

SATURDAY 15 APRIL 2017

**SAT 19:00 The Silk Road (p03qb3q4)**  
Episode 3

In the final episode of his series tracing the story of the most famous trade route in history, Dr Sam Willis continues his journey west in Iran. The first BBC documentary team to be granted entry for nearly a decade, Sam begins in the legendary city of Persepolis - heart of the first Persian Empire.

Following an ancient caravan route through Persia's deserts, he visits a Zoroastrian temple where a holy fire has burned for 1,500 years, and Esfahan, one of the Silk Road's architectural jewels and rival to Sam's next destination - Istanbul. In the ancient capital of Byzantium, Sam discovers how the eastern Roman Empire was ruled through silk and how Venetian merchants cashed in on the wealth and trade it generated.

Sam's last stop takes him full circle to Venice. Visiting Marco Polo's house, Sam reminds us how the great traveller's book was one of the first to link east to west and how the ideas and products that trickled down the Silk Road not only helped to trigger the Renaissance, but set Europe on a path of unstoppable change.

**SAT 20:00 Tankies: Tank Heroes of World War II (b01pvbds)**  
Episode 1

The Second World War was the ultimate conflict of the machine age, and the tank was its iconic symbol. The 'tankies' who fought inside had experience of much of the conflict from the fall of France to the deserts of Africa, from the invasion of Italy to D-Day, and on to the final victory in Germany.

In this two-part series, historian, BBC diplomatic editor and former officer in the Royal Tank Regiment, Mark Urban tells the story of six remarkable men from one armoured unit - the Fifth Royal Tank Regiment, also known as the Filthy Fifth.

Using first-hand testimony from the last surviving veterans alongside previously unseen letters and diaries, Mark brings the story of an extraordinary 'band of brothers' to life, in visceral detail. At the same time he analyses the evolution of tank production in Britain and illustrates how we fell far behind our German enemies in both technology and tactics, relying instead on dogged determination and a relentless drive to victory, whatever the costs.

In part one, Mark begins his journey in northern France, introducing our band of brothers in the midst of the fall of France and the retreat to Dunkirk. Characters such as 'rookie' tank driver Gerry Solomon join veterans, themselves still only in their twenties, such as and Jake Wardrop and Harry Finlayson.

Mark then follows in the tankies' footsteps across the deserts of North Africa. Here he looks at the game-changing tank battles of Sidi Rezegh, Alam Halfa and, of course, the battle that changed the course of the Second World War - Alamein. He then takes us back to England where the tankies expect a well-earned rest, instead they are confronted with the news that as battle-hardened troops they must fight again, this time on the beaches of Normandy.

With spectacular archive footage, including rarely seen colour footage, it brings to life the Second World War from a unique point of view.

**SAT 21:00 Department Q (b08mnylv)**  
The Absent One

In 1994, two teenage twins are found brutally murdered and a number of clues point to some pupils from a nearby boarding school, but the case is closed as a local outsider pleads guilty and is convicted for the murders. Twenty years later, the case ends up on Carl Morck's desk, and he soon realises that something is terribly wrong. Carl and Assad try to track down a key witness, but they are not the only ones looking for her, as powerful people try to protect their secrets.

The second film based on Jussi Adler-Olsen's 'Department Q' novels. In Danish with English subtitles.

**SAT 22:55 Top of the Pops (b08m9f47)**

Another edition of the pop chart programme, first broadcast on 11 August 1983. Presented by Richard Skinner and Tommy Vance, featuring tracks by David Grant, Level 42 and Depeche Mode.

**SAT 23:30 Top of the Pops (b08m9f4x)**

John Peel and David Jensen present the pop chart programme, first broadcast on 1 September 1983. Featuring Modern Romance, Madness, Genesis, Big Country, Stray Cats and

UB40.

**SAT 00:05 Chas & Dave: Last Orders (b01nkdsy)**

Documentary which highlights cockney duo Chas & Dave's rich, unsung pedigree in the music world and a career spanning 50 years, almost the entire history of UK pop. They played with everyone from Jerry Lee Lewis to Gene Vincent, toured with The Beatles, opened for Led Zeppelin at Knebworth - and yet are known mainly just for their cheery singalongs and novelty records about snooker and Spurs.

The film also looks at the pair's place among the great musical commentators on London life - and in particular the influence of music hall on their songs and lyrics.

The film crew followed Chas & Dave on their final tour, having called it a day after the death of Dave's wife, and blends live concert footage with archive backstory, including some astonishing early performances and duets with the likes of Eric Clapton. Among the experts and zealous fans talking about their love of the duo are Pete Doherty, Jools Holland and Phill Jupitus. Narrated by Arthur Smith.

**SAT 01:05 London Songs at the BBC (b01jzxfz)**

A collection of performances from the BBC archives, celebrating the sights and sounds and the ups and downs of London through the words and songs through the years - from Petula Clark singing A Foggy Day in London Town in 1965 to Adele performing her love letter to the city in Hometown Glory, filmed in October 2007 on the roof of the BBC car park in Shepherd's Bush. Also featured are the likes of The Jam, Eddy Grant, Tom Paxton and Lily Allen plus many more.

**SAT 02:05 Squeeze: Take Me I'm Yours (b01n8kmq)**

Glenn Tilbrook and Chris Difford, the men behind Squeeze, have been called everything from the new Lennon and McCartney to the godfathers of Britpop. Now, 35 years after their first record, this documentary reappraises the songwriting genius of Difford and Tilbrook and shows why Squeeze hold a special place in British pop music.

Difford and Tilbrook, two working class kids from south east London, formed Squeeze in 1974 with the dream of one day appearing on Top of the Pops. In 1978, they achieved that dream when the single Take Me I'm Yours gave the band the first of a string of top 20 hits. The period from 1978 to 1982 saw the group release a run of classic singles, timeless gems such as Cool for Cats, Up the Junction, Labelled with Love, Tempted and Pulling Mussels (From the Shell) to name but a few.

