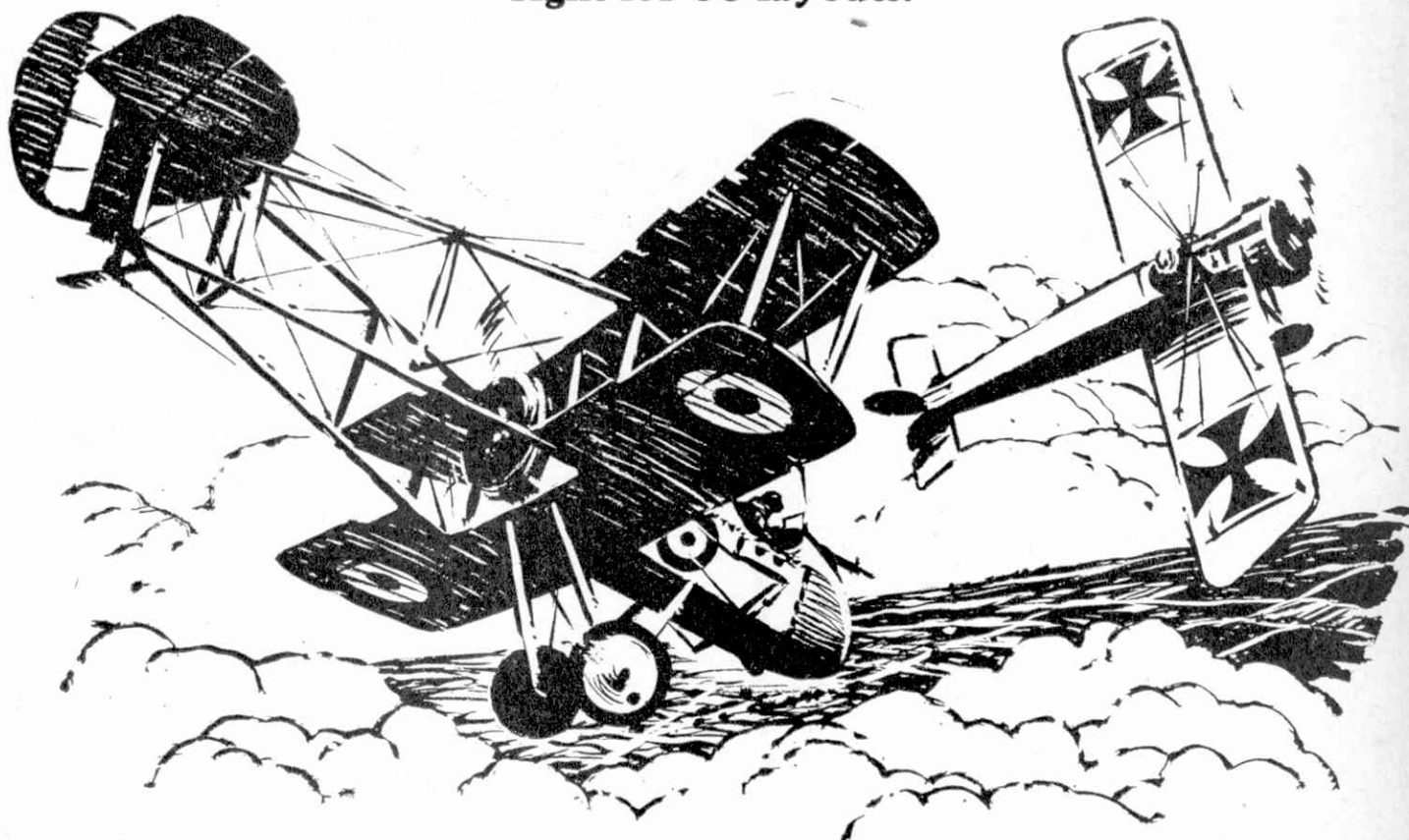


Home of the fighting scouts

It goes without saying that aeroplanes need airfields—all, that is, except the new VTO jobs and helicopters—but how many of the millions of plastic model planes built every year find their way to their own miniature airfields? Today, it needs years of legal wrangling and yet more years of heavy engineering to construct an airfield for modern jets to use. Not so in the early days of flying when almost any suitably sized flat field was a potential air base and the only legal negotiations were with the farmer who owned it! Such fields were commonplace in France during the 1914-18 war and author-artist-modeller, Ken McDonough, has made a special study of this pioneer period. This month, he begins a new and unique series of features in which he will describe the building of his own magnificent 1/72 scale World War I Royal Flying Corps field, and at the same time tell the fascinating story of the real-life airfields of 50 years ago. Here, at last, is a real base for your homeless plastic models! Many of the scenic techniques will be equally useful to the railway modeller and, of course, the scale of our model is just about right for 00 layouts.



Building a model of a Royal Flying Corps Aerodrome

DURING the Battle of the Somme, 1916, The Royal Flying Corps maintained an almost uninterrupted ascendancy over the German Air Force. When battle was joined on July 1st, 27 squadrons were in the field with a total strength of 421 aeroplanes. The supremacy of the R.F.C. was in large measure due to the D.H.2 Scout, a small pusher biplane with an unobstructed field of fire for the Single Lewis gun in the nose.

At the commencement of the Somme battle the R.F.C. was operating from 25 aerodromes in the neighbourhood of the towns Amiens, Arras and Doullens. The first squadron ever to be equipped with single seater Scouts was based at Bertangles, near Amiens, under the command of Major L. G. Hawker, V.C., D.S.O.

Unless used by more than one squadron, aerodromes during the First World War were much smaller than those of today. Any field or flat piece of land about three hundred yards square near a road was usually sufficient. Specially constructed runways were not required as the take-off and landing-run of the lightly loaded aeroplanes was fractional compared with modern jet aircraft. Most of the aerodromes were on the outskirts of a village. Nearly all the adjacent land was under cultivation and, once a suitable site had been chosen, an amicable agreement was usually reached between the landowner and the military authorities. A fixed rent with an additional percentage for depreciation was then established. Sometimes partial use of the land was still allowed for grazing and it was not uncommon for cattle to stray on to an aerodrome when the occupying squadron was fully operational. During the first two years of hostilities the housing of aerodromes was primitive by present day standards. Permanent wood and brick structures and the familiar French Bessoneau hangars only became common during the later stages of the war. A type of hangar widely used by the R.F.C., as featured in our model landscape, was the R.E.7 portable. This was

really a large canvas marquee tent, open along one side and braced by guy-ropes. Originally designed to accommodate one R.E.7 bomber, this hangar was soon issued to squadrons equipped with other types of aeroplanes when the R.E.7 became obsolete. It was large enough to house three single seaters, but even so, three hangars could be packed on a standard Army lorry. Over six hundred were still in use at the time of the Armistice.

