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THE ORIGINAL  
'DO-IT-YOURSELF'  
MAGAZINE

# HOBBIES *weekly*

FOR ALL  
HOME CRAFTSMEN

*Also in this issue:*

HANDKERCHIEF  
GIFT PACKS

COLLECTORS' CLUB

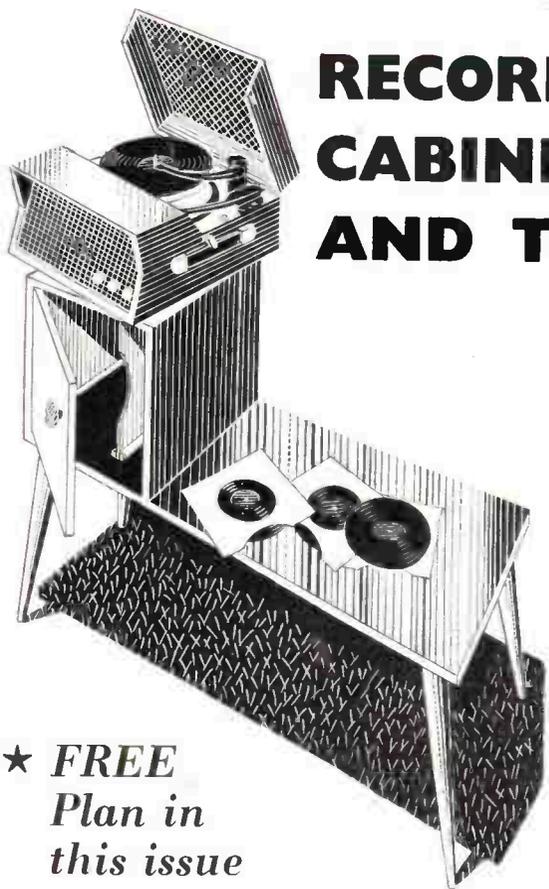
CONTINUATION OF  
DIVING HINTS

PROCESSING YOUR  
PHOTOGRAPHS

MODELLING OLD-TIME  
GALLEONS

A GARDENER'S  
STRING TIDY

ETC. ETC.



## RECORD CABINET AND TABLE

Designed  
for the  
Enthusiast

★ **FREE**  
*Plan in  
this issue*



*Up-to-the-minute ideas*

*Practical designs*

*Pleasant and profitable things to make*

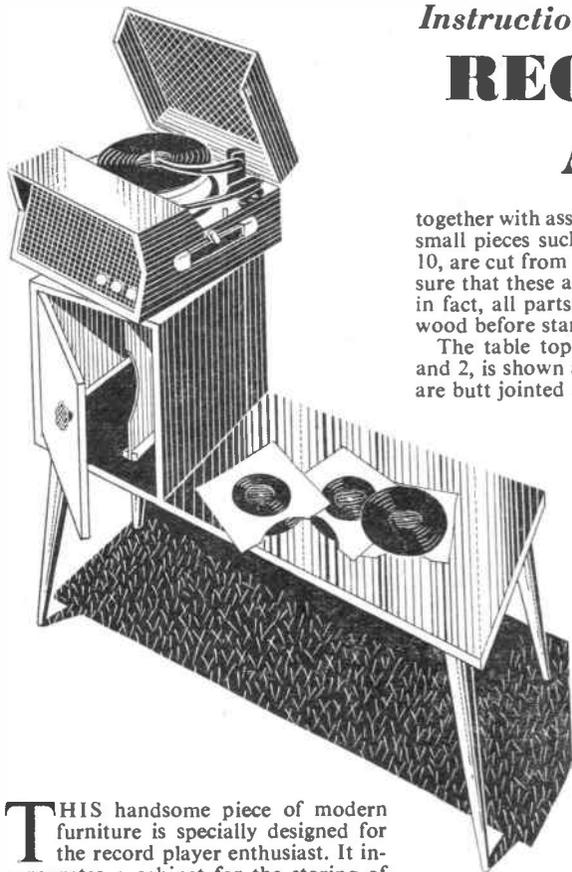
World Radio History

**5<sup>D</sup>**



## Instructions for making

# RECORD CABINET AND TABLE



**T**HIS handsome piece of modern furniture is specially designed for the record player enthusiast. It incorporates a cabinet for the storing of discs, and there is a suitable flat table surface for their selection and arrangement.

Hobbies kit for making this project contains all materials, and also includes dowelling for those who chose this method of making the joints. Incidentally, three alternative joints are suggested in D, E and F on the design sheet. The method of working will be chosen according to individual capability. Otherwise the makeup is quite straightforward and the project can be undertaken quite confidently and successfully by the average handyman.

The finish applied to a project of this nature will obviously enhance or else mar the work. Incidentally, some may prefer to paint the cabinet and stand to match other furnishings in the room for which it is intended. In this case it should be noted that a further simplification in makeup would be for all parts to be butt jointed. They should be screwed and countersunk well, finally filling flush with plastic wood or stopper before painting.

All the measurements for the various pieces are shown on the design sheet,

together with assembly details. Note that small pieces such as battens 2, 7, 9 and 10, are cut from waste  $\frac{1}{2}$  in. wood. Make sure that these are allowed for and that, in fact, all parts are marked out on the wood before starting to cut.

The table top, consisting of pieces 1 and 2, is shown at A. The two pieces (1) are butt jointed and glued together. It is desirable to cramp these if possible. Three battens (2) made up as illustrated will strengthen the top and help to prevent warping. These are glued on and screwed.

The cabinet is made up as shown at B, the measurements being taken from the front and side views. The sides (3) and top (4) are each made from two pieces butt jointed and glued together as previously described. Strengthen the assembly by

gluing in the corners pieces 10 consisting of  $\frac{1}{2}$  in. by  $\frac{1}{2}$  in. wood. Remember to set back these pieces 10 from the front to allow for the door. The back of the cabinet (5) which is in one piece, is glued between the sides (3).

Fix the made-up cabinet to piece 1 by gluing and screwing from underneath. Note that the cabinet can be positioned flush with the end of piece 1 (see main illustration), or set in slightly from the edge (see front view).

The makeup of the cabinet door (6) is shown at C, measurements being taken from the front view and checked with the actual size of the opening. The battens (7) are glued and screwed in place and the door hinged to the side (3). The 2 in. butt hinges will, of course, be recessed in both pieces.

There is enough wood in the kit to make one partition in the cabinet, but others can be added if thought necessary. The partition is fixed inside the cabinet as shown at G, strips of  $\frac{1}{2}$  in. by  $\frac{1}{2}$  in. wood being glued at the top and bottom.

Hobbies No. 581 contemporary legs are 15 in. high and should be played in position. The blocks are first screwed

★★★★★★★★★★★★★★★★★★★★  
★  
★ BUY A KIT ★  
★  
★ Hobbies Kit No. 3418 for making ★  
★ the Record Cabinet and Table ★  
★ contains all planed wood, turned ★  
★ legs, handle, hinges, catch, &c. ★  
★ Kits from branches and stockists ★  
★ price 62/6 or carriage free from ★  
★ Hobbies Ltd, Dereham, Norfolk. ★  
★  
★★★★★★★★★★★★★★★★★★★★

and glued in position, being set in as shown in the front and side views. The legs themselves simply screw into the blocks.

Clean up thoroughly all parts when preparing to add the finish by staining and polishing or varnishing, and last of all add the handle to the cabinet door. A ball catch can be used to secure the door if necessary.

## GLASS FIBRE FOR AMATEURS

By G. M. Lewis and R. H. Warring

**T**HIS is essentially a practical book for the reader interested in making things with reinforced glass plastics, or using this most versatile material for repair work, etc. It is the first book of its kind to cover materials, techniques and a vast range of applications in a single, comprehensive volume — giving the reader literally all the information he will ever need for producing successful glass plastic mouldings of any shape, form or size.

Projects for which this material is now in common use range from car bodies and water-craft hulls, to modelling and simple repairs to house guttering. Of much interest to the handyman is the informative chapter on maintenance and domestic applications.

Published by Model Aeronautical Press Ltd, 38 Clarendon Road, Watford, Herts.  
Price 7s. 6d.

# GOING IN FEET FIRST



(A) Ready for the plain jump

forcibly straightening them and springing with the ankles, as in previous dives, spring into the water. Keep your feet pointed and your hands in position, so that you make a straight and clean entry. A common fault is to lean forward; this is usually caused by looking down at the water. Once you have given

*By P. R. Chapman*

a quick glance to make sure that nobody is underneath, look straight ahead the whole time. This dive must be practised until you are able to do it easily and neatly each time.

### Using the arms

The next stage is to incorporate an arm movement into this dive. To begin, a movement similar to that learned for the front header is satisfactory. In other words, start with your outstretched arms in front of you, bring them down to past your sides, and then fling them upwards as you also spring up, but in this case, of course, you do not flick up your legs (Photograph B). After reaching the highest point in your jump your arms should be rapidly brought to your sides as in the previous dive, so that you enter the water just as before. In water up to 8 ft. deep you should easily touch the bottom with your feet, so that you can give a spring, and shoot to the surface again.



