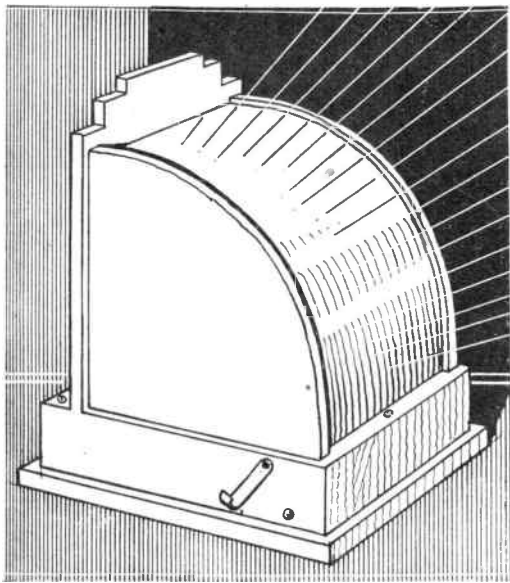


# How to make a distinctive and useful BATTERY BED LAMP



THE novel electric lamp shown here would be most useful for the bedside table. Not much wood is required to make it up, and the work of marking out the pieces, and the cutting and making up is simple in the extreme.

The lamp consists of a shallow box which forms the base of the article, this box will hold the battery.

On top of the base are two shaped sides and a plain back for supporting them. The curved front consists of some semi-transparent material such as lampshade paper or tinted grease-paper.

The electric bulb and its holder are fixed on top of the base, and the switch for turning the light on and off may be fixed on one side of the box as the sketch shows.

## General Framework

Now for the construction. The base complete is shown in Fig. 1 and it is made up entirely of  $\frac{1}{4}$  in. wood. At the end of this article we give a useful cutting list from which all sizes may be taken.

It will be noted that one end of the base is made to open to allow the battery to slide in and make contact with the wiring inside. So in the construction it will be necessary to prepare all the parts of the box viz., piece A for the base, two sides B, two ends C, and the top D.

In gluing up the parts, take the sides B and glue them to the base A and glue in also one end C. The other end, C, will be fixed later to the top

which is fixed by screws to the sides. It can thus be removed should any internal adjustment to the wiring be necessary.

Having the box so far made, minus top and one end, do the wiring for battery, bulb and switch. A glance at the diagram in Fig. 2 makes it clear how this is done.

A battery suitable for this lamp is of the flat type,  $2\frac{1}{2}$  ins. long. It will when pushed in from the back be flush with the inside of the door, and its plus and minus strips contact properly with two strips of brass angled up and screwed to the base as seen in the detail.

It will be found these two contact strips will stand back  $2\frac{1}{2}$  ins. from the edge of the base. Two square fillets of wood must be glued to the base and to the sides inside the box to hold the battery in its proper place. These pieces are seen in Fig. 2.

To one of the sides of the base run in two screws as 'on' and 'off' contact and also another screw with a strip of brass as a switch. From one of the angle brasses inside run a length of cotton-covered wire to this latter screw, and also a similar wire must run from the second angle brass to the bulb holder.

## The Wiring

As the latter has not yet been fixed and the top of the box not yet put on, one end of the wire must be left loose and long enough for future fixing. The wiring diagram in Fig. 2 makes it clear how the connections are to be

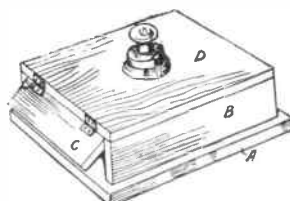


Fig. 1—The battery box and bulb

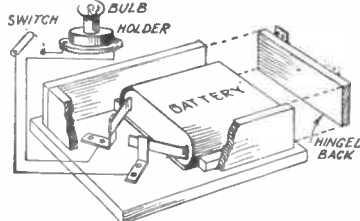


Fig. 2—Details of electrical work

made. It will be an advantage if a bulb holder can be purchased already to screw in place as the wiring connections are so easily made.

To finish the base it only needs the top to be cut to size and screwed on and the little door made by hinging the end C which really forms the back of the box.

## The Shade

The top of the lamp—or shade—may now be taken in hand. Two quarter circles of  $\frac{1}{4}$  in. wood F cut  $\frac{1}{4}$  ins. radius as shown are first prepared, and to these are glued two further quarter circles of wood G only  $\frac{3}{8}$  in. in diameter. Thus, where the completed sides are erected and fixed to the back E, a rebate is formed into which the transparent material may be glued.