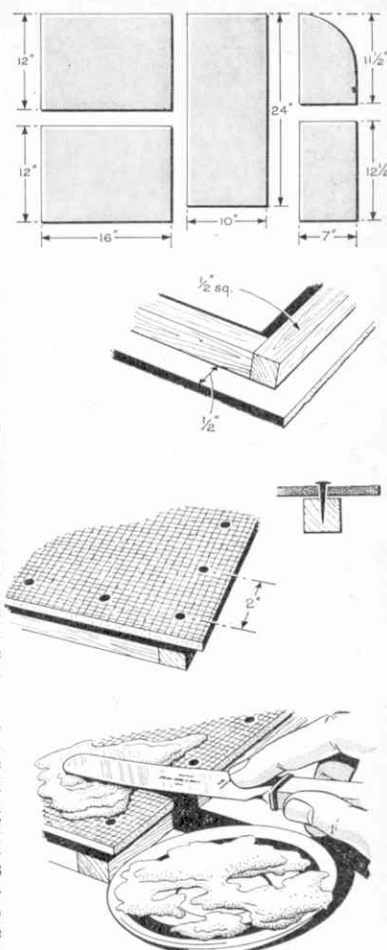
Many of the houses and farm buildings in the villages from which the R.F.C. squadrons operated are still standing today. As squadrons were almost invariably based several miles from the front line, buildings in the vicinity were not subjected to the ravages of war. The Somme area today, still presents an aspect similar to that of fifty years ago.

Our model represents part of a typical aerodrome of that period and is easily constructed from materials which can be bought for a few shillings. The aeroplanes are made from Revell Kits of the D.H.2 and Morane Saulnier N and the figures and livestock are from the Airfix and Merit ranges. Naturally your model aerodrome could be considerably larger than ours. The one in the photograph measures 3 ft. by 2 ft., so you can easily imagine how much space would be required for a complete 1/72 scale aerodrome for a squadron of fighters. Buildings are constructed of thin card and balsa wood and the portable hangar can be made for the price of a khaki handkerchief and a length of $\frac{1}{2}$ in. square balsa. Cart wheels for the farm vehicles come from parts in the Airfix kit of Stephenson's 'Rocket' locomotive (alternatively, Slater's cart wheels can be used if locally available). To commence construction you will need five baseboards, cut from hardboard, to the dimensions given in the sketches. Hardboard has a tendency to warp and each section must be suitably stiffened with $\frac{1}{2}$ in. square wood. The rough side of the hardboard should be uppermost. When the baseboards have been cut, go round the edges with a file so that each one fits up closely to the next. It is impor-

tant that no gap appears between each section as this would destroy the illusion of a continuous stretch of ground. The $\frac{1}{2}$ in. square hardwood used to stiffen each section can be bought from any 'Do-It-Yourself' store, and four 6 ft. lengths will be required. The hardwood lengths should be attached $\frac{1}{2}$ in. in from the edges of each baseboard and located with a suitable P.V.A. white adhesive such as Evo-Stick Resin 'W' before permanent fixture with carpet tacks driven in from the hardboard side at 3 in. intervals. These tacks are covered with Polyfilla surfacing, so are invisible in the finished model. Three of these baseboards should now be surfaced with Polyfilla; the ones for the hangar, the section in front of hangar and road. Apply evenly all over each section with a table knife, working the Polyfilla well into the grain of the hardboard. It is important that this grain is concealed so the second layer can now be applied while the first is still wet, more unevenly this time to represent the irregularities in the ground surface. In the road section, cart ruts can be represented by scoring the wet Polyfilla with a pencil point.

When surfacing the baseboards, try to avoid a 'palette knife' effect. Tap the Polyfilla into place here and there to vary the texture. Most aerodromes were covered by short grass or stubble, the area in front of hangars being usually muddy and bare of vegetation. Poster colours are ideal for painting your baseboards, but always remember to keep your colours subdued, as crude colouring can do more to destroy realism than anything else.

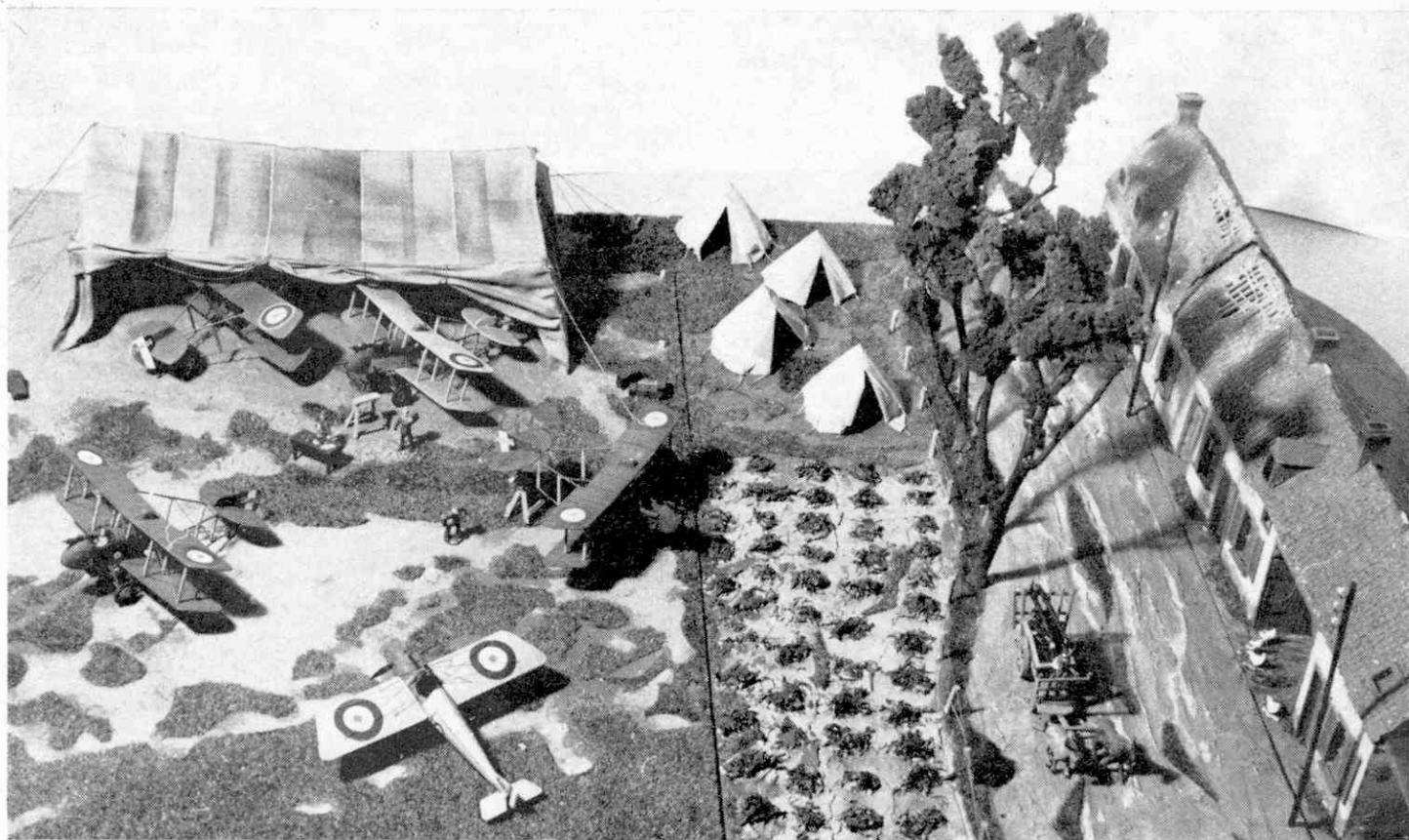
Next month we start to construct the buildings.



