



# WHITE ENSIGN MODELS

## Handley Page Halifax B1/BII/BIII/GR11

Photo Etched Parts for the Bomb Bay of the Airfix or Matchbox/Revell kits in 1/72 scale

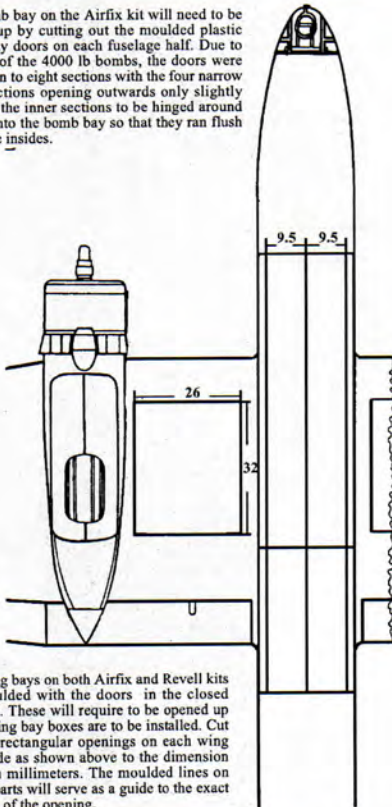


### Introduction

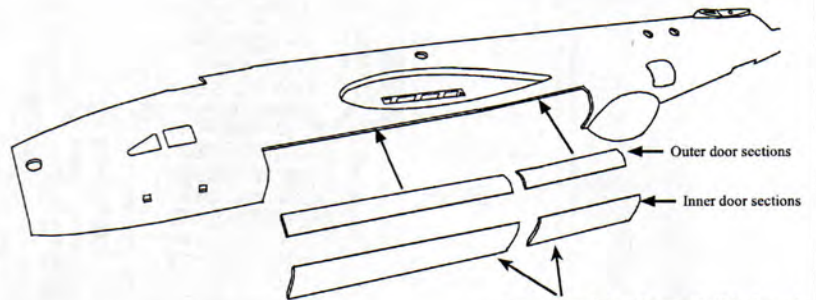
This detail set is principally designed to fit into the fuselage and wing bays of the Airfix kit, though there is little difference between this kit and the Matchbox/Revell in size and form, so that these items will fit this kit as well with probably even less modification than that needed on the Airfix kit. Due to the nature of the way the Airfix kit has been moulded, with the bomb doors closed and set in as part of the fuselage, with only a recessed demarcation line showing where the doors are, some modifications to open up these doors is required of the modeller in preparation to be able to fit this detail set. The first steps in these instructions will be focused on how to modify the Airfix kit, though the same procedure will apply for the wing bays on the Matchbox/Revell kit. The first section shows where and how to cut out the main bomb doors from the fuselage halves and keep them intact for use in fitting back to the model in the open position. Alternatively there is a set of pre-formed resin bomb doors available from White Ensign Models as WEM Pro.....

### PREPARING THE KIT PARTS

The bomb bay on the Airfix kit will need to be opened up by cutting out the moulded plastic bomb bay doors on each fuselage half. Due to the size of the 4000 lb bombs, the doors were divided in to eight sections with the four narrow outer sections opening outwards only slightly to allow the inner sections to be hinged around and up into the bomb bay so that they ran flush along the insides.



The wing bays on both Airfix and Revell kits are moulded with the doors in the closed position. These will require to be opened up if the wing bay boxes are to be installed. Cut out the rectangular openings on each wing underside as shown above to the dimension given in millimeters. The moulded lines on the kit parts will serve as a guide to the exact position of the opening.



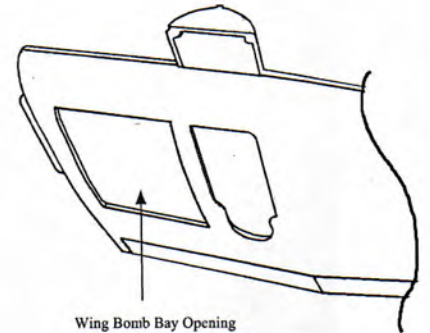
Note: It may help with assembly if the forward and rear sections of the doors are left joined together.

