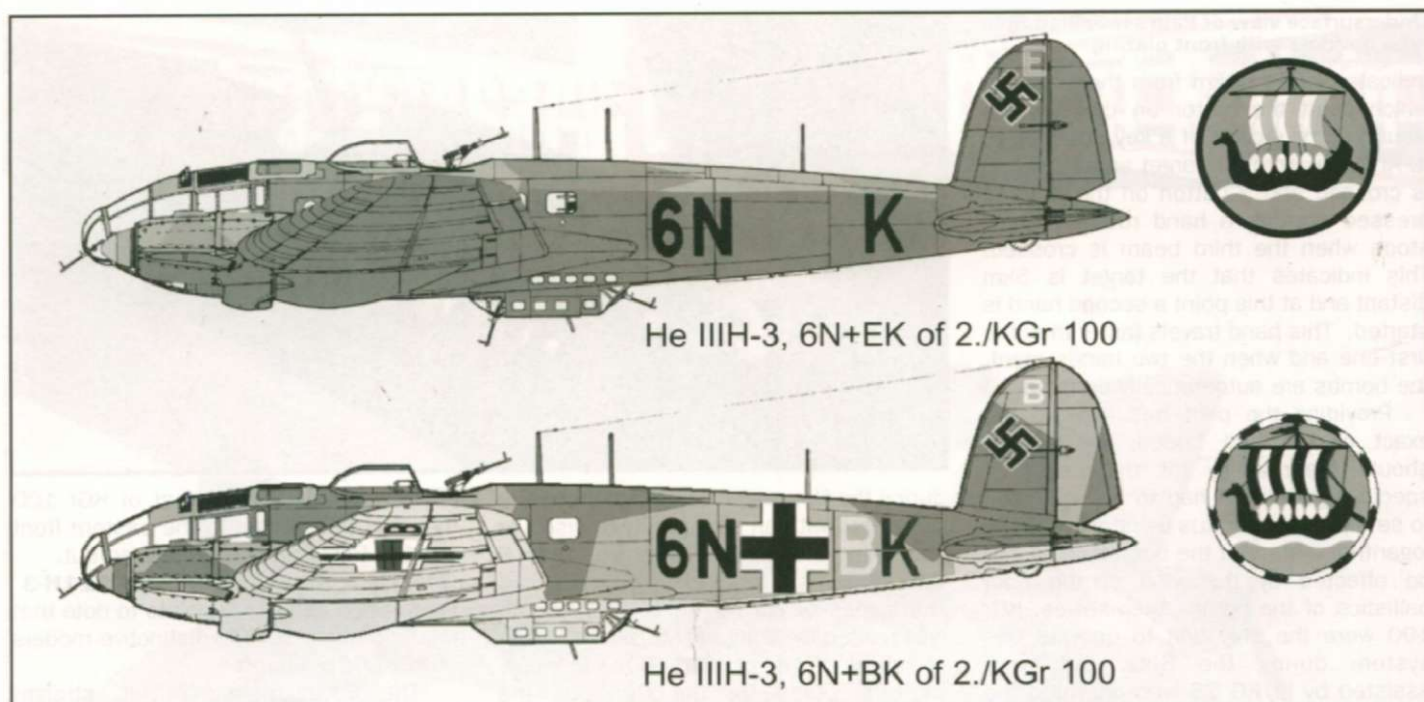
Also, most He 111s in the *Gruppe* had six MG 15 machine guns fitted as follows. One in the nose, one in the dorsal position, two in the ventral gondola - facing fore and aft, and one either side in the fuselage beam positions.

The kit is moulded in light grey plastic with neatly engraved panel lines, and upon opening the box first impressions are favourable. Considering the kit is date stamped 1994, there is a surprising amount of flash, although this isn't a major problem. (You don't see this on Tamiya's new products, so perhaps something is amiss somewhere!?!). The clear parts are bagged separately to avoid scratching and there are six sprues holding some 126 parts. Test fitting showed that the canopy glazing was not going to be straightforward, but more of that later.

KGr 100 mainly operated the H-3 variant of the He 111, with the exception of a two week period during October 1940, and on the only raid mentioned in the Ken Wakefield's book covering this period, on the night of 15/16 October 1940, to Birmingham, they used the H-5 sub-type and actually carried one SC500 mounted externally, so for a He 111H-3 the kit bombs are no use in modelling one of their aircraft. The drag caused by the externally carried bomb(s) and the associated reduction in performance meant that the *Gruppe* preferred the H-3 variant which was better suited to their requirements.

KGr 100 were *firestarters* so they really only needed to use relatively small Close-up of the KGr. 100 Viking longship insignia from the AeroMaster sheet.





bombs and normally carried nothing heavier than a 250kg bomb or the BSK 36 incendiary cannisters, which meant each aircraft dropped 1152 bomblets of two types. The first one, called B1 E1 was a straightforward incendiary. The second, B1 E1 ZA, was the similar but with a small explosive charge that detonated at irregular intervals to deter fire-fighters and rescue teams. Two other incendiary bombs were used called Flam C250 and Flam C500. They were similar in size to ordinary bombs of this weight category, but were actually lighter. 3lbs of TNT was used to ignite a flammable oil mixture but they had a tendency to fail to detonate, and would often burst on impact without igniting.

In the Polish and Norwegian campaigns, the aircraft were painted in the usual 70/71/65 *Luftwaffe* day bomber scheme, but later, during the Night Blitz, as KGr 100 were to be used primarily in night attacks on Britain, the undersurfaces, side surfaces of the fuselage and rudder, including the crosses and swastikas were overpainted with a temporary black wash. Occasionally the fuselage beam and gondola windows were also treated to a black 'wash' as well.

Also of interest are the markings the *Gruppe* employed just after the war started. One very interesting photo shows that in late 1939, the aircraft of the *Gruppe* carried four crosses on the upperwing at the same time. Large crosses, the same size as the underwing ones, were added just outboard of the engines and smaller, standard-sized ones were nearer to the wingtips. If you depict this scheme, you'll certainly have a model that will stand out from the 'crowd'! The familiar Viking longship badge wasn't introduced until the spring of 1940.

The individual aircraft letter also came in for some non-standard positioning. The i/d letter was always in the usual fuselage position but was

repeated on the top of the fin, the wingtip upper surfaces and the leading edges of the mainplanes outboard of the engines. The fuselage letter was generally painted-out with the black wash, although the tailfin and wingtip ones were usually left alone.

Back to modelling. The cockpit area was completed as instructed, but for better results the moulded-on seatbelts were removed and replaced with etched brass examples. The hole in the back of the pilot's seat was reamed out to pass the belts through. Other than that the only requirement for this area was a good paint job and a representation of the *X-uhr* clock that was glued to the forward edge of the starboard sidewall. I used a sliver of plastic card and a Reheat instrument bezel to represent this.

Whilst waiting for the cockpit to dry, I finished off the wings. There isn't really a lot to say about this area except to mention that I took off the wheel well doors before I positioned the mainwheel bays. This saved me knocking them off later. The radiators, parts 15, needed to have the sides filed down a little, as on the real aircraft they could be raised and lowered, and had to fit inside the cowlings above. Also the holes in the propeller backplate needed drilling out for added realism as did two holes for the beam guns in the rear windows on either side.

Before cementing the fuselage halves together, an aperture was cut out for the glazing at the front of the gondola. Using the part that normally covers this area, I moulded a new front section glazing from clear plastic card. This was my first attempt at plunge-moulding and I surprised myself by successfully producing a usable front glazing section after only three attempts!

The main cockpit glazing is a butt-joint and doesn't fit quite perfectly and could do with some help to align it all the way around. My method was to fit the main section to the fuselage making sure it fitted around the bottom, and then attach

the top section, aligning it for best fit, then fill all the gaps with white glue!

After masking all the various 'holes', the cockpit glazing and lower gondola windows with Tamiya tape and damp tissue, I was ready for painting. All the paints used were AeroMaster. The upper surfaces were in the usual *Schwarzgrün* 70/*Dunkelgrün* 71 splinter pattern with the undersurfaces in matt black. I was going to paint the undersurface *Hellblau* 65 first, but settled on dry-brushing on 'scuff marks' afterwards. I added a little matt white to the black to simulate a faded scale appearance and so that the black code letters would stand out a little more. The temporary black wash demarcation sweeps up from the wing trailing edge, runs high along the fuselage side and covers the entire fin in a fashion similar to that employed by RAF Bomber Command.

I sprayed Halfords acrylic gloss varnish all over and when it was dry, I was ready to decal the model. I used AeroMaster sheet 48-120A, but only used some of the decals that were supplied. The fuselage and underwing crosses were left off so only the swastikas, upperwing crosses and the KGr 100 Viking longship emblem were utilised. I cut up the kit supplied aircraft i/d letter 'B' to represent an 'E' and placed them on the fin top and the wing tips. After all the decals had settled, I sprayed on matt varnish to blend-in and 'dull down' the paintwork and was then ready for final assembly.

Using the kit's aerial mast as a guide, I produced two more from suitable plastic card and filed the edges into aerofoil section. I fixed them centrally on the fuselage spine, (see the accompanying side view drawings for the positions). The main undercarriage legs were fixed in to place and the doors re-fitted.

KGr 100's aircraft were generally fitted with flame damping exhaust manifolds and I constructed these from

sprue - cut and sanded to shape. Reheat gunsight bezels were added to each machine gun, and a stretched sprue aerial completed the job. I had no problem fitting the beam guns in at this point, before the gunsights were added of course.

Finally, I would like to say that this is a good kit to build, and the few 'faults' I pointed out were only minor.

Paul Hughes

Right: Close-up of the flame-damping exhaust manifolds fitted to most of *Kampfgruppe 100's* Heinkel He 111s, made from sprue, cut and sanded to shape.

Below: Rear view of Paul's model showing the extent of the temporary black wash extending up the fuselage sides and fin, which virtually obliterated the fuselage codes and crosses.



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SIMPLY THE BEST!



**In an exclusive
Scale Aircraft Modelling interview with
John Alcorn, the IPMS(UK) Scale Modelworld's first
international champion, we reveal a little of this modest master
modeller's history and how he built his award winning de Havilland DH 9A**

Last October, myself and about 40 fellow 'colonials' from the USA and Canada invaded 'Blighty' to attend the IPMS(UK) 'Scale Modelworld 2000' World Championships. Most of us were on a one-week tour, the remainder of our time being spent in London and *en route* to/from Telford by coach.