## CUTTING LIST

All  $\frac{1}{4}$  in. wood

- A—One Base— $5\frac{1}{2}$  by 4 ins.
- B—Two Sides—5 ins. by 1 in.
- C—Two Ends—3 ins. by 1 in.
- D—One Top—5 by 3 ins.
- E—One Back—5 by 3 ins.
- F—Two Sides—4 by 4 ins.
- G—Two Sides, Inner— $3\frac{1}{8}$  by 3 ins.

A portion of this curved front material is shown cut away in Fig. 3. Should a new bulb be necessary this front material must be removed and probably replaced altogether.

The back E of the stand may have its top cut to some shape as suggested in the diagrams, this cutting is easily done with the fretsaw as all the other cutting is done.

This lamp would look well if made from mahogany and afterwards lightly stained and either varnished or rubbed up with wax. It will be noted from Fig. 1 that the hinges for the small door are put on "flush" this makes for simplicity of handling.

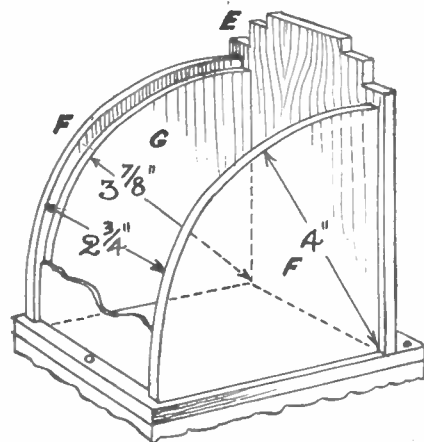


Fig. 3—The casing of the cabinet

# Hobbies

## WEEKLY

May 19th. 1943

Price Twopence

Vol. 96. No. 2483

HERE is the first freak aeroplane of the war—a Blohm and Voss 141 Monoplane, which the Luftwaffe has now in service. As can be seen, the cabin nacelle (which houses the crew) is placed on the starboard side of the main wing, this and the short-ended tail-plane giving the craft a freak, unbalanced appearance.

That, however, is not the case. The weight of the cabin has been allowed for, and the basic reason for the peculiar design is to enable the crew to have an unobstructed view. So far as one can judge, the engine is probably a Bramo Fafnir 1,000 h.p.

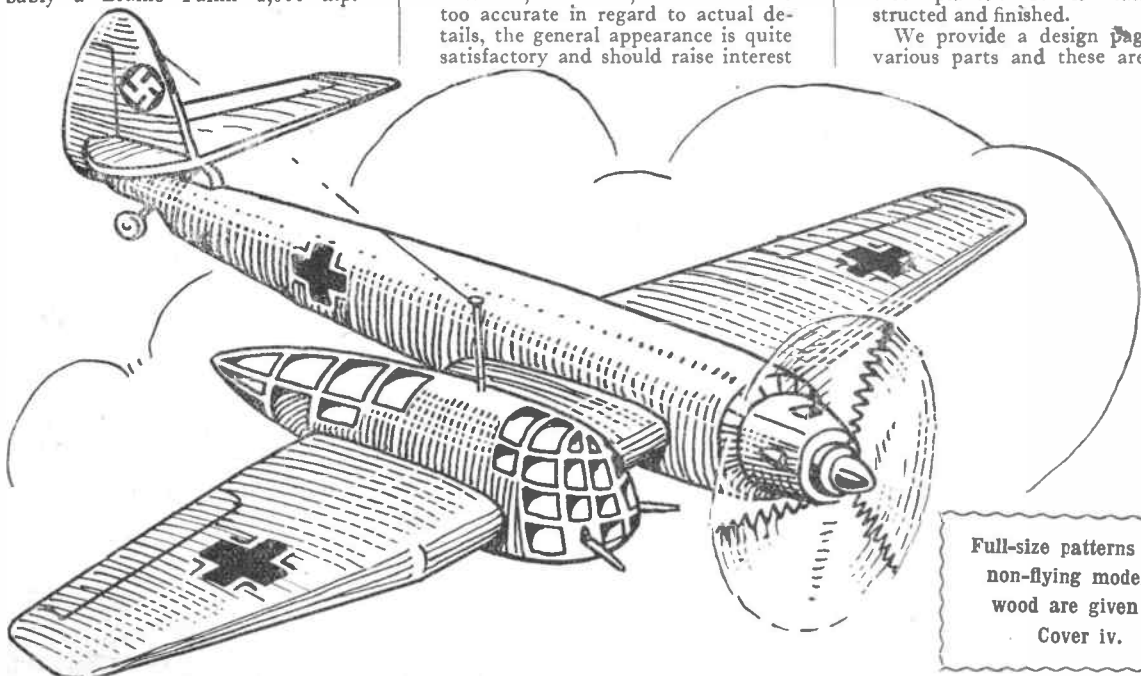
## FREAK PLANE of the LUFTWAFFE

radial, having a maximum speed of roughly 220 m.p.h.