(B) Leaping up

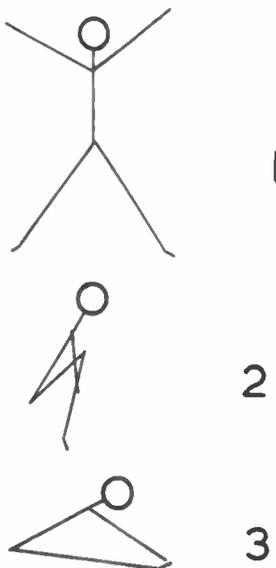
**A**LTHOUGH the plain header is considered to be the 'standard' dive, and is the one that most swimmers will probably want to do, there are others which are equally graceful. Of these, probably the easiest to learn is the feet first entry. Since you will probably not want to spend all the time practising the header, it makes a pleasant change to try out this dive. Although at first sight it appears to be just a jump, it should not be underestimated, since to perform it neatly is not quite as easy as it looks.

Since you do not go out so far with this dive, in order to be quite happy about clearing the edge of the bath when you are beginning, you may prefer to stand at the end of the springboard, although at first you will not be trying to make use of its 'spring'. If you care about water entering your nose (and this can be unpleasant) as it is more likely to do than in the case of a head-first entry, you can obtain nose clips at most sports shops or departments for about 2s. 0d. However, whether you enter from the board or the bath side, the method is exactly the same.

Stand in an 'attention' position, as in photograph A, hands tightly pressed to the thighs and toes over the edge. Then bend slightly at the knees, and by

The modifications of this dive are the Straddle, Tuck, and Pike. For these you will need to be jumping from a sufficient height in order to give yourself the time in the air to make the necessary movements. For each of these you start the dive just as before, but in the case of the Straddle, at the peak of the dive you open your arms and legs to form an 'X' (Fig. 1). Your arms must be lowered to your sides, and your legs closed before entering the water, exactly as before. For the Tuck, start as before, but instead of 'straddling' your arms and legs whilst in the air, double up and clasp your shins with your hands (Fig. 2). The Pike consists of bending at the hips, and touching your toes (Fig. 3). In each case, the movement should be carried out at the peak of the jump, and you should straighten out in time to enter the water as in the case of the plain jump.

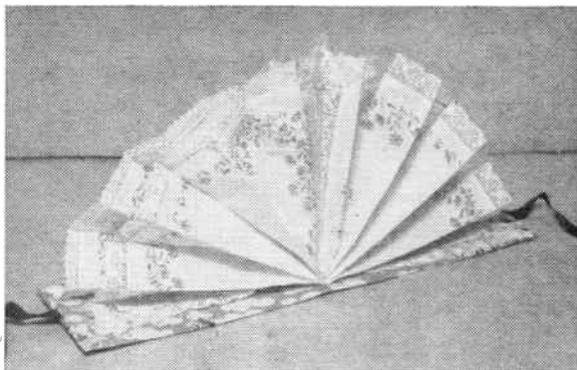
In order to gain sufficient height for these and other dives, it is useful to know how to 'work' the springboard, in order to get the maximum 'push' from it. Stand at the end of the board, hands extended forwards, as for the plain jump or header. Bring the arms down to your sides in a smart manner; this will have



● Continued on page 165

For 'bring-and-buy' stalls

# Handkerchief Gift Packs



**H**ANDKERCHIEF gift packs are very easy to produce and any fancy wrapping or surplus wall-paper will serve for the cover. The intention is to make a novel but attractive pack as a gift or for tempting the customers at your bring-and-buy sales. And nice hankies are worthy of an attractive case — something different from the conventional box.

Reference to the diagram will show that after allowing  $\frac{1}{2}$  in. for the overlaps at the top and sides your paper cover will measure  $5\frac{1}{2}$  in. by 13 in. But note that before finally attaching the paper to the inside of the card we also fix two short lengths of coloured ribbon for tying up the case.

Now for a description of the assembly. Lay a piece of fancy paper, already cut to size, on the table, with a piece of scored card stiffener on top. Trim away the surplus at the corners by means of scissors, apply a touch of adhesive at the top edge of the paper and fold from the top inwards. This will fasten the overlap marked A. Now turn over and glue the two side overlaps B in the same way. You now take two 4 in. lengths of coloured ribbon, preferably matching the cover, attaching one to each side of the card with a little adhesive as shown in the diagram and finish by attaching the remainder of the inside cover paper. There is no need to apply glue all over the card or paper.

The covers should be stacked and flattened under pressure while drying.

You will need two handkerchiefs to fill the case and these must be ironed into straight, even pleats about 1 in. wide. Place one hankie on the card with the fancy edge facing outward. Push fine pins in each end horizontally, thus fastening to the inside cover. Since we

insert two hankies in our covers it is best to space them so there is an even margin. This will be accomplished easily enough if the inside edges of both are laid so that they are on the centre of the card. Proceed exactly the same with the other hankie laid alongside and then the two are fastened securely by tying a length of embroidery silk round the centre fold, finishing with a bow. The embroidery silk should be of the same colour as the ribbon.

Now raise the two extreme upper edges of a hankie, folding upwards and fan-wise. Pin together in the centre to keep in position and then do similarly with the other. The case is fastened by tying the two ribbons together but when these are untied the hankies open out like a dainty fan as shown in the illustration.

*By Anne Bradford*

You will need some pieces of thin cardboard as stiffeners, measuring  $2\frac{1}{2}$  in. by 12 in., scored down the centre for easy folding. A few of these stiffeners can be prepared at the same time if some pieces of cardboard are laid together. There is nothing difficult about cutting a simple oblong to the prescribed measurements but you must ensure that the score mark is central and at right angles to the long edge if the case is to close correctly.

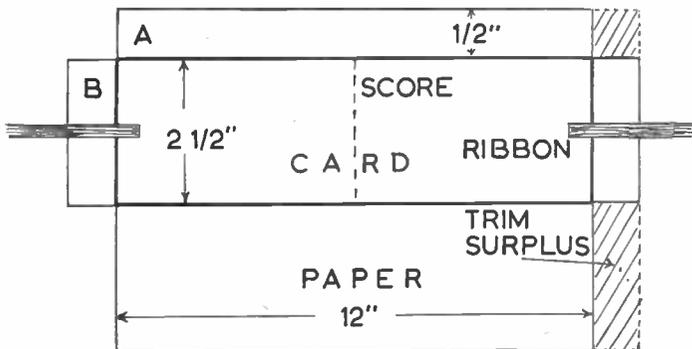
We now require a paper backing which will cover both the inside and the outside. Select something which is bright and cheerful but avoid crepe paper, which is inclined to be transparent. This cover has to be large enough to bind the outside and inside and allow for overlapping joints.

● Continued from page 164

## LEARNING TO DIVE

the effect of depressing the board slightly. Without pause, sweep them upwards and outwards until they are extended in line with your shoulders, when the board will rise. Bring them down to your sides again, at the same time bending your legs as the board descends once more and finally sweep them forwards and upwards as you straighten your legs to attain the usual take-off position.

You must of course synchronize each of these movements with the natural oscillation of the springboard, and some practice will be needed to be able to do so. When, however, you can manage it with correct timing and vigour, you will find that the board will give you a good 'lift' into the air. You will probably find it easier to work the board whilst doing the feet first entries to begin with, but later on you can adapt it to the header, when, of course, you must turn in the air, and enter head first.



# Drying, Glazing and Reducing

**A**FTER your prints have been thoroughly washed they should be dried either naturally or by carefully applied heat.

For natural drying first allow all surplus water to drain from the prints. When this has been done place them on a flat, clean surface and gently remove surface moisture from the fronts and backs with a viscose sponge. Alternatively, a sheet of photographic blotting paper can be used. This paper is specially prepared, and is fluffless and free from any chemical which could be harmful to the prints.

After blotting lay the prints separately, face down, on a clean smooth towel or cloth. A non-fluffy material is of prime importance. Coloured materials should also be avoided unless you are absolutely certain that the colours will not run.

Another method is to partly dry the prints, as described above, and then hang them on a line in a warm, dust-free atmosphere. They should be placed in pairs, back to back, and clipped at one corner. If metal film clips are not available, use wooden, clip-type clothes pegs.

For assisted drying, spread the prints out, or hang them, near a fire or radiator. 3 ft. may be regarded as a safe distance. Change the position of the prints frequently and do not allow them to become bone-dry or the gelatin may

crack when flattening is subsequently carried out.

However they are dried, prints have a tendency to curl. To remedy this, first lay the print face down on a flat surface. A table with a smooth cloth on it is suitable. Place a flat wooden ruler diagonally across the back of the print.

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*By K. Baxter*

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Then, holding the print by one corner, draw it under the ruler. Repeat this procedure until all four corners have been dealt with.

Moderate pressure on the ruler is all that is necessary, and the degree of anticurl can be regulated by the angle at which the paper is held during flattening.