Scale Modelworld attracted by far the largest vendor presence that I have ever

seen. One curious, (to me), but interesting aspect of the vendor area was the intermingled profusion of Special Interest Group (SIG) displays, put on by various IPMS(UK) Branches. Many and varied were the topics covered, from impressive dioramas to an acre, (or so it seemed), of Spitfires. In fact, large though the halls were, the vendor area put the squeeze on the contest entries.

I felt that the general level of modelling competence was quite high - I saw few, if any 'turkeys', although I admit that I only had eyes, (and the time), for the aircraft. Many fine models were in evidence, covering a wide variety of subjects, by craftsmen from 22 nations!

When I put my 'Ninak' in Category 19, amongst all of those impressive scratchbuilt aircraft models, I thought, "*Oh well, perhaps it might get a Commended*". Without even its diorama base, (which was much too large, heavy and awkward to bring), it looked rather forlorn amongst such outstanding entries as Alan Clark's HP Halifax and Blackburn Firecrest, the Heinkel 219, and Short Sunderland. So that evening, upon being informed that it had won the Gold in that Category, I was astonished. Then, next morning, upon learning that it had been awarded 'Best of Show', I was, "*like, blown away toadally, man*". It just goes to show, that there's no accounting for judges. (I should know, having been one myself for many years at our IPMS/USA Nats).

I was greatly honoured to have received this award, in a truly world-class field of entries, where a large number of models were worthy candidates. So, at age 68yrs, (I've been modelling for 60 years!), I can now drift serenely off into the modelling sunset - not that I plan to lay down scalpel and tweezers just yet. In fact, I'm currently planning a World War I Halberstadt Cl.II as my next, and probably last scratchbuilding project - if only I can find some cockpit and gunner's compartment information!



The DH 9A

Whilst I have always admired the DH 9A, receipt of a set of exterior general arrangement drawings by, and from, Doug Carrick, convinced me to take it on as my *magnus opus*. Its construction took me eight years, (1990-1998) and 6,400 hours, plus a trip to the UK in 1990 for the primary purpose of examining the RAF Museum's magnificently restored DH 9A, (and of attending the Battle of Britain 50th activities). I also managed to gather considerable archival reference material from the Museum and other sources.

I chose to depict H3510 'L' of No 8 Squadron RAF, serving in Iraq during the early/mid 1920s, based upon a well-known MoD photo of it flying over Baghdad, of which I obtained a large glossy print to hang over my workbench for inspiration.

The model was constructed primarily of plastic card, (high-impact polystyrene), although the wing cores are basswood, (from the Linden tree), and many small components were made from photo-etched brass. For painting, including the national insignia, I used acrylic automotive lacquer, applied with my trusty Paasche airbrush. The rather heavy weathering of my exemplar posed a considerable challenge - the 'silver' having become very worn and the grungy in the harsh desert climate and primitive conditions under which the squadron operated. But, it ultimately added a great deal to the model's realistic appearance.

The rigging posed a special challenge for me - and has proved to be something of an ongoing nightmare. Its extreme vulnerability is due to it being made almost entirely of steel - flat stainless orthodontic wire for the wing's flying and



landing wires and 'piano wire' for the tail and nose-to-wing drag lines. The control 'cables' to the tail are of monofilament nylon.

The problem, of course, is that the steel wire has **no** compliance. Hence, overstress from snagging, motion-induced structure flexure, or overtemperature will cause the wire

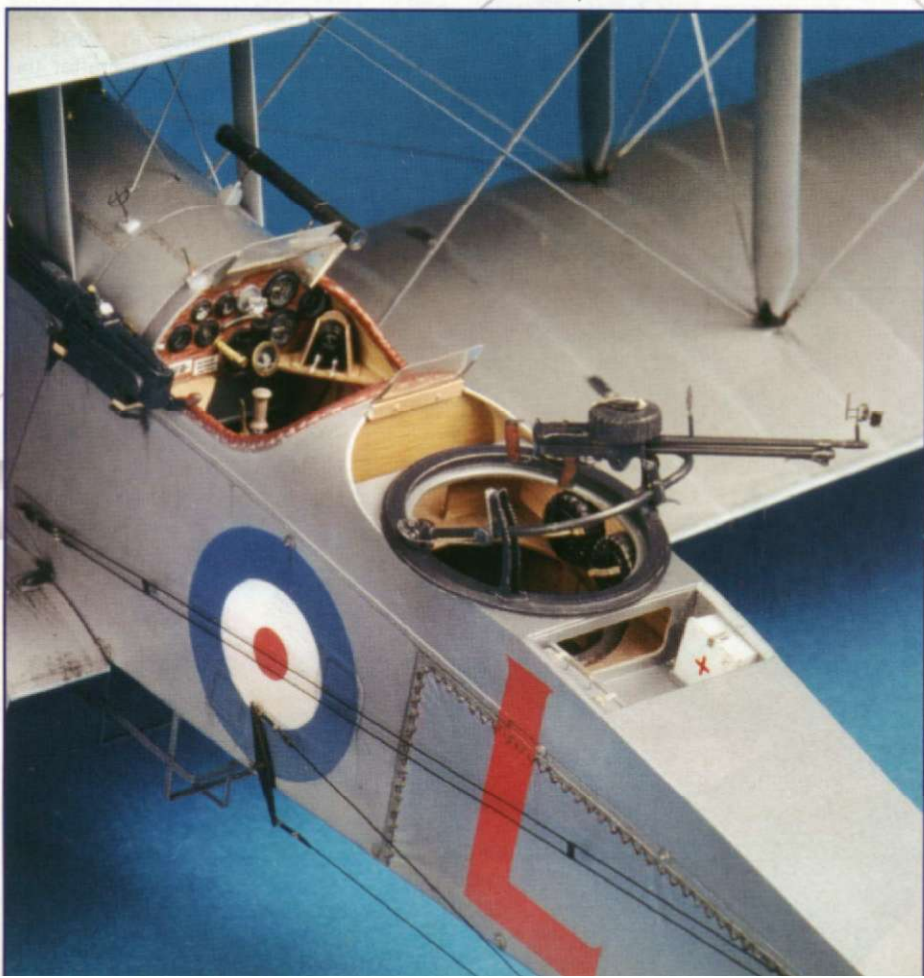
attachments to either pull loose or permanently distort. Once this has occurred, the only recourse is to remove and reset the wires, (which are connected to the photo-etched brass attachments with superglue) - a tedious chore to say the least! (I've had to do this numerous times for the tail and drag wires).

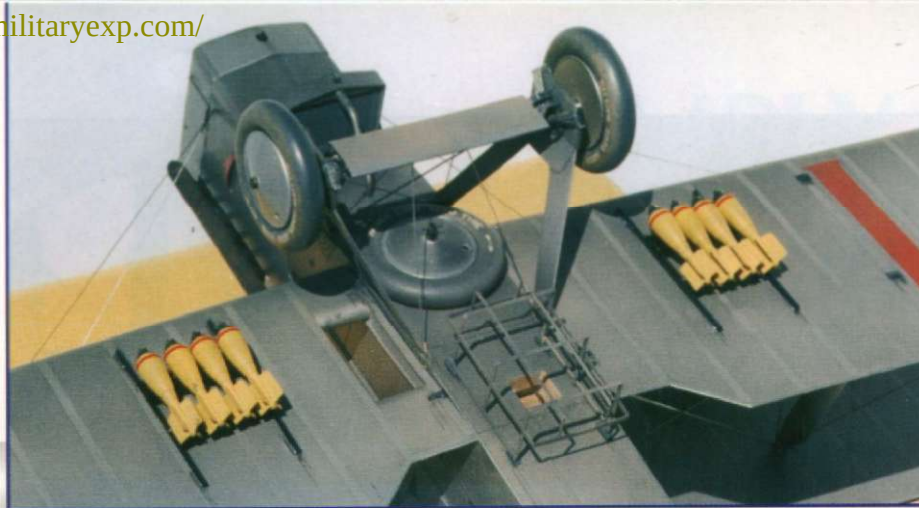
Beyond this, the model is festooned with delicate projecting features, including the Lewis gun and Scarff ring, Cooper bombs, and crew's kit basket hanging beneath the fuselage.

So, I took the model to Telford against all my good judgement. At 23 inches span, it barely fitted diagonally within its 21in x 19in x 10in box. Even when clamped snugly within its purpose-built transport fixture, it remained vulnerable to tipping, knocking and temperature excursion beyond about 85 degrees F, (a plastic model expands with temperature at a much greater rate than the steel rigging wire). So, the only way in which it had even a chance of survival was in the overhead storage bins of the Boeing 747 passenger compartment - permission for which I finally obtained.

The old 'Ninak' arrived back home more or less intact; I less so, being totally exhausted from the week-long round of exertions, excitement, stress, (over the model's safety), over-indulgence, (I love that good old English draught bitter!), and a lack of a good night's sleep - thanks to my room-mate, who snored like a rutting hog!!

**Above: Close-up of the engine cowling.
Below: Close-up of the pilot's and gunner's interiors - incredibly realistic!**





Close-up of the centre-section underside, showing spare wheel, 20lb Cooper bombs and luggage cage.
Below: Overall view of the finished model.

MY MODELLING CAREER

I entered this world on 29 February 1932, the night that the Lindbergh baby was kidnapped - an historical, if inauspicious beginning. Also less than auspicious was the prevailing economic climate. The US (and indeed, the western world) was languishing at the very nadir of the Great Depression. Likewise the political climate - Adolph Hitler became Chancellor (Dictator) early the following year.

My first coherent recollection of modelling was construction of a Curtiss P-40 from a Hawk kit in 1940 - as the Battle of Britain raged. However, I have archeological remains of earlier efforts, including Spitfires, Bf 109s (Me 109s to us then), a Boeing P-26A and an unidentifiable biplane.

Although by then a 'serious' modeller and airplane 'nut', a 1942 visit to see the 'Bundles For Britain Messerschmitt' in Houston was a life-affecting event. (This was, Uffz Horst Perez's 'weiss 4', W.Nr.1190 of 4./JG 26, brought down near Eastdean almost intact on 30 September, 1940, but, we didn't know all of that then.) The sight of this sinister bird of prey, with its lurid yellow nose, tiger's head insignia and five kill marks on the fin, further inflamed my interest in airplanes and cemented an abiding interest in the Battle of Britain. (Some readers may even have seen my B of B 'Top Guns' features in the September 1996 and July 2000 issues of 'Aeroplane'.)