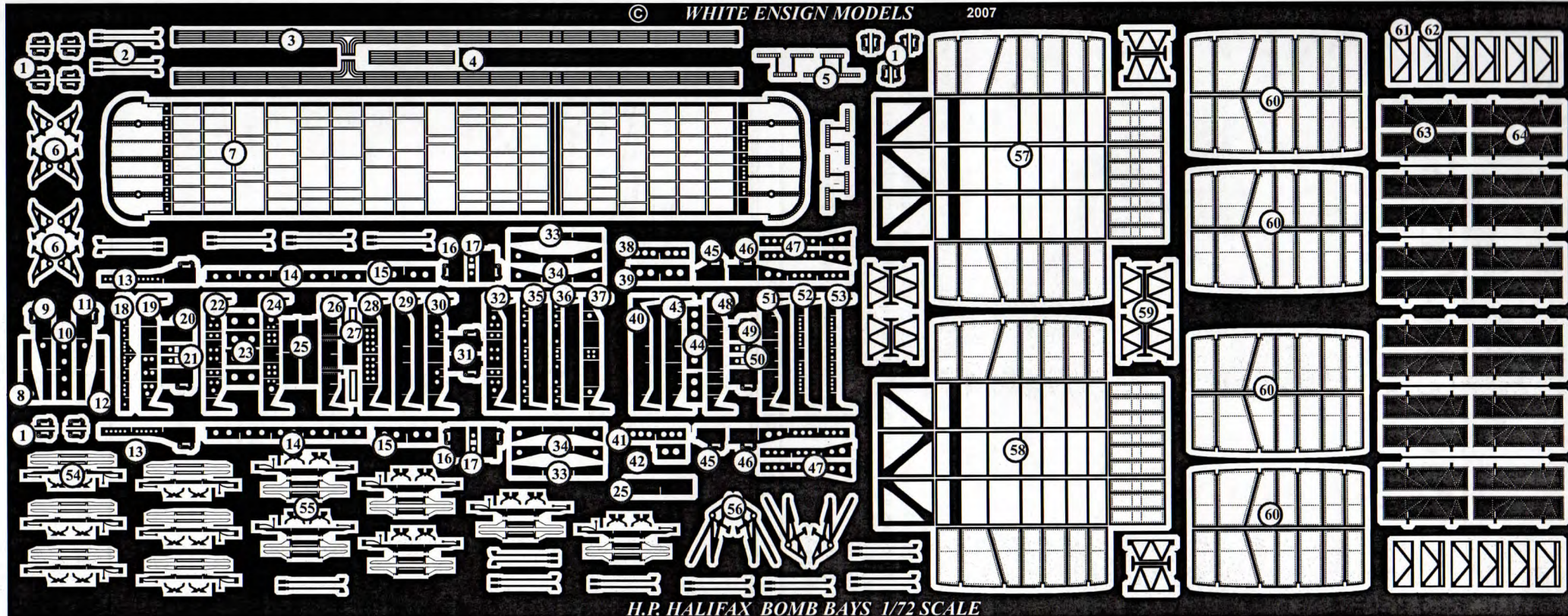
To cut out the main bomb bay doors, first mark out and scribe a line running fore and aft 9.5 millimeters in from the centre join line. This is where the inner and outer doors divide. The overall length of the main bomb bay opening should be 103.5 millimeters from the forward cut line, of which the moulded lines on the kit parts can be used as a reference.

If care is taken the doors can be extracted whole and used to fit back in the open position, or alternatively a resin door set, which is available from White Ensign Models, may be used instead.

If the plastic kit parts are to be used, clean up the edges of each section before proceeding further.

Now gently cut along the previously scribed lines so that each door section is divided in two, along their length, so that each inner door section is 9.5mm wide. All four doors can now be cut again across the moulded line towards the rear of the bay, to account for where the fuselage is slightly angled. This now gives you eight doors. The narrow outer doors are fitted directly to the edges of the bomb bay opening, angled outwards slightly. The inner doors are to be fitted to the hinges, supplied in the etched metal detail set, and the fitting and positioning will be dealt with in a later section.

