

Belcher Bits BL-19: Canadair North Star conversion 1/72

Background

In 1945, Trans Canada Airlines decided that the Douglas DC-4 would be the choice for the new airliner post-war. It was felt the design was fairly mature since the military version (C-54) had been in service for nearly two years at that point. However, TCA considered that the best engine for their new airliner would be the Rolls Royce Merlin RM-14. At the same time, Canadair was looking for work and in talks with Douglas, bought most of a C-54 production plant in Illinois as well as many C-47 airframes and tooling. In all, Canadair bought some 600 carloads of equipment from Douglas, including 60-70 complete C-54 fuselages.

Although the use of the North Star by TCA was the genesis of this aircraft, this conversion is more concerned with RCAF use which started in 1947 with 426 Sqn from Dorval outside Montreal in the role of long distance transport. Eventually, 24 North Stars were in service until 1966.

The Canadair North Star was 'mostly' a C-54 with Merlin engines, although the higher speed and power of these engines required some structural reinforcement of the wings and some DC-6 landing gear components were incorporated. However, most differences were not apparent visually. North Stars performed sterling service in transport of Canadian troops during the Korean War from 1950-53.

Construction

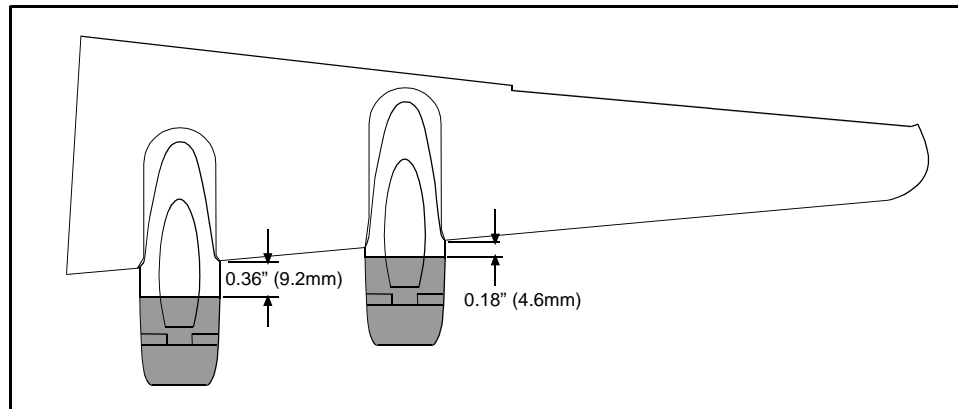
The Revell kit of the C-54 is an accurate but complex model. I would recommend following the kit instructions, including installing the engine firewalls even though they will be cut off later. They will help keep the engine nacelles together. At assembly step 41/42, use the smaller upper fairings (parts 124 and 125), although you can dispense with the inlets (parts 126). Continue with the standard assembly up to step 49. Now we are ready to start cutting!

Mark off the distances shown in the diagram on the following page, and cut off the engine nacelles as shown. It would be best to wrap some tape around the nacelle front to keep the cut as square as possible.

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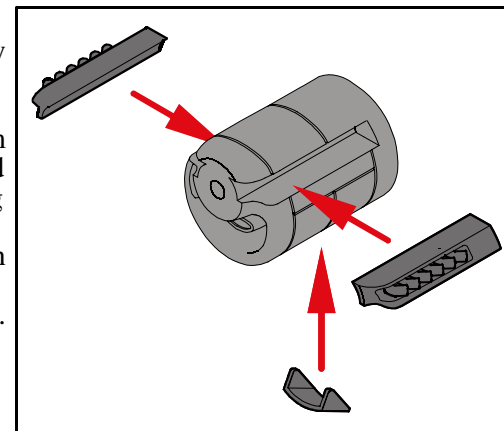
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Merlin nacelles

