

Type 81 'Tribal Class' Frigate

H.M.S. ZULU

1964-1984

1/350 Scale

The design of the Type 81 Frigate came about as a requirement by the British Admiralty to replace the aging wartime fleet of sloops, corvettes and destroyers with a more up-to-date design of general purpose vessels that could incorporate the latest technology then available in the 1950s & '60s. The ship was initially seen as being in the anti-aircraft role, providing fleet escorts, but the growing submarine threat from the Soviet Union dictated that more emphasis be placed on the anti-submarine (ASW) role as well as being able to give anti-aircraft cover.

To this end the Type 81 was designed to incorporate all the weapons & sensor requirements of a general purpose frigate that was also equipped with a helicopter which could be used in the MATCH role. The ship was also fully air conditioned internally, so that it could be deployed to the hotter climates of the Caribbean & Persian Gulf. Seven ships of the class were ordered & built for the Royal Navy, & they entered service between 1961 & 1964. All were named after famous ethnic tribes from various locations throughout the world, thus carrying on some of the names of the well known Tribal Class Destroyers of World War 2. The Tribal Class Frigate was now born.

HMS Zulu was the third ship to bear the name. She was laid down at Alex Stephen & Sons Ltd Shipyard, Govan on 13 December 1960. Launched by Lady Begg on 3 July 1962, final fitting out continued until April 1964 when she was completed. After an extensive period of builder's sea trials, she was the last of the seven Tribal class accepted into the Royal Navy.

Although the Tribals had been designed to be equipped with the GWS 20 Sea Cat missile system, only the *Zulu* was built with this system installed from the outset. The other ships of the class were equipped with 40mm Bofors guns until the GWS 20 system was retrofitted to them at a later date.

HMS Zulu's career spanned from early 1964 right through to 1984, & in the decades between saw a great deal of active service. The Beira patrol was in full operation during the mid-1960's & *Zulu* saw one of her first East of Suez deployments, patrolling off the east coast of Africa assisting with the enforcement of the blockade of oil to Rhodesia. In 1972 *HMS Zulu's* Wasp helicopter was sent to assist with the search & recovery of bodies from the wreckage of a US Navy Lockheed P3 Orion that had crashed on a mountain in northern Morocco. On her return to the UK from the Mediterranean, *Zulu* entered a prolonged period of maintenance & refitting at her home base of Rosyth in Scotland. She stayed at Rosyth until late 1974 when she carried out post-refit sea trials.

January 1975 saw *HMS Zulu* starting her post-refit workup at Portland, which put the ship & her company through a grueling period of exercises of all shapes & forms to bring the ship up to fully operational status with the Fleet. At this stage of her career *Zulu* was part of the 4th Frigate Squadron, & as such when her workup was completed, she took part in various exercises & joint operations with units of the Dutch & German Navies. This period took her up to August 1975 when she deployed to the Caribbean as West Indies guard ship.

During this time, *Zulu* was called upon to sail at short notice from Fort Lauderdale to take up station off the coast of Belize, when Guatemala threatened to invade & annex the country after some political disagreements with the Belize independence from Great Britain. *HMS Nubian* later joined her & stayed on station until the Army & Royal Air Force had established a security zone along the border.

HMS Zulu was present at the Spithead review in 1977 for Her Majesty the Queen's Silver Jubilee, followed by a global deployment with the standing task group of ships that included *HMS Tiger*. She was retired from service in 1979 & laid up in reserve, but she saw re-activation in 1982 when she was used to relieve ships required for duties in the Falklands conflict. *HMS Zulu* stayed in service with the Royal Navy until 1984 when she was sold to the Indonesian Navy & renamed *Martha Kristina Tuyahahyu*.

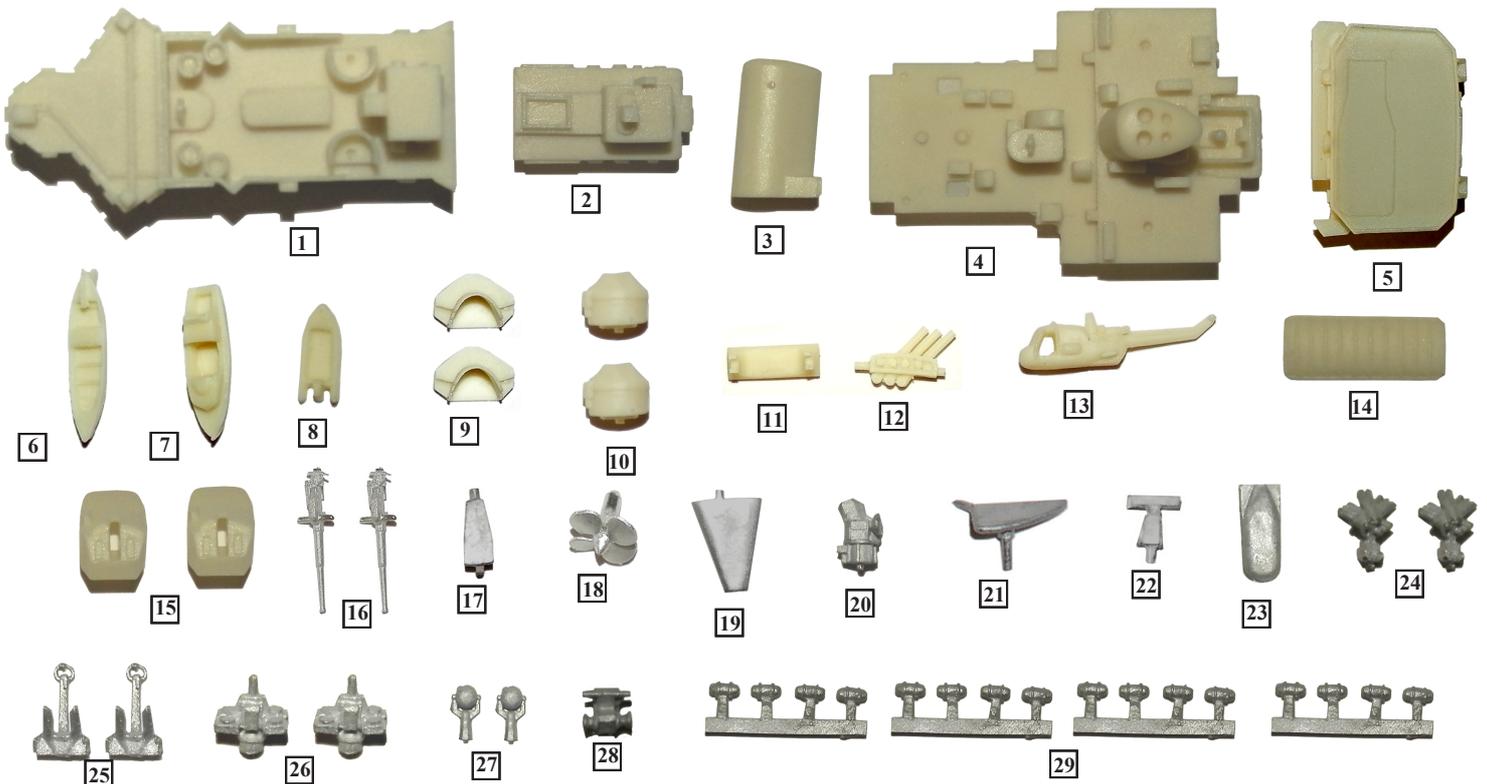
Specifications

Length: 360 ft (110m) Beam: 42.3 ft (12.9m) Displacement: 2,700 tons full load Propulsion: Single Shaft COSAG 1 Steam Turbine & 1 Metrovick G6 Gas Turbine
Speed: 28 knts Max, 20 knots Cruise Range: 5,300 nautical miles at 12 knts Complement: 253 Officers & Men

Armament

2 x Single 4.5" Mk5 Mod1 Gun Mounts 2 x Four Rail GWS 20 Sea Cat Missile Systems 2 x 20mm Single Oerlikon Mountings 1 x Mk10 Limbo ASW Mortar
1 x Westland Wasp HAS 1 Helicopter

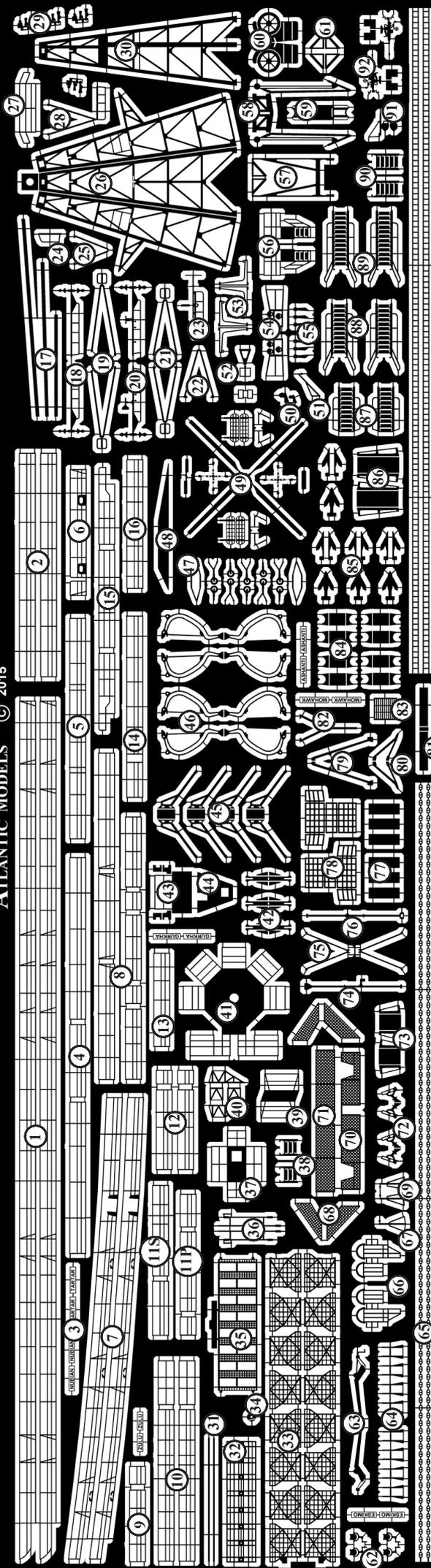
RESIN & WHITE METAL PARTS



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|-----------------------------|------------------------------|---------------------------------|-------------------------------|
| 1. Bridge | 9. Chaff Launcher Enclosures | 16. 4.5" Gun Barrels | 23. VDS Body |
| 2. Radar House | 10. GWS 20 Sea Cat Directors | 17. Whip Aerial Mountings x 4 | 24. Corvus Chaff Launchers |
| 3. Forward Funnel | 11. Mortar Mk 10 Base | 18. Propeller & Bearing | 25. Anchors |
| 4. Shelter Deck | 12. Mortar Mk 10 Barrels | 19. Rudders x 2 | 26. Sea Cat Missile Launchers |
| 5. Hangar & Flight Deck | 13. Wasp HAS 1 Helicopter | 20. MRS-3 Fire Control Director | 27. Searchlights |
| 6. 27' Whaler | 14. Hangar Roof Covers | 21. 993 Radar Antenna | 28. Deck Winch |
| 7. 25' Cheverton Motor Boat | 15. 4.5" Mk 5 Gun Shields | 22. 978 Radar Antenna | 29. Life Raft Canisters |
| 8. Gemini Inflatable Boat | | | |

