



## AIMING 1972

by W. F. Paterson

The Member Associations, representing thirty-nine countries, have welcomed the long-awaited news that archery is to be once more included in the list of sports for the Olympic Games, where it last appeared in 1920.

Success in archery — as in other sports — can only be achieved by hard work, study and regular practice. It requires all the care and concentration needed, for instance, when shooting a rifle, but the archer is pulling and holding about forty lbs. — or twenty kilos — as he steadies on aim. The string must be smoothly released without any loss of tension, snatch or jerk, but at this instant the pressure against the hand which holds the bow is suddenly removed. It is essential that the bow shall remain steadily in line with the target, as any movement away from the correct alignment can easily start before the arrow has left the bow. This will deflect the arrow from its intended path. The release and the follow-through are the most difficult actions to master, and these are the two most important factors on which accurate shooting depends.

### Archery is history

In prehistoric times the bow played an important part in enabling man to survive. It was his first and only long-range weapon for many millenia. The earliest bows were probably little more than a trimmed sapling or thin straight branch. The simple bow made from a single piece of wood reached its most effective form in the old

English longbow. The best were made from Spanish or Italian yew, as the hotter and drier climate gave a closer-grained and more resilient stave than that of native growth. Yew bows were made from sections split from the trunk of the tree, and then shaped.

The prowess of the English archers was due to years of training which enabled them to draw and shoot, under full control, bows with a pull at full draw — which the archer calls the weight of the bow — of eighty to one hundred lbs., or roughly forty to fifty kilos. They were trained to engage targets up to two hundred and forty yards, which is about two hundred and twenty metres. The use and practice of the longbow is still preserved in certain societies as a traditional form of archery.

Suitable wood for bows of this type is not to be found in all parts of the world, and craftsmen had to adapt their designs to the materials they had available. One effective form was the Samurai bow of Japan, seven feet or more than two hundred centimetres in length. The main components were a number of bamboo sections glued together. The warriors of Japan were redoubtable archers and they used their bows, in spite of their length, on horseback as well as on foot. Their traditional form of archery, or *kyudo*\*, with its elegant ritual, is also preserved and practised.

\* There were demonstrations of *kyudo* during the Tokyo Olympic Games in 1964. (Ed.)

The Japanese realised a long time ago the benefits to be gained by the individual from the mental and physical discipline demanded by training in archery.

Another design was that of the archers from Central Asia with the composite bow. This had a wooden core which formed the base or frame and determined the final shape of the bow. On one side there was a layer of buffalo horn which withstood great compression, whilst the other was covered with sinew which withstood great tension. These materials were bonded together with glue, and the result was some of the most resilient and efficient bows that have ever been devised.

Although we do not know where the design originated, the earliest evidence is in the hands of the Sumerians and Accadians in the 23rd century B. C. Size and detail varied with place and time, but this form of bow was found in China, Korea and Mongolia, Persia, India, Turkey and Egypt. In earlier days and in a slightly different form they can still be seen in the well known Assyrian rock carvings where the bows, at full draw, are almost in a complete semicircle. Crusaders faced composite bows in the hands of the Saracens,

in length and very suitable for use on horseback. The design is of special interest, as it was from studies of these weapons that modern bows were evolved.

### **From battle-fields to sports grounds**

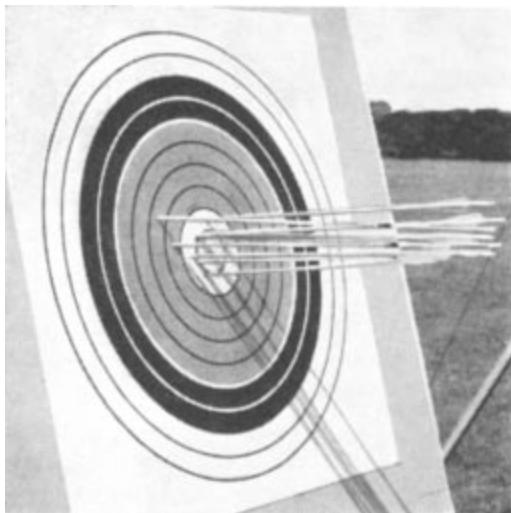
Personal weapons of war have often been used for sporting purposes with the object of encouraging individual proficiency. It may be seen in such activities as throwing the javelin, and fencing. The two main forms of exercising with the bow were shooting at marks at varying ranges, from which modern target shooting developed; and flight shooting, which is a competition for distance without regard to accuracy. This latter form of archery was particularly popular among the Ottoman Turks, and for this purpose they developed their delicate, though powerful, short flight bows. Though unsuited for war, they were among the most efficient bows ever devised. Exponents in this art could project their specially designed arrows over considerable distances, the greatest recorded range being

