

Pablo's Armchair Treasure Hunt 2019 – Solution
Team: Simon Long & Katherine Jones Ticket # : 10

Theme

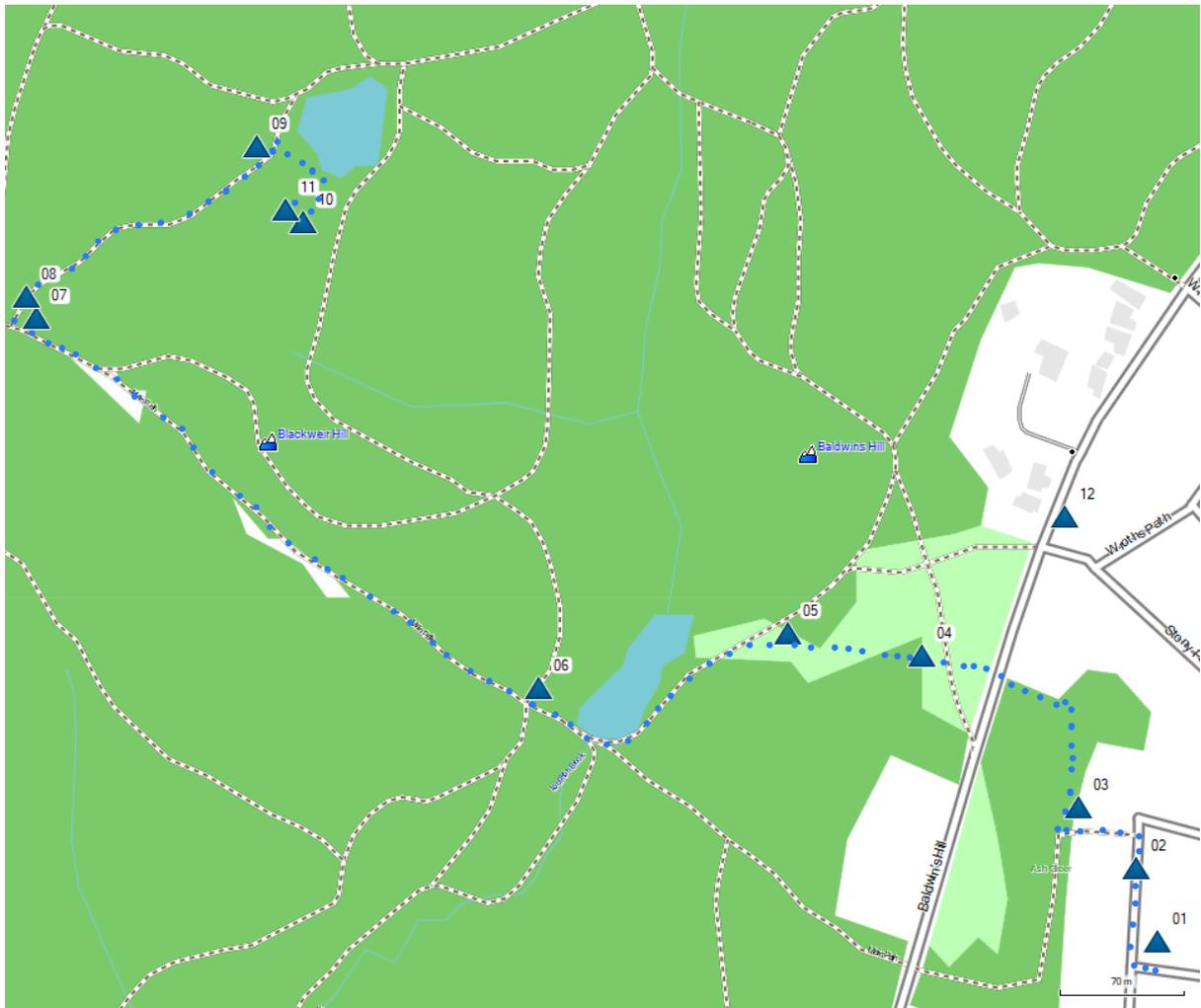
The theme of this year's Hunt is novels by a selection of popular authors.

A sub-theme is that each of the authors has written one or more novels in which a bank robbery takes place.

Treasure Location

The treasure is concealed in a hollow tree close to Blackweir Pond in Epping Forest, near Loughton, the former home of the novelist Ruth Rendell.

The route to the treasure was clued by 11 phrases which were enciphered on the pages of the main Hunt document, and by 11 photographs of locations along the route.



The map shows the route to the treasure; the table below relates the numbered waypoints on the map to the pictured locations and route descriptions.

Note that the page numbers below are those of the photographs; the text on each page does not always exactly correspond to the picture on the same page, but the order through the document of both is consistent.

01	45 Millsmead Way, location of Ruth Rendell blue plaque (START AT MY BLUE PLAQUE HEAD N)
02	Page 10 - Stone lion near start of footpath (TAKE SIGNED FOOTPATH WEST)
03	Page 2 - Footpath junction by fence (FOLLOW PATH TO RIGHT BY FENCE CROSS ROAD)
04	Page 3 - Rungs on tree near bench (HEAD DOWN TO L NOTE RUNGED TREE AND BENCH TO R)
05	Page 4 - Trees at bottom of hill
06	Page 5 - Main path near pond (AFTER A BOGGY FURLONG NOTICE NO NUTS OR SPOONS - a reference to a sign by the pond prohibiting the use of certain fishing tackle, including nuts and spoons; a furlong = 200m)
07	Page 6 - Clearing with post (TAKE MAIN PATH UP WNW A HUNDRED RODS TO CLEARING WITH A POST - a hundred rods = 500m)
08	Page 7 - Entrance to wood (SHARP RIGHT INTO WOOD CONTINUE TO BANK)
09	Page 8 - Truncated tree by pond (FROM TRUNCATED TREE WIDDERSHINS FOR THIRTY YARDS - widdershins = anticlockwise around pond)
10	Page 9 - "Keyhole" in many-trunked tree (LOOK FOR A TREE WITH VERY MANY TRUNKS)
11	Page 11 - Metal tag numbered 19957 on treasure tree (ONE CHAIN BACK FROM KEYHOLE INSIDE TREE CXCIX LVII - one chain = 20m; Roman numerals parsed as 199 (CXCIX) followed by 57 (LVII))
12	Page 12 - Bicycle on "The Foresters Arms" pub (ON WAY BACK PASS BENCH TO BIKE IF THIRSTY)

Pictured are the blue plaque at the start, and the hollow tree which held the treasure:



(Note that the Roman numerals given for the tree number are ambiguous – CXCIXLVII is a concatenation of two numbers, and can be parsed as either CXCIX LVII (199 57) or CXCI XLVII (191 47) – we located the treasure box in tree 19957, which was at the end of the route described.)

