

# AERIAL WARFARE MADE INTERESTING BY KITE FLYERS

ALTHOUGH most boys have taken so enthusiastically to aviation and the making of model aeroplanes, this does not mean that kites have lost favor with the schoolboy of today nor that the pleasure of building one's own kite and flying it in competitions or warring with it against the kites of the other boys is any less fun than it used to be before aeroplanes were ever heard of. There are lots of things which can be done with kites that can not yet be done with aeroplanes, and among these are the kite wars, which all boys who have ever engaged in them declare to be about as good fun as anything that could be thought of.

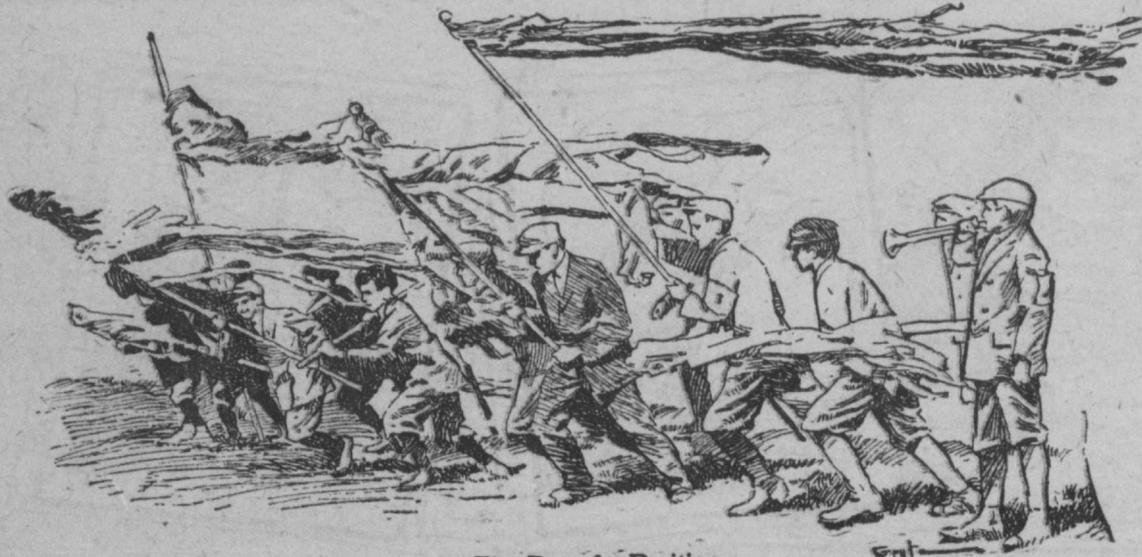
There is one school in New York whose annual kite contests and kite battles are so large and important an event that numbers of persons journey out to Astoria field, where they are held, to look on at these interesting battles in the air. Kite contests and kite wars are not at all the same thing, be it understood, for kite contests are simply competitions in which certain boys and certain classes are awarded the honors for height, strength of pull, etc., while kite wars are genuine battles in the air, in which the kites fight for their lives and the victor brings down all possible captors, which remain his by the law of battle.

School No. 77 is the one whose expert building and flying of kites has attracted so much attention. A. E. Horn, the science instructor of the school, has helped to organize the kite contests and to make the rules of battle under which the kite warriors go into action. Mr. Horn thinks that boys ought to enjoy themselves in a natural way with the fine old games and plays that develop manual dexterity, physical endurance and a manly spirit. Kite building and flying is one of these sports, and in addition there is something to be learned in connection with the study of the atmosphere, which joins the play time and the school time together in a very interesting fashion.

The kite flying contests of No. 77 are modeled directly after those of Poochow, China, where the greatest kite contests of the world are held. There annually 3,000 men fly their kites, wonderful and grotesque creations which could scarcely be found outside of China. No. 77 hasn't quite so many kite flyers as this, but it is making progress, and this year when the annual war game came off there were more than 150 war kites in the air.

In preparing for the contests the boys make two kites, usually, one a war kite and one for exhibition purposes. The war kites are so frequently lost to their makers before the end of the battle that the boys are not willing to risk their exhibition kites in the battle. As a necessary preparation, also, the boys choose a class color for their kites. All the boys make their kites in the colors of their own class, although they may be of any shape which the individual boy desires.

Each class obtains a tall pole, which



The Race for Position.

woe to the kite commissary if his mending kit falls short at a critical moment and causes his class to fall back in the competition.

At the second call of the bugle the kites are raised and every eye follows their graceful curving into space.

The kites compete for height, the farthest distance out, the strongest pull, good construction and unique design. No kite that does not fly is permitted in the competition, no matter how grotesque or interesting its de-

sign. The strongest pull is measured by means of scales. There are umpires and inspectors appointed, but when it becomes necessary to measure the distance of the farthest out kite it is necessary to call in the assistance of the teacher, and then at last it becomes evident why there should be such things as lessons, because after the kite flyer has reported the amount of string out and the inspector, by means of the protractor, has found the angle of the kite, it is still necessary for the teacher to be called upon to work out the amount by trigonometry.

After the kites are up the various colored banners are sent up, which with the object of puncturing the other boys' kites. Others put a pointed stick in the prow of the kite, which will pierce the other kites if it comes in contact with them.



A Group of Grotesque Kites

After the bugle has sounded for the conclusion of the competition five minutes is allowed for everybody to haul down his kite. At the conclusion of that time it is understood that all kites remaining in the air intend to fight. A half hour is allowed for equipping the fighters, and then the battle begins. It is usually a very warm affair, as the boys go at it for dear life and give no quarter. At the end of the last battle only one kite remained in the air, and this was a British war kite. As trophies of its prowess it had pulled down ten other kites, some of them larger than itself. It was a four foot kite of the regular British war pattern. Strong hopes had been entertained of an American eagle kite before the contest, but alas! when it came really to flying it was one of the first to succumb.