During World War Two, I ran a veritable production line of wooden 'solids', initially

largely based upon the US Government-produced 1:72 scale Recognition Model plans; but later mostly from drawings which appeared regularly in our US magazines 'Air Trails' and 'Model Airplane News'. Oh, sure, I also built the occasional 'flying' model, most of which ended up as 'Hanger Queens', suspended by string from my bedroom ceiling.

Modelling continued sporadically through High School, but ceased during college, when other diversions prevailed - mostly academic. During my two-year, post-college service aboard a US Navy destroyer, I built one model - a Vought F7U Cutlass, having become fascinated by the type during our operations with fleet carriers in the Pacific. This was my only lapse into modelling jets.

After marriage in 1959, I returned to modelling on occasion, (between elaborate, year-long, pencil drawings), including a trio of Battle of Britain fighters - all to 1:24 scale. It was whilst constructing the second of these, a Hurricane, that I encountered George Lee, a colleague at the Stanford Linear Accelerator Center, (where I designed large electromagnets - both resistive and superconducting, as toys for physicists). As George later recalled, although I showed promise, I needed help! So, by the third of the trio, a Bf 109E, I was airbrushing the finish and silk-screening the markings - all under George's expert guidance.

It was during this period that George made the transition from wood to plasticard, for his 1:32 scale Aviatik D.I

Berg - which won Best of Show at the 1971 IPMS/USA Nats.

He prevailed upon me to follow suit, partly on the premise that you couldn't (then) enter wood models in IPMS contests. Therefore, in 1972, I began construction of a 1:32 scale Douglas A-20A, where the major components were vacuformed over carved wooden forms (*duck soup* for me, after all those years of solid model making). To my utter astonishment, this model was awarded Best of Show at the 1974 IPMS/USA Nats, in Anaheim(Disneyland), California. With that stimulus, there was no turning back!

During 1975-76, I constructed a 1:16 scale Laird Super Solution air racer model, under contract for the NASM. In 1977, I completed a 1:32 scale Rumpier C.IV, which was awarded the first-ever Judge's grand Award at the IPMS/USA Nats, in San Francisco. I then built a 1:16 scale Wedell-Williams 44 for the NASM, plus another for myself - but with the larger Wasp engine. This was awarded Best Aircraft at the 1983 IPMS/USA Nats in Phoenix.

Then, unfortunately, (in retrospect), for the next several years, I succumbed to 'Old Car Fever', restoring a succession of 1950s-vintage *clunkers*.

I finally extricated myself from that malady, to begin construction of my 1:24 scale DH 9A in 1990, by which time I was employed at CEBAF - a physics research laboratory in Virginia - still designing those big superconducting experimental magnets.

Meanwhile, I collaborated with George Lee and Peter Cooke to produce 'Scratch Built!', published in 1993 by Schiffer. Then, during and just after the 'Ninak' project, I followed this up with 'The Master Scratchbuilds', by the same publisher.

I devoted most of 1999 to completing the 1:16 scale Vought O3U-3 float biplane initially begun by the late George Lee - of which more in the next issue! ■



OPERATION DILLINGER



Paul Lister describes the USAAF mission to shoot down Admiral Yamamoto's Mitsubishi G4M1 'Betty' and models three representative aircraft involved in this historic action
Part One: Get Yamamoto!

Admiral Isoroku Yamamoto, Commander in Chief of the Imperial Japanese Navy's combined fleet, (and mastermind behind the attack on Pearl Harbor), was visiting his troops in the front line in the spring of 1943. The Americans had broken the Japanese Navy codes and knew the exact details of this itinerary. With this knowledge, one of the most significant air missions of World War Two was planned, and one of the most controversial debates begun - *who shot down Yamamoto?*

On 18 April 1943, Easter Sunday, Major John Mitchell led sixteen P-38Gs of the 339th FS to intercept the Mitsubishi G4M1 'Betty' bomber carrying Admiral Isoroku Yamamoto on his tour of front line troops. After flying over 400 miles at wave-top height from Henderson Field, Guadalcanal, and navigating by pure dead reckoning, two G4M1 'Betty' bombers and six escorting A6M3 'Zeros' were sighted over Bougainville Island. Mitchell ordered his P-38s to, *"Skin off your tanks"*, and whilst he led twelve P-38s in a climb to act as top cover, Capt Tom Lanphier, Lt Rex Barber, Lt Holmes and Lt Hine in the four remaining aircraft swung into the attack. As the 'Bettys' dived to pick up speed, Lanphier and his wingman Barber closed in for the kill.

Up to this point the mission had gone as planned, and the events described above are not in dispute. However, the subsequent attack on the bombers as reported by the pilots differ, and what actually happened will probably never be known.

Capt Lanphier describes how he turned left into the 'Zeros' which were trailing the 'Bettys' and destroyed the first one head on. Rolling over he saw a bomber which he believed had made a 360 degree turn and attacked it from one side. The right wing came off and the 'Betty' bomber crashed into the jungle.

However, Lt Rex Barber reported that

as Lanphier broke left into the 'Zeros' he continued and rolled to the right slotting in behind the bombers at low altitude. Misjudging his closing speed slightly he overtook the trailing 'Betty' and began firing on the leading aircraft which started to fall to the jungle. With several 'Zeros' now on his tail, Barber took evasive action before two P-38s arrived forcing them away. Heading out to the coast, Barber sighted the other 'Betty' which was carrying Vice Admiral Ugaki.

This was first attacked by Holmes and Hine before Barber started his attack. As the 'Betty' crashed into the sea, Barber flew his P-38 through the debris, and one piece hit his wing and knocked out the turbo intercooler. Barber still hadn't finished though, and claimed a 'Zero' before turning 'Miss Virginia' home. Low on manifold pressure, Barber kept at low altitude and nursed the damaged P-38 back to Fighter Two airstrip. On the ground 'Miss Virginia' was found to have over 100 bullet holes!

Meanwhile back to Mitchell's top flight, who had expected to encounter a fierce reaction by the 'Zero' fighters from the nearby Kahli airfield, but in fact saw little action. With the battle over, fifteen P-38s returned to Henderson Field. Lt Hine was missing. His fate still remains unknown to this day. With no gun cameras due to film shortages, claims by the pilots couldn't be verified. Amazingly there was no formal debriefing, which Major John Mitchell later admitted was his one regret.

Immediately on his return, Tom Lanphier claimed that he had shot down Yamamoto. This surprised the other pilots because no one knew for sure which of the two 'Betty's Yamamoto was in. Rex Barber claimed two 'Bettys' and a 'Zero' whilst Holmes claimed one 'Betty' and one 'Zero'.

After the war there was a surprising revelation from Japan. Vice Admiral

Ugaki, Rear Admiral Kitamura, and Hiroshi Hayashi, chief pilot of the 'Betty' which crashed into the sea, had survived!

In 1975, Kenji Yanagiya was interviewed in Japan. He was the only survivor at the end of the war of the six aircraft 'Zero' escort. Within three months, four of the escort pilots were dead. Having *failed in their duty* to protect Admiral Yamamoto, they were given ample opportunity to redeem themselves through glorious death!

Unaware of the controversy with the American pilots, Yanagiya stated that he saw a P-38 come in behind the lead bomber and shoot it down, verifying Rex Barber's account. Also that all of the six escorting 'Zeros' escaped unscathed.

In April 1988 Kenji Yanagiya was invited to the Admiral Nimitz Museum in Fredericksburg, Texas and shook hands with the remaining P-38 veterans including Rex Barber and John Mitchell, who planned and led the mission to perfection.

In conclusion regardless of who shot which aircraft down, each pilot played his part, and as Mitchell's wingman Julius Jacobson later remarked, it was Lanphier's initial turn into the escorting 'Zeros' which gave Barber time to attack the first bomber and 'deserves' lasting praise.

The Mitsubishi 'Betty' that carried Admiral Yamamoto on that fateful day still lies deep in the jungle of Bougainville Island. The remains have in fact been inspected by several aviation historians.

For the full, fascinating story, I thoroughly recommend the book *'Attack on Yamamoto'* by Carol V Glines.

Modelling the aircraft

Suitably inspired by this remarkable story, I decided to re-create history in model form. Research for me is half the fun with this hobby, and by chance I noticed colour profiles of Rex Barber's P-



Above: Lt Rex Barker's P-38G, 43-2204/147 'Miss Virginia' of the 339th FS based at Henderson Field, Guadalcanal, April 1943.
 Heading opposite: The three aircraft types involved in 'Operation Dillinger' - P-38G, Mitsubishi G4M1 'Betty' and A6M3 Model 32 'Zero'

38G used on the mission and Kenji Yanagiya's escort 'Zero' in Osprey's excellent series of books, *'Aircraft of the Aces'*. Best of all I came across a stunning painting titled 'Mission Accomplished' by Roy Grinnell which showed 'Miss Virginia' zooming past the Mitsubishi 'Betty' (323) carrying Admiral Yamamoto. Definitely impressed, I bought a print and (with a substantially lighter wallet!) started to look for suitable decals.

The Japanese aircraft's markings were basically white tail codes and

Hinomarus which proved no problem. However, the P-38 was a different matter, and I only acquired the right size, colour and style of 'Miss Virginia', thanks to the extensive spare decals of a fellow modeller. Satisfied I had everything it was time to cut some plastic.

