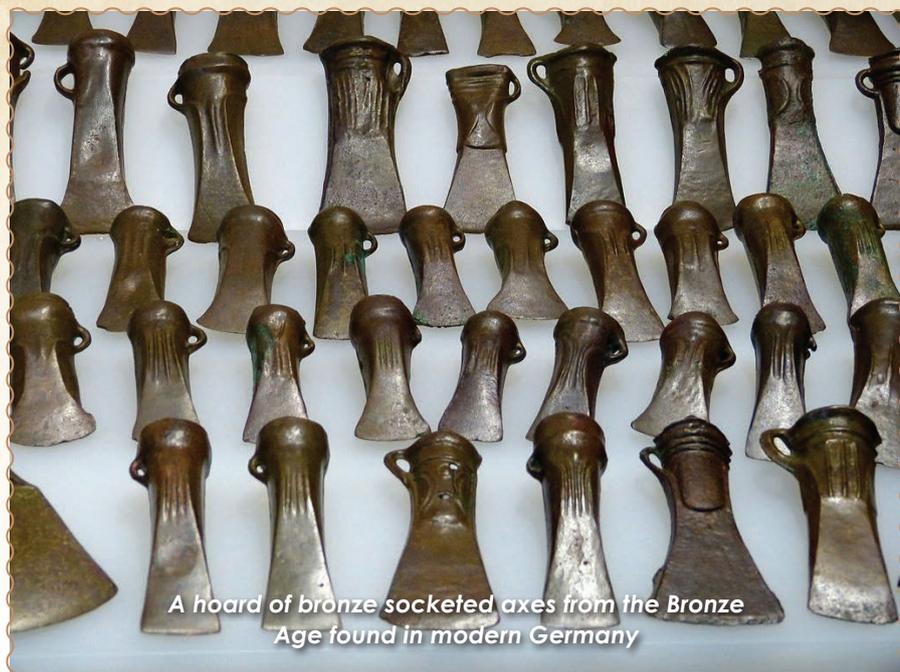


# The history of the flathead axe



**H**umans have used axes for most of our history. The inherent usefulness and versatility of these tools made them an obvious choice for the fire service. The history of the axe in the fire service is hard to trace, simply because of how closely the two have been tied throughout time. Suffice to say that for as long as people have been fighting fires, there was probably an axe being used to help with it.

Initially axes were tools of stone called hand axes, used without handles (hafts) and had knapped (chipped) cutting edges of flint or other stone. Stone axes made with ground cutting edges were first developed sometime in the late Pleistocene in Australia, where ground-edge axe fragments from sites in Arnhem Land date back at least 44 000 years.

Ground-edge axes were later invented independently in Japan sometime around 38 000 years ago and are known from several Upper Palaeolithic sites on the islands of Honshu and Kyushu. In Europe, however, the innovation of ground edges occurred much later, in the Neolithic period ending 4 000 to 2 000BC.

The first true hafted axes are known from the Mesolithic period circa 6 000BC. Few wooden hafts have been found from this period but it seems that the axe was normally hafted by wedging. Birch-tar and raw-hide lashings were used to fix the blade.

From the late Neolithic/Chalcolithic onwards, axes were made of copper or copper mixed with arsenic. These axes were flat and hafted much like their stone predecessors. Axes continued to be made in this manner with the introduction of Bronze metallurgy. Eventually the hafting method changed and the flat axe developed into the 'flanged axe', then palstaves and later winged and socketed axes.

The axe has many forms and specialised uses but generally consists of an axe head with a handle or helve.

The axe is an example of a simple machine, as it is a type of wedge or dual inclined plane. This reduces the effort needed by the wood chopper. It splits the wood into two parts by the pressure concentration at the blade. The handle of the axe also acts as a lever allowing the user to increase the

force at the cutting edge, not using the full length of the handle is known as choking the axe.

Generally, cutting axes have a shallow wedge angle, whereas splitting axes have a deeper angle. Most axes are double bevelled, ie symmetrical about the axis of the blade but some specialist broadaxes have a single bevel blade and usually an offset handle that allows them to be used for finishing work without putting the user's knuckles at risk of injury. Less common today, they were once an integral part of a joiner and carpenter's tool kit, not just a tool for use in forestry. A tool of similar origin is the billhook.

Most modern axes have steel heads and wooden handles, typically hickory in the US and ash in Europe and Asia, although plastic or fibreglass handles are also common. Modern axes are specialised by use, size and form. Hafted axes with short handles designed for use with one hand are often called hand axes but the term hand axe refers to axes without handles as well. Hatchets tend to be small hafted axes often with a hammer on the back side (the poll).

### Design

The flathead axe has three essential parts. First, the cutting wedge or blade of the axe, this part is used for cutting and sometimes prying motions. Secondly, the striking face or rear of the axe head. On the flathead axe, the back of the axe is flattened and serves as a striking tool much like a sledgehammer. This is the main difference between the flathead axe and its cousin the pickhead axe. Finally, there is the 'haft' or handle of the tool. It is where the axe is gripped in use.

### Uses

The flathead axe has many different uses on the fire ground.

### Forcible entry

Together with the Halligan bar the flathead axe makes a set that we call 'the irons' or 'the marriage'. This combination of a prying tool and a striking tool are used primarily to achieve entry into locked buildings

to allow fire fighters to perform search and rescue ops, as well as to put out the fire. There are also techniques that can be used to make entry with just the flathead axe. It is less reliable than using the irons but in certain situations may be necessary or may be quicker.

### Search and rescue

The flathead axe is one of the main tools that are used once you've gained entry to search a burning building for victims. The axe is gripped near the head and the haft is used as an extension of the arm to allow the fire fighter to search a larger area in zero-visibility conditions.

### Overhaul

The flathead axe can be used to chop and smash through areas when checking for fire extension into walls and ceilings to prevent a fire that had been extinguished from rekindling. Pike poles are more frequently used for this work but in some situations the flathead will be a better choice of tool.



*The inherent usefulness and versatility of these tools made them an obvious choice for the fire service*

An ancient tool, the axe provides fire fighters with the advantage of a multi-purpose device. A fire fighter and his axe are like the sea and its waves. ▲