## Sparkling finish

To give a sparkle to your finished prints reduction or glazing can be employed. The first of these processes is very popular among American photographers. Used overall, chemical reduction will lighten and brighten a print to really good effect. Farmer's reducer is the ideal solution. It consists of hypo crystals and potassium ferricyanide, with water to mix.

Dissolve a handful of hypo crystals in approximately 20 oz. of water. Add a

small amount of the ferricyanide, previously dissolved in water, until the hypo solution takes on a faint lemon-yellow tint. The deeper the colour the stronger the action, and as only a very weak reducing solution is required, remember to use the smallest amount of ferricyanide necessary to tint the hypo bath.

Soak the print in water for 10 to 15 minutes. Then transfer it to the reducer. Immerse for 10 sec., not longer, agitating the print continuously by gently rocking the reducing bath. At the end of this time remove the print immediately and place it face down in running water. Wash thoroughly for a few minutes so that all action is stopped.

After this the print can be inspected. If the degree of reduction is to your satisfaction, wash the print for a further 10 minutes. If you feel its brightness could be still slightly improved, repeat the process, but this time restrict the period of reduction to 5 seconds. Finally, refix the print for 10 minutes in a solution of one part hypo to four parts water. Then wash for about an hour.

Farmer's reducer has a very short life. Generally, half an hour is the maximum time for which it can be used, so that it will be necessary to prepare a fresh solution for each batch of prints to be reduced. Exhaustion can be readily identified, being indicated by loss of colour.

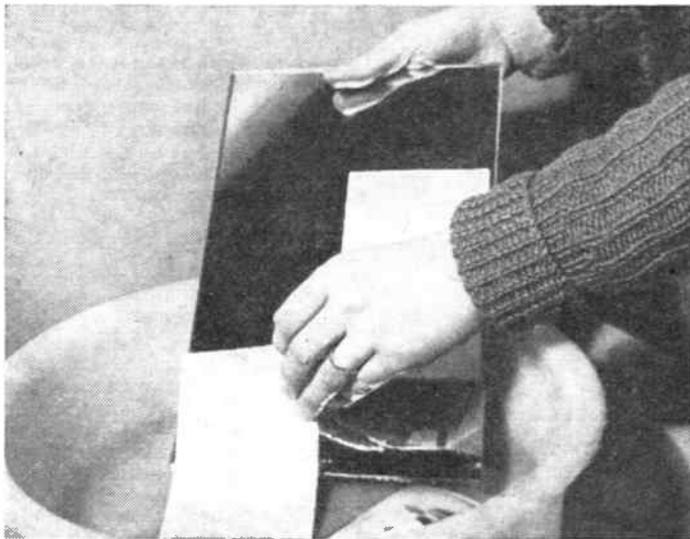
## Professional look

Glazing, which gives a print that polished, professional look, can be done on a number of surfaces provided they are highly polished. Plate glass generally produces the best results, but chromium-plated steel, or celluloid sheets, are quite suitable.

The glazing sheet must be perfectly clean, as any small particle of dirt will encourage the print to stick. The sheet is prepared by first washing with a solution of warm soapy water and then wiping over with a soft cloth soaked in methylated spirit. Lastly, the surface is dusted with French chalk and polished with a dry cloth.

Once this initial cleaning has been carried out, for future use the sheet need only be wiped over lightly with a damp cloth and polished off.

After the final washing the print to be glazed is lowered on to the glazing sheet, one end first to ensure that no air is trapped between the two surfaces.



*Transferring the prints to the glazing sheet after washing*

● Continued on page 167

# Cold water Fish for Aquariums

**T**HERE are lots of fish in our streams and rivers which are quite suitable for your cold water aquarium, but some will not readily accept the cramped living conditions of a tank. When we refer to cold water fish we mean those which can live in water not colder than 50°F, and not warmer than 65°F.

You will realize that to take a small fish from a fast flowing stream and to place it in an enclosed tank along with a lot of other specimens is contrary to nature, and very often the fish will die. At the same time young specimens may survive, adapting themselves to their new quarters if they are not overcrowded. They must be caught with nets of fine mesh, and can usually be found in the shallow reaches of large rivers or in clear streams. Some can be trapped and coaxed from their hiding places under large stones if a large glass jar is lowered into the stream by means of a piece of string. Fit a celluloid funnel into the mouth of the jar, leaving a 1 in. space at the base, then add a few pieces of bread as bait before placing in the water. When the fish has passed through the funnel for the bait it will be trapped, and the jar should be taken out as quickly as possible.

Here are a few of the fish you may be able to catch in our streams:

**Bleak** — A bright silver fish which is rather lively, but will settle down in a tank.

**Carp** — There are several varieties of this kind, and they are very much like goldfish both in appearance and habits.

**Chub and Dace** — Will probably grow too fast for keeping in your tank.

**Gudgeon** — Can be kept in your cold water tank, but they will grub about in sand and detach any plants you insert.

**Minnows** — Are sometimes called red-throats because of the scarlet bellies of the males. They can be kept only in small numbers in a tank.

**Orfe** — Fast and active, and cannot be confined in a tank when they have grown larger.

**Perch or Pike** — Far too ferocious to other varieties, and can only be kept with their own kind. Incidentally, they can become very tame.

**Sticklebacks** — Sometimes known as tiddlers, and are excellent for the small, cold aquarium.

**Stone Loach** — Usually found beneath stones. If you try to keep these you must provide stones in the tank for them to hide, since they do not like too much light.

**Tench** — Favours the river bottom, lying on the sand. There is a golden variety.

Perhaps goldfish are the most popular of pets for the cold water aquarium. These are a variety of carp found wild in China, and they have been developed by breeders into a number of varieties. The best known of these are the veiltail, fantail, comet, shubunkin, oranda, and lionhead goldfish, and all appreciate similar treatment to keep them alive and healthy. They enjoy a variety of foods such as small or chopped earthworms from the garden, along with a diet of coarse grade dried food.

Goldfish are mature when they are about 3 in. long, and they will breed in an aquarium. Small, whitish pimples can be seen on the covers of the male fish, indicating its sex, while the female usually appears to fatten, due to her egg production in the early summer.

You cannot expect captive fish to continue a blissful life without experiencing some disease or illness, often due to their limited and unnatural diet. The usual symptoms of a sick fish are slow, jerky swimming. Sometimes it will stay near the surface of the water, or lie on the bottom of the aquarium, perhaps on its side, carrying its fins close to the body, and the head may be up or down. And more often than not the first sign of sickness is the refusal to take food.

The remedy is to check (a) whether the water is too hot or cold, (b) whether there are too many fish for the tank to accommodate, (c) whether any harmful material has been accidentally dropped into the water, and (d) whether stale food is fouling the water, making it cloudy. Replace the water immediately, and give the tank a thorough cleaning, then give a restricted but varied diet.

A common disease is fungus which attacks both wild and aquarium specimens, and, needless to say, the latter are the more susceptible. This is a growth which can affect any part of the body of a fish, starting in small patches. Weak and injured fish are most liable to attack, and may die, but the condition is easily recognized, and can be treated in the early stages.

White or greyish threads protrude in clusters from the body, but if caught early enough, they can be removed by rubbing away with the fingers. If attended to at this stage, this remedy may well save the fish, but remember that the fungus may be rooted in the flesh, affecting the muscles, and if it spreads to the gills will undoubtedly be fatal. Again, neglect of the tank, including the decomposition of uneaten food, may well be the cause of fungus, and you must handle the pets carefully to avoid injury to the scales.

A recommended cure for this con-

dition is a bath of salt and water, or a solution of permanganate of potash. If the affected fish is placed in a 3 per cent solution of common salt, and left there until it shows no signs of distress, it will probably recover. One bath may be sufficient for a minor attack of fungus, but if the disease is worse, successive baths may be necessary. Another method is to dip the fish into a bath of one part copper sulphate per 2,000 parts of distilled water for one minute.

You can check an attack of fungus before it can do any harm if you maintain a regular inspection, and keep the tank clean. If the disease is noticed, add one ounce of salt to a gallon of water, and give the salt bath immediately. Then give the tank a thorough cleaning before returning the fish, keeping affected fish separate until cured. (S.H.L.)

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● Continued from page 166

## Photographic Processing

To be certain of even glazing, gently but firmly run a roller or flat squeegee over the back of the print. Finish off by removing surplus moisture with a piece of photographic blotting paper. This will have the additional effect of ensuring the complete absence of air bells.

The prints are allowed to dry naturally, and when this process is complete they will fall off the glazing sheet. Alternatively they can be easily pulled off after one edge of the print has been eased with the blade of a knife.

Should you find an occasional print has stuck hard to the glazing surface, soak the sheet for about half an hour, then peel off the print and reglaze.

Provided scrupulous cleanliness has been observed throughout, sticking can, in almost every case, be prevented by first drying the prints and then soaking them in water for 10 minutes before glazing.

Another way is to soak the prints for 5 minutes, before glazing, in a prepared solution of  $\frac{1}{4}$  oz. ox gall to 20 oz. water. This will also give the prints a much higher gloss.

