

## **Talks by Bill Coombes**

I present quite a number of different talks that will suit most audiences. I do have a few that are very specialised and are more suitable for a technical audience such as a University or a Club that have an interest in that subject. They are in the Specialised Talks list.

All of the other talks are suitable for any audience and I adapt them to suit the age range of the people that I am speaking too. All of the non-specialised talks are in plain English and should be understood by most people. Most talks last between 3/4 and 1 hour but some can be trimmed to a shorter period.

All I need is a Screen or a White wall to project onto. I bring everything else with me. I am more than happy to take questions as part of the talk.

I don't usually charge for talks that are reasonably local to me but I am always happy to take a donation for Charity. The Charities I support are "The Bournemouth Heart Club", "The Dorset Air Ambulance" & "Macmillan Caring Locally". This is not compulsory but I do try to support these excellent Charities and none of them have highly paid executives on their boards!

I also have a number of walks connected with certain talks, or these walks can be taken on their own.

**The International Space Station** - An explanation of what the ISS is and what it does.

This talk is one of most popular and I have given this one at least 350 times. It covers what the International Space Station (ISS) is and where it is, when you can actually see it at night, it's size and how fast it is travelling and why it's there.

I then run a short video by an Ex Lady Commander of the ISS that shows how you wash, clean your teeth and comb your hair in zero gravity and most importantly, how you use a toilet in space.

I finish the talk with some amazing photos taken from the ISS including some taken by me.

**How to be an Astronaut** - What it takes to be an Astronaut

This talk explains what is needed to become an Astronaut. You don't have to be that young but you do need experience in flying or a degree or PhD in a scientific subject. You also need to be very healthy. It is mainly based around the type of training that Tim Peake had to go through to become an Astronaut and the skills that he already had to be able to apply for the job. Three short videos are shown during the presentation showing actual training and also the recovery of the Soyuz module that he returned to Earth in. I had some contact with Tim whilst he was on the ISS, when he was talking to 10 different Schools around the UK during the time he was in Space.

**The History of Gin** – This is becoming a very popular talk!

A talk on the history of Gin, starting with where alcoholic spirits are thought to have come from, how Gin came about and how it got to the UK. For the last 10 minutes of the talk, I ask for a couple of volunteers to actually make some Gin. This is completely legal and I use commercial spirit as a base which has already had the duty paid on it. During the talk, I cover the terrible problems that Gin caused in the UK in Victorian times.

**The Royal Art of Poisoning** - Deadly Cosmetics, Medicines & Murder Most Foul

How Poisons were/are used to kill people. The toxic cosmetics that people used to use. The "medicines" that did more damage than cure. A poison that people use by choice that kills millions of people around the world.

The deadly plants that live in our gardens and countryside and how they affect people. The talk finishes with details of some of the poisons and toxins that we eat or use in our houses today.

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### **The Enigma Machine** - What it is and how it worked & Why it was so effective

I've always had a keen interest in encryption and use it daily in my work with computer forensics. The earliest encryption that we know of was used by Julius Caesar when he was sending messages to his troops, or back to Rome. It is thought that the Enigma Machine took 2 years off WW2 and saved many millions of lives. The talk covers when the original machine was invented, how it was copied by the Polish and how we 'cracked' it at Bletchley. I also bring along my home built and programmed Enigma Machine that does exactly what the original one did, and is simple to make. I also show my homemade Enigma Machine that is as secure as the original and my 3D printed simplified version. I finish the talk with a brief explanation of uncrackable codes that are still used today.

### **An introductions to Bees** - Not a technical talk but about what it is like to keep & handle Bees

This is a talk about my experience keeping Bees. This is not a talk on how to be a Bee Keeper but about what I had to learn, the equipment I needed, the mistakes I made and how I became confident when dealing with 60,000 Bees once I had opened a Bee Hive. For anyone interested in keeping Bees, this talk is a good introduction. It also covers the history of Bees, their benefit to humans by producing Honey, Propolis, Bees Wax and of course, this lead to the making of Mead.

### **Staying Safe Online** – How not to run into trouble when browsing the web etc

This talk explains how to stay safe online, in a practical and easy to understand manner. To try and help people who either use Email or browse the Web. Also how to use strong passwords, how not end up with a Virus on their computer etc. How to prevent running into problems online, and how to spot scams. This is a practical talk but if people follow what I cover in it, they will be a lot more aware of the various types of Scams, Computer Viruses, Facebook problems etc., and hopefully be a lot more aware of how not to become a victim when online.