Poster

The poster contains a number of paragraphs under subheadings.

The title line of the poster contains pictures of the Chilean poet and politician Pablo Neruda (PABLO), and of the Small Animal Teaching Hospital (SATH) at the University of Liverpool. These combine to make the phrase PABLO'S ATH, a reference to the title of the Hunt.

Some of the letters used in the text of the poster are drawn in colours of the spectrum. In spectrum order, these are:

Red	T
Orange	A
Yellow	L
Green	L
Blue	Y
Indigo	H
Violet	O

These give the message “Tally-Ho”, which is a fox-hunting phrase meaning ‘the hunt is on’, confirming that the poster is the first part of the Hunt.

The subheading for each paragraph is accompanied by a small image which is connected in some way to the content of the following paragraph. The paragraphs are as follows:

Christmas Pantomime Cancelled (Picture – Kansas)

This paragraph combines the story of “The Wizard of Oz” (which is initially set in Kansas) with the exit of the UK from the EU.

References include:

- “Athexit” – a reference to “Brexit” combined with the ATH
- “...what all the ding-dong is about...” – a reference to the song “Ding! Dong! The witch is dead!”
- “Jo Bercoz” – a reference to former Speaker of the House John Bercow, combined with the land of Oz
- “Theresa” – a reference to former Prime Minister Theresa May
- “...whisked away by a whirlwind...” - a reference to the tornado which takes Dorothy to Oz
- “...her entire House” – a reference to the Houses of Parliament, and to the fact that Dorothy’s house was swept up by the tornado
- “the Emeraude city” – a reference to the Emerald City in Oz, but written in French to suggest the EU

- “Boris the brainless Scarecrow” – a reference to Prime Minister Boris Johnson, and the Scarecrow who had no brain
- “Jeremy the cowardly Lion” – a reference to Leader of the Opposition Jeremy Corbyn, and the Lion who had no courage
- “Jacob the heartless Tin Man” – a reference to leader of the ERG Jacob Rees-Mogg, and the Tin Man who had no heart
- “Nicola the good witch of the North” – a reference to leader of the SNP Nicola Sturgeon
- “Arlene the wicked witch of the West” – a reference to leader of the DUP Arlene Foster
- “Toto Farago” – a reference to leader of the Brexit Party Nigel Farage, and to Dorothy’s dog Toto

Chess Champ Floored by Czech Mate (Picture – Czech Republic)

This paragraph tells the story of a chess match between a Czech grandmaster and his wife.

Both players have names which are chess puns – “Ivan Knight” (sounds like “I have a knight”) and “Domova Knight” (sounds like “do move a knight”).

There is a reference to “my homely wife Domova” - “domova” means “home” in Czech.

The chess game hinted at by the description consists of the following moves – as per the character’s names, several involve moving a knight:

1	e4	Nc6
2	Ke2	Nd4+
3	Ke3	c6
4	Kf4	Ne2+
5	Ke5	Qa5#

The moves of this game are confirmed by the solution to a puzzle in the main Hunt document.

This paragraph includes the words “going wrong”, the title of a novel by Ruth Rendell.

Reading on the Increase (Picture – Berkshire)

The picture shows Berkshire with a marker over the town of Reading.

The reference to linear algebra and “The Matrix” is a clue to the use of the Hill cipher in the main Hunt document.

This entire paragraph is a clue to the significance of reading, novels and authors in the main Hunt.

Subverting Swiss Security (Picture – Switzerland)

The text refers to an account number with between 40 and 80 digits, which is multiplied by nine by moving the last digit to the front. This is a description of the first 9-parasitic number (or Dyson number) 10112359550561797752808988764044943820224719.

If the digits of this number are used in turn as negative offsets to each letter in the string of random letters also in this paragraph, a message from the setters is revealed – WE HOPE YOU GREATLY ENJOY THE ARMCHAIR TREASURE HUNT.

“Baroness Bindie Diebin” includes the German phrase “die Diebin”, which means “the thief”. This is the title of a novella by Ruth Rendell.

The reference to a bank is a clue to the significance of bank robberies in the main Hunt.

Tragic Death of Tennis Chairman (Picture – Prague skyline)

The Prague skyline shows the Charles Bridge, indicating that the words “Charles” and “bridge” are important.

The reference to “Sir Charles” is Sir Charles Wheatstone, the inventor of the Playfair cipher (“his personal code”) and after whom the Wheatstone Bridge (“his bridge skills”) is named. The Playfair cipher is used extensively in the main Hunt document, and the Wheatstone bridge is pictured on page 5.

The reference to “West Hills tennis club” is a hint to the use of the Hill cipher in the main Hunt.

Goalkeeper to be Honoured (Picture – Sheffield)

Sheffield was the birthplace of goalkeeper Gordon Banks, whose birthday was 30 December.

The header famously saved by Banks in 1970 was by the Brazilian footballer Pelé in the opening match of the World Cup in Guadalajara.

The name of the footballer “Röd Sill” is the Swedish for “red herring”.

The name Banks is a clue to the significance of bank robberies in the main Hunt.

Holiday Weather Forecast (Picture – Greater London)

The alliteration in this paragraph (and elsewhere in the poster, such as subheadings) is a clue to one of the authors to be found in the main Hunt, Ruth Rendell, whose name is also alliterative.

