

Kit Number TM109

1/72 CAC CA-12 BOOMERANG

The overwhelming sweep down through S.E.Asia and onto the very doorstep of Australasia by the Japanese in late 1941 early 1942 caught the Australian Government without any suitable modern fighter types to counter the clear threat posed by superior Japanese aircraft. Neither the Americans nor the British were in a position to supply the type of fighters that were required. Fortunately, a small group of designers at the Commonwealth Aircraft Corporation (CAC) had anticipated this situation and, within three days of the start of hostilities, had prepared preliminary sketches of their proposed new fighter. For nearly three years CAC had been producing the Wirraway trainer, a local derivative of the NA-33, along with licensed production of the Beaufort bomber. It was obvious to the CAC team that there was simply not enough time to design a new interceptor from scratch. Therefore it was necessary to merge together an available engine, airframe and armament to meet the requirement for a fast, manoeuvrable fighter, safe to fly and a good gun platform. The engine, a 14-cylinder P&W Twin Wasp, came from the Beaufort and much of the basic airframe came from the Wirraway. This greatly eased the design and construction of what was to become Australia's first locally-designed fighter. Official approval for the design go-ahead was given on December 21 1941 and, a mere four months later, the first CA-12 Boomerang took to the skies. Performance in all areas either met or exceeded expectations - a remarkable achievement for an aircraft conceived only weeks before! The RAAF now had a fighter that could compete on comparable terms with most of the aircraft then in Japanese service in the S.W.Pacific theatre.

The 250 Boomerangs built were split into three major variants - 150 CA-12s, 95 CA-13s and 50 CA-19s. The CA-12 was initially fitted with a spinner on its prop but cracking in the backing plate dictated its removal until the problem could be solved. Production CA-13s and CA-19s were all fitted with the new spinners. The most obvious difference between the CA-12 and the later CA-13/19 variants was the exhaust stack, this being a round tube on the CA-12 but changed to a Beaufighter-style 'Christmas tree' flame—dampening exhaust from the CA-13 onwards. The primary difference between the CA-13 and CA-19 was the installation of a camera in the belly of the CA-19. A belly fuel tank was designed for the CA-12 but was usually, albeit infrequently, carried on later variants.

In the short period between conception and delivery from the production line, the strategic situation that generated the need for the Boomerang was altered by deliveries of Spitfires, P-40s and P-39s that were rushed through. The first operational service involved standing patrols in the northernmost tip of Australia and southern New Guinea. As more aircraft were produced, these were allocated to home defence squadrons in West Australia and the Northern Territory to guard against what was seen as the real possibility of a carrier-borne invasion. After the threat of invasion receded, a number of Boomerangs were kept in Australia for home defence and night interception duties.

The Boomerang was never put to the test for its original purpose but, in the jungles of New Guinea, the Solomons and Borneo, it found a niche that perfectly suited its firepower, rugged construction and speed - ground attack and army cooperation. Boomerangs normally operated in a team with Wirraways and P-40s, providing ground-marking and fire suppression, while the Wirraways carried out low-level reconnaissance and light bombing. Another major job, involving 5 Sqn, was escorting RNZAF Corsairs on raids on Bouganville where they strafed and smoke-bombed targets before calling in the Corsairs to finish the job. The skill and courage of Boomerang pilots became legendary and their constant low-level strafing had a devastating effect on enemy morale while at the same time giving considerable comfort to Allied soldiers slogging it out on the ground.

At the end of the war, the aircraft from all Boomerang squadrons were either scrapped, stored or destroyed. Today the Boomerang will always occupy a special place in Australian aviation history and will be fondly remembered as 'the little Aussie battler'.

PREPARATION OF PARTS

All of the plastic parts in this kit have a very thin film of silicon mould-release agent on them. Remove this film by washing thoroughly in warm water with a drop of detergent added. To remove the parts from their sprue you should carefully razor-saw each sprue attachment point about 3mm away from the edge of the part. Then carefully razor-saw as much of the remaining sprue from the part as you can manage and clean up the remainder with a knife, file & sandpaper. On most of the parts the sprue, where it enters the part, extends onto the mating surface - this should be carefully removed by gentle filing/sanding to ensure the mating surfaces are completely flat. We recommend continual dry-fitting of all such parts to ensure correct fit. You will find some of the parts have a small amount of flashing on them - carefully examine each part and remove with a sharp knife.

CONSTRUCTION – Wings & Fuselage

WINGS: Before assembling the parts, clean up mating surfaces to ensure a tight fit. Scrape back the raised flow-channel lines on the inside face of the wing halves near the tips. The port and starboard leading-edge landing lights can be represented by painting, but inserting clear plastic is better. To do this, cut out an area larger than the light (the size of the panel line surrounding it) and glue an oversize piece of clear sprue into it. When the glue has dried, file and sand the sprue down to the contour of the wing, re-scribe the panel, and mask off the light when painting.

Moulding limitations have meant that the undercarriage wells are shallower than they should be. The easiest way of correcting this, if you want to, is by cutting out the roof of the well, leaving the sidewalls intact. Build up the sidewalls a little more to deepen the well, then glue a piece of thin plasticard over the hole to form a new roof. Ensure that the upper wing will accommodate it first.

Using a rat-tail file, make a slight indentation in the leading edge of each wing to allow bedding down of the white-metal wing cannon. Use superglue or epoxy glue for fixing the cannon in place. Using a very fine drill, make holes for the two .303 machine-gun ports in the leading edge of each wing (refer to the front view drawing for position). Drill a shallow depression in the roof of the outer edge of each undercarriage well to fit the white-metal undercarriage leg. Use superglue or epoxy glue – plastic cement won't work. Refer to the drawings for positioning of the undercarriage doors.

The pilot's seat will require a little cleaning up. Open up the rectangular opening in the seat back to a height of 1mm plus sand off the slightly rough finish of the inside face of the seat. We have made the top of the seat a little too square in shape when viewed from the front - correct this by rounding off the two corners to give it a more rounded look. On early production kits you will notice a little extra moulding immediately below the headrest on the armour—plated bulkhead (mould damage!) - file/sand this off.