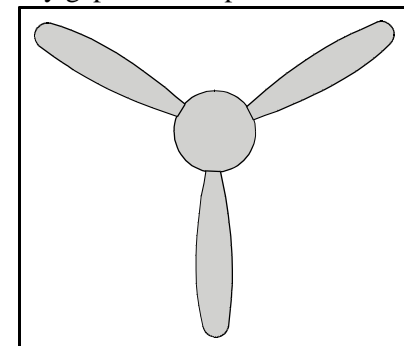
These parts were developed by Aircraft in Miniature and really make a complex shape quite simple to represent. Remove the pour plugs from the nacelle bottoms, leaving the round disc at the rear. Remove the pour plug from the nacelle tops and glue the top to the bottom, matching up the slots in the sides. Clean up the white metal exhaust sections, and test fit in the slots. You may need to remove a little bit from the back to keep the metal part from protruding too much. Glue in place, and do this four times.



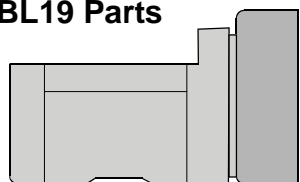
Fit the nacelles into the cut off nacelles on the kit. Remember that the aircraft has dihedral, so make sure the exhausts are oriented parallel to the ground, not the wing centre or top. When satisfied they are all lined up properly, glue them in place. At this stage, you can cut off the oil cooler from the kit nacelles and fill the hole. Fair the new nacelles into the kit parts, fill and sand any gaps. Clean up and install the radiator dump door as shown.

Propeller

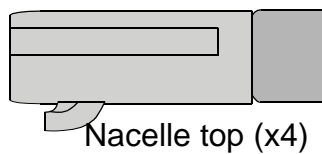
Sand the back of the spinner flat. Locate the centre of the spinner back plate and drill a 1/16" (1.5mm) hole. Glue in a short length of brass or plastic rod. Use the kit props; cut them off to 0.9" (23mm) long. These can be glued into the holes in the spinner casting, but you may need to clean up the root of the blade just a bit, right at the root. You can make a small jig to help with getting the blades all at the same pitch.



BL19 Parts



Nacelle bottom (x4)



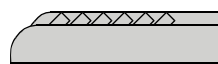
Nacelle top (x4)



Spinner (x4)



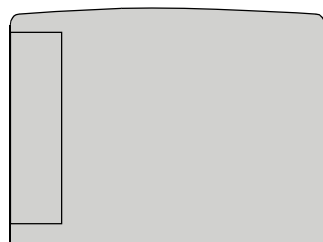
Door (white metal) (x4)



Exhaust (white metal) (4 left, 4 right)



Observation blister (x2)