Other faults that may occur are small, unglazed patches, the result of uneven squeegeeing, and oyster shell markings, caused by changes of temperature during drying. In either case, the fault can be rectified by soaking the print in water for 15 minutes, afterwards reglazing.

# Mainly for Modellers

**W**E start our study of Tudor ships of the sixteenth century with the knowledge that we are at last getting on to firm ground where records are concerned.

The normal type of vessel of this period was the galleon, probably the most popular type from the model maker's point of view, and certainly the type to figure more than any other in kits supplied by various firms.

## WOODEN SHIP BUILDING—13

By 'Whipstaff'

This type of vessel, as shown in the previous article in this series, evolved from the carracks and, therefore, came north from the Mediterranean. We find that most likely Spain was the last country to adopt this type, and their galleons became very highly decorated, due to their love of the ostentatious.

The general type to evolve was a ship whose length was normally about three times its beam. It had a lower freeboard than the earlier round type of Northern ship, with a long flat floor like a galley.

At first they were generally flush decked, with the half deck carried across the waist to meet the forecastle. In large vessels the quarter deck was also carried forward to make a flush deck from stem to stern. The larger ships or true galleons thus had at least two decks, and occasionally three.

On the upper decks of the earlier types were erected high castles fore and aft after the manner of the gallease, usually giving a curved sheer to the look of the hull due to the fact that these castles followed a curved line. In some types the low freeboard was retained for some time, thus allowing the use of oars.

From these early type galleons emerged the true Elizabethan galleon, so much beloved of the model maker. The hull was fairly bluff of entry. The fore-foot was cut away and the stem was raking. The hull was strengthened with light single wales, having considerable sheer, the upper wale rising to clear the

gun-ports under the forecastle.

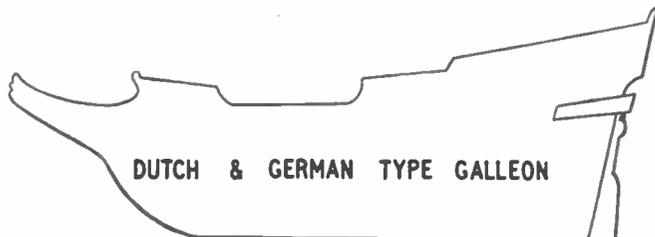
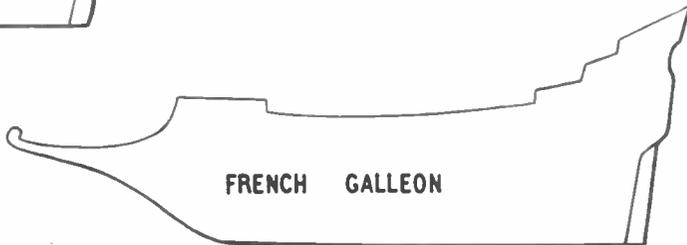
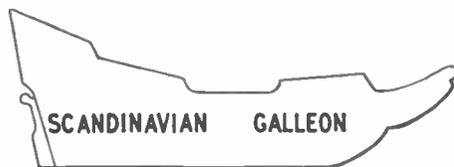
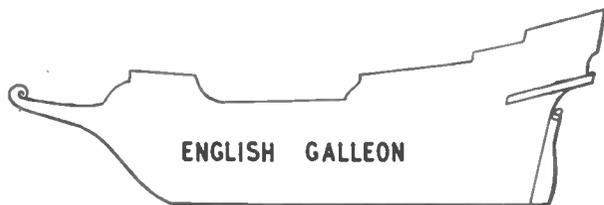
In making your models, note that the gun-ports were never cut through the wales. To do so would nullify the purpose for which the wales were designed. The stern became flat and was pierced for gun-ports.

In this type of advanced design the flush deck practically disappeared. Although the upper works showed considerable 'sheer', this was balanced by the fact that the main decks were stepped up or down as was found necessary.

As shown by existing lists of the period, and of the 'Armada', these ships were not of great size, only a few reaching 600 tons or more. The majority did not exceed 360 tons.

A manuscript in existence called 'Fragments of Ancient Shipwrightry' is especially valuable in giving us details of the exact form and design of Elizabethan vessels. The plans, etc, although they cannot be named as actual ships, do give correct proportions of keel, breadth, depth, overhangs, etc, and are the earliest scale plans handed down to us.

They show the typical galleon of the period, forecastle well back from the stem with its long projecting beak, and the square transom. The rising decks caused the vessel's sides to rise in a marked sheer or upward curve from stem to stern, defined by the wales, and making the exterior view of the hull bear no relation to the actual internal arrangements.



The 'tumble-home' was also still well marked. Be careful in your models when using drawings and paintings by contemporary artists. They usually show the decks following the line of the sheer. If they did so in actual practice the decks would be at an impracticable slope.

Sir Walter Raleigh laid down certain qualities as necessary to a good naval

● Continued on page 169

# THE THREE CORD PUZZLE

HERE is a cute little puzzle to amuse your friends. The cords are threaded through the three holes in the sides of the wooden block, one being allotted to each. Knotted on the end of each cord is a block of wood which is too large to pass through the hole.

By A. F. Taylor

The idea of this Three Cord Puzzle is to remove all cords from the block without having to cut them or untying the knots. The secret lies in the way in which the cords are knotted, and a casual observer would think that they are all tied alike.

Fig. 1 shows how the three sets of cords are knotted. The two outside cords pass through the hole in the small blocks, and are knotted together. The centre cord on the other hand, after passing through the block, has a knot tied separately on each end.

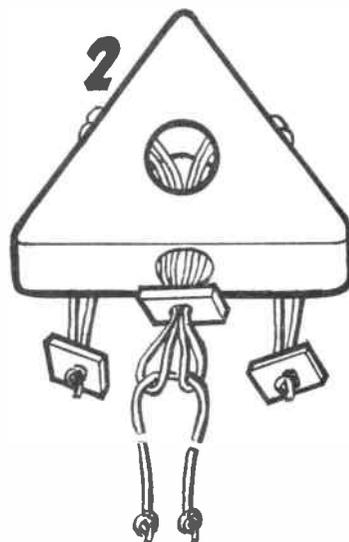
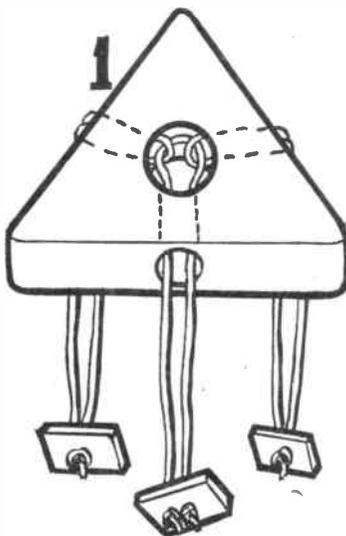
This gives us a clue to the solution, and by carefully studying Fig. 2 we can see how easy it is to slip one cord out through the two loops formed by the other two cords. Then the small wood block can be pulled off, and this will allow the other two cords to be released

from the main block.

The main block has been made from a piece of hardwood, and is in the form of a triangle with the corners cut off. The sides of the triangle are 3 in. long, and

drilled carefully, so that they will all meet in the centre hole. Well smooth all the wood with glasspaper.

The small blocks of wood are 1 in. square and  $\frac{1}{4}$  in. thick, and are also of



the thickness of the block about  $1\frac{1}{2}$  in. Drill a  $\frac{3}{8}$  in. hole in the centre of the block, and others on each side, but having a diameter of only  $\frac{1}{4}$  in.

These holes in the sides must be

hardwood. The hole in the centre of each is barely  $\frac{1}{4}$  in. diameter. The cords should be long enough to allow them to be pulled through the centre hole as shown in Fig. 2.

● Continued from page 168

## WOODEN SHIP BUILDING

fighting ship. She should be strongly built, stout-sided, and be able to carry her guns in all types of weather. His other recommendations referred to sailing qualities. He also advocated certain regular features in the designs of his day — a long run forward, a long bearing floor, a tumble home from the lower edge of the gun ports, and sufficient stoutness to enable her to carry her lower gun deck ports at least 4 ft. above water in any kind of weather.

At this period John Hawkins introduced the 'sheathing' of the hull with a thick layer of tar and hair over the underwater body, this being covered with another layer of planking.

This period is noted for its splendid shipwrights, including James Baker, Matthew Baker, and Peter Pett, and later the famous Anthony Deane,

whose *Doctrine of Naval Architecture* has come down to us, and supplies much valuable data on shipbuilding of the period.

The following types of ship were in use at this time:

The true galleon. Deck layout of large vessels was high square forecastle, high quarter deck above the waist and behind the main mast, poop above the quarter deck, sloping to the taffrail. These decks were cut off from the waist by wooden bulkheads, pierced for guns.

Gallease. Flush decked vessel.

Pinnace. Small sailing vessel.

In my sketches are some details of the shapes of the hulls of the Elizabethan galleons, also continental types of which I have several plans and detailed drawings.