PHOTO ETCHED METAL PARTS

ATLANTIC MODELS © 2015



Tribal Class Frigates 1/350 Scale

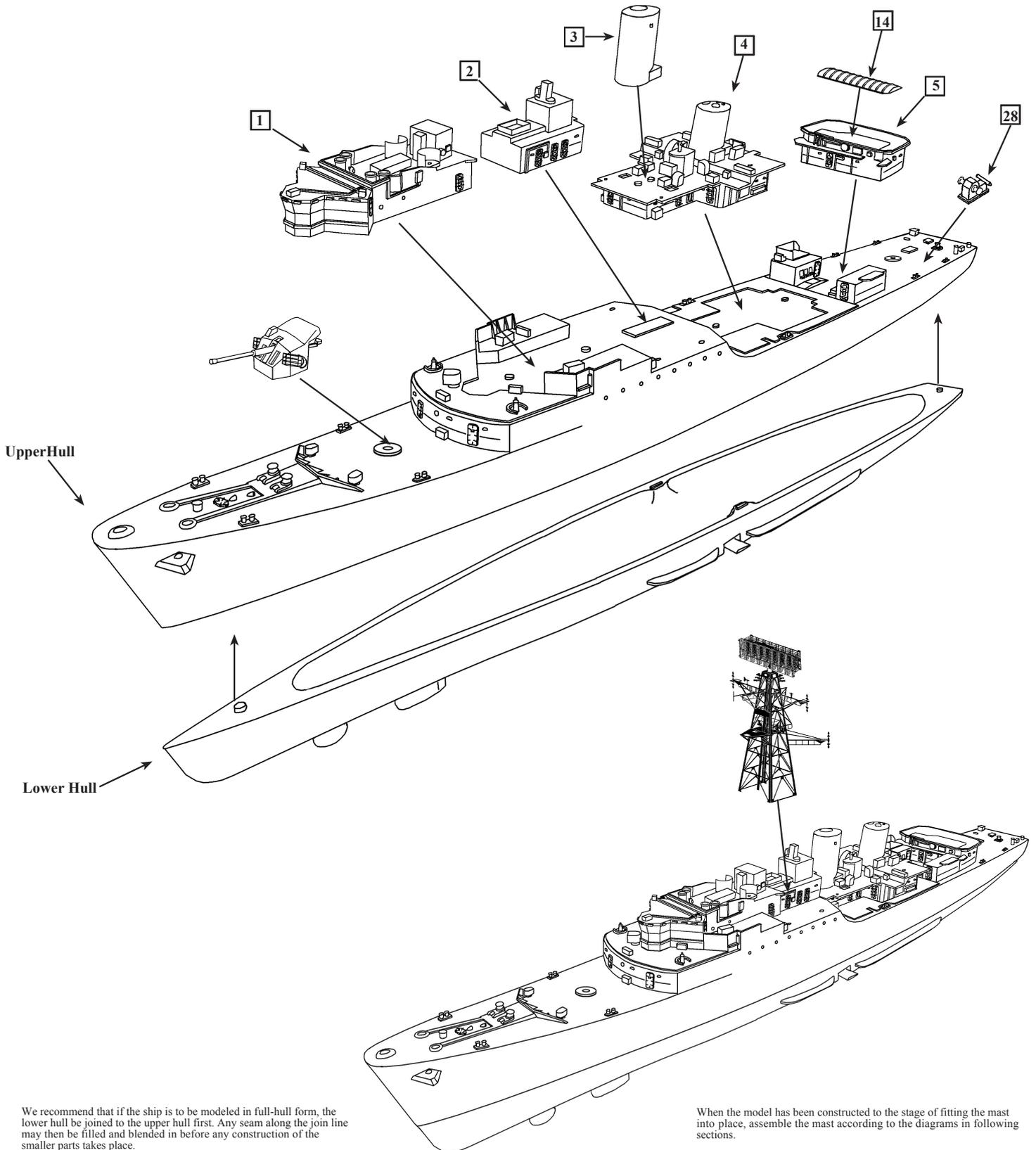
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|--|---|---|
| 1. Railings (Main Deck Aft) | 47. Wasp Helicopter Undercarriage Parts | 70. Flight Deck Safety Nets (Rear Sections) |
| 2. Railings (Aft Deck Step) | 48. Stern VDS Well Extension Plate | 71. Flight Deck Safety Nets (Side Sections) |
| 3. Ships' Name Plates | 49. Wasp Helicopter Parts | 72. Chaff Launcher Flare Gun |
| 4. Railings (Fore Deck Step) | 50. Mast Platform Lights | 73. Life Raft Racks (Double) |
| 5. Railings (Mortar Well) | 51. Mast Top Gaff | 74. Ensign Staff |
| 6. Railings (Stern) | 52. Bridge DF Antenna | 75. Flag Staff Supports |
| 7. Railings (Foc'sle Deck) | 53. Accommodation Ladder Davits | 76. Jack Staff |
| 8. Railings (Aft Director Platforms) | 54. Aft Funnel Floodlight Frames | 77. Fuel Can Rack Shelves |
| 9. Railings (FDO Position) | 55. Aft Funnel Floodlights | 78. Boat Fuel Can Racks |
| 10. Railings (Boat Deck) | 56. Inclined Ladders (Fwd Deck Step) | 79. Forward RAS Gantry |
| 11. Railings (Flight Deck House Sides) | 57. VDS Gantry Inner Bracing Frame | 80. Forward RAS Gantry Support |
| 12. Railings (Chaff Enclosure Deck) | 58. VDS Radar Antenna (Front Face Plate) | 81. Propeller Shaft Support |
| 13. Railings (Auxiliary Conn Position) | 59. VDS Body Cradle | 82. Aft RAS Gantry |
| 14. Railings (965 Radar House) | 60. VDS Gantry Pit Head Gear | 83. Aft Funnel Rear Vent Grille |
| 15. Railings (GDP Sides & Rear) | 61. VDS Gantry Pit Head Supports | 84. Life Raft Canister Racks (Single) |
| 16. Railings (993 Radar House) | 62. Signal Lamps | 85. Sea Cat Missiles |
| 17. Radar Waveguide Conduits | 63. Stern Paravane/Gemini Crane | 86. Life Raft Racks (Quadruple) |
| 18. Yards (Rear Quarter) | 64. Sea Cat Launcher Rails | 87. Inclined Ladders (Boat Deck) |
| 19. Yards (Rear Quarter) | 65. Anchor Chain Stock | 88. Inclined Ladders (GDP Access) |
| 20. Yards (Main Sides) | 66. Flare Rocket Racks | 89. Inclined Ladders (FDO Access) |
| 21. Yards (Main Sides) | 67. Aft Funnel Centre Wire Antenna Mast | 90. Inclined Ladders (Corvus Deck) |
| 22. Yards (Main Front) | 68. Flight Deck Safety Nets (Corner Sections) | 91. GPI Yardarm |
| 23. Yards (Main Front) | 69. Aft Funnel Side Wire Antenna Masts | 92. 20mm Oerlikon Mounts |

General Precautions

When assembling a Resin/Photoetched metal kit, certain precautions should be taken.

1. Resin dust can be an irritant if inhaled. We recommend that you wear a suitable dust mask when drilling or sanding resin parts.
2. Cyano adhesives (super glues) are generally used to assemble this type of kit. Care must be taken when using this type of adhesive as it will bond in seconds. Follow the advice on the container.
3. Wash resin parts in a solution of warm soapy water before assembly. This will remove any residual mold release agents & ensure a good key for painting.
4. Soak photoetch parts in a suitable solvent, such as white spirit, to degrease the surfaces prior to painting.

MAIN STRUCTURAL PARTS



We recommend that if the ship is to be modeled in full-hull form, the lower hull be joined to the upper hull first. Any seam along the join line may then be filled and blended in before any construction of the smaller parts takes place.

Fitting of the larger parts such as the bridge, resin part 1, may take place at an early stage so that the smaller parts and details may be added around them.

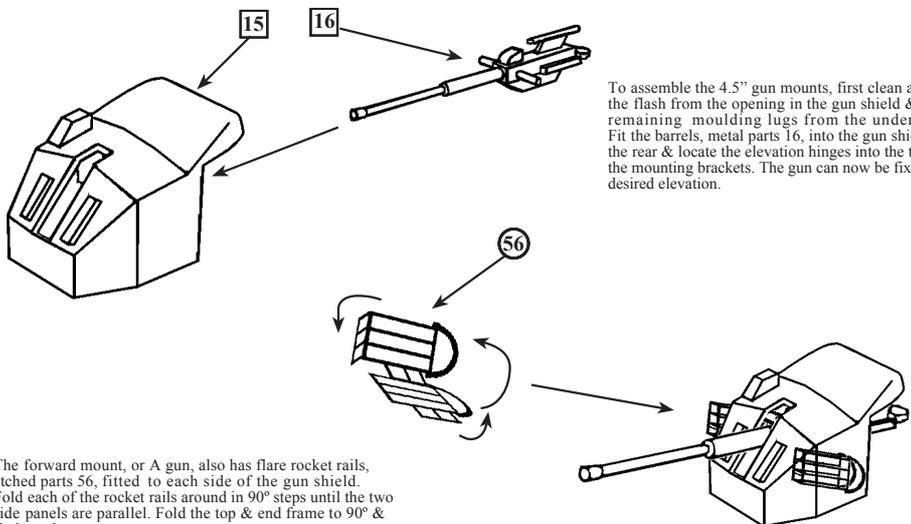
Before fitting the shelter deck & midships superstructure, resin part 4, we recommend that the area inside the forward cross passage be painted & finished first, as this area will be inaccessible when the parts are all assembled. The same applies to the short passageway between the hangar, resin part 5, & the mortar handling room on the starboard side.