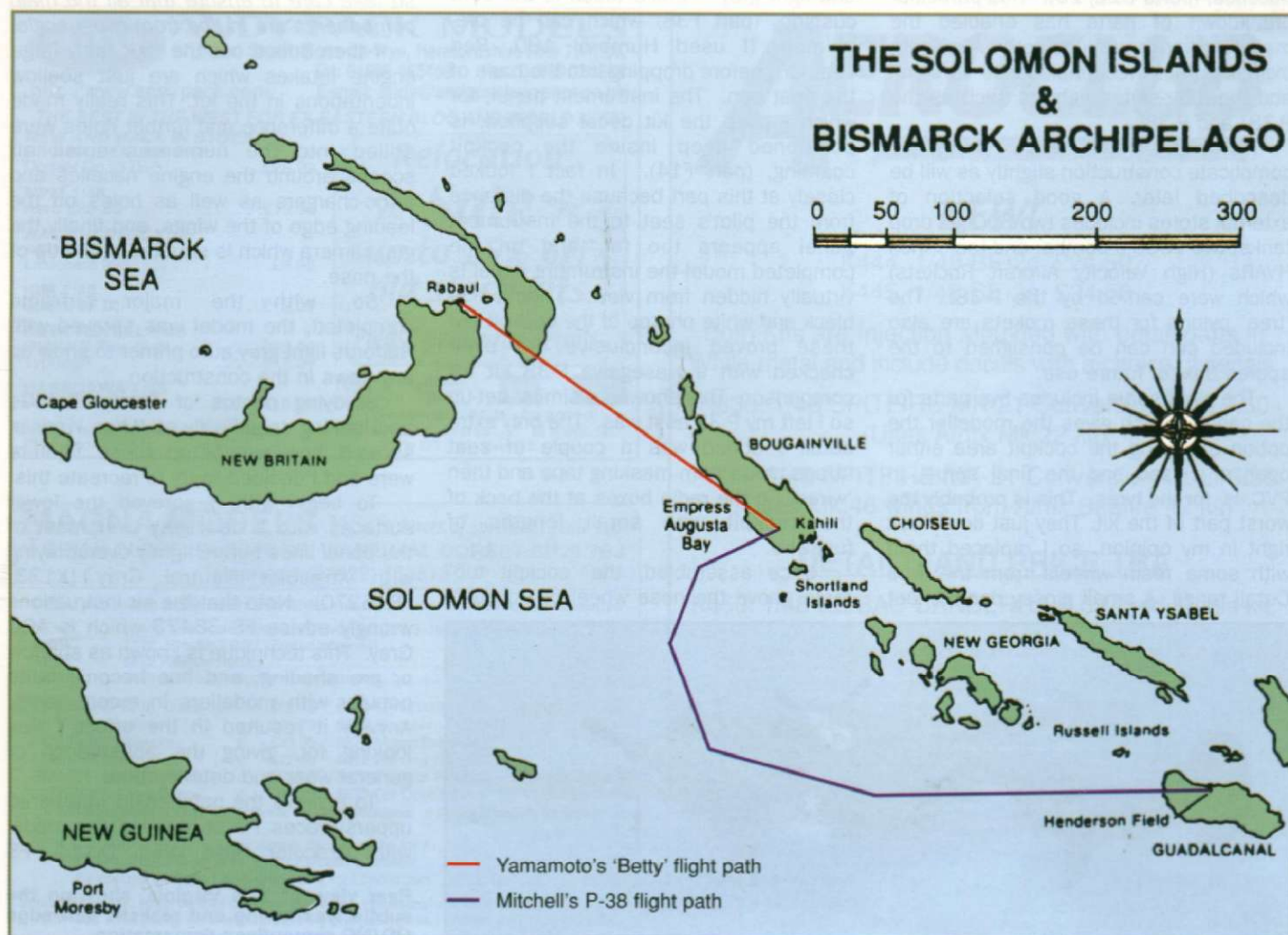
Rex Barber's P-38G

The first model I started was a P-38G-13 'Miss Virginia' as flown by Lt Rex Barber, from 339th Fighter Squadron, 13th Air Force. I had a 1:48 scale Academy/Minicraft Lockheed P-38E Lightning kit available, and after studying

the differences between the 'E' and the 'G' versions, I decided I could suitably modify the Academy model. The variations in kit form seem minimal and the main points I noted are as follows:-

On the P-38E - the top canopy opened sideways, the pitot tube was located under the nose, and usually no external fuel tanks or stores were carried.

On the P-38G - the canopy opened to the rear, the pitot tube was relocated under the port wing, the wings were stressed for 1000lb bombs and fuel tanks up to 300 gallons, and the Allison





Close-up of 'Miss Virginia's nose showing the style of lettering, the white individual aircraft i/d number and the small grey serial number on the nose tip.

engines were rated at 1325hp from 1150hp which powered the P-38E.

Reference to Squadron/Signal's excellent **'P-38 in Action'** is recommended and should make all the differences clear. Many P-38E Lightnings were in fact later re-engined and modified to 'G' standards.

The kit parts are moulded in light grey with nicely engraved panel lines on seven sprues. One of the sprues has two pieces for the front fuselage/nose area, (parts C9 and C10). Also moulded as separate parts are the lower engine nacelles, (parts D22/23). This particular breakdown of parts has enabled the manufacturer to produce several variants including photo reconnaissance versions and the later-series fighters such as the P-38J and P-38L.

However, these extra parts do complicate construction slightly as will be described later. A good selection of external stores includes two 300 gal drop tanks, two 1000lb bombs, and ten 5 inch HVARs (High Velocity Aircraft Rockets) which were carried by the P-38L. The 'tree' pylons for these rockets are also included and can be consigned to the spares box for future use.

The clear sprue includes five parts for the canopy which gives the modeller the option of having the cockpit area either open or closed and the final sprue, in PVC, is for the tyres. This is probably the worst part of the kit. They just don't look right in my opinion, so I replaced them with some resin wheels from the True Detail range. A small glossy decal sheet

for a rather plain marked USAAF machine completes the box contents.

Following the instructions, I started with the cockpit area. The floor, sidewalls and radio compartment which is positioned behind the pilots seat are best painted before assembling together. I used Xtracolor Interior Green (X117 FS34151) along with Tamiya Smoke, (X-19) which can be used as a wash to give some depth.

The control column, switches and various boxes were picked out in black and carefully dry-brushed in matt silver and light grey. A nice touch is the seat cushion, (part F38) which can be pre-painted, (I used Humbrol 180, Red Leather), before dropping into the base of the seat pan. The instrument panel, for which I used the kit decal supplied, is positioned deep inside the cockpit coaming, (part F14). In fact I looked closely at this part because the distance from the pilot's seat to the instrument panel appears too far, and on the completed model the instrument panel is virtually hidden from view. I looked at black and white photos of the cockpit but these proved inconclusive. I even checked with a Hasegawa P-38 kit for comparison. This showed a similar set-up so I left my P-38 as it was. The only extra detail I added was a couple of seat straps made from masking tape and then 'wired' up the radio boxes at the back of the cockpit with small lengths of fusewire.

Once assembled, the 'cockpit tub' rests above the nose wheel bay on part

A2 which actually forms most of the lower fuselage and lower wings as a one-piece item and attaches nicely to part A1 the upper wings and rear fuselage.

Moving away from the instruction sequence, (as I usually do!), I glued the two pieces that make up the front fuselage, (parts C9/C10) and the nosecone (part F18), not forgetting to add plenty of lead shot to prevent a *tailsitter*. It was here I encountered the first of my fit problems, and spent a lot of time filling, sanding and re-scribing the panel lines which had totally disappeared under the Milliput.

A technique I was shown and used successfully for scribing onto the front fuselage and nose area curves involved applying cutting tape, (similar to masking tape, but thicker), to shape and then scribe away using a sharp pin superglued to a wooden dowel - (*nice one Ralph*).

Fixing the main undercarriage bays together required more filler, as did installing them into each twin boom. I then proceeded to attach these twin booms and engines to the lower wings and guess what? More gaps to fill and sand and more scribing practice! At least part D1, the tailplane, slotted-in between the booms with minimal fuss.

It is worth pausing here just to emphasise that this is the critical point in the construction of all twin boom aircraft, so take care to ensure that all the main components are in line from every angle.

I then drilled out the four fairly large engine intakes which are just shallow indentations in the kit. This really made quite a difference and further holes were drilled into the numerous small air scoops around the engine nacelles and turbo-chargers as well as holes on the leading edge of the wings, and finally the gun camera which is situated at the tip of the nose.

So, with the major airframe completed, the model was sprayed with Halfords light grey auto primer to show up any flaws in the construction.

Studying photos of Pacific P-38Gs and looking specifically at 'Miss Virginia' showed how weathered these fighters were and I decided to try to recreate this.

To begin with, I sprayed the lower surfaces with a dark grey over most of the panel lines before lightly overspraying with Xtracolor Neutral Gray (X133, FS16270). Note that the kit instructions wrongly advise FS 36473 which is ADC Gray. This technique is known as shadow or pre shading, and has become quite popular with modellers in recent years. Anyway it resulted in the effect I was looking for, giving the appearance of general wear and deterioration.

To achieve the patched-up weathered uppersurfaces I first sprayed the model with Xtracolor Olive Drab, (X111, FS

Rear view of 'Miss Virginia' showing the subtle weathering and realistic soft-edge OD/NG camouflage demarcation.



14087), then sprayed the panel areas on the wings and the gun bay access covers in varying shades of dark and faded greens as well as light grey. Then, using oils such as Raw Umber applied as a wash into the panel lines and Yellow Ochre dry-brushed onto the leading edges of the wings, the painting of the main airframe was almost complete.

Applying decals to a model is one of the most satisfying aspects of the hobby for me, although in this case they had to be found first. This took some doing, but with a little help from a fellow modellers who gave me access to his extensive 'decals bank' and came up with the 'Miss Virginia' - (thanks Tim) - I eventually got everything I needed.

Before going any further it is worth remarking that 'Miss Virginia' was actually not the aircraft normally assigned to Rex Barber, (whose usual aircraft P-38G-13, 43-2187/white 110 'Diablo' had gone unserviceable), but was the mount usually flown by Lt Bob Petit. Even more interestingly, the two 'victory' markings on the nose of 'Miss Virginia' did belong to Rex Barber who shot down two 'Zeros' on 7 April, whilst the ship silhouette next to them was accredited to Bob Petit.

Back to the decals. The main items were sourced as follows: The US insignia came from AeroMaster sheet 48058 and the yellow tail numbers were from AeroMaster sheet 48090. Finding the right style and size for the white nose

numbers '147' proved a lot harder, but eventually turned up on an old Aerodecal sheet for F-4s!

Next, the 'Miss Virginia' decals were from two different kits. The yellow 'Miss' came from an AMT A-20 Havoc kit, whilst the yellow 'Virginia' came from two Revell B-17F kits, and luckily I knew a chap who had these kits and was willing to spare the decals. Even so, the two styles of lettering were not quite accurate or the same, so a little bit of hand-painting was also required.

The small grey serial numbers on both sides of the nose were added next, those on the port side partially covered by the ship victory mentioned earlier, which was fashioned out of tiny bits of black and white decal. Finally, Barber's two 'rising sun' victory markings completed the decal process.

All that was left to do now, was to complete all the routine small parts such as the propellers and undercarriage legs. To the latter I added brake lines from suitably shaped wire and then cut and filed the canopy side windows to make them appear in a slightly open state.

Note that the four main undercarriage doors are a very bad fit and I may have to re-shape and re-position them later, (they are also easily knocked off when handling the completed model). The sharp-eyed and knowledgeable amongst you may have spotted the aerial under the nose, which doesn't appear to have been fitted to this aircraft from photos that I have

seen. Of course, I only noticed this after the studio photos had been taken, following hand crafting one from some spare etch! Upon further checking my references it would seem that European-based P-38s had this installed whilst those in the Pacific did not.