Although the line-up of Squeeze would go through various changes of personnel (another founder member Jools Holland left in 1980 and then rejoined the group in 1985) it is Difford and Tilbrook's songs that have remained the constant throughout the lifetime of the band.

The duo explain how they came to write and record many of their greatest songs. Although their relationship at times has often been tenuous at best, the mutual admiration for each other's talent has produced some of the best songs of the past 40 years.

With contributions from former band members Jools Holland and Paul Carrack, together with testament from Elvis Costello, Mark Knopfler and Aimee Mann to Difford and Tilbrook's songwriting talent and why they deserve to be placed alongside such renowned songwriting partnerships as Lennon and McCartney, Jagger and Richards and Elton John and Bernie Taupin.

**SAT 03:05 Sounds of the Eighties (b0074sn5)**

Episode 6

Rocking out with the loud guitars and manly hair of Motorhead, ZZ Top, U2, Bruce Springsteen, Bon Jovi, INXS, The Cult and The Mission.

SUNDAY 16 APRIL 2017

**SUN 19:00 Messiah at the Foundling Hospital (b041mbw4)**

Handel's Messiah is one of the most popular choral pieces in western music. It has been recorded hundreds of times and contains a tune that is as instantly recognisable as any in music. Yet few people know the extraordinary story of how this much-loved piece came to public attention - or how it helped save the lives of tens of thousands of children.

Historian Amanda Vickery and BBC Radio 3 presenter Tom Service present this one-hour drama documentary which recreates the first performance of Messiah at London's Foundling Hospital in 1750 and tells the heartrending story of how this special fundraising concert helped maintain the

hospital and heralded a golden age of philanthropy.

Exploring historical documents and artefacts, Amanda examines the plight of women in Georgian London, particularly how the attitudes of the time led mothers to abandon their babies at the hospital. Tom looks at the momentous trials and tribulations faced by Handel in London and discovers how the composer became involved with the Foundling Hospital alongside another philanthropist of the day, the artist William Hogarth.

**SUN 20:00 Darcey Bussell's Looking for Audrey (b04w7mfk)**

Behind Audrey Hepburn's dazzling image, Darcey Bussell unravels an epic tale of betrayal, courage, heartache and broken dreams.

For as long as she can remember, Darcey has been fascinated by Audrey Hepburn - style icon, star of Breakfast at Tiffany's and an Oscar winner at 24. Now, Darcey follows in Audrey's footsteps through Holland, London, Rome, Switzerland and Hollywood to find out more. She discovers that Audrey started out as a dancer, risked her life in the Second World War and, although adored the world over, was always looking for love.

**SUN 21:00 Shakespeare's Mother: The Secret Life of a Tudor Woman (b05279pq)**

Michael Wood tells the extraordinary story of an ordinary woman in a time of revolution. Born during the reign of Henry VIII, Mary Arden is the daughter of a Warwickshire farmer, but she marries into a new life in the rising Tudor middle class in Stratford-upon-Avon. There she has eight children, three of whom die young. Her husband becomes mayor, but is bankrupted by his shady business dealings. Faced with financial ruin, religious persecution and power politics, the family is the glue that keeps them together until they are rescued by Mary's successful eldest son - William Shakespeare!

**SUN 22:00 Timewatch (b0078w1y)**  
2004-2005

The Killer Wave of 1607

At 9am on 20 January 1607, a massive wave devastated the counties of the Bristol Channel. It came without warning, sweeping all before it. The flooding stretched inland as far as the Glastonbury Tor. Two hundred square miles of Somerset, Devon, Glamorganshire and Monmouthshire were inundated. Up to 2,000 people died. Yet for 400 years, the killer wave of 1607 has been forgotten. Timewatch relives the terror and the human tragedy of 1607 and follows the research of two scientists who are increasingly convinced that the wave was not simply a freak storm but a tsunami.

**SUN 22:50 The Mystery of Rome's X Tomb (b037vywt)**

Historian Dr Michael Scott unlocks the secrets of a mysterious tomb recently discovered in one of Rome's famous catacombs. Found by accident following a roof collapse, the tombs contained over 2,000 skeletons piled on top of each other. This was quite unlike any other underground tomb seen in Rome. They are located in an area of the catacombs marked as 'X' in the Vatican's underground mapping system - hence the name The X Tombs.

Scott joins Profs Dominique Castex and Philippe Blanchard, head of a team of French archaeologists with experience of investigating mass grave sites. Carbon dating the bodies suggest they died from the late 1st century AD to the early 3rd century AD, which would mean these people lived and died during Rome's golden age.

The remains of an early medieval fresco were found on the wall sealing the tomb suggesting this could be the last resting place of a group of unknown Christian martyrs. But the bones don't show the signs of physical trauma you would expect after a violent death.

The bodies were a mixture of men and women, most of them late teenagers and young adults. They were placed in the tombs with great care, packed in head to foot. Further clues suggest they were laid to rest after a series of mass death events. This raises the idea they may have died from disease.

The streets of ancient Rome were like an open sewer and the famous roman baths were also a breeding ground for infection. DNA expert and palaeogeneticist Johannes Krause is called in to try to identify what disease may have killed them.

Meanwhile, the French team uncover further clues to the identity of the people. They find cultural connections with northern Africa. Was this a wealthy immigrant community? Or a select group of ancient Rome's elite?

**SUN 23:50 The Story of Maths (b00f3n43)**

## The Frontiers of Space

Four-part series about the history of mathematics, presented by Oxford professor Marcus du Sautoy.

By the 17th century, Europe had taken over from the Middle East as the world's powerhouse of mathematical ideas. Great strides had been made in understanding the geometry of objects fixed in time and space. The race was now on to discover the mathematics to describe objects in motion.

