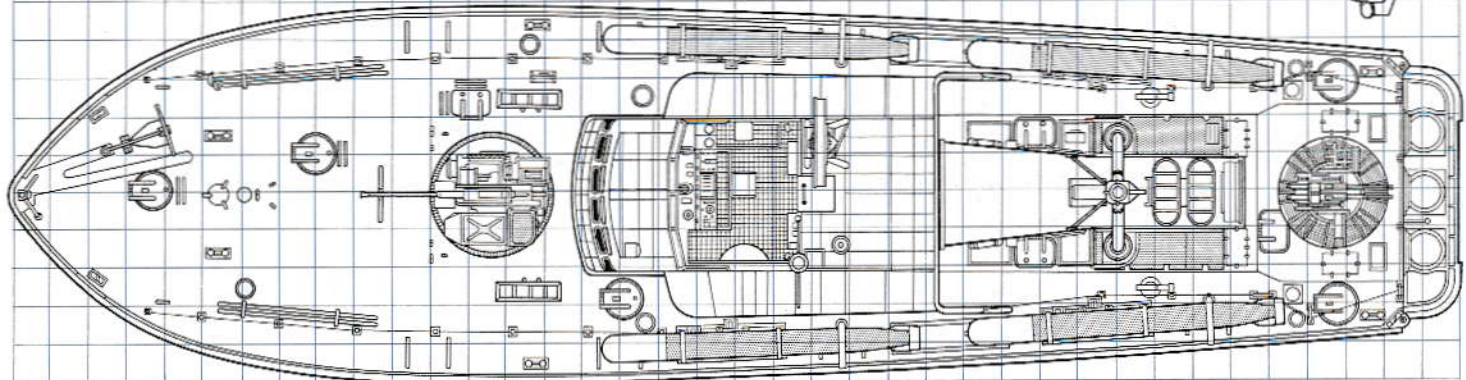
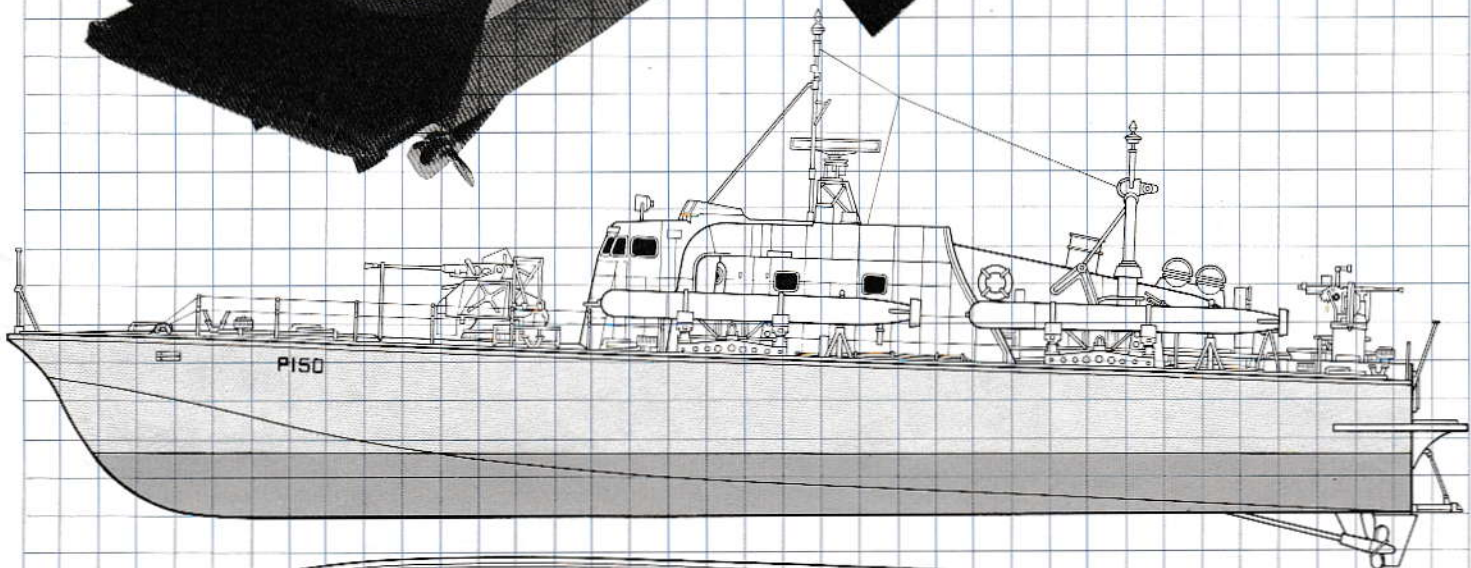




1/72 VOJSER FAST PATROL BOAT PERKASA



VOSPER FAST PATROL BOAT PERKASA

Development of the Torpedo Boat

In 1872, an Englishman named, 'Whitehead' announced to the whole world that he successfully produced what should be regarded as a prototype of the present-day torpedo. This prototype used compressed air as a fuel for its propulsive engine and was equipped with a steering device to adjust direction and depth during sailing.

It was an epoch-making one as it could for the first time run and explode itself in the water. This prototype torpedo, therefore, was employed by the Navies throughout the world and had a far-reaching influence on the later development of torpedoes.

The German Navy like other prominent Navies of the world employed the 'whitehead' torpedo.

However, in the end of the 19th century, the Schwartzkopff & Co. (incidentally, the name means a black head) produced its own torpedo for the German Navy. Since then, Germany established a torpedo plant to produce torpedoes exclusively, while continuing its own study and development of torpedoes. And already in the 1st World War, Germany had its submarines, the so-called, 'U-boats' equipped with these torpedoes. They achieved brilliant records.

Since the old 'whitehead' torpedo, other countries as well advanced their developments of torpedoes. Even a single torpedo at this later time, had a tremendous power to destroy a large warship. Moreover, its launching device is simple and compact compared with a big gun that needs a large-scale firing mechanism.

This particular feature of a torpedo makes it an ideal main weapon for a small warship like a submarine. It is natural that various applications have been tried since to make full use of this feature. In the beginning of the 1st World War, there appeared some high-speed boats like the Italian MAS (Motoscafo Anti-Sommergibili) and the British CMB (Coastal Motor Boat). These boats achieved good results in surprise attacks thanks to their nimble but quiet mobility. The MAS especially showed its full power and strength by sinking the Austrian battleships, 'Vienna' and 'St. Istvan'. Due to this brilliant achievement, the name of MAS and the power of a torpedo had been spread all over the world.

Development of torpedoes had been continued after the 1st World War. Italy in particular concentrated its effort on this developmental work. In this connection, it should be noted that this kind of development is best suited for Italy as its topography is rich in quiet bays and inlets. Also, Italy is situated in the Mediterranean where small islands abound and the sea rarely becomes rough in comparison with the Atlantic or the Pacific Ocean. These very Italian conditions and its topography again are ideal for development of a small vessel like a torpedo boat which is easily affected by weather conditions and has a limited cruising distance. As a result, Italy played a leading role in development of torpedo boats after the World War I. Already around 1927, it completed a high per-

formance torpedo boat credited with a speed of more than 40 knots.

In the 2nd World War, torpedo boats had been much more active than those in the WWI.

The U.S. had about 800 torpedo boats called 'PT' (Patrol Craft, Torpedo). Britain about 400 MTBs (Motor Torpedo Boats) and MGBs (Motor Gun Boats) — the latter were high-speed boats, each equipped with machine guns instead of torpedoes —, Japan, about 370 torpedo boats, Germany, 150 or so of Schnell Boats and Italy, about 80 of MASs. Among them, activities of the U.S. torpedo boats both in the Solomon Sea and the Philippine Sea are known. British MTBs and MGBs and German S-boats, too, were active in respective operations in the English Channel and the North Sea to patrol along shores and also to attack the enemy convoys in order to break off trade between friendly countries.

After the World War II, importance of the torpedo boats has been appreciated more and more. Almost every country in the world makes its study and carries out its improvement. To date, a torpedo boat with a maximum speed of more than 50 knots has been produced. Also, its main armament, torpedo, has increasingly been replaced with a missile. With further development of missiles, present-day torpedo boats are mainly armed with high-performance anti-warship and anti-submarine missiles. In addition, pioneering studies including developments of torpedo boats of hovercraft — and hydrofoil types have been in good progress in various countries throughout the world.

The British Torpedo Boats

It has been said that the first man who ever produced a torpedo boat was an Englishman named, 'Sir John I Thornycroft'. Sir John was the president of a famous shipbuilding company in Britain. He began to design high-speed boats of various types since around 1877. One of his boats even claimed a high-speed exceeding 60 knots/hr. However, these high-speed boats had only limited uses — for speed races, sports and touring. In 1915 when the 1st World War just started, Thornycroft was asked by the British Navy to produce a motor boat of special kind to attack the German Navy base in the North Sea. What he produced was a high-speed boat weighing 4.25 tons. It was credited with a speed of 30 knots and armed with a single torpedo. This boat is said to be the beginning of the later torpedo boats around the world. Essentially basing on this high-speed boat but much improved in various details, 12 similar boats were produced. It was these boats called, 'CMB', that had been active both in the British Channel and in the North Sea. After the 1st World War, the British study and development of torpedo boats were discontinued for a time. However, when in 1935 the Ethiopian war broke out and the Italian Navy surprised Britain with its much improved torpedo boats, the country which had been irritated by the advanced developments both in Germany and France, reopened its devel-

opment and improvement of torpedo boats at once. And asked by the Royal Navy, the Vosper, the Thornycroft and others started to produce many torpedo boats. This was beginning of the MTBs and their performance and armament far exceeded those of the preceding CMBs during the World War I. As stated above, these MTBs together with MGBs had been variously active in the English Channel, the North Sea and the Mediterranean.

Vosper

The Vosper Company located in Portsmouth, England, has produced many high-performance torpedo boats and high-speed patrol boats for a long time. Its boat of the 'Brave' class developed in cooperation with the British Navy during the years extending from 1954 to 1959 adopted a gas turbine engine as its main engine for the 1st time in the world and was credited with a speed record of more than 50 knots/hr. After this, the Vosper built more than 20 gas-turbine, high-speed boats. All of these boats have now been active in various countries including Britain, Greece, Denmark, Malaysia and Libya. Most of these boats are torpedo boats proud of its high maximum speed in the range of 50 to 60 knots. This kit is a model of one of these boats called, 'Perkasa', specially built for the Malaysian Navy by the Vosper.

Perkasa

The Perkasa was built as one of four Torpedo boats of the 'Perkasa' class. It was completed in 1967 and delivered to the Malaysian Navy. Before the Perkasa boats, the Vosper built two torpedo boats of the Soloven class for the Denmark Navy. In a word, the 'Soloven' boat was constructed by utilizing hull of a Brave class and by incorporating good points of the Ferocity boat independently developed for study and experiment by the Vosper. However, a completed Perkasa was little different from the Soloven except in two or three minor points.

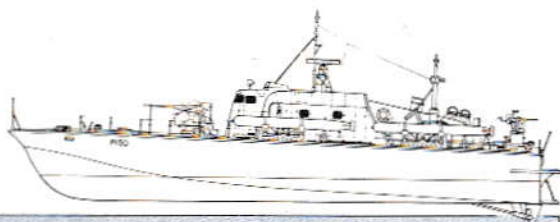
Main engine of the Perkasa comprised three Rolls-Royce Proteus 1270 gas-turbine engines. Performance of this Rolls-Royce engine was much improved when compared with a Proteus 1250 employed in a Brave-class boat described above. In fact, the power of this Proteus 1270 reached up to 4250 HP, while that of the latter, only 3500 HP.

Incidentally, the diesel engine played the main role as a ship's engine before the advent of the gas-turbine engine. The gas-turbine engine can be roughly divided into two types — One is an open-cycle type while the other, a closed-cycle one. For aeroplanes and ships, open-cycle engines are mainly used. A gas-turbine engine of an open-cycle type is chiefly composed of an air-compressor, a burner, a high-pressure turbine and low-pressure turbine. Its cycle starts with the air-compressor where air is compressed. Then, compressed air is led into the burner where air and fuel are mixed and burned until high-temperature



PERKASA CLASS

Courtesy by
 ● VOSPER Ltd.,
 ● Magazine (Ships of the World) Kaijin-Sha Japan



Early Torpedo Boat C. M. B. 40

and high-pressure gas is produced. Lastly, this gas is led into the turbine. A turbine is like a windmill. The high-pressure gas strikes blades of the turbine and make the latter revolve. The turbine shaft is connected to the screw shaft through reduction gear. Thus, when the turbine revolves, its rotatory motion is transmitted to the screw-shaft and makes the screw revolve. Advantages of the gas-turbine engine are as follows: Firstly, light weight and small scale. In fact, it is said that weight per HP of a gas-turbine engine in comparison with a diesel one is less than one tenth, while its bulk per HP, less than one fifth. Needless to say, these two features—light and small—of the gas turbine engine have a big appeal for a small boat strictly limited in space.

Next, a single gas-turbine engine can be expected to produce a great power reaching up to several tens of thousands horse-power. However, it is said that this kind of thing is almost impossible especially with a diesel engine of a high-speed type.

Good and fast starting, too, is one of advantages of a gas turbine engine. In fact, characteristically fast starting of a gas-turbine engine is a great advantage over engines of other types as it can make a starting in 10 seconds to 3 minutes to be ready for sea in time of emergency.

Other big features and advantages are as follows: Easy to control, easy maintenance with little need of care and attention, little oscillation and little use of cooling water.

However, there are disadvantages, too. A gas turbine engine burns not so well as a diesel one. A gas turbine engine, again, needs a large amount of air so that its inlet and exhaust ducts are bound to get large-sized. Also, saline particles that adhere to its surface are apt to reduce its efficiency. Further, it sometimes happen that the metal parts corrode due to salts and sulfurs adhering to their surfaces.

These disadvantages, however, have since been steadily improved thanks to researches carried on by various countries of the world. It is forecasted, therefore, that a gas turbine engine will certainly play the key role as a main engine for a ship, especially a small ship of future.

In every torpedo boat built by the Vosper including the Perkasa, a gas turbine engine is located in the hindmost part of the stern.

The engine there drive screw shaft through a V-shape reduction gear. The idea is a very clever one. Its screw propeller shaft system consists of three shafts. Two GM-made diesel engines are additionally equipped to make up for inefficient burning of the gas-turbine engine. These additional engines drive two other screw shafts located outside of the first one through the same reduction gear in an ordinary sailing. Also, two Rover gas-turbine engines are equipped for generation of electric power.

