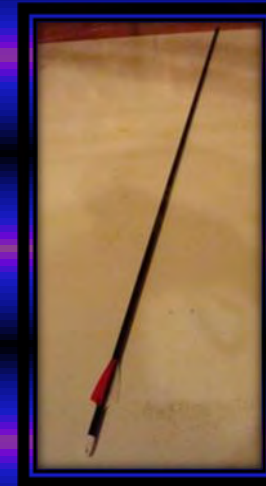


# THE BOW



&

# THE ARROW



By: Conner Sorley and Anson Dinh

# INTRODUCTION

In this document we will be breaking down and explaining the materials and concepts of a bow and arrow. We will also explain where on Earth the materials come from.

The bow and arrow is our choice because we both do archery and Conner Sorley is a major competitor in the world of Saskatchewan Archery. And Anson Dinh likes to blow up balloons.

**\*\*Some of the chemical compounds are not listed for competitive reasons.\*\***



*Conner Sorley*



*Anson Dinh*

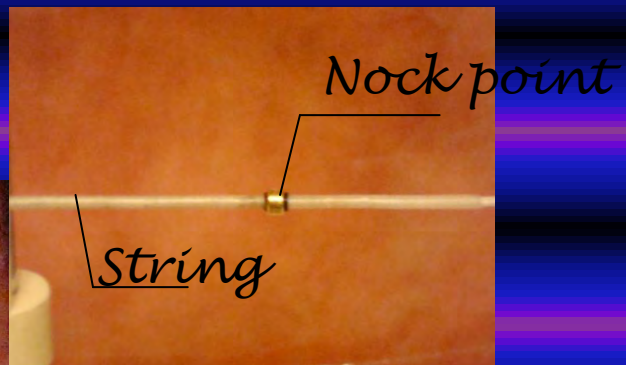
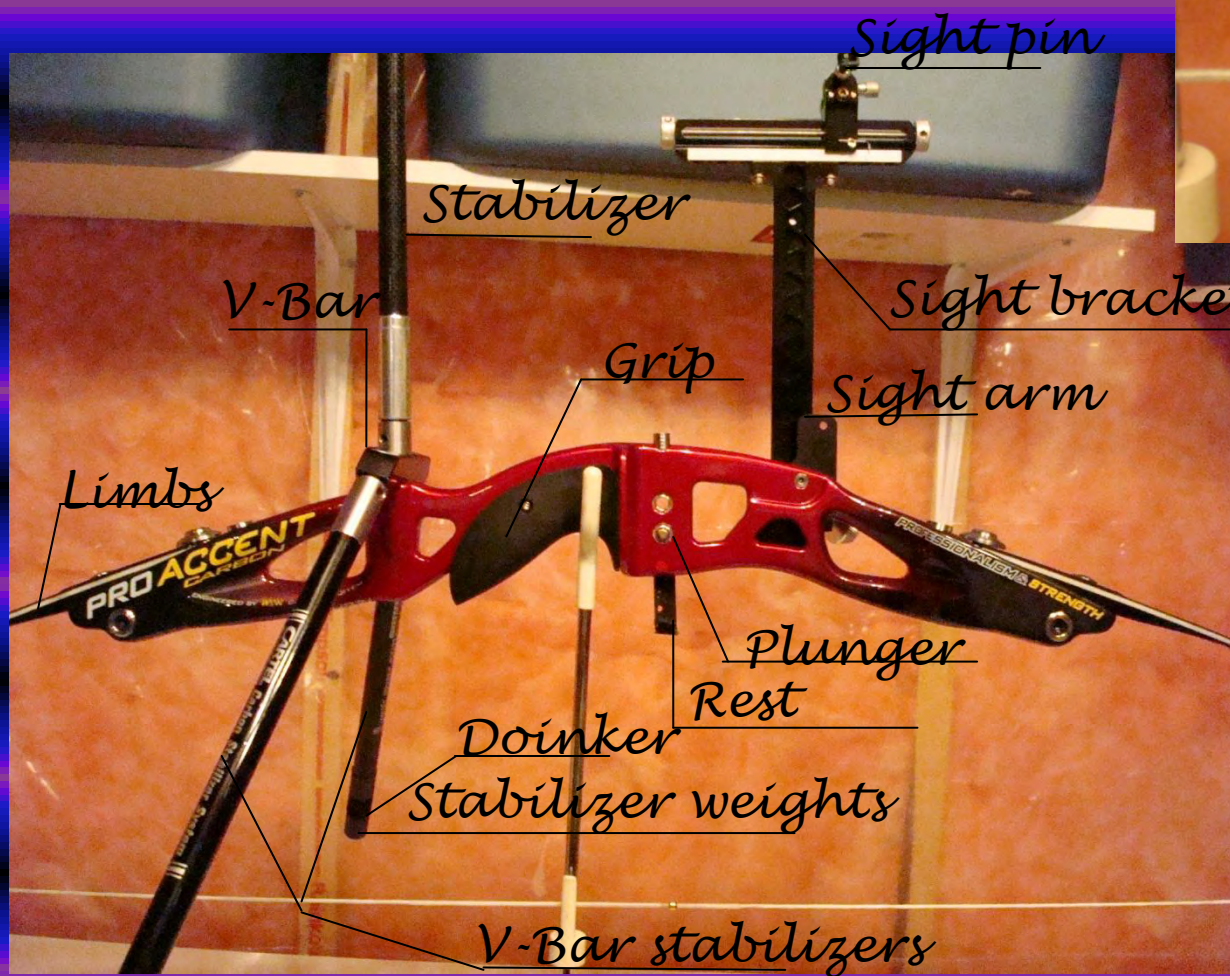
# HISTORY OF THE BOW