Marcus explores the work of Rene Descartes and Pierre Fermat, whose famous Last Theorem would puzzle mathematicians for more than 350 years. He also examines Isaac Newton's development of the calculus, and goes in search of Leonard Euler, the father of topology or 'bendy geometry', and Carl Friedrich Gauss who, at the age of 24, was responsible for inventing a new way of handling equations - modular arithmetic.

**SUN 00:50 A Timewatch Guide (b052775d)**

Series 1

## Cleopatra

Using the BBC film archives, historian Vanessa Collinridge explores how our view of Cleopatra has changed and evolved over the years - from Roman propaganda, through Shakespeare's role in casting her as a doomed romantic heroine, to her portrayal in the golden age of Hollywood.

Along the way Vanessa investigates Cleopatra's relationships with Julius Caesar and Mark Anthony, her role as a politician, whether she should be seen as a murderer, and her tragic end. Drawing on the views of academic experts, BBC documentaries and drama, Vanessa charts how, throughout history, Cleopatra's image has been subject to myth, cliché and propaganda.

**SUN 01:50 Pugin: God's Own Architect (b01b1z45)**

Augustus Northmore Welby Pugin is far from being a household name, yet he designed the iconic clock tower of Big Ben as well as much of the Palace of Westminster. The 19th-century Gothic revival that Pugin inspired, with its medieval influences and soaring church spires, established an image of Britain which still defines the nation. Richard Taylor charts Pugin's extraordinary life story and discovers how his work continues to influence Britain today.

**SUN 02:50 Timeshift (b08lvtz6)**

Series 17

## Blazes and Brigades: The Story of the Fire Service

Timeshift looks back on nearly two centuries of British firefighting, and explores how major incidents and the evolution of equipment from manual pumps to motorised fire engines have helped forge the modern fire service.

The founding father of modern firefighting was Scotsman James Braidwood, whose pioneering techniques helped save Westminster Hall when the Houses of Parliament were consumed by fire in 1834. Remarkably, London had no publicly funded fire service at the time - and it was only after Braidwood's death tackling a warehouse blaze nearly 30 years later that the Metropolitan Fire Brigade was created.

The fireman soon became an iconic figure of heroism in Victorian painting and popular literature - but the provision of fire brigades and the standard of their equipment varied widely across the country. Motorised fire engines were available from the beginning of the 20th century, but it took the arrival of World War Two for the fire service to be organised on a national footing. Professional and volunteer firefighters worked side by side to tackle the devastating incendiary bombs dropped on British cities by the Nazis. Doug Lightning, the last surviving firefighter of the Sheffield Blitz in December 1940, recalls his own experience of helping to save key buildings during the attack.

In the post-war years, improvements to the fire service saw the introduction of new equipment, including the state-of-the-art Dennis F7 fire engine - we take one of the last surviving examples back on the road in Manchester. Firemen were also called on to help with non-fire-related disasters. Interviewee Brian Sadd recalls the exploits of his father Fred during the floods that hit the east coast of England in 1953. Fred rescued 27 people, was awarded the George Medal and became the star of a comic strip in *The Eagle*.

A series of tragic incidents in the 1960s raised awareness of the importance not just of tackling blazes but of fire prevention. However, Britain was unprepared for the record hot summer of 1976, when a series of fires swept through the countryside. We speak to Mary-Joy Langdon, who in volunteering to help became Britain's first female firefighter, heralding changes to what was once seen very much as a man's job.

But the service wasn't immune to the industrial unrest of the decade. 1977 saw once tight-knit teams divided by the first national firefighters' strike, the film explores the media and public reaction to this unprecedented event. With the strike resolved, technology and equipment continued to improve in the 1980s, spurred on by a series of high-profile tragedies, culminating in the King's Cross underground station fire of November 1987, in which 31 people lost their lives, including one of the first firemen on the scene.

The King's Cross disaster led to a further overhaul of fire safety regulations. Today there are more than 50 regional fire services in the UK, dealing with nearly 2,000 call-outs a day. Increasingly, fewer of these are to actual fires. Firefighters respond to a range of incidents from road traffic accidents to terrorist attacks and natural disasters, and in recognition of this, in 2004 the service was officially renamed the Fire and Rescue Service.

**MONDAY 17 APRIL 2017****MON 19:00 100 Days (b08mnk17)**

Series 1

17/04/2017

As President Trump takes office, Katy Kay in Washington and Christian Fraser in London report on the events that are shaping our world.

**MON 19:30 Timothy Spall: All at Sea (b01cl52j)**

Message in a Bottle

Timothy Spall and his wife Shane are back on board their beloved barge the Princess Matilda as they conclude their trip around the British coast.

Tim takes on Rattray Head in the face of a huge storm. This is the equivalent of Land's End for Scotland and the point where they head south for the first time. The North Sea soon becomes the new enemy as he and Shane struggle to cope with this unrelenting force of nature.

On land they find wonderful Scottish towns - Peterhead, Eyemouth and Stonehaven - but it is the town of Banff that resonates most. They fall in love with it and are sad to leave it behind as they pursue their odyssey of circumnavigating Britain. At the end of the episode, they eventually reach the English sea border, where they launch a message in a bottle.

**MON 20:00 Inside Chernobyl's Mega Tomb (b08650s6)**

Documentary which follows the construction of a trailblazing 36,000-tonne steel structure to entomb the ruins of the nuclear power plant destroyed in the 1986 Chernobyl disaster. It films close up with the team of international engineers as they race to build the new structure before Chernobyl's original concrete sarcophagus - the hastily built structure that covers the reactor - collapses.

