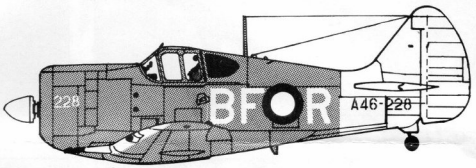
TASMAN Models.

P.O. Box 14-263
Wellington
New Zealand

RAAF CA-13/19 BOOMERANG



The overwhelming sweep down through South-East Asia and on to the very doorstep of northern Australia by the Japanese in late 1941 and early 1942 caught the Australian Government without any suitable modern fighter to counter the clear threat posed by superior Japanese aircraft. Neither the American nor the British were in a position to supply the type of fighters — Spitfires, P-40s, etc. — 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 the CAC had been producing the Wirraway trainer, a local derivative of the North American NA-33, along with licensed production of the Bristol Beaufort bomber. It was obvious to the CAC team that there was simply not enough time to design a new interceptor from scratch. It was therefore necessary to merge together available engines, 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 21 December 1941, and a mere 16 weeks and 3 days later the first CA-12 Boomerang took to the air. Performance in all areas either met or exceeded expectations, with the most outstanding feature being its rate of climb: over 2900 feet per minute (884 m/min). This was superior to the Spitfire I, Hurricane I, P-40N and Tw 190F-3 — 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 used by the Japanese in the South-West Pacific.

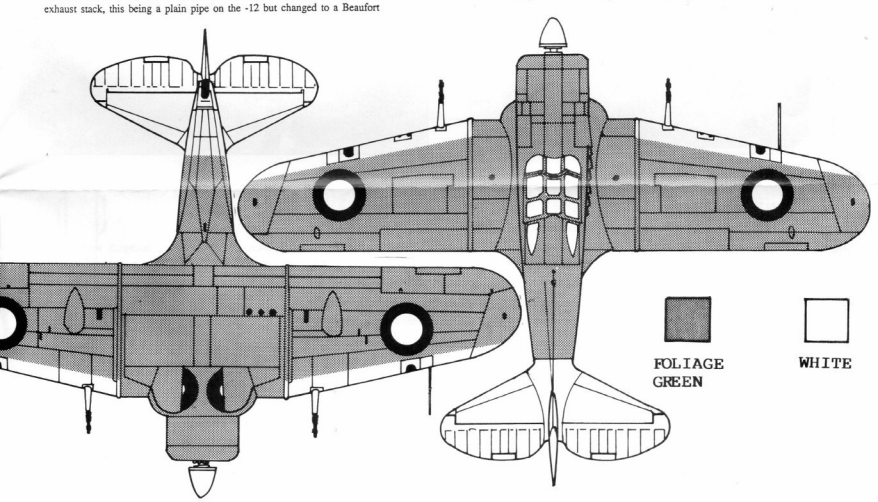
The 250 Boomerangs built were split into three major variants — 150 CA-12s, 95 CA-13s and 50 CA-19s. The CA-12 was initially fitted with a spinner, but cracking of the backplate resulted in the majority flying minus the spinner. This was subsequently rectified, and it was rare to see any -13s without them. The -12 had ribbed fabric ailerons, but these were changed to smooth aluminium on later variants. The most obvious difference between the -12 and the -13/19 was the exhaust stack, this being a plain pipe on the -12 but changed to a Beaufort 'Christmas tree' flame-damping exhaust from the -13 onwards. The -19 barely rated a change in designation, the only external change being the tread on the main tyres! A belly tank was designed for the -12, but was generally used on the later variants, and even then infrequently.

In the short period between conception and delivery from the production line, the strategic situation that generated the need for the Boomerang altered. Deliveries of Spitfires and P-40s were rushed through, along with Airacobras. The first operational service involved standing patrols in the northernmost tip of Australia and in southern New Guinea. As more aircraft were produced, these were allocated to home defence squadrons in West Australia and the Northern Territories to guard against what was seen as the real possibility of a carrier-borne invasion. It was found later that no such plan existed. After the threat of invasion receded, a number of Boomerangs were kept in Australia for home defence and night interception.