When the model has been constructed to the stage of fitting the mast into place, assemble the mast according to the diagrams in following sections.

Fit the assembled foremast down to the deck so that the bottom rails on the side lattices fit along the edges of the deck on the top of the radar house.

Fit the fore funnel & hangar roof covers into place before spray painting. This is so that any seams in the joints may be filled & smoothed prior to painting. We recommend that if the Wasp helicopter is to be fitted as being ranged on the flight deck, then the hangar roof covers are omitted from the model.

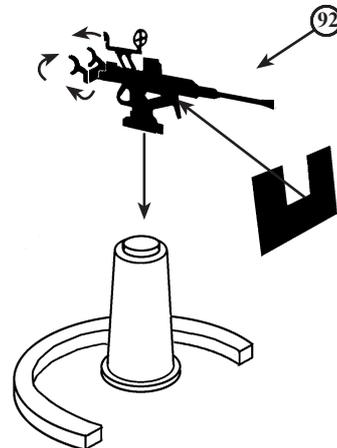
4.5" Mk5 Gun Mount Assembly



To assemble the 4.5" gun mounts, first clean away the flash from the opening in the gun shield & any remaining moulding lugs from the underside. Fit the barrels, metal parts 16, into the gun shield from the rear & locate the elevation hinges into the tops of the mounting brackets. The gun can now be fixed at the desired elevation.

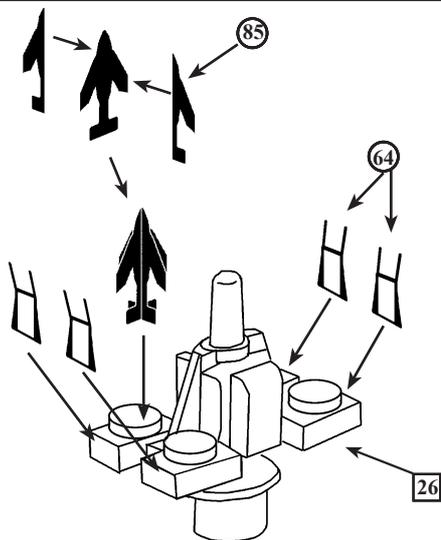
The forward mount, or A gun, also has flare rocket rails, etched parts 56, fitted to each side of the gun shield. Fold each of the rocket rails around in 90° steps until the two side panels are parallel. Fold the top & end frame to 90° & fix into place. Fit the two rocket rails to each side of the gun shield as shown right, angled slightly upward.

20mm Oerlikon Mount



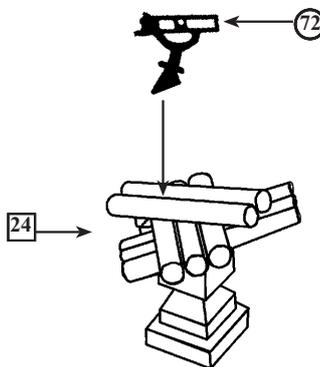
Fold the shoulder rests on the rear of the gun around to 90° so that they are parallel, then fold them up to 90° to fit against the back of the gun. Twist the gun sight to 90°. Fit the 20mm gun mount to the tops of the pintles that are situated on each side of the forward superstructure top deck abreast the bridge. Fit the gun shield centrally to the locating lug just below the mid point on the gun.

Sea Cat Missile Launcher



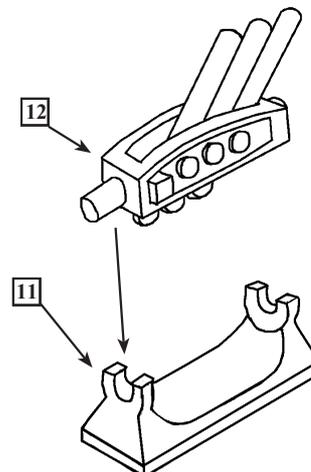
Assemble the Sea Cat missiles using etched parts 85 as shown above. These can be fitted to the launcher as desired. Fit the side rails, etched parts 64, to the short sides of the launcher. Make two of these.

Corvus Chaff Launcher Assembly



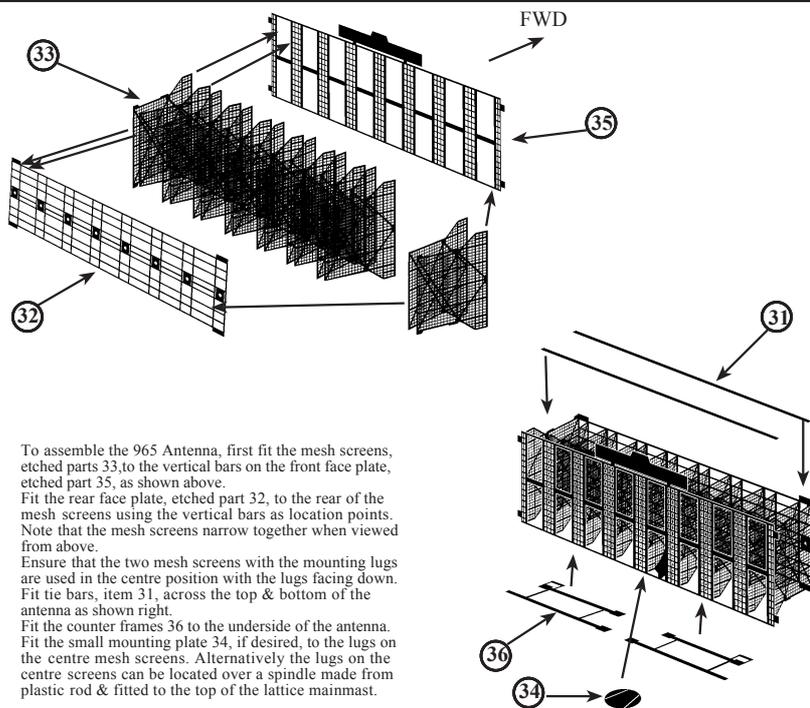
Fold the flare tubes, etched parts 72, in half to make them double-thickness with the relief-etched detail outermost. Fit to the top of the chaff launchers, metal parts 24, so that the foot locates between the top two tubes. Make two of these.

Mortar Mk10 Assembly



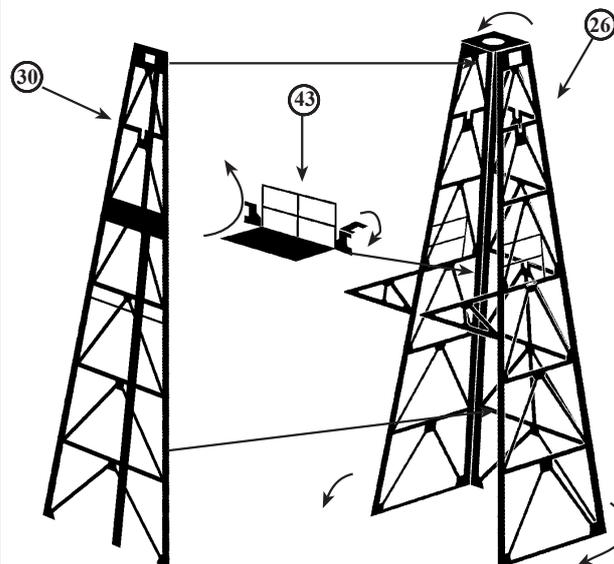
Fit the Mortar Mk 10 barrel unit, resin part 12, so that the hinge lugs locate in the recessed ends of the mounting base, resin part 11. The mortar barrels can be angled sideways as desired.

965 Radar Antenna Assembly



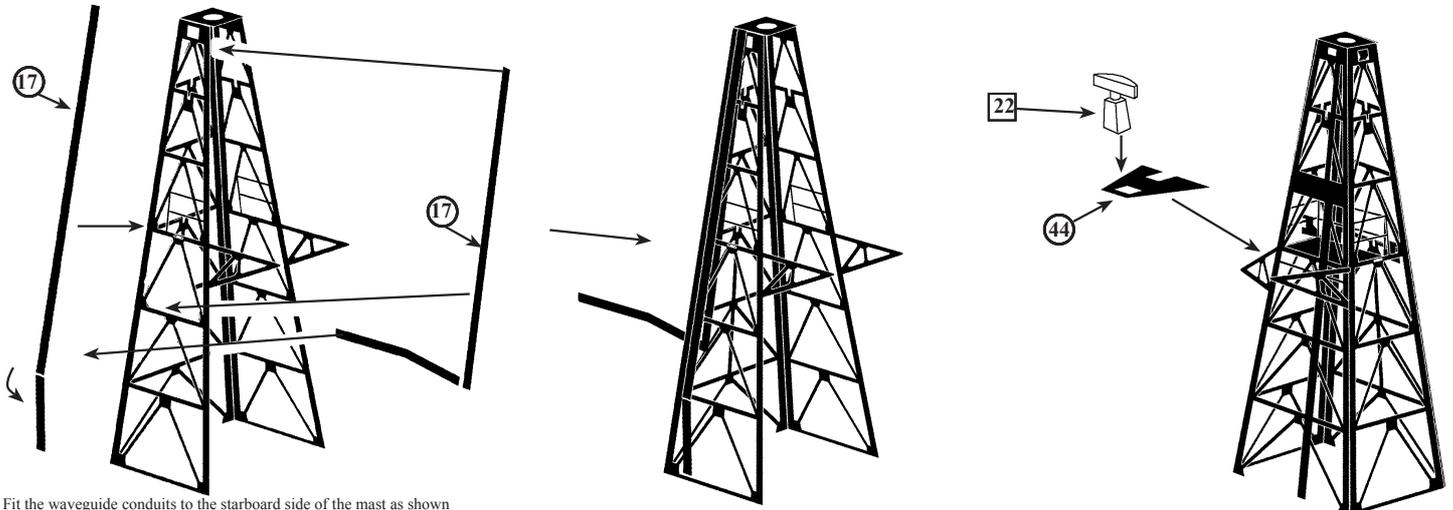
To assemble the 965 Antenna, first fit the mesh screens, etched parts 33, to the vertical bars on the front face plate, etched part 35, as shown above. Fit the rear face plate, etched part 32, to the rear of the mesh screens using the vertical bars as location points. Note that the mesh screens narrow together when viewed from above. Ensure that the two mesh screens with the mounting lugs are used in the centre position with the lugs facing down. Fit tie bars, item 31, across the top & bottom of the antenna as shown right. Fit the counter frames 36 to the underside of the antenna. Fit the small mounting plate 34, if desired, to the lugs on the centre mesh screens. Alternatively the lugs on the centre screens can be located over a spindle made from plastic rod & fitted to the top of the lattice mainmast.