Control of engine and its related parts is a very easy operation and remote control from control room away from engine room is an ordinary operation. For hull materials, wood or plywood of mahogany and Canadian rock elm is used. And for reinforced sections especially, laminated boards made of these materials are used. When gluing these materials, chemical adhesives are applied so that use of metal parts be heavily curtailed in order to reduce overall weight.

Desk portion is of course made of wood but covered with nylon cloth to shield it from humidity and powerful southern sunlight. Upper construction is either welded with aluminium alloy or fastened by rivets.

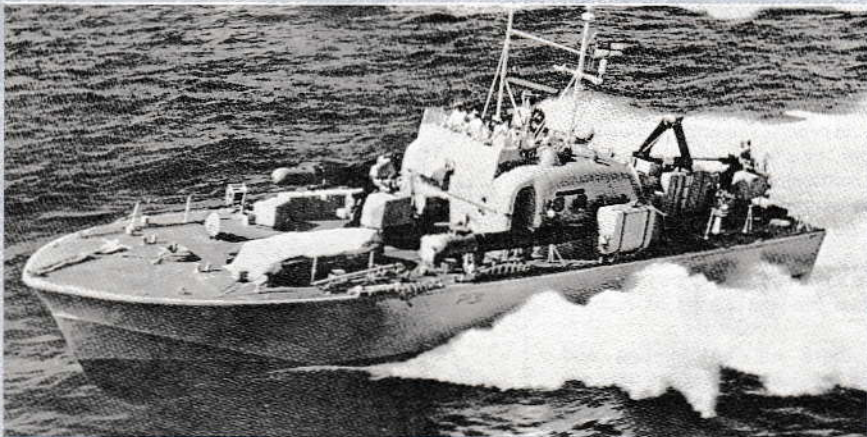
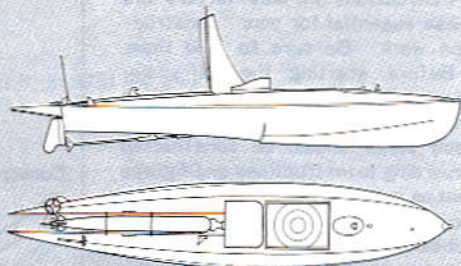
Armaments include four 53.3 cm torpedoes. However, in order to reduce overall weight, side launchers are employed instead of torpedo tubes. For anti-air defence, a Bofors 40mm AA machine gun was fixed in front and a 20 mm double-barrelled Ericson AA MG at the rear of the boat. The Bofors gun is moved about by a remote-control system. Captain's bridge is in one of the following two ways: open bridge or closed bridge. Closed bridge is used in time of a stormy weather or during combat. Remote-control device for the Bofors 40 mm MG is located in the closed bridge. Incidentally, it is interesting to note that the Perkasa of the Malaysian Navy is equipped with a complete air-conditioning system as befitting for a warship to operate in the tropical zone.

At present, four torpedo boats of this Perkasa type are active for the Malaysian Navy.

Three others are named, 'Gempita', 'Handalan' and 'Pendekar'.

Essential Specifications

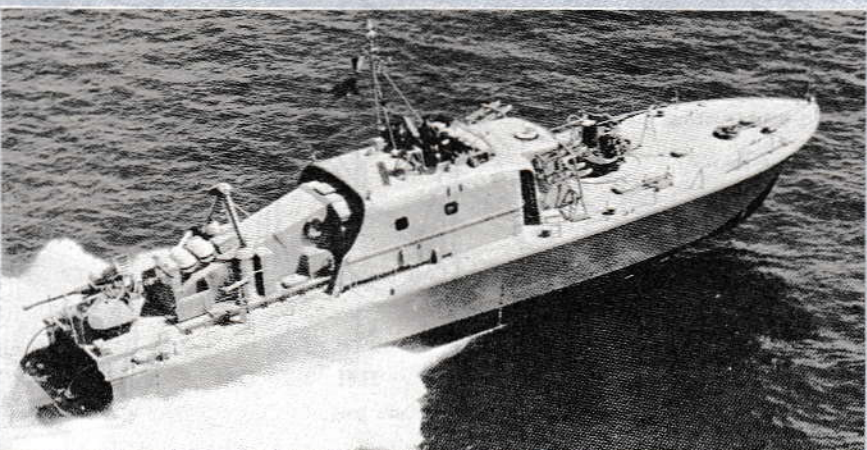
Displacement: 95 tons Overall length: 30 m
 Overall width: 7.8 m
 Armament: Four 40 mm Bofors AA machine gun, one 20 mm Ericson double AA MG and four 53.3 cm torpedoes (four side launchers)
 Main engine: Three Rolls-Royce Proteus 1270 gas turbine engines, each with a 4250 HP (12750 HP) output
 Auxiliary engine: Two GM V71 Diesel engines
 Generating engine: Two Rover 1s/60 turbine engines
 Propeller screw shaft: 3
 Maximum speed: 54 knots
 Number of boats of the same type: 4



H.M.S. Brave Borderer



K.D. Perkasa



R.L.N.S. Susa

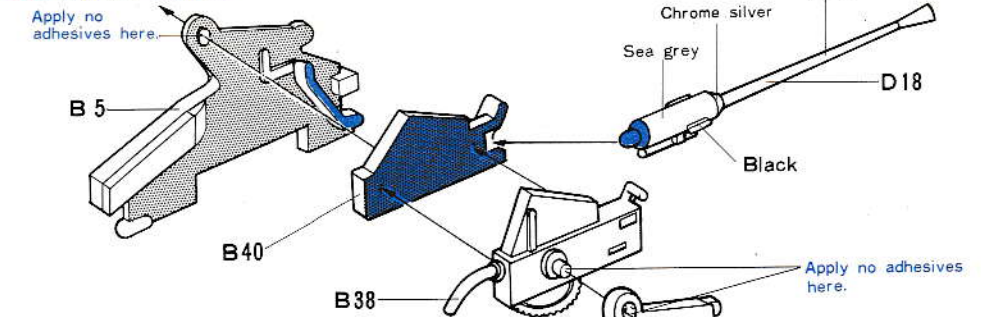
READ BEFORE ASSEMBLY.

ERST LESEN — DANN BAUEN.

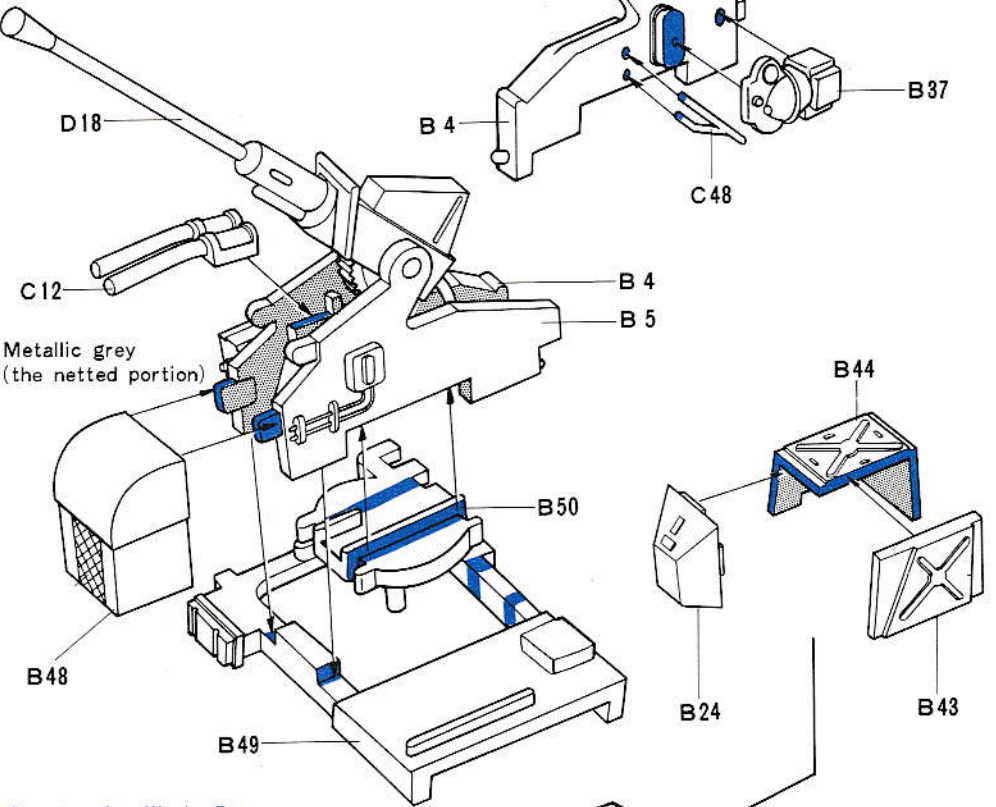
- ★ Instructions in blue letters are those essential for your construction work. Be sure to read them.
- ★ Before starting the full-scale construction work, do a tentative one. In this tentative construction, each parts should be constructed according to instructions and figures just as in the full-scale construction work. However, instead of applying adhesives, all fixing and gluing works will be done tentatively with the aid of Scotchtapes, rubber bands, clothespins or the likes. And after confirming if each combination of parts is right and appropriate faces (or sides) of parts are set to be glued, do proceed to apply adhesives.
- ★ Paper board to which the vinyl bag containing parts is attached will be used as a flag on the mast later. So, remove it carefully off the bag.
- ★ Have a knife, Scotchtapes, a screwdriver, a file and a pair of nippers ready.
- ★ As there will be painting and pasting (of marks) works in between the ordinary construction work, it is advised that you should read all the instructions and see figures beforehand.
- ★ In pages 12 and 13, you will find overall painting instructions. However, painting of details should be done referring to respective instructions found in explanatory figures.
- ★ Apply adhesives to those portions which are printed in blue.

1 Construction of the Bofors 40mm MG

Construction Work, A



Construction Work, B



Construction Work, C

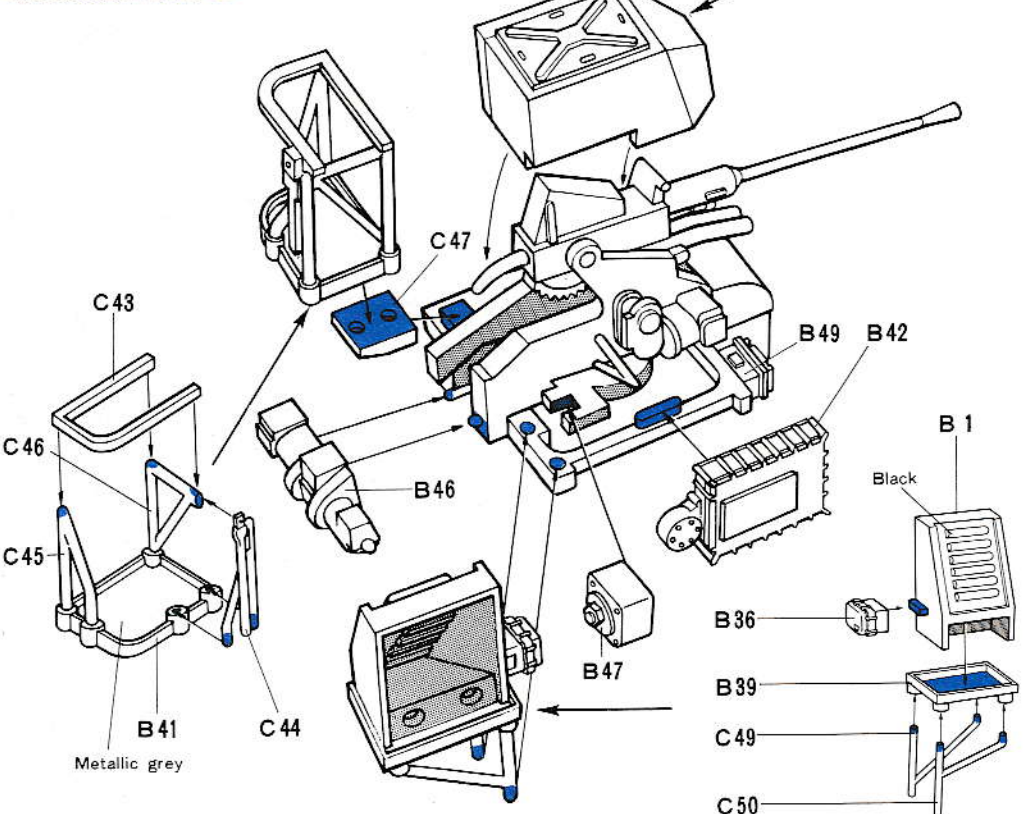


Fig. 1 Construction of Bofors MG Construction Work, A

- ★ Glue MG Parts, B40 and B38, together. Then, fix Parts, B5 and B4, together with the glued Parts, B40 and B38, in between.

Construction Work, B

- ★ Firstly, glue the portion of MG which has been constructed in the work, A, onto Parts, B50,

- ★ Glue Parts, B49, and fix two Parts, C12 and B48, onto the MG support.

Construction Work, C

- ★ Fixing of Parts, B46 and B47, should be done first.

- ★ Next, fix Parts, B24, and B43, B44, onto Parts, B49.

- ★ Photos of a completed MG and an actual MG follow below. Refer to them in constructing MG.

Photo of a completed MG

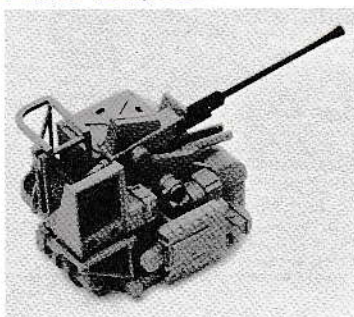


Fig. 2 Construction of the 20mm MG

★Be sure not to have Parts, D14, face in the wrong direction.
 ★Also, take care not to get adhesives flow into the hole of Parts, B32, as it will have to serve as the axis of rotation later.
 ★Firstly, glue Parts, B25, onto Parts, B26. Then, fix the whole onto Parts, B21.

Fig. 5 Construction of Radar

★Don't apply adhesives onto Radar, D23, as it will have to be revolvable later.