Whilst, therefore, we cannot be too accurate in regard to actual details, the general appearance is quite satisfactory and should raise interest

in the model-making world. Why not add it to your collection of miniature planes? It is easily constructed and finished.

We provide a design page of the various parts and these are printed



Full-size patterns for a non-flying model in wood are given on Cover iv.

Letters to the Editor should be addressed to Hobbies Weekly, Dereham, Norfolk. Address orders for goods to Hobbies Limited.

on cover iv. The fuselage can be made first. Its shape is cut from a piece of wood 6ins. long by  $\frac{3}{4}$ in. square; for ease in cutting, two shapes could be cut from  $\frac{1}{2}$ in. wood, gluing these together afterwards.

If you adopt this plan, see that main wing slots are dead true with each other. Any unevenness should be cut away (after the parts are glued together) from the slot with the fret-saw or sharp penknife.

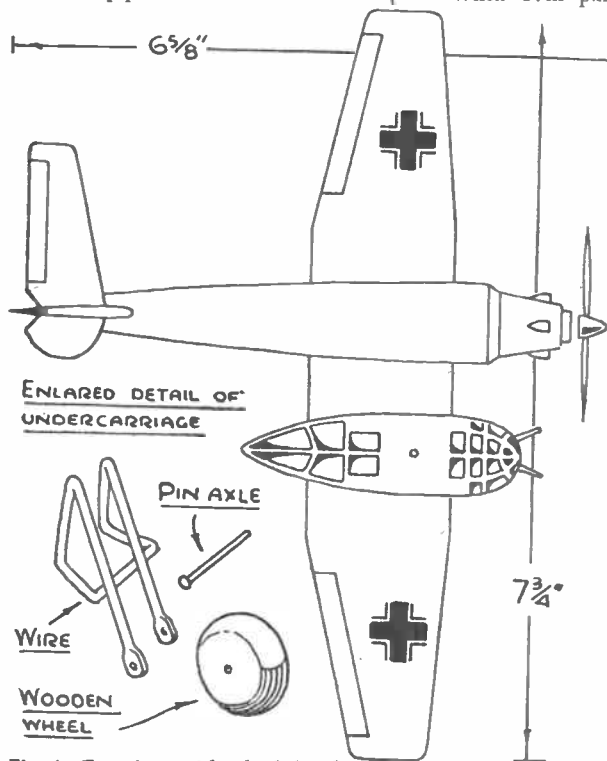


Fig. 1—Top view, with wheel detail

The cabin can be made up in the same way, using  $3\frac{1}{2}$ ins. by 1in. by  $\frac{1}{4}$ in. pieces of wood. While waiting for the glue to set, cut out the main wing from a piece of  $\frac{1}{4}$ in. wood measuring  $8\frac{1}{2}$ ins. by 2ins.

The cabin, fuselage, black crosses, etc. as shown on the pattern, should be traced on the surface side of the wood; the cabin and fuselage positions are indicated by the dotted lines, including the length of the taper of the wings, this line being ruled across on the reverse side of the wood.

Having cut the wing to the outline shape, taper the ends to  $1/16$ in. thick, then proceed to round over the leading edge and bring the trailing edge to a sharp point to suit the slots cut in the fuselage and cabin.

#### Fitting the Wing

The shaping must be done, little by little, until the fuselage fits over the wing at its end, then the cabin fitted on from its end. If, in the shaping, you have removed the position lines, or should you have pasted the pattern of the wing on the wood and scraped it off, it is easy to judge

the positions of the two parts from the top view at Fig. 1.

When you have fitted the fuselage and cabin, remove them and pare to shape. In section, the fuselage is circular at the fore end; it is more pear-shaped at the rear end, but could be kept circular. The cabin is shaped in the usual streamline fashion. Note, from the head-on view at Fig. 2, how it is pear-shaped at the fore-end.

When both parts are shaped up neatly and smoothly glass-papered, they are glued upon the main wing. Any slight gaps that show at the wing slots should be filled in with plastic wood or putty.

Cabin windows and wing details should be pencilled on the wood at this juncture; use a hard, sharp-pointed pencil and lean somewhat heavily so the point makes a slight impression in the wood, there being a reason for this as explained later on.

The tail-plane and fin are cut

a look at the tail and fin and see that the former is truly in line, horizontally, with the main wing; the fin, too, must sit perfectly upright with the wing, i.e., at right angles with the tail (see front view).