- 🎯 There is recollection of bows and arrows being used between 8,000 and 9,000 BC in Schleswig Holstein (northern Germany).
- 🎯 Elm and yew seems to have been favoured woods for bow making.

# THE HISTORY OF THE ARROW

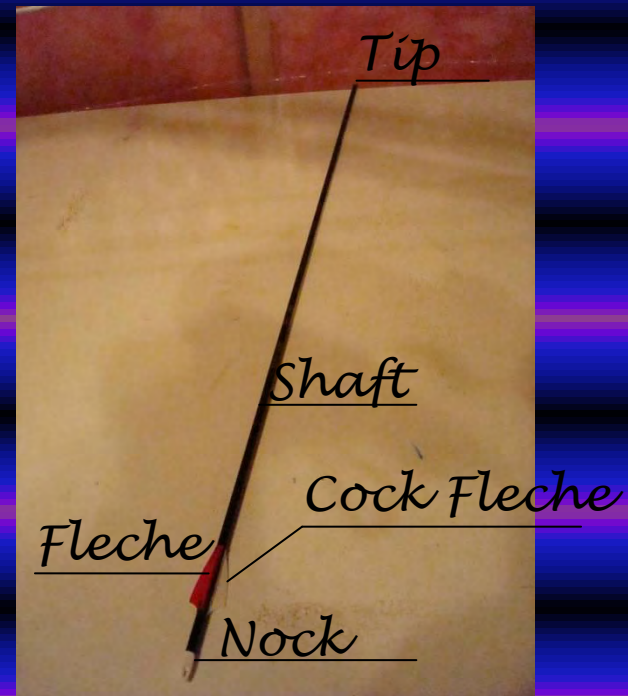
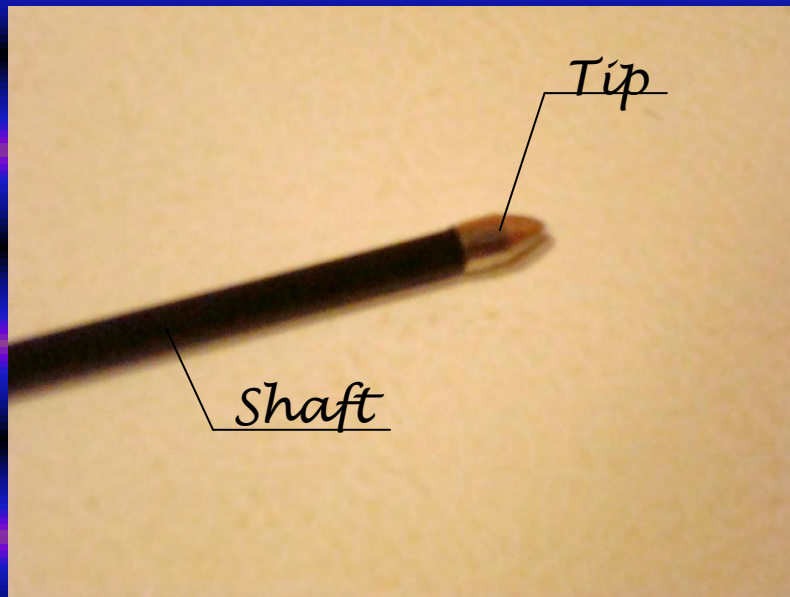
- ① Arrows were made of hazel.
- ② The arrowheads were made of flint and were put on to the arrow shaft with pine resin and sinew.
- ③ The pine resin was heated with charcoal to produce a flexible glue of great strength.