## 'TACKLE CANOEING THIS WAY'

THE activities of Percy W. Blandford in the canoeing world are well known to readers of *Hobbies Weekly*, for whom he has designed various models of these popular craft in the PBK range. With some thirty years of canoeing experience behind him he is the obvious expert to advise others.

This book deals thoroughly with all aspects of canoeing as a sport and recreation and is excellently illustrated by the author's own photographs and drawings.

The techniques of canoeing on all types of water (including the sea), competition notes, the building and maintenance of craft, and the facilities for adding sail and power are among the headings fully covered by Percy Blandford.

Published by Stanley Paul & Co. Ltd, 178-202 Great Portland Street, London, W.1 Price 12s. 6d.

# Replies to Readers

## Photo-electric alarm

**I SAW** a gadget on television; it was a sort of burglar alarm consisting of a little transmitter and receiver. The transmitter sends a beam across a door or window to the receiver; when the door or window is opened, it breaks the beam, and a bell is brought into operation. Could you please inform me where to enquire for drawings, etc.? (J.L. — Hartlepool).

**T**HE device you mention is probably photo-electric, as this form of alarm is used in the way described. An infra-red lamp is used. The beam from this cannot be seen, and is directed upon a photo-electric cell which is sensitive to infra-red light. When this beam is interrupted, the photo-electric cell operates a device which rings a warning bell, etc. Osram make suitable cells, also amplifiers, working data, etc. Circuits, etc., will be found in the Osram receiving valve manual, which is 5s. from The General Electric Co., Magnet House, Kingsway, London, W.C.2.

## 'Fur' on a damp wall

**WE** have an outside toilet which, although the walls are painted, has developed a furred surface which is, presumably, due to damp. I propose fitting hardboard to the walls, but think it may be useless to do so if the walls are damp underneath. Will a coat of silicon paint do the trick? (R.B. — Finsbury Park).

**P**AINT shops can supply waterproof solutions for painting on walls. These are usually colourless. They are best applied on the outside, to prevent penetration, but if that is impossible they are effective on inner surfaces. A good quality hardboard, painted on the back with hardboard sealer before fixing, should be satisfactory, but it would help if a narrow space could be left top and bottom for ventilation. If conditions are exceptionally wet, use oil-tempered hardboard.

## Luminous Ink

**CAN** you inform me of a luminous writing ink? (P.L. — Penselwood).

**R**EALLY effective luminous inks are based on solutions of yellow phosphorus, but we hesitate to recommend these owing to their potential

danger in possibly untrained hands, due to the dangerous nature of phosphorus itself, and the possibility of ignition of the paper. A typical formula consists of 1.9 grams of phosphorus dissolved by careful warming in 15 c.c. of either salad oil or oil of cinnamon. A safe but less effective ink may be made by thinning luminous paint with a paint thinner, or by grinding a little luminous calcium sulphide with thin gum water. Both of these require exposure to bright light after writing with them, so as to activate them sufficiently to glow satisfactorily in darkness.

## Chemicals for Experiments

**I WOULD** be grateful if you could tell me how I can obtain the various chemicals required to carry out the experiments described in *Hobbies Weekly* from time to time. (J.A. — Ayr).

(1) You can consult the classified telephone directory for your area to see if there is a local laboratory furnisher whom you could call upon; (2) find a

local pharmacist who deals with British Drug Houses Ltd, and order the chemicals through him. (3) Write to Oakes, Eddon & Co. Ltd, 95-99 Prescott Street, Liverpool 7, whose list cites quantities up to 4 oz. For larger quantities or for chemicals which they do not list, an enquiry will bring a quotation. Oakes, Eddon have always been found very obliging as regards postal supplies, although some potentially dangerous chemicals cannot be sent through the post. If the chemicals you require come into this category, you will need to fall back on (1) and (2).

## Coloured Smoke

**I WONDER** if you can tell me a method of producing coloured smoke? (D.G. — Belfast).

**C**OLOURED smoke compositions may be made up as in the following recipes. All ingredients should be in fine powder and mixed intimately, *NOT* by grinding, but by rolling about on a sheet of paper. Proportions are by weight. Since a yellow smoke involves an arsenic compound, we do not give this. White — Potassium nitrate 4, soft coal 5, sulphur 10, sawdust 3. Red — Potassium chlorate 15, Paranitraniline Red 65, lactose 20. Green — Indigo (synthetic) 26, Auramine Yellow 15, potassium chlorate 33, lactose 26.



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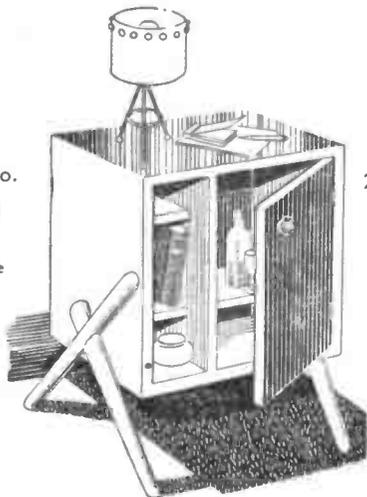
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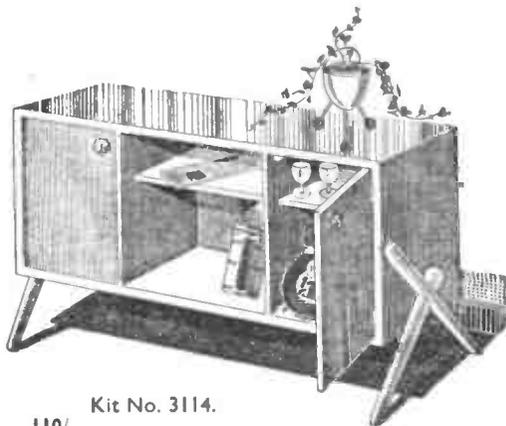
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# BOAT, CAMERA ... AND PEN

As a seafront journalist I have learned the value of illustrated features depicting waterfront work and play. Such outdoor material dates less rapidly than topical news, so that a paper can store it for publication during the season, or even later. Also in my case there is the 'work as you play' ideal, for I loved my boat and camera before I ever took up the pen. My first feature was published by *Hobbies*, since which nearly two hundred of my pictures have been used by the Press.

We will assume that you can manage your boat under any expected conditions and a bit worse, and hope that she contains some compartment where the camera can be stored dry and stable while not wanted on the voyage. Unless there is little hope of direct sunlight it may then always be carried. Nothing that I am writing applies to an overcast day when clear definition is possible but little more.

Use a film with ample exposure latitude rather than one of the highest speed groups — movement upon water is rarely so rapid as to call for a film where enlarging may be hindered by excessive grain. Light is always more powerful upon land, in any case.

When you cross the bar, the thrill of the open sea will tempt you to record immediately the impact of the emotion you capture from the colours alone. But the best black-and-white film can reproduce no more than a diversity of shades. The distant shore, outside which you sail with a fulfilment which increases your love for it, is always further from you than it looks, and cannot be relied upon as your main subject. Leave it out of the picture unless you have a significant reason for including it, such as emphasizing that a race is being held where racing is not frequent.

Have with you a packet of bread crumbs, for the first way of obtaining foreground interest is to attract gulls that always oblige within seconds, settling quietly to their feast. Perhaps by now a boat is coming up, or better still, two boats. Two boats have more than twice the value of a single boat in any seascape picture.

Remembering the rules for avoiding collision — particularly if, under power, you approach sail — deploy your craft so as to have in your lens the nearer boat sailing towards the centre of the picture, preferably at an angle towards you. Wait until she fills a substantial part of the

picture, if possible with other boats in line with her and yourself: there will come a second when this will be easier than it reads. Wait until the crew will be recognizable, allowing for the standard of photographic reproduction in the market you have in mind. Remember though, rather than wait too long, that by later trimming the negative the suggestion of nearness, with all the appropriate danger, is easily achieved from an armchair.

Sailing away from the camera, the wake of a boat will produce an effect strangely more pleasing than the natural beauty of a wave. Following the boat, you will have a better view of her occupants than from forward, and they will be happily relaxed because you are not in their way. Boats engaged in racing take much journal space, not only because of the competition interest, but also because the steady passage of a close-hauled craft is an easier subject to capture, even at speed, than the bobbing movements of a motor boat on a choppy sea.

A pleasing effect may be obtained while under tow by the subject of your picture — after the race. Under tow, all movement will be in the same direction provided that your own craft is properly steered. Three-dimensional factors can make this subject a winner — the towing craft's wake, the rope between you, the mast of your own boat providing secondary interest without stealing the picture. It may be better, in this case, for the foreground to be less clearly defined.

Be careful with inboard photographs because your boat's fittings and the line of the gunwale may appear distorted in close-up. Tuck the baler out of sight and tidy the cable — efficiency must be the keynote, offset by casual clothing. The mast and rigging allow the subject of a portrait to pose un-self-consciously with the hands occupied. Alternatively, if your friend is seated aft, there are two methods of securing a good portrait. Lower yourself to floorboard level, and take the picture with an upward slant, or sit facing him at his own level, making the exposure while the background horizon is at a thrilling slope. Your own canvas will hold interest even if slightly blurred, but we must admit that pictures are more easily taken from a craft under power!