#### The Under-carriage

A bomber-like wheel carriage is suggested. The forks are easily bent from wire to the shape shown, following which the fork lengths are cut evenly, then the ends hammered flat and drilled for a pin axle (use a fretwork drill).

An enlarged detail is given at Fig. 1. The wheels are cut from  $3/16$ in. wood and rounded over. The axle pins must be a tight fit in the wheel centres and be free to revolve in the forks.

Set the wheels in the forks and push the pin through. The point is nipped off. Holes are then drilled in the fuselage and cabin underside for the entry of the top ends of the wire forks. Note that the amount of "leaning" angle given to the under-carriage wheels. Incidentally, you could dispense with the under-carriage and make a model for suspension on a suitable stand—a "flying" model, in other words. Details of such stands appeared in Hobbies Weekly dated December, 30th., 1942.

The tail-skid wheel is made from  $\frac{1}{4}$ in. wood and a plain pin. Having rounded the edges of the wheel and drilled the pin hole, insert the pin, then bend the shank of it to the shape shown. A pin hole is then drilled in the rear end of the fuselage and the shank inserted; cut it short (with

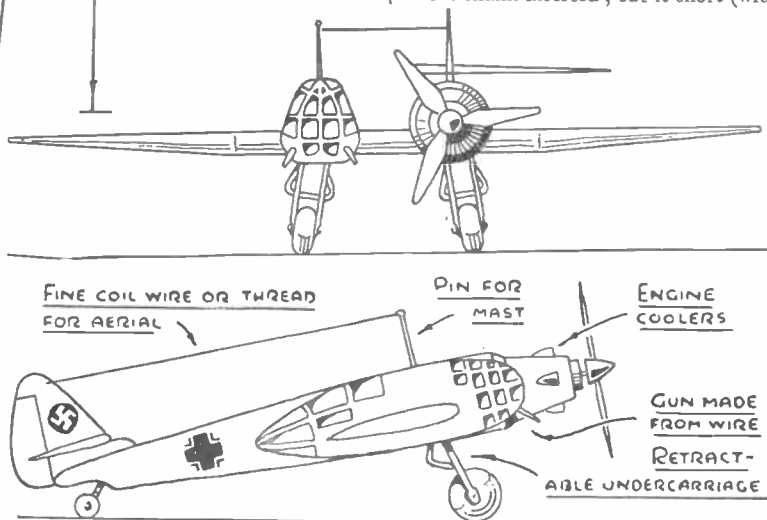


Fig. 2—Front and side view with helpful details

out from  $\frac{1}{4}$ in. wood (see grain direction as indicated by arrows) and shaped up with penknife and glass-paper. Glue the fin into its slot in the tail of the fuselage, then glue the tail itself to the fin, both being half-checked to "lock" together correctly.

The base of the fin is glasspapered neatly with the end of the fuselage. Before allowing the glue to set, take

the nippers) should it be too long.

#### The Propeller

The three-bladed propeller is cut from thin cardboard or celluloid (ivorine, xylonite, etc.). Glue a  $\frac{1}{4}$ in. diam. disc of  $1/16$ in. wood to one side of it, then insert a pin. The spinner is shaped from a small piece of  $\frac{1}{4}$ in. dowelling.

(Continued on page 55)

# Beginner or expert can learn something from these FRETWORK NOTES

**W**E have already, in previous articles, mentioned specific tools to use and the best way to get the best result from them. There are, of course, numerous other points of general interest, and even those who consider themselves expert will do well to read the following lines and see if they do not offer some further helpful advice.

It cannot be driven home too often that best results are only brought about by "making haste slowly." The beginner is naturally all enthusiasm and wants badly to see the result of his labour, and to be able to exhibit his ability to admiring friends.

## Do Not Rush Work

But fretwork, like most other things, is worth doing properly if it is worth doing at all. It is folly to attempt to rush in anything, because not only is the finished article obviously hurried, but there is every likelihood that some part is going to get damaged. In consequence, more labour is involved in straightening out this trouble, and time is wasted which might have been saved if only the worker had "made haste slowly."

When you have spent some hours in cutting out a delicate piece of work, it is such a pity to smash it up by attempting to drive it home in forcing

it out with the other parts to see that it is correct.

Finally, spend care and attention in fitting the parts together to form a properly finished article. Then you will have something of which you can be justly proud.