and these weapons were carried by the hordes of Gengiz Khan and Tamerlane. The Arab conquerors spread them through North Africa, and the Bashkiri levies brought them to the walls of Vienna under Sulieman the Magnificent in 1529. Their pliability enabled them to be made short

over nine hundred and seventy yards. This technique had an obvious application in war, as it enabled a group of archers to engage a massed target at a range in the order of four hundred yards when using the more robust war bow and the heavier steel-headed arrow.

## Modern Archery

It is only in the last thirty years or so that archers in the West really began to appreciate the great advantages offered in the basic design of the composite bow. Able scientists and engi-



neers, mainly in the U.S.A., made thorough investigations into the technical aspects, with the result that design rapidly advanced and full use was made of modern materials.

Though regulations have varied for the conduct of both International and National Championships, the longest ranges for men have been either one hundred yards or ninety metres. For shooting at these distances a longbow needed a pull of fifty to fifty-five lbs. — about twenty-five kilos — at full draw in order to keep the trajectory low enough for precision shooting. The same problem faced the ladies, though they shot at shorter ranges with less powerful bows. During the shoot this weight had to be pulled three hundred times and held steady for two or three seconds while the final aim was taken for each arrow. Due to the physical effort involved, relative accuracy tended to drop toward the end of the day. It was obvious that if a bow could be designed with a lighter pull which would still give the necessary velocity to the arrow, it would be easier to control, fatigue would be reduced, and higher scores should result.

After many attempts that met with varying success, the modern composite bow was developed. Instead of the organic materials that had proved so successful with the Eastern craftsmen, plastics and fibreglass were tried and tested. During the last decade great progress has been made and the modern bow is far more accurate and

easy to handle than its forbears. A man's bow need only have a pull at full draw of about forty lbs. — or twenty kilos — with the lady's about twelve lbs. — six kilos — less.

A bad arrow cannot be shot straight from even the finest bow, so arrows have also been closely studied. The majority are now made from aluminium alloy tubing, and some even have plastic vanes instead of feather fletchings. An arrow vibrates under the thrust of the string as it leaves the bow. In addition to being checked for length, weight and point of balance, sets for target shooting are also matched with static deflection tests under a weight to ensure their accuracy and similarity in behaviour when they are shot.

## Olympics ahead

Better equipment alone would have resulted in improved scores. The surprising growth of this sport in recent years, with more and younger archers taking active part, coupled with the careful studies that have been made of detailed shooting techniques has led to the achievement of even higher standards.

A Round in archery consists of shooting a given number of arrows at specified ranges. The Federation Internationale de Tir à l'Arc (F.I.T.A.), founded in 1931, at present requires World Championships to be decided by the shooting of two FITA Rounds. For each of these Rounds a total of one hundred and forty-four arrows are shot, with thirty-six shots at four different ranges. The men shoot at ninety, seventy, fifty and thirty metres and the ladies at seventy, sixty, fifty and thirty metres.

Colourful targets are designed with gold centres and red, blue, black and white circles, each being divided into two to give ten-zone scoring. At sixty metres and over the target diameter is one hundred and twenty-two centimetres, and for the two shorter ranges it is eighty centimetres. Though F.I.T.A. is only in its 35th year a number of societies, guilds and clubs were founded a long time ago. Le Grand Serment Royal des Archers de St. Sebastian (Belgium), 1381; the Royal Company of Archers (Scotland), 1676; the Royal Toxophilite Society (England), 1781; and the United Bowmen of Philadelphia (U.S.A.), 1828, are a few examples. Today they all still flourish and maintain their time-honoured traditions.

It is a great reward to all those who have laboured so long, patiently and successfully in the organisation and encouragement of both International and National archery, to find that this old and honoured sport has been included again in the programme under the sign of the five rings for 1972.

*W. F. P.*