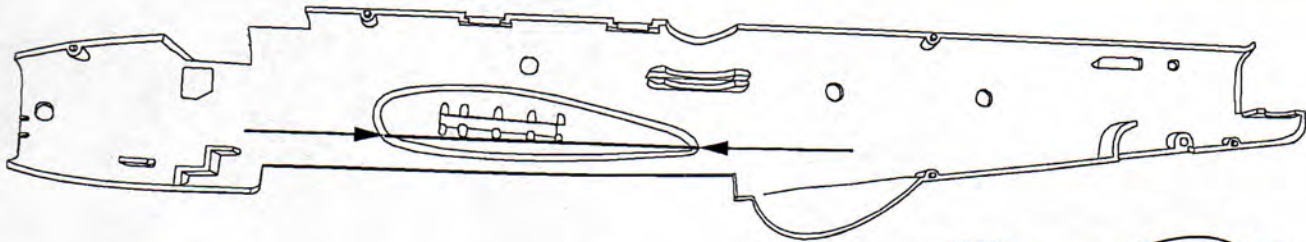




H.P. HALIFAX BOMB BAYS 1/72 SCALE

- |                                   |                              |                                      |                                       |
|-----------------------------------|------------------------------|--------------------------------------|---------------------------------------|
| 1. Bomb Carrier Hook Doublers     | 17. Bomb Hook Spacers        | 33. Outer Triple Longerons           | 49. Centre Bomb Hooks                 |
| 2. Wing Bay Door Operating Rods   | 18. Cross Frame 1            | 34. Inner Triple Longerons           | 50. Bomb Hook Spacers                 |
| 3. Pipe & Cable Looms             | 19. Cross Frame 2            | 35. Cross Frame 10                   | 51. Cross Frame 16                    |
| 4. Pipe and Cable Loom Cross Over | 20. Bomb Hooks/Frames        | 36. Cross Frame 11                   | 52. Cross Frame 17                    |
| 5. Bomb Carrier Steady Bars       | 21. Bomb Hook Spacers        | 37. Cross Frame 12                   | 53. Cross Frame 18                    |
| 6. Main Bomb Door End Hinges      | 22. Cross Frame 3            | 38. Port Outer Double Longerons      | 54. 250lb Bomb Carrier                |
| 7. Main Bomb Bay Plate            | 23. Short Spacer Frames      | 39. Port Inner Double Longerons      | 55. 500lb Bomb Carrier                |
| 8. Fwd Outer Longeron             | 24. Cross Frame 4            | 40. Cross Frame 13                   | 56. Main Bomb Door Central Hinges     |
| 9. Fwd Inner Longeron             | 25. Double Centre Spacers    | 41. Starboard Outer Double Longerons | 57. Port Wing Bomb Bay Box            |
| 10. Fwd Centre Longeron           | 26. Cross Frame 5            | 42. Starboard Inner Short Longerons  | 58. Starboard Wing Bomb Bay Box       |
| 11. Fwd Inner Longeron            | 27. Cable/Pipe Loom Brackets | 43. Cross Frame 14                   | 59. Wing Bomb Carrier Mid Support     |
| 12. Fwd Outer Longeron            | 28. Cross Frame 6            | 44. Centre Short Longerons           | 60. Wing Bomb Bay Cell Divider Panels |
| 13. Longeron with Bomb Hook       | 29. Cross Frame 7            | 45. Outer Bomb Hooks                 | 61. Wing Bomb Carrier Fwd Support     |
| 14. Outer Side Longerons          | 30. Cross Frame 8            | 46. Longeron & Inner Bomb Hooks      | 62. Wing Bomb Carrier Rear Support    |
| 15. Centre Spacer longerons       | 31. Bomb Hooks/Frames        | 47. Centre Longerons                 | 63. Wing Bomb Bay Cell Forward Doors  |
| 16. Bomb Hooks Sections           | 32. Cross Frame 9            | 48. Cross Frame 15                   | 64. Wing Bomb Bay Cell Rear Doors     |