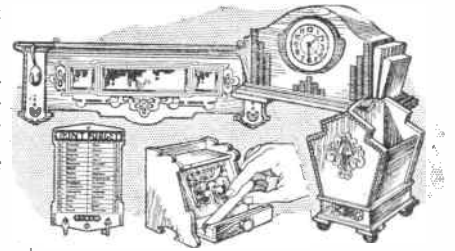
The wide range of designs obtainable gives every worker an opportunity of choosing something he likes, and which he can readily sell or offer as a present. Moreover, competitions and exhibitions are always being held where one can see the sort of thing which is popular.

## Those with little Patience

Those who have little patience should not attempt big things. There are plenty of designs which can be cut and completed in an hour or two. On the other hand, those who like to undertake a large piece of work will find plenty of designs which they can undertake.

Of the smaller things, boxes, pipe racks, photo frames, and the like are an endless source of profit and pleasure. They can be made quite easily and cheaply from the most common fretwood, and never fail to give delight as presents or to sell at any bazaar. A group of such popular designs in this class is illustrated here.

Carrying the work a stage further from the last article on cutting and construction, it is as well to mention

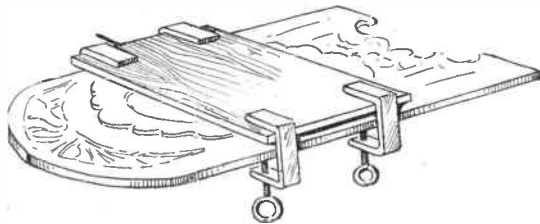


*A group of popular articles to make*

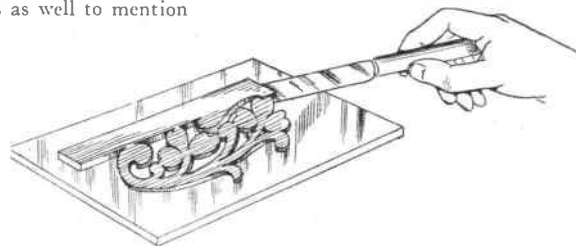
It should never be spread on like treacle so that when the two parts are cramped together it squeezes out all over the edges and on to the face. A very thin coat is all that is needed and if any does ooze out, wipe it away immediately with a damp rag.

The most common and useful glue for the worker who does fretwork is the ordinary variety in tubes. This can be squeezed out in small quantities and used sparingly on the wood. If the weather is cold the glue may have become set, but if the tube is stood in a cup of hot water it will soon become fluid enough to be squeezed out.

Always nip the tube from the bottom end, and as it becomes empty there, roll it up towards the top. If large surfaces are to be glued a stiff brush can be used to get the adhesive over the surface.



*How to clamp after gluing an overlay*



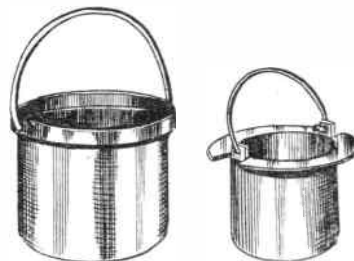
*Glue transferred from glass to the wood evenly*

a badly cut joint. Better, surely, to take a little more pains in cutting the joint in the first instance, isn't it?

Each piece needs its own particular care and attention. Cleaning may seem monotonous, and one is apt to say that anything will do. It will not. Do your best and take time over it. Get the pattern down to the wood properly—if it is twisted or lies unevenly the parts will never join together properly, no matter how you try.

## Watch your Cutting Stroke

See your frame is held vertically and cutting is maintained along the design lines. Don't go outside them or inside them. Keep on the edge all the time. Get each piece complete if possible. Cut and clean it up, resting



*The two parts of a Glue Pot*

a few points on the question of gluing. One of the most common faults is that glue is applied much too thickly.

It is not, after all, the quantity of glue which holds the parts together, but rather the manner in which it is applied. Good glue need only be put on quite thinly.

Get an even coat, quite thin, and do not put the second piece of work to it until the glue has become "tacky." Whilst it should be put on fairly quickly, it is a mistake to put the glued parts together immediately.

## How to Apply Glue

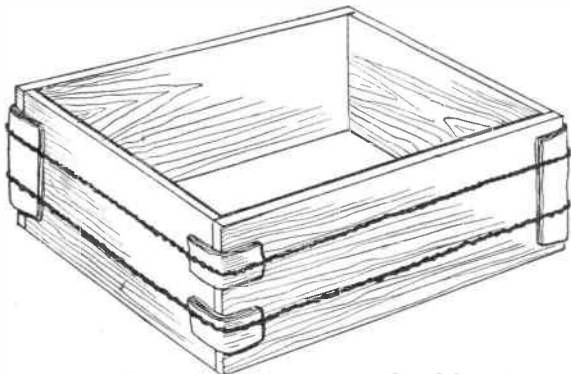
Pay particular attention to the edges of the work, and when the two boards are put together rub them gently on each other to allow the glue to get a good grip and rub into the grain.