Photo of a Completed 20mm MG

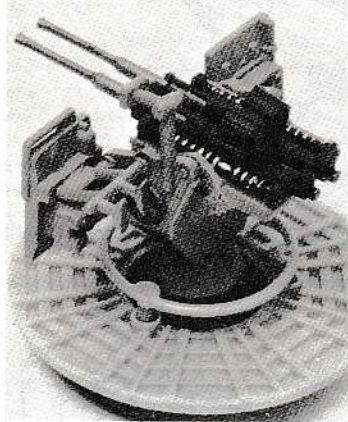


Photo of an Actual 20mm MG

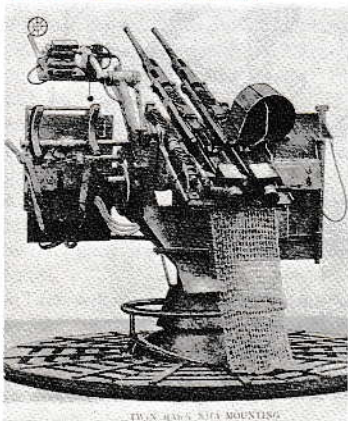


Figure of a Completed Radar

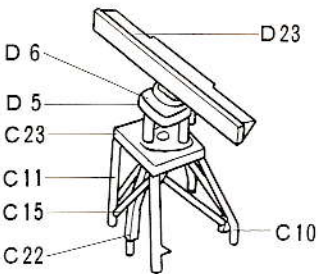
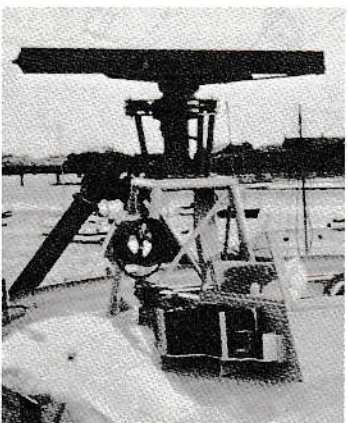
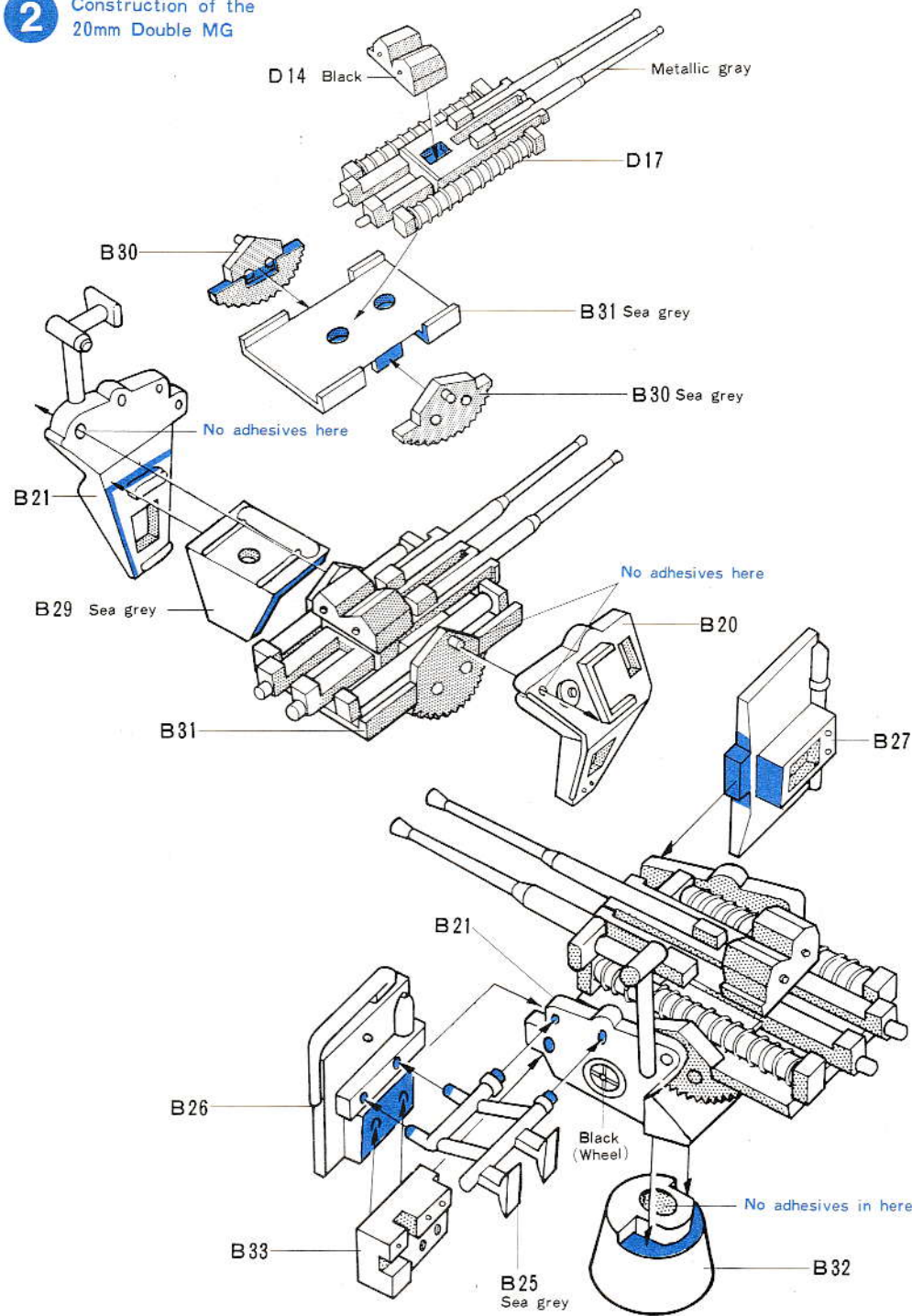


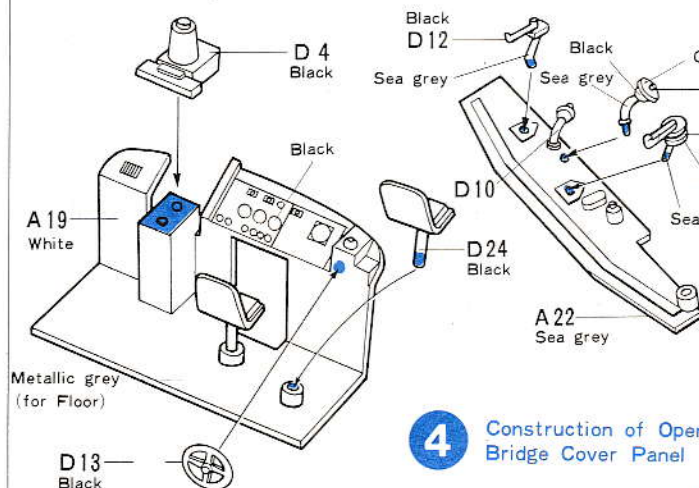
Photo of an Actual Radar



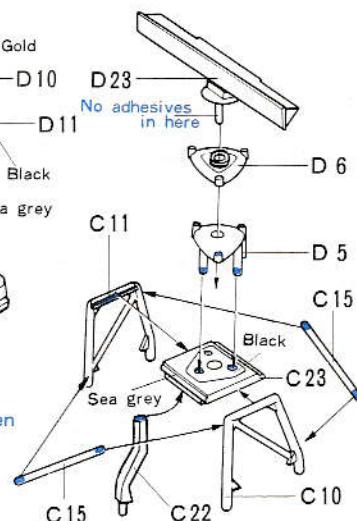
2 Construction of the 20mm Double MG



3 Construction of the Wheelhouse (inside)



5 Construction of Radar



4 Construction of Open Bridge Cover Panel

Fig. 6 Construction of Inside of Captain's Bridge

★ Firstly, glue Windshields, G1, G2, G5 and G6 onto the Bridge wall inside. In so doing, be sure to apply adhesives as little as possible but enough for the need.

★ If you prefer to have your kit equipped with a motor, you will have no use for Parts, A19 and A14, ★ After Parts, A27, has been glued, fix Parts, A22, onto the Bridge wall inside.

★ After Mast, C18, has been fixed, glue Mast Supports, C19 and C21, onto Mast.

★ When gluing Windshields, G3 and G4, apply adhesives as little as possible but enough for the need.

Cross Section of a Closed Captain's Bridge

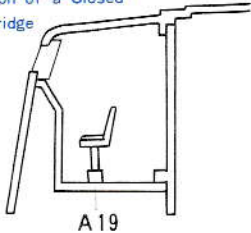


Photo of a Completed Captain's Bridge

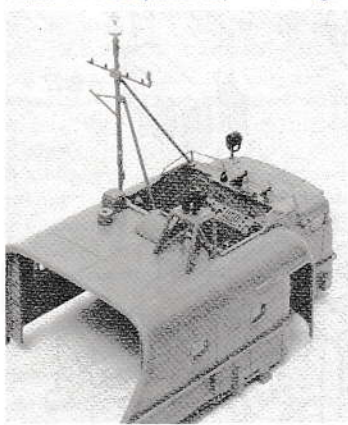


Photo of a Completed Captain's Bridge

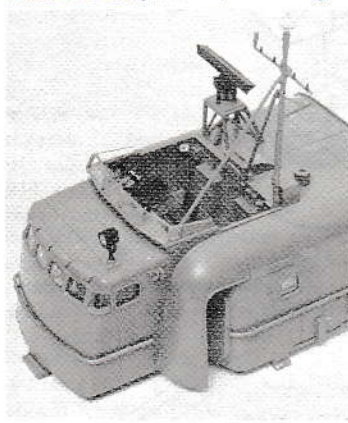
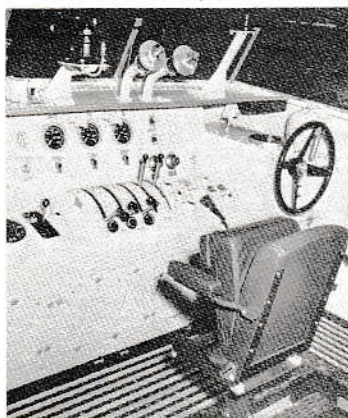


Photo of an Actual Captain's Bridge



6 Construction of Inside of Captain's Bridge

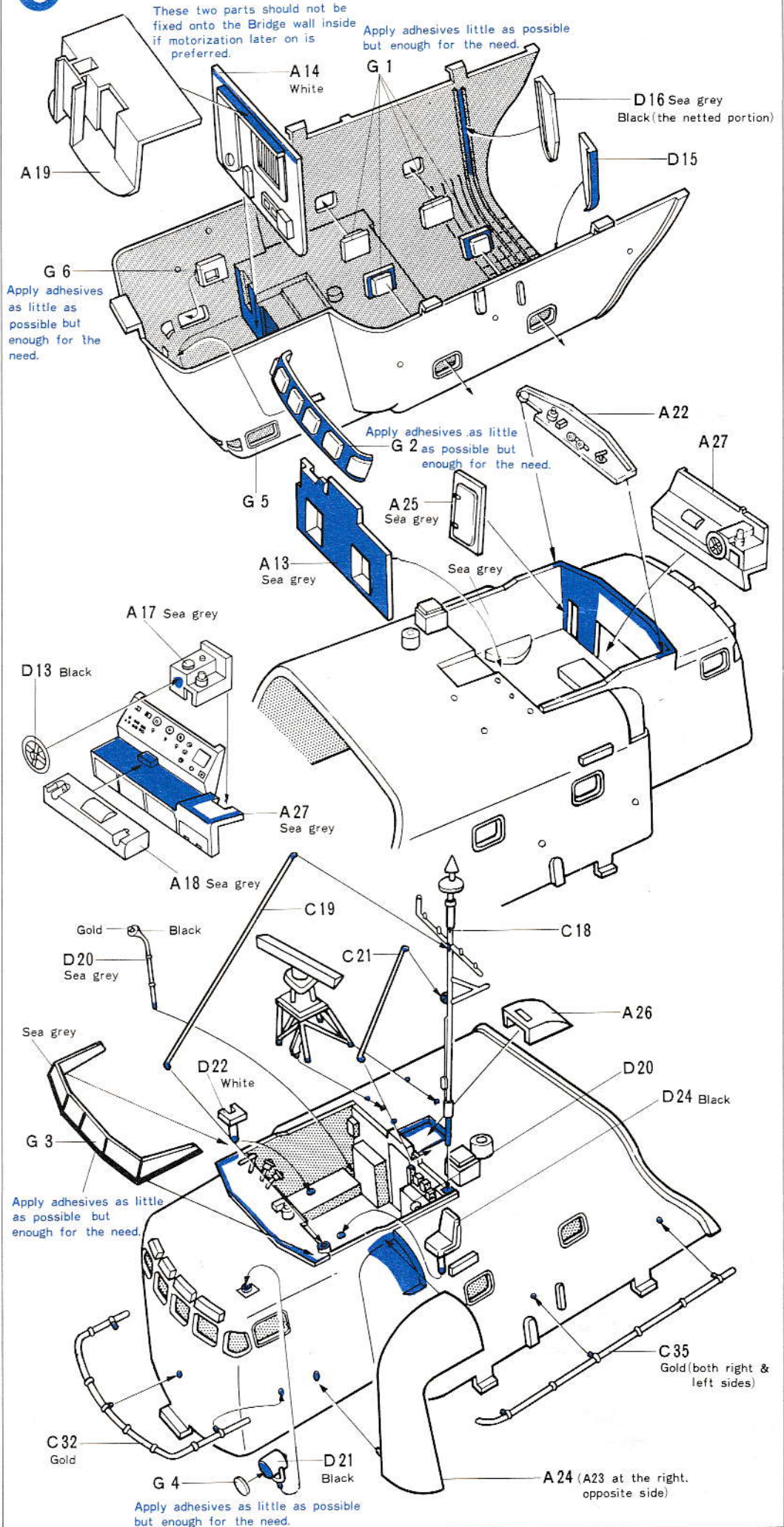


Fig. 7 Construction of Box

★After Parts, A8 and A9, has been fixed onto Parts, A10, glue Parts, A15, onto Parts, A10. Wiring of Switchboard as seen from both sides

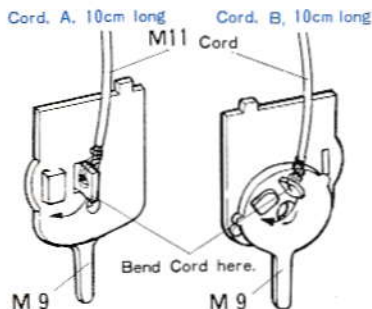


Fig. 8 Construction of Switch

★Switch should be constructed only when motorization is preferred.
★Fix Cords onto both sides of switch, M9. If so done, a defective switch can be replaced with a good switch simply by removing Screw.

Fig. 10—Construction of Engine Room, A

★When motorization is preferred, be sure not to have Lifeboat as shown in Fig. 9 fixed.