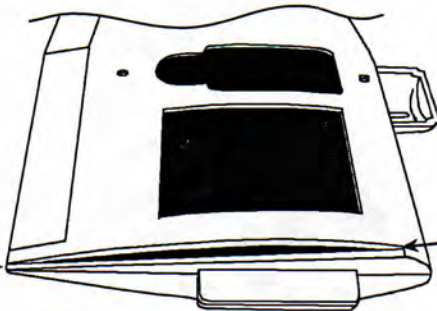
## FUSELAGE AND WING TRIMMING



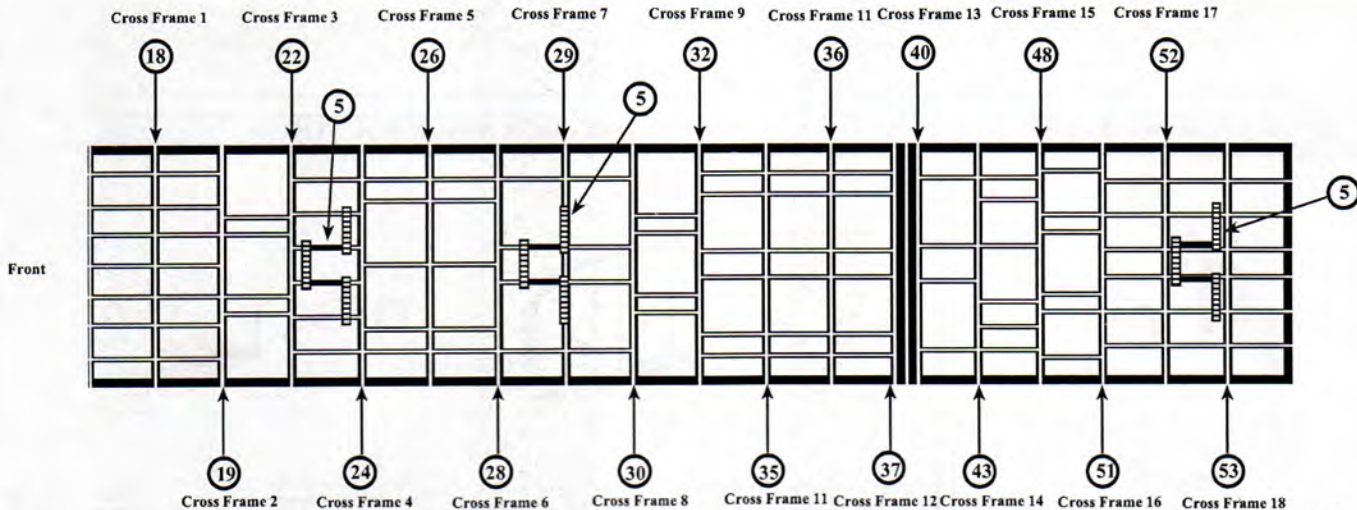
To allow extra room in the fuselage for the main bomb bay structure, it will be necessary to remove some of the plastic wing root moulding from the kit parts. Cut away the lower part of the wing root inside the fuselage on each side to a line shown above. Don't worry if a curved gap appears below the wing attachment slot, the fuselage part is amply strong enough. Take care not to remove the upper and lower bracing lugs from each side of the wing attachment slot.

When the above operation has been carried out, insert the wings into the location opening in the fuselage. Look inside and mark the wing root with a scriber where it protrudes through the gap below the attachment slot. Remove the wing again and cut away the area on the wing marked with the scriber. See diagram Right. This will make the inside of the fuselage clear of obstructions that will hinder the fitting of the bomb bay parts.

Cut away here

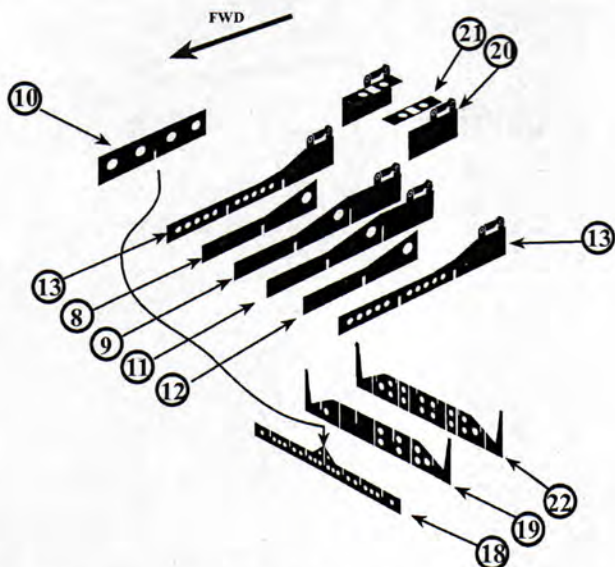


## CROSS FRAME LOCATION



Fit all cross frames to the relief etched lines on the bomb bay deck as shown above. Ensure that all frames are at 90° to the deck plate and that the relief etched vertical location lines on the frames are facing forward and line up with the longitudinal lines on the deck plate. Fit etched parts 5 in to position last of all, after the cross frames and longerons have been fitted in to position.