One last point, regarding the drop tanks which in the kit are 165 gallons, but on the mission the load consisted of one 165 gallon tank and one 310 gallon tank. So far I have been unable to track one of the latter down and if any one out there can help, I would be grateful.

Finally, a touch more weathering over the markings with a coat of Johnsons Kleer to seal in the decals, and the model was complete.

In conclusion, I accept that by using an 'E' version I made things slightly more complicated, but it was simply a case of what was available at the time. Overall the quality and accuracy of the mouldings is excellent, the only criticism is the fit of some of the major pieces, which I think is caused by the breakdown of parts. However, thanks to Academy/Minicraft, with a little patience, a fine replica can result, and I can even look forward to making more P-38s from their range in the future.

Paul Lister

**In the next issue -
Part Two: Yamamoto's 'Betty'
and A6M3 'Zero' escort**

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MARKET PLACE



Revell/Monogram ProModeller

Dornier Do 217E-5

1:48 scale approx £27.00

The eagerly awaited Revell/Monogram Do 217E has finally arrived - and what a wonderful Christmas present it's going to make for so many 'quarter scale' modellers!

Moulded in a very easy to work with pale grey plastic, the standard of moulding is excellent, with a VERY FULL cockpit interior which will repay an evening or two's careful painting of all the radio boxes, throttle levers, instrument panel and myriad of dials. Literally all that is missing are the seat belts, (and crew figures - if you still like *that sort of thing* - which I do!), which can be added from one of the brass etch *Luftwaffe* seat belt sets.

Assembly is straightforward if somewhat 'involved', and I urge you to follow the instructions to the letter. I "knew better" of course and fitted the cockpit sidewall panels separately on to the fuselage halves, rather than first building the entire cockpit as a complete sub-part as instructed, and had resultant problems with fitting the instrument panel - my fault, but be warned!

The breakdown of some of the parts is quite unique - (and bears not a little resemblance to the Koster vacform Do 217 kit I understand - Roy Koster having being involved with the tooling of this kit too I believe) - with the fuselage being moulded in three parts, the top part having the upper surface inboard sections of the mainplanes and the entire horizontal tailplanes moulded integrally. The fuselage joins are prone to a little flexing until the glue sets, but eventually sand down without a trace of join lines.

The undersurfaces of the mainplanes and the upper-surface outboard sections are added separately and care must be taken with the upper-surface join line to avoid any

unsightly 'step'. Also the Revell/Monogram © logo will need sanding off from under the starboard tailplane!

The engine nacelles/main undercarriage bays, complete with integrally-moulded cowlings, when assembled simply 'slot into' the wing undersurface in a very neat way and are complete with boxed-in and detailed undercarriage bays. Personally, I would have preferred the engine cowlings themselves to have been separate one piece mouldings to avoid the awkward to erase join line - but the rear of the nacelles have an excellent thin scale effect.. I would also suggest fitting the exhaust manifolds, (parts 35 and 36), after painting which will mean removing the location tab and carefully sliding them into position, securing with superglue. The main undercarriage legs fix securely into the bays with good, strong positive locations, as does the tailwheel and all the undercarriage doors, and there are 'flats' moulded onto the mainwheels.

Care must be taken when fitting the side gun mountings which locate from inside the canopy, and might I suggest attaching them with Johnsons Kleer to avoid clouding the clear plastic. Might I also suggest that you ensure the two lateral, and single ventral, 7.9mm MG 15s are securely

fixed in place - I 'lost' one inside the canopy and had the devil of a job getting it back in to position!

It was with the armament that I slightly strayed away from the kit supplied parts and added a 20mm MG FF cannon in the nose glazing, (a Tommy Atkins white metal 'special'), as I was also building the model for a future modelling feature, so don't be deceived by the accompanying photo as there is no MG FF cannon supplied in the kit.

Construction up to the painting stage took about five evening's work - masking-out all the glazing took most of one of the five! - and the actual painting/decalling/weathering another three or four evenings.

Revell/Monogram suggest that the cockpit interior be painted RLM 66 Schwarzgrau, (instead of the usually suggested RLM Grau 02), and checking with the various *Luftwaffe* manuals reproduced in some of my references, I agree with them and dutifully painted my model's interior in a very dark grey, later highlighted with a lighter grey and finally sparingly dry-brushed with a 'hint' of dull aluminium to give an appearance of operational wear and tear.

The exterior colours are also a little controversial as Revell/Monogram advise the

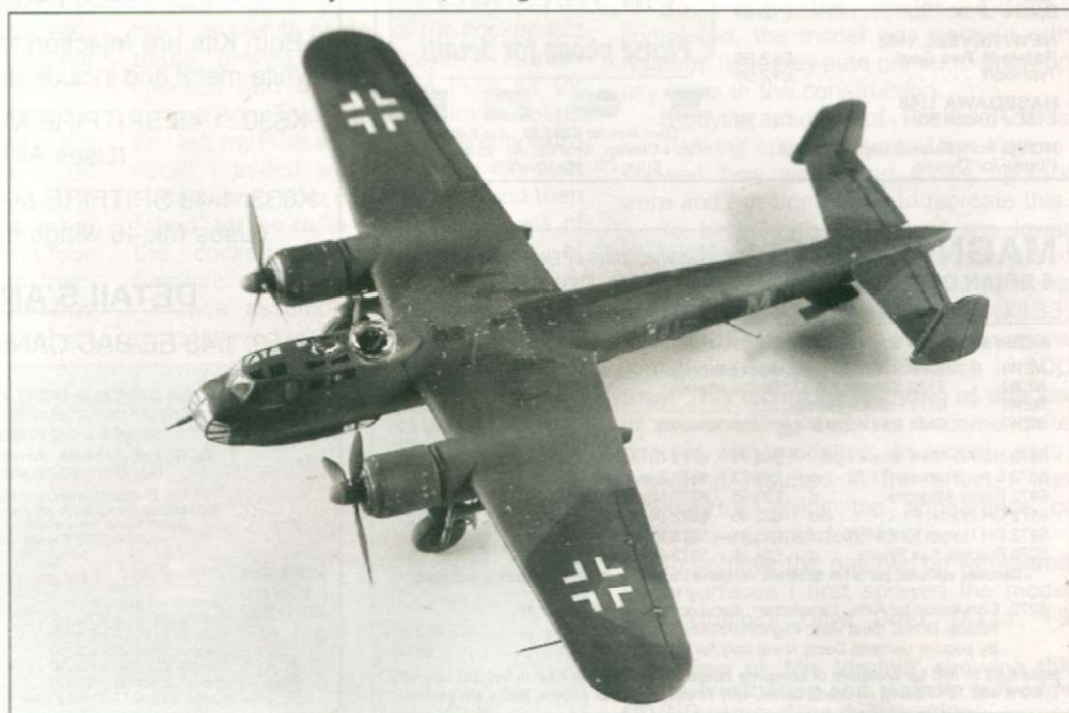
use of the 'maritime greens' RLM 72 and 73 for the standard Do 217 upper-surface scheme.

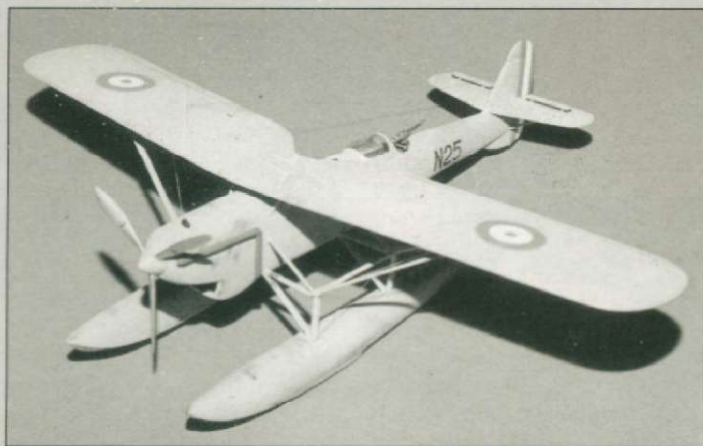
Despite finishing my model as a slightly earlier Do 217E-3 of 5./KG 2, (of which more in future issue of SAM), I did use some of the kit decals, which are lovely and thin and went on without any problems, responding well to Micro Set and Micro Sol. As Mike mentioned in 'The In Tray', the kit markings are for two Do 217E-5s of KG 100, both from II Gruppe, circa summer 1943, operating in the Bay of Biscay. The kit includes a very nice eight-part Hs 293 anti-ship missile together with a counterbalancing 600ltr drop tank and the appropriate racks with separate sway braces.

With the release of this kit, Revell/Monogram have cornered the market and produced the three main mid-World War Two *Luftwaffe* bomber types - (Do 217E, Ju 88A-4 and He 111H) - and I understand that there is already a conversion set available to convert the Do 217 into a solid-nosed night fighter or big glasshouse-fronted Do 217K.

This ProModeller kit is available in the UK from Hannants, the Revell Germany boxing won't be available in the UK until early spring 2001.

Neil Robinson





AVIATION USK

Dornier Do 22

1:72 scale £23.60 (\$24.95)

When the fledgling German Air Force was re-forming in the early 1930s there were few products of that country's aircraft industry which did not find their way into military service. One of these was the Dornier Do 22.

Originally designed and developed by Dornier's Swiss facility at Altenrhein, production was undertaken at the main Dornier factory in Freidrichshafen, with deliveries starting in 1938 - export orders having been obtained from Greece, Yugoslavia and Latvia.

The aircraft was of conventional construction, with a fabric covered metal structure and a parasol wing. With a crew of three, it was designed for general reconnaissance and light attack duties. First deliveries were of the float-plane version, but certainly some of the Greek machines had a spatted wheeled undercarriage fitted.

Aviation Usk has long been associated with kitting some of the aviation world's more esoteric offerings, and this is one no exception. The kit comes in their now familiar fairly soft grey plastic, with a minimum of flash, and good scribed surface detail. I particularly liked the treatment of the fabric covered fuselage longerons.

Construction follows the conventional pattern, with most of the cockpit interior parts made in well detailed resin. My sample was an early test shot, and I found that the cockpit floor was slightly too narrow. However, although this failing is still present in production kits, an extra sheet has been added to the kit instructions, giving advice as to how to overcome this, and also pointing out an error with the attachment points for some of the struts on the wing underside. The people at Aviation Usk are to be commended for this attention to detail.