To ensure the work being well glued it is always essential to get the parts as closely together as possible. For this reason the boards should be cramped together or weighted down until the glue has set. Three or four Hobbies light steel cramps are ideal

for this work. They can be put round the edges and will draw the work tight.

Remember, however, that the jaws of the cramps will mark the wood when screwed up, so put in a waste piece of wood on either side, to prevent the actual work being dented. It is a good plan to keep some waste wood for this purpose, because it always comes in useful.

If the work being glued is a box, or piece of work which is not flat, it can still be cramped tight by tying string round. Make a running noose in



Pad the corners when tying up for gluing

one end and then pad the corners of the work, so it may not cut into the wood.

A padding can be made with newspaper, but be careful to see that no glue gets on to it or it will be a trouble to get off again. The string is

pulled quite tight and then tied in a knot.

#### Hints on Gluing

In gluing fretted work together, it is important to have the glue over every part. Suppose for instance, an overlay is being added to a piece of work. It is no use just putting a dab at each corner and expecting to make a good joint.

The glue must be applied to the back over the whole surface, and be so applied that it does not ooze on to the edges or out at the sides. The



Stand the tube in warm water to soften

best method of doing this — although perhaps a messy one — is to use the forefinger to pat the

glue on thinly. It can be gently rubbed in with the tip of the finger, and guided just where it is wanted.

Again, it is important to get it on evenly, and over the whole surface. Then place the overlay in position press it hard into place and cramp up.

Another method is to spread the glue evenly and thinly with a knife on to a piece of thick glass, covering a surface larger than the piece of fretted work. Then lay the fretwork on to the glass and press gently to transfer the glue to the wood.

Slide a knife blade between the two and take away the work. It will be found that the glue now covers the back of the work which can be put in its proper place on the article being made.

Those who are doing a lot of gluing may prefer to use the ordinary carpenter's glue pot and Scotch glue. This is a process needing more attention, because the cake of glue has to be broken up into small pieces and put into a special pot which is contained in another holding water.

#### In a Glue Pot

A simple glue pot is illustrated on the previous page and is—as can be seen—in two parts.

The water is put into the larger and the broken glue in the smaller pot. The whole thing is then stood on a gas ring or stove and the water heated until the glue melts. Stir it occasionally and be sure to get an even creamy consistency before using.

This glue is specially valuable for larger surfaces and can be applied with a brush for normal carpentry jobs.

The glue itself is bought in slabs like frozen toffee, but is brittle enough to break into small pieces for melting down.

## Send for this Trial Offer

For a Postal Order for 2/3 Johnsons will send you, post free (G.B. only) a trial set of Chemicals including 1-oz. bottle of AZOL to develop eight spools 2½ in. by 3½ in. A 4-oz. tin of ACID-FIXING making 30-60 ozs. of solution and one packet of AMIDOL—JOHNSONS DEVELOPER, enough for 2 to 3 dozen Bromide or Gaslight contact prints. Mark your letter Hobbies Dept. and address it to—

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# This article deals with stops and exposure in HOME PHOTOGRAPHY

THE beginner usually has a camera with two stops only to the lens, and the instructions given to him when he purchases the camera are to use the large one on dull days and the small one when the sun is shining on the subject he is going to take. The result of these very simple and limited directions is that comparatively few mistakes of a serious character are made.

On the other hand, however, the percentage of really good negatives is usually small if one is to consider the quality from the angle of the more advanced worker with his better camera and higher grade lens.

## Not Just Luck

"Beginner's luck" is found in photography just as much as it is in any other hobby. We mention this because there may be some who would argue that if it is possible to get good results with a cheap camera costing only a few shillings why go for one priced at several pounds?

The answer is that the reader would far sooner work with a "pukka" fret sawing machine than the ordinary hand fretsaw because that it would be easier to use and the certainty of making a better job of work.

When there are only two stops to select from it is hardly likely a mistake would be made in the choice. But if you are fortunate to acquire a fairly good camera with a number of stops, and also a number of speeds at which the shutter will function, then you are at once faced with the problem of which stop and speed should be used for each exposure you make.

## Exposure Meters

In order to help us amateurs accurately to calculate answers to the problems, several exposure meters have been invented, ranging from a few pence each to a few pounds.

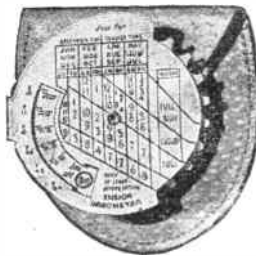
The latter are, of course, the electric cell type but as they are not easily obtainable these days no useful purpose is served in discussing them, but if you happen to get possession of one you should take every possible means to test it so that you become familiar with its characteristics.