The Boomerang was never put to the test for its original purpose, but in the jungles of New Guinea, the Solomon Islands 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 for the Boomerangs and Wirraways was escorting Corsairs of the RNZAF on Bougainville, where they strafed and smoke-bombed targets before calling in strikes by the Corsairs. 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 of all Boomerang squadrons were either scrapped, stored or destroyed, and today only one complete Boomerang (A46-30) still exists.

The Boomerang will always occupy a special place in Australian military aviation history and will be fondly remembered as 'the little Aussie battler'.



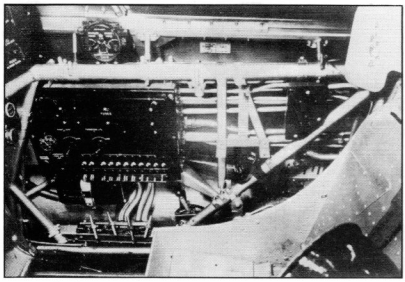


PHOTO (1)

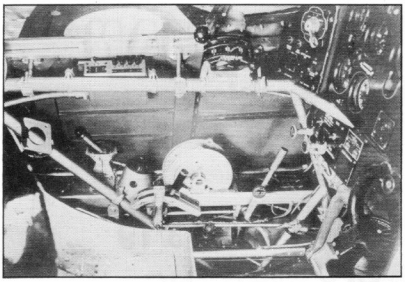


PHOTO (2)

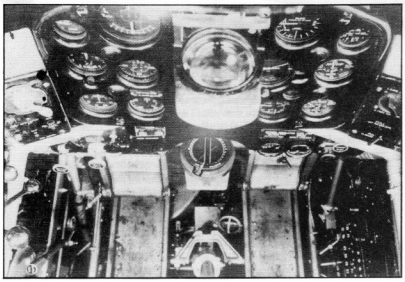


PHOTO (3)

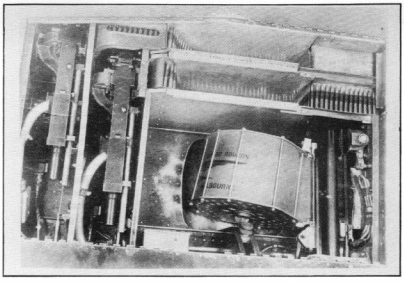


PHOTO (4)

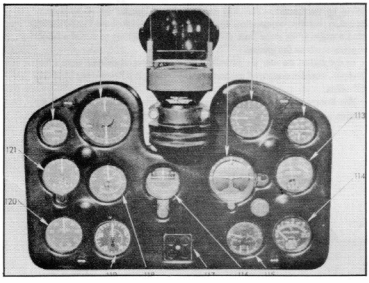


PHOTO (5)

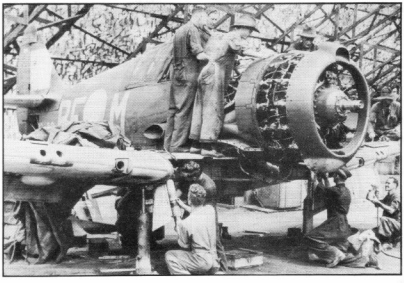


PHOTO (6)

PHOTO INFORMATION INDEX.

(1) Right cockpit interior. Black boxes/instruments and Cockpit Green the rest. Note tubular framing.

(2) Left cockpit interior. Note flat side panel with rudder trim wheel and various controls. Note stringers on cockpit wall.

(3) Instrument panel and forward floor area. Note parallel floor boards, compass and small panels on both sides of main panel.

(4) Left wing machine-gun/cannon bay fully equipped. Gun-metal guns and Cockpit Green interior.

(5) Main instrument panel and gun-sight. Note instruments are recessed. Semi-matt black.

(6) A CA-12 under major inspection - an interesting diorama subject for super-detailers.

(7) Instrument panel & left forward cockpit. Note thick armour-plated windscreen, control column & exposed rear of instrument panel.

(8) Pilots seat, harness straps & rear armoured panel. Colour of straps varied (mainly dk green or cream). Seat is dull silver.

(9) A CA-19 under routine maintenance.

(10) A CA-12 engine & cowling. Note top paint colour goes inside cowling and around bottom lip.