Older modellers may be familiar with the 'Code of the Real Modeller' - one of the

rules therein being that, "When all else fails, read the instructions"!! This certainly holds good with this kit, and they also quote another rule - "Real Modellers use tube glue. This is absolutely essential with the complex strutting for this kit, and although it slows construction down somewhat, as you have to allow time for each set of struts to set thoroughly, it is the only way that construction can be safely completed. Superglue has not got the tensile strength to do the job.

Parts' fit, (apart from the cockpit floor mentioned earlier), is good overall, and although at first glance some of the struts look overly thick, once carefully trimmed and cleaned up, they work well. The hand-held machine guns in the ventral and aft cockpit positions are a little heavy and not very well detailed, and substitutes might usefully be found in the spares box.

Painting instructions are to be found on the back of the well printed box, and depict six machines, two each from the Yugoslav, Greek and Finnish air forces, the last two offerings with both wheels and floats. I am a little unsure as to whether the Greek or Yugoslav machines were delivered in a silver dope, or light grey finish as depicted on the box top, and it would have helped if more detail had been given for interior colours.

The decal sheet is well presented, with good crisp colour printing and excellent adhesion. There is also a bonus in the form of two codes for Greek PZL-24 fight-

ers, in both monotone and camouflaged finish, complete with red spider insignia for 23 *Mira*. These can be used to enhance the RPM kit.

Although not featured in the kit, there is a further intriguing marking possibility for this aircraft, as following the fall of Yugoslavia and Greece, some eight Do 22s were flown to Egypt, and served with 2 (Yugoslav) Sqn under British operational direction.

The kit does have some minor shortcomings though. The very prominent actuating arms are supplied as resin parts for the wing underside, and the mass aileron balances are missing. Equally, the observer's cockpit transparency is supplied as a vacuum-form, (with an unfortunate moulding dimple in the clear area), and the pilot's windscreen has to be scratchbuilt.

However, with a limited run kit of this nature, these are minor inconveniences. Overall accuracy is good, with the main dimensions coming very close to published figures, and the proportions look right.

This is not a kit for either the beginner or for those who want a quick result because of the complexity of the strutting, but it will repay careful work, and the resulting replica provides an interesting example of a machine which served on *both sides* in the air war over Europe.

Our thanks to the new team at Aviation Usk Nebraska for supplying the review kit, which should be available now.

Julian R B Edwards

Actulite

Actulite 'Vista' lamp

£112.95 plus £8.50 delivery within the U.K.

It must be a fact of life that almost every modeller, particularly during the winter months, models under artificial light. It is also a fact that most living rooms do not have lighting which conforms to the lighting standard suggested under the Illuminating Engineering Society (IES) code of practice.

Having said that, many modellers do try to provide themselves with fluorescent lighting, or 'daylight' type bulbs, most of which have their drawbacks, either with light output, or colour rendering.

Over the last few months I have been trying a new solution, and have to say that the results are very promising. The Aura Daylight lamp provides a polarised white light, which is very closely matched for colour value and intensity to daylight.

The lamp itself is mounted on an anglepoise type arm, which can be fixed in turn to either a weighted base for tabletop use, or clamped to a vertical surface. The nature of the light is such that it enhances contrast on the workpiece and surrounding surface, and does not produce any glare. Indeed you can look straight at the lamp without discomfort. The lamp is rated for 20,000 hours, and takes only some 11

watts, so will last a long time, but should you ever need to change the tubes this is easily done by removing the polarising filters with the Allen key provided with the lamp.

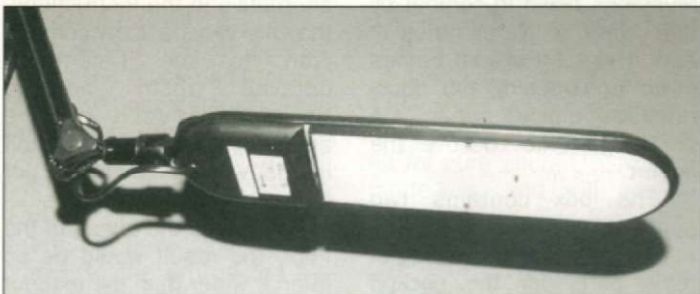
Apart from providing good spot illumination over my workbench, I have been particularly struck by the infinitely better quality of colour rendition that I am now achieving in colour matching and interpretation.

No more waiting for daylight now, I can burn the midnight oil with confidence that colour judgements will be accurate.

This lamp is certainly not cheap, but how much do you value your eyesight?

Available from Aura Corporation Ltd., Unit 5, 30 Sedgley Road, Penn Common, Wolverhampton, WV4 5LE. Web: www.actulite.com

Julian R B Edwards





P-51D and Bf 109E-3

1:72 scale £9.99 each

Two of the latest kits to emerge from the recent Tamiya 1:72 scale series are the NA P-51D Mustang and the Messerschmitt Bf 109E-3.

Both kits come in a stout 'tray and lid' type box with a photograph of the finished model on the lid. The sealed polythene bag contains a superbly moulded single sprue of grey parts, and includes a loose sheet of decals and the instruction sheet. The transparencies are in their own small bag.

Upon close inspection it becomes apparent that they are revised and scaled down versions of Tamiya's earlier 1:48 scale products. The parts have a mixture of raised and engraved detail as appropriate that would put many larger scale models to shame.

Both models also offer optional parts - in the P-51 there are shrouded or unshrouded exhausts and the choice of standard or Dallas canopies; and the Bf 109 contains everything to build an E-4/7 (except the correct style of canopy for these later variants).

There are three decal options offered in the P-51.



John C Meyer's 'Petie 2nd' of the 352nd FG, 487th FS; Leonard K Carson's, 'Nooky Booky IV' of the 357th FG ,362FS, and Urban L Drew's E2•S of the 361st FG, 375th FS which is the one I chose to model.

In the Bf 109E there are also three decal options. *Gruppenkommandeur* Adolf Galland, of III/JG 26 August 1940, which is depicted in my model; White 5 of 4./JG 77 September 1940, and *Gruppenadjutant* of II/JG 54 autumn 1940.

The instructions are in the standard Tamiya format, moving through construction in logical stages, the only mistake I noticed was some confusion over the painting of the cockpit in the P-51, so check your references.

Needless to say both these models virtually build themselves, the only fit problem I had was that the cockpit floor in the P-51 is about 2mm too narrow, but this was remedied with some Milliput.

Both models measure up extremely well to scale plans, and the level of detail on both is excellent, with both featuring full cockpit interiors, well detailed undercarriage and treaded tyres. The Bf 109 has the front of the engine block visible through the vent holes in the top of the engine cowl - the vent holes benefit greatly from having the back of the part thinned to a more realistic thickness.

The decals are well printed and are in good register, however, I found the white in the P-51 decals a little

translucent, and would recommend the use of aftermarket invasion stripes and national insignia. I also found both sets of decals too thick.

All the decals reacted well with, and benefited from, the use of Micro Sol and Set. The painting and marking instructions are very good, but one thing I would have liked to see is the RLM colour references for the Bf 109.

Both models were very enjoyable to make and they offer superb detail in 1:72 scale. However, at £10.00 each I would have expected to have seen better decals as the whole package becomes very expensive if you wish to replace them.

Let's hope that Tamiya now 'downscale' the Meteor!

Matthew Coy



NA P-51/F-6A Mustang

1:72 scale £7.50

The North American F-6A was a photo reconnaissance version of the P-51 fighter modified with a bulged rear window to allow the installation of a camera immediately behind the pilot. F-6As of the 154th Observation Squadron had the honour of being the first Mustangs flown in combat by the USAAF in North Africa in April 1943. MPM's kit comes in an 'end-opening' box decorated with a picture of an F-6A bouncing an Me 109 over the desert.

The box contains two sprues of grey plastic and one of clear together with a bag of resin parts for the cockpit

interior, wheels and camera installation. Propagteam decals are provided for three options including F-6As from the 154th Observation Squadron, 111th Tactical Reconnaissance Squadron, and an RAF Mustang Mk IA. Although the parts are not numbered on the sprues, a 'map' is included with part numbers for both plastic and resin, which are referenced in the instructions.

Construction begins with the cockpit interior. Although plastic parts are included on the sprues and offered as alternative in the instructions, they are very basic by comparison to the beautifully detailed resin cockpit. However, it soon became apparent that if the cockpit interior was assembled as per instructions, with the side-walls fixed to the edges of the floor, the result would be an interior wider than the exterior

dimensions of the fuselage! To get around this I sanded down the insides of the fuselage halves and then glued the resin sidewalls to them so that the cockpit floor could then be fixed to the bottom of the sidewalls when the fuselage halves were glued together and before the wing was attached. Unfortunately there is just too much resin to fit the space available.

Removing more plastic from the insides of the fuselage halves would probably help. Much time was spent trimming plastic and resin with repeated test fitting before everything, (or most of it anyway!), was installed.

Before joining the fuselage halves, the exhaust stubs are installed from inside. The 154th Squadron version needs a hole to be



made in the fuselage underside for a clear part I assume to be a camera port. The instructions call for the installation of the tailwheel when the fuselage halves are joined, but I left this until later, preferring to add the undercarriage parts and aeris after painting.

The wing assembly consists of a one piece lower and two part upper. Location pins and holes are provided but are not very positive and most were lost as I sanded all the mating surfaces to minimise any joint lines. This done the parts went together very well and required no more filler than a mainstream kit. The ventral air scoop was added next and a reasonable amount of sanding is required here to blend this into the

fuselage. However, the plastic is soft enough for this not to be too much of a chore. The propeller assembly consists of a two part spinner and three separate propeller blades. The locating pins on the blades are almost non-existent and care is needed to align them correctly.

The canopy comes in two parts with the rear left camera window moulded separately to allow a decent representation of its bulged shape. To get the best possible fit I glued the canopy together in situ on the fuselage, using clamps and superglue, effectively forcing it all into alignment. Coating the non-mating surfaces of clear parts with Johnsons Kleer before assembly helps to prevent the frosting which some-

times occurs when superglue is used. It also fills any small surface scratches improving clarity.

I decided to finish the model as the 111th Tactical Reconnaissance Squadron machine featured on the box top. Rather than use the decals provided, the yellow wing identification bands were painted and masked after which Olive Drab and Neutral Gray completed the scheme. (The instructions quote both Humbrol and FS paint numbers).

Decals followed a coat of Johnsons Kleer. But be warned - Propagteam decals are difficult to move once on the model, and as I never seem to get it right first time, I decided to replace the national insignia with some

from an old Superscale sheet. With the decals applied the undercarriage, 20mm cannon, aeris and pitot were added.