Fig. 11 Construction of Engine Room, B

★After Parts, B19, has been fixed onto Engine Room, glue Parts, B8, onto Rear Floor.

★After Parts, A3 and A4, have been fixed, glue Handrails, C8 and C9, onto right and left walls and Parts, A3 and A4, respectively.

★Parts, D26 and D27, should be glued onto respective positions as shown in the figure.

★After Parts, C4, has been fixed onto Parts, A11 and A12, respectively, glue the whole onto Engine Room.

★Two water-proof 'Danger' marks should be pasted onto respective places as specified in the figure. In so doing, read instructions printed at the back of each mark and on page 12 well before you start.

★See the figure well and glue both fixing portions of Parts, B8 and C40 beautifully.

Photo of a Completed Engine Room

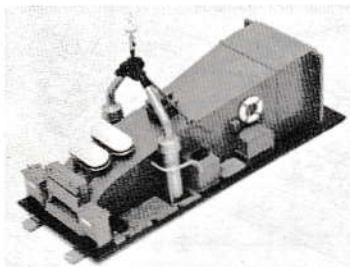
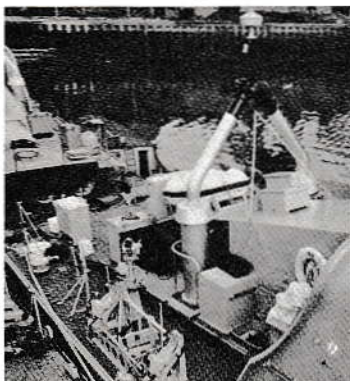
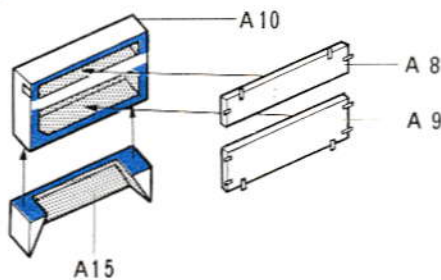


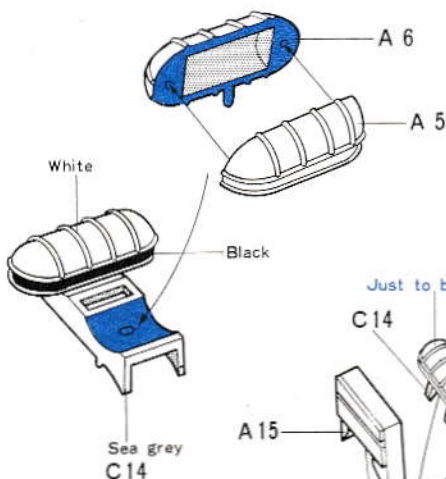
Photo of an Actual Engine Room



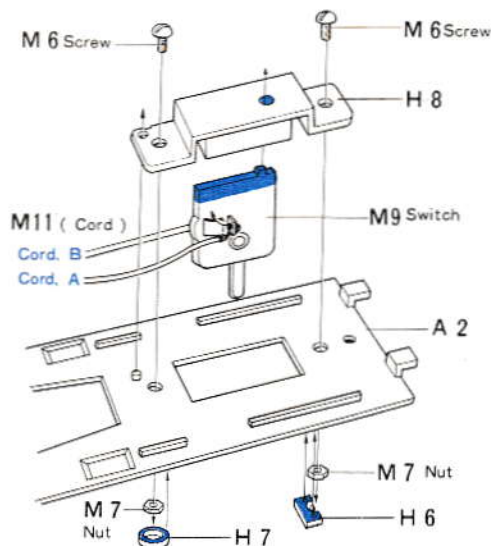
7 Construction of Box



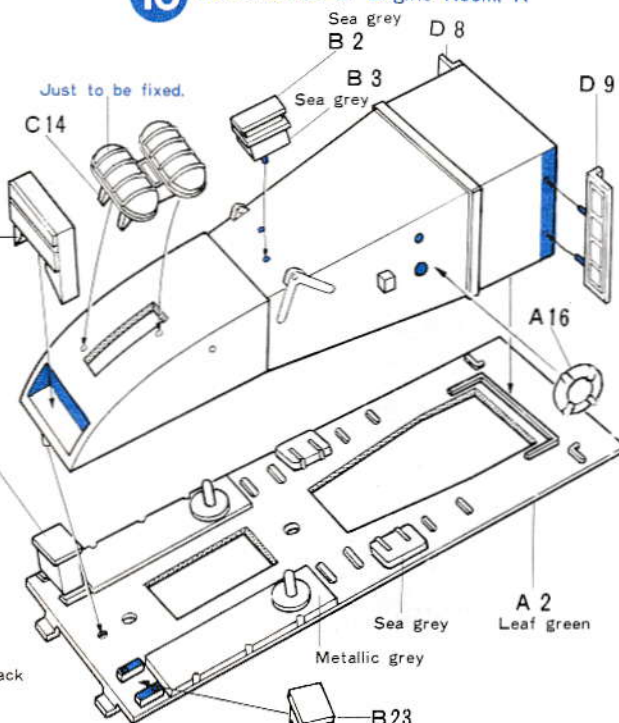
9 Construction of Lifeboat



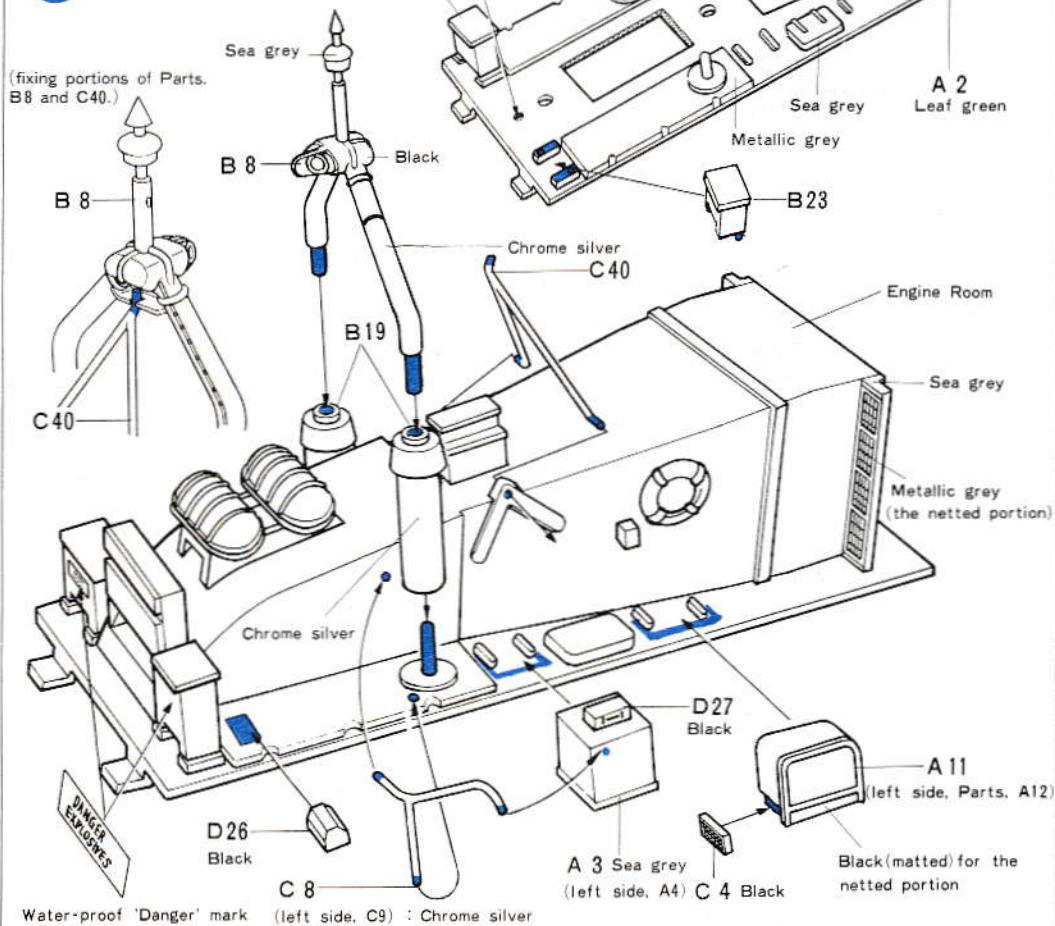
8 Construction of Switch (only when motorization is preferred)



10 Construction of Engine Room, A



11 Construction of Engine Room, B



Water-proof 'Danger' mark (left side, C9) : Chrome silver

Fig. 12 Construction of Rear Hull, A
 ★Glue Rod, C3, onto Parts, E4. Then, after Parts, E5, has been fixed onto Hull, glue Parts, E4, onto Rear Hull:

Fig. 13 Construction of Rear Hull, B
 ★Fix Screw, F, into Shaft, M4.
 ★Glue Parts, E1 and E2, together with Screw Shaft in between. Then, glue Parts, E3, onto Parts, E2. Lastly, fix Parts, E3, into Hull, while the completed Shaft, M4, should be inserted into Hull, too.

★Parts, E7, should be inserted full into Hull without applying adhesives.
 ★Tip-end of Parts, E7, should be secured firmly with Rubber Cap, M2.
 ★Those who want to motorize their kits, should apply Grease, M5, into the box at the inside of Hull, where Parts, H11, should be fixed.
 ★However, be sure not to apply any Grease onto faces of Parts, H11, which should be glued to the box.

Fig. 14 Construction of Side Launchers

★There are two pairs of Side Launchers to be fixed onto both sides of Deck. So, take every caution in fixing each of them.

Fig. 15 Construction of Torpedo & Rack

★Parts, B18, should not be glued but just be fixed.

Photo of an Actual Screw



Photo of a Completed Side Launcher

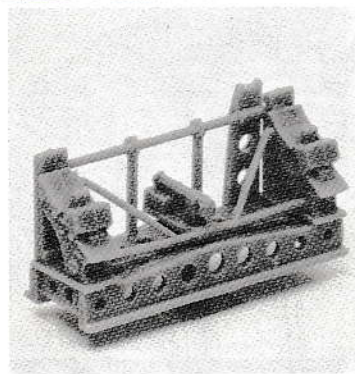
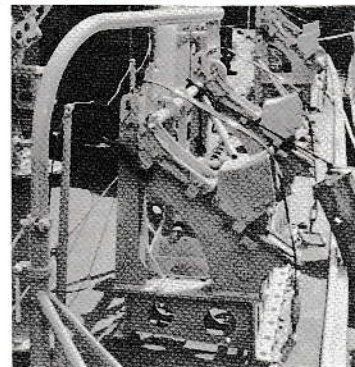
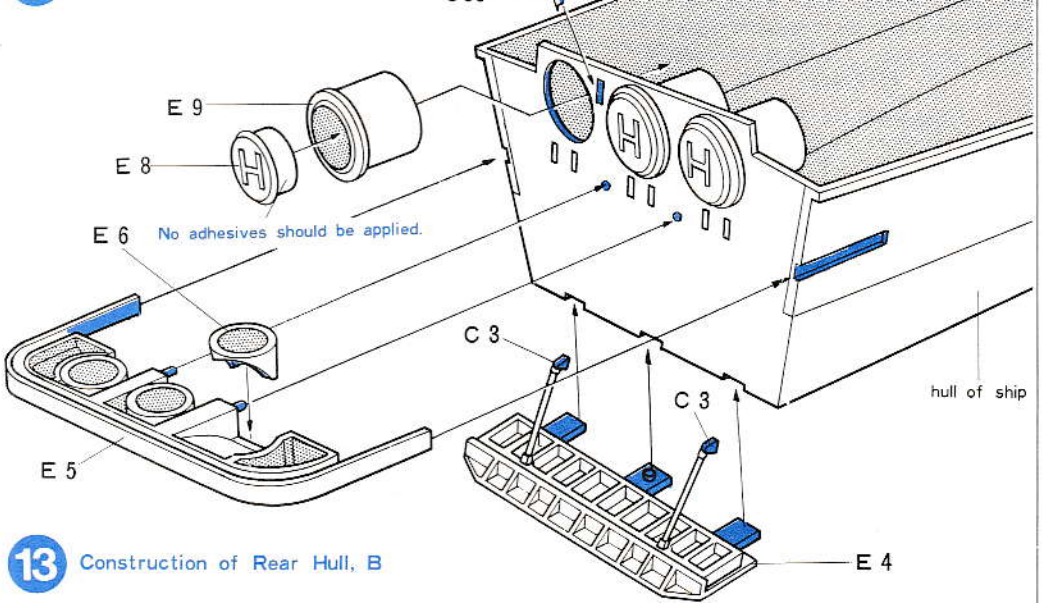