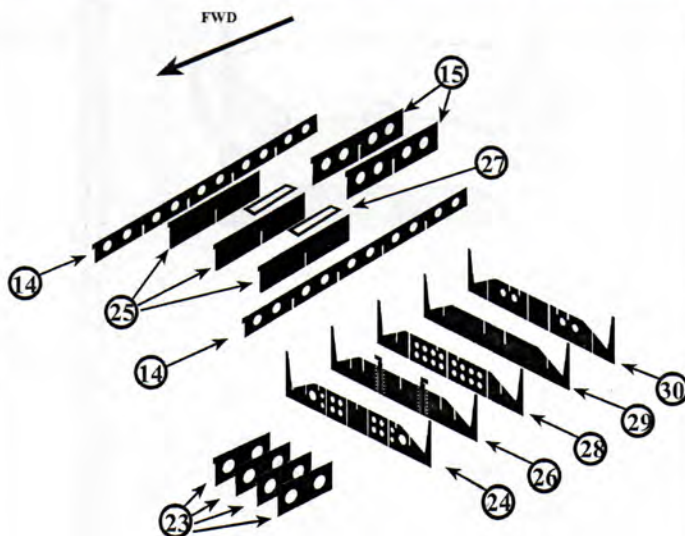
## MAIN BOMB BAY FRONT SECTION BOMB HOOKS



To assemble the interior of the main bomb bay, first start at the front and fit the central beam, 10, so that the slot fits down over the central slot in part 18. Continue to slot the parts shown above together over parts 18 to 22 in the order shown.

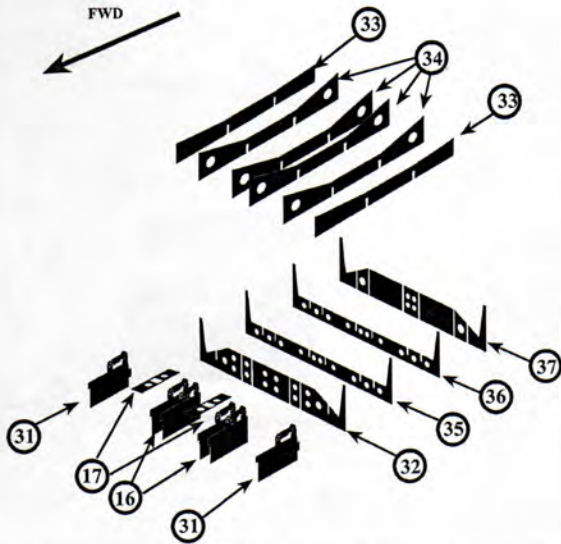
Fit the short bomb hook beams 20 outboard of parts 9 and 11 with the plates 21 used as spacers between them. The ends of the bomb hook beams should correspond and locate into the etched slots on the forward face of part 22. The positions of the longerons and fore and aft beams should correspond with the etched pattern on the bomb bay deck plate, 7.

## MAIN BOMB BAY 2ND STAGE LONGERONS



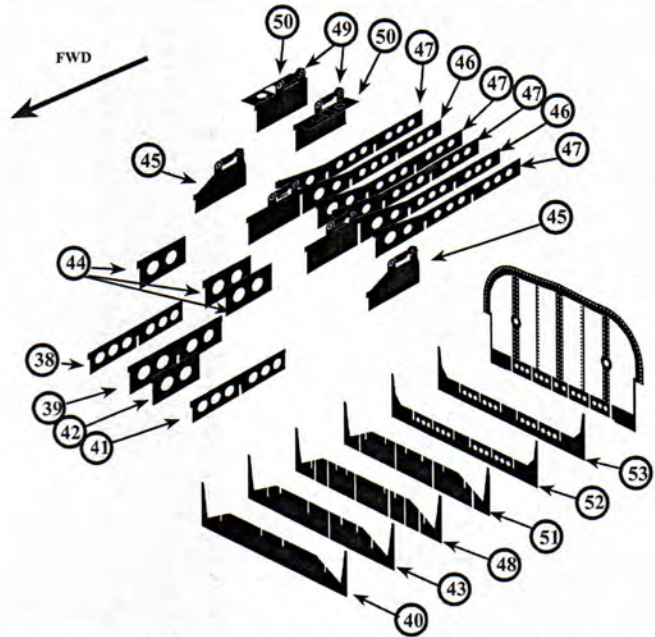
When the front section has been completed as described in the previous section, start assembling stage two by fitting etched plates 23 between Cross Frames 3 and 4, etched parts 22 and 24. Next fit the outer longerons, parts 14 so that the forward ends fit into the outer slots of etched part 22, and the aft ends fit in the outer etched lines of part 30, Cross Frame 8. Fit the etched parts 25 so that they slot into the frames, etched parts 24 and 26 with the aft end fitting into the etched lines on etched part 28, Cross Frame 6. Fit the cable/pipe loom attachment brackets, etched parts 27, so that they fit directly to the rear of the raised spigots on etched part 26, Cross Frame 5 and attach at the rear to the top of Cross Frame 6. Fit longeron plates 15 so that the central slot fits over the two middle slots on etched part 29, Cross Frame 7. The forward lugs will fit into the small slots on etched part 28 and the rear edges into the etched lines in the middle of part 30, Cross Frame 8.