I also discuss simple free software that is used to make you safer online and produce strong passwords.

I can do this talk two ways; either as a talk to a group or as a seminar over a couple of hours or so where people bring along their own laptops, tablets and smartphones, then we can correct any problems they might already have or I can suggest what they need to do to protect themselves online.

### **The Pyjama Fairies** - Operating Theatre Gowns & Pyjamas for Children

My Wife has always sewn, her Father was a tailor, and during the Covid lockdown, she made dozens of Scrubs etc for the Health Service.

Since then, she discovered a charity called The Pyjama Fairies and they make Theatre Gowns and Pyjamas for children from babies through to 16 years old. These are distributed via the charity to Hospitals all over the UK for youngsters that are going to have a medical procedure, or life saving operations including open heart surgery or transplants. When I give this talk, Sue comes with me and shows the fabric they are made from, gowns that she still has in stock and how they are made etc. I ask for a donation to the Pyjama Fairies.

### **The New Forest Bombing Range** This covers what went on in the New Forest during WW2

The biggest bombs that fell on England in WW2 were dropped by the RAF. The New Forest became a major site for developing weapons and Sir Barnes Wallis spent 2 years living there during WW2. My talk covers what went on and what was developed there during the war. The site is only a few miles North of Bournemouth yet hardly anyone knows of its existence. As in my Enigma talk, things that were developed in the New Forest helped shorten the war.

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### **Bournemouth, Poole & Christchurch in WW2** - A lot of people don't realise what happened

I always thought that the Bournemouth, Poole & Christchurch area in WW2 got away quite lightly and we were not really affected by the war. This isn't so and there were some really serious events that happened during it. It was also very involved with military research, had a number of Airfields, areas where we encouraged the Germans to deliberately bomb us and an airfield in the sea. There were a couple of really bad events that killed a lot of people, Dragons Teeth scattered in the area and was on Hitler's Operation Sea Lion plan for the invasion of the UK. The more I researched this talk, the more I found out.

### **The Romans in the South of England** - How the Roman invaded the South of England

This is about the way the Roman Empire developed within the UK. How they conquered most of the UK and the parts that they didn't. The South of England was really affected by their arrival and my talk explains more about that.

### **Daily Life in Ancient Rome** - What it was like to be a Roman

This talk is about how people of all status lived in ancient Rome. It covers most things including: The type of housing that was available, family life, the type of food they ate, work & leisure, religion, the medical system, the roles of women, their entertainment, the baths, slavery etc. This talk will be of interest to anyone wanting to know more about the Romans.

### **Roman Ladies/Jewellery** - Showing the skills that Jewellers had in Roman and Saxon times

I originally produced this talk for a group of ladies that were interested in the Romans but didn't want the war and weapon side of the talk. The Romans produced some beautiful jewellery and I show photographs of the type of things they were producing. I also cover the types of clothing they were wearing and their lifestyle. There is also some Saxon jewellery in this talk. I have a very good range of photos from various museums to show as well.

### **A Science Show** A real demonstration of the type of Science that is not taught these days!!

For the last 11 years of my working life, I worked in Science education working with 11 to 16 year old Girls and the last 4 years at a Boys school. It was a real education to me and I really enjoyed working and learning with them. One of my jobs was to try and modernise how we teach Science these days. This talk covers a number of Fun experiments including me bringing along and demonstrating my Van de Graaff Generator that produces around a Quarter of a Million Volts (safely). I usually try to get a 'brave' member of the audience to help me with this device. Ask me for more information.

### **Macmillan Caring Locally** - The superb work this Charity does locally

This talk is based around the excellent work that MacMillan Caring Locally do at their site at Christchurch Hospital. This is the original MacMillan Charity in the UK, runs very efficiently and does not have highly paid executives. The talk covers the start of the charity, what they do, how they run today and the people they help that are not all Cancer patients.

### **Digital Photography** – This talk is the answer of how to get the best from your camera

Many people take pictures with either a Smartphone or a Digital Camera, and then do nothing or very little with the images. We are actually entering a dark age where photos that are taken nowadays could be lost forever as people change their phone or computer and don't keep the photos. This is a talk and demonstration of how to take good pictures with a Digital Camera and Smartphones, and what to do with them after they have been taken. It covers how to get them off of your phone and Camera, how to process them, make slide shows, back them up, etc. all using free software where needed.