The reference to “unusually heavy footwear” is a hint to the phrase STONE BOOTS, which is used as a cipher key in the Hunt itself.

The map of Greater London is a hint as to the location of the treasure; Epping Forest is within the area of this map.

Website Messages

A message posted on 25 November referenced the funeral of Sir Charles (mentioned on the poster). It included the “booking reference” ONCRKAZM, which is PABLO RIP, a tribute to the originator of the Armchair Treasure Hunt, encoded using the Playfair keyword SWITZERLAND. The keyword is hinted at by the references in the message to hillwalking, hostelries and bridges, and the mention of “...flag, that’s a big plus”, a reference to the cross on the Swiss flag.

The date on which the Hunt was posted was indicated by a message posted on 9 December, that the Hunt would appear at “what would have been dinner-time tomorrow, were it 1582 in Lyon.”

This is a reference to the transition between the Julian and Gregorian calendars, which took place in France (hence Lyon) in December 1582.

When this happened, the day after 9 December 1582 was 20 December; this message therefore indicated that the Hunt would go live on December 20.

A Christmas message was posted using the same font made up of festive symbols as in the main Hunt document, giving the address pablosath.com/chanukah.htm

In this case, the picture is of a zebra with a menorah made of its stripes. The zebra is referenced on the Alistair Maclean page of the Hunt. The picture is accompanied with an alliterative message as a further clue to Ruth Rendell.

A message released on January 11 refers to “unremitting, relentless labour”, for which the initials are URL. This is a hint to an additional puzzle which involves URLs for additional pages on the site which are embedded in some of the images in the Hunt, described at the end of this document.

Hunt Document

The Hunt document itself consists of 12 pages; an introduction page and 11 pages with clues.

Other than the introduction page, each page is associated with the works of a particular novelist, each of which has written one or more books in which a bank is robbed; this work is referenced in a question or other reference on the page.

Each page contains a number of questions, the answers to which are an acrostic used as a decryption key for one of the ciphers on the page. (In three cases, a single letter nonce is included to make the encryption more resistant to brute-force attack – these three nonces, in order, spell ATH, a reference to the Hunt.)

Each page contains a section marked out with envelope symbols – this contains ciphertext with directions to the treasure location using one of three ciphers – Playfair, Hill or Vigenère. The names of these ciphers themselves are clued with rebuses.

The font used for the ciphertext denotes which cipher is used. Playfair encoding is denoted by a serif font. Hill encoding is denoted by a sans-serif italic bold font. Vigenère encoding is denoted by a sans-serif regular font.

The number of envelope symbols (either 25 or 26) denotes the number of letters used in the alphabet for the Hill cipher encryption.

The ciphertexts on each page form a chain; the acrostic provides the key for the first cipher; the decrypted text from each cipher provides a clue for the key for the next cipher, and the final cipher provides a section of the directions for the route to the treasure.

Each page also contains a number of other thematic items, mostly associated with the novelist associated with the page.

One exception is that each page contains an item associated with the novelist Ruth Rendell. She is associated with page 10, but to make this page particularly difficult to solve, there are few clues to her identity on the page itself.

Finally, each page contains a photograph of a location *en route* to the treasure. These contain a second set of puzzles as embedded web links to image files on the pablosath.com site – these are described in “The Website Puzzle” section at the end of this document.

Page 1 – Introduction

There are no questions on this page.

The enveloped section contains a single ciphertext in Hill encoding. The key for the Hill cipher is PABLOSATH, as written above it. The decrypted text is EACH PRIME LETTER.

This is an instruction to take the prime-numbered letters of the opening paragraph of the introductory message, which gives A BOAT RIDE IS NOT NEEDED BUT WATER IS NEAR, a hint as to the treasure location near Blackweir Pond.

This page also contains a number of images, each of which is a hint to a book by one of the novelists, as follows:

Image	Author
RAF Tornado GR4 jet, banking	Reference to BANK, and possibly a reference to the tornado in “The Wizard of Oz”, as referred to on the poster.
Cover of “Rites of Thy Degringolade” by band of the same name	Emile Gaboriau – “La Degringolade”
Red gift box	Rex Stout – “The Red Box”
Silkworm larva	J. K. Rowling – “The Silkworm” (as Robert Galbraith)
Golden Gate Bridge, San Francisco	Alistair Maclean - “The Golden Gate”

Lightning	Ed McBain – “Lightning”
Banks Peninsula, New Zealand, upside-down	Reference to BANK, possibly also cluing the slang term “turning over banks”, meaning “robbing banks”.
Tiger cub	Tibor Fischer - “The Hungarian Tiger”
Corn tortilla	John Steinbeck - “Tortilla Flat”
Cracked mirror	Agatha Christie - “The Mirror Crack’d from Side to Side”
Six French gold coins known as Napoléons	Sir Arthur Conan Doyle - “The Adventure of the Six Napoleons”
Cover of “Aladdin Sane” by David Bowie	Neil Gaiman - “Inventing Aladdin”

The alliteration in the second paragraph is a clue to one of the authors to be found, Ruth Rendell, whose name is also alliterative.

The initial sentence of the second paragraph includes the words “opaquely” and “obscured”, which are awkwardly-clued answers in the crossword on page 8.

At the bottom of the page is the URL pablosath.com/christmas.htm encoded in a suitably festive font. This links to a picture of “Carol, the ancient Christmas troll”, a pun on the line “troll the ancient Christmas carol” from “Deck the Halls”, accompanied by the “fa la la la la” line from the carol and an alliterative title as a clue to Ruth Rendell.

The reference to “use your detective...skills” is a hint to the detective novels which make up a significant part of the theme.

The reference to “thieves broke into ATHMMIX’s safe deposit box” is a hint to the bank robbery subtheme of the Hunt.

The picture of 5 Oreo cookies and the reference to “rich desserts” is a reference to a pack of the cookies which was left in the treasure box for the first finders.

Page 2 – Sir Arthur Conan Doyle

Doyle’s book “The Red-Headed League” featured a bank robbery.