### MAIN BOMB BAY MID SECTION BOMB HOOKS



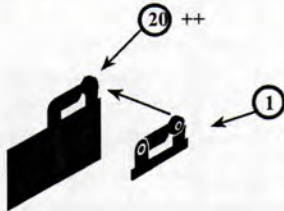
The next section starts with the middle area bomb hooks. Take the four bomb hooks etched parts 16 and fit them in pairs between etched parts 30 and 32 so that they correspond with the etched lines on part 32. Fit the spacer plates 17 between the two pairs. Fit the outer bomb hooks 31 so that the lugs on the rear edges fit in to the slots on the outer part of etched part 32. Fit the remaining fore and aft longerons 33 and 34 into the slots in the frames 35 and 36 with the rear edges fitting in to the etched lines on frame 37.

### MAIN BOMB BAY AFT SECTION BOMB HOOKS



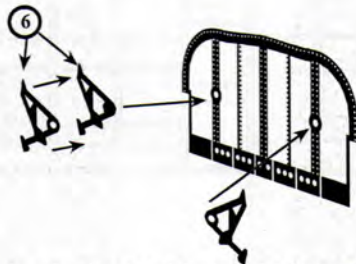
Fit the aft section longerons and bomb hooks in to place as previously described, using the etched line pattern on the bomb bay deck panel as a location guide. Note the position of the single short plate, etched part 42, and that it fit between etched parts 40 and 43, Cross Frames 13 and 14. The bomb hook plates are located between etched parts 48 and 51, Cross Frames 15 and 16. The three short plates, etched parts 44, locate between etched parts 43 and 48, Cross Frames 14 and 15.

### BOMB HOOK DOUBLERS

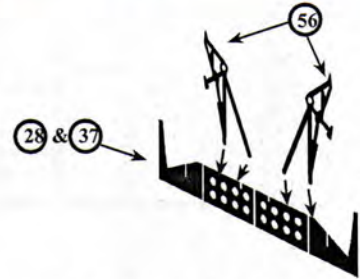


This diagram shows how to use etched parts 1, Bomb Hook Doublers, to thicken the actual retaining hooks and give a relief etched detail on both sides. There are sufficient doublers to fit to all of the bomb hooks that are part of the structural plates.

### BOMB DOOR HINGE LOCATIONS

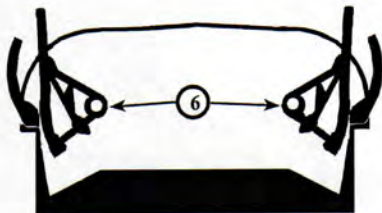


Etched parts 6 are the main bomb door hinges that fit to the end bulkheads. These are made to be doubled in thickness for extra strength. Fit these to the end bulkheads as shown, then attach the bomb doors as shown in the next diagram.

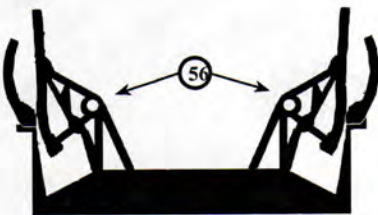


Etched parts 56 are the hinges that fit to the mid points of the main bomb bay doors. The additional legs are the means of attaching these to Cross Frames 6 and 12 as shown in the next diagram.