Built to last just 30 years, the temporary sarcophagus is now crumbling, putting the world at risk of another release of radioactive dust. Radiation levels make it impossible for workers to build the new shelter directly over the old reactor, so engineers are erecting the new megastructure - taller than the tower of Big Ben and three times heavier than the Eiffel Tower - to one side and will then face the challenge of sliding the largest object ever moved on land into place over the old reactor.

**MON 21:00 Empire of the Tsars: Romanov Russia with Lucy Worsley (b06w0gn7)**

Age of Extremes

Lucy Worsley continues her journey through Russia in the footsteps of the Romanovs, the most powerful royal dynasty in modern European history.

In this episode she examines the extraordinary reign of Catherine the Great, and the traumatic conflict with Napoleonic France that provides the setting for the novel *War and Peace*.

Lucy begins in the 18th century, when the great palaces of the Romanovs were built. But in Romanov Russia, blood was always intermingled with the gold - these splendid interiors were the backdrop to affairs, coups and murder.

At the magnificent palace of Peterhof near St Petersburg, Lucy charts the meteoric rise of Catherine the Great, who seized the Russian throne from her husband Peter III in 1762 and became the most powerful woman in the world. Catherine was a woman of huge passions - for art, for her adopted country (she was German by birth) and for her many lovers.

Lucy visits the Hermitage Museum in St Petersburg, once the

home of Catherine's vast art collection. Here she explores how, once Catherine had taken the throne, she compensated for her foreign origins by taking careful control of her image, using her portraits and clothes to create a brand that looked authentically Russian yet also modern and sophisticated. Lucy tells how Catherine expanded her empire through military victories overseas, while at home she encouraged education and introduced smallpox inoculation to Russia. But Catherine struggled to introduce deeper reforms, and the institution of serfdom remained largely unchanged. Lucy explains how this injustice fuelled a violent rebellion.

Nevertheless, Catherine left Russia more powerful on the world stage than ever. But all she had achieved looked set to be undone when Napoleon invaded Russia in 1812. Lucy relives the pivotal battle of Borodino, when the Russian army finally confronted the French forces; the traumatic destruction of Moscow; and, under Catherine's grandson Alexander, the eventual victory over the French that provided the Romanov dynasty with its most glorious hour.

**MON 22:00 The Beginning and End of the Universe (b075dxsq)**

The End

Professor Jim Al-Khalili carries us into the distant future to try to discover how the universe will end - with a bang or a whimper? He reveals a universe far stranger than anyone imagined and, at the frontier of our understanding, encounters a mysterious and enigmatic force that promises to change physics forever.

**MON 23:00 B is for Book (b07j1zb7)**

Documentary following a group of primary schoolchildren over the course of a year as they learn to read. Some of them make a flying start, but others struggle even with the alphabet. The film takes us into their home lives, where we find that some parents are strongly aspirational, tutoring children late into the night, while others speak English as a foreign language, if at all.

As the children master the basics, they discover the magical world of stories and look with fresh eyes at the world around them. The film gives us privileged access to a profound process that all of us only ever do once in our lives.

**MON 00:00 Everyday Miracles: The Genius of Sofas, Stockings and Scammers (b04fmg34)**

Awy

Professor Mark Miodownik concludes his odyssey of the stuff of modern life. This time he looks at how materials have enabled us to indulge our curiosity about the world around us. To go further and travel faster. He looks at how the bicycle suddenly stirred our national gene pool, why we should all be grateful for exploding glass and what levitation has to do with discovering your inner self. On the road and in the lab with dramatic experiments, Mark reveals why the everyday and even the mundane is anything but.

**MON 01:00 Timeshift (b03mp53s)**

Series 13

## The Ladybird Books Story: The Bugs that Got Britain Reading

To millions of people, Ladybird books were as much a part of childhood as battery-powered torches and warm school milk. These now iconic pocket-sized books once informed us on such diverse subjects as how magnets work, what to look for in winter and how to make decorations out of old eggshells. But they also helped to teach many of us to read via a unique literacy scheme known as 'key words'. Ladybird books were also a visual treat - some of the best-known contemporary illustrators were recruited to provide images which today provide a perfect snapshot of the lost world of Ladybirdland: a place that is forever the gloriously ordinary, orderly 1950s.

**MON 02:00 Bright Lights, Brilliant Minds: A Tale of Three Cities (b04fmg8j)**

Paris 1928

Dr James Fox tells the story of Paris in 1928. It was a city that attracted people dreaming of a better world after World War I. This was the year when the surrealists Magritte, Dali and Bunuel brought their bizarre new vision to the people, and when emigre writers and musicians such as Ernest Hemingway and George Gershwin came looking for inspiration.

Paris in 1928 was where black musicians and dancers like Josephine Baker found adulation, where Cole Porter took time off from partying to write *Let's Do It*, and where radical architect Le Corbusier planned a modernist utopia that involved pulling down much of Paris itself.

**MON 03:00 Empire of the Tsars: Romanov Russia with Lucy Worsley (b06w0gn7)**  
[Repeat of broadcast at 21:00 today]

**TUESDAY 18 APRIL 2017**

**TUE 19:00 100 Days (b08mnk1n)**  
Series 1

18/04/2017

As President Trump takes office, Katty Kay in Washington and Christian Fraser in London report on the events that are shaping our world.

**TUE 19:30 Timothy Spall: All at Sea (b01cqpff)**  
Stags by the Sea

Timothy Spall and his wife Shane are back on board their beloved barge the Princess Matilda as they conclude their trip around the British coast.

The Spalls visit Northumberland, Newcastle and Hartlepool. Starting in Amble and the neighbouring town of Warkworth, Tim and Shane are in awe of this historic part of England as they visit the beautiful Church of St Lawrence and Warkworth Castle. In Amble, Tim meets a young sailor circumnavigating Britain in the opposite direction who, like Tim, was inspired to take to the sea after surviving leukaemia.