# MODERN BOW

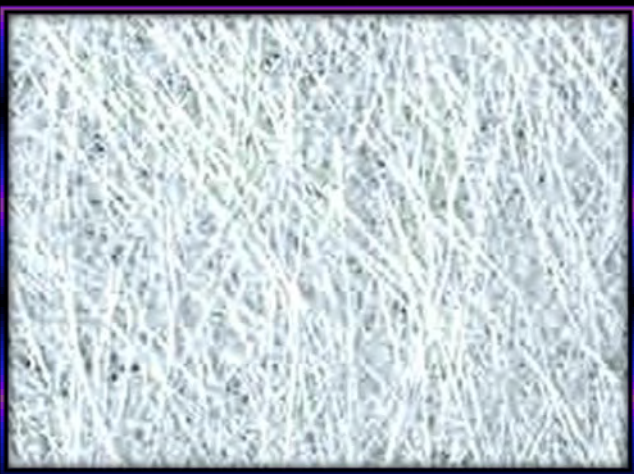




# MODERN ARROW



# FIBRE GLASS



- ① One of the ways sand is created is when rocks are moved down stream in a current in a river the slowly grind into smaller pieces.
- ① China is the main producer.
- ① Fibreglass is located on the outside of the riser and limbs.
- ① Canada is the third largest producer of fibreglass.

- ① Fibreglass is made up of many pieces of thin glass.
- ① It was invented in 1938 by Russell Games Slayter. It was intended to be used as insulation but later developed into more things.
- ① Silica is the main base for fibreglass.
- ① To make fibreglass you need sand and sand is almost everywhere on the earth.

# CARBON FIBRE

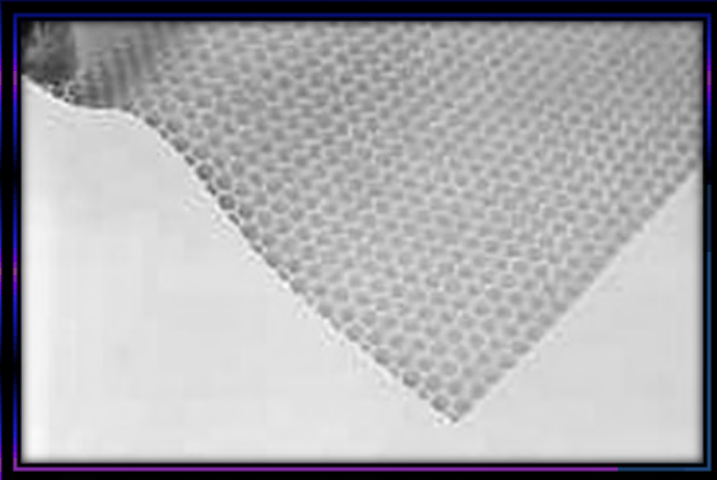
- ⦿ In 1958, Dr. Roger Bacon created the first high-performance carbon fibres at the Union Carbide Parma Technical Center, found just outside of Cleveland, Ohio.
- ⦿ Carbon fibre as many names including graphite fibre and carbon graphite.
- ⦿ The fibres in carbon fibre are 0.005–0.010 mm in width.



- ⦿ Toray Industries (found in South Korea) is the largest manufacturer of carbon fibre.
- ⦿ Carbon fibre is located on the riser under the fibreglass, the limbs, the arrows, and the stabilizers.
- ⦿ There are many types of carbon and patterns that you can weave it into but they all have the same concept.



