



## **LISTENING SCRIPTS**

### **PART I: WHILE LISTENING**

I'm Professor Sam Richards, and I've come as the third guest lecturer on this course on Australian wild birds. My job is to watch peregrines in Tasmania. Of course this is not just bird watching as a hobby. This is watching them in a scientific way and doing research on them. So I'll start by giving you some background information about these magnificent birds before I continue talking about my own project.

Now, a little bit of information about the places where these birds are generally found. Peregrine falcons are found on all continents around the world, Asia, Europe and the Americas. But with one exception - and that's Antarctica. So don't go looking for them at the South Pole. You will not be able to find any peregrines in the Antarctic region. They are found almost everywhere in Australia. And it's interesting to note that the name, peregrine, comes from Latin, and it means "moving from one place to another." This is a suitable name for these birds because in most parts of the world, they migrate. But this is not the case in Australia, because here, they prefer to stay in one place.

Now, let me give you some information about the speed of these birds when they are flying. Peregrines are known to be the world's fastest creature. They have been tracked by radar and the results are very interesting. According to some, they can dive down towards the ground at 180 km an hour. However, a number of textbooks claim that their flight speed can go as high as 350 km an hour. So, we can only say that there is still disagreement about how fast they can actually fly.

OK, what about their appearance? Male peregrines are mostly red in colour, and in contrast, the female is more like brown. They are different in weight too. Female peregrines are larger than their male counterparts. In fact, the female weighs almost 30 per cent more than the male bird. While she stays close to the nest in order to protect the eggs and the young chicks, the male is mostly busy with looking for food. So the female bird takes care of the eggs and the young, but the male bird flies around and he is the one which brings the food.

So, let's look at the first days of a young bird. When the chicks are about 20 days old, they start to fly. So they fly at a very young age. By the time they are just 28 days old, they have already reached full adult size. In other words, they are fully grown. Soon after this, at about two months after coming out of the egg, they leave the nest forever. From this time on, they are on their own. But the young birds are not good at finding food for themselves, and so during the first year, about 60 percent of them die. If they manage to live for 2 years, they generally continue to live for another six or seven years. Ok, now, I would like to give you some information about our research. When we come across nests with young chicks, the first thing we do is catch the chicks before they are able to fly. We have to catch them at an early age. If they have learnt how to fly, then it is really impossible to catch them. Then, we attach identification rings to their legs. These identification rings are made of aluminium. They allow us to identify the birds, and to watch them later in their lives. So, first, catch the bird, second, attach the identification ring. What comes next? Because we need to know how many males and how many females are born each year, we write down the sex of the chicks. Writing the sex of the bird is a vital part of our research. The next thing to do after this is to take a blood sample from the chicks. We take the blood sample so that we can check the level of pesticide in their bodies. Peregrines can build up dangerous levels of pesticide in their blood. Can you imagine how this happens? Well, they feed on smaller animals, and the smaller animals eat crops from farms where pesticides are used. Finally, we check the birds' general health. This health checking process can take a few minutes. In fact, most of our time is actually spent trying to find the birds. After we find the birds, all the other steps I have just explained take a lot less time than this.

Well, that's all I have for you today. If you'd like to do some further reading, I'll put some material on the course website.



**SAMPLE PROFICIENCY EXAM**  
**LISTENING SCRIPTS (SESSION II)**

**PART II: NOTE-TAKING**

**MAPMAKING AND PAPER TOWNS**

Hello everyone. Welcome to my class. As I said last week, we have a really interesting topic to talk about today. We will talk about maps and mapmaking!

For thousands of years, we have been using maps to guide us through unknown places. Maps show us the locations of countries, cities, mountains, lakes and many more important places. Thanks to them, people walked around the foreign places with confidence. They were able to sail through tough, vicious and hideous seas and oceans. Naturally, making these maps has become a very serious, and important job. In today's lecture, I will focus on this job. We will talk about the history of mapmaking, and I will focus on an interesting thing that mapmakers do in order to ensure that people are not copying their maps without permission.

Let me start with a brief introduction about mapmaking. As I have said, it is a very serious and ancient profession. It could have originated as early as the 7th millennium BC. This means that mapmaking could be a 9-thousand-year-old practice. Quite old, right? Ever since that time, a huge number of maps have been produced. These maps used to be made on rocks and paper, however, for the last 70 years, mapmaking has been digital. In these last 70 years, many technological tools have been utilized to make our maps as correct as possible. Ever since the beginning, mapmaking has been regarded both as a science and an art. It is a science, because we are using science to produce maps correctly. It is also an art, because these maps need to look pleasing. A boring-looking map will not be bought by anyone.

Now, let me talk a little bit about the history of mapmaking. Mapmaking has a long history, but its origins are rather unknown. The earliest attempts at maps are likely to be found in cave paintings. However, the meanings of cave paintings are usually unclear. So, archeologists can never be sure whether the drawings are actually maps, or they had some other purposes. Most of these paintings show animals, rivers and trees. These cave paintings can be actual maps for the location of these animals, rivers or trees; or they can just be about the daily lives of these ancient people. We can never be sure.