Next stop is Newcastle-upon-Tyne, a place he is truly fond of as he has been welcomed there ever since he played Barry in *Auf Wiedersehen, Pet*. Along the way he meets actress Melanie Hill, who played Barry's first wife Hazel. Tim says that most of Britain saw Barry as a 'bit of a radish, a pranner', but that the Geordies thought of him as a 'sensitive character' and have always made him welcome. He takes us on a tour of his favourite places in the city.

After Newcastle it's on to Hartlepool, which Tim discovers translates to 'Stags by the Sea'. They soon find themselves trapped there after dramatically aborting a journey to Whitby whilst at sea. The North Sea once again reminds us that it's not to be messed with.

**TUE 20:00 Yellowstone (b00jmqk1)**  
Autumn

Over the summer, Yellowstone has flourished - in late August there are more living things here than at any other time of the year. But winter is around the corner and there are just two months for all Yellowstone's animals to get ready or get out.

An early dusting of snow is a sign for elk to start moving down from the mountains to focus on finding food in the valleys. Although the wolves are waiting for them, the male elk are distracted, their haunting bugle call boasting that they are fired up and ready to fight each other to the death for the right to breed.

As temperatures fall further, beavers get busy in a rush to repair dams and stock underwater larders before ice freezes their ponds. Yellowstone's forests - the aspens, cottonwoods and maples - start to shut down for the winter, their colours painting the park a blaze of red and gold. Meanwhile, another tree is coming into its own, the whitebark pine. It offers up a bumper crop of pine nuts which fatten grizzly bears and squirrels alike. But its nuts are meant for another animal - the Clark's nutcracker, a small bird with a colossal memory and one that will reward the tree's efforts well by carrying its seeds far and wide, and even planting them.

As autumn ends, the snow and ice return and many animals now move out from the heart of Yellowstone and away from the protection of the national park. Their fight is not only to survive the cold, but also to find what little wild space remains in the modern world. All around Yellowstone, the human world is encroaching - it is now that the true value of the 'world's first national park' becomes clearer than ever.

Mike Kasic is a local sound recordist who got many of the natural sounds for the series, but in his spare time he dons snorkel and fins and jumps into the raging waters of one of the USA's wildest rivers to explore Yellowstone from the point of view of the unique Yellowstone cut-throat trout. Whilst his exploits might seem strange to the other park users - fly fishermen and bison alike - in becoming a fish, Mike not only uncovers an enchanting hidden Yellowstone, but finds out that things are not what they used to be for the cut-throat trout.

**TUE 21:00 The Big Thinkers (b08lvvsk)**  
How to Live Longer

Our lifespan is increasing by 2.5 years every decade - and a

third of all babies born today can expect to live to 100. But living longer can come at a cost. Old age itself brings with it a range of debilitating illnesses, many of which are the result of accumulating damage during our lifetime.

Three diseases in particular have become the main killers in the developed world - cancer, heart disease and dementia. But a revolution in bio-medicine is now offering new hope for the treatment of these ailments, and the potential to extend our lives still further. Methods such as gene editing and stem cell therapies are transforming the way medicine can conquer disease today.

These extreme frontiers of medicine do, however, also come with a range of ethical dilemmas - when is the right time to try out an experimental technique on a patient? Should we gene edit human embryos? And is it right to use cells from aborted foetuses for medical treatments?

Guiding us through this fast-moving and complex field is Nobel laureate Sir Paul Nurse, for whom the big question isn't just what science can do to fix our bodies and extend our lives, but whether it's right to use all the tools and techniques available.

**TUE 22:00 Obesity: How Prejudiced Is the NHS? (b08mf976)**

Britain has a serious problem with obesity - and the medical cost is threatening to bankrupt our health service. Professor Rachel Batterham, head of the obesity services at University College Hospital and a research scientist, presents this current affairs documentary. In it, Rachel explores whether there is 'fat prejudice' against obese patients within parts of the NHS that is stopping them accessing a potentially cost-effective surgery, even when recent scientific research supports it.

Professor Batterham considers obesity to be a disease that needs specialist treatment, including weight-loss surgery, whereas many others contend that it is a lifestyle choice. She meets several NHS patients who say they were made to feel 'not worthy' and were denied life-changing bariatric surgery and other routine operations. This seems to show evidence of a bias within the health service. She also speaks to others who have tried to use the NHS weight management services, with one admitting it actually made her gain two stone. Professor Batterham speaks to bariatric surgeon Chris Pring and people that have had weight loss surgery to examine the dramatic effect gastric bypasses can have on person's lifestyle and overall health - and how it can even cure other weight-related illnesses.

Rachel also meets patients who are successfully using the diet and lifestyle programme called Tier 3 services, which the NHS require them to do for two whole years before being considered for surgery. Could weight-loss surgery actually be a more cost-effective method of treatment for the NHS?

**TUE 23:00 Ray Mears Goes Walkabout (b00byd8v)**  
The Bushtucker Man

Ray Mears makes a journey across Queensland with bushtucker man Les Hiddins. They both share a love of the wilderness and have learnt much of what they know from indigenous people. Each of them has already left his mark on the world of bushcraft and now they get to work together for the first time.

**TUE 00:00 Servants: The True Story of Life Below Stairs (b01nd1w5)**  
No Going Back

Dr Pamela Cox explores how the 20th century dealt a hammer blow to domestic service as we knew it. It's the story of how, the moment they had a choice, servants left domestic service, leaving the master-servant relationship spiralling into decline.

The Great War dealt the first blow, as menservants enlisted and women stepped in to fill their roles, both in stately homes and factories. Having had a taste of better working conditions, women were reluctant to return to service, with its hated, now old-fashioned starched cap and apron. Mistresses tried to tempt women back with prettier uniforms and even a Masters & Servants' Ball. Yet radical change came from suburban housewives in a new type of house springing up in the 1930s: the semi-detached home. Here new 'daily' servants used novel technologies like the vacuum cleaner - but still had to use the outside toilet.