The kit builds into something of a hybrid Mustang. The wing has the angled leading edge fillets of the P-51D, whilst the carburettor and cooling air intakes are more A-36/P-51A than P-51/F-6A, (the carburettor intake fairing should be straight and narrow, and the ventral radiator scoop lacks any representation of the distinctive hinged intake and exit ramps). However, the four 20mm cannon protruding from the wing and the bulged camera window say F-6A.

Despite a few inaccuracies, the finished model stands up well alongside later Marks from the mainstream kit manufacturers.



AH-1W SUPER COBRA

1:35 scale £TBA

Italeri's latest helicopter offering is in the 'AFV' 1:35 scale. The Super Cobra is an evolution of the AH-1T Sea Cobra currently in service with the US Marines. The AH-1W's features include more powerful engines, a re-enforced fuselage, and its weapons have been updated to include laser-guided Hellfire anti-tank missiles.

This model's mouldings are made in the USA and Italy, and boxed by Italeri. The kit is moulded in 134 medium grey plastic parts and 6 transparencies - well packed and easily identified - and had very little flash on them except for the machine guns that needed very careful trimming. The painting instructions were clear with Modelmaster and FS paint colours listed.

Construction begins in the cockpit area, and although the mouldings were quite detailed it would perhaps have been better for decals to have been supplied for the instrument panel, (as with Italeri's new 1:48 EF 2000 Typhoon). After the cockpit comes the fitting of the two fuselage halves along with the M-197 turret gun, rotor, cockpit, wing and the obligatory 20 grammes in the nose to prevent tail sitting.



A second pair of hands would be useful at this point and the patience of Job! Space is at premium in the nose and I put some of the 20 gms under the cockpit floor.

Three alternatives are offered - with different panels being fixed 'open' or 'closed' to display one of the engines and baggage holds. The engine is detailed but most modellers will want to improve on what's offered.

The cockpit transparencies were fitted next. Unfortunately a couple showed large and deep sprue attachment marks which were difficult to remove.

After attaching the stub wings, the weapons were assembled. A choice had to be made between 8 x AGM 114 missiles and 2 x rocket launchers. A rapid-fire gun was attached and I also went for the missiles. All the weapons were painted and decal before fixing in place.

The construction was then

finished off with the attaching of the skids, rotor blades and various smaller items; the transparencies given a coat of Kleer and fixed in place.

The model was then masked-up and sprayed with a coat of Halfords Light Grey Primer.

On applying the Pale Green FS 34227/Humbrol 120 (Matt Light Green), I broke into a cold sweat, it looked so wrong! I had carefully cross-referenced both sets of numbers given, and had used the correct shade - used by the US Marines in the Persian Gulf in 1987 - but it looked more like the colour of a new Volkswagen Polo!

I carried on regardless, adding the Black and Medium Gray, and hoping that the Pale Green would tone-down when varnished. However, I'm still not happy, it still looks too light and bright and doesn't seem to bear any resemblance to the artwork on the

box.

Even checking in a back issue of SAM, (Nov 1997), on the camouflage and markings of the Cobra didn't produce an answer, so if any kind person out there can shed light on this little problem, I would be forever in your debt - and also be able to get full nights sleep!

A word of warning - make sure you get the camouflage pattern 'spot-on' around the tail, because the decals are split colours and they contrast match with the paint colour underneath. The decals were applied without trouble and the whole model finished off with a coat of Humbrol Matt Cote.

Primarily aimed at the 1:35 scale armour modeller I suppose, this is still a great kit for pure aircraft/helicopter modellers, and will provide hours of modelling fun, whatever your skill level.

Dave Harrington



READERS' WRITE

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

Plog's Panther

Dear Neil,

The otherwise excellent article on Korean War Panthers in the December issue perpetuated a long-standing error about the 'Yak-killer' flown by Lieutenant Plog.

In July 1950 Lt. Plog and VF-51 were flying the F9F-3 as part of Air Wing 5 on *USS Valley Forge*. Jon Freeman's illustration shows an F9F-2 from VF-51's second Korean deployment, from June 1951 to March 1952 on the *Essex*. VF-51 flew a third Korean deployment with F9F-5's from November 1952 to June 1953 on the *Valley Forge*.

The error arises because, in black and white photos, the VF-51 insignia, a star and eagle superimposed on concentric circles, looks very much like the small North Korean insignia used occasionally as a 'kill' marking. (Plain red stars or red stars on white rectangles were much more common.) All Korean War VF-51 Panthers carried this squadron marking, and publications over the years have misidentified many VF-51 F9F-2s as Plog's aircraft - eg Osprey's 'Korean War Aces' series, 'Wings of Fame', and Squadron Signal, (twice).

I corresponded with Len Plog, (a retired Lieutenant Commander), in 1996, and he was kind enough to check his log book to determine which aircraft he flew on 3 July 1950. It was Bureau Number 123071, 109/S. A photo taken a week later, (reproduced below), shows the VF-51 insignia above the 'E' to the rear of the national insignia, but no 'kill' marking. According to L/Cdr Plog, no 'kill' markings were applied to either 109/S, or to the Panther flown by his wingman, Ensign Eugene Brown, who also shot down a Yak-9 that day.

The only source for a VF-51 insignia small enough for a 1:72 scale Panther is the sheet which comes with the Siga FJ-1 Fury. The F9F-3 was externally identical to the F9F-2, except that it carried no external ordnance racks. The Allison J-33 powered F9F-3 was so underpowered that it couldn't carry bombs or rockets, and all of VF-51's missions during the first deployment were limited to strafing. In 1:48 there are VF-51 insignias on the old ESCI Kingfisher/Duck sheet (Number 47).

James BurrIDGE
via e-mail

Battle over Bridlington Bay

Dear Neil,

With reference to your article in the September issue of SAM. I have been engaged on a history of 73 Sqn for many years and there are one or two points in the article that I feel merit bringing to your attention.

No 73 was not, "scrambled from Church Fenton". The six aircraft (of A Flight) involved, were on detachment to Leconfield where 616 Sqn was based. They certainly did not orbit either base for its protection - both squadrons were vectored straight out to sea to meet the incoming raid.

The pilot in the air-to-air of the Hurricane P3110, TP•G, on p411, (reproduced below), was not "F/Sgt John Griffiths" but Sgt John J Griffin, who claimed a 'cert'. The photograph was taken by P/O Donald Scott, (who also claimed a 'cert' and a 'damaged'), through the canopy of his Hurricane TO•J. He is still with us, amongst the rapidly-diminishing 'Few', living at Helensburgh.

Incidentally, the 'Munich' codes were promulgated in April 1939, and started appearing on the aircraft in the squadrons in early May. They were all changed at the very start of the war (No 73 went from HV to TP), although there were differences in the speed with which the various units carried out the change.

Don Minterne
Dorchester
Dorset



Musical rigging!

Dear Neil,

In response to Hugh Beyts' article detailing methods of rigging biplanes, I am writing with a further method that I have used now for several years. I use old guitar strings, the top E string being 9, 10 or 11 thou thickness to represent the rigging.

This scales to approximately 75% in 1:72 scale, or 50% in 1:48 scale, and so even when painted does not appear overlarge. The wire also has the advantage of appearing taut even when loosely fitted. Used strings are straightened by virtue of being under tensions when strung and retain this once cut into sections.

I drill small holes at the wing and fuselage location points of the rigging and cut a length of wire slightly overlength. The wire can then be 'sprung' into position and secured with either a small application of PVA glue or paint. Being steel, the wire is best primed with a spray, such as one of the popular Halfords sprays.

Paul G. Gilson
Coleford
Somerset

Kfir 'kill'

Dear Neil,

Congratulations to Ray Ball on the Israeli Air Force Part 3 feature in the March 2000 issue of SAM, (Vol 22/1), but may I make a couple of observations regarding the feature?

Ray states that the Kfir kill in 1979 is the only Kfir kill. That is not strictly correct. It is the only *Israeli* Kfir kill. In 1995, Capt Mata of the Ecuadorian Air Force shot down a Peruvian A-37. The aircraft, '905', has been represented by Aztec, (1:72 and 1:48 scales), IsraDecal (1:72 and 1:48 scales) and Albatros in 1:32 scale.

Secondly, Ray also states that the deep spine on the Israeli F-16D is unique to the IAF. In 1994, Singapore ordered a batch of the latest F-16s, and when the first aircraft was rolled out, it featured a deep spine. Some of these aircraft are based at Luke AFB, Arizona, in US markings whilst others have been shipped to Singapore. Of course, whenever anyone asked what is inside the spine, the answer is a coy, 'extra avionics'.

Jason T Floyd
via e-mail

Molders' '109Es

Dear Neil,

Can any of your readers help me to track down the colour schemes and markings of Werner Molders' various Bf 109E aircraft? I am in the process of building Hasegawa's 1:32 scale Bf 109E and would like as much information as possible about the above pilot's aircraft colours and markings.

Jim paton
via e-mail

If any reader can help, please reply to Jim direct at:
e-mail address <jamesstewart@paton3.freemove.co.uk>

Schneider Trophy Questions

Dear Neil,

I am trying to locate scale drawings and colour schemes of two aircraft that participated in Schneider Trophy Races.

The Navy-Wright NW 2 of 1923 at Cowes, England and the Kirkham-Williams Racer of the 1927 Venice, Italy Race.

Are any of your readers able to help me in anyway?

May I take the opportunity to congratulate you on a well-balanced and interesting magazine that I have only subscribed to for the past two years, and now wouldn't be without it.

J. W. Perrin
9 Glendale Avenue
Hartlepool TS26 9QE

Maritime Greens?

Dear Neil,

I was particularly interested in Andrew Armstrong's article about V/KG 40's Ju 88Cs operating over the Bay of Biscay (in Vol 22/10, December 2000), but it was Harry Greenwood's letter, (in the same issue), on the same subject that has prompted my response.

In Andrew's article and Harry's letter, they both state that the initial equipment aircraft were finished in RLM 72 and RLM 73 - the maritime greens. My question is, why?

I know the official *Luftwaffe* scheme for maritime aircraft was RLM 72/73/65, but surely that was for machines originally designed and built as maritime aircraft, not for aircraft that were originally designed and built as bombers, or in the case of the Ju 88Cs, as long-range heavy fighters - *Zerstörers*/Night Fighters.

I have a few suggestions why KG 40's Ju 88Cs were not finished in the 72/73 maritime greens. Firstly, the C versions were built on the same production runs as the bomber versions. It was, in terms of production, a relatively simple matter to make one aircraft a 'fighter', and another a 'bomber', therefore I would suggest they were all painted in the then standard day bomber scheme of 70/71/65. Also, Junkers were not a traditional supplier of maritime aircraft, (unlike Dornier or Blohm und Voss for example), so they would have no real reason to hold stocks of 72/73.