Home of the fighting scouts



Part 2—Making the Hangar



In our last issue we showed you how to prepare the baseboards for your model aerodrome. This month we are going to make a model canvas hangar, typical of the type so widely used by squadrons of the Royal Flying Corps on aerodromes in France during the First World War. You could make several, depending on the space available for your model aerodrome, as they are cheaply and quickly produced.

There were, of course, many other types of hangar employed by the R.F.C. but this type was probably the most picturesque and was a prominent feature of most front-line aerodromes. Major L. G. Hawker V.C., who commanded the famous 24 squadron, was a member of the Royal Engineers before he transferred to the Royal Flying Corps. From his experience in the Engineers he designed a more permanent wooden type from easily obtainable local materials and this type was also widely used on the Western Front.

FOR your model you will require the following materials. A piece of thin grey card, obtainable in large sheets from most art shops. White card would do, but the grey variety is very useful for the buildings we will be describing in a later issue. One 3 ft. length of $\frac{1}{8}$ in. sq. balsa, some carpet thread, a few match sticks and a khaki handkerchief. A white one would do, but it would then need to be 'camouflaged' by dyeing with water colour paint—a khaki one is ready to use and is readily available.

Figure one is a scale drawing of the hangar, to which you should refer when making all your measurements. Commence construction by making two ends from the grey card with tabs as shown for sticking to the baseboard. Both faces of these ends should be covered with pieces of handkerchief with the exception of the tabs. Allow the material to pleat in places to give a realistic effect. P.V.A. white adhesive was used throughout since it dries colourless and is quite 'matt' although balsa cement or any other strong glue would also be satisfactory.

Now, referring to Fig. 4, glue the ends to the baseboard. Notice that they slope slightly inwards. They are then connected by three pieces of $\frac{1}{8}$ in. sq. balsa as in the upper sketch of Fig. 2. Steam the balsa to a slight curve before connecting the card ends.

The front of the hangar is of course left open and, in order to represent this, a strip of material $\frac{3}{4}$ in. wide is glued to the front piece of balsa and to the ends as in the lower sketch of Fig. 2. The cotton material is then gathered up in six places by carpet thread.

On active service these hangars

would soon show signs of wear and tear, and it will enhance the realism of the model if we, too, give it a well-worn look. Fig. 3 shows how this can be achieved simply and effectively. First cut a piece from the handkerchief to cover the top and back of the hangar. Refer to the plan view again in Fig. 1 when making your measurements. This piece is then cut up again into three pieces; two for the roof and one for the back. In Fig. 1, notice the positions of the seams in the full size fabric. Obviously, in the full size hangar it was impossible to manufacture material to cover the entire length. To represent this in our model and also to simulate the change in colour of the various panels, powdered pencil lead or charcoal is rubbed on to the material with a piece of rag, using a scrap of card as a stencil as in Fig. 3. The real hangars might well have been patched and slashed with mud in places, so here again, careful use of a stencil can achieve a life-like effect. Another method of 'weathering' the material is by dipping an old toothbrush in water colour and splattering the fabric by drawing a razor blade over the bristles. Whatever method you employ, do not overdo it. Remember, the object is to achieve the effect of realism.

When the material has a suitably worn appearance attach it to the hangar frame as in the lower sketch of Fig. 2. If there are any gaps these can easily be covered with small scraps of material glued on. Strips of thin note paper, painted light brown to represent the seams in the canvas, are glued in place in the positions shown in Fig. 1. The strips should be $\frac{1}{16}$ in. wide. Your hangar

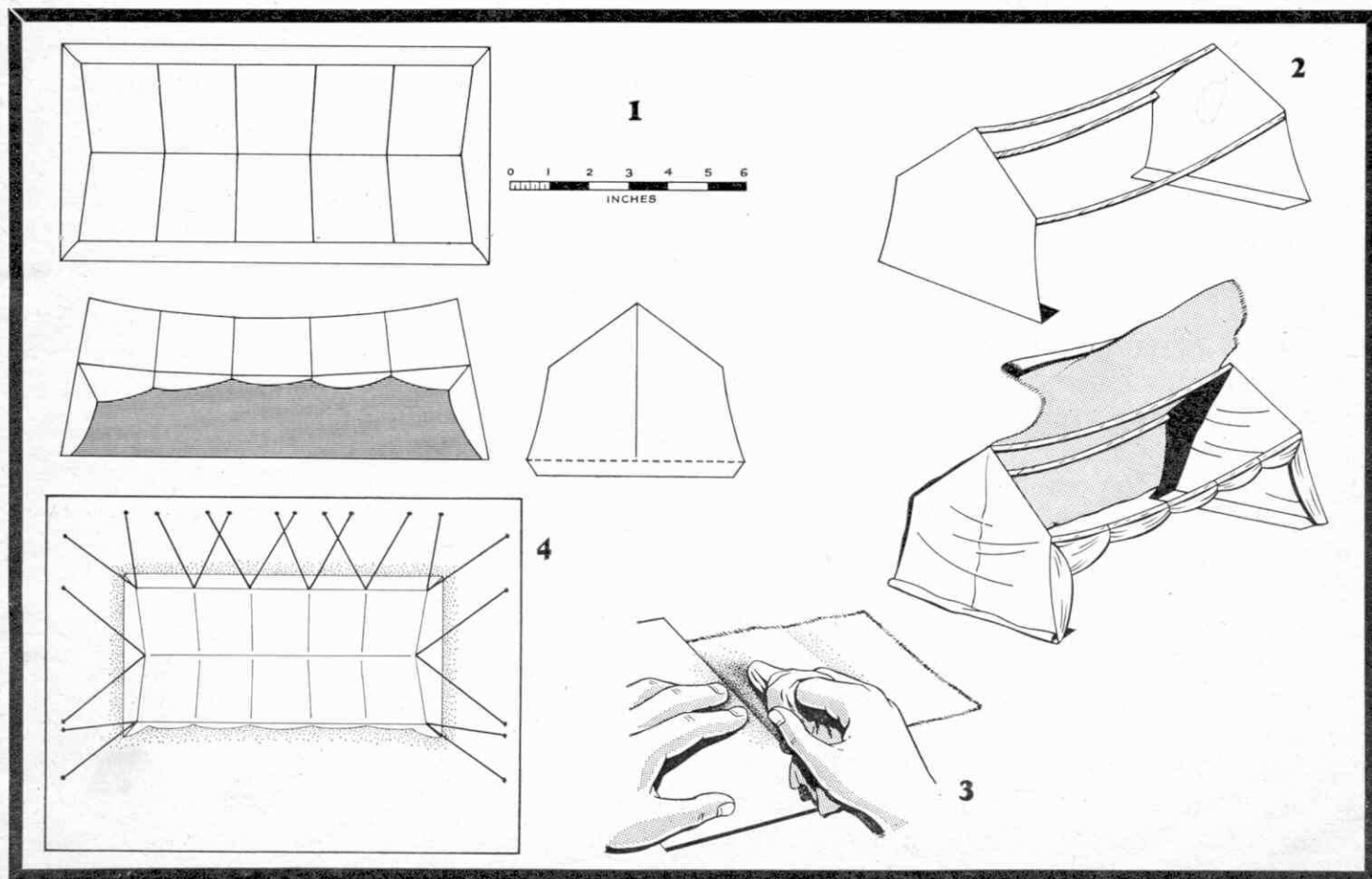
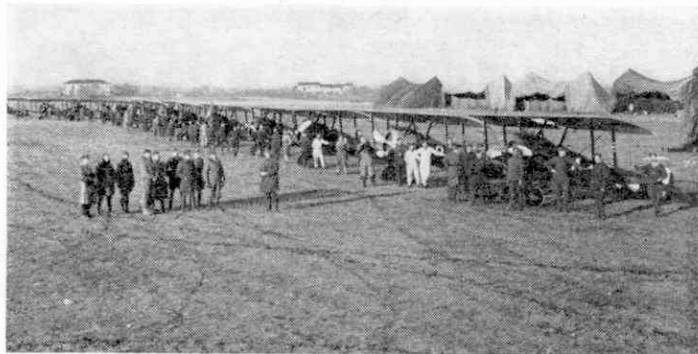
is now complete with the exception of the guy ropes.