FUSELAGE: A little extra work is needed inside the fuselage before the halves are joined. The inside face of the engine cowling, from 1 mm inside the lip to 10 mm from the lip should be reduced in thickness by a half to allow the white-metal engine to fit properly. Use a curved knife blade to scrape this area down (be careful to avoid the lip), or a Dremel motor tool will do it quicker. Keep dry-fitting the engine until the fuselage halves fully join. Some support will be needed at the rear of the engine to hold it permanently in position. The very front of the engine crankcase should protrude just under 1 mm in front of the cowling (see the side-view drawing). Drill out the front of the engine to accept the shaft on the back of the propeller before installing the engine. You may wish to carefully open out the front of the air intake above the engine, or you could just paint it black.

The Boomerang's cockpit is similar to that of the Wirraway and Harvard in that it does not have a full floor, just channels the width of the rudder pedals for the pilot to stand on (refer to detail photo). Beneath is a collection of wiring, tubing, etc. Use the detail photos printed here to build the additional cockpit items. A rear bulkhead will need to be made from 10-thou plasticard using the template given.

Attach the seat (after detailing to taste) to this so that it projects I mm above the sill line. Add a circular headrest, as indicated, made from a slice of sprue 2 mm in diameter and 1 mm thick (rounded off). The control column is mounted on a rod and fixed under the seat. To aid in the moulding of the control column, the circular handle has been formed at right-angles to the correct position — the metal is soft enough to allow you to simply twist it slowly through 90° to face the seat.

Position the instrument panel with the top level with the top line of the nose, and attach the gunsight (see detail photo #20).

To assist in the moulding of the fuselage halves, it was necessary to add an extra sliver of plastic on the bottom of the belly from the centreline to the wing root at the rear. If you do not remove this piece the lower centre wing piece will not fit properly. Install the exhaust stack after construction and full painting is complete. Drill a hole under the tail to fit the tailwheel. Add an aerial mast 1 cm long made from 10-thou plasticard. Also add the small rear-view mirror to the middle front of the canopy.

CANOPY PREPARATION & ATTACHMENT

Tasman have always used the services of Falcon Industries (producer of the Falcon Clear-Vax and Squadron Canopy ranges) for producing our kit clear parts as they are, without doubt, the very best canopy maker in the world.

It is ESSENTIAL that you use a knife with a fresh blade in it when starting to cut the parts from the backing sheet. Note that there is a border around the canopy which is there to make guiding the knife around easier. Place the tip of the knife blade at a 45 degree angle in the junction of the part and the border (refer Drawing A). VERY gently run the knife blade around the clear part. On the first time around the part you should barely break the surface of the material - the prime objective of this first scoring is to provide a slight channel for the knife to follow in on subsequent scorings. Repeat this scoring and slightly increase the pressure each time, scoring the line deeper and deeper until you break through the surface - if you rush any part of this stage then you risk the blade slipping out of the scoring channel and ruining the part. Go SLOW and STEADY and you will have no problems. Clean up any rough edges with a VERY careful wet-n-dry sanding. It is EXTREMELY IMPORTANT that you take care not to scratch or scuff the clear parts of the canopy as the special material these are moulded in can't be buffed to remove such markings. We recommend that you leave the canopy part of this kit until you are ready to paint the whole model - this will reduce any damage to the clear parts if you put the canopy on at too early a stage. Keep the clear parts in their own bag to prevent them getting scuffed or scratched by other kit parts.

Don't use normal model glues (liquid, tube or super-glues) to attach the canopy as they don't react with the canopy material and super-glue gives off fumes that will cloud them. Use PVA or a wood glue instead. These offer the added benefit of helping to seal the join-line as it dries clear and fills any minor gaps.

DECAL APPLICATION

To remove each decal from the backing paper, dip in warm water and put aside for one minute. The decal is ready when it can be moved easily on the paper. Pre-wet the area to be decaled with a decal solution (such as Micro Set) and then slide a third of the decal off the paper and into position (still with the backing paper under two-thirds of the decal). Hold the decal in position with a paint brush and slowly draw the paper out from under the decal. This will ensure that a minimum of repositioning is required. When you are happy that the decal is correctly positioned, use a piece of cloth to carefully press the decal completely flat and remove any air trapped underneath. The decals are very thin, and do not need any special treatment to make them conform to the fine surface detailing. Where the blue/white roundel goes over a camouflage demarcation line, it is recommended that the area under the decal be painted a light shade - this prevents the difference in colour showing through the white of the decal. Always ensure that the surface you put the decal on is smooth and glossy - if it is not glossy then you run the risk of 'silvering'. It also pays to trim the clear decal film as close to the ink as possible. The Micro system of decal solutions and varnishes is compatible with these decals.

COLOUR INFORMATION

The interior surfaces of the Boomerang, including cowling, cockpit, pilots bulkhead, inside faces of main u/c doors/wells and interior canopy framing, are Cockpit Green - Humbrol HD 5 Interior Green (F.S. 24226) is a close match. The main & tail wheels are black (a VERY dark grey gives a more scale effect) as are:- the instrument panels, internal cockpit fixtures, engine crankcase/cylinders, propellers (tips are yellow, front and rear), front of cannon barrels, control column grip, gunsight, various u/c well items and the prop hub. The exhaust stack is burnt metal, the pilots seat and main wheel hubs are dull aluminium and the headrest is brown leather. The navigation lights on the left wingtip (top and bottom) are red and on the right tip they are green. The fin navigation lights are Clear Oil 3 small aluminium rectangular base. The dorsal navigation light on the spine behind the cockpit is also clear. The formation light above the left wingroot (scribed circle on the fuselage part) is a bright dark blue.