Women after World War II opted for jobs in offices, shops and the new NHS. Finally, typists and clerks overtook servants as the largest category of female employment and servants' quarters in stately homes were transformed into visitor attractions. Today, the rich still have staff and many of the middle classes now rely on cleaners and nannies, but the 'servant class' has long since disappeared.

**TUE 01:00 Natural World (b01q9djl)**  
2012-2013

Jaguars - Born Free

Three tiny orphaned jaguar cubs are discovered in a Brazilian forest. A family decides to take the place of their mother and trains them to become wild again. Over two years they must learn to climb trees, swim, and hunt for their dinner. If they can be successfully released, it will give new hope to these rare animals.

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**WED 19:30 Timothy Spall: All at Sea (b01d24tt)**  
God's Own Coast

The Spalls are now in Yorkshire, and had been proudly steaming towards their final destination of London. But on the sea while travelling to Whitby, Tim is deeply troubled by strange engine noises. A failed engine at sea is incredibly dangerous so an engineer is called to Whitby to assess the problem. Tim is keen to see the town as this is where Bram Stoker based the opening of his novel, *Dracula*. Armed with his treasured antique walking cane, once owned by Stoker, Tim finds the hotel where Stoker stayed and looks for the part of the coastline featured in the novel.

Next is Scarborough, where Tim filmed *The Damned United*. It's high summer and Britain's first seaside resort is crammed with holidaymakers. Arriving at Spurn Head they are now completely alone - there's no harbour or marina here, no town or access to land. They are moored to a single buoy owned by the local lifeboat crew and are waiting patiently for the perfect sea conditions to take them out of the north of England and into the south. It's a big journey - as well as the North Sea they have to watch out for heavy sea traffic, the turbulence of the Wash and dangerous sandbanks.

In the dark of night arriving at the north Norfolk coast, a pilot boat guides them into the port of Wells-next-the-Sea. They soon discover it's a trip worth making as they explore this stunning coastline.

**WED 20:00 Nature's Wonderlands: Islands of Evolution (b06yrgvr)**  
Madagascar: A World Apart

Professor Richard Forrey travels to the rainforests of Madagascar - an ancient island that has spawned some of the most extraordinary groups of plants and animals anywhere in the world. From beautiful Indri lemurs, toxic frogs, and the cat-like giant mongoose called the fossa, to evolutionary oddities like the giraffe-necked weevil and the otherworldly aye-aye, he uncovers the secrets of the evolutionary niche - examining how, given millions of years, animals and plants can adapt to fill almost any opportunity they find.

**WED 21:00 The Celts: Blood, Iron and Sacrifice with Alice Roberts and Neil Oliver (b06h3ytf)**  
Episode 1

Anthropologist Professor Alice Roberts and archaeologist Neil Oliver go in search of the Celts - one of the world's most mysterious ancient people. In Britain and Ireland we are never far from our Celtic past, but in this series Neil and Alice travel much further afield, discovering the origins and beliefs of these Iron Age people in artefacts and human remains right across Europe, from Turkey to Portugal. What emerges is not a wild people on the western fringes of Europe, but a highly sophisticated tribal culture that influenced vast areas of the ancient world - and even Rome.

Rich with vivid drama reconstruction, we recreate this pivotal time and meet some of our most famous ancient leaders - from Queen Boudicca to Julius Caesar - and relive the battles they fought for the heart and soul of Europe. Alice and Neil discover that these key battles between the Celts and the Romans over the best part of 500 years constituted a fight for two very different forms of civilisation - a fight that came to define the

world we live in today.

In the first episode, we see the origins of the Celts in the Alps of Central Europe and relive the moment of first contact with the Romans in a pitched battle just north of Rome - a battle that the Celts won and that left the imperial city devastated.

**WED 22:00 Colombia with Simon Reeve (b08n5flh)**

Adventurer and journalist Simon Reeve heads to one of the most spectacular countries in the world - Colombia. For 50 years, Colombia has been in the grip of a brutal civil war that has killed more than 200,000 people and displaced seven million. But in late 2016, a peace deal was signed promising to end the conflict and finally bring peace to the country.

In this hour-long documentary for the award-winning This World strand, Simon explores Colombia at a pivotal point in its history. He travels into the jungle and comes face to face with the guerrilla army Farc, which is now promising to lay down arms. In the Pacific coast city of Buenaventura, Simon finds out more about the fearsome right-wing paramilitary gangs who now dominate the cocaine trade. As the Farc abandon the countryside, there is a fear that these groups will only grow in power. Travelling in the countryside, Simon meets the coca farmers who are demanding government support to stop growing coca and stop the flow of money to criminal gangs. With land ownership, poverty and drugs at the heart of Colombia's problems, it is in the countryside that the country's precarious future will be decided.

**WED 23:00 The Big Thinkers (b08lvvsk)**

[Repeat of broadcast at 21:00 on Tuesday]

**WED 00:00 Horizon (b039grrx)**

2013-2014

Dinosaurs: The Hunt for Life

The hunt for life within the long-dead bones of dinosaurs may sound like the stuff of Hollywood fantasy, but one woman has found traces of life within the fossilised bones of a Tyrannosaurus rex.

Dr Mary Schweitzer has seen the remains of red blood cells and touched the soft tissue of an animal that died 68 million years ago. Most excitingly of all, she believes she may just have found signs of DNA. Her work is revolutionising our understanding of these iconic beasts.