A medium yellow filter withholds the light of the sea and sky. Visualize the result before making use of the filter when the exposure must be doubled. In



*Steering was tricky as I took this picture, but the result was worth while*

other words, there must be lots of lightly-coloured foreground material to offset the darker part of the print. You are recommended to use a lens hood, though I managed very well without one.

When entering harbour, the rules for landscape photography will begin to apply, and the range of subjects multiply. Fishermen, next to film stars, are the most photographed of the world's workers, and the registration of their craft places the locality.

Lastly, let us assume that you would like to market your pictures. The strictly professional photographer, unopposed in his market ashore, generally uses the sea to relax rather than to further his business. Any prints which you submit to the Press should have a glossy finish, and be of a size rather larger than will appear in the paper when published.

The caption brings one into the waters of amateur journalism, upon which you may well be tempted to embark. Never describe graphically a detail that will be immediately obvious, but remember that the colouring of the occasion, the sounds and even the scents are not apparent. Present a picture of which the subject will never be ashamed.

(T.H.M.)

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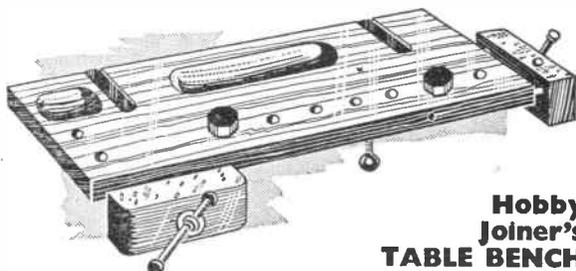


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# THE L. & N.W.R. 'PROBLEM'

PERHAPS among the more interesting of the British single-driving-wheel express engines were the 'Problem' or 'Lady of the Lake' class designed by Mr John Ramsbottom for the L. & N.W.R.

1857. 'Problem' was followed by a further fifty-nine sisters, the last ten being built in 1865. They were in reality a development of the earlier Allan 2-2-2 type, but with the leading and trailing axles provided with inside bearings instead of outside ones.

Other new features included hook-

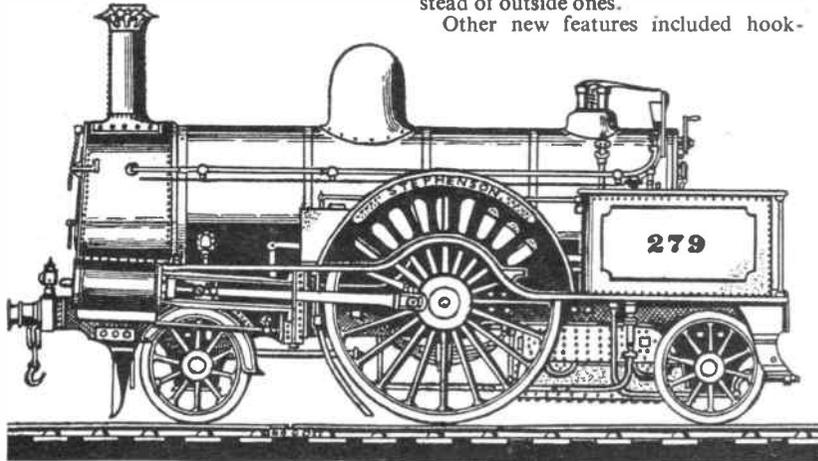
which was permanently open, thus providing a continual upward draught across the ends of the tubes. The Stephenson valve gear employed was similar to that of the 0-6-0 'DX' goods engines, but had a somewhat short lifting link of 6 in. between centres.

Notable engines in the class were: No. 531, 'Lady of the Lake', built in 1862 and shown in the same year at the International Exhibition, and being awarded a bronze medal for excellence of materials and workmanship; No. 165 'Star', which was the first to be fitted with the then newly invented Giffard injector; and Nos. 667 'Marmion' and 806 'Waverley' which distinguished themselves during the race to Edinburgh in 1888.

An interesting feature which was also applied to the 'DX' goods was the firebox which had a small brick arch projecting downwards, having two openings below through the throat plate covered by damper doors. Incoming air was thus directed downwards on to the fire.

Leading details — wheels dia.: leading and trailing, 3 ft. 7½ in.; driving, 7 ft. 7½ in. Cylinders 16 in. by 24 in. Heating surfaces: tubes 1,013 sq. ft.; firebox, 85 sq. ft.: total, 1,098 sq. ft.; working pressure, 120 lb. p.s.i. Wheelbase, 15 ft. 5 in. Weight in working order, 27 tons. The tenders ran on six wheels and weighed 17½ tons in running order.

(A.J.R.)



London & North Western Railway. John Ramsbottom's 7 ft. 6 in. single express locomotive, No. 279 'Stephenson'.

The first engine of the class, No. 184 'Problem' was erected at Crewe in November 1859, and was Mr Ramsbottom's first express design since becoming chief of the locomotive department in

ended spring hangers for the leading wheels, and six 6 in. coiled springs held in a transverse trough above the trailing axle. The bottom of the smokebox opened out into a hopper, the mouth of

## Magic Moebius Strips

TRY and draw a continuous straight line, upon a strip of paper, in such a manner that it will pass from end to end of both surfaces, but will not go over any edge of the paper. If the task seems impossible, begin by pasting the ends of the strip together after giving the paper a single half twist. The resulting structure, named a 'Moebius strip' after its German inventor, will have only one side, so you will be able to draw your line in accordance with the conditions of the problem.

Variations of this solution are used by conjurers and adapted into bold and deceptive magic tricks. Cut your strip in half, down the middle. The result will not be two separated bands, as you might expect, but a pair of interlocked loops.

The principle may be employed to perform a colourful version. Prepare three 2 in. wide bands of crepe paper, using

6 ft. lengths of the colours red, blue, and yellow. Form the three bands into loops, as follows. Do not twist the yellow loop before you paste its ends together, but give the red band a half twist and give a complete twist to the blue band. Drape the three bands over a chair. The twists in the red and blue loops will not be obvious when the paper is allowed to hang loosely.

Provide yourself with two pairs of sharp scissors, a toy cap-firing pistol and a chocolate bar. Face your audience and state that you will cut two separate bands out of one. Take the yellow band and proceed to cut it around the middle. Hold up the two bands which you make. Tell your audience that you will require two assistants, of opposite sexes, to take part in a contest, the winner of which will be presented with a small prize. Show the bar of chocolate.

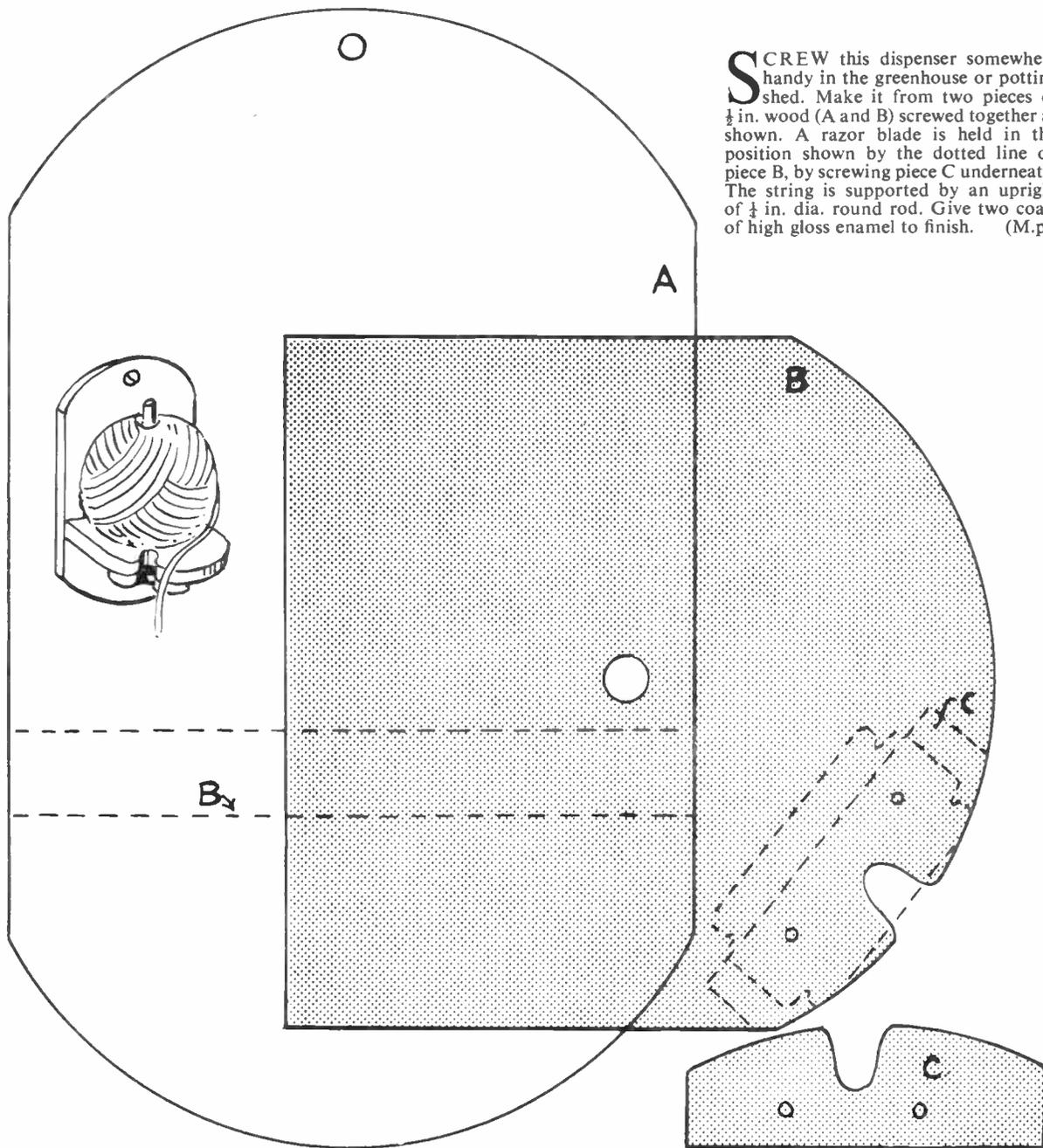
Explain to your volunteers that, when you fire your pistol, they must commence to cut the bands into separate loops, exactly as you did with the yellow band. The first person to do this will win the prize. Give each competitor one of the twisted loops and a pair of scissors. When you fire the pistol the race will be fast and exciting as the contestants snip wildly away at their paper bands.