The main camouflage colours used on the Boomerang have been subject to a lot of research and educated speculation - we have based our colour information on research done by both Kookabuna Publications and Ian K Baker's 'Aviation History Colouring Book' (more correctly called a colours book). Official specifications were quite vague - 'green', 'brown' and 'blue' - while actual colours were Light Green & Dark Green and Light Earth & Dark Earth. Early Boomerangs therefore came out with either Light Green/Light Earth/Sky Blue or Light, Green/Dark Earth/Sky Blue. Sky Blue was in short supply early on and was commonly substituted by Sky Grey (lighter than Medium Sea Grey). It was only after Boomerangs entered squadron service that Foliage Green and Earth Brown (very similar to Dark Earth - just a touch redder in shade) were introduced when repainting was required. The number of colour permutations applied to Boomerangs in those early years, prior to overall Foliage Green being adopted by most (but by no means all - many Boomerangs ended the war still in three-tone schemes), was therefore quite large. Add to this the heavy weathering Boomerangs were subjected to in the Pacific and Northern Australia and you end up with an unlimited variation of shades of green and brown! It is therefore not possible to state with accuracy exactly what shades of colours were applied to the three-tone (CA-12 & CA-13) schemes — only what they were most likely to be at any one given time.

The demarcation line between upper fuselage colours was not hard-edged but the scale effect (in 1/48 and most certainly in 1/72) would dictate you use a mask (if spraying) unless you have a super-fine air brush that will allow the slightest of spraylines between colours. There is a hard demarcation between the upper colours and the undersurface colour however.

REFERENCE SOURCES

Fortunately the Boomerang has received wide coverage over the years in aviation & modelling publications.

The following are the best known sources:-

'RAAF Camouflage & Markings 1939-4S' Volumes 1 & 2 by Kookaburra Publications

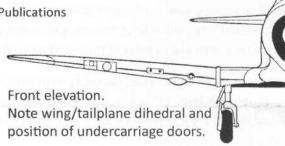
'Wirraway, Boomerang & CA-15 in Australian Service' by Stewart Wilson

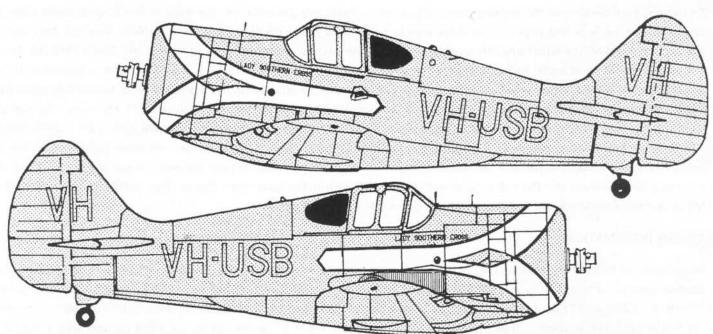
'Wirraway & Boomerang Markings' published by Kookaburra