0.	HILL	Hill	In “The Adventure of the Illustrious Client”, Dr Watson assumes the guise of a “Dr Hill Barton”.
1.	C	Conan	Conan is one of Doyle’s forenames, not part of his surname. It is shared with Conan the Barbarian.
2.	I	Illustrious	In “The Adventure of the Illustrious Client”, Kitty Winter throws vitriol at the Baron in revenge for her ruination.
3.	P	Priory School	In “The Adventure of the Priory School”, Holmes finds tracks on the moor suggesting that they were made by cows with the gait of horses, due to shoes with cow’s hooves being fitted to horses.

4.	H	Katie Holmes	The actress Katie Holmes appeared in the TV series "Dawson's Creek" before marrying Tom Cruise. She shares her surname with Doyle's hero.
5.	E	The Empty House	In George Macdonald Fraser's book "Flashman and the Tiger", Sir Harry Flashman appears in a scene from "The Adventure of the Empty House", in which he pretends to be drunk to avoid being suspected as the murderer.
6.	R	The Red Circle	The top right of the Olympic rings is coloured red; Doyle wrote "The Adventure of the Red Circle".

The enveloped section contains a set of rebus pictures which confirm the use of the Hill cipher denoted by the acrostic:

- Scrabble tile A, which indicates that in the Hill cipher, $A = 1$.
- Leicester City Football Club – LESTER
- Solsbury Hill, near Bath – HILL
- A 2x2 grid of pictures of Keanu Reeves in "The Matrix" – MATRIX

The Hill cipher was invented by *Lester S. Hill*, and uses a *matrix* for encoding. The middle initial "S" may be clued by the SOLSBURY of Solsbury Hill.

The decoding matrix to be used can be deduced from the next line. This shows Rod Steiger in the film "The Pawnbroker" with the letters JW – this is a reference to the pawnbroker Jabez Wilson in the Doyle story "The Red-Headed League".

Linear algebra can be used to deduce the key used to decrypt the supplied short ciphertext in Hill cipher into JABEZWILSON-; as suggested by the pictures of Reeves, a 2x2 key is used.

The resulting decryption key, $\begin{bmatrix} 19 & 8 \\ 10 & 23 \end{bmatrix}$ can then be used on the first long Hill ciphertext to decode the message NOW USE REKORBNWAP AS PLAYFAIR KEY I AND J NO Q.

REKORBNWAP is PAWNBROKER backwards, so NOSLIWZEBAJ is the key (in a grid with both I and J but with Q removed) for the Playfair ciphertext to decode the message TAKE SIGNED FOOTPATH WEST.

The Rendell link is the picture of a crocodile with a bird in its mouth, a reference to her book "The Crocodile Bird".

The treasure route image is the picture of a footpath alongside a fence. This is accompanied by a blue box with a darker blue border containing the text "Hind is readable". This is a clue to the use of EXIF data from the JPEG linked in the route image, as described in "The Website Puzzle" section at the end of this document.

Other items on the page include:

- The pictures beneath the clues are an acrostic:

Dylan THOMAS	T
Katharine HEPBURN	H
Queen ELIZABETH I	E
D H LAWRENCE	L
ISABELLA I of Castille	I
Maureen O'HARA	O
Willie NELSON	N
Tilda SWINTON	S
Alex MCLEISH	M
ADELE	A
Holly NEAR	N
ESAU	E

This gives THE LION'S MANE, a reference to the Doyle story "The Adventure of the Lion's Mane".

- A series of fractions; every fraction up to sixths, but $\frac{3}{4}$ is missing - a reference to the Doyle story "The Adventure of the Missing Three-Quarter".
- The Greek for "Dubbed it as 'interpreter'" – a reference to the Doyle story "The Adventure of the Greek Interpreter".
- A yellow smiley face – a reference to the Doyle story "The Adventure of the Yellow Face".
- A picture of a ruby, with the notation 0.38c and an arrow moving towards an observer, along with the birth and death dates of Christian Doppler. This is a reference to the blue shift in observed starlight as calculated by Doppler, which would convert the red colour of a ruby to a blue colour – a reference to the Doyle story "The Adventure of the Blue Carbuncle".
- A red horned foot – a reference to the Doyle story "The Adventure of the Devil's Foot".
- Two bloodstains – a reference to the Doyle story "The Adventure of the Second Stain".
- Copper beech trees – a reference to the Doyle story "The Adventure of the Copper Beeches".
- A violet – a reference to the character Violet Hunter in "The Adventure of the Copper Beeches". Also a reference to the ATH itself.
- Three water pipes – a reference to Holmes' description of a difficult puzzle as "a three-pipe problem".
- The word "Scandal" in Czech - a reference to the Doyle story "A Scandal in Bohemia".
- 4828 metres, equivalent to three miles – a reference to the Doyle story "The Adventure of the Three Students", the third of which was named Miles.

Page 3 – Rex Stout

Stout's short story "Secrets" featured a bank robbery.

1.	A	<nonce>	<no question>
2.	O	Frederick Osgood	In "Some Buried Caesar", Osgood is the neighbour of Thomas Pratt, who plans to kill a bull called Hickory Caesar Grindon. In the TV series "Dr Who", a member of a race called the Zygons became a clone of Petronella Osgood, leading to confusion between the human and her Zygon impersonator.
3.	R	Lily Rowan	Rowan is Nero Wolfe's girlfriend. She shares her name with comedian Rowan Atkinson, star of "Johnny English" and "Mr Bean", and Rowan Williams, former Archbishop of Canterbury.
4.	C	Inspector Cramer	Cramer collaborates with Wolfe. There is a Swiss bank called Banque Cramer, and Cramer's rule is a technique for inverting matrices (which can be used in decrypting Hill ciphers).
5.	H	Hole Four	In Stout's first novel, "Fer-de-Lance", Peter Barstow is murdered while playing golf (hence "driving") with a doctored club which shoots a poisoned dart into him. This takes place on the fourth hole at the Green Meadow Club in Westchester County, which ignoring the direction "west" should give "Chester". (Which, sadly, does not start with an H.)
6.	I	In the Best Families	In "In the Best Families", Arnold Zeck, whom Wolfe described as his nemesis, is shot and killed. The reference to "Peter (the first beater)" is to Pete Best, original drummer with the Beatles, and that to "George (o quinto)" is to footballer George Best, who was referred to as "O Quinto Beate" by the Portuguese press – both are members of a "Best family".
7.	D	Death	Reference to two Stout novels, "Death of a Dude" and "Death of a Doxy".
8.	S	Stout	Nero Wolfe is described as "oversized".