**WED 01:00 The Celts: Blood, Iron and Sacrifice with Alice Roberts and Neil Oliver (b06h3ytf)**

[Repeat of broadcast at 21:00 today]

**WED 02:00 Nature's Wonderlands: Islands of Evolution (b06yrgvr)**

[Repeat of broadcast at 20:00 today]

**WED 03:00 The Brits Who Built the Modern World (b03vrz4f)**

The Freedom of the Future

How an exceptional generation of British architects, led by Norman Foster and Richard Rogers, conquered the globe with their high-tech vision.

The first episode includes glimpses of some of their most stunning recent work, such as London's new 'Cheesegrater' skyscraper, Spaceport America and the KK100 skyscraper in China (the tallest tower ever built by a British architect), before looking in detail at some of their revolutionary projects from the 1960s and 70s.

Foster, Rogers, Nicholas Grimshaw, Michael Hopkins and Terry Farrell were born within six years of each other in the 1930s; shaped by both the optimism of the postwar years and the sixties counterculture, these pillars of today's establishment began their careers as outsiders and radicals. Rogers and his collaborators tell the story of one of the most influential buildings of the 20th century - the Pompidou Centre in Paris - the result of a contest he didn't want to enter and no-one ever thought they would win.

Other early projects featured include Norman Foster's glassy Willis Faber & Dumas Headquarters in Ipswich, Farrell & Grimshaw's corrugated aluminium tower block next to Regent's Park in London and the industrial-style Hopkins House in Hampstead.

**THURSDAY 20 APRIL 2017**

**THU 19:00 100 Days (b08mnk23)**

Series 1

20/04/2017

As President Trump takes office, Katy Kay in Washington and Christian Fraser in London report on the events that are shaping our world.

**THU 19:30 Top of the Pops (b08mp215)**

Peter Powell and Andy Peebles present the pop chart programme, first broadcast on 8 September 1983. Featuring Heaven 17, JoBoxers, Ryan Paris, Paul Young, Status Quo, Peabo Bryson & Roberta Flack, UB40 and Level 42.

**THU 20:00 Timewatch (b0078w1y)**

[Repeat of broadcast at 22:00 on Sunday]

**THU 20:50 Wild (b00793wd)**

2006-07 Shorts

Robins of Eden

A seasonal tale of how the Garden of Eden really was invaded not by a bad snake, but by one of the nation's favourite little birds. The Eden Project is an architectural wonder, a world of different habitats created in a single Cornish quarry, and probably the unlikely place to find the robin. So why have they set up home in one of our top tourist attractions?

**THU 21:00 Timeshift (b08mp218)**

Series 17

Dial "B" for Britain: The Story of the Landline

Timeshift tells the story of how Britain's phone network was built. Incredibly, there was once a time when phones weren't pocket-sized wireless devices but bulky objects wired into our homes and workplaces. Over the course of 100 years, engineers rolled out a communications network that joined up Britain - a web of more than 70 million miles of wire. Telephones were agents of commercial and social change, connecting businesses and creating new jobs for Victorian women. Wires changed the appearance of urban skylines and the public phone box became a ubiquitous sight.

Yet despite ongoing technical innovation, the phone service often struggled to meet demand. When the mobile phone arrived, it appeared to herald the demise of the landline. Yet ironically, now we're more connected than ever, it's not the telephone that's keeping us on the landline.

In 1877, Scottish-born inventor Alexander Graham Bell returned to Britain from America to showcase a revolutionary new electric device - the telephone. After impressing no less than Queen Victoria, Bell helped drive uptake of the telephone in Britain, tapping into the growth of a growing commercial phenomenon - the office. Soon, whole networks of telephone lines were being built, connected together by exchange switchboards. Female switchboard operators were preferred by telephone companies as they were cheaper and perceived as more polite, opening up new employment opportunities for women in late Victorian Britain.

At first only the wealthiest people had phones in their homes, but the public call box soon emerged, although when the GPO - the General Post Office - took over the private networks, it initially struggled to find an acceptable design for its box and met some resistance to its now iconic bright red colour.

The introduction of direct dial telephones and automatic exchanges, as well as services like the 999 emergency number and the speaking clock, helped drive private uptake of phones in the 1930s. However, with the onset of World War Two, military concerns took priority. Gene Toms, a switchboard operator, recalls her time during the war, trying to work while wearing a helmet during air raids, dealing with self-important officers and doing her best to assist servicemen phoning home.

A renewed drive to restore, modernise and expand the network after the war kept a legion of engineers busy. Former GPO engineers Jim Coombe, Bryan Eagan and Dez Flahey share their memories of dubious safety practices and difficult customers. Despite the expansion, the network still had limited capacity relative to demand, and one cheaper solution was the "party line", shared with another household, although it created problems of privacy.

The introduction of STD - subscriber trunk dialling - in the late 1950s enabled callers to make long distance calls without the help of an operator. But STD, like the network itself, was taking a long time to roll out; and despite the introduction of stylish coloured telephones and the Trimphone in the 1960s to tempt customers, the service acquired a bad reputation among many users. Even an episode of the children's series Trumpton

reflected the general frustration. Archive footage shows the then postmaster general, Anthony Wedgwood Benn, being grilled by an interviewer about the shortcomings of the phone service.

But there was an exciting new symbol of the future under construction - the Post Office Tower, part of a network of towers designed to expand the capacity of the network using a wireless, microwave system. By the 1970s telephone supply was catching up with demand. People were increasingly moving home around the country, relocating for work, and young families expected to have a phone as a standard mod con. An advertising campaign featuring a talking cartoon bird - Buzby - encouraged customers to make more calls. What was once a service had become a thriving business, and British Telecommunications was privatised in 1984.

The arrival of the mobile phone soon threatened to supersede the landline - but the internet, a technology that the founding fathers of telephony could never have dreamed of, has given the landline a new lease of life.

**THU 22:00 Bucket (b08mp21b)**

Series 1

Episode 2

Mim has a plan to fund her bucket list by selling the contents of a time capsule buried at her alma mater, Cambridge, but instead Fran learns a secret about Mim's past.