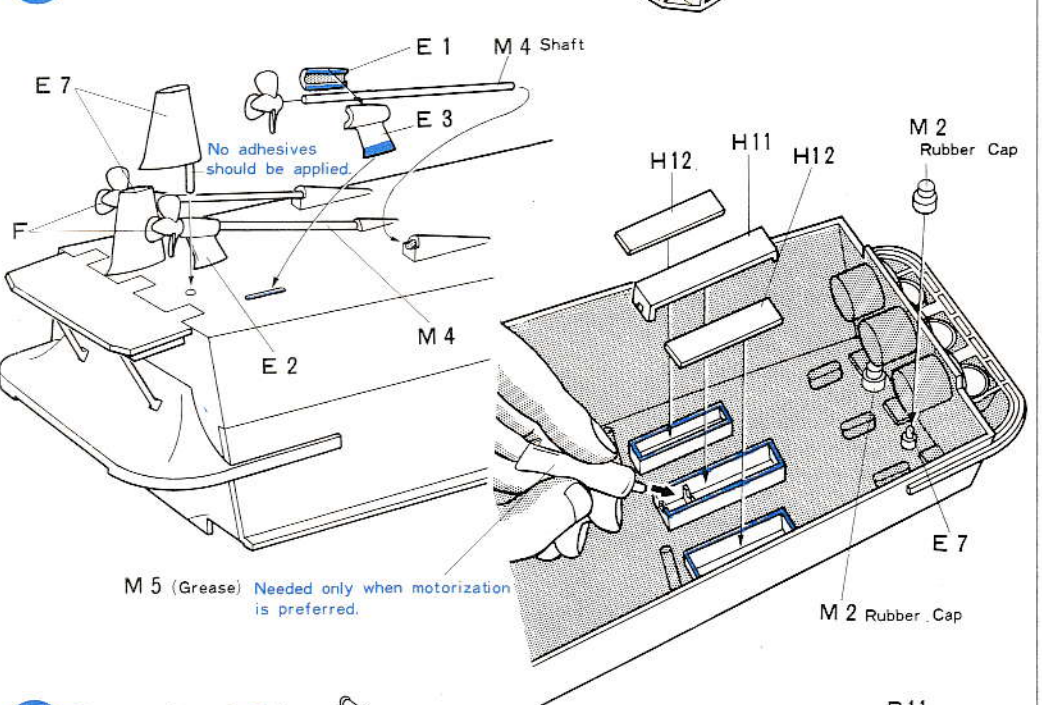
Photo of an Actual Side Launcher



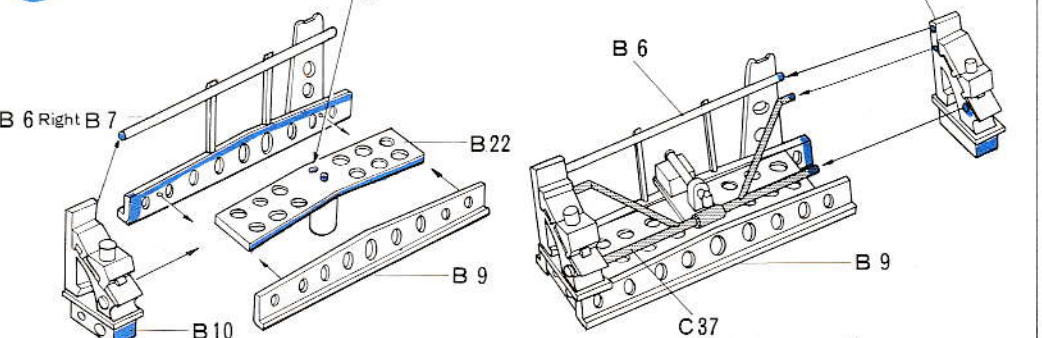
12 Construction of Rear Hull, A



13 Construction of Rear Hull, B



14 Construction of Side Launchers



15 Construction of Torpedo & Rack

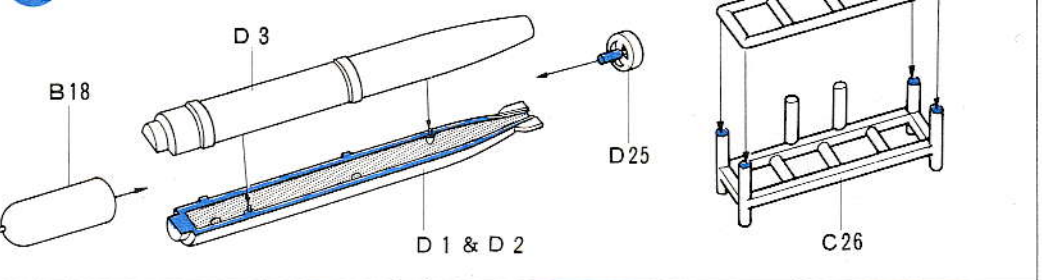


Fig. 16 Construction of Handrail
 ★Fix Handrails, C29, into Deck and pass threads through holes of their holders as shown in the figure.
 ★Insert Parts, C30, into Deck and tie the thread-ends under Deck.
 ★Apply tubed adhesives onto thread-ends and the tied thread-ends won't come loose.

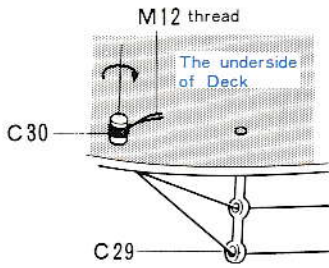


Fig. 17 Construction of Deck & Hull

★Glue Parts, B34, onto Deck, first. Then, glue Deck onto Hull. Apply adhesives onto both Hull and the underside of Deck and temporarily glue them together firmly with Scotch tapes.

17 Construction of Deck & Hull

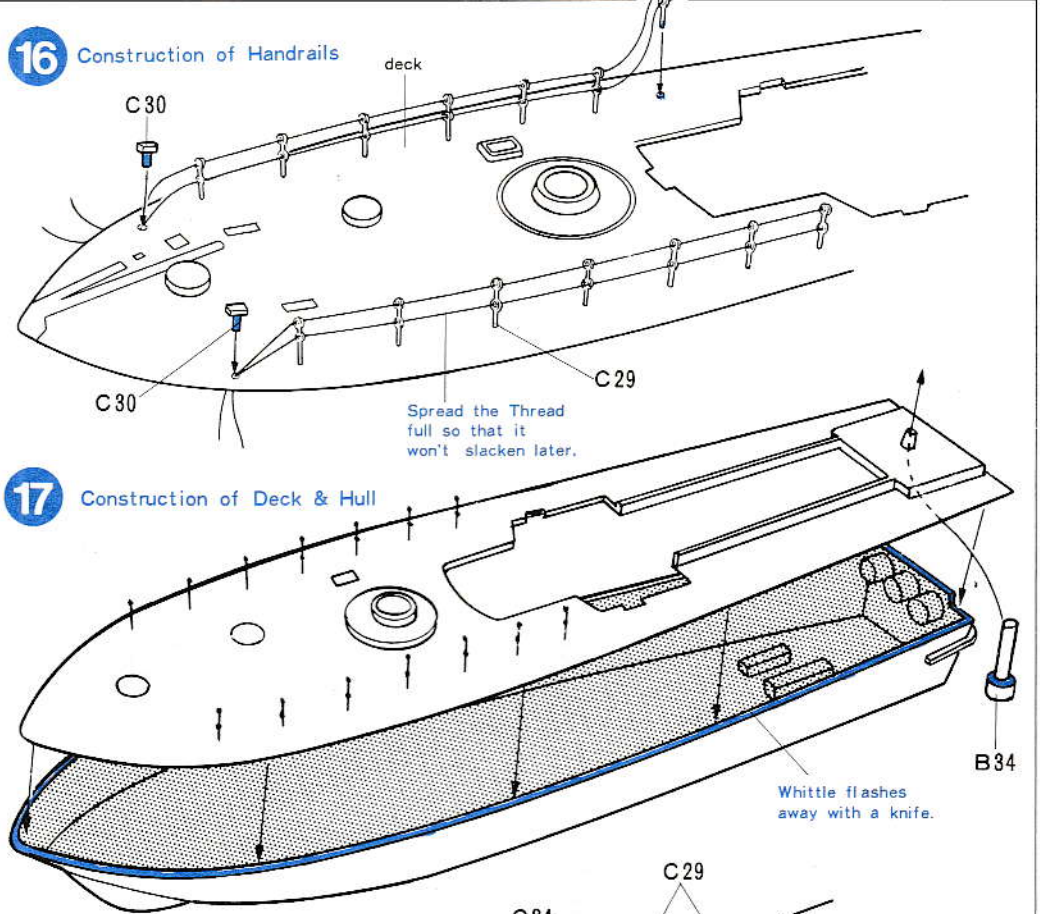


Fig. 18 Construction of Rear Handrail

★Glue Rail Holders onto Deck, first, and then, pass a thread through their holes. Spread the thread full.

18 Construction of Rear Handrail

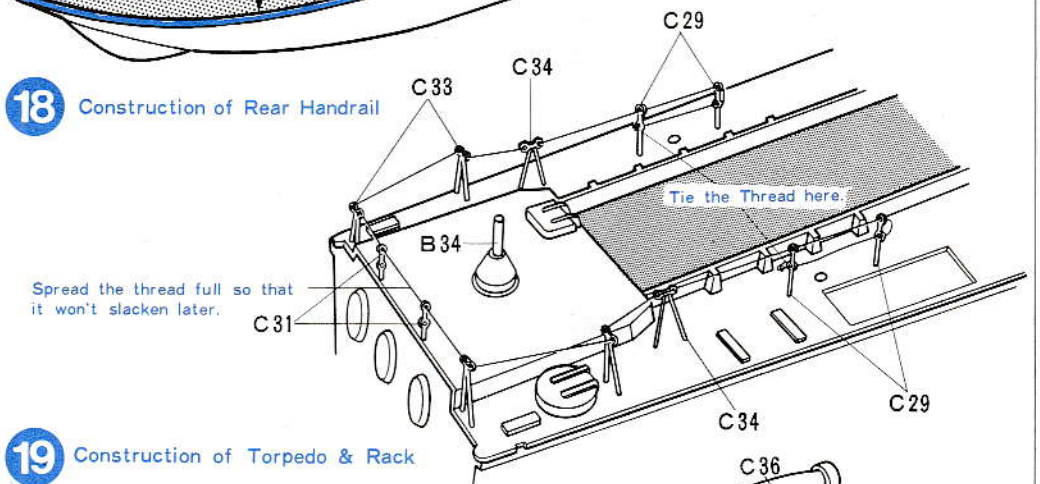
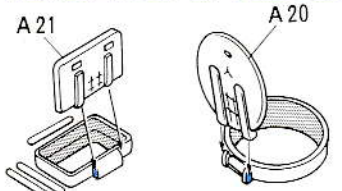


Fig. 19 - Construction of Front Deck

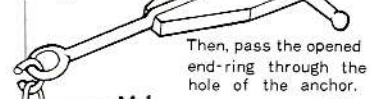
★Hatches, A20 & A21, can either be opened or closed. So, make your choice and have it either opened or closed.

Fixing of Hatch—an opened one

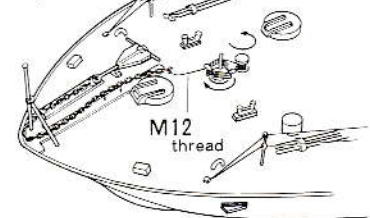


Connection of Chain & Tying of thread

Cut one end-ring of the chain with cutting pliers.

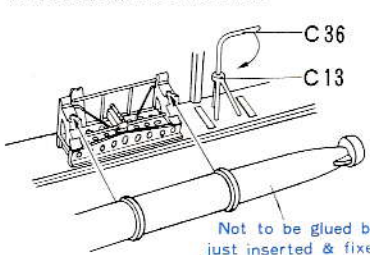


Then, pass the opened end-ring through the hole of the anchor.



Fixing of Torpedo

★Firstly, fix Torpedo onto Side Launcher. Then, turn Parts, C36, to the arrowed direction.



19 Construction of Torpedo & Rack

**Construction of Front Deck
 Gluing of Parts, D19 & B50.**

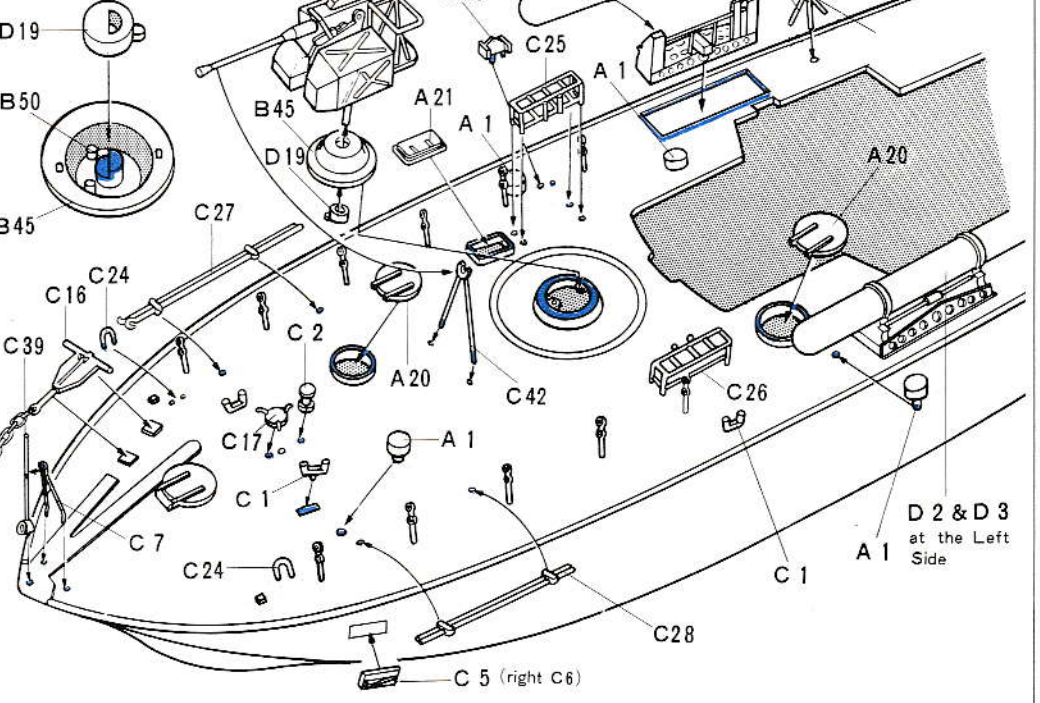


Fig.20 Construction of After Deck
 ★Fix Parts, B28, C41, and 20mm MG onto Parts, B34. Fasten the whole with the aid of Parts, B35. In so doing, apply as little adhesives as possible onto Parts, B35, to have the MG easily revolvable later.

★Parts, C36, should not be glued but just inserted and fixed into Parts, C13.

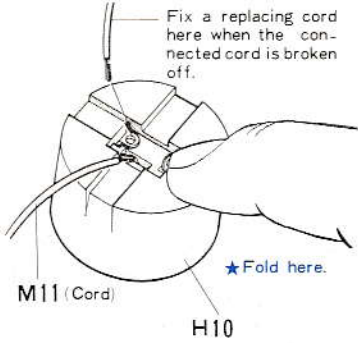
Fig. 21 Fixing of Motor

For motorization, insert RE280 motor in to Motor Bracket, H4.

Fig. 22 Construction of Battery Holder

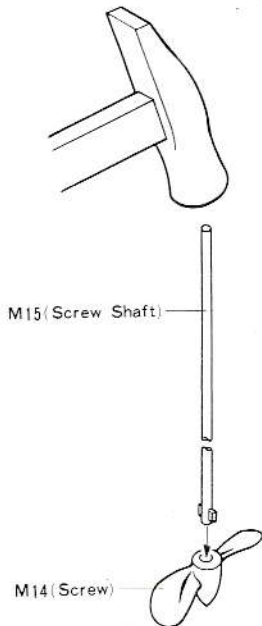
★Connect Cord, M11, to Battery Receptacle Metal, M8, and pass the cord through Battery Holder, H10. The connecting portion of the cord should be bared of the coating material by 2cm long.