'Commonwealth Boomerang Described' by Kookaburra

'Aircraft of the RAAF 1921-78' by Kookaburra

Airfix March 1981 - article 'Boomerangs of the RAAF' by Gary Byk

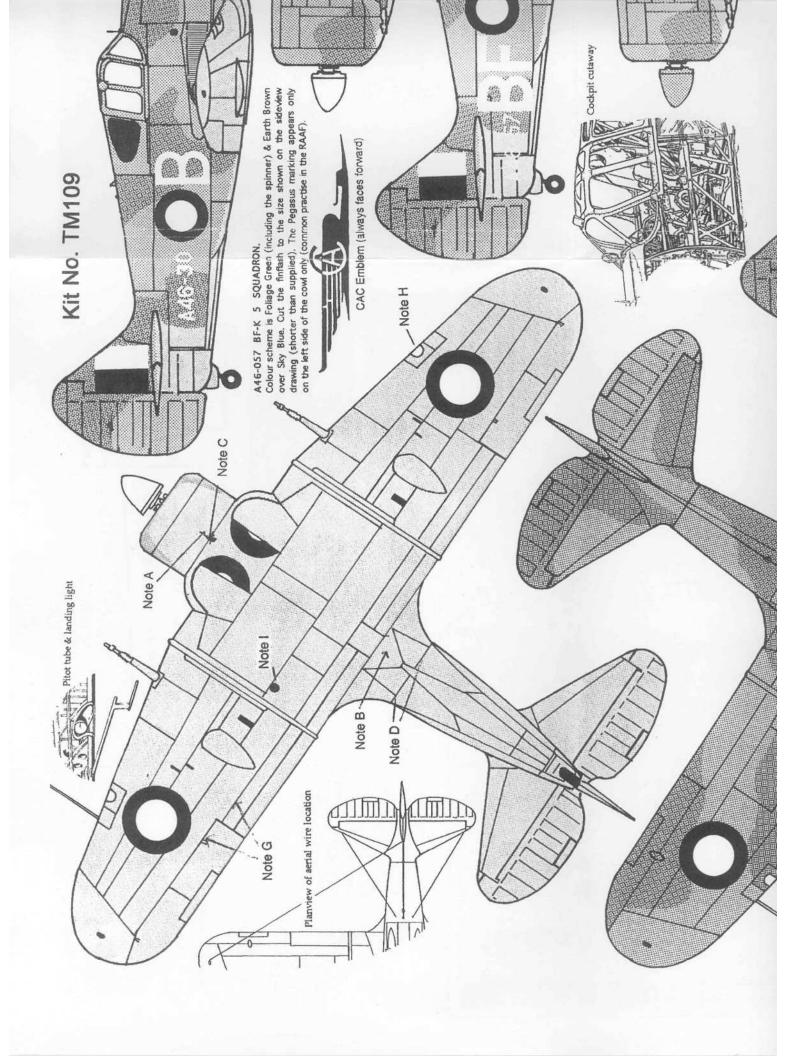


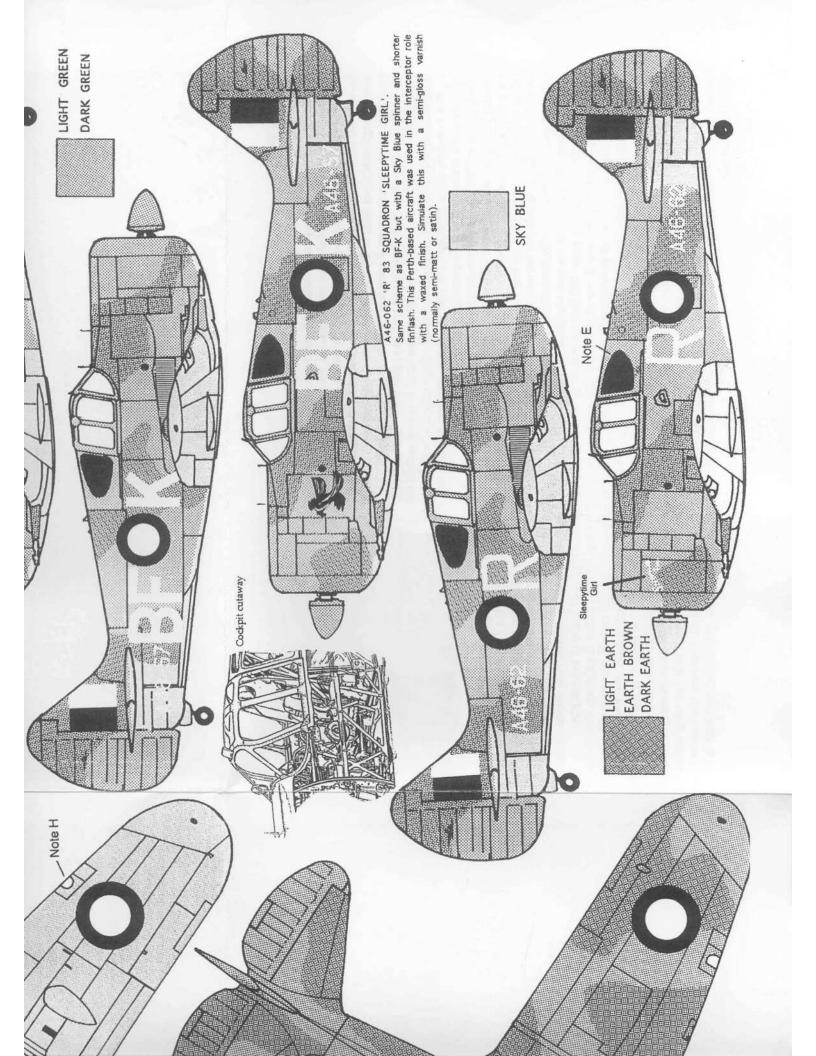


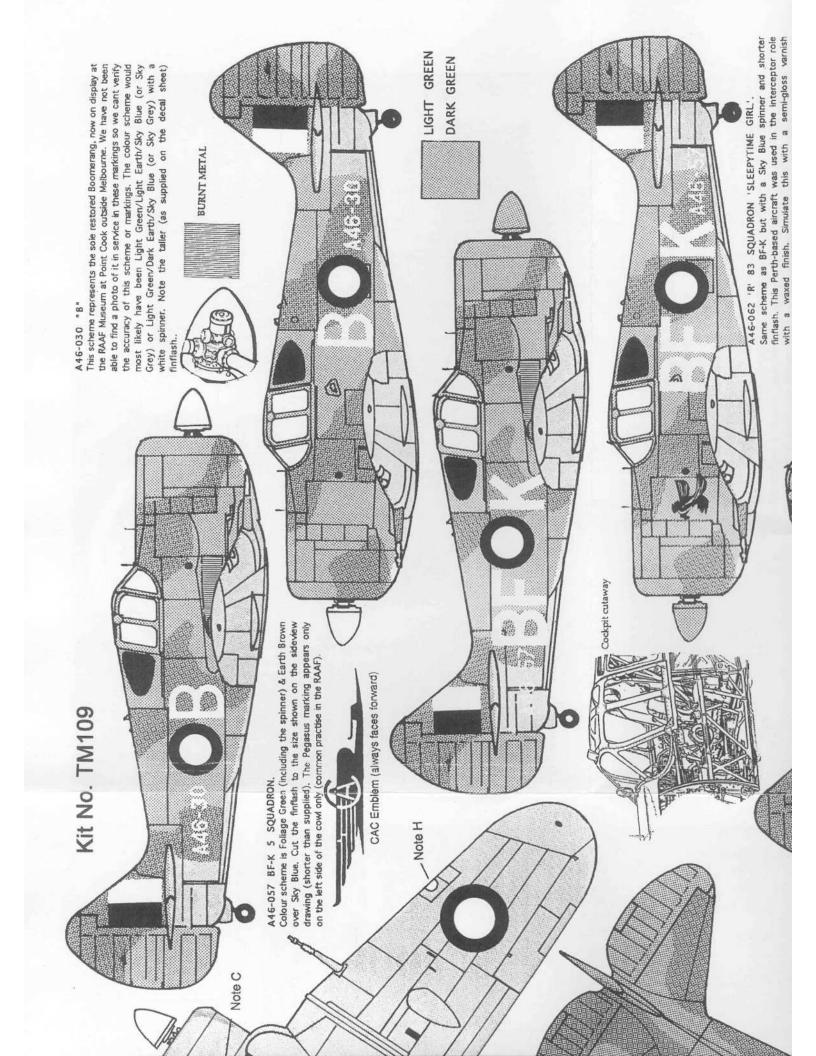
VH-USB "LADY SOUTHERN CROSS".