If you have not represented the texture of the ground on your baseboard with 'Polyfilla', as described in our first article, this should be done now. There is no need to apply the 'Polyfilla' right inside the hangar: as far inside as you can get with the top of a table knife will be sufficient. The baseboard should be painted earth colour. Poster colour is best for this purpose and also the least expensive. An oil colour hog's hair brush $\frac{3}{4}$ in. wide or even a piece of cotton wool will cover large areas quickly. When colouring your models, keep the colours dull, and follow natural hues as much as possible. In order to achieve the colour of earth,

use burnt umber, yellow, black and white.

Allow the base to dry well before adding the guy ropes. Fig. 4 clearly shows their positions. They are made from lengths of carpet thread and first glued to the tent as shown, in pairs. While these are drying, drill twenty holes of $\frac{1}{16}$ in. diameter in the baseboard round the edge as indicated. Next make twenty 'tent-pegs' $\frac{3}{8}$ in. long from match sticks and point the ends. Take each guy rope in turn to its appropriate hole (which should be filled with glue), and tap the guy rope in with a panel-pin hammer while the glue is still drying. If any of the guy ropes are still slack after everything has set, moisten them with water to tighten them up.

The whole squadron line up for the photographer! Farm buildings can just be seen on the field perimeter in the background, with a cluster of hangars nearer the camera. Note that the top of each hangar has a very pronounced sag. Plenty of activity has been going on, by the look of the wheel marks on the grass!



Home of the fighting scouts

Part 3—Making the Buildings



TWO points which often detract from the realism of model buildings are the use of unnaturally bright colours and a general lack of surface texture. These errors are particularly noticeable when the reproduction of old buildings is attempted. The following techniques for producing buildings to 1/72nd scale, will also be of interest to model railway enthusiasts.

The buildings described in this article were originally made by the writer in a simpler form with a view to producing a series of paintings about early aviation. Sketches and photographs were taken in France and general dimensions made in order to prepare accurate three-view drawings. Although the paintings are still in layout form, it was thought that the techniques employed would be useful to model makers. Grey card, obtainable in 30 in. by 20 in. sheets from most good art shops is used for the main structure. Any card of a neutral tone however can be employed, but it should be about postcard thickness. Commence by cutting out the various parts shown in Figs. 1 and 2 with a sharp knife. Cut out all windows and doors marked X and score all dotted lines for easier bending with a sharp 4H pencil or the back of a knife blade.

The sequence of construction is indicated on the drawings (which are exactly quarter size) by the letters on the tabs and the corresponding edges to which they are glued. Thus in Fig. 1 the four walls are formed, after the card has been folded along the dotted lines by glueing tab A to edge A. The roof is then folded and glued to tabs B. The out-house is added by glueing tabs C to their appropriate positions on the main building followed by the roof on to tabs D and to the main roof at E. Finally, the ceiling and walls of the archway are glued to tabs F. The sequence of construction for the two smaller buildings in Fig. 2 is self-explanatory. UHU glue was used but any good quality glue, with the exception of balsa or plastic cement, would be satisfactory. The garret windows M and K and the chimney stacks L are carved from balsa wood.

Fig. 3 shows three ways in which you can add realism to your buildings. In Fig. 3a a realistic 'sag' can be given to the roof by cutting along the fold as indicated and glueing the curved edges back in place from inside the roof. Many of these old farm buildings were in an advanced state of dilapidation quite apart from

war damage. Fig. 3b shows another effective way of introducing a 'war-worn' look. Quite a sizeable hole is cut in the roof as shown and the broken rafters glued in place from inside the roof. Fig. 3c shows how the effect of a tiled roof is achieved. The roof is first given a coat of size or fish glue and then a thick layer of Polyfilla is applied all over with a table knife. The wet Polyfilla is then scored with a sharp pencil in horizontal lines about $\frac{1}{4}$ in. apart, followed by vertical lines from the top of the roof to the eaves. The rest of the buildings can then be given a very thin coat of Polyfilla applied with a small square-edged piece of cardboard about $\frac{1}{2}$ in. wide, using a palette knife technique.

Poster colours again are used for painting the buildings as they are far more economical than matt enamel. The walls are painted a faded stone colour. (White with a touch of burnt umber and black.) For the roof and chimney stacks, use burnt sienna and white with a touch of black. Notice how the edge of the roof in Fig. 3 is serrated by hacking with a razor blade.

The buildings should not be glued to the baseboards at this stage, for in next month's issue the method of making doors, windows and other small details will be described and it will be necessary to attach the window frames from inside the buildings.

