**The Horse Collar**

Hi. How are you? It’s good to see you. Thanks for coming. I'm going to start a new series of five-minute talks. Some people don't have long enough to listen to my other talks, so, I’m going to make some short talks. This is the first one. I'm going to talk to you about the horse collar. And I'm going to try and do it inside five minutes. OK. Here we go.

So, OK, you all know what a horse collar is. A horse collar is a collar made of probably leather that a horse wears. And it wears it in order to pull something; either a court … either a cart, or a plow, or some other kind of farming implement. OK? The horse collar that we know, and we have today, was invented in China in about 221 BC, during their Warring States period. Before then, horses basically pulled things by having a rope lashed around their throat and tied to whatever they were pulling. You try doing that. You try pulling something with a rope around your throat. Is it easy to do? Of course it's not easy to do. If you have a rope around a horse's throat you're crushing its throat, its larynx, you're also crushing its arteries, you’re stopping blood getting to its brain, you're hurting the horse. No animal is going to pull anything that's hurting it. So, it's very very hard to make horses pull things, so they weren’t used for anything really, other than riding. In most European … in most countries … in most farming countries, people did the farming with ox. Oxen were used to pull plows and to pull carts. Oxen are quite strong, but they’re very very slow.

OK. 221 BC in China, a horse collar, basically a breast strap, is introduced. This goes across the horse's chest and round the middle of the horse This is much better than the original collar because it doesn't constrict the throat, but it's not the best idea yet. In the fifth century AD, in China, there is another huge leap in this, and they have the collars we have today. Basically, this is a stiffer collar, and what this does is in … it enables the horse to push rather than pull. Because the collar is stiff, the horse with its shoulders is basically pushing the collar along. So, because of that, they can use their hind legs and that means they can put in far more strength and they can push much much heavier loads. Doesn't hurt them of course.

So, in about 900AD, this collar spreads all over the real … world, and it reaches as far as England. In England, up until that point, of course, they've been using oxen in the fields. Now, a horse has far more power than an ox: 50% more power than an ox. A horse can work for longer. A horse has more endurance. It can work longer. It can work faster. It can work basically all day. Horses are far more efficient than oxes are … than oxen are. So, once we have these horse collars introduced into Europe, into England, there are huge changes in society. “Now, why would that be?” I hear you ask. Well, in two ways.

The first way, of course, is it decentralizes the agricultural industry. Up until that point, people had to live by their fields. Oxen are very very slow, very heavy. They cannot travel that far. So, an ox couldn't travel much further away than where you wanted it to work. Horses, of course, can. Horses are fast and they can walk a long way. So, once you replace oxen with horses, you can now ride your horse to work, to your farm. You can basically commute. So, because people were able to use horses, they no longer had to live next to their fields. So, instead of having people living by their fields all over the place, you could suddenly have centralized villages. People could live together and work in other places. So, communities developed that wouldn't have developed before. Thanks to the horse collar.

And the second thing is, because horses are far more efficient and can work for many more hours than an ox can, farmers can grow more. Farmers can produce more. Up until that point, basically, farming was a subsistence in … industry. You would grow as much as you needed to eat, or as much as you had to give to the lord of your land. You wouldn't be able to grow any more than that. And it would be a struggle to produce even that much. Once you have horses, once you have become more efficient, you can grow more than you need. This enables farmers to specialize in certain crops, and it also enables farmers to start buying and selling the extra produce. And, because of this, suddenly England develops a merchant class. Unheard of before, farmers start to become wealthy. Some farmers start to rise up and become wealthy landowners themselves. And, the horse collar is one of the main reasons why the feudal system that existed in England up until that point breaks from this point. The horse collar revolutionized society in Europe and in England. People never think about that. It's very very interesting. If you're interested research it yourself. I have run out of time.

Thank you very much for watching. As always, if you click the link in the description down there, you can find the script for this talk, you can find questions, you can find answers. If you liked it click like. If you want to subscribe, that's over here, looks like my head. Thank you. Talk to you next week. Bye.

**The Horse Collar Questions**

1. What is a horse collar made of?

A: Wood

B: Metal

C: Leather

D: Plastic

2. What is the main purpose of a horse collar?

A: To control a horse.

B: To make a horse look fashionable.

C: To enable a horse to pull something.

D: To hold the horse’s neck tight.