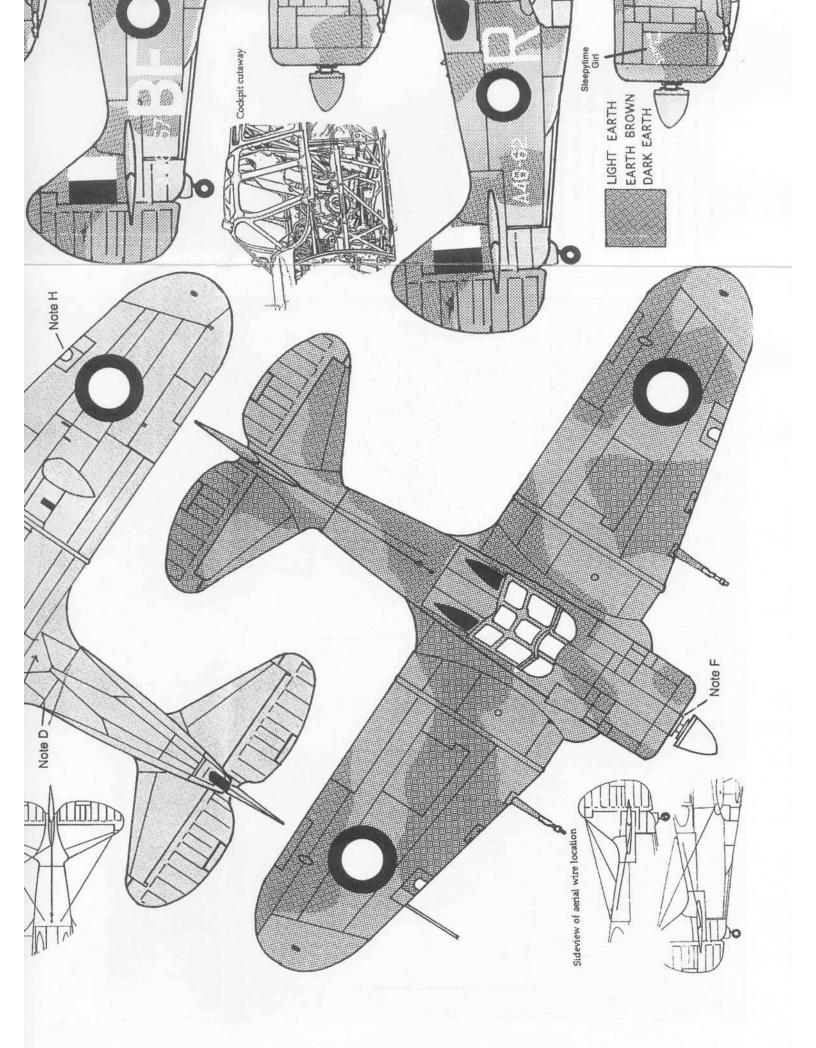
One of the few Boomerangs to survive scrapping after the War, A46-030 was repainted to disguise it as 'Lady Southern Cross' - Sir Charles Kingsford- Smith's Lockheed Altair in the movie 'Smithy'. It had its wing cannons removed (ignore the side-view drawings showing them fitted!) along with the spinner and was painted overall very light

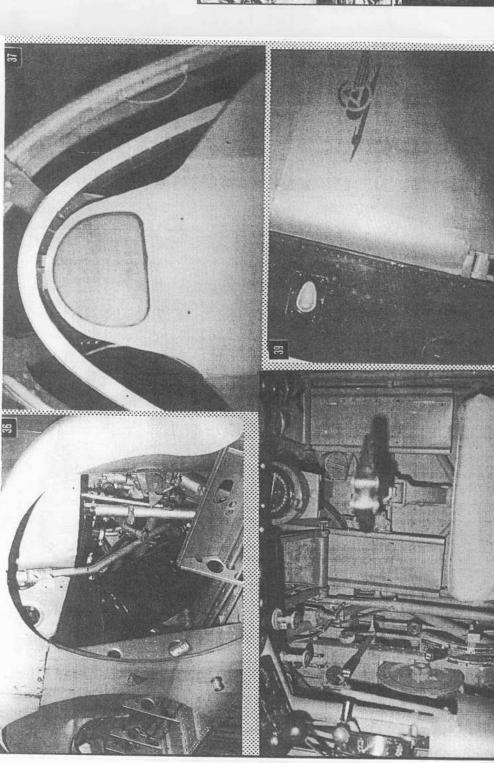
powder blue - a more precise description or exact colour specification is not available. No wing markings were applied. Extreme care should be exercised when removing the fuselage striping decals and applying them to the model. Where the striping joins up under, and on top of, the engine cowl you will need to carefully trim this as a slightly extra amount has been printed to ensure a correct fit.











Dra

Instrument panel

planview of cockpit tubular framing (top of frame)

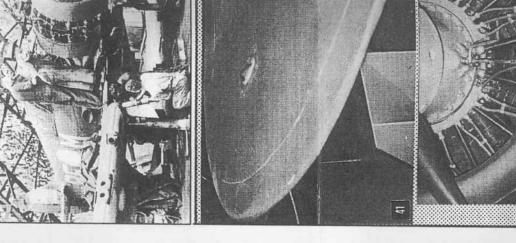


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(1) Starboard cockpit interior. Note main electrical panel (black) and curved cockpit sill coaming (both supplied in metal). (2) Front-left cockpit. Note tubular framing. (3) Inside of area behind pilots armourplating. Note tubular framing, bottom of aerial post and main fuel tank. The pilot's radio normally sits on top of the tank. (4) same as preceding photo. (5) WWII photo of main instrument panel. Note gunsight detail (not fitted to the RAAF Muscum's CA-12 example). (6) Main instrument panel, control column & compass. (7) same as preceding photo. (8) Fueltank/radio access hatch (includes rear window) plus rear of pilot's armour plating. (9) Pilot's seat, rear of left instrument console panel & curved cockpit sill summlied in metal). (10) Port cockpit exterior. Note canony rail Lick-in foot access