Wing section

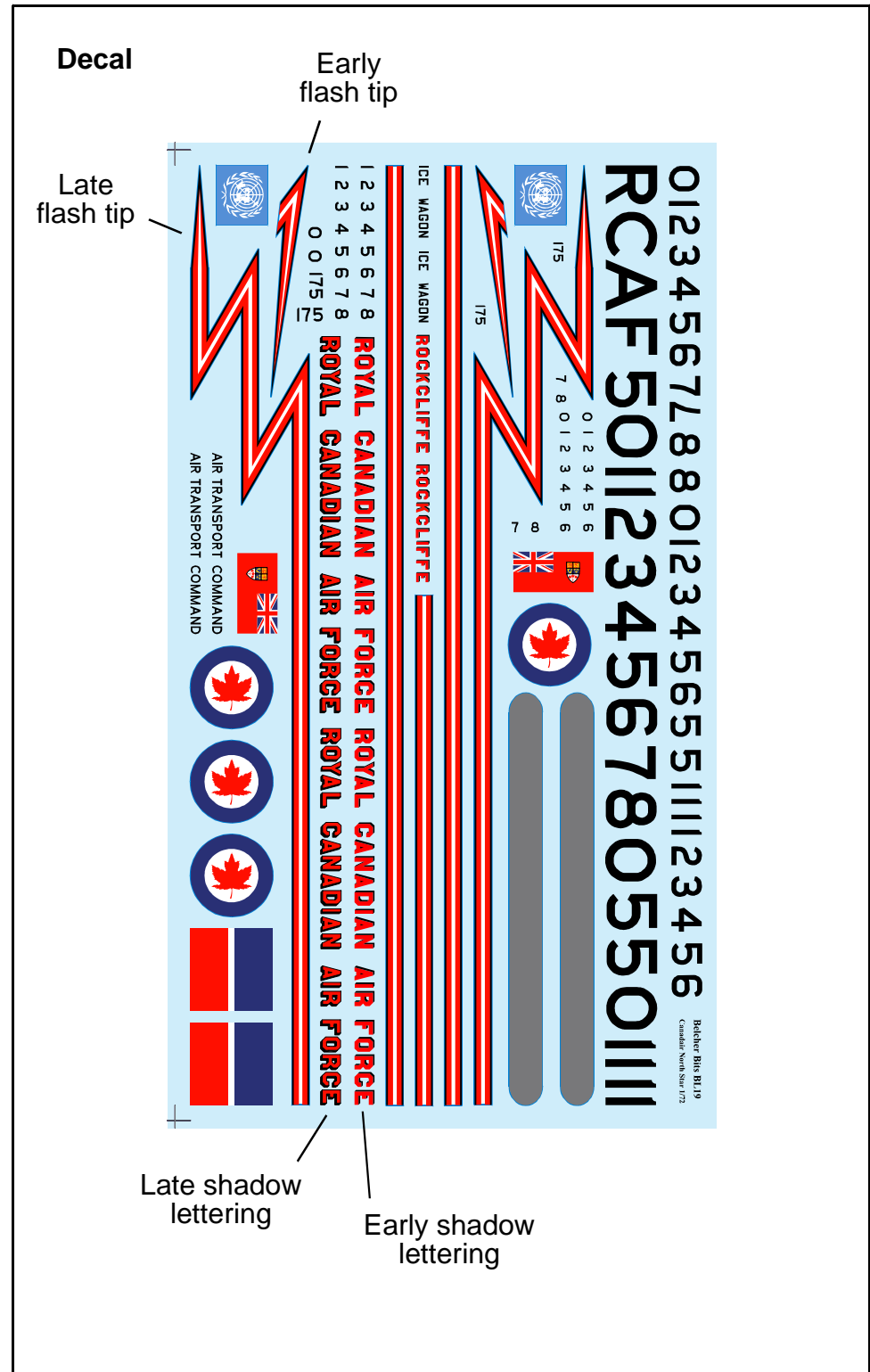
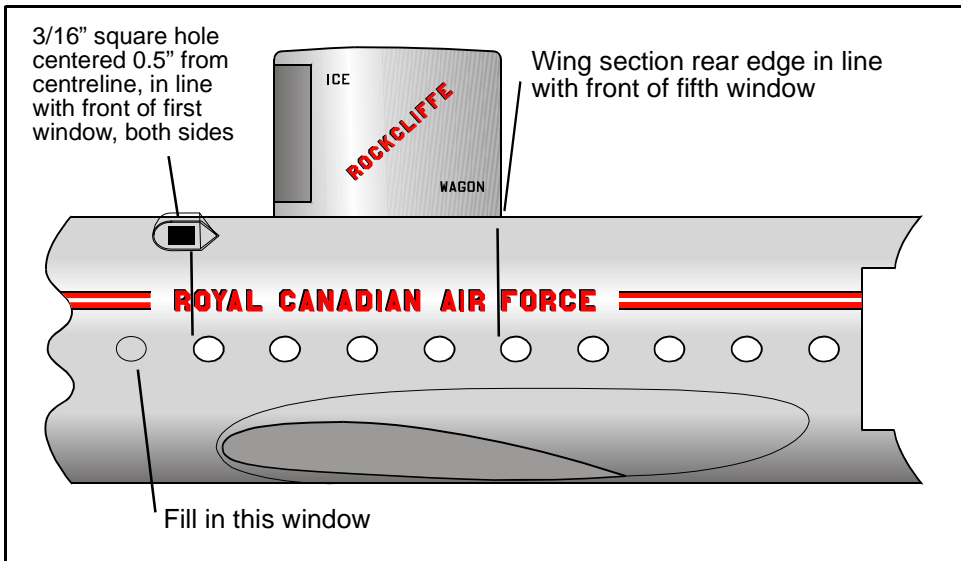
Note: Remove pour sprues at rear (shown dark grey)