Construction of Battery Holder

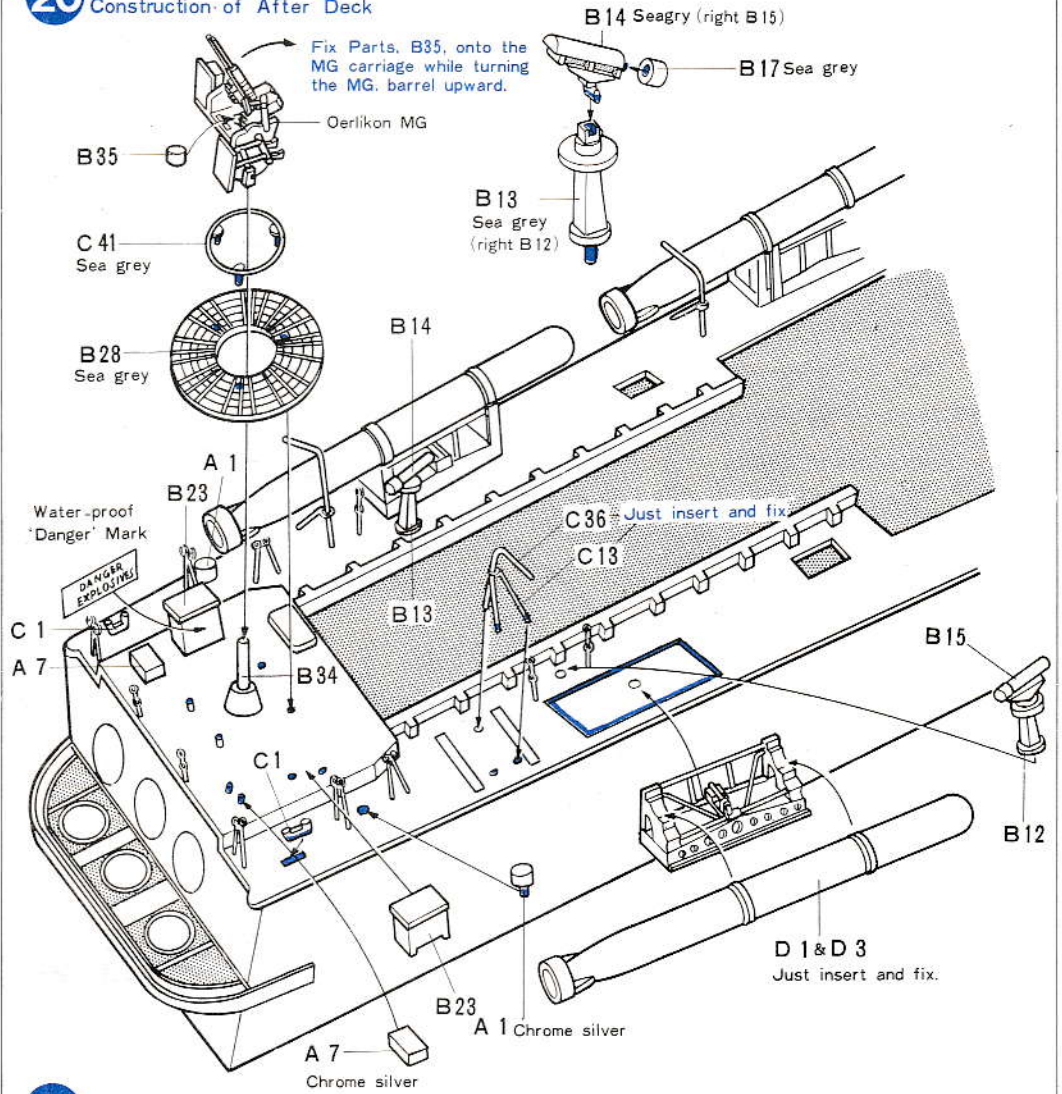


★Have four UM-2 Dry Batteries ready. Place and fix two Batteries inside Battery Holder with the aid of Rubber Band, M10. Do the same with another pair of Batteries.

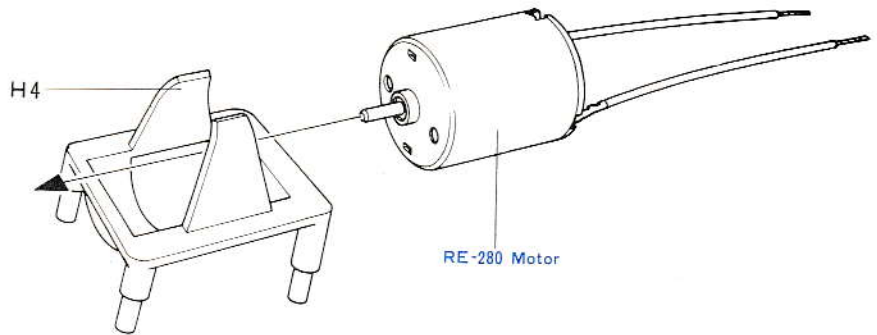
Insert Screw Shaft, M15, into Screw, M14, by lightly striking the Shaft end with a hammer.



20 Construction of After Deck



21 Fixing of Motor



22 Construction of Battery Holder

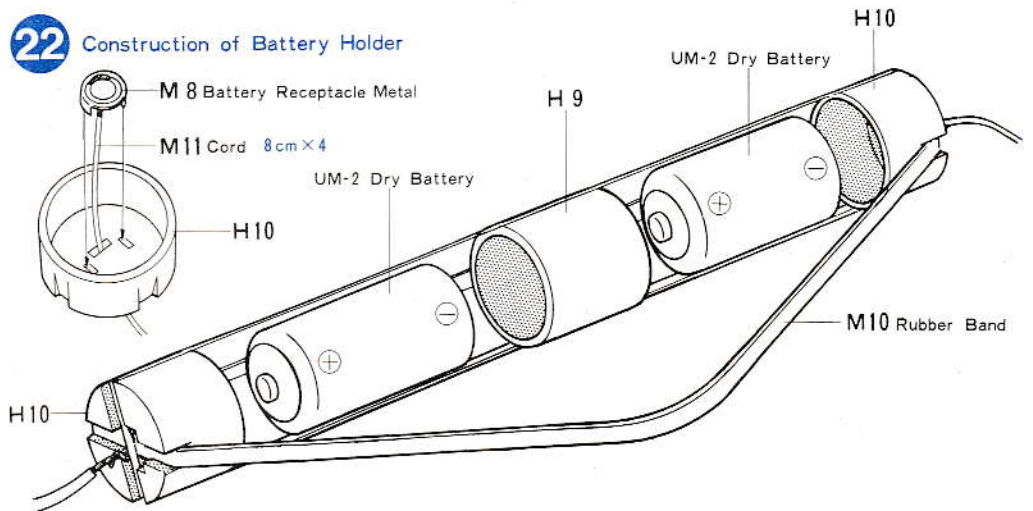


Fig. 23 Fixing of Motor for Motorization

★Connect Switchcord through Battery Holder onto Motor as shown in the figure.

★Before the connection, pass Cords through Vinyl Pipes, M13, and when connected, cover the connecting, bared portions of Cords with those Pipes.

★Insert Screw Shaft through Rear Hull and cover the end of the Shaft with Rubber Pipe, M3. Then, fix Rubber Pipe onto Motor Shaft.

★When fixing Motor Bracket, H4, onto Hull, be sure not to apply adhesives onto the Bracket and Hull.

★Motor and Battery Holder should be easily removed and fixed again later.

Fig. 24 Completion of Construction Work

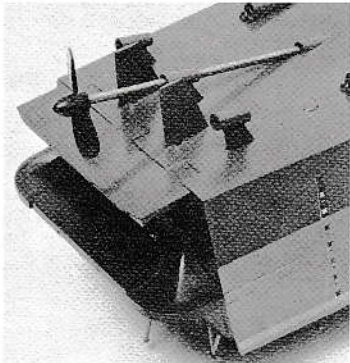
★Fix Engine Room onto Hull as shown in the figure. And lastly, fix Captain's Bridge onto the latter. No adhesives should be applied.

★When fixing Captain's Bridge, hold it rather firmly with fingers as shown in the figure.

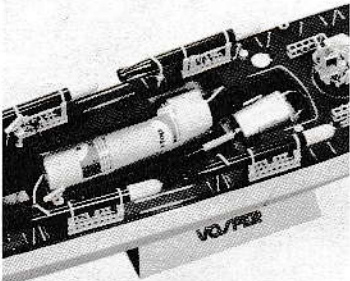
★When replacing Dry Batteries, remove Captain's Bridge and Engine Room beforehand.

★Lastly, construct Stand and all your work will be completed.

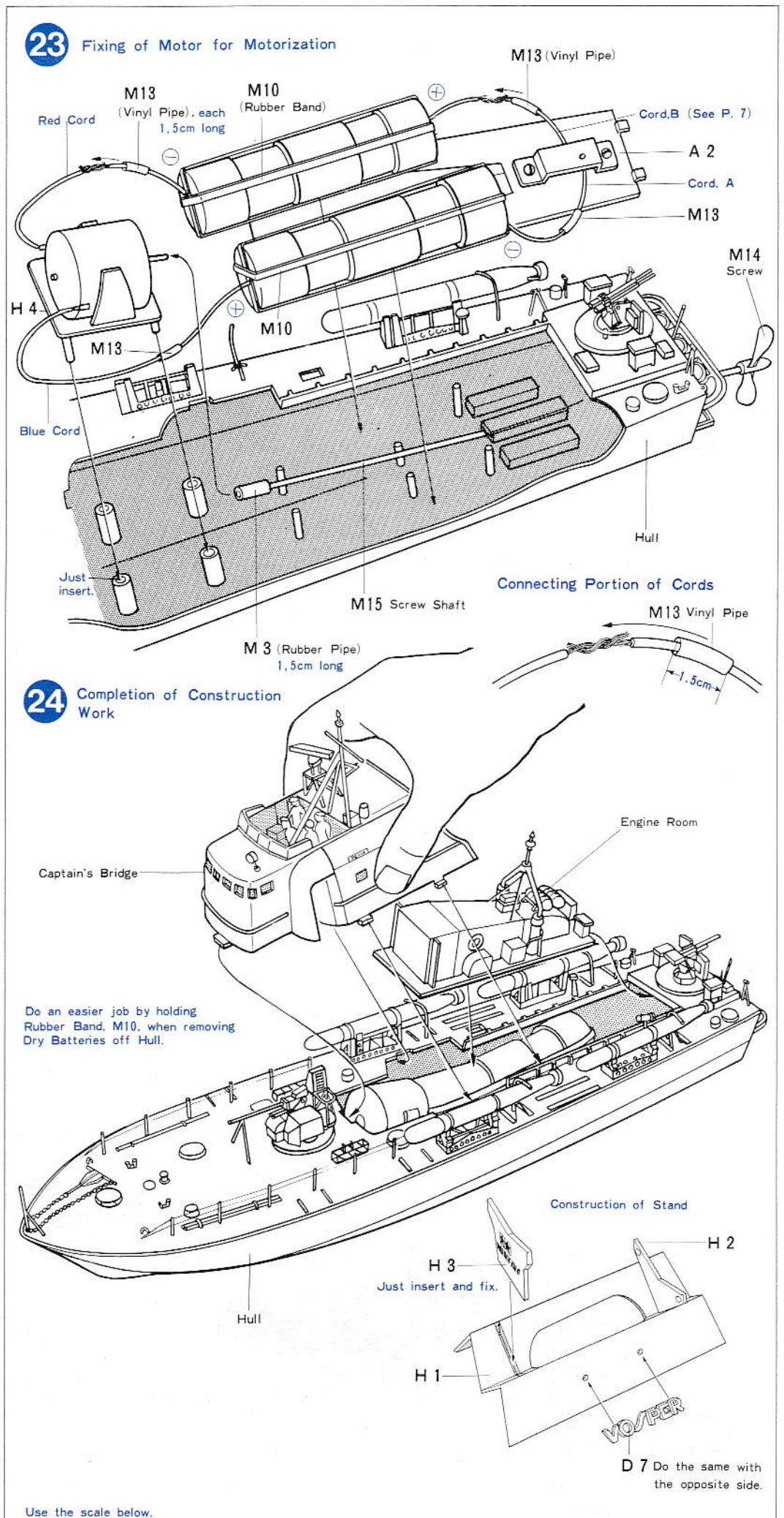
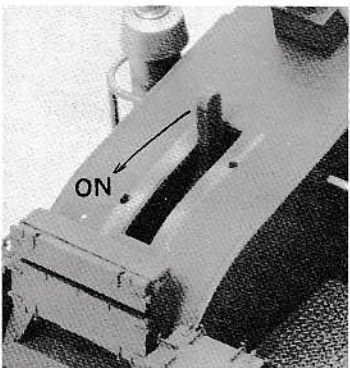
Reference Figure for Motorization, A



Reference Figure for Motorization, B



Reference Figure for Switch Part



PAINTING



APPLYING DECALS

Painting :

Painting should not be done simply to differentiate parts, but to accentuate the shape and function of each part. You are recommended to use various different colours with this kit and they are listed in columns two and three.

Before painting :

Before painting parts, sweep away dusts, dirt and hand stains from its surface with a soft cloth. Use a neutral cleanser to make sure of a clean surface.

Painting could not veil a rough surface like the one smeared with pressed-out adhesives. So, remove those rough smears off the surface with either a cutter-knife or a sand-paper (in the range of No. 400 to No. 800) before painting. Also, smooth uneven parting-line (joints of parts or metal molds) with a file.

It is essential to paint each parts after it has been fully constructed. None the less, those parts where a brush could not reach once they have been constructed with other parts, should be painted even while they are on the runner. Those parts which will have to be painted in the same colour should be glued together and their parting line be smoothed before painting.

When so done, you can expect a fine finish.

When painting is failed :

In case a painted surface is smeared with dust or waste of thread, do the same with the surface as above.

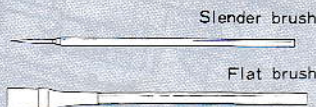
When too thickly painted at a time and get the paint foam or overflow, repaint after more than an hour drying and smoothing the painted surface with a watery paper-file (No. 400).

In case painting did not produce the desired polish because of high humidity or painting itself was covered with whitish overcast, repaint at a fine day next.

Painting tools :

Have a brush, a cleansing dish and rags ready. Use a brush for design painting. Also, a flat and a thin brush should be used. Brushes of soft hairs and long tips are better. For dissolving paints, use either a chinaware dish or a transparent brief pack which has contained parts. Or get a cleansing dish at a colourman.

When painting work has all been finished, cleanse brushes with lacquer-thinner. Then, give them a final wash with water. After drying, keep them for future use.