Ken McDonough

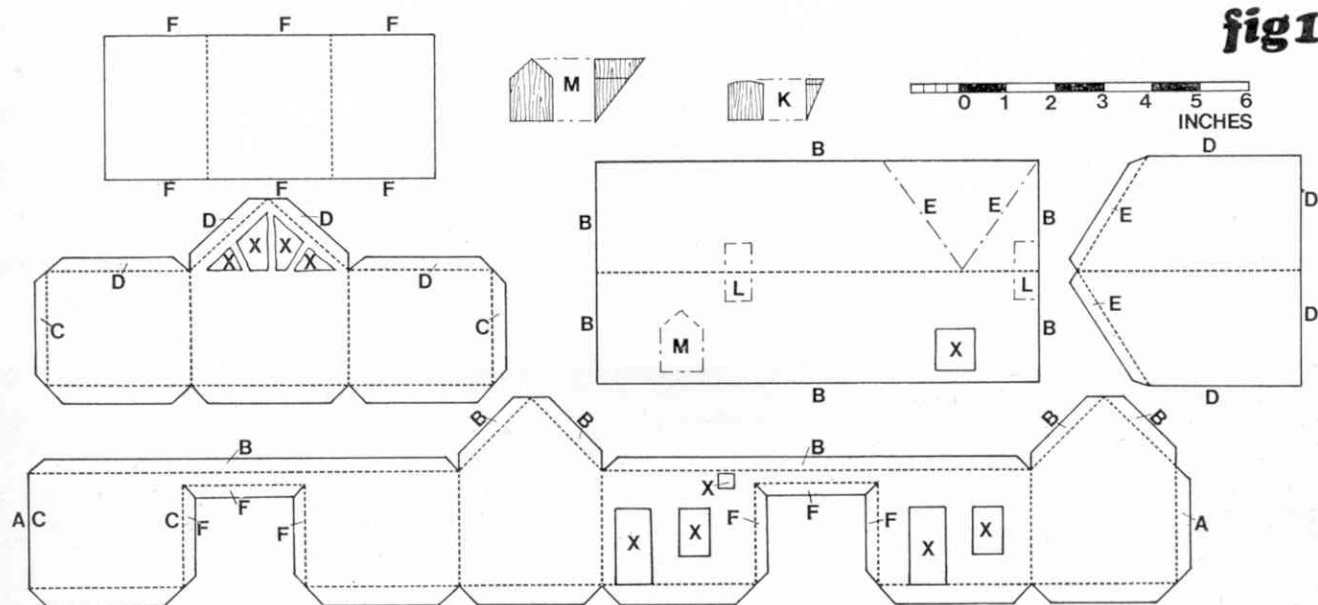
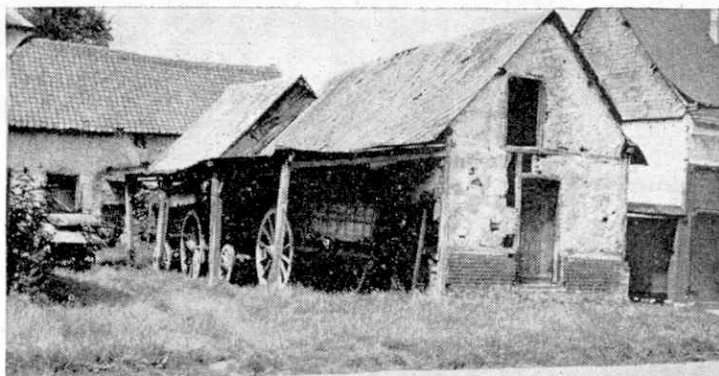