### BOMB DOOR ATTACHMENT



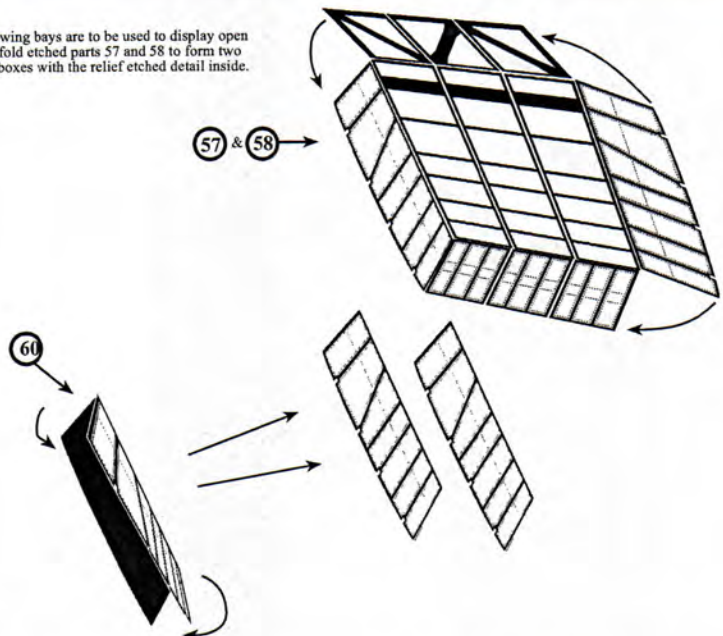
Fit the narrower side bomb doors to the longitudinal ledge along each side of the bomb bay slightly splayed as shown above. Fit the larger main bomb bay doors so that they are vertical inside the bomb bay and attached to the legs on the hinges as shown above.



The central or mid point hinges are first attached to the bomb bay doors as shown above, then the lower support legs are attached to the rear faces of the Cross Frames 6 and 12.

### WING BOMB BAY ASSEMBLY

If the wing bays are to be used to display open cells, fold etched parts 57 and 58 to form two large boxes with the relief etched detail inside.

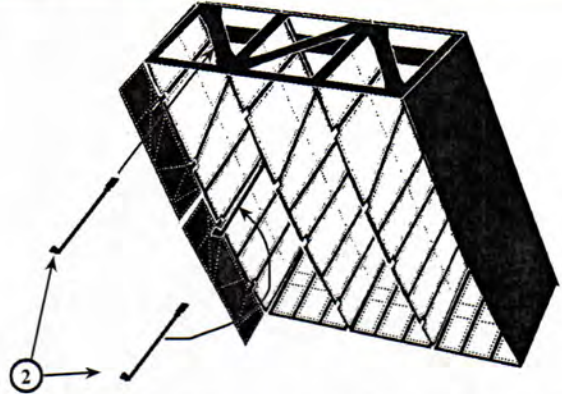
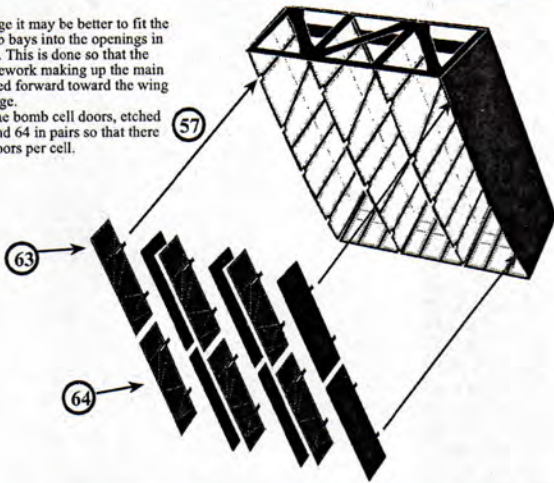


Fold the four etched parts 60 in half along the central etched line, so that the relief detail is outer most then secure the folded halves in place. Fit these panels in to the wing bays, locating them into the relief etched lines running fore and aft inside the boxes.

## WING BOMB BAY CELL DOOR ASSEMBLY

At this stage it may be better to fit the wing bomb bays into the openings in each wing. This is done so that the open framework making up the main spar is fitted forward toward the wing leading edge.