The Rockcliffe Ice Wagon

In 1945, an RY3 (transport version of the PB4Y Privateer) was outfitted for icing research and studies of electro-thermal propeller de-icing by the National Research Council of Canada. (This aircraft was covered in the old Matchbox release of the Privateer.) This aircraft was apparently a maintenance problem and in 1948, one of the new North Stars (s/n 17513) was earmarked as a replacement. One big change was the wing test section installed on top of the fuselage, measuring 96" high and 120" in chord with a NACA 0012-64 airfoil. This test section included a removable wing leading edge and electric heating elements. Also mounted on the fuselage top just ahead of the test section were a couple observation blisters. The second Rockcliffe Ice Wagon continued in service for 10 years until it was destroyed in a hangar fire in Dorval in 1956.

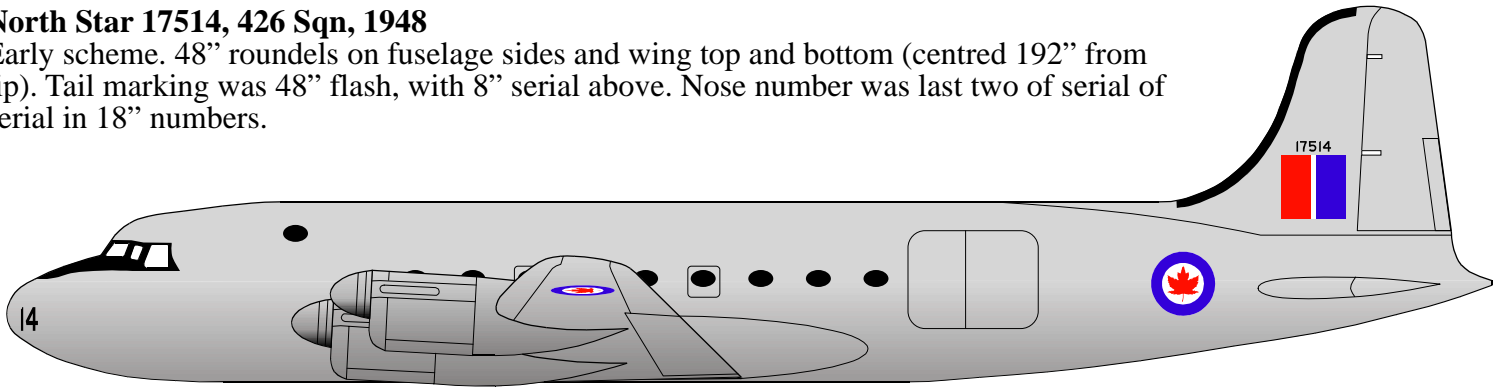
This set provides the test section, observation blisters and special decals for the Ice Wagon. First step is to fill in the forwardmost window as shown. The wing section is placed according to the sketch below. Mark and cut out two 0.187" (5mm) square holes, each 0.5" (13mm) out from the centreline of the fuselage. These holes should have their rear edges lined up with the front of the window just ahead of the wing root. Paint anything visible through these holes black. These were simple observation points, where scientists would watch the ice accumulation on the test section by sticking their heads through the hole. The holes were covered by a plexiglass bubble. Cut these vacuform parts from their backing, carefully sand the base (try wrapping a little sandpaper over a similar sized tube) and when painting is done, glue in place with white glue. Note the pointy portions face back (these represent flat panels for better viewing).