fig1

These drawings are exactly quarter size

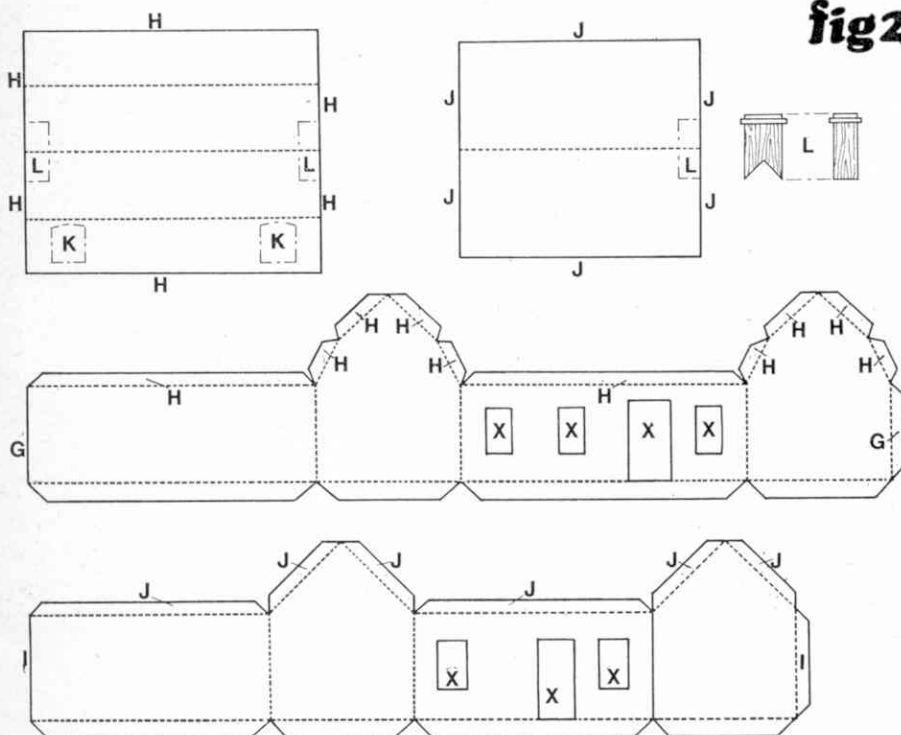


fig2

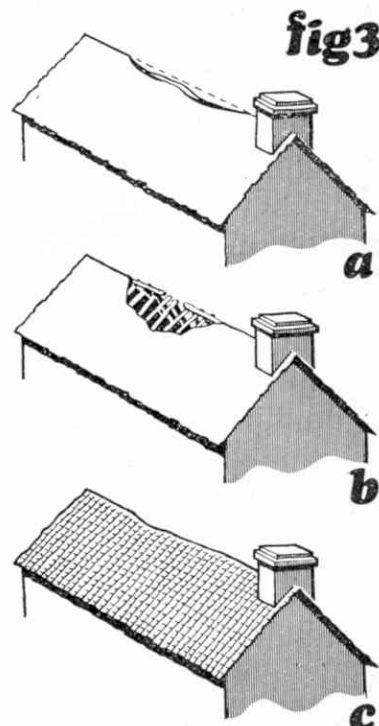
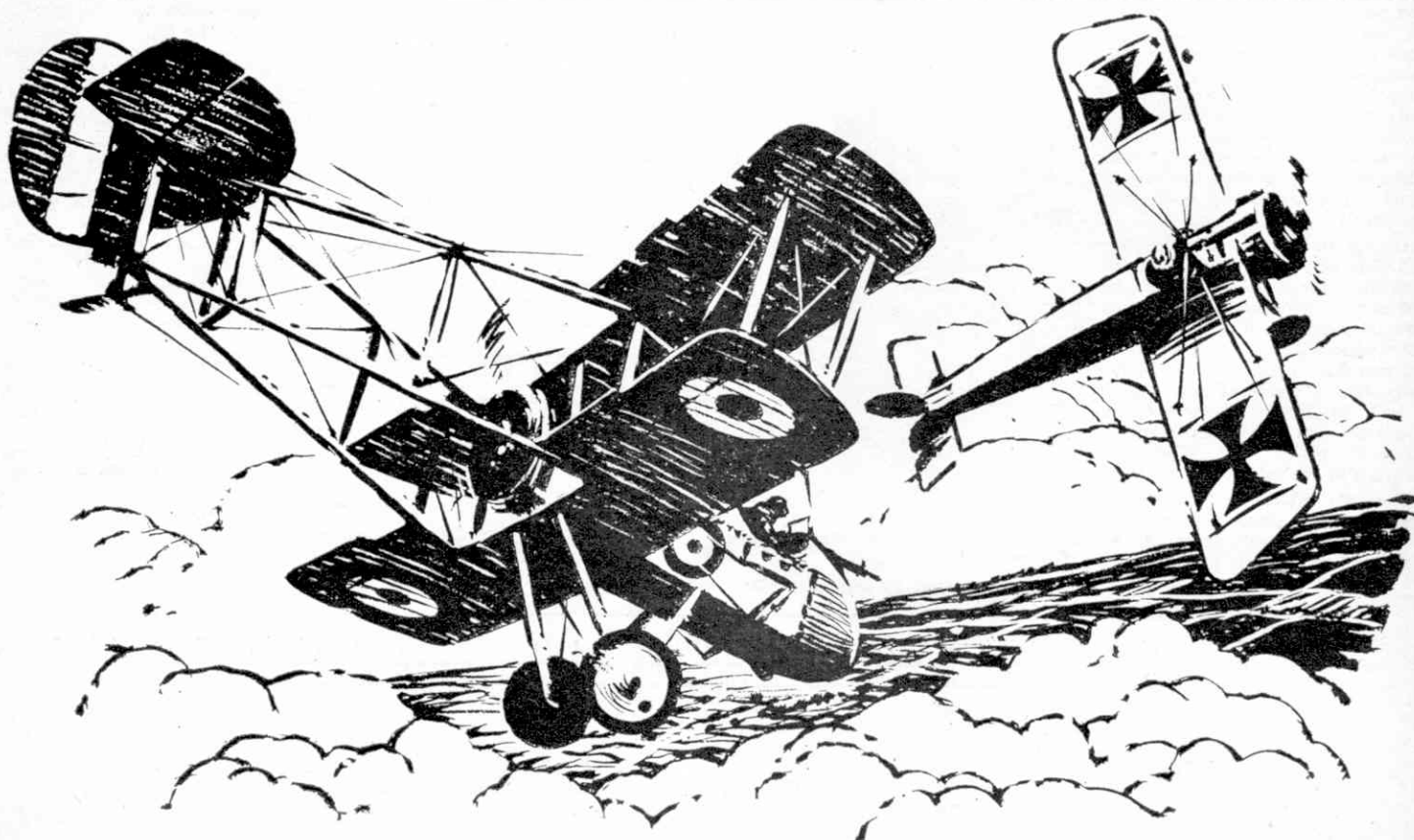
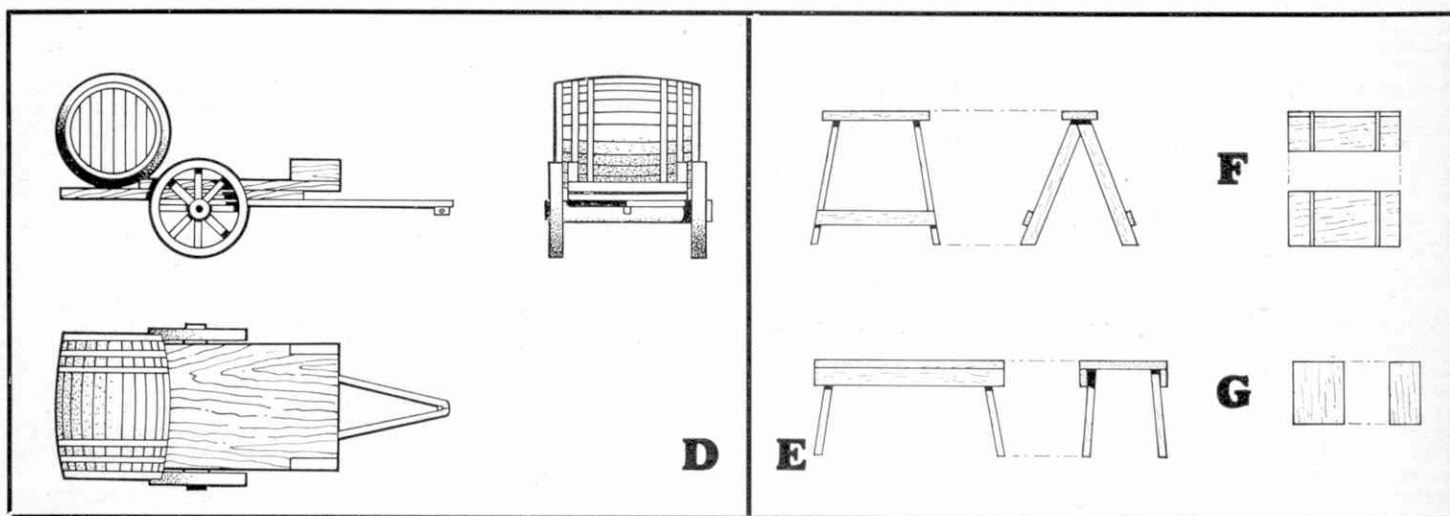


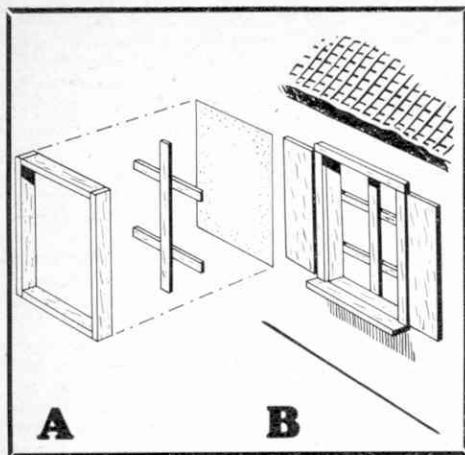
fig3

Home of the fighting scouts

In this, the fourth instalment of this series, Ken McDonough describes how you can add some really authentic details to your completed aerodrome. The photographs opposite demonstrate the realism of Ken's models, and the drawings are reproduced full-size for 1/72nd scale.