Colours of Paints Used :

Sea grey

A bright grey. Many British ships have their hull painted in this colour.

Leaf green

Decks of British ships are painted in this deep green.

Mandarin red

Dark red. Hull below water-line is painted in this colour.

Royal blue

Deep blue. The British (Royal) Navy uniform is painted in this royal blue.

Yellow

A bright yellow. Tip-end of a torpedo is painted in this colour.

Black

There are two blacks - a glossy black and a matted black. So, use the appropriate one of the two in each occasion.

White

Also, two kinds - a matted white and a glossy white. So, use the appropriate one of the two in each occasion.

Metallic grey

This colour is used to reproduce the impression of a metallic surface. In general, the colour is called 'iron colour'.

Chrome silver

A bright silver used to paint plated parts.

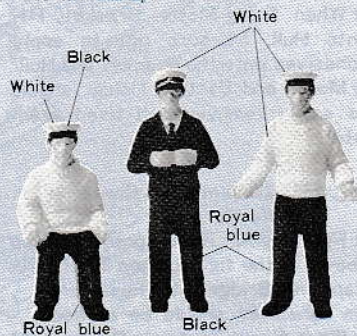
Gold

A gold colour used to paint brass parts.

Painting of crew dummies :

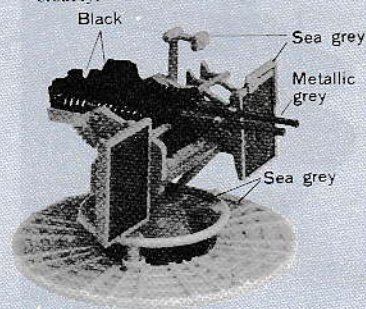
Crew dummies in the kit wear winter uniforms.

A seaman dummy wears a white pullover sweater and blue trousers while an officer dummy, blue coat and trousers. His necktie, too, is a blue one. Shoes are black in both cases. Caps are in white with black borders. A big badge is attached in the mid-front of each cap. So, when painting, add a gold point in that place. The addition will certainly enhance the whole out look of the dummy.



Painting of Erikon machine gun :

The MG is coloured all over in sea grey as in the case of hull. However, in some details, different colourings should be done. For instance, MG barrel and spring portion should be painted in metallic grey to produce a massive impression. Also, small carvings and the likes should be painted in relatively deep grey to make them loom more clearly.

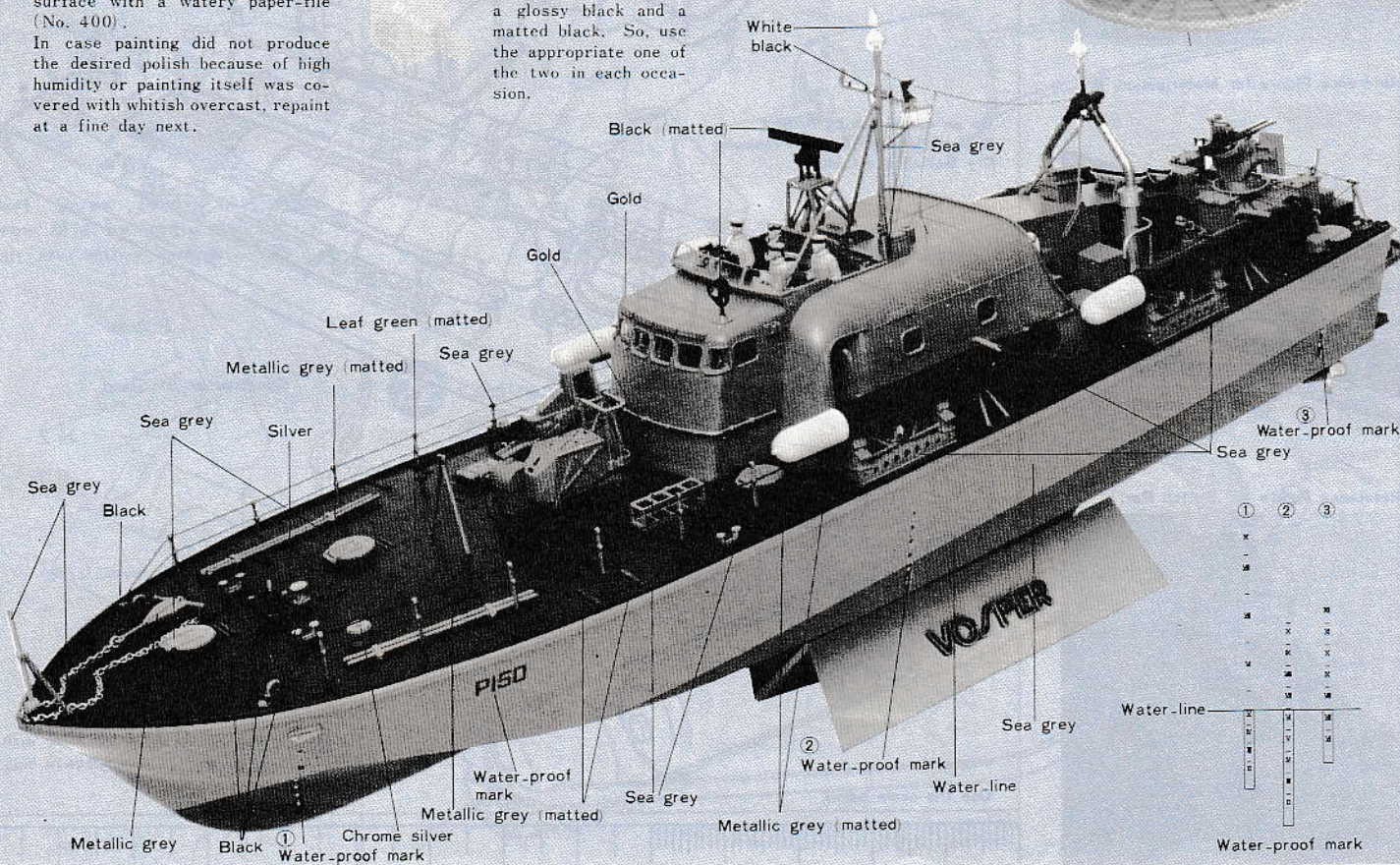


Gluing of Water-proof Marks

Names of parts and appropriate places to glue water-proof marks are indicated in respective explanatory figures. See also the photo below.

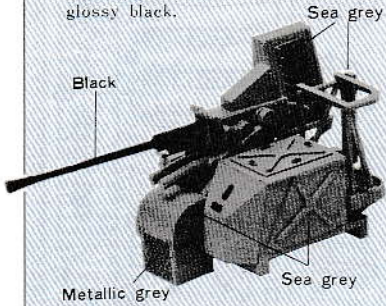
Gluing of these marks are different from that of the usual decals. So, remember the difference and do gluing as follows :

- 1) Cut off a desired number mark with its ground paper. The mark is water-proof and its surface (not the back side as before) is glued onto an appropriate place. So, the ground paper should be cut off large enough to contain all the desired numbers or letters.
- 2) Remove a thin oil-paper off the surface of the mark.
- 3) Press the number or letter mark down with the ground-paper facing upward onto the right place. The place must be located precise, as changing of place will be very different once the mark is glued.
- 4) Press the mark well with your finger and sprinkle water all over it. After 20 to 30 seconds, the ground paper will easily come off.



Painting of Bofors MG :

This MG, too, is painted all over in sea grey. However, it is advised that its mechanical, motive portion should be painted differently in metallic grey, while gun barrel, in glossy black.



Painting of Captain's Bridge

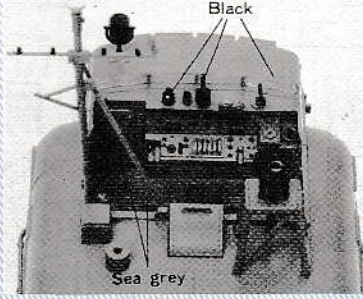


Photo to be referred when spreading wires.

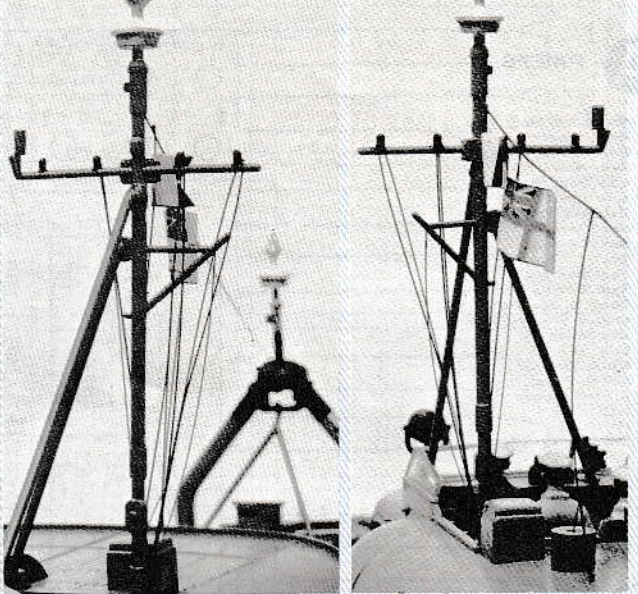
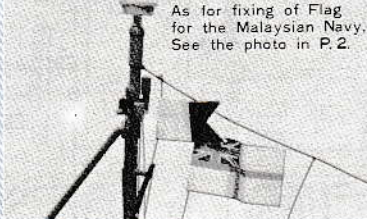


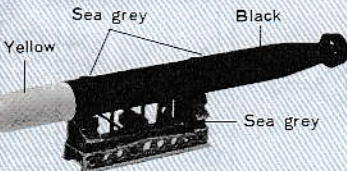
Photo to be referred to when fixing Flag onto the mast



As for fixing of Flag for the Malaysian Navy. See the photo in P.2.

Painting of torpedo :

A torpedo is painted all over in half-matted black. But a band in the middle, which is a metal to secure the torpedo is painted in sea grey and the tip-end, in yellow.



Painting of bridge :

Bridge is the most important section of the whole hull. All commands to the crew are issued from and judgement of right steering are passed there. So, even the smaller parts found in there like meters in the instrument board and voice tubes should be painted distinctly. Floor is often washed by the waves so that a latticed board is placed dross it. (See photos.)

★To improve the outlook of the model

Fix Antenna Straight.

An antenna for wireless communication is fixed onto and wires for the flag are connected to, the mast. An antenna rod and these wires can be made of the runner which has held parts. Warm the runner with a candle fire to make it into an elongated thin line. Cut it to appropriate lengths for an antenna

and wires respectively. These runner-rod and wires can be glued to the mast with adhesives exclusively meant for the plastics, as the runner is made of plastics. So, fix them onto the mast referring to photos in this page.

Making a rod and wires of the runner :

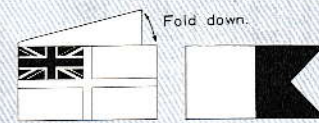
Warm the runner by a candle fire, while turning it around over the latter. When the runner bends down, remove it off the fire. Then, stretch it both ways with your hands and you will get a thin plastic thread.



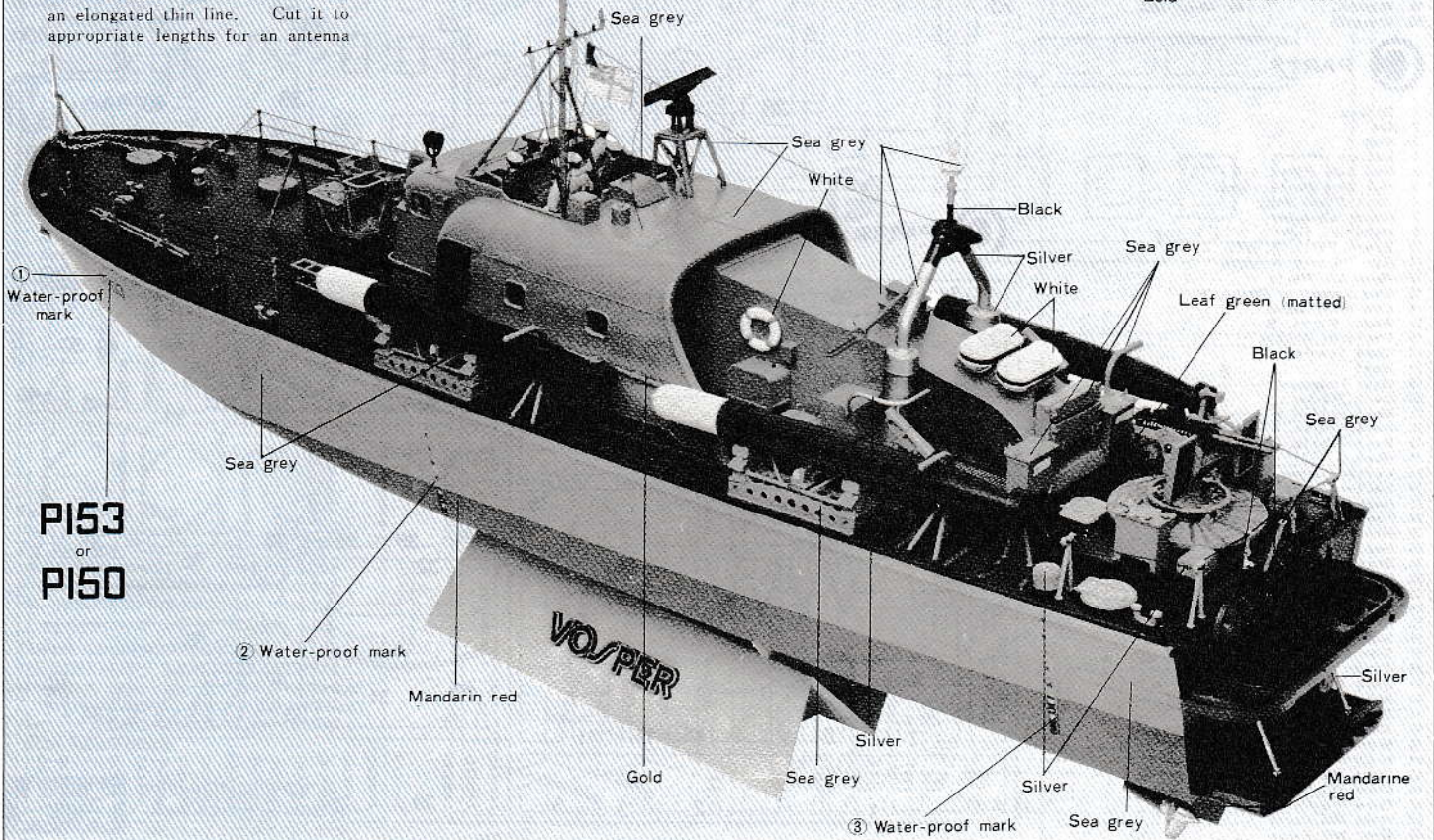
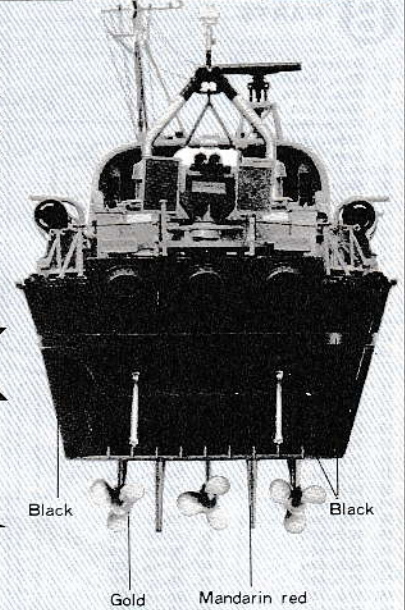
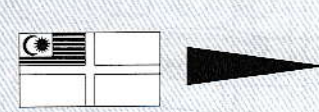
Fixing of flag :

Two flags of different kinds are printed on the paper board to which a vinyl bag containing parts is attached. Cut these flag marks carefully off the board and glue each of them onto a wire as if to enclose the latter. Appropriate combinations of flag-marks are shown in the figures below.