**THU 22:25 Yellowstone (b00jmqk1)**

[Repeat of broadcast at 20:00 on Tuesday]

**THU 23:25 The Silk Road (p03qb3q4)**

[Repeat of broadcast at 19:00 on Saturday]

**THU 00:25 Top of the Pops (b08mp215)**

[Repeat of broadcast at 19:30 today]

**THU 01:00 Darcey Bussell's Looking for Audrey (b04w7mfk)**

[Repeat of broadcast at 20:00 on Sunday]

**THU 02:00 Timeshift (b08mp218)**

[Repeat of broadcast at 21:00 today]

**THU 03:00 Bucket (b08mp21b)**

[Repeat of broadcast at 22:00 today]

**FRIDAY 21 APRIL 2017**

**FRI 19:00 World News Today (b08mnk28)**

The latest national and international news, exploring the day's events from a global perspective.

**FRI 19:30 Top of the Pops (b08mp2sl)**

Simon Bates and Mike Read present the pop chart programme, first broadcast on 22 September 1983. With Toyah Willcox, David Bowie, Nick Heyward, The Alarm, Howard Jones and Hot Chocolate.

**FRI 20:00 The Good Old Days (b08n274s)**

Leonard Sachs chairs the old-time music hall programme, originally broadcast on 7 March 1978. Guests include Roy Castle, Barbara Windsor, Robert Tear, Benjamin Luxton, Ted Durante & Hilda, and members of the Players' Theatre London.

**FRI 20:50 Sounds of the Seventies (b08nb116)**

Shorts

Labelle, Chic and Rose Royce

It does exactly what it says on the tin. Three classic slices of BBC archive served up in one bite-size package. Labelle's Lady Marmalade, Chic's Le Freak and Rose Royce's Love Don't Live Here Any More are the songs.

**FRI 21:00 The Story of Funk: One Nation Under a Groove (b04t6nm5)**

In the 1970s, America was one nation under a groove as an irresistible new style of music took hold of the country - funk. The music burst out of the black community at a time of self-discovery, struggle and social change. Funk reflected all of that. It has produced some of the most famous, eccentric and best-loved acts in the world - James Brown, Sly & the Family Stone,

George Clinton's Funkadelic and Parliament, Kool & the Gang and Earth, Wind & Fire.

During the 1970s this fun, futuristic and freaky music changed the streets of America with its outrageous fashion, space-age vision and streetwise slang. But more than that, funk was a celebration of being black, providing a platform for a new philosophy, belief system and lifestyle that was able to unite young black Americans into taking pride in who they were.

Today, like blues and jazz, it is looked on as one of the great American musical cultures, its rhythms and hooks reverberating throughout popular music. Without it hip-hop wouldn't have happened. Dance music would have no groove. This documentary tells that story, exploring the music and artists who created a positive soundtrack at a negative time for African-Americans.

Includes interviews with George Clinton, Sly & the Family Stone, Earth, Wind & Fire, Kool & the Gang, War, Cameo, Ray Parker Jr and trombonist Fred Wesley.

**FRI 22:00 The Genius of Funk (b04t9cjz)**

A selection of some of funk's best artists from the BBC archives and beyond, beginning in the 1970s. Includes performances from acts such as Earth, Wind & Fire, Kool & the Gang, Average White Band and Herbie Hancock.

**FRI 23:00 Music for Misfits: The Story of Indie (b06gxxxk)**  
The Alternative 80s

Episode two explores a time when the independent labels transformed from cottage industries into real businesses that could compete with the majors. It examines the evolution of 'indie' - a guitar-based genre of music with its own sound, fashion and culture.

Independent record labels provided a platform for some of Britain's most groundbreaking artists at this time, including The Jesus and Mary Chain and The Smiths, who would burst onto the scene in 1983 staging a mainstream intervention and starting a small revolution.

In the midst of shiny 80s sounds and shoulder-padded fashion, indie was anti-image and anti-flamboyance. Through many of the indie bands in this period, everyday life was repackaged in melody and poetic lyrics. It's not hard to see why a generation of youth, disaffected from the times they were living in, sought refuge in the poetic haze of early indie. The bands were accessible too, and aspiring music journalists could meet their favourite indie stars at the small and intimate gigs where they performed.

The programme concludes in the late 80s with the Madchester scene, as alternative music crossed over into the mainstream chart. This breakthrough was inspired by a merging of indie rock and the burgeoning acid house culture, and it was led by a new crop of bands such as The Stone Roses and Happy Mondays.

The series is presented by BBC Radio 6 Music's Mark Radcliffe and this episode features exclusive interviews with performers including James Dean Bradfield of Manic Street Preachers, New Order's Stephen Morris and Gillian Gilbert, Shaun Ryder, Suede's Bernard Butler, The KLF's Bill Drummond, Stuart Murdoch of Belle and Sebastian, Cocteau Twins' Simon Raymonde, The Jesus and Mary Chain's Jim Reid, and Talulah Gosh's Amelia Fletcher.

It also includes interviews with a number of influential music industry figures such as former Happy Mondays manager Nathan McGough, Pete Waterman, Factory Records' designer Peter Saville and journalists Alexis Petridis and Sian Pattenden.

**FRI 00:00 Top of the Pops (b08mp2sl)**  
[Repeat of broadcast at 19:30 today]

**FRI 00:45 The Story of Funk: One Nation Under a Groove (b04t6mm5)**  
[Repeat of broadcast at 21:00 today]

**FRI 01:45 The Genius of Funk (b04t9cjz)**  
[Repeat of broadcast at 22:00 today]

**FRI 02:45 Music for Misfits: The Story of Indie (b06gxxxk)**  
[Repeat of broadcast at 23:00 today]