(11) Rudder pedals, compass and bottom of control column. Note ridge on both side of the two floor panels.

(12) Front/rear views of pilots seat. Note darker harness, oval hole in middle of seat back and the seat frame.

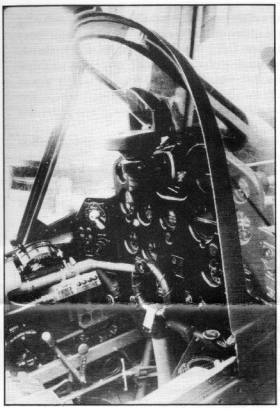


PHOTO (7)

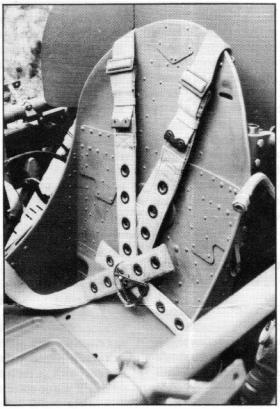


PHOTO (8)

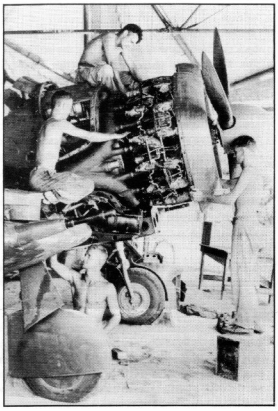


PHOTO (9)

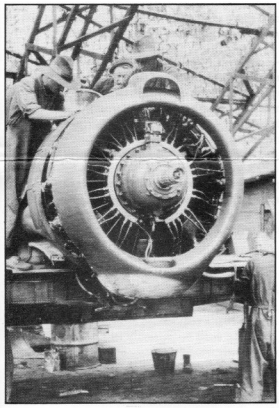


PHOTO (10)

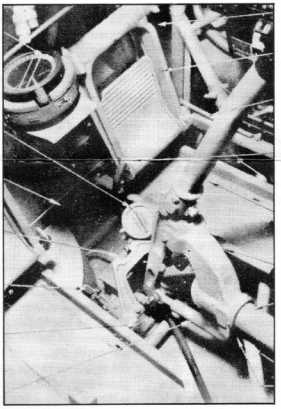


PHOTO (11)

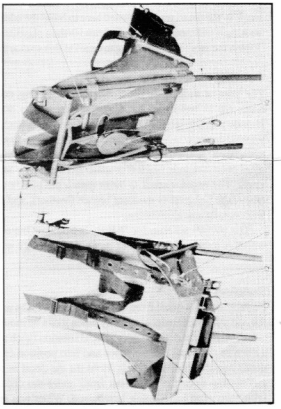
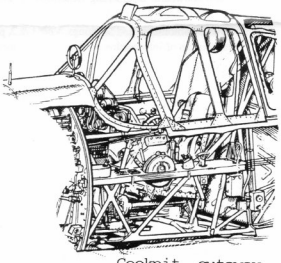
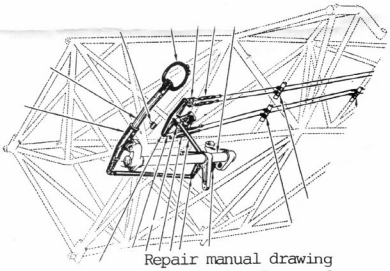


PHOTO (12)

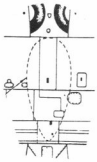
Template for rear cockpit bulkhead.



Cockpit cutaway.



Repair manual drawing of control column and cockpit tubular framing.



Position of belly fuel tank.

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 line, and mask off the light when painting. You may like also to drill out the shell ejector chutes on the bottom of each wing.

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 whole 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 belly-mounted fuel tank is provided for those modellers who wish to build their model as one that flew with this in place. 'BF-R' may at one time have used this tank, but it has not been documented. The ailerons have been moulded with raised ribs — as these were used only on the CA-12 variant, so for your model of the CA-19 they should be gently sanded down to leave the surface of the ailerons smooth.