Lattice Mast Internal Platform Location



Fold the side lattices of the mainmast around to 90° so that they are parallel, then fold the small top plate down to fit across the gap. Ensure that relief-etched detail is outermost. Fold up the railings on platform, etched part 43, then fold the sensor 'ears' over so that they are double-thickness. Fit the platform into the mast so that the sensor ears fit through the gap formed by the upright railing stanchion & the angled bracing struts on each side of the mast. When the platform is secured into place, fit the front lattice section of the mast, etched part 30, into place.

Mast Lattice Assembly

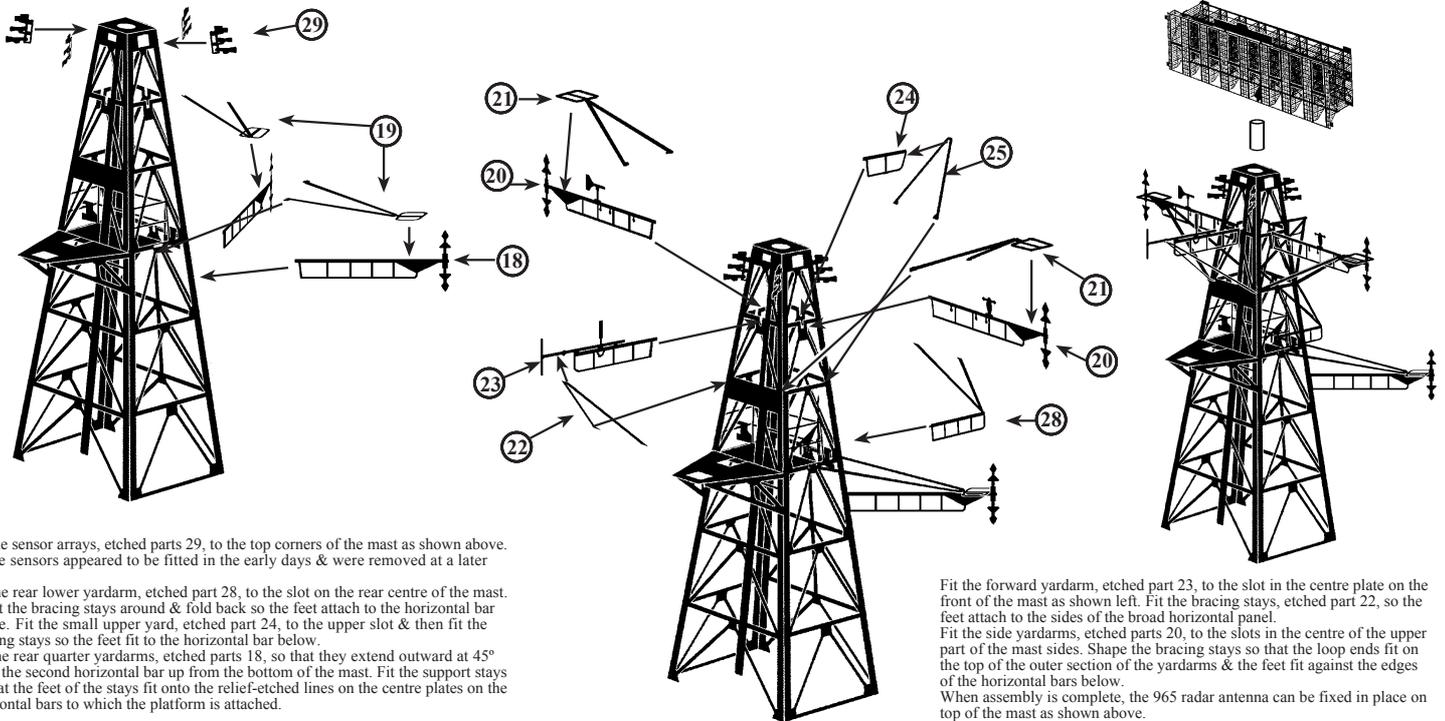


Fit the waveguide conduits to the starboard side of the mast as shown above. The long section of conduit fits to the rear upright corner pole with an angle at the bottom taking it inside the lowest mast section. Fit the medium length conduit just forward of the long length on the inside of the mast so that it passes up the mast just behind the inner platform. Fit the short length at the bottom of the medium length at 90°.

When fitted into place the short length of conduit should pass out of the rear of the mast and locate to the top of the section of conduit protruding up from the side of the 965 radar house, resin part 2.

Fit the 978 radar platform, etched part 44, to the front of the main mast as shown. Angle the support brackets that extend from the side lattices inward to fit against the edges of the platform. Fit the 978 radar antenna, metal part 22, to the rectangular recess on the forward platform.

Mast Yardarms Assembly



Fit the sensor arrays, etched parts 29, to the top corners of the mast as shown above. These sensors appeared to be fitted in the early days & were removed at a later date.

Fit the rear lower yardarm, etched part 28, to the slot on the rear centre of the mast. Twist the bracing stays around & fold back so the feet attach to the horizontal bar above. Fit the small upper yard, etched part 24, to the upper slot & then fit the bracing stays so the feet fit to the horizontal bar below.

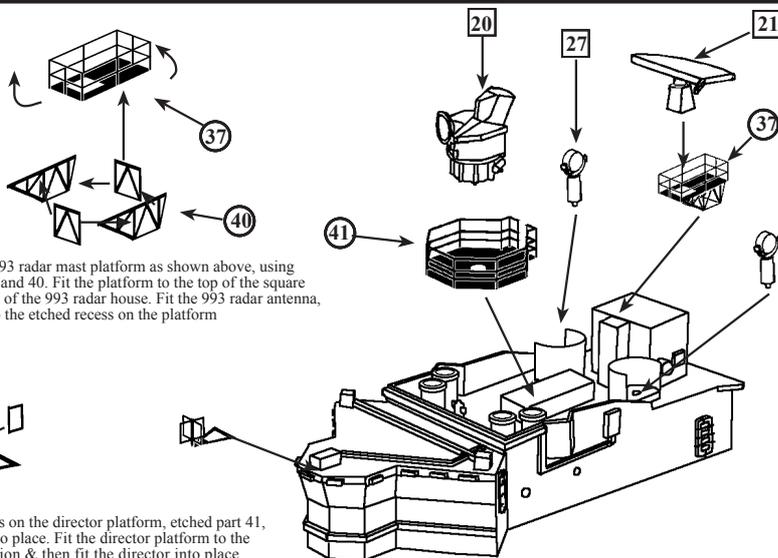
Fit the rear quarter yardarms, etched parts 18, so that they extend outward at 45° from the second horizontal bar up from the bottom of the mast. Fit the support stays so that the feet of the stays fit onto the relief-etched lines on the centre plates on the horizontal bars to which the platform is attached.

Fit the forward yardarm, etched part 23, to the slot in the centre plate on the front of the mast as shown left. Fit the bracing stays, etched part 22, so the feet attach to the sides of the broad horizontal panel.

Fit the side yardarms, etched parts 20, to the slots in the centre of the upper part of the mast sides. Shape the bracing stays so that the loop ends fit on the top of the outer section of the yardarms & the feet fit against the edges of the horizontal bars below.

When assembly is complete, the 965 radar antenna can be fixed in place on top of the mast as shown above.

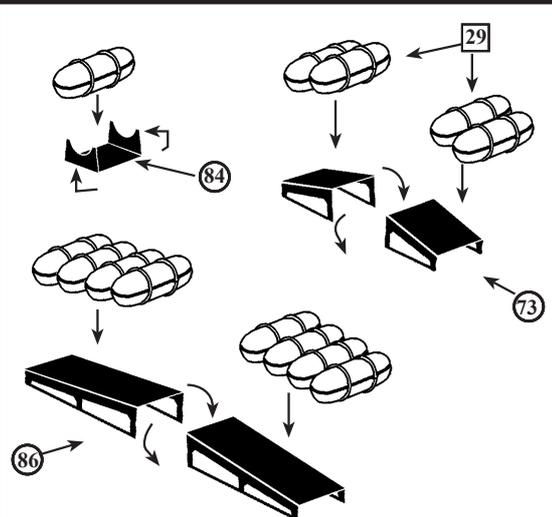
Forward Director & 993 Radar Antenna



Assemble the 993 radar mast platform as shown above, using etched parts 37 and 40. Fit the platform to the top of the square forward section of the 993 radar house. Fit the 993 radar antenna, metal part 21 to the etched recess on the platform

Fold up the railings on the director platform, etched part 41, to 90° & secure into place. Fit the director platform to the central raised section & then fit the director into place. Shape the DF antenna, etched part 52, as shown above & fit to the front of the bridge roof.

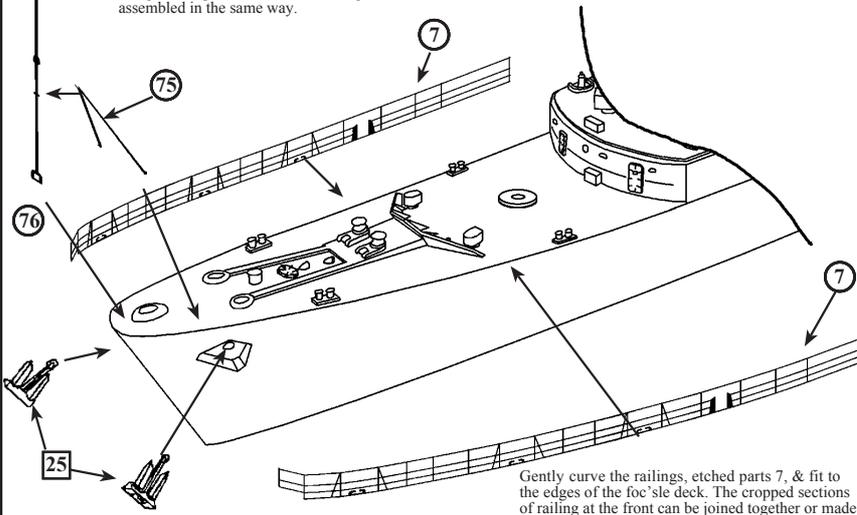
Life Raft Canister Racks



To assemble the life raft canister stowage rack, the same method applies to all. Fold down the sides of the two- & four-canister racks, etched parts 73 & 86, to 90°, then fit the required number of life raft canisters, metal parts 29. The single-canister racks fold up to 90° & a single canister is placed into the curved end sections.