As the number of civilizations increased and humans established cities and empires, just like the city of ancient Babylon, they started to feel a need for professional mapmaking. The first undoubtable examples of maps can be traced back to the city of ancient Babylon. The maps which were found about this civilization were made on the walls of the buildings. These maps are very simple and they show the general area of the city. The description of neighbor cities can also be seen on these maps. As I have said, these maps were made on strong walls. Thanks to that, these maps were able to survive until modern times. The same thing cannot be said for Ancient Egypt. While Ancient Egyptians produced certain maps, these maps were mostly drawn on paper. Most of these paper maps were either burned away or they were lost naturally.

Another ancient civilization that I want to talk about now is Ancient Greece. A great breakthrough in the practice of mapmaking happened around 300 BC in Ancient Greece. Greek mapmakers were the first ones to study mapmaking scientifically. Their scientific approaches improved mapmaking greatly. They invented new methods to improve the accuracy of their maps. Certain Greek scientists wrote important books about mapmaking and set up the basic principles of map making processes. However, most of these books, and thus these scientific methods, were forgotten during the following Roman Ages. Unfortunately, this was very bad for mapmaking. Mapmaking lost its importance during the Roman Ages, there was little or no improvement about mapmaking at that time.

Now, it is time to talk about Arab scholars and their contribution to mapmaking. Arab scholars were the ones who brought this ancient science back to life. The science of mapmaking gained importance again in the 8<sup>th</sup> century AD. This happened when Ancient Greek books were uncovered by Arab scholars and scientists. These people translated the Greek books into Arabic and studied the methods and knowledge in these books to improve the field. The Arab scientists made great contributions to the field. The maps that they produced were amazingly accurate. One of these Arab scientists was Al-Idrisi. His book contains an astonishingly accurate map of the world. In this map, nearly all of Europe is drawn correctly. When you look at the map, you will recognize many places. The map also contains a detailed description of North Africa. Al-Idrisi did not depict the rest of Africa but his work on the north part of the continent is amazing. Along with these, we can also see the Far East in this map. These areas are also drawn very detailed. You can even see some islands near the Australia continent. It is amazing that Al-Idrisi, without any modern



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technological tools, was able to draw the maps of these places accurately. He drew this map in 1154, and this map was so accurate that it was copied and used by many people for nearly three centuries.

Now, let's approach more modern times. Now, we will look at the story of mapmaking during and after the 15<sup>th</sup> century. Those years were very crucial in the history of mapmaking because scientists made many important scientific discoveries regarding maps and exploration. As you know, many sea explorers started to sail around the world in the 15<sup>th</sup> and the later centuries. These people needed accurate maps in order to navigate through oceans and lands. What helped them was the discovery of two important tools in the 15<sup>th</sup> century. One of these tools was the compass. As you know compasses show our directions. Thanks to the compasses, mapmakers were able to draw much more accurate maps. The other tool was the sextant, which can be spelled as s-e-x-t-a-n-t. Sextants allowed mapmakers to measure the angle between a star and the horizon. This was a huge discovery. When mapmakers were able to measure the angle between a star and the horizon, they were able to better understand their location on earth. These discoveries changed the future of mapmaking.

Lastly, I want to focus on recent practices in mapmaking. Let's talk about the 20<sup>th</sup> century and the progress that mapmaking has made until now. A big contribution to mapmaking was the use of plane photography. Mapmakers and governments hired planes and cameras and flew through the lands and seas to capture photos. Later, they used these photographs to draw complete maps of cities, mountains, lakes and many other things. The most important use of plane photography was in the area of drawing city maps. Plane photography enabled mapmakers to draw better maps of cities. They were able to see the shape of the streets and avenues better and closer. This data was later used in the planning of cities.

As you can guess, however, the biggest technology that helped mapmaking was the invention of satellites. This great innovation paved the way for the most accurate map making methods. Even though the first satellite images were low quality, these satellites proved that it was the best method in mapmaking. The invention of satellites also brought a new perspective to the science of mapmaking. Mapmakers are now able to compare the satellite pictures of the same locations from different times. By doing that they are able to track changes in rivers and lakes. By comparing different satellite pictures, mapmakers are able to detect the changes in rivers. This data is especially useful for environmental scientists.

The last thing that I want to focus on in this lesson is about a trick that mapmakers use. Before I explain what this trick is, let me tell you why mapmakers are using this trick. As mapmaking is a very long, tedious and difficult process, mapmakers want to make sure that other mapmakers do not copy their work, in other words, they do not want others to plagiarize their map. So, what do they do to understand when other mapmakers plagiarize their work? They create "paper towns". But what is a "paper town"? Of course, they are not towns or cities made out of paper. Paper towns are imaginary towns that mapmakers place on their maps. They just find an empty space on the paper and write an imaginary name in that space, as if there was a real town in that location. When mapmakers see their own imaginary paper town on someone else's map, they understand that that person copied their map.

So, this is all for now! I love talking about maps and mapmaking. I could go on for hours and hours. Just like I have said at the beginning this is both art and science! I just love it. I hope you were not bored, but liked this lecture.

So, stay safe and I will see you next week.