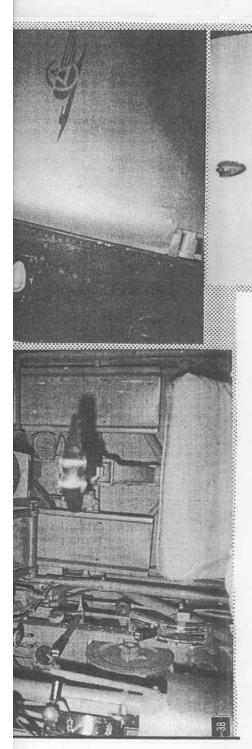
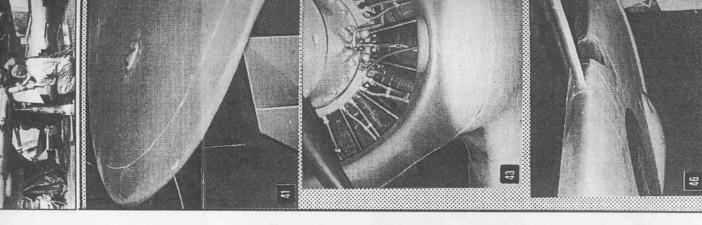
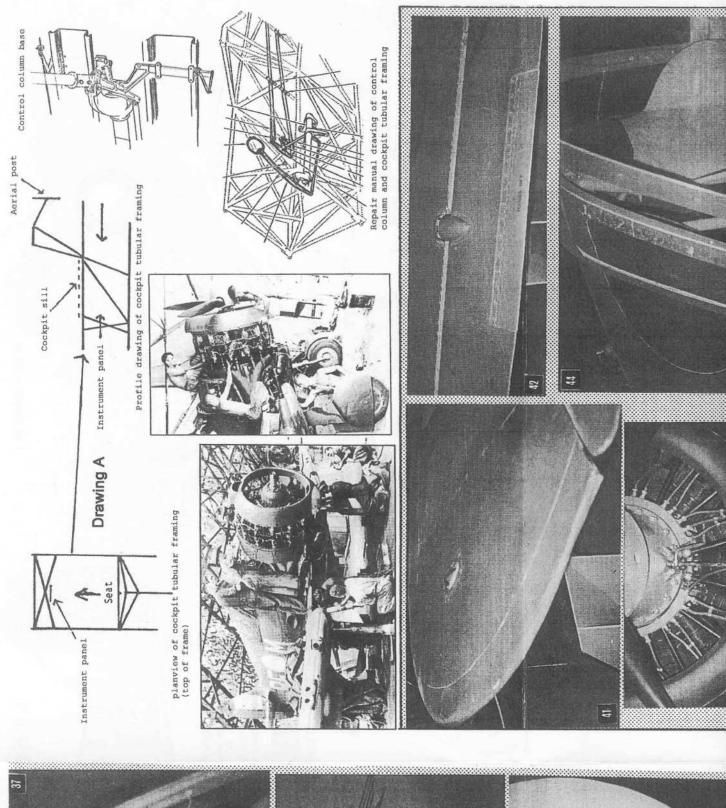


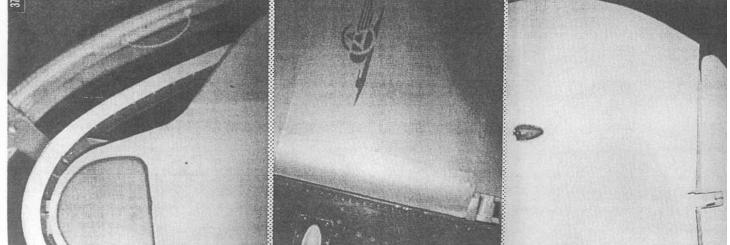
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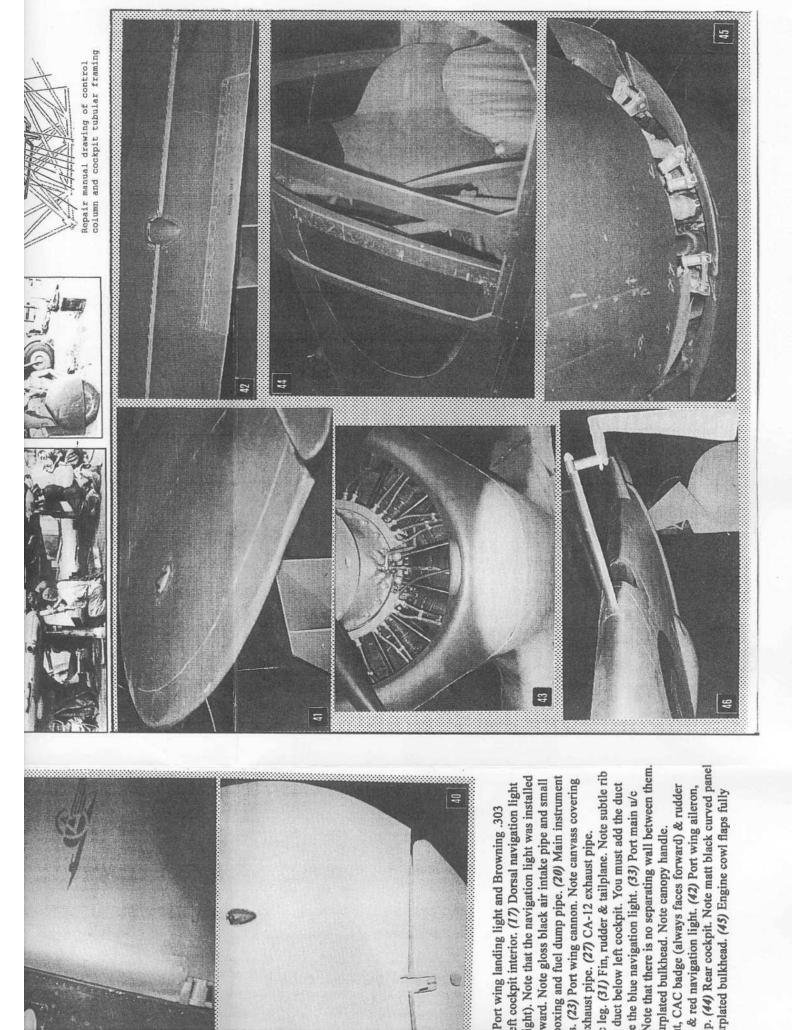
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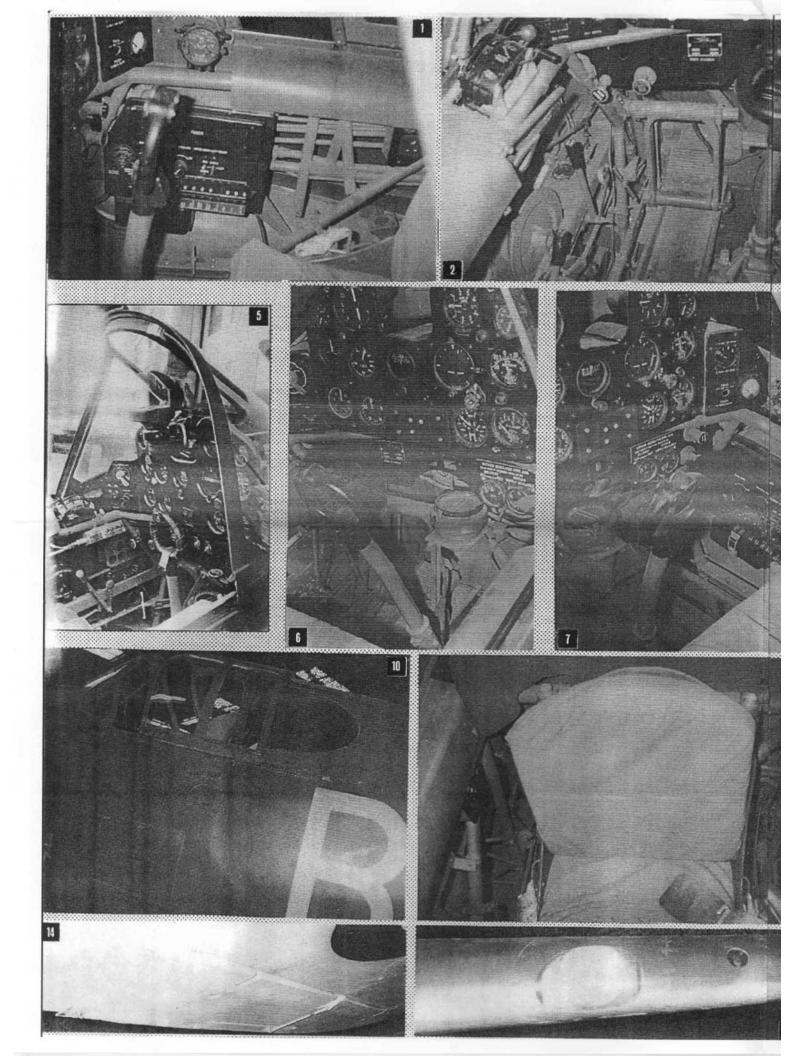
doors. (34) WWII photo of seat & harness. (35) Tailwheel & leg. (36) Main u/c wells. Note that there is no separating wall between them. aileron actuator cover & trimtab. (43) Engine front. Note Small intake on lower cowl lip. (44) Rear cockpit. Note matt black curved panel 28) CA-12 exhaust pipe. (29) Front & rear of pilots seat. (30) Starboard u/c well & u/c leg. (31) Fin, rudder & tailplane. Note subtle rib silver bottom with clear top), aerial lead-in and port tailplane aerial wire (just below light). Note that the navigation light was installed external scoop between walls. (19) Starboard u/c well rear face. Note maze of piping, boxing and fuel dump pipe. (20) Main instrument panel & gunsight, (21) Starboard u/c well rear section. (22) Port u/c leg, wheel & doors. (23) Port wing cannon. Note canvass covering on all Boomerangs up to A46-185 but not on later ones. (18) Main u/c well looking forward. Note gloss black air intake pipe and small machinegun port. Note that the gun ports are above the leading edge centreline. (16) Left cockpit interior. (17) Dorsal navigation light detail, CAC badge, trimtabs & tail navigation light (clear with silver rim). (32) Oblong duct below left cockpit. You must add the duct (38) Cockpit floor area. (39) Close up shot of centre of fin/rudder. Note navigation light, CAC badge (always faces forward) & rudder ninge. (40) Port lower wingtip, aileron & red navigation light. (41) Port upper wing tip & red navigation light. (42) Port wing aileron, door and actuating lever from thin plasticard. Note that it opens only a few inches. Note the blue navigation light. (33) Port main u/c behind rear window and that you can see through to the fueltank area behind the armourplated bulkhead. (45) Engine cowl flaps fully (black). (14) Under surface of port wing aileron. Note actuating lever for trimtab. (15) Port wing landing light and Browning .303 Note position of small intake and fuel vent pipe. (37) Leather headrest (black) & armourplated bulkhead. Note canopy handle. and black tip. (24) Machinegun ports. (25) Port u/c well & top of u/c leg. (26) CA-12 exhaust pipe. (27) CA-12 exhaust pipe. open. (46) Pitot tube.