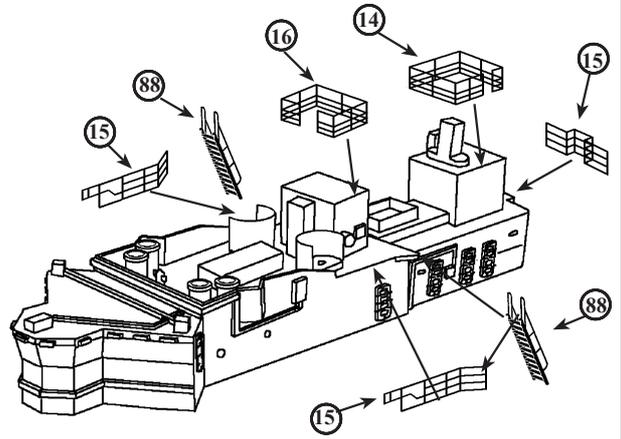
Foc'sle Fittings Assembly

If the jack staff is to be fitted to the bow, assemble as shown using etched parts 75 & 76. The ensign staff on the stern is assembled in the same way.



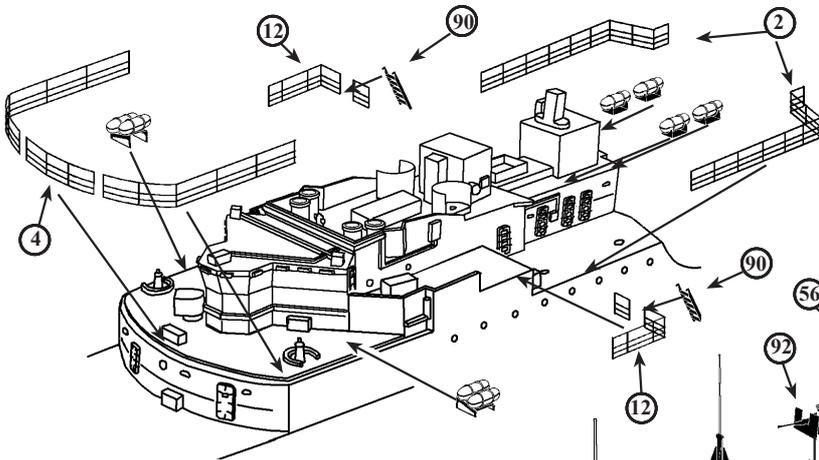
Gently curve the railings, etched parts 7, & fit to the edges of the foc'sle deck. The cropped sections of railing at the front can be joined together or made to meet up with the jackstaff.

Upper Superstructure Railings



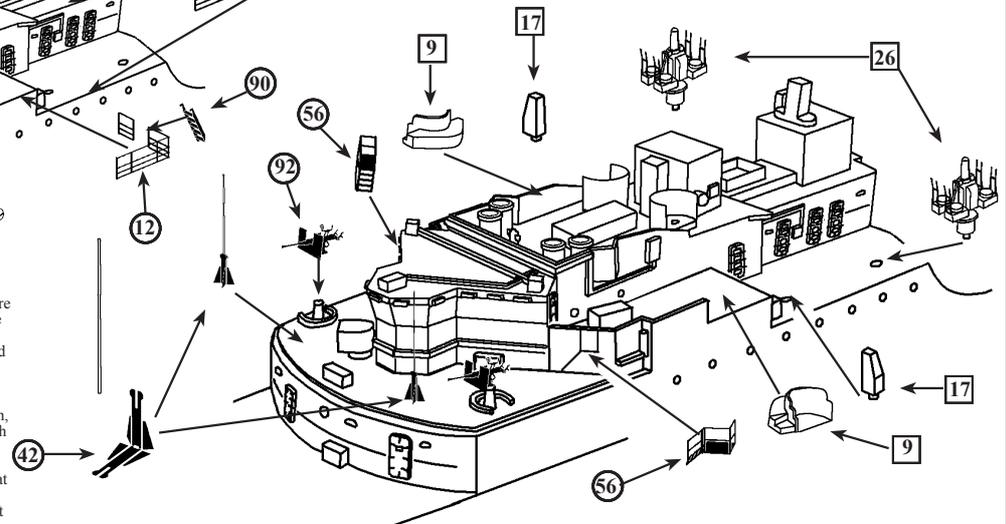
Shape & fit the railings sections 14 & 16 to the tops of the 965 & 993 radar houses respectively.
Fit the forward sections of railings, etched parts 15, to each side of the signal deck, angling the end sections outward along the edges of the ladder landings. Shape & fit the inclined ladders, etched parts 88, to the ladder landings with the uprights attaching to the railings.

Forward Superstructure Railings & Fittings Location

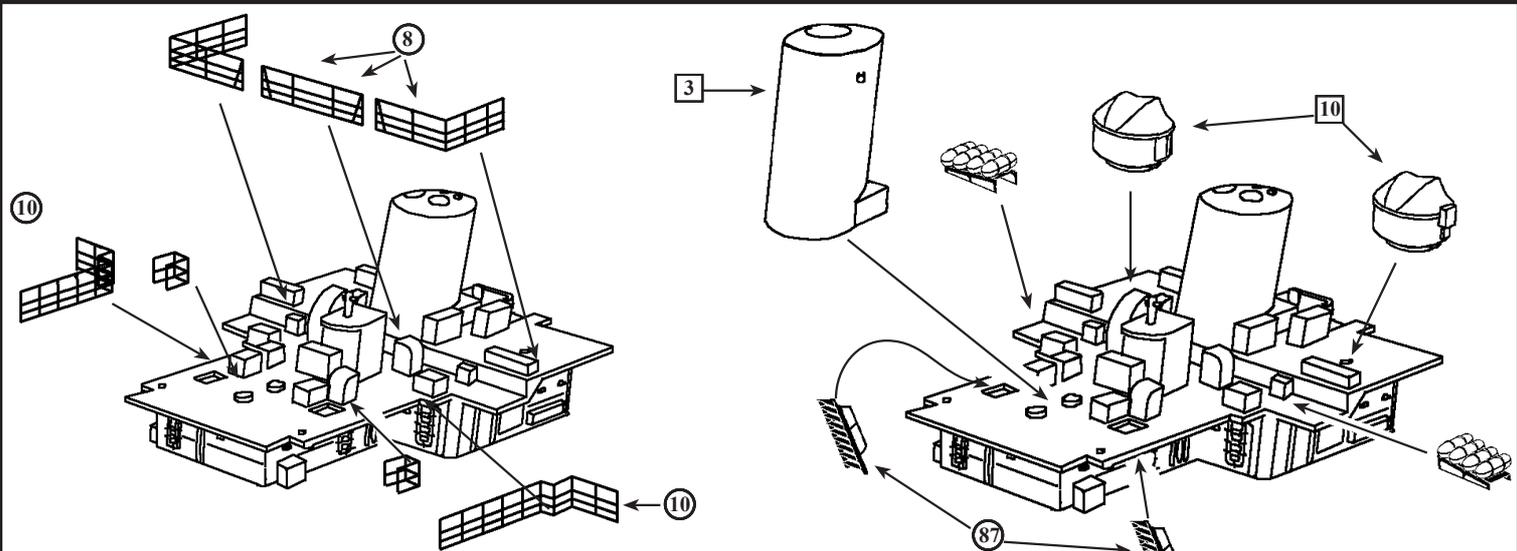


Shape & fit the railings sections, etched parts 4, to the edges of the forward superstructure deck as shown left. Allow a gap for the vertical ladder access.
Shape & fit railings, etched parts 2, to the edges of the Sea Cat deck on the superstructure. Note that the small end section is angled to fit onto the forward part of the boat deck.
Shape & fit the railings sections, etched parts 12, to the edges of the deck adjacent to the chaff launcher enclosures. Small inclined ladders, etched parts 90, run down from the chaff launcher deck to the Sea Cat deck.

Fold the whip aerial bases, etched parts 42, in half, trapping a length of wire or stretched sprue in the top etched recess to make the whip aerial. Fit the aerials to the deck forward of the bridge as shown.
Fit the assembled 20mm Oerlikons to the tops of the pintles facing forward or outboard as desired.
Shape & fit the small inclined ladders and landings, etched parts 56, to the bulwarks on the front of the bridge wings as shown right.
Fit the chaff launcher enclosures to each side of the bridge deck as shown, then fit the Corvus chaff launchers into place inside. Note: Allow enough room between the front of the chaff launcher enclosure & the edge of the deck to fit the railing sections.
Fit the large VHF whip aerial bases, metal parts 17, to the locating holes at the forward end of the Sea Cat deck.
Fit the Sea Cat launchers, metal parts 26, into the locating holes at the aft end of the Sea Cat deck.



Aft Superstructure Deck & Funnel Fittings



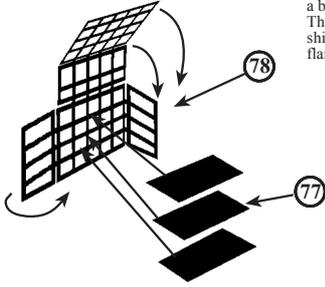
Shape & fit the railing sections, etched parts 8, to the forward edges of the Sea Cat director deck. Allow a small gap to fit the short steps, etched parts 38.
Shape & fit the boat deck railings, etched parts 10, to the edges of the boat decks on each side.
Shape & fit the small railings sections around the tops of the ladderways.

Shape & fit the inclined ladders, etched parts 87, to run from the boat deck to the main deck. Fit the Sea Cat directors, resin parts 10, to the locating holes on the director deck. Fit the quad life raft racks to the extended strip of deck aft of the boat deck.

Aft Superstructure Railings Location

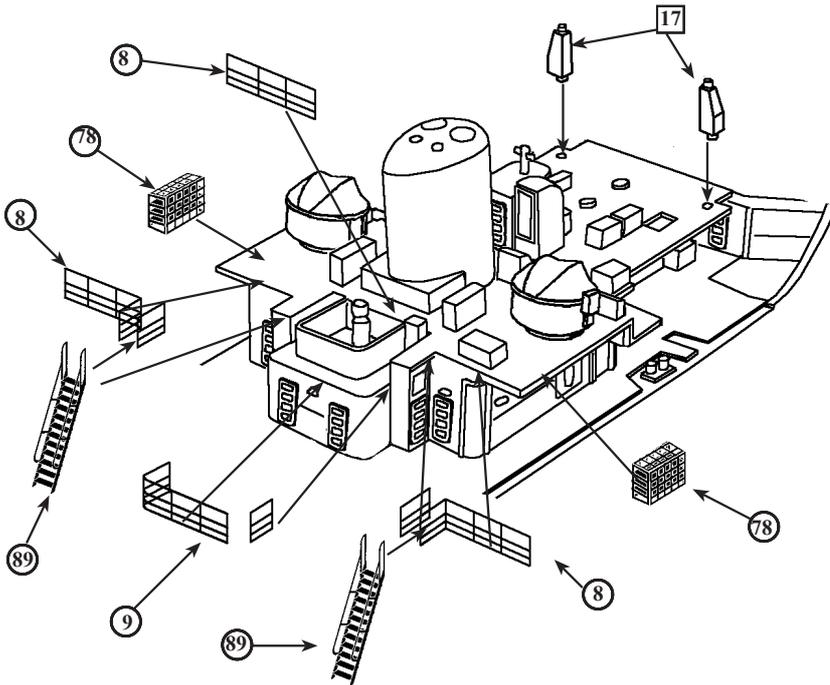
Fold the sides of the fuel can rack round to 90° so that they are parallel, then fold the top & front panels down in stages of 90° so that they form a box construction rack.