We would, however, advise all to get a meter such as that published by Burroughs Wellcome, or the Posometer issued by Johnsons and illustrated here or that known as the Ilford. Possibly your dealer can

supply some other make, but those mentioned are quite simple to handle and reliable for most subjects.

Whether you possess a meter or not a few general hints will prove of value and if followed will tend to reduce your failures and make your hobby much more interesting.

The writer believes in standardising work as much as possible because by doing so you reduce the opportunity to make confusion. You know that you have various stops and you should know that the large one lets through just twice as much light as second largest. Also that the smallest only permits half the amount that



The "Holborn" Posometer

the second smallest does. Get that rule firmly fixed in your mind and you will be able to agree with the argument being put to you. You will also see from the speed indicator that you have 1/10th, 1/25th, 1/50th, 1/100th and so on.

## An Example

Now supposing you are going to take a shot requiring the equivalent of 1/25th with F16, but owing to a lot of movement due to wind or people moving about you feel that you must make a quicker exposure. This is very easy to do by altering the speed to 1/50th and using the next largest stop namely F11. Or go a step further and give 1/100th and use F8.

By using either of these combinations you will permit the same amount of light to travel through the lens to your film. That is how a good many workers use both stops and speeds as factors when calculating their exposure times.

## A Simple Rule

There are many others, though who are advocates of standardization even in this matter (and they are usually the most careful workers) believe that it is best to work on the basis of using one stop and changing the speed or one speed and changing

the stop. There are, of course, obviously occasions when this rule is not applicable, but for general work that is the hint for you to follow.

The endless number of subjects necessitates several groupings, and if a meter included everyone of them it would be overloaded and take you some time to read. But we can give you some idea of the varying of light during the summer months and what this means as regards changing either the speed or the stop.

## A Useful List

We must select one group of subjects and one make of film. For the latter the popular Selochrome roll film and for the group include the following: Fairly open landscapes, scenes on a river, portraits in a large garden not enclosed with heavy trees or other buildings. With the stop to be F11, and the time of day 11 o'clock to 4 o'clock, sunny, then for May the time required would be 1/100th; June and July 1/150th; August and September 1/100th.

These times will be found approximately correct for the subjects intimated and F11 is chosen for the reason that if the sun is not shining then all you have to do is to alter the lens to F8. On the other hand, if the light happens to be particularly strong, as it is sometimes at midday, then it might be advisable to use the smaller one of F16. Similarly you would alter the stops if the subject needed more or less exposure.

## Stops and Exposure

What we want specially to draw your attention to is that only the one factor is altered and that is the stop. We do not want you to be confused in your calculations by suggesting that both stops and speeds be varied. Experience has shown the writer that many amateurs find it difficult to understand the connection between the two and it is only when they have first mastered one or the other that they can effectively use both.

Sometimes it happens that a very small stop is needed because you have to give a long exposure. Such as inside a Cathedral where people are constantly walking about. If you used a large stop and a fast speed you would get them in the result, but in a blurred form. Whereas by using the very small stop and slow speed they will not appear.

Experience will soon teach you suitable timing for suitable subjects.

**Large Design Sheet Free next week for making a  
waterline model Motor Torpedo Boat**

# You'll get better results if you study these helpful FRENCH POLISH HINTS

**W**HEN using French polish, do you merely apply it with a soft brush, allow it to harden, then rub down with No. 00 grade glass-paper, dust it and finish off by means of the pad or rubber? Do you leave it at that, being content with the glossy surface?

If so, therein lies the difference between the amateurish finish and the professional finish, for actually, you leave the job half done. There is just a little extra work in order to complete the polishing.

## Spiriting-off

For example, the polished article, although pleasing and quite glossy, is sure to be a trifle smeary and smudgy in places. The professional, in such cases, reverts to what is known as "spiriting-off."

He makes up a new pad from cotton wool and a piece of calico. The cotton wool is charged with a slight amount of methylated spirit; it must not be saturated or "wet" with the spirit. Such a pad is called a "ghost" as it contains no shellac, i.e., French polish; the pad gathers a thin film of the polish when it is used on the streaky surface, thereby brightening and levelling the dull patches.

To use the rubber, run it over the full length of the surface in parallel sweeps. Avoid leaning too heavily or keep rubbing repeatedly in the same quarter, as the pad tends to "wear away" the hardened polish. The pad may need to be recharged with spirit at intervals.