There were kites of extraordinary shape both in the competition and the war game. Many of the boys of different nations chose to fly kites representing the country of their ancestors. There were French, German, British, Roumanian, Japanese and Irish kites. Then there were wonderful dragon kites of Chinese design and balloon kites enormous in size and grotesque in appearance, not to mention many strange mannikin kites, some of which you will see in the illustration.

During the contest the kites furnished their own music, and some of them even attempted to take their own photographs, in which they were not particularly successful, but they are not discouraged and are going to try again next year. The photography, done by sending up a camera in a kite, has often been described, but it remains a most interesting experiment, and although it is not very often successful it is well worth trying. The camera is tied to the cord of the kite and then its shutter is attached to another cord, which the kite flyer pulls to take an instantaneous photograph.

Many boys also have heard of the way in which the kites may be made to make their own music. A humming kite is simply a kite which has a piece of tough paper doubled over the cord which bows the crosspiece. This vi-

brates in the air, giving a low toned hum. When this piece of paper is clipped the tone is made sharper. If a piece of bamboo or thin strip is substituted for the paper it makes a buzzing sound. Additional strips of the bamboo produce harmonious sounds.

Here are some descriptions of how to make kites which were given by the boys of No. 77:

### BOW KITE

To make a bow kite secure a piece of white wood five-eighths of an inch square and exactly five feet long for the main support. For the crossbar or bow split a piece of bamboo in half, laying one thick and one thin end together and pasting them. This makes each side weigh the same.

Now comes the part in which great care must be taken. This is the fastening of the bow 10 inches from the top of the main bow at an angle of 45 degrees. When this has all been carefully laid out it must be very securely fastened. This is done by gluing both sticks together, and before the glue dries tying them with cord. In order to make them more secure put a brass joint over this point.

In finishing, bend the bow five inches to every three feet. A five foot bow is bent nearly seven inches and tied very securely with cord. Tie a continuous cord from one corner of each stick to the other. In doing this screw eyes are convenient. The kite must be completely covered with cloth, as paper will tear. A five by five kite requires three yards of paper muslin 27 inches wide.

### BRITISH MAN-OF-WAR KITE

The materials needed for a British man-of-war kite are five strips of white wood half an inch square, three strips eight feet long, one strip six feet long and one strip four feet long. Four screws five-eighths of an inch long.

Nails, flat top, three-eighths inch. Four aluminum braces. Ten yards of red muslin.

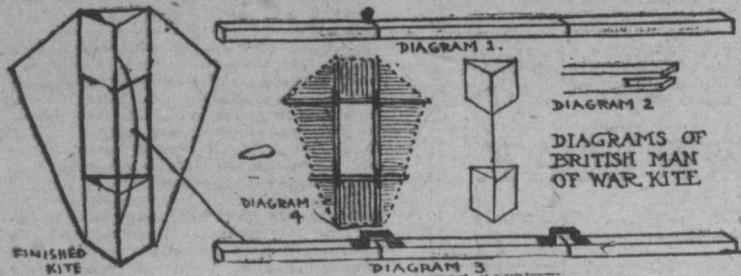
A British man-of-war is really a difficult kite to make, but if you will follow these directions closely you will not find the difficulties greater than you can cope with.

Take the three strips eight feet long and lay them upon a level surface, as in diagram 1, and square a line on all three, two and a half feet from the top and bottom. These squared lines show where the strips cross each other. Take one of the strips away and lay it away for future use. Now take the six foot strip and square two lines two feet apart. Then take the four foot strip and square two lines one foot apart from each other. Now notch the ends of all the sticks, as on diagram 2.

The next step is to make three sockets on the braces and put them on the two eight foot strips crossing the squared lines, as in diagram 3.

Now we are ready to finish the kite without the covering. Follow diagram 4 in laying out the strips and in putting on the cord.

Now, for the last steps cover the two sides first, then the top and bottom and then the triangle. Put on the bellyband and you will own a kite worth \$5 or \$6.

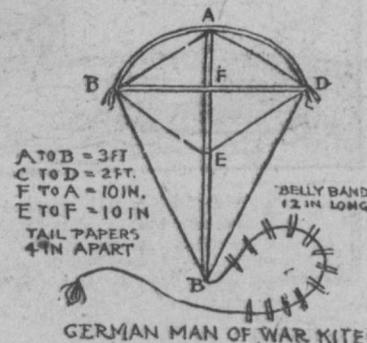


is to be the standard of their class. Long, bright streamers, as many as they can secure, are tied to the top of this pole. These streamers are in the colors of the different classes. When the field on which the kite flying exhibition is to take place is reached, the boys select a color bearer for each class. These color bearers line up with their color poles and the bugler sounds the starting note. Then all the color bearers race for position on the field and plant their colors as a rallying point of their own class. One boy has been appointed by each class to carry all the mending material needed for the kites. They carry pieces of cloth, glue, pieces of wood, cord, etc., and

adds tremendously to the gaiety of the occasion. Some boys have as many as 20 or 30 banners to send up on their kites. The banners increase the pull on the kites.

After the competition kites have been flown for about an hour and a half and have all been judged by the umpire the bugle sounds for these kites to be pulled down. Then comes the event which the boys like best—the war game.

For some time after the competition is over there is busy preparation for war. Every boy on the field is seriously at work making his kite as formidable as possible for the fierce contest that is to come. All over



GERMAN MAN-OF-WAR KITE