Nero Wolfe grows ORCHIDS.

The enveloped section contains two Playfair ciphertexts and one Hill ciphertext.

AORCHIDS is the key to the first Playfair cipher, which decodes to NEXT KEYWORD IS DETECTIVE'S FAVOURITE FISH EGGS. This is a reference to Wolfe's liking for shad roe.

SHADROE is the key to the second Playfair cipher, which decodes to ENCODING MATRIX IS THE DETECTIVE'S NAME X.

NEROWOLFE is the key to the Hill cipher, which decodes to FOLLOW PATH TO RIGHT BY FENCE CROSS ROAD.

The enveloped section also contains a set of rebus images:

- Board game ludo; "ludo" is Latin for "I play" - PLAY
- Parsley, sage, rosemary and thyme – reference to traditional song "SCARBOROUGH FAIR", as made famous by Simon & Garfunkel
- Label for Scarborough & Whitby Brewery Regal Stout – SCARBOROUGH subtracted from previous image to give FAIR
- Rex Hill Pinot Gris – HILL (+ REX)
- A 3x3 grid of pictures from "The Matrix" – MATRIX

In this case, the rebus images include a reference to the author.

The Rendell link is the picture of a Rottweiler dog, a reference to her book "The Rottweiler".

The treasure route image is the picture of a tree with "rungs". This is accompanied by a blue box containing the text "Now we comply". This is a clue to the use of EXIF data from the JPEG linked in the route image, as described in "The Website Puzzle" section at the end of this document.

Other items on the page include:

- A description of the hunt for the W boson, a mother particle to various leptons and hadrons – a reference to Stout's book "The Mother Hunt".
- A picture of (Father) George S. Hunt of the Society of Jesus – a reference to Stout's book "The Father Hunt", and a reference to the ATH itself.
- "The Doorbell Rang" painting by Pat Hutchins - a reference to Stout's book "The Doorbell Rang".
- Poster for the film "Gambit" - a reference to Stout's book "Gambit".
- A quotation from the Star Wars films in Sullustese which contains the words "Archie Goodwin" backwards - a reference to the character of the same name in Stout's novels. The quotation seems to have had the words "oophoroma" (an ovarian tumour) and "das" (German for "the") added to the version in the references found online, but otherwise says "We copy, General Solo. We'll keep you on our tracking screens. Good luck!"
- Ymynydddu, a contraction of Y Mynydd Du, "the Black Mountains" in Welsh - a reference to Stout's book "The Black Mountain".

- “Thematic link, somewhat stretched” – a reference to Stout’s book “The Rubber Band”.
- A photograph of some little golden spiders – a reference to Stout’s book “The Golden Spiders”

Page 4 – Agatha Christie

Christie’s short story “The Million Dollar Bond Robbery” featured a bank robbery.

1.	M	The Moving Finger	The writing on the wall at Belshazzar’s feast was depicted in a Rembrandt painting as being written in vertical lines, although Hebrew is conventionally written right to left. “The Moving Finger” is a Christie novel.
2.	A	Appointment with Death	The rock group Lizzy Borden recorded the album “Appointment with Death”. In Somerset Maugham’s play “Sheppey”, the title character is visited by Death, who has an “appointment” with him to end his life. “Appointment with Death” is a Christie novel.
3.	R	Ridgeway	In Christie’s novel “Poirot Investigates”, Ridgeway loses \$1m of bonds while crossing the Atlantic on the liner Olympia. The Ridgeway footpath ends at Ivinghoe Beacon, a site used previously in the ATH.
4.	P	Hercule Poirot	A reference to Christie’s novel “The Labours of Hercule Poirot”, inspired by the labours of Hercules. Poirot’s surname was inspired by the French word “poireau”, meaning “leek”.
5.	L	Lord Edgware	In Christie’s novel “Lord Edgware Dies”, the titular Lord is killed by Jane Wilkinson, his wife, so she can subsequently marry the Duke of Merton, whose Catholicism means he cannot marry a divorced woman.
6.	E	Endless Night	Tidal locking causes one orbiting body to remain in the same orientation relative to another; this is what causes the far side of the moon to be in perpetual darkness. The name of the Christie novel “Endless Night” was taken from Blake’s “Auguries of Innocence”.

Miss MARPLE was the protagonist of numerous Christie novels.

The enveloped section contains two Playfair ciphertexts and one Hill ciphertext.

MARPLE is the key to the first Playfair cipher, which decodes to NEXT KEYWORD ON WHAT BONDS VANISHED. This is a reference to the liner Olympia in the Poirot story, “The Million Dollar Bond Robbery”.

OLYMPIA is the key to the second Playfair cipher, which decodes to BELGIANS NEURONES AND GLIA X. This is a reference to Poirot's description of his brain as his "little grey cells"

GREY CELLS is the key to the Hill cipher, which decodes to HEAD DOWN TO L NOTE RUNGED TREE AND BENCH TO R.

The enveloped section also contains a set of rebus images:

- Book "Huttonian Theory of the Earth" by John Playfair - PLAYFAIR
- Churston, Bexhill, Andover (from Christie's "The A.B.C. Murders") - BEXHILL
- Jasmine Armfield as Bex Fowler in "Eastenders" - BEX subtracted from previous image to give HILL
- Matrix of numbers which when decoded with A=1 give THE MAT RIX - MATRIX

The Rendell link is the picture of a fallen curtain, a reference to her book "The Fallen Curtain".

The treasure route image is the picture of a footpath between two trees.