These racks are meant to contain the Jerry cans of fuel required by the ship's boats. They have a quick overboard release capability due to the flammable contents, & are painted red.

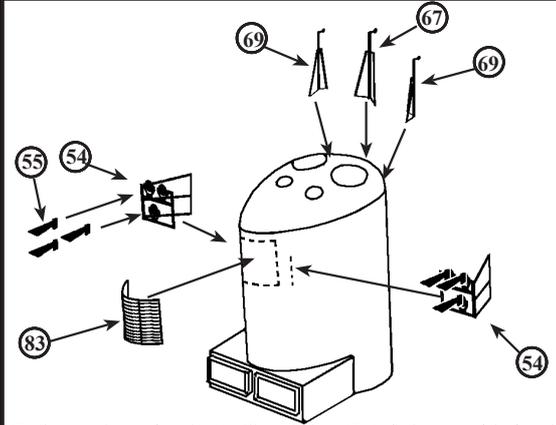


Shape & fit the railings sections, etched parts 8, to the aft edges of the director deck as show below. The small sections of railing fit to the inward edges of the ladder landings. The single length of railing fits along the back of the FDO's position. Shape the inclined ladders, etched parts 89, & fit to the aft edges of the landings on each side of the FDO's position. Fit the fuel can racks to the rear outer edges of the director platforms.

Fit the remaining two large whip aerial bases, metal parts 17, to the locating holes at the forward ends of the boat decks.



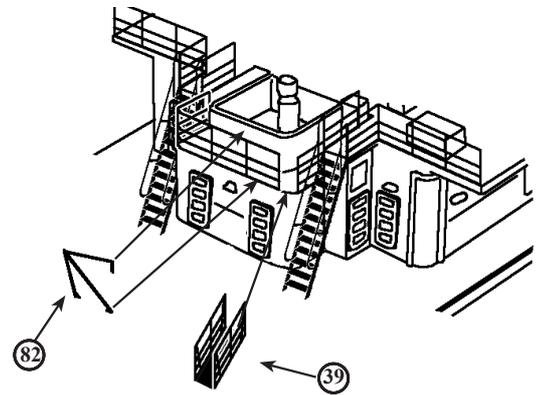
Aft Funnel Fittings Assembly



Gently curve the rear funnel vent grille, etched part 83, to fit the curve of the funnel at a point 1.5mm down from the edge of the funnel cap.

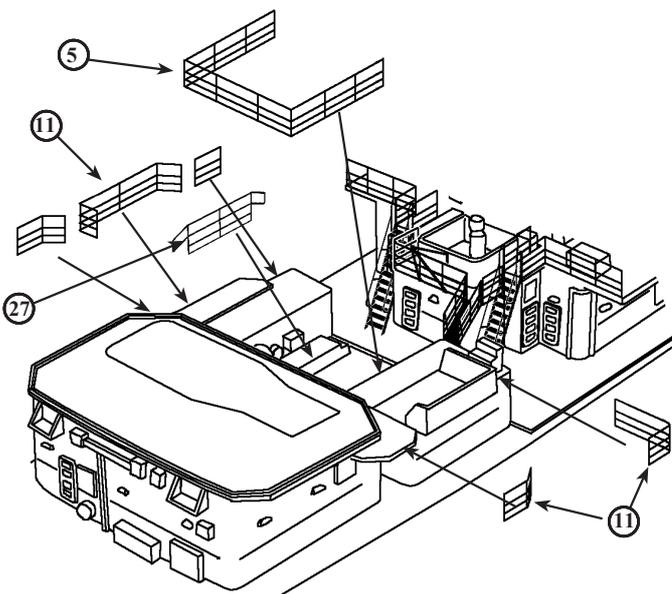
Fold the floodlight support frames, etched parts 54, along the vertical post until they are angled inward. Fit to the funnel so that the inner vertical post on the floodlight frame fits just outboard of the funnel vent grille. Fit the vertical post on the support frame to the funnel so that floodlight frames are in line with each other athwartships. Fit the floodlights, etched parts 55, to the circular backs fitted in the floodlight frame. Shape and fit the wire antenna masts, etched parts 67 and 69 to the front of the funnel cap as shown above.

FDO's Catwalk Location



Fold the railings on etched part 39 up to 90° so that they are parallel. Fit the catwalk so that it bridges the gap between the mortar handling room roof & the walkway around the FDO's position. Shape and fit the aft RAS sheerlegs, etched part 82, to the bulkhead on the FDO's position as shown.

Mortar Well Railings Location



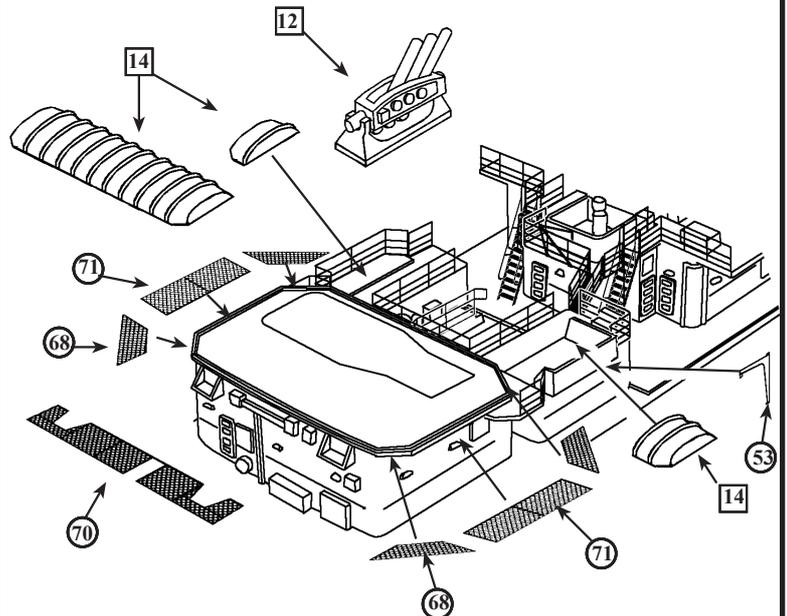
Shape & fit the railings section, etched part 5, around the mortar well, which involves fitting it along the edges of the flight deck catwalk, the inner edge of the mortar handling room roof, & the inner edge of the air office roof.

Shape & fit the railings sections, etched parts 11P, to the outer edges of the air office roof. There are alternative fittings for the starboard railing section, etched part 11S. The first is a straightforward fit of the shorter length, folded to 90° & fitted to the forward end of the mortar handling room roof. This applies in both cases. Cut the two sections from the end of the longer railing 11S & shape them to fit the angled catwalk extension below the flight deck as shown above.

The alternative is to remove the solid bulwark from the deck edge & replace that with the whole of the longer section of 11S.

Flight Deck & Mortar Well Fittings

Fit the flight deck safety nets, etched parts 70 & 71 to the rear & side edges of the flight deck. If the nets are to be fitted in the raised position when the helicopter is stowed in the hangar, the side sections will need to be linked to the rear section by cutting down the angled sections of net to fit across the gap between the sides and rear nets. If the nets are in the lowered position, the angled sections, parts 68, will fit across the corners of the flight deck & link up the side & rear sections.

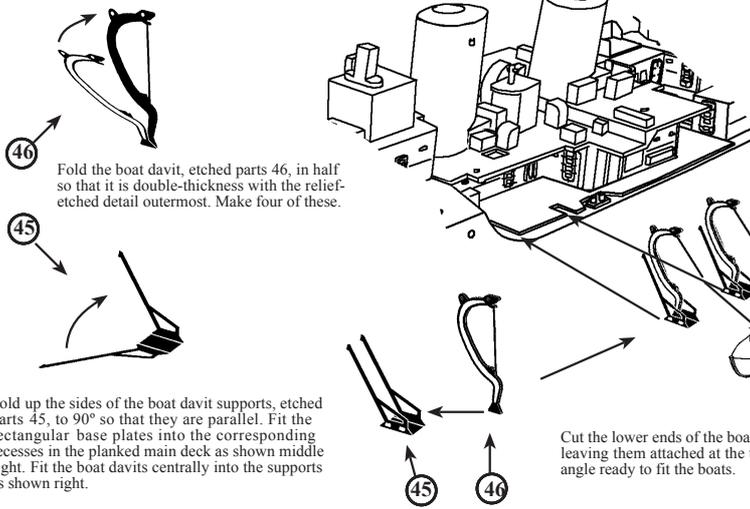


Fit the Mortar Mk10 assembly into place centrally in the mortar well. Fold the accommodation ladder davits, etched parts 53, in half so that they are double-thickness. Fit these to the outside walls of the mortar handling room & the air office at the forward ends.

The hangar roof covers, resin parts 14, can be fitted in one piece as the helicopter would be stowed below in the hangar. This involves fixing the cover section down to the flight deck so that it covers the engraved lines of the elevator.

If the helicopter is to be ranged on deck, the hangar roof cover would be removed in sections & stowed on the deck extensions on the mortar handling room roof & air office roof. To represent the stowed roof sections, cut the end two sections from one end & a single section from the other end. Fit the two sections to the stowage on the mortar handling room roof, & the single section on the air office roof.

Boat Davit assembly & Boat Location

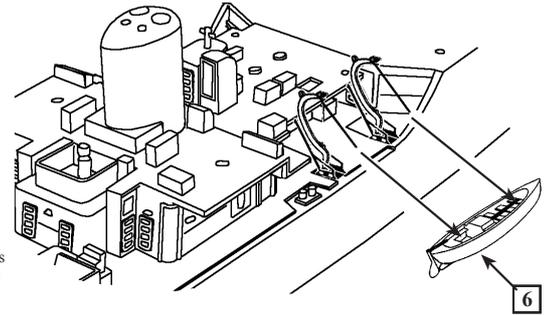


46 Fold the boat davit, etched parts 46, in half so that it is double-thickness with the relief-etched detail outermost. Make four of these.