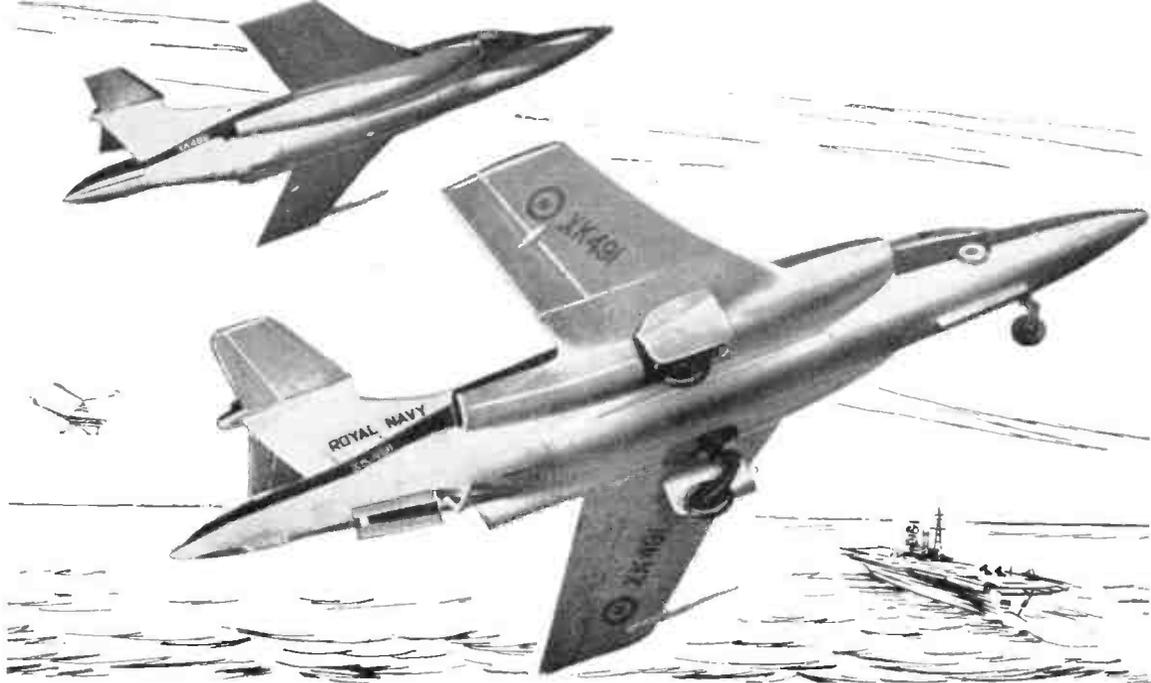
If 'Blue' finishes first he will be dismayed to find that his frantic efforts have resulted in the formation of two interlocked bands. Regretfully you announce that 'Blue' must be disqualified. The attention of the audience will now be concentrated upon triumphant 'Red'. However, when eventually the red band has been cut all round, it will form, not a pair of separated bands, nor even two interlocked bands, but a single loop. When the laughter has subsided, commiserate with both losers and graciously break the chocolate bar into two 'consolation prizes'.

(A.E.W.)

# A STRING TIDY FOR DAD

**S**CREW this dispenser somewhere handy in the greenhouse or potting shed. Make it from two pieces of  $\frac{1}{2}$  in. wood (A and B) screwed together as shown. A razor blade is held in the position shown by the dotted line on piece B, by screwing piece C underneath. The string is supported by an upright of  $\frac{1}{4}$  in. dia. round rod. Give two coats of high gloss enamel to finish. (M.p.)





## Just like the real thing!

Believe it or not, the nearer one is the Airfix model of the Blackburn Buccaneer (N.A. 39), 1/72nd scale (Kit 4/6). Behind it is a picture of the real thing.

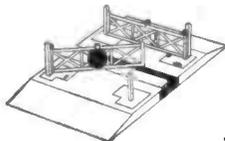
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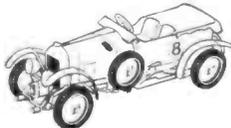
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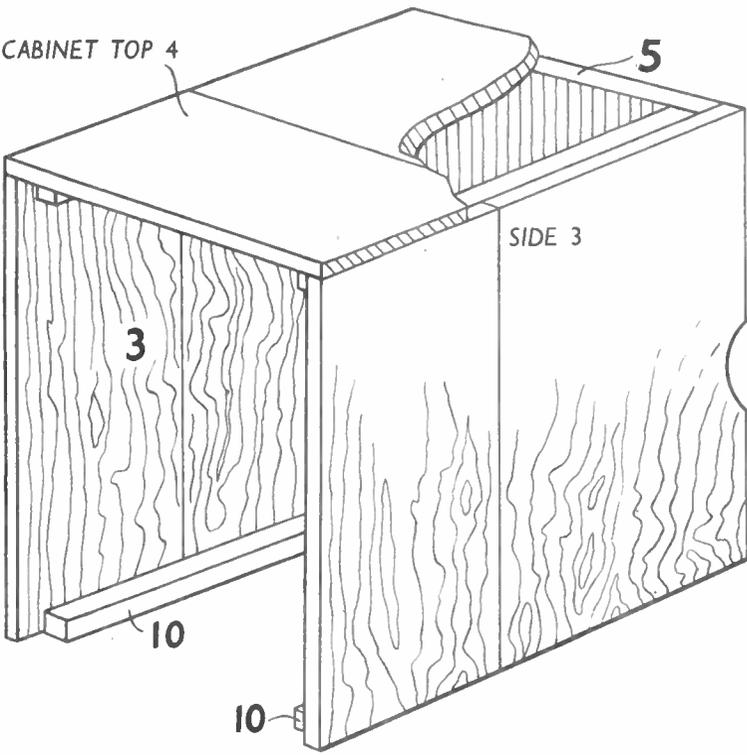
### Latest Airfix Production



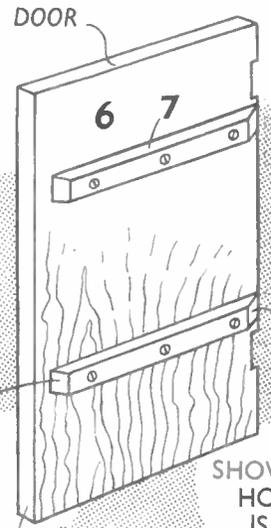
**SUNBEAM RAPIER**

This magnificently detailed model, first of the Airfix series of 1/32nd scale Modern Cars, has revolving wheels and transparent windows, can be finished as a saloon or convertible. 46-part kit 2/-.