Other items on the page include:

- A large figure 4 - a reference to the Christie book "The Big Four".
- The Blue Train - a reference to the Christie book "The Mystery of the Blue Train".
- The Crooked House pub - a reference to the Christie book "Crooked House".
- Ryan Gosling in "La La Land" wearing a brown suit - a reference to the Christie book "The Man in The Brown Suit".
- A curtain - a reference to the Christie book "Curtain".
- The board game "Cluedo", which was inspired by Christie's works.
- Five pigs - a reference to the Christie book "Five Little Pigs".
- Tarot cards - a reference to the Christie book "Cards on the Table".
- British ambassador Peter Westmacott - Mary Westmacott was a pen name used by Christie.
- A diagram of the Wheatstone bridge circuit - invented by Samuel Christie.
- An icon of the prophet Samuel - when subtracted from the image above, gives Christie's name.

- RDG1722; 17:22 is the usual time at which the train leaving Paddington at 16:50 arrives at Reading station (RDG) – a reference to the Christie book “4:50 from Paddington”.

Page 5 – Neil Gaiman

Gaiman’s novel “American Gods” featured a bank robbery.

1.	T	<nonce>	<no question>
2.	S	Saraqael	In Gaiman’s “Murder Mysteries”, Saraqael is the angel who murders Carasel, his partner. This happens at or around the time of the Creation.
3.	H	Hunter	In Gaiman’s “Neverwhere”, when the party of explorers visit the British Museum, Hunter has to stay in the underground station due to a curse preventing her from entering London Above. Also a reference to the ATH itself.
4.	A	American Gods	All three are deities in American countries – Sin is a Haida Sky God; Gaol is an Iroquoi Wind God, and Kin is a Mayan Sun God. “American Gods” is a novel by Gaiman.
5.	D	Dream	In Gaiman’s “The Sandman”, Roderick Burgess casts a spell to capture Death, but instead captures Dream, Death’s brother, keeping him trapped in a glass globe until Burgess dies 72 years later.
6.	O	Omens	Gaiman’s “Good Omens” is subtitled “The Nice and Accurate Prophecies of Agnes Nutter, Witch”
7.	W	Wednesday	In Gaiman’s “American Gods”, Shadow Moon robs a bank with Mr. Wednesday, who is actually the god Odin. They meet on an airline flight; Shadow was scheduled to fly on a Tuesday but was delayed by a day due to his expired ID, thus meaning he met Odin on Wednesday.

SHADOW Moon is the protagonist of Gaiman’s “American Gods”

The enveloped section contains two Playfair ciphertexts and one Hill ciphertext.

TSHADOW is the key to the first Playfair cipher, which decodes to MUMXMY MAKER WITH X HONORIFIC IS NEXT KEY. This is a reference to Mr Jaquel, who works at the funeral parlour in “American Gods”

MRJAQUEL is the key to the second Playfair cipher, which decodes to MAIN GOD IN STORY TWO X TWO NO Q. This is a reference to Odin, the principal god in “American Gods”

ODIN is the key to the Hill cipher, which decodes to AFTER A BOGGY FURLONG NOTICE NO NUTS OR SPOONS.

The enveloped section also contains a set of rebus images:

- Thomas Jefferson quote which ends “...where common sense has fair play” - PLAYFAIR
- HILL HOUSE in Morse code
- Hugh Laurie as House in the eponymous TV series – HOUSE subtracted from Morse message to give HILL

The Rendell link is the satellite image of the town of Wexford in Ireland, a reference to Inspector Reg Wexford, protagonist of many of her novels.

The treasure route image is the picture of a footpath between bushes.

Other items on the page include:

- The cover of the book “Sloths!” by William Hartson, upside down – Gaiman wrote “Sloth” for Bryan Taylor’s “Seven Deadly Sins”, and sloths typically hang upside-down from trees.
- A picture of the Earth during a total solar eclipse – Eclipse Comics published Gaiman’s “Miracleman” series.
- A painting by James Heseldin titled “A West country street leading towards the sea” – a reference to Gaiman’s book “The Ocean at the End of the Lane”.
- A close up of some apples in a snow-filled glass vase – a reference to Gaiman’s short story “Snow, Glass, Apples”.
- Cinnamon sticks – a reference to Gaiman’s children’s book “Cinnamon”.
- Representation of NASA “Stardust” mission landing on comet Wild 2 – a reference to Gaiman’s book “Stardust”. Gaiman also appeared on an episode of TV series “The Big Bang Theory” called “The Comet Polarization”.
- Sand sculpture – a reference to Gaiman’s series “The Sandman”
- A sign for Dublin using its old name, “Ath Cliath”, meaning “ford of the hurdles”, with a red arrow superimposed and replacing the letters CLI, leaving ATH (the initials of the Hunt) at either end. This is possibly a reference to the 51st (LI in Roman numerals) episode of the TV series “Arrow”, which features the character Felicity Smoak, whose appearance was based on that of “Death” in Gaiman’s “The Sandman”.

Page 6 – Ed McBain

McBain’s novel “Let’s Hear it for the Deaf Man” featured a bank robbery.