Secondly, the *Luftwaffe* never had enough Ju 88s of any version to satisfy its needs. In fact its appetite for bombers was such that the *Zerstörer* versions were always in very short supply indeed. To that end, any operational unit equipped with the fighter version is going to be under extreme pressure to keep what few assets they have serviceable, which brings me to my third point.

I have lived my entire life by the sea. I am also a keen offshore sailor, and in the course of my work have spent many, many, long hours staring out to sea from aircraft. I've noticed that the sea takes on many colours, depending upon its depth; what particles are suspended in it, (such as sand or pollution!); the colour of the sky; whether the sun is shining, and the full range of all the various weather conditions. The sea can be any colour from brown to black, through blue, grey and green. My point is, that one dark green colour scheme would serve just well as another. In other words 70/71/65 would work just as well as 72/73/65!

What I am saying is that KG 40, a unit under extreme pressure from the German High Command to prevent U-Boat losses to marauding allied aircraft, would be more concerned about keeping whatever machines they had serviceable, than whether they were the 'correct' shade of green! It takes days to paint an aeroplane, days that could be better spent undertaking its primary job.

Andrew and Harry's interpretation of Ju 88C-6, F8+RY's colour scheme, is entirely reasonable, indeed, I believe that Andrew is correct in his assertion that all Ju 88s were delivered in overall *Hellgrau* 76 from about the middle of 1943. I can't imagine that KG 40 would have gone to the trouble of a wholesale re-paint of their aircraft to make them conform to a particular directive - just sufficient camouflage to allow their aircraft to do their job and no more!?!?

I know we'd all like to believe that the *Luftwaffe* adhered religiously to the schemes and orders issued by the RLM, but examples are legion of this not being so - the *Luftwaffe* was far more interested in meeting its operational obligations. Niceties such as conforming to the latest RLM edict would just have to wait, or indeed never happen - just look how long it took the USAF to change over to the Tan and Greens scheme in Vietnam!

So, what does all this mean? It all comes back to the fact that there's nothing better than a good, preferably colour, photograph of the aircraft you're modelling that conforms totally to the pot of paint that was used to paint it in the first place. Unless there's an un-opened hangar at Bordeaux-Mérignac that has a couple of examples of KG 40's aircraft in both schemes, I guess this one's going to remain unsolved! Isn't modelling wonderful!?!?

Jim Wherry
Bitterne park
Southampton

Black Thursday to Phoenix Rising?

Dear Neil,

Raison de etre

My 'inspiration' in compiling this letter to SAM comes about through a most unfortunate incident caused by a sudden house fire at my home. In consequence, may I draw to the attention of fellow modellers, the potential losses that can be incurred as a result of a domestic tragedy, (or through any other destructive source).

Background

For the passed 24 years I have enjoyed the use of my own self-contained hobby room under the main portion of the house. During that time, I have built many aircraft kits, and also have, (or maybe had), an extensive collection of various aircraft kits from 1:72 to 1:28 scales, (including some rare examples). There were also others still under construction. Also over the years, I have collected various reference books, and SAM and Airfix magazines, (amongst various other soft-cover publications). Additional materials included various accessories, tools, paints, airbrushes, decals etc. This 'hallowed' space was also shared with an extensive collection of stamps, a double base, violin, TV, radio-cassette player, furnishings, and more recently, study books, folders, photo albums, noted and assignments in relation to horticulture and natural resource studies.

Analysis

Having had the exclusive use of one's own den has provided a therapeutic retreat. But, with so many more eggs filling a 'shrinking basket', there came a day when 'it turned and bit' as fire broke out whilst I was outside on 18 November 1999. (I had not been stretching sprue that day).

Injuries and Damage

I have recently returned home, (11. 12. 99) from the Burns Unit of the Royal Adelaide Hospital, and it is time to start on damage and loss assessment, via the insurance company, then to put the contents section of the policy to the test. A brief glance into this severely affected room, now tells a more devastating story that at the point in time I was prevented from making any further rescue attempts by the fire service that day. Although a hastily connected garden hose had enabled me to initially douse the flames, the smoke was continuous, although fortunately not ingested. Continuous expanding heat caused all the latter damage. (I did not realise that in the process, I had sustained bad burns on my hands).

Overview

Even before the in-depth sorting gets underway, it is clear that

the stamp collection has gone, along with a number of models and kits, paints, accessories, display items and most magazine, plus severe structural, broken glass and furnishing damage. The mess reeks of foul-smelling smoke and a number of hardback books are limp and smutty. The musical instruments were rescued from the fire, but the double base requires extensive repairs around the scroll and fingerboard.

Warning Devices

There was one smoke alarm in the house, which although functional, was not effective until the smoke had started to filter upward to its level. (Now two further devices have been fitted, with a fourth to follow up after renovations. A least one fire extinguisher will be purchased).

Effects to Family

The repercussions from this incident have gone far beyond the hobby room in the form of smoke and other damage by rendering the house temporarily uninhabitable for my wife and daughter. This continued until cleaners, decorators, carpenters and carpet cleaners, (arranged by the insurance company), had made good, during the time I was in hospital. (All this in the upper part of the house).

My room still needs clearing, with the sorting and separating of surviving and damaged items, and then the repairs and re-decorating can begin.

Future

In due course, I trust that my room will be renovated to a satisfactory standard and that some progress will be made regarding compensation over losses. However, one can never be fully compensated for hours of devotion spent on models now destroyed, and the stamp collection only covered by a nominal amount. Will I continue as before, when all this is put right? I'd like to think so, although I do not expect that I will have anything ready in time for the annual model show and competitions of October/November in Adelaide this year.

Recommendations

As a consequence to my unfortunate experience, I recommend that all serious modellers keep accurate records of all their revered possessions, (in a protected place), and that smoke alarms are installed at each level or extremities throughout a dwelling. Also invest in a fire extinguisher or two. List specific items of higher values for contents insurance cover, and also list combined values of a number of smaller items, which form a group, and are not necessarily categorised simply as 'hobby' items.

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Once upon a time when we were first married - (so you can tell how long ago *that* was) - it was the done thing to have friends, and indeed sometimes strangers, to the house for increasingly exotic meals (ie no gravy!!). Several publishers of the day, knowing a bandwagon when it ran over their collective feet, produced several magazines to help the aspiring cook, and one at least of these, (whose name escapes me - which is probably for the best), came as a 'part work', the first I think that I'd come across. We dutifully subscribed (for a while), enclosing successive issues in the free binder, and no doubt referring to it from time to time and enjoying the tasting.

However, the vagaries of memory being what they are, what I remember is not the unforgettable taste of something that had involved slaving over a hot stove, but some critics rather *sniffy* description of the recipe collection as, "the world's clumsiest cookbook".

This is one of those expressions that has survived in The Family Phrase Book, and has recently been dusted off because of the accretion on my shelves of the World Aircraft Information Files - the successor, (spiritually at least), to 'Warplane' and 'Airplane', but which will no doubt prove in the end more informative than either, not least because its contents cover more than just individual aircraft.

Issue One, (doubtless with some splendid offer which has melted in to the mists of time), arrived at a relatively hectic period of my family life when we were getting ready to move house, so that at the time of writing, as number 150 has been left in my designated

folder it must mean that we are coming up to three years since the first silver-backed binder was placed carefully on 'an about-to-be-dismantled' bookshelf, and now there are ten of them nestling at the far end of my workshop.

The trouble is that the last three of them are fairly full of parts that have yet to be dismantled in to their component sections and allocated to those binders that are full of Airlines of the World, or the Aviation Hall of Fame, never mind the four or more that are already devoted to accounts of individual aircraft types which range from single pages for some, to as many as fifteen or twenty for such as the Spitfire or Me 109 (and I'm *still* waiting for the Hunter).

The prospect of the publishing of the parts stretching out until the crack of doom is beginning to seem a possibility, raising the questions of whether I shall see it through to its conclusion - (if there is indeed a conclusion) - and how I'm going to accommodate all the binders if I ever get that far!?

The publishers were kind, and bold, enough to publish an index in the first or second issue, but the different items are referred to by file number - of which there are over a thousand - rather than page. From their point of view, this is very sensible, as it does provide the possibility of updating earlier entries during the course of publication, and adding extra pages to in-service aircraft if new roles or colours, or even variants, occur.

Space for the binders - 20? 25? 30? - can of course always be created by disposing of material already on the shelves. (I have reluctantly come to the conclusion that the provision of more shelves is not possible in a room of which some areas already bear a passing resemblance to a small maze). Disposal of the two earlier part-works already mentioned, may help to give a metre or so, but I have this horror of shredding - or worse, consigning to the flames or the local recycling facility - *anything* written, and I'm not sure that there will be a market for them at one of the very useful Air Enthusiasts Fairs, a table at which is my usual conduit for 'the no longer wanted'.

Until the whole batch of files is

complete, not least because of the possibility of additions to the parts already published, it is difficult to identify totally what other printed material the files can replace as a reference. Should I clear, for example, the shelf of the Ian Allen Modern Combat Aircraft series published in the 1980s, or all those Squadron/Signal 'In Action' titles that I found myself collecting after an incautious purchase of the early example on the Crusader - (bought at a model shop in Yeovil because the price was reduced)?

However, just as we've stopped asking each other, "But where are we going to put it?" when my wife and I come back from the local antiques fair with some desirable oddity protruding from the top of one of our *rag tops*, I shall no doubt manage to find an extra centimetre or ten when the time comes.

In the meantime I am looking forward to a little gentle post-festivities therapy, when I can spread the pages of the fifty-seven pending parts in growing heaps on the living room floor, before trapping them in the jaws of their relevant binder, and maybe even read the odd page or two on something a little unfamiliar while it is in progress. By the end of the day, (or two), I shall have convinced myself that I'm at last starting to be organised - but don't worry, that'll wear off, just as soon as I start to look for that kit that I know I put somewhere safe.....!

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Fairey Firefly

The publishers apologise for the delays in the production of the Fairey Firefly. The reason is that pictures ordered from the FAA Museum at the beginning of November have so far not been sent. Without them the book cannot be printed. Meanwhile the Hawker Sea Hawk by Tony Buttler has been completed and will be ready for distribution within the next few days. Orders can be accepted at a retail price of £9.50 each. Orders already submitted for the Firefly will be sent as soon as possible.

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