Building a model of a Royal Flying Corps Aerodrome



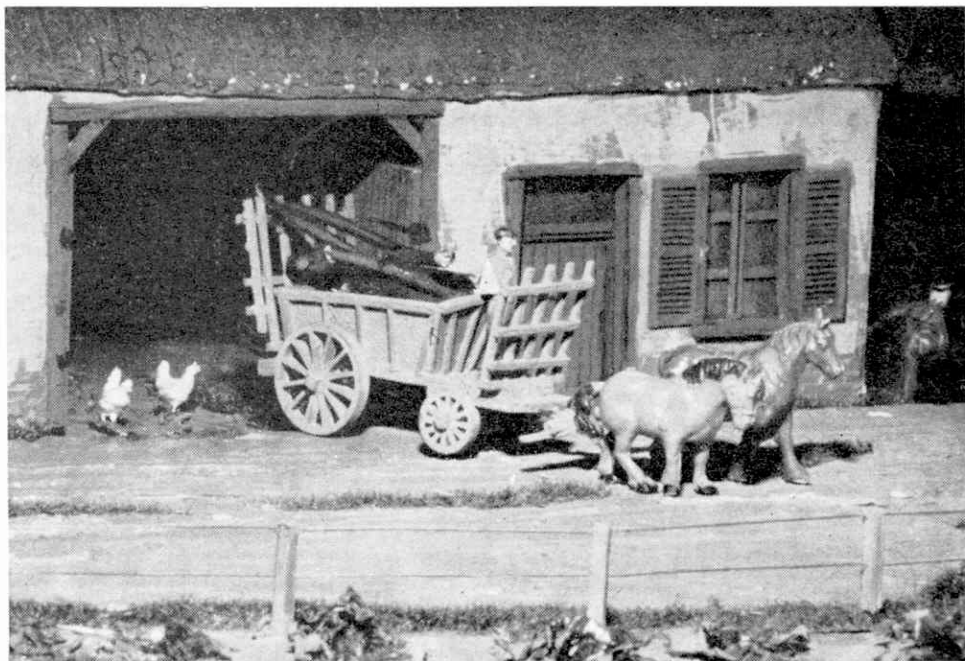
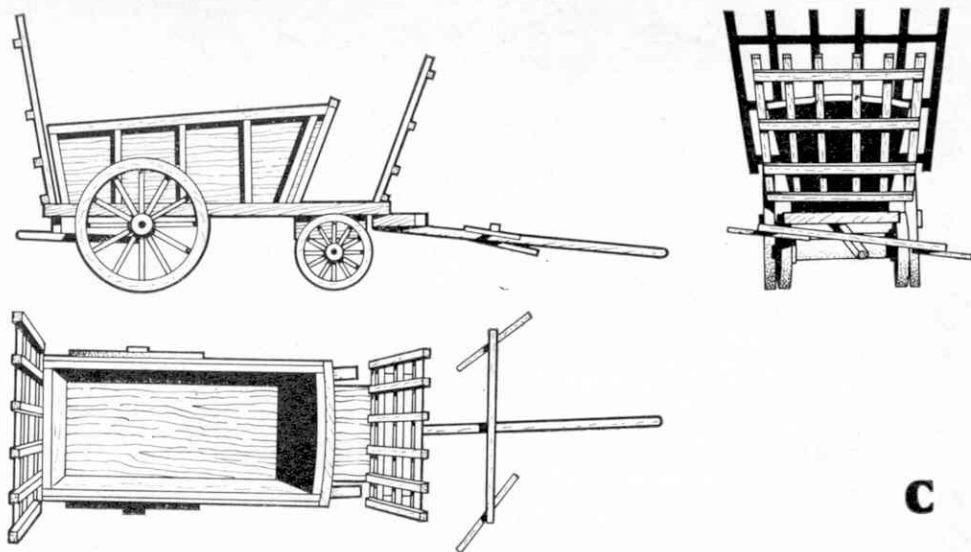
BEFORE describing how you can add one or two realistic items to your model aerodrome, here are some final details for the farm buildings described in our last issue. Figures A and B show how you can make realistic windows. As you will see from Figure A, the windows are recessed by constructing a rectangular frame from $\frac{1}{8}$ in. by $\frac{1}{8}$ in. balsa to which the window frames are glued. The windows are glazed with cellophane or tracing paper. The complete assembly is then fitted behind each window opening from inside the building. Outside frames, ledges and shutters are then glued in place as in Figure B. Doors, too, should be recessed by first making a frame of $\frac{1}{8}$ in. by $\frac{1}{8}$ in. balsa glued behind each doorway. All the woodwork of windows and doors can then be painted in a rather faded blue or green. Once these small additions have been made, the completed buildings can be fixed to their respective baseboards.

Figure C shows a typical French farm cart, a model of which can be easily constructed from $\frac{1}{16}$ in. and $\frac{1}{32}$ in. sheet balsa. The wheels are from the Airfix kit of Stephenson's 'Rocket', or you can use Slater's cart wheels if they are on sale in your local shop. If you use the ones from the Airfix kit they must be first modified by removing the flanges with a sharp knife and sandpaper. All four wheels came from the locomotive wheels in the kit. Small twigs or grass clippings in your farmcart will add a touch of realism. There is a wide range of farm animals to 1/72nd scale. Livestock in our model is from the Airfix and Merit ranges, although these do differ slightly in size. The water cart in Figure D is similarly constructed again making use of the Stephenson's 'Rocket' kit, the water barrel and two of the wheels from the tender in this case. Paint both carts in light brown, buff or green. Several carts, of course, can be made, depending on the size of your layout.

Trestles (Figure E) were essential equipment on every aerodrome, and two or three of these should be incorporated in your layout. They were employed to raise the aeroplanes into flying position in order that rigging angles could be checked. Ladders were also indispensable when mechanics were rigging the aeroplanes or filling the tanks with petrol. In the case of the D.H.2 the reserve petrol tank was above the upper wing and could not be reached from the ground. Both ladders and trestles are constructed from $\frac{1}{32}$ in. balsa strips and painted light brown or grey.

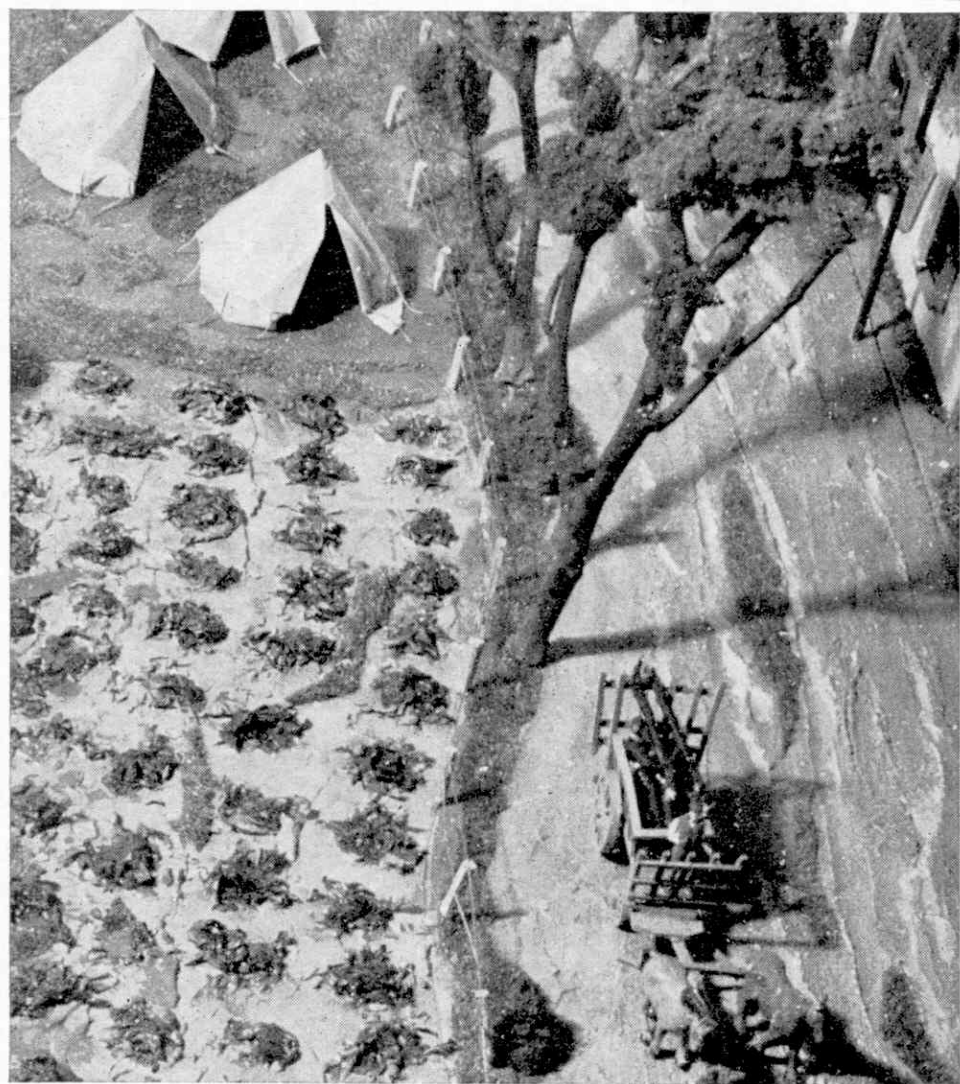
Ammunition boxes and petrol cans are simply cut from lengths of balsa to the dimensions in Figures F and G. Quite a number of each of these items can be made and either stacked neatly or scattered round the hangar. Paint the ammunition boxes green and the small petrol cans silver.