For markings, a couple points. The Ice Wagon did not have a white top despite having later features such as the fuselage flash. The top of the flash is lined up with the top of the cockpit window. The gap in the flash runs from about 0.37" (10mm) ahead of the first remaining window to about 0.25" (6.3mm) ahead of the 7th window, as shown below. RCAF is centred in this gap; be sure to use the early style shadow lettering (with shadow above and to the left) for the RCAF name. Tail markings were red/white/blue fin flash with 17513 above.



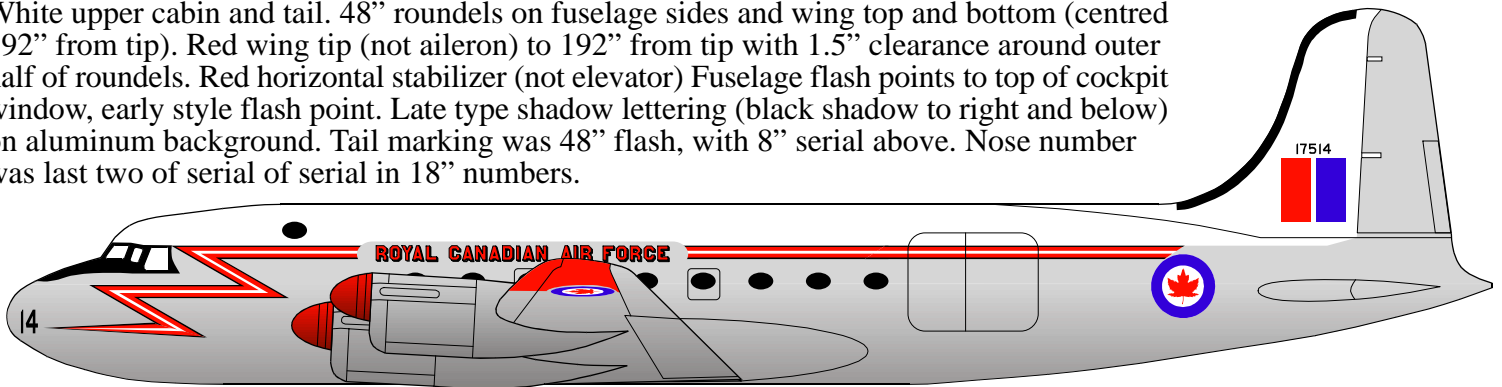
North Star 17514, 426 Sqn, 1948

Early scheme. 48" roundels on fuselage sides and wing top and bottom (centred 192" from tip). Tail marking was 48" flash, with 8" serial above. Nose number was last two of serial of serial in 18" numbers.



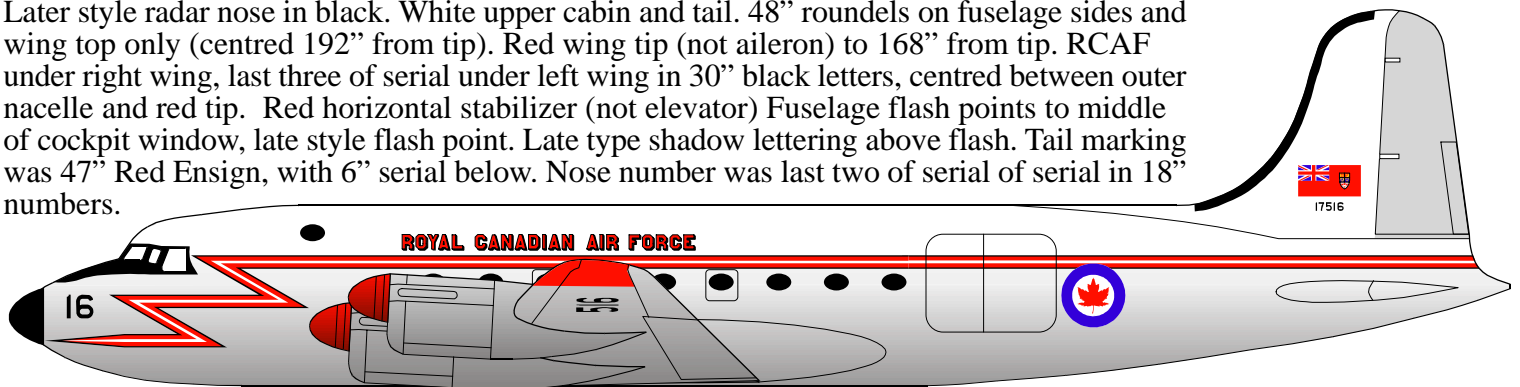
North Star 17514, 426 Sqn, 1951 (Korean War)

