be made to occur in two photographs. What is then done is to cut out the part in each photograph containing the point and paste the two photographs alongside each other, on the usual stereoscopic card. Here it is necessary to get the positions of the two photographs by experiments, as for certain optical reasons, unknown to me, if you put one photograph on the right whereas it should be on the left, the proper effect of height and depth is reversed, although the two photographs may look identical. However, once this is successfully done the combination of the photographs can be used in the usual stereoscope and a very good idea of the proper perspective obtained.

## Effects of Stereoscope.

Another interesting point is that two different photographs giving, for instance, a fuzzy appearance singly can, by viewing stereoscopically, be made to give a very good single image.

Using this method, it is possible to very closely examine positions on the ground, and in case of batteries I know it is possible to tell whether emplacements are made of concrete or of sand bags. This method obviously offers chances of value in the examination of items on the ground which, from a survey point of view, special information is required about.

Before coming over here I was stationed at Dunkirk for the last year, where a great deal of aerial photography was done over places such as Bruges, Ostend, etc., where the Archies were severer probably than anywhere else in the world.

## Survey Photography.

To continue now with aerial photography, as applied to survey work.

When I came over here, I knew practically nothing about survey work. I gather now that photography plays a considerable part in survey work over mountainous country, and that expeditions set out in summer months in order to photograph ranges of mountains from known positions with the idea of getting the heights and positions of the mountains. I have seen some of these photographs taken by the Geodetic Survey and have admired them immensely, but looking at them it struck me that when you photograph a mountain there must be various foothills and minor mountains leading up to the main peak and that photographs taken from one point will not give any idea of what lies between these foothills and the mountain itself nor of what lies behind the mountain. I suppose to obtain particulars of these it is necessary for a

party to go round to another point, at a different angle to the original, and to make another set of photographs from there. This further expedition is naturally a matter of time, and I think it possible that aerial photography may be able to make much of this unnecessary. The machines, working in conjunction with a surveying party and in touch with them by wireless telegraphy or wireless telephony, could receive orders to fly over any particular portion of the mountain and take such photographs as are required. For instance, a photograph taken immediately over the top of a mountain will show the general contour of the mountain and all its couloirs and surrounding peaks. It will give no idea of the altitude of the mountain, but it will certainly show a great deal which a photograph taken from some known point opposite will not show, such as the configuration of the snow fields round the peaks, the distance between individual peaks, and possibly such a photograph might give a good indication of the best method of climbing the peak, if this is required.

## Mapping Rivers and Lakes.

To get away for a moment from mountain work, aerial photography could give very valuable results in the mapping out of rivers and lakes. These particular objects are especially adapted to aerial photography, as it is possible to obtain in one photograph the shape of an entire lake, and a series of photographs of a river will give the course of a river. Without knowing anything about mapping out rivers and lakes, I imagine it must be a case of covering most of the water in boats and fixing numerous positions along the shores by means of triangulation, so that in this case an aerial photograph might be able to dispense with many days of work. Photographs taken over water would also, to a great extent, show the configuration of the bottom, so that unless precise details were required, the necessity of taking soundings could be obviated.

## Life of Aeroplanes.

Many people, without stopping to think, are of the opinion that for the purposes of flying all that is needed is a good looking machine, a pilot, and one mechanic. If one went by the papers one would be apt to think that all that has to be done is for the pilot to step into the machine, the mechanic to give the propeller a twist, and off the machine goes. As a matter of fact, this part of flying is only a very small item, and it should not be necessary for me to say that the whole success or otherwise of suc-