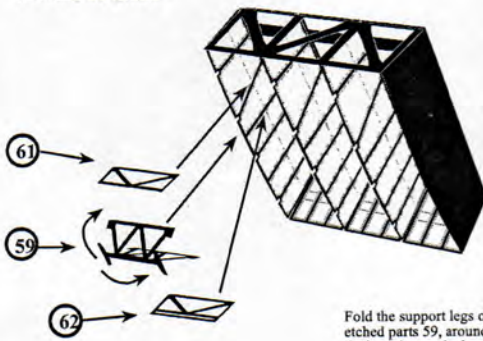
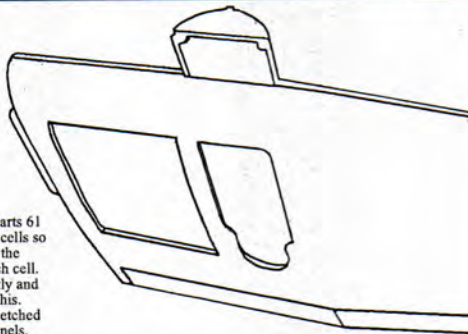
Next, fit the bomb cell doors, etched parts 63 and 64 in pairs so that there are four doors per cell.



Fit the bomb cell door acting rod and hinge unit to the etched slot on the front of each door, with the long ends fitting into each bay and attaching to the bomb bay floor. Repeat the operation on each door for as many doors as that are fitted to both wing bays.

## WING BOMB CARRIER SUPPORT FRAME ASSEMBLY

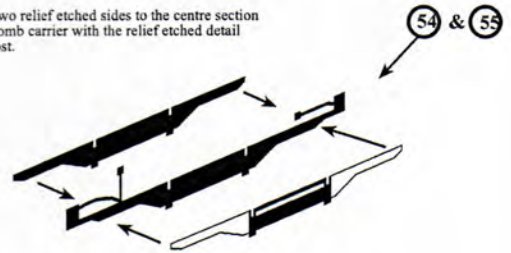
Fit the bomb cradle support frames parts 61 to the forward positions in the bomb cells so that the frames side bars are fitted to the etched frame on the side panel of each cell. This is the frame that is angled slightly and support frame should correspond to this. Fit the support frames 62 to the next etched frames to the rear, on the cell side panels. These ones are vertical.



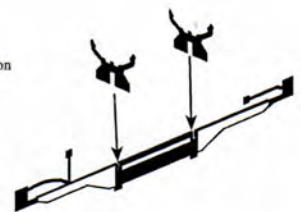
Fold the support legs of the bomb cradle steady beams etched parts 59, around so that they fit to the bomb cell deck against etched parts 61 at the front and etched parts 62 at the rear. Fit these to all six cells.

## STANDARD BOMB CRADLES

Fit the two relief etched sides to the centre section of the bomb carrier with the relief etched detail outermost.



Slot the sway braces into position as shown right.



The parts 54 are designed for the lighter 250lb bombs where etched parts 55 are for the 500lb bombs. These are fitted in to the wing bays so that the locating slots on top of the carriers fit on to the top bars of the support frames 61 and 62.

## OTHER INFORMATION

1. Etched parts 3 and 4 provided some extra detail in the form of cable/pipe runs. These long section run along the inside edge of the bomb bay and fit vertically against the side frames. The cable blocks actually match the positions to fit on to the sides of the cross frames. The junctions should lay between cross frames 5 and 6 with etched part 4 spanning the bomb bay width wise and joining the two side sections.
2. When fitting the main bomb bay plate, etched part 7, it may be helpful to laminate a layer of 20 thou plasticard to the plain side of the plate, for extra strength and rigidity. This will easily be trimmed to the size of the etched plate after fitting.
3. References available for the Halifax are the very good CD Rom Aircraft Exploration Series No3 "The Halifax B.MkIII Explored" this is a very good photographic diagrammatic and interactive reference and gives most information required to build a good model. Alternatively there is the Warpaint Series No46 Handley Page Halifax by Tony Butler which is an excellent reference and has a set of plans and profiles included. If they can be obtained a book called Halifax and Wellington by Chaz Bowyer and Armand Van Ishoven provides a wealth of photograph from operations and a lot of good recollections from aircrews. The Ian Allan publication Halifax Special by Bruce Robertson is also a very useful photographic reference.