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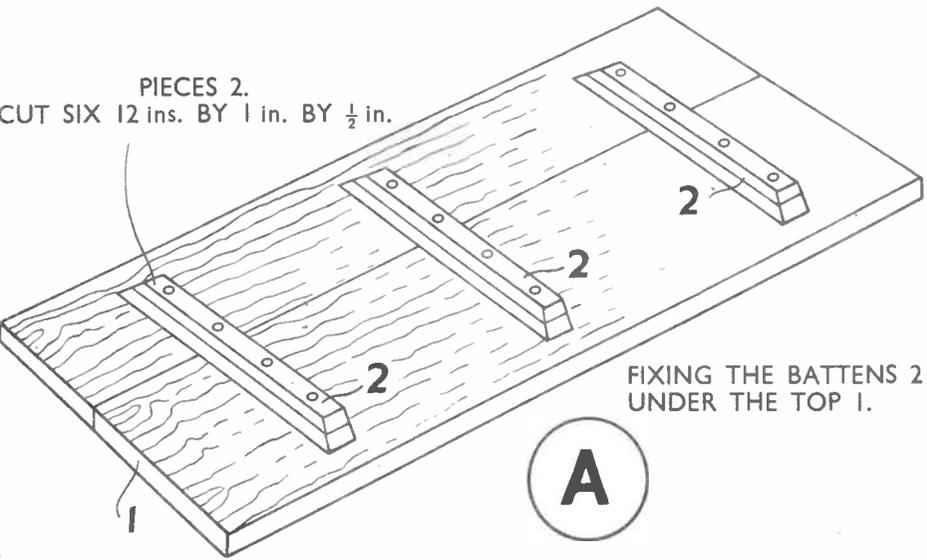


**B**



PIECES 7, CUT TWO  
8½ ins. BY 1 in. BY ½ in. ½"

SHOWING HOW IS H IN

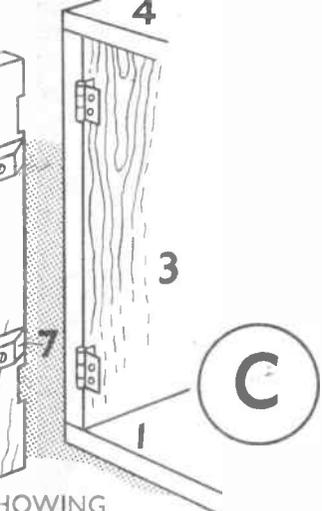


**A**

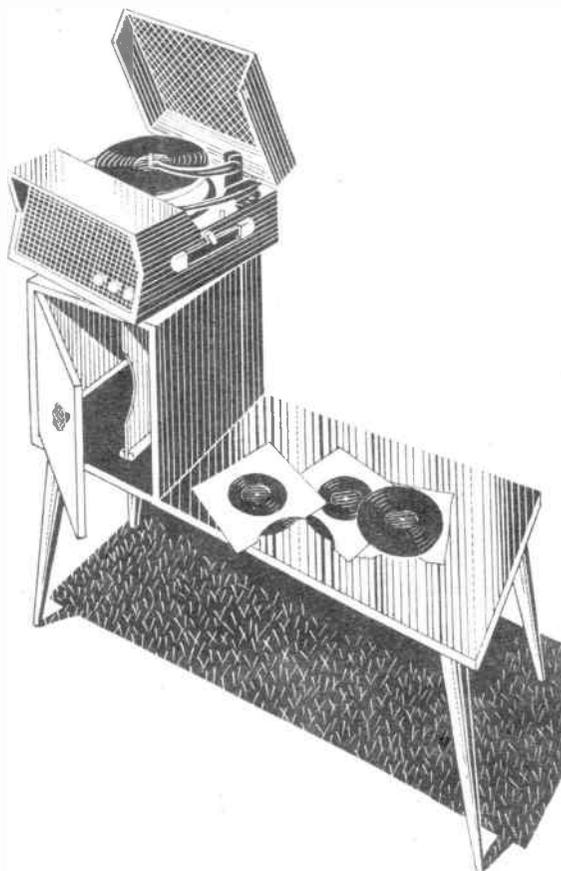
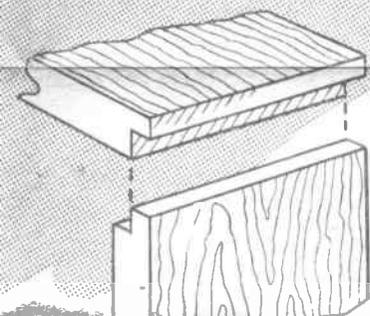
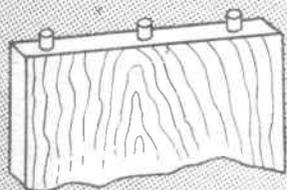
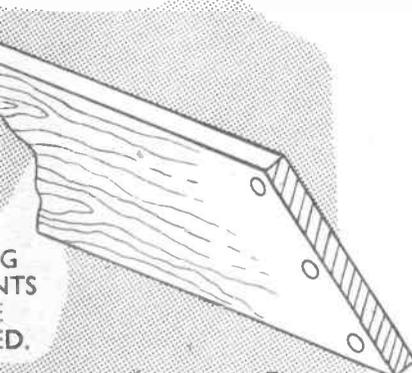
**D**

SHOWING HOW JOINTS CAN BE DOWELLED.

## RECORD CABINET & TABLE



HOWING  
HOW DOOR  
IS HINGED  
IN PLACE.



SIZE: 36 ins. WIDE BY 18½ ins. HIGH.

A KIT OF MATERIALS FOR MAKING THIS DESIGN IS SUPPLIED BY HOBBIES LIMITED, DEREHAM, NORFOLK. PRICE ON APPLICATION.

Use **CASCAMITE**  
**'One Shot'**  
**Resin Glue**  
for all Wood Gluing

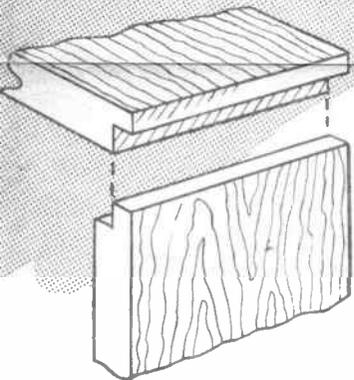


- Mixed & use cold
- Waterproof type
- Gap-filling and non-staining

Obtainable in:  
3½-oz.; 7-oz.  
and 18-oz. tins.



DESIGN IS SUPPLIED BY  
 HOBBIES LIMITED, DEREHAM, NORFOLK.  
 PRICE ON APPLICATION.



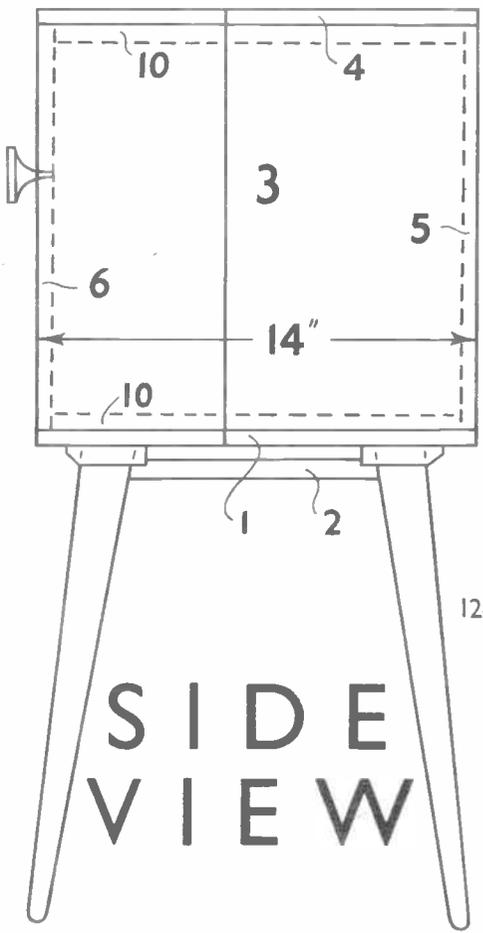
**E**

Use **CASCAMITE**  
 'One Shot'  
 Resin Glue  
 for all Wood Gluing

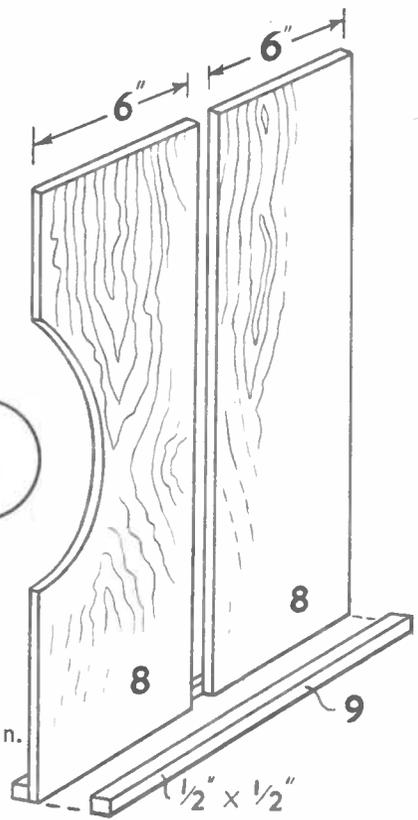


- Mixed & use cold
  - Waterproof type
  - Gap-filling and non-staining
- Obtainable in:  
 3½-oz.; 7-oz.  
 and 18-oz. tins.
- Stocked by: Ironmongers, Builders' Merchants, etc.

Manufactured by:  
**LEICESTER, LOVELL & CO. LTD.** North Baddesley, Southampton



**G**



PIECES 8.  
 CUT TWO  
 12½ ins. BY 6 ins. BY ¼ in.

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