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 the seat projects 1 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 so that the top is level with the top line of the nose, and attach the gunsight (see detail photo).

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 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. A bead-and-ring gunsight was fitted to many Boomerangs, but research to hand after the box-art sideviews were drawn shows that CA-19 'BF-R' did not carry them. Add an aerial mast 1 cm long made from 10-thou plasticard. A small number of CA-19s, including 'BF-R', had a small blade aerial added to the belly as shown in the side-view on the instruction sheet. Also add the small rear-view mirror to the middle front of the canopy.

Painting

The interior surfaces of the Boomerang (cowling, cockpit, rear window recess, main wheel wells and inside the undercarriage doors) are cockpit green — Humbrol HD5 Interior Green is close. The wheels, instrument panel, some internal cockpit fixtures, engine crankcase, propellers (front and rear, with yellow tips), front part of the cannon barrels, control column handle, gunsight, and anti-glare panel are matt black (for scale this should be semi-matt black or very dark grey). The exhaust stack is burnt metal, the pilot's seat is a very dull shade of silver, the headrest is medium brown (leather), and the undercarriage legs and wheels hubs are aluminium.

The overall scheme for 'BF-R' is Foliage Green (FS 24092 is very close), which is a very dark shade of green. Humbrol 29 with a touch of 70 is a close approximation. The complete tail, the leading edge of the wings, the rear of the cannons, and the spinner are white. The finish of the paint should be semi-matt. All the available photos of this aircraft show a fair degree of weathering, typical of operating in tropical jungle conditions. If you choose to weather your model, remember that there will be a greater degree of weathering on the top of the fuselage and wings than on the lower surfaces. The upper wing and fuselage roundels would also fade to a lighter shade of blue.

The rear part of the canopy has been left completely clear in order to avoid a joint line around the rear windows (which was one of the negative features of the old Airfix kit). Mask off the rear windows before blending the canopy into the fuselage profile with filler, then scribe a vertical line as indicated on the main drawings.

Decaling

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 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 re-positioning 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.

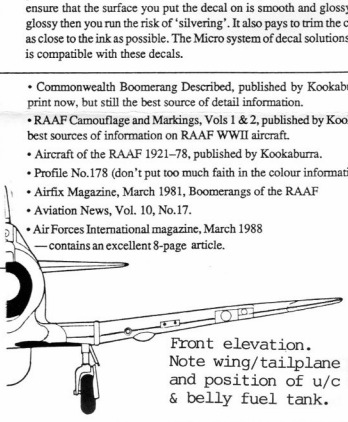
References

Fortunately, the Boomerang has received wide coverage over the years in aviation and modelling publications. The following are the best known references:

- Australian Plastic Modellers Association magazine 1984 No.3 (PO Box 51, Strathfield, NSW 2135, Australia) has a 9-page feature article — an excellent reference. The APMA magazine is amongst the very best of modelling society journals worldwide, and TASMAN strongly recommends a subscription; sample issues are available on request from the above address.
- Wirraway and Boomerang Markings, published by Kookaburra (PO Box 648, Dandenong, Melbourne, Victoria 3175, Australia) — excellent guide to colours and markings.
- Commonwealth Boomerang Described, published by Kookaburra — out of print now, but still the best source of detail information.
- RAAF Camouflage and Markings, Vols 1 & 2, published by Kookaburra — the best sources of information on RAAF WWII aircraft.
- Aircraft of the RAAF 1921–78, published by Kookaburra.
- Profile No.178 (don't put too much faith in the colour information).
- Airfix Magazine, March 1981, Boomerangs of the RAAF
- Aviation News, Vol. 10, No.17.
- Air Forces International magazine, March 1988 — contains an excellent 8-page article.

Acknowledgements

Without the combined efforts of a lot of friends, this kit would never have got off the ground, so TASMAN would like to thank the following for their invaluable contributions: Malcolm Laird (kit pressings and origination), Tony Pritchard (decal artwork and computer typesetting), Tore Martin (vac-formed canopies), Mike Dutton (white-metal origination and production), and Peter Malone (detail photos). Thanks a lot guys!



Front elevation.
Note wing/tailplane dihedral and position of u/c doors & belly fuel tank.