Personnel on the aerodrome can be modified from the large number of 1/72 scale figures on the market. Remember that the colour of the R.F.C. uniform was khaki. The blue uniform did not appear until the Royal Flying Corps and the Royal Naval Air Service were amalgamated as the Royal Air Force on April 1, 1918.



Home of the fighting scouts

Ken McDonough



In this, the fifth and final instalment of the series, Ken McDonough describes how you can add the final touches of realism to your model aerodrome. Trees, and vegetation generally, are often a problem to the scenic modeller, and if you've ever been faced with the problem of 'growing' a miniature cabbage patch, then read on and learn how!

THERE are, of course, a large number of track-side models to 00 scale (the approximate equivalent of 1/72nd scale) on the market. Many of the figures can be modified and repainted to represent R.F.C. personnel. Such items as bicycles, oil drums and straw bales will find a ready use in your layout. Model trees, however, are very difficult to reproduce commercially and, almost without exception, they are unrealistic. It is much better to make your own, using natural twigs and pieces of sponge. However, before describing a method of making trees, we are going to show you how to construct a couple of accessories which are not available in any commercial range.

Bell tents were much more widely employed in the first war than in the second. They formed an essential part of the equipment of every military unit. The tent itself is cut out of cartridge paper, using the full-size pattern shown in figure 1a. Bend along all dotted lines and glue tab A to edge A. Now, referring to figure 1b, which is a view of the underside of the tent, glue short lengths of thread to represent the guy ropes at each fold of the paper as shown. The braiding is a small strip of fabric which hangs vertically down from the base of the tent and is glued round the tent over the upper ends of the guy ropes. The tent pole, a short piece of $\frac{1}{8}$ in. dowling, is now glued to the apex of the tent from the inside. The lower end of the pole is pointed so that the tent can be inserted in a hole in the baseboard.

Figure 1c shows the completed tent. Note how the entrance flaps are folded back and glued. The small ventilators are made from balsa scrap. The

free ends of the guy ropes should be glued to the baseboard after the tent pole has been inserted in its appropriate hole. Four bell tents were constructed for our layout, but you can make as many as you like, depending on the size of your aerodrome. Paint your tents a khaki colour and try to introduce some evidence of wear and tear by stippling on some patches of a darker tone here and there.

Figure 2a illustrates a typical telephone pole. Note that, contrary to British practice, there are no crossbars. This type of pole is still seen in rural districts of France and, of course, telephonic communication was not so widespread fifty years ago as it is today. The pole is drawn full-size and made from a length of bamboo or hardwood strip. The insulator brackets are bent from 20 s.w.g. wire or pins, bound and glued to the pole, and the insulators themselves are blobs of cement painted white. Colour the pole dark brown. Telephone wires can be simulated by using 5 amp. fuse wire. The ends of the telegraph poles (three were used in our layout) are painted and inserted in holes in the baseboard. Reference to the photographs will indicate their positions.

Two-inch lengths of $\frac{1}{4}$ in. by $\frac{1}{8}$ in. balsa could represent planks of wood placed over muddy ground. In our layout, imitation grass on a paper backing was employed extensively, except on the baseboards of the houses and road. The grass paper is available in large sheets, and sold at shops dealing with model railway equipment. On the area in front of the hangar, the paper was cut up into irregular shapes and each piece attached separately with P.V.A. adhesive so that patches of bare earth were represented.

Figure 3 depicts our method of making trees. 3a shows a typical sprig. It is a good plan to gather a number of these and select the ones which are most realistic. Plastic or natural sponge is used for the foliage and each piece should be cut into an irregular shape with nail scissors, as illustrated in figure 3b. The pieces of foliage are of various sizes and attached to the sprig with Evo-Stik. Wrap the sponge round the sprig and tie with cotton. The sponge can be either painted after assembly or dipped in a solution of dull green water colour. If the sponge is pre-coloured, allow some time to dry before gluing into place.

Cultivated fields can be represented in a number of ways. One method, widely employed in architectural models, is to use the bristles of small brushes to give the effect of a wheat or barley field. Bristles can represent tall grass or coarse vegetation, and green tissue paper also has its effective uses.

Many R.F.C. squadrons used to cultivate their own kitchen gardens. The famous pilots, Albert Ball and Charles Nungesser, were both keen gardeners, and found recreation by this means after the strain of war flying. Cabbage or kale is easily made from green tissue paper. First slice the tissue into strips about $\frac{1}{16}$ in. wide. Several strips are then screwed up together and dipped in glue size. Plant the vegetation in regular rows as in figure 4. The fencing is made from matchsticks and thread. Each matchstick is split half-way down with a razor blade to allow the thread to be attached in a continuous length.

There are many other ways by which you can add interest to your model aerodrome. Wherever possible, refer to photographs taken on R.F.C. aerodromes and pick out all the items of equipment that can be reproduced in model form.

As suggested in our previous articles, colouring should be kept dull and not too dark in tone. The best types of colours to use are poster or emulsion paints. The following colours have proved to be the most useful: Vermilion, Yellow Ochre, Cobalt Blue, Oxide of Chrome, Burnt Umber, Burnt Sienna and, of course, White. Ordinary household white emulsion paint is most economical and mixes readily with poster colours. Clear varnish can be applied where necessary to achieve a gloss effect.

Oil colour hogs hair brushes are to be recommended for covering large areas and water colour brushes (Nos. 3 and 6) for the smaller details. A small piece of sponge and a strip of stout card are also useful tools for applying colour.