White upper cabin and tail. 48" roundels on fuselage sides and wing top and bottom (centred 192" from tip). Red wing tip (not aileron) to 192" from tip with 1.5" clearance around outer half of roundels. Red horizontal stabilizer (not elevator) Fuselage flash points to top of cockpit window, early style flash point. Late type shadow lettering (black shadow to right and below) on aluminum background. Tail marking was 48" flash, with 8" serial above. Nose number was last two of serial of serial in 18" numbers.



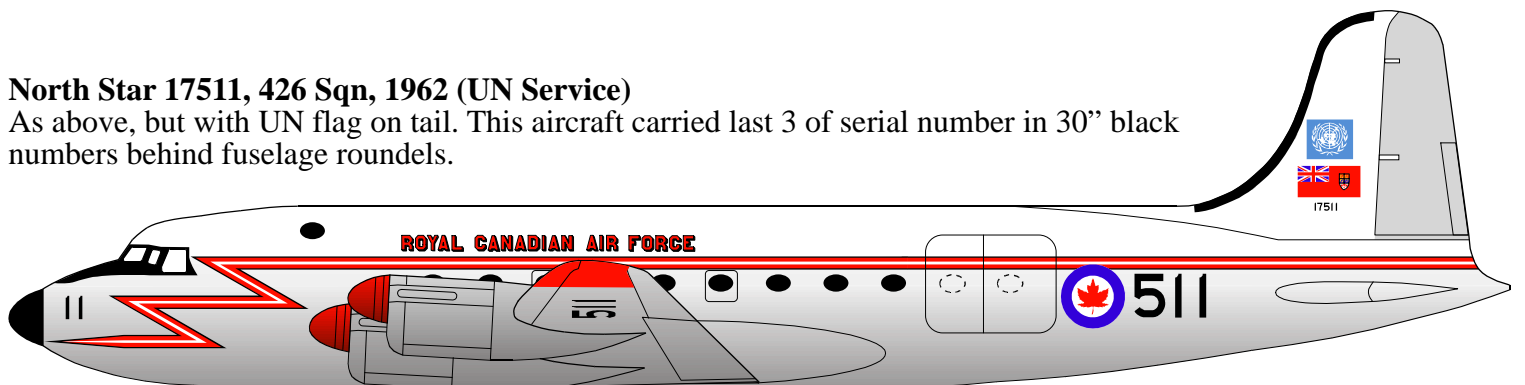
North Star 17516, 426 Sqn, 1959-65

Later style radar nose in black. White upper cabin and tail. 48" roundels on fuselage sides and wing top only (centred 192" from tip). Red wing tip (not aileron) to 168" from tip. RCAF under right wing, last three of serial under left wing in 30" black letters, centred between outer nacelle and red tip. Red horizontal stabilizer (not elevator) Fuselage flash points to middle of cockpit window, late style flash point. Late type shadow lettering above flash. Tail marking was 47" Red Ensign, with 6" serial below. Nose number was last two of serial of serial in 18" numbers.



North Star 17511, 426 Sqn, 1962 (UN Service)

As above, but with UN flag on tail. This aircraft carried last 3 of serial number in 30" black numbers behind fuselage roundels.



References

1. The Canadair North Star, Larry Milberry, CANAV Books, 1982
2. RCAF Aircraft Finish and Markings 1947-1968, Patrick Martin, 2003

Special thanks to Duncan Macintosh for his suggestion on the Ice Wagon and Neil Gaunt of Transport Wings for his collaboration on this project.