1.	T	Taub	Chris Taub is a plastic surgeon in the TV series “House”, who appeared in the episode “Larger than
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			Life” in which his face is used on a billboard. Russell Taub is a Republican party donor who formed a PAC called “Keeping America in Republican Control” and paid himself \$1m on the proceeds. “Der Taubmann” is an alias used by The Deaf Man, a criminal in McBain’s novels.
2.	H	Heckler	Heckler and Koch are a German arms manufacturer, whose corporate motto is “Keine Kompromisse!” (“no compromises”); “The Heckler” is a novel by McBain.
3.	E	Evan Hunter	Reference to Evan Almighty (film) and Hillman Hunter (car); Evan Hunter is McBain’s real name. Also a reference to the ATH itself.
4.	B	Bank	All the flowers shown are mentioned in a speech by Oberon in “A Midsummer Night’s Dream” – “I know a <i>bank</i> where the <i>wild thyme</i> (picture 5) blows, where <i>oxlips</i> (3) and the nodding <i>violet</i> (6) grows, quite overcanopied with luscious <i>woodbine</i> (4), with sweet <i>musk-roses</i> (1) and with <i>eglantine</i> (2): There sleeps Titania sometime of the night, <i>lull’d</i> in these flowers with dances and delight”. When combined with the answer to question 6 below, this gives BANK ROBBERY, a common theme of McBain’s novels and the sub-theme of the Hunt.
5.	I	Isola	In the 2013 Gibraltar (“the Rock”) by-election, Albert Isola was elected Housing Minister. “Isola” is Italian for “island”, hence the use of Italian for the year. Isola is the fictional location of McBain’s 87 th Precinct.
6.	R	Robbery	Steeleye Span (whose members include Peter Knight and Rick Kemp) covered the traditional song “Bank of Ireland” giving it the new title “Robbery with Violins”; the graphic of the violin being crossed-out reduces this to “robbery”. When combined with the answer to question 4 above, this gives BANK ROBBERY, a common theme of McBain’s novels and the sub-theme of the Hunt.
7.	D	Deaf Man	The Deaf Man is a criminal in McBain’s novels. The 57 th novel in McBain’s 87 th Precinct series was titled “Let’s Hear it for the Deaf Man”, and was set in the 27 th Precinct.
8.	S	Sourd	$C_6H_8O_7$ is citric acid, the addition of which would make something sour, so “added $C_6H_8O_7$ ” is “soured”. $C_{11}H_{15}NO_2$ is MDMA, or Ecstasy, known as “e” – removing this from “soured” gives “sourd”, which is the French for “deaf” or “deaf person”, someone who would say “quoi?” (“what?”) - another reference to the Deaf Man.

McBain wrote the screenplay for Hitchcock's film "THE BIRDS".

The enveloped section contains two Playfair ciphertexts and one Hill ciphertext.

THEBIRDS is the key to the first Playfair cipher, which decodes to THEMATIC AUTHOR'S PSEUDONYM. This is a reference to McBain being the pseudonym of Evan Hunter

EDMCBAIN is the key to the second Playfair cipher, which decodes to DEAF NOVEL FOUR FOUR X FOUR MATRIX. This is a reference to "Eight Black Horses", McBain's fourth novel featuring The Deaf Man.

EIGHTBLACKHORSES is the key to the Hill cipher, which decodes to TAKE MAIN PATH UP WNW A HUNDRED RODS TO CLEARING WITH A POST.

The enveloped section also contains a set of rebus images:

- "The Play that Goes Wrong" promotional photo - PLAY
- New York State Fair - FAIR
- Micaiah Hill's equations for a spherical vortex - HILL

The Rendell link is the reference to 'Haydn's autoepitaph', which was the phrase "*Veni, scripsi, vixi*" ("I came, I wrote, I lived", in Latin). The motto on Rendell's coat of arms is the very similar phrase "*Vixi scripsi*" ("I lived, I wrote").

The treasure route image is the picture of a clearing with a post.

Other items on the page include:

- A series of photos of birds (as in "The Birds", the film for which McBain wrote the screenplay) which make up an acrostic.

Merlin	M
Egret	E
Yellowhammer	Y
Eagle	E
Robin	R

These are followed by the figure 2 to give MEYER MEYER, a character from McBain's novels.

- The cover to "Like an Open Door" by The Fuzz – a reference to McBain's novel "Fuzz"
- Eight horse silhouettes – a reference to McBain's novel "Eight Black Horses"
- Detail of Mischief from John William Godward's painting "Mischief and Repose" – a reference to McBain's novel "Mischief"

- The opening bars of the Christmas carol “Hark! The Herald Angels Sing” - a reference to McBain’s novel “Hark!”
- A white dove and a swede – a reference to the character The Deaf Man in McBain’s novels, whose aliases include “Den Dove”, from the Swedish for “deaf”
- A still from the video for Björk’s song “Hunter” – a reference to McBain’s real surname. Also a reference to the ATH itself.
- A green arrow – a reference to the superhero Green Arrow, who appeared in a series called The Longbow Hunters; another reference to McBain’s real surname and to the ATH itself.
- A photo of Steve Carell in the film “Evan Almighty” followed by the letter A – a reference to the character Steve Carella in McBain’s novels. Also a reference to McBain’s real forename.

Page 7 – Tibor Fischer

Fischer’s novel “The Thought Gang” featured a bank robbery.

1.	T	Thought Gang	“DAVID” by MICHELANGELO minus MICHEL (sculptor of “Poetry and Music”) gives DAVID and ANGELO. The next picture shows David Lynch and Angelo Badalamenti, who formed a musical group called Thought Gang, named after the Fischer novel of the same title. Three copies of Rodin’s “The Thinker” are another “thought gang”.
2.	W	Tibor Weinberger	TIBOR Weinberger was defeated by future World Chess Champion Bobby FISCHER, at the North Central Open tournament in Milwaukee in 1957, between them matching both of Tibor Fischer’s names.
3.	I	If You’re Stupid	“Do Not Read this Book if you are Stupid” is a novel by Fischer.
4.	N	Night	“The Black Dog Runs at Night” is a song performed by Thought Gang which appeared in the soundtrack to the film “Twin Peaks: Fire Walk with Me”. The only lyric in the song is the title repeated several times.
5.	P	Laura Palmer	Flower = Pink, chamber = room; “hot lobster stew” suggests an anagram of HLOBSTER = brothels. Laura Palmer, the corpse in “Twin Peaks”, had worked in brothels and visited a party at The Pink Room.
6.	E	Eddie Coffin	EDDIE MURPHY + the COFFIN of ALEX MURPHY (IRA member) – MURPHY (slang for a potato) –

			ALEX ("Daily Telegraph" cartoonist) = EDDIE COFFIN, character in "The Thought Gang".
7.	A	A béka segge alatt	Batrachian is an adjective referring to frogs or toads. "Under the Frog" is a novel by Fischer, whose title comes from the Hungarian phrase "under a frog's arse down a coalmine", which means a situation which cannot get any worse.
8.	K	Kyle	"iSpy" is a song by American rapper Kyle. "Fortis et Fidus" is the motto of the Clan MacLachlan; Kyle MacLachlan appeared in "Twin Peaks", created by David Lynch, a member of Thought Gang.
9.	S	Sumerian	The pictures show the word ABRAM ("Father beloved") in Cuneiform script, used by the Sumerians. Fischer's novel "The Collector Collector" is about a Sumerian bowl.