3. Where was the horse collar invented?

A: England

B: China

C: France

D: Japan

4. Which of these is not an advantage a horse has over an ox?

A: It is more powerful

B: It has more endurance.

C: It can work for longer.

D: It cannot be ridden.

5. Why did people have to live by their fields before the horse collar was introduced?

A: Because oxen cannot travel very far.

B: Because horses are too expensive.

C: Because they didn’t have houses.

D: Because horses are more efficient.

6. What is a subsistence industry?

A: A job where you grow vegetables.

B: A job where you work on a farm.

C: A job where you have to buy and sell vegetables.

D: A job where you only make just enough to survive.

7. The horse collar revolutionized society. Give an example of another invention that has revolutionized society. Explain the invention and discuss the changes that came about because of it.

8. Is it ok for humans to use animals?

9. Why do most counties eat pigs, cows and sheep, but they don’t eat horses, cats and dogs?

10. How do you think the agricultural industry will change in the next fifty years?

**The Horse Collar Answers**

1. C 2. C 3. B 4. D 5. A 6. D

7. The horse collar revolutionized society. Give an example of another invention that has revolutionized society. Explain the invention and discuss the changes that came about because of it.

 I would like to talk about the washing machine. It has been said that the washing machine did more for women’s emancipation than anything else thus far in history The first real washing machine was invented in 1797, and the first commercially available model was made in the mid-1800s. Until the late 1920s it was a luxury that had to be driven by a gasoline engine. By the 1930s, electricity had spread to most houses and sales of the new “electric washing machine” started to take off. So, how did it help women? Before the invention of the washing machine, clothes were all washed entirely by hand. Water would be carried up to ten times from a communal pump to wash the clothes. Then, after they had been soaped, more water was required to wash the soap off. Then, the clothes had to be wrung dry by hand. It would take almost an entire day to wash a family’s clothes, often more than once a week. And who did the washing? The women. The invention of the washing machine freed women from this laborious task and gave them far more time to work, study or pursue other activities. Subsequent inventions, such as the fridge and the microwave, continued the trend, but the washing machine was the most significant.

8. Is it ok for humans to use animals?

 The trouble with this question is that it is asking us to view activities a thousand years ago with the mindset that we have today. The talk discusses the use of horses and oxen as laborers on a farm. At that time, animals were seen as a tool. A horse was expensive, so it would be used every day until it couldn’t function anymore. Was that right? Would it be ok today to do the same thing? No, of course not. In our time, animals have rights. As they should. However, we have the luxury of alternatives to animal power and we can afford to give them rights. A thousand years ago, if you had no horse, you would have to plow your field by hand. Some people would argue that plowing a field by hand is an acceptable consequence of giving a work horse its freedom. I would guarantee that the person who says that, has never had to plow a field by hand.

9. Why do most counties eat pigs, cows and sheep, but they don’t eat horses, cats and dogs?

 Well, some countries don’t eat pigs, cows and sheep, while they do eat horses, cats and dogs, so my answer will obviously be culturally based. In the UK, where I am from, we do not eat horse, cat and dog. I would suggest that the reason is those animals are more useful to us alive than they are as food. We can ride horses and they work in our fields. Cats catch mice and birds that would eat grain or crops. And dogs protect us or help us hunt. Each animal has a purpose that we need. These days we don’t use them for the same reason, but the habit of not eating them has become engrained in our culture. Although, some countries that don’t eat these animals now, may have done so in the past. Countries that suffer through war or famine are likely to start eating dogs and cats. If you are starving, your cultural morals go out of the window.

10. How do you think the agricultural industry will change in the next fifty years?

 The two biggest changes I see in the future are automation and farm size. Obviously, the drive towards automation at the moment will only pick up speed. Already, in the US, there are automated combine harvesters that harvest wheat. As with any other driving industry, these jobs will soon be replaced by computers. Automated farm machinery will reduce the number of people required and will probably reduce the cost of food.

 The second change I see is farming size. As the world’s population expands, we are going to need to produce more and more food. Genetic engineering can help us produce better and stronger food, but we need somewhere to grow it. Automated machines will begin tending farms that are many times larger than the farms we have today. The Earth still has a large amount of land that could be, and will have to be, used for farming in the future. The impact this will have on the world’s ecosystem is another problem altogether.