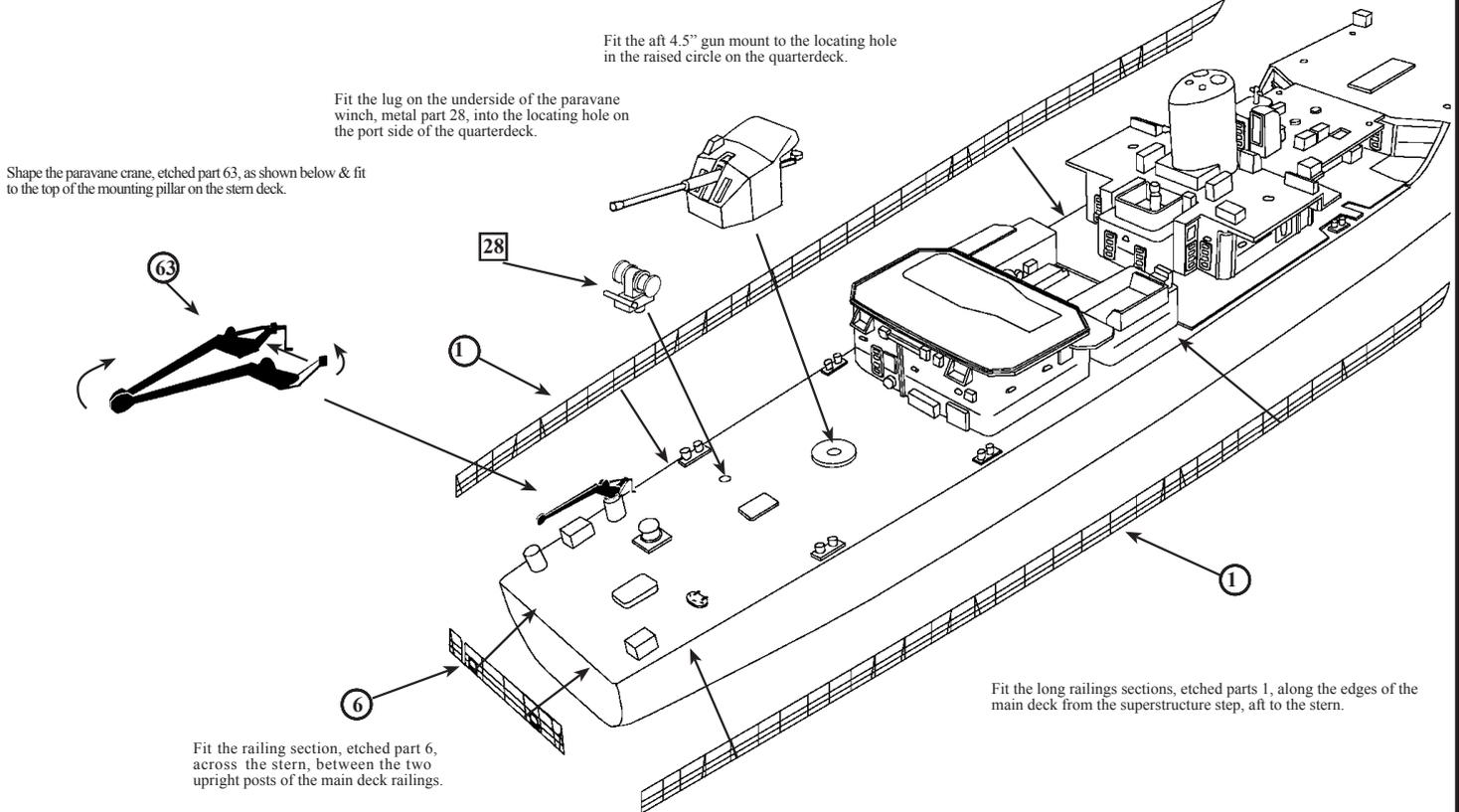
45 Fold up the sides of the boat davit supports, etched parts 45, to 90° so that they are parallel. Fit the rectangular base plates into the corresponding recesses in the planked main deck as shown middle right. Fit the boat davits centrally into the supports as shown right.

7 Cut the lower ends of the boat falls away from the davits leaving them attached at the top. Pull the falls out at an angle ready to fit the boats.

Measure the distance between the davits when they are fixed into position on the deck, then mark out that distance on the boats. Drill through the boat from top to bottom with a 0.4mm drill bit making sure that the drill goes all the way through. Thread the boat falls on the davits, through the holes drilled in the boats so that they pass right through. Push the boat back into the davits. The boat falls are still the correct length to fit back into the davits so that they can be re secured into place thus holding the boat in the correct position.



Quarterdeck Railings & Fittings Location



Fit the aft 4.5" gun mount to the locating hole in the raised circle on the quarterdeck.

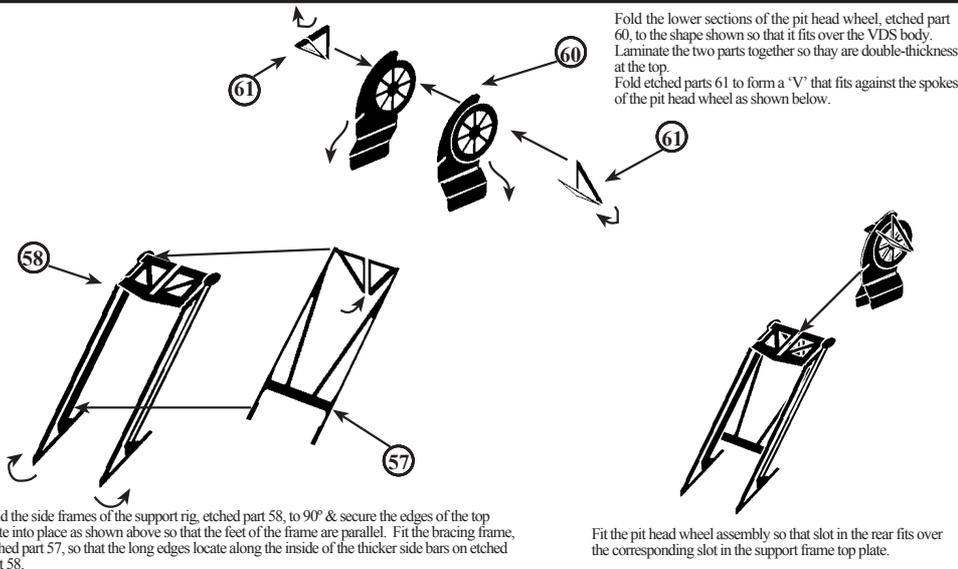
Fit the lug on the underside of the paravane winch, metal part 28, into the locating hole on the port side of the quarterdeck.

Shape the paravane crane, etched part 63, as shown below & fit to the top of the mounting pillar on the stern deck.

6 Fit the railing section, etched part 6, across the stern, between the two upright posts of the main deck railings.

1 Fit the long railings sections, etched parts 1, along the edges of the main deck from the superstructure step, aft to the stern.

Variable Depth Sonar (VDS) Pit Head Gear Assembly (Ashanti & Gurkha Only)

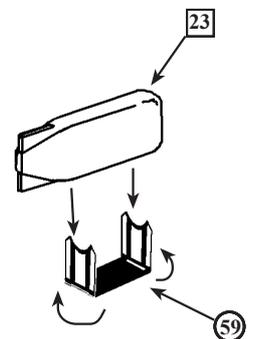


60 Fold the lower sections of the pit head wheel, etched part 60, to the shape shown so that it fits over the VDS body. Laminate the two parts together so they are double-thickness at the top. Fold etched parts 61 to form a 'V' that fits against the spokes of the pit head wheel as shown below.

58 Fold the side frames of the support rig, etched part 58, to 90° & secure the edges of the top plate into place as shown above so that the feet of the frame are parallel. Fit the bracing frame, etched part 57, so that the long edges locate along the inside of the thicker side bars on etched part 58.

Fit the pit head wheel assembly so that slot in the rear fits over the corresponding slot in the support frame top plate.

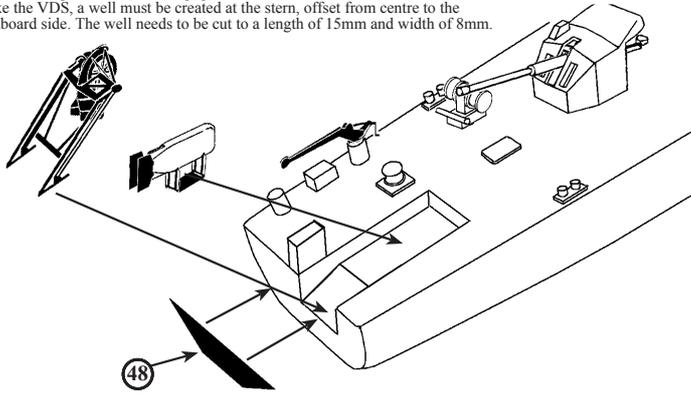
VDS Body and Cradle Assembly



59 Fold up the ends of the VDS cradle, etched part 59 to 90° so that they are parallel. Fit the VDS body into the cradle as shown.

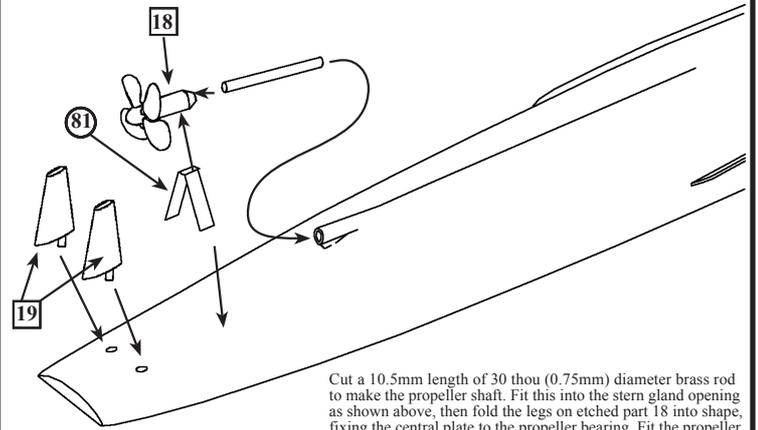
VDS Location

HMS Ashanti & HMS Gurkha were the only ships of the class to be fitted with Variable Depth Sonar (VDS) equipment. To convert the basic hull of the kit to take the VDS, a well must be created at the stern, offset from centre to the starboard side. The well needs to be cut to a length of 15mm and width of 8mm.