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### Specialised Talks:

#### **Watching Meteors by Radio** - How to 'watch meteors' even if it's cloudy

There are a number of Meteors Showing each year but one problem we have here in the UK is the weather. If it's cloudy, you can see them. If the right type of radio is tuned to specific frequencies, you can hear the meteors as they enter the Earth's upper atmosphere. This can be done inexpensively and doesn't need a lot of equipment or knowledge to do so.

This talk explains how to do this and I also have some visual/sound recordings of Meteors entering the atmosphere during a shower and I show this as part of the talk.

#### **High Altitude Balloons** - Sending a Balloon up to the edge of Space and tracking it

This talk is how to make the equipment, data logger and send a balloon up to the edge of Space. I cover what is needed, how to source the parts, how to track it by Radio and once it starts to return to Earth, how to track its path as it returns. This is often done with a School and can be a real fun project that covers all of the parts of STEM/STEAM. It's a very rewarding project that is not expensive but covers a lot of interesting parts of Radio, Computers, Data Collection, Weather, Geography etc.

#### **Battery Technology** - Mainly based around Lithium Technology but cover other Battery types

A good part of my life has been in the Battery industry. When I started, the most popular battery technology was Lead Acid but these days, it's Lithium. I cover the development of the Cell/Battery from early days right up to what we are using these days and where we are going with Batteries. The different types of Lithium, how they work and most importantly, the correct way to charge them.

Lithium Batteries have made a huge difference to the storage of power, giving us lots of power without the weight. In portable power applications, there is nothing to touch Lithium for efficient lightweight storage of electrical power.

#### **MMANA-GAL Antenna Modelling** - Design Antenna systems using this free software

A lot of people who use antennas have probably heard of MMANA-GAL but don't know how to use this brilliant piece of software. It does take a bit of learning but once you have the basics, it is so useful to be able to try experimental antennas on a computer before actually building them.

This software is relatively easy to learn and use and I cover how to get started and what you need to do to produce an antenna. I also show a number of different designs that I have worked with and also where to find user groups etc.

#### **Live Link with Tim Peake** - How UK Schools talked to an Astronaut in Space

During his time in space, Tim Peake had amateur radio contacts with 10 different Schools around the UK. Some of these links also used television as part of the link. Youngsters at these Schools had the chance to ask up to 20 different questions directly speaking to Tim and he answered them whilst still orbiting the Earth on the International Space Station. All of these talks were set up via AMSAT-UK which is the UK Amateur Radio in Space organisation which is a worldwide organisation that launch our own Satellite for use by radio amateurs throughout the world. I am a member of AMSAT-UK and use various satellites for communication with other amateurs around the globe using amateur radio.

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### Walks:

**New Forest Bombing Range** - This is a walk around some of the New Forests WW2 Bombing Range. A lot is still visible if you know where to look and this is a pleasant walk where you can also see a lot of the nature in this part of the forest.

Please ask me for more details if you are interested.

**Tour of Salisbury Cathedral Close**- Salisbury is my home town although I live in Bournemouth these days. The town has a huge amount of history going back to prehistoric times but one of the best known things is the Cathedral. Being over 700 years old, it has a lot of history attached to it. This walk is around the grounds of the Cathedral where some remains of the house that the original designer/builder of the Cathedral lived, right through to fairly recent times where a famous Composer stayed and wrote a well known piece of music. This walk does not cover the inside of the Cathedral, as this is so well done by the guides that are already there, if necessary we have use of the toilets there, and also a visit to the excellent Restaurant is worth a visit.

Again, ask me for more details if you are interested.

**Tour of Roman Dorchester (Dunovarium)** - This walk takes you around Roman Dorchester

This talk is a follow up to my talk about The Romans in the South of England and takes around Roman Dorchester, includes the original walls, a very well preserved Roman town house, a Church where parts of a Roman building were used in its construction and a Gravestone of a Roman who died in AD50.

Dorchester also has an excellent Museum, many very good Cafes/Restaurants, and is easy to get to either by car or train. There is good parking in Dorchester as well.

Again, ask me for more details if you are interested.