The Evolution of Ski Technology

The use of skis probably began near the end of the last ice age, approximately 10,000 years ago. Remnants of the earliest skis discovered by archaeologists—found in a bog in Russia—date back about 8,000 years, and were made of wood. Skis have also been depicted in cave drawings in Norway and Russia. The earliest of these drawings, which clearly depict skiers on two skis and using ski poles, date back between 3,500 and 4,000 years. These early skis were made of single pieces of wood, and tended to be flat, short, wide, and heavy. Wood skis continued to be made this way well into the 19th century, when technological improvements changed the shape of skis, the materials used to make skis, and the fasteners used to laminate dissimilar materials.

The first major improvement in the technology of ski construction took place in Norway around 1850. According to the International Skiing History Association, the use of a camber, or bow, in the middle of the ski enabled the skier to ski more easily. This design also enabled ski makers to create skis that were much thinner, narrower, longer, and lighter. This enabled the skier to expend less energy while skiing, and also enabled the skier to move faster and maneuver better.

The next major improvements in ski technology occurred near the end of the 19th century. First, modern tools enabled ski makers to make skis out of hickory, a very hard and durable wood, but wood that was very difficult to work with using standard hand tools. Then, the first laminated skis were introduced, making the skis stronger, lighter, and much less expensive because a cheaper wood such as spruce or basswood could take the place of much costlier hickory or ash.

The first serious use of metal in skis began in the 1920s. Steel edges were added to wooden skis to make the skis grip better while retaining the flexibility of wood. Also in the 1920s and 1930s, the first solid aluminum skis were designed and produced.

In the 1940s and 1950s, developments in airplane technology led to improvements in ski technology. Aluminum skis, which had experienced many problems, were refined and improved, and plastic became increasingly important in skis made of multiple materials, including wood, steel, and reinforced fiberglass.

Fiberglass skis were perfected in the late 1950s and early 1960s, and by the end of the 1960s, fiberglass had overtaken both wood and aluminum as the most popular ski material. Another major improvement in ski technology resulted from the design of better fastener technology, and the development of far more effective glues for laminated skis.

In the past two decades, improvements in fiberglass technology—and the addition of other materials to the fiberglass—have resulted in incremental improvements in skis. The use of polyethelene, carbon fiber, and even steel have also resulted in improvement in the flexibility and durability of modern skis.