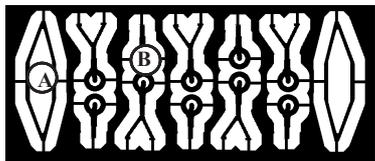
The shallow part of the well needs to be 2mm deep, angling down at the stern to 5mm. Cuts need to be made with a sharp craft knife at the sides & use a chisel blade to remove the material from inside the cuts. Cut two rectangular blocks of plastic from strip or sheet, to 5mm x 3mm x 2mm & fit these to the stern on each side of the VDS well. Fit the extension plate, etched part 48 across the stern at the same level as the opening.

Propeller & Rudder Assembly

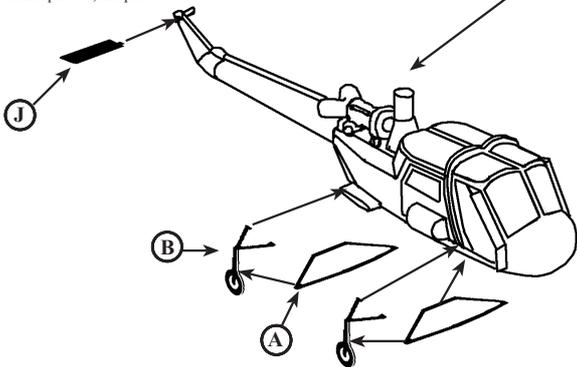


Cut a 10.5mm length of 30 thou (0.75mm) diameter brass rod to make the propeller shaft. Fit this into the stern gland opening as shown above, then fold the legs on etched part 18 into shape, fixing the central plate to the propeller bearing. Fit the propeller bearing onto the other end of the propeller shaft the fix the ends of the legs to the hull bottom, adjusting for height.

Wasp HAS1 Helicopter Assembly

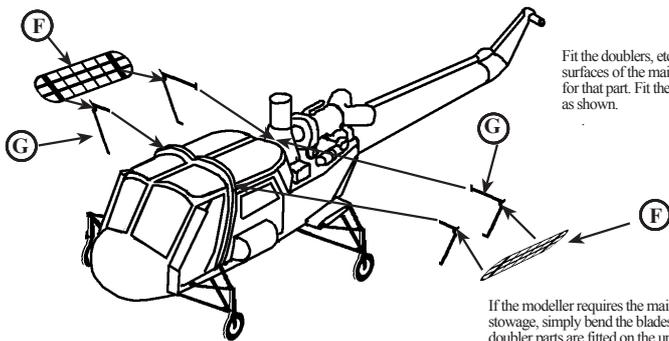


Cut a groove in the top of the tail opposite to the tail rotor attachment, & fit the stabiliser wing, etched part 40J, into place.



Assemble the starboard side undercarriage legs in the same way as described for the port side.

Fold the flotation bag shells, etched parts 49F, in half so that the relief-etched detail is outermost. Fit the flotation gear attachment frames, etched parts 49G, so that the forward frames fit onto the outside of the yoke frame between the front & rear doors. The rear frame fits with the top foot on the front of the main rotor gearbox & the lower foot on the engine deck. The flotation bag shells then fit with the lower edges slotting into the point of the attachment frames at the thick relief-etched lines.

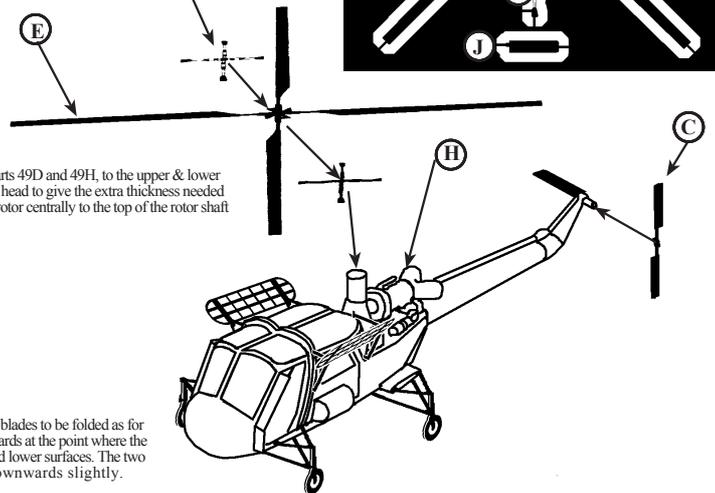
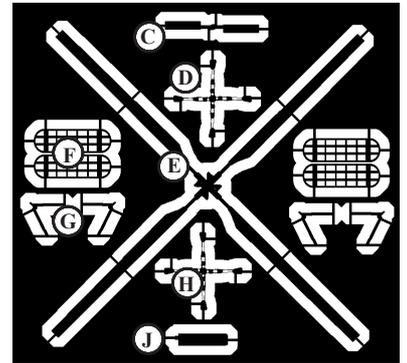


If the modeller requires the main rotor blades to be folded as for storage, simply bend the blades rearwards at the point where the doubler parts are fitted on the upper and lower surfaces. The two front blades would be angled downwards slightly.

Fold the undercarriage legs 47B in half so that they are double-thickness with the relief-etched detail outermost. Secure into place. Fold the 'V' frame on top of the undercarriage legs to 90°. Make 4 of these.

Fit the lower undercarriage attachment frames to the underside of the fuselage so that the rear of the front frame is in line with the main door pillar, & the rear frame is in alignment with the small stub wings. The two parallel sections of each frame fit onto the fuselage centrally.

Fit the front undercarriage to the fuselage so that the ends of the top 'V' frame fit on to the fuselage forward with the rear foot in line with the door pillar. The point of the lower frame should attach to the inside of the leg just above the wheel. The rear leg top 'V' frame feet fit onto the outside edge of the stub wing, & again the point of the lower frame should attach to the inside of the leg just above the wheel.



Wasp Helicopter Colour Guide



Ships Flights Codex Numbers

Humbrol 96
RAF Blue Grey

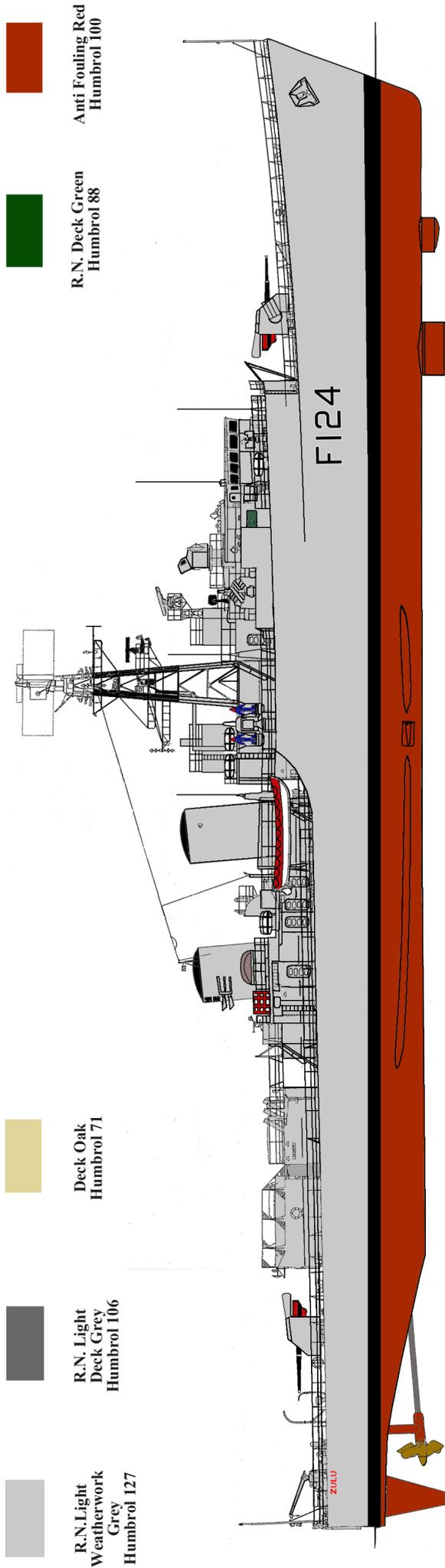


Other Colours Used

427/HMS Ashanti. 442/HMS Zulu. 444/HMS Gurkha. 453/HMS Eskimo
457/HMS Nubian. 474/HMS Mohawk. 477/HMS Tartar

Matt Black: Wheel Tyres, Undersides of Rotor Blades.
Light Grey: Top Surfaces of Rotor Blades, Cockpit Interior
Red & White: Tail Rotor Blade Tips
Gloss Black: Tail Rotor Blades

Main Colour Chart and Painting Guide



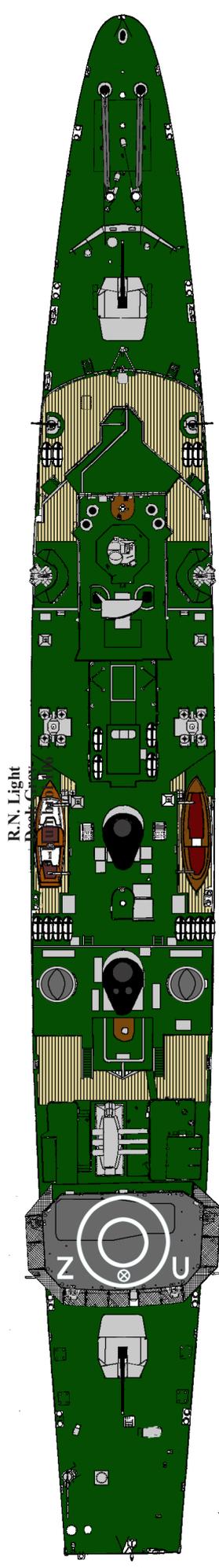
R.N. Light
Weatherwork
Grey
Humbrol 127

R.N. Light
Deck Grey
Humbrol 106

Deck Oak
Humbrol 71

R.N. Deck Green
Humbrol 88

Anti Fouling Red
Humbrol 100



R.N. Light
Deck Grey

Pennant Numbers Flight Deck Code Letters for all uhips of the class

- J O U C U CPVK F117/AS
- J O U G U M O O F119/ES
- J O U I W M C F122/GU
- J O U W W F124/ZU
- J O U O J C Y M F125/MO
- J O U P W M K P F131/NU
- J O U V C T V C T F133/TA

The colour guide above shows the main scheme & the areas covered. There are smaller, less obvious areas listed below.

Matt Black: Mid Section of Mast, Funnel Top Caps, Gun Barrels. Waterline Boot Topping.

Matt White: Mast Top Array, Life Raft Canister

Bronze: Propellers.

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