★The British Navy



★The Malaysian Navy



PI53
or
PI50

VO/PER

PARTS

A PARTS

B PARTS

A PARTS

1. Mushroom Ventilator
2. Rear Floor
3. Rear Cover, right
4. Rear Cover, left
5. Life Boat, A
6. Life Boat, B
7. Exhaust Ventilator
8. Box Cover A
9. Box Cover B
10. Box
11. Tool Box, right
12. Tool Box, left
13. Open Bridge Panel
14. Closed Bridge Panel
15. Box Holder
16. Life Tire
17. Meter Box B
18. Meter Panel
19. Closed Bridge Floor
20. Hatch, A
21. Hatch, B
22. Open Bridge Cover
23. Cover, right
24. Cover, left
25. Open Bridge Door
26. Companion Top
27. Meter Box, A
28. Dummy, A
29. Dummy, B
30. Dummy, C

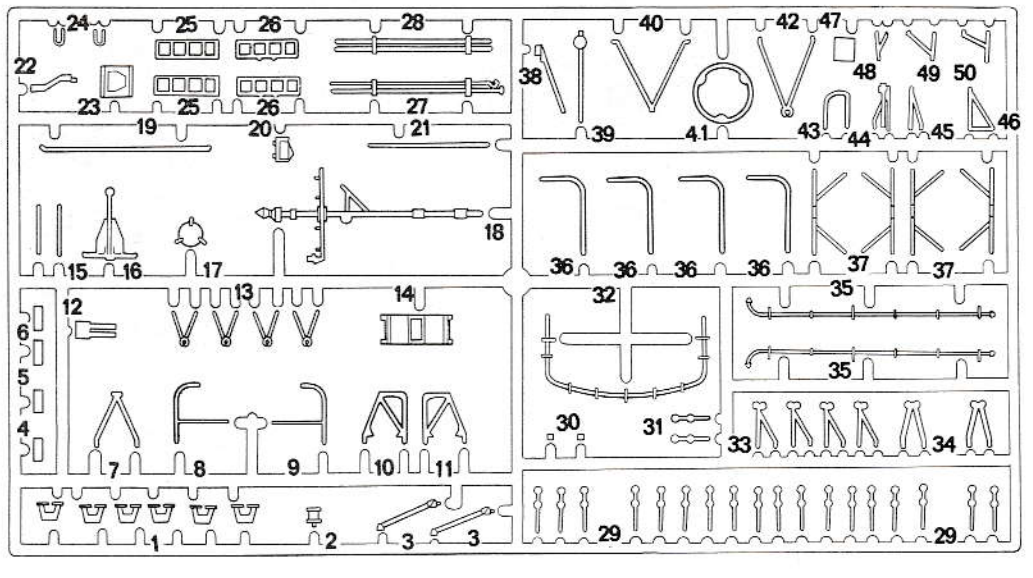
B PARTS

1. Bofors 40mm MG Parts
2. Box, small
3. Box, large
4. 40mm MG Parts
5. 40mm MG Parts
6. Side Launcher Parts, A, left
7. Side Launcher Parts, A, right
8. Auxiliary Diesel Exhaust Pipe, A
9. Side Launcher Parts, B
10. Side Launcher Parts, C
11. Side Launcher Parts, C
12. Flare Bomb Launcher, A, right
13. Flare Bomb Launcher, A, left
14. Flare Bomb Launcher, B, left
15. Flare Bomb Launcher, B, right
16. Side Launcher Parts, D
17. Flare Bomb Launcher, C
18. Torpedo Head
19. Auxiliary Diesel Exhaust Pipe, B
20. 20mm MG A
21. 20mm MG B
22. Side Launcher Parts, D
23. Ammunition Box
24. 40mm MG
25. 20mmMG, C
26. 20mm MG, D
27. 20mmMG, E
28. 20mm MG, F
29. 20mmMG, G
30. 20mm MG, H
31. 20mmMG, I
32. 20mm MG, J
33. 20mmMG, K
34. 20mm MG, L
35. 20mmMG, M
36. 40mmMG
37. 20mm MG
38. 40mmMG
39. 40mm MG
40. 40mmMG
41. 40mm MG
42. 40mmMG
43. 40mm MG
44. 40mmMG
45. 40mm MG
46. 40mmMG
47. 40mm MG
48. 40mmMG
49. 40mm MG
50. 40mmMG

C PARTS

1. Bollard
2. Bit
3. Rod
4. Lattice
5. Hull Side Parts, left
6. Hull Side Parts, right
7. Jack Staff Stay
8. Hand-rail, left
9. Hand-rail, right
10. Radar Parts, A, left
11. Radar Parts, A, right
12. 40mm MG Parts
13. Side Launcher Parts, F
14. Life Boat Davit
15. Radar Parts, B
16. Danfortn Anchor
17. Rope Cradle
18. Mast
19. Mast Holder, A
20. Deck Parts
21. Mast Holder, B
22. Radar Parts, C
23. Radar Parts, D
24. Hook
25. Locker, upper
26. Locker, lower
27. Hook Pole
28. Fend off quants
29. Handrail, A
30. Handrail Stopper
31. Stanchion
32. Bridge Handrail, A
33. Stayed Stanchion
34. Double Stanchion
35. Bridge Handrail, B
36. Side Launcher Parts, G
37. Side Launcher Parts, H
38. Ensign Staff
39. Jack Staff
40. Auxiliary Diesel Exhaust Pipe, C
41. 20mm MG Parts, N
42. 40mm MG Gun Barrel Stopper
43. 40mm MG Parts
44. 40mm MG Parts
45. 40mm MG Parts
46. 40mm MG Parts
47. 40mm MG Parts
48. 40mm MG Parts
49. 40mm MG Parts
50. 40mm MG Parts

C PARTS

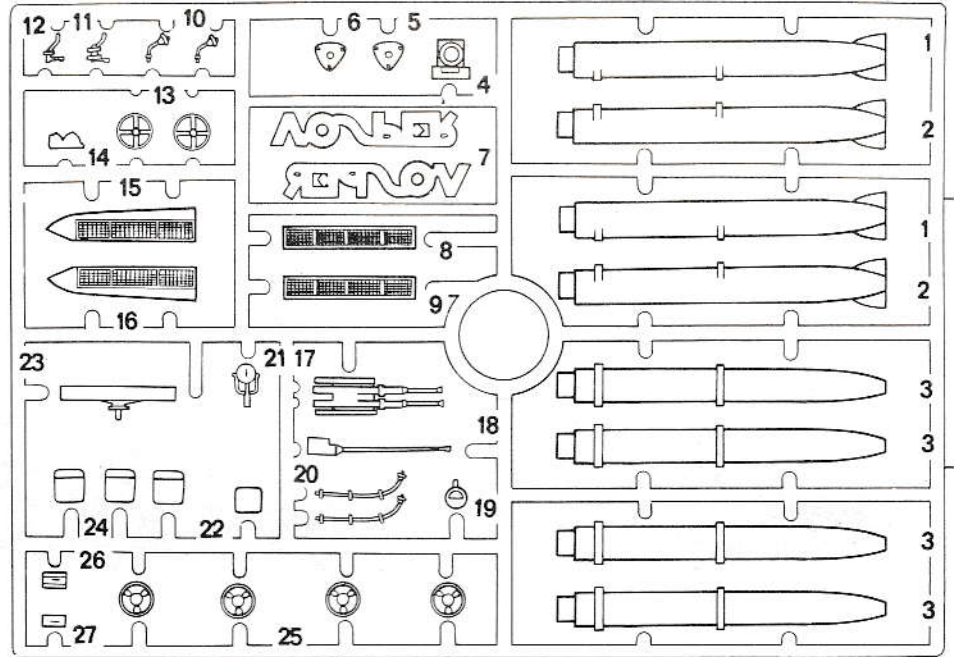


PARTS

D PARTS

1. Torpedo, right
2. Torpedo, left
3. Torpedo, upper
4. Closed Bridge Parts
5. Radar Parts, E
6. Radar Parts, F
7. Letter Plate
8. Lattice, A, left
9. Lattice, A, right
10. Voice Pipe, A
11. Bearing Compass, A
12. Bearing Compass, B
13. Steering Wheel
14. 20mm MG Parts
15. Lattice, B, right
16. Lattice, B, left
17. 20mm MG, Parts
18. 40mm MG Parts
19. 40mm MG Parts
20. Voice Pipe, B
21. Searchlight
22. Seat, A
23. Radar Parts, G
24. Seat, B
25. Torpedo Screw
26. Tool Box, A
27. Tool Box, B

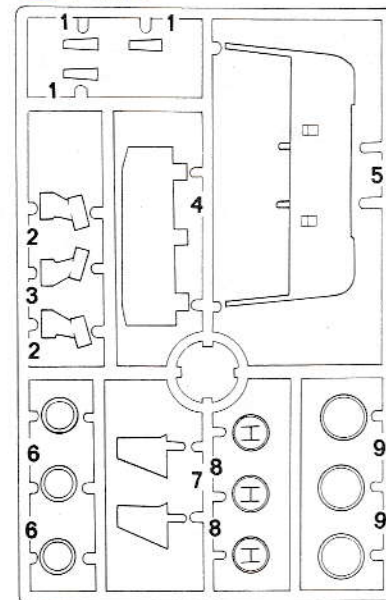
D PARTS



E PARTS

1. Shaft Holder Cover
2. Shaft Holder, A
3. Shaft Holder, B
4. Rectifier-Stabilizer
5. Leak-proof Plate
6. Ring
7. Rudder
8. Exhaust Cover
9. Exhaust

E PARTS



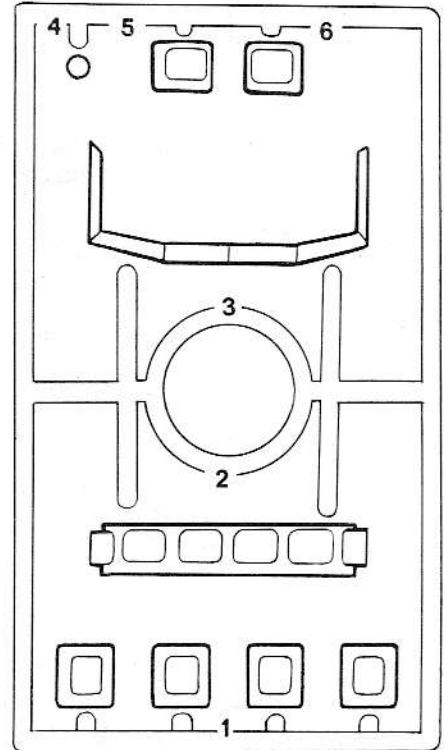
F PARTS

1. Display Screw

G PARTS

1. Windshield, A
2. Windshield, B
3. Windshield, C
4. Searchlight Lens
5. Windshield, D, right
6. Windshield, D, left

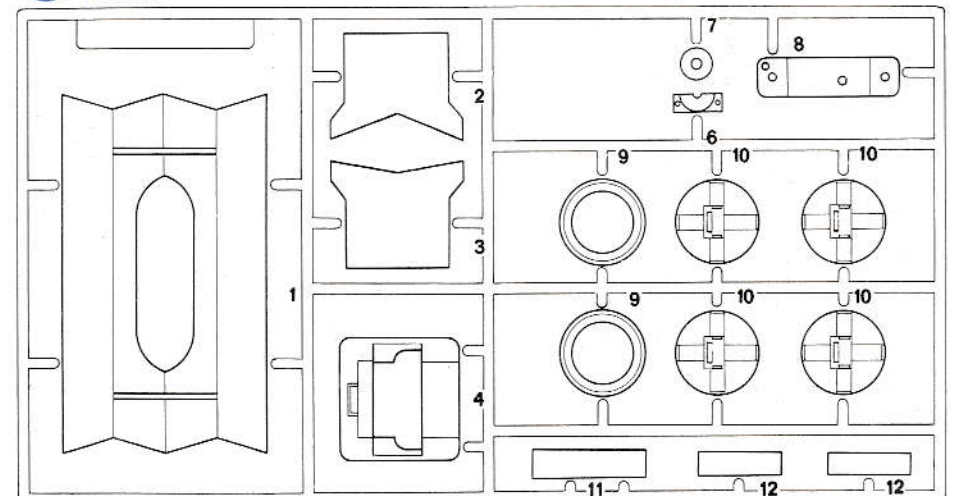
G PARTS



H PARTS

1. Stand
2. Stand Supporting Plate, A
3. Stand Supporting Plate, B
4. Motor Bracket
5. Nut Stopper Cap, A
6. Nut Stopper Cap, B
7. Switch Holder
8. Intermediate Ring for Holding Battery
9. Battery Holder
10. Grease Box Cover
11. Screw Shaft Box Cover
12. Screw Shaft Box Cover

H PARTS



M PARTS

1. Chain
2. Rubber Cap
3. Rubber Pipe
4. Shaft
5. Grease
6. Screw
7. Nut
8. Battery Holder
9. Switch
10. Rubber-band
11. Cord
12. Thread
13. Vinyl Pipe
14. Screw
15. Screw Shaft

F PARTS

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