To find out if the pad is properly charged, it should be pressed against the cheek, or the back of the hand. Skin is extremely sensitive to methylated spirit and your nerve cells will enable you, with practice, to determine the right amount of charging that is always necessary. An under-

charged pad, like an over-charged one, is detrimental to good results.

## Curing "Sweating"

If, when applying the polish with the rubber, it became tacky and a spot of oil had to be applied to the pad to ease matters, it often happens that minute quantities of the oil seeps through the polish and "sweating" results. The spiriting-off helps to remove much of this oil.

However, it is advisable to use little of the oil during the final stages. Some woods are oily by nature and that, apart from (say) an oil stain, must be taken into account. If you *must* use oil, avoid using linseed oil.

Almond oil is generally preferred by the professionals, for it is claimed that such oil does not cause 'sweating' in the same degree as linseed oil. Even so, the almond oil, if adopted, should be used sparingly, for prevention is always better than a cure.

## A Polish Reviver

It sometimes happens that, despite the use of thinned polish and much careful rubbing, the finish remains dull—not the bright, high gloss wanted. In such instances, there are two courses that can be tried, each being the opposite of the other. Both, too, are applicable to, and intended for, any existing polished furniture.

To obtain a high lustre, the articles are rubbed with a polish reviver. An excellent form of reviver can be made by mixing 2 ozs. of vinegar, 4 ozs. of spirits of wine and 1 oz. of linseed oil together. The mixture is rubbed on thoroughly and polished off with a soft duster.

Another—and better—form of polish consists of some melted beeswax, to which a small quantity of linseed oil and turps is added. Having stirred the mixture, a small amount of kerosene is added to it.

Allow to cool. The polish should become a thickish paste, but if too creamy in consistency, a little more of each ingredient can be added.

This polish, or reviver, is particularly ideal for stained softwood articles. The more it is used and polished off, the better and finer the result. A harder finish is possible by using carnuba wax, this being different from beeswax. The polish must be allowed to soak in prior to rubbing off with the soft duster.

## An Antique Gloss

When a surface is on the dull side and lightly scratched, a lovely, antique lustre can be achieved by simply brushing the polished surface with a soft-haired brush dipped in emery powder or grey knife powder. Although the resultant finish is called "antique" in the profession, the term does not imply a dull, crude form of finish.

Actually, the final result is a soft, warm, new lustre, and velvety in appearance. New furniture is often finished in this way, for many people hate high gloss finishes—the antique finish is much more elite and easier to keep clean and bright.

When using the powder, see that it is free from dampness, for hard lumps may be picked up by the brush and rubbed on the work, causing deep "spoons" or tracks on the surface. Heat the powder near a fire, then break up any lumps with an old table knife, crushing them with the flat side of the blade. Finally, sift the powder through the hands, breaking up any smaller lumps that may be found.

When "scoured" satisfactory with the powder, brush off the surplus powder and dust from the polish, then wipe with a dry, soft duster. If desired, furniture cream could be applied to darken the many minute scratches.

## Model Plane—(Continued from page 50)

Countersink the centre of the spinner slightly (with an  $\frac{3}{16}$  in. drill) and glue the spinner to the front of the propeller hub, over the pin head. Owing to the countersinking, the pin head will not interfere with the turning of the propeller.

Glue the  $\frac{3}{16}$  in. diam. nose disc to the nose of the engine. Stick the propeller in the centre of it and leave some amount of freedom so the propeller turns easily. There should be a slight twist in the propeller blades.

A pin stuck in the cabin top acts as an aerial mast, wire or fine thread being attached from it to the fin, as shown by the side elevation at Fig. 2. Four small half-round pieces of wood

are glued on the engine cowling to serve as engine coolers. Gramophone needles, or beheaded panel pins, serve as guns, including pieces of wire.

The best way to finish off the model is to give it a thin coat of grey enamel paint. Allow the paint to dry properly. It will then be seen (in the case of soft wood, such as deal) that the pencil markings "show" up ideally. This is a big help when you start to fill in the details, which you can proceed to do as soon as the paint can be handled.

Windows are touched up with white paint and allowed to dry. They are then "shaded" with black paint, as shown. The crosses are done

black, including the lines on the fin and tail and main-wing. The swastika emblems (on the fin) are painted white on a black background, at both sides.

The wheels can be grey, with black forks. The engine coolers and guns can be black, including the nose of the engine. The propeller could be coated with silver paint.

When all the paints have dried, give the whole work a thin coat of glaze (clear) varnish, or you could use paper varnish. The varnish gives a good gloss to the painting. If desired, a dull finish can be obtained by using poster colours.