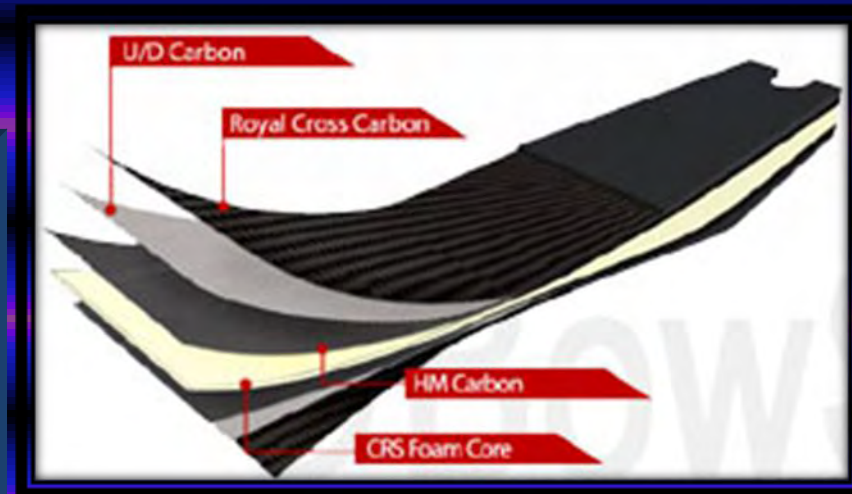
# HIGH DENSITY HONEYCOMB FOAM



- ① Foam is made out of gas bubbles that are trapped inside a liquid or a solid.
- ① In this case the foam is trapped inside a solid.
- ① Honeycomb foam is found inside the riser underneath the fibreglass and carbon fibre layers making it keep the risers shape firm and light weight.
- ① The chemical compounds for this material are not listed.

# CRS FOAM

- CRS foam is a high density foam that is put inside of the limbs of the bow to help keep its shape and make it light.
- DOW is the largest manufacturer of CRS foam in the world and the head office is located in Houston, Texas.



# DYNEEMA



- ⦿ Ultra high molecular polyethylene (Dyneema) is the world's strongest man-made fibre.
- ⦿ It offers maximum strength and minimum weight.
- ⦿ Dyneema makes up the string on the bow.
- ⦿ DSM is the largest manufacturer in the world.
- ⦿ DSM is located in the Netherlands.

# PLASTIC

- ① Plastic is found wound around the middle and ends of the string, on the arrow nock, and on the fleches and cock fleche.
- ① The majority of plastics are made of polymers of carbon and hydrogen alone or with oxygen, nitrogen, chlorine or sulphur in the backbone.
- ① China is the largest producer of plastic.



# ALUMINUM

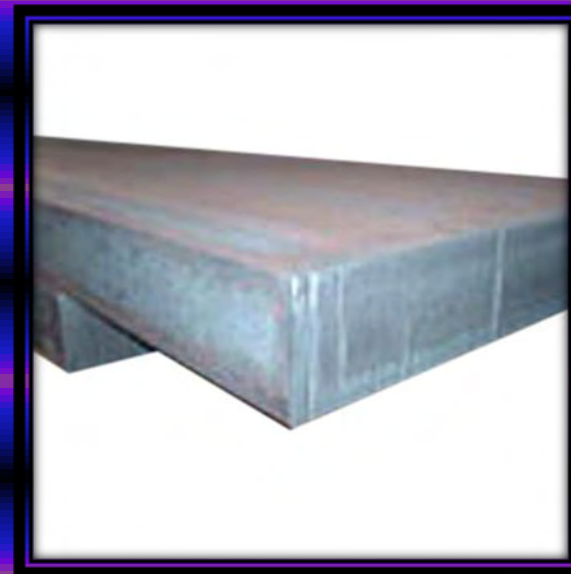


- ① Aluminum is found in the stabilizers, V bar, bolts in the limbs, the core of the arrow and the sight.
- ① Aluminum's atomic number is 13 and makes up 8% of the earth's solid surface weight.
- ① China is the largest exporter of aluminum.



# STEEL

- ① Steel is an alloy that consists mostly of iron and 0.2-2.14% carbon.
- ① Steel is found mainly in all the screws that holds the bow together. However it is also found on the clicker, sight, tips of the arrows, and stabilizers.
- ① Steelnet is the largest manufacturer in North America.
- ① Canada is the fifth largest manufacturer in the world.



# BRASS



- 🎯 India is the largest exporter of brass.
- 🎯 Brass is an alloy of copper and zinc.
- 🎯 The brass on my bow is only found on the nock point.

# GOLD

- 🎯 Gold's atomic number is 79.
- 🎯 The only gold on my bow is on the edge of the plunger it is leafed with gold to that it doesn't wear down the plunger.



# RUBBER



- 🎯 Rubber can be gathered by tapping a Para Rubber Tree that can be found in Brazil.
- 🎯 On the bow the rubber is found on the nock point and stabilizers.
- 🎯 Brazil is the largest producer of rubber.

# CORK

- ① Cork is a type of plant called the cork oak tree.
- ① Cork is found only on the inside of the clicker so it doesn't destroy itself.
- ① Cork oak trees are found in Portugal, therefore Portugal is the largest producer.





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