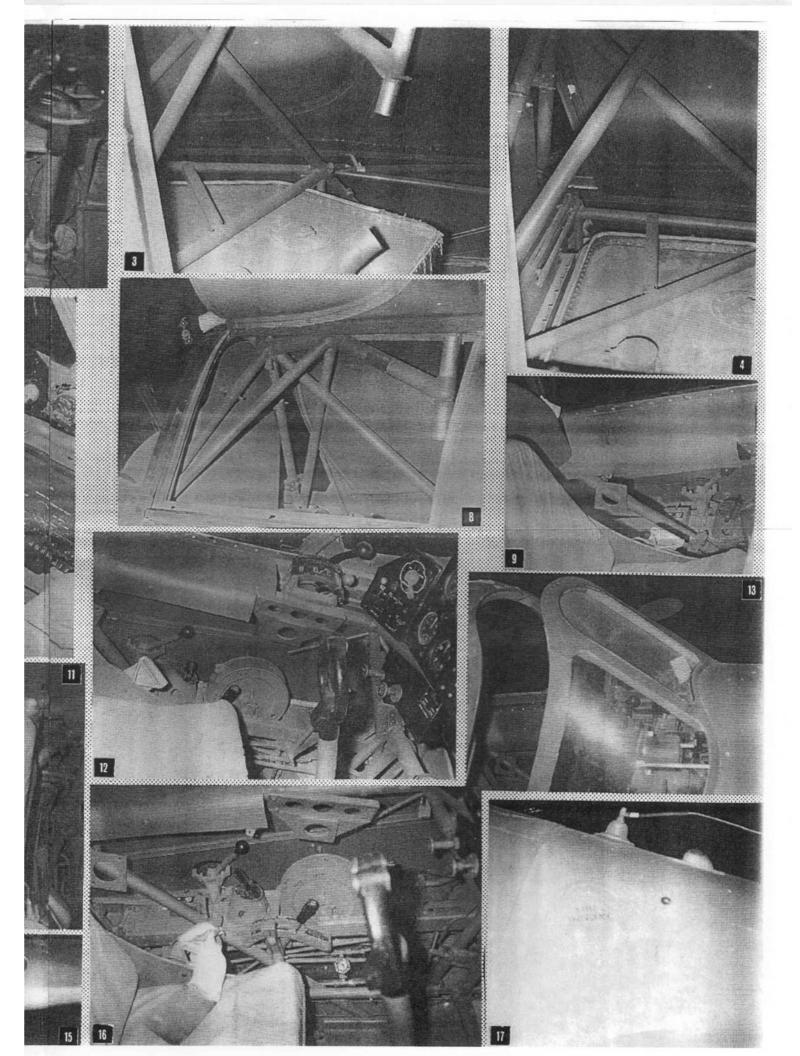


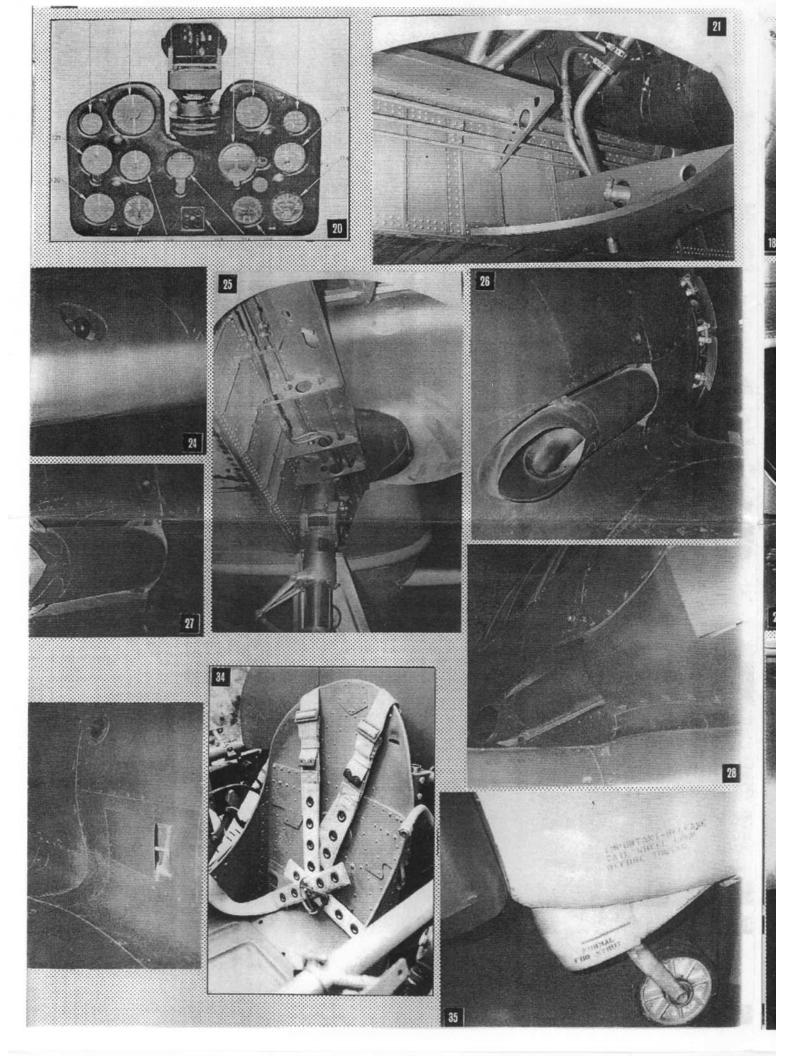


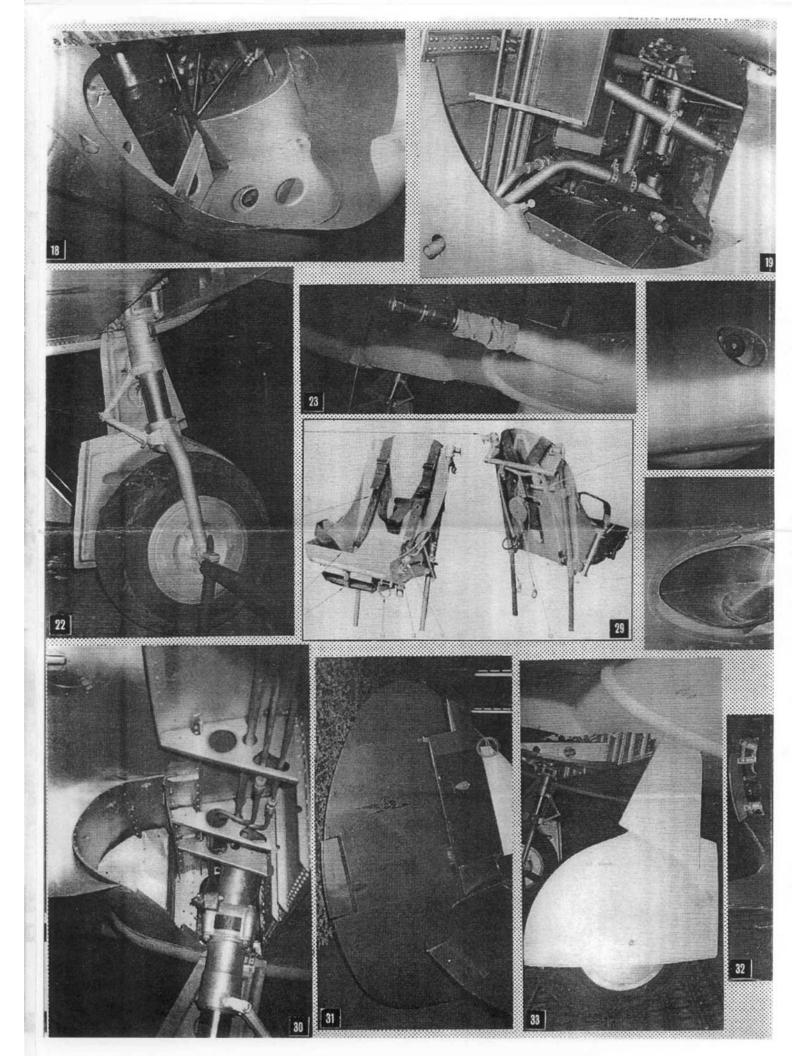














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Note: The kit number printed on this decal sheet is not correct the number for this kit was changed after the decal was printed. This will be corrected at the next printing.