Thought Gang, named after a Fischer novel, composed some of the music for the film "TWIN PEAKS".

The enveloped section contains two Playfair ciphertexts and one Hill ciphertext.

TWINPEAKS is the key to the first Playfair cipher, which decodes to AUTHOR WITH PRECEDING INITIAL.

TFISCHER is the key to the second Playfair cipher, which decodes to NO Z FOUR X FOUR BOOK AND AUTHOR'S INITIALS.

THETHOUGHTGANGTF is the key to the Hill cipher, which decodes to SHARP RIGHT INTO WOOD CONTINUE TO BANK.

The enveloped section also contains a set of rebus images:

- The ISBN for the book "The Philosophy of Play" by Emily Ryall - PLAY
- "Fair" painting by Tibor Boromisza - FAIR (+ TIBOR)
- Whitewater Wines "Fischer Hill" - HILL (+ FISCHER)

In this case, the rebus images include references to the author.

The Rendell link is the label of the Old Mammoth Grape *Vine* in Santa *Barbara* - Barbara Vine was a pseudonym used by Rendell.

The treasure route image is the picture of a path into a wood.

Other items on the page include:

- The director Tim Hunter, who, among other things, directed episodes of the series "Twin Peaks", which was created by David Lynch of Thought Gang, and which was the progenitor of the film of the same name for which some of the music was provided by Thought Gang. His name is also a reference to the ATH itself.

- A slot machine colloquially known as a “one-armed bandit” – “The Thought Gang” featured a character called Hubert, who was a thief with only one arm.
- A satellite image of LYTTLETON in New Zealand + a picture of US President HUBERT HUMPHREY – trumpet player HUMPHREY LYTTLETON = HUBERT, the name of the aforementioned one-armed thief.
- A still from the Monty Python sketch about an expedition to Kilimanjaro – a reference to a quotation from Fischer’s book “Voyage to the End of the Room” – “We need meeting places of the mind. A Kilimanjaro of the spirit that we’ve all visited so we can say of other things: it’s shorter, or taller, or the same height as Kilimanjaro.”

Page 8 – Alistair Maclean

Maclean’s novel “The Satan Bug” featured a bank robbery.

1.	H	<nonce>	<no question>
2.	B	Bear Island	All are names of mountains on Bear Island, in the Barents Sea. “Bear Island” is a Maclean novel.
3.	O	One (Is) Down	Maclean wrote a novella titled “Air Force One is Down”. When ‘swapped’, the words in this read “One Down is Air Force” (or “Air Force is One Down”, an answer to the crossword on the page.
4.	T	Toll	In the setters’ previous Hunt, the works of Dorothy L. Sayers were important, including “The Nine Tailors”, where “tailor” was a reference to a bell-ringing stroke. “When Eight Bells Toll” (i.e. one fewer) is a Maclean novel, whose title refers to the method used to tell time aboard ship.
5.	U	Ulysses	The novel “Ulysses” by James Joyce describes the events of a single day; the actual voyages of the Greek hero Ulysses lasted 20 years. “HMS Ulysses” is a Maclean novel.
6.	L	The Last Frontier	The US state of Alaska is known as “the last frontier”; space is described as “the final frontier...where no man has gone before” in the introduction to the TV series “Star Trek”. Maclean’s novel “The Last Frontier” was set in Hungary.
7.	I	Ice Station	Matthew Reilly wrote the (dreadful) novel “Ice Station”; a “variegated (striped) equid” is a zebra. “Ice Station Zebra” is a Maclean novel; Maclean’s middle name is Stuart; he also wrote under the pen name Ian Stuart.
8.	S	The Satan Bug	In Maclean’s novel “The Satan Bug”, a terrorist threatens to use the eponymous biological agent to kill everyone on the planet, but their real intention

			is to have the city of London evacuated so they can rob it.
9.	M	Mallory	The numbers 11 23 18 8 10 are the atomic numbers of the elements sodium, vanadium, argon, oxygen and neon, with the symbols Na, V, Ar, O and Ne, respectively, spelling NAVARONE. The back-story of Keith Mallory, the hero of Maclean's novels "The Guns of Navarone" and "Force 10 from Navarone", was that he was a famous mountain climber. (It is rumoured that Maclean's character was named after real-life famous mountaineer George Mallory, who disappeared while climbing Everest.)

BOTULISM is one of the biological agents stolen from a Government facility at the start of "The Satan Bug".

The enveloped section contains one Playfair ciphertext, one Vigenère ciphertext and one Hill ciphertext.

HBOTULISM is the key to the first Playfair cipher, which decodes to VIGENERE FOILER OF DIABOLICAL BANK ROBBERY. This is a reference to Pierre Cavell, the hero of "The Satan Bug".

PIERRECAVELL is the key to the Vigenère cipher, which decodes to THREE X THREE HIS LAST BOOK. This is a reference to Maclean's final novel, "Santorini".

SANTORINI is the key to the Hill cipher, which decodes to FROM TRUNCATED TREE WIDDERSHINS FOR THIRTY YARDS.

The enveloped section also contains a set of rebus images:

- The promotional poster for the 1936 film "Captain Calamity"; "Captain Calamity was the nickname given to an accident-prone amateur sailor named Stuart Hill – HILL (+ STUART)
- The sailing ship TS Playfair - PLAYFAIR
- A picture of Blaise Vigenère – VIGENÈRE
- The latitude and longitude of Maclean Hill in Canada – HILL (+ MACLEAN)

In this case, the rebus images include references to the author; both his surname and his middle name (also a pen-name he used occasionally).

The Rendell link is the crossword puzzle – the title of Rendell's novel "One Across, Two Down" produces the phrase AUTHOR IS THEMATIC from the grid answers.

The treasure route image is the picture of a forked tree stump.

Other items on the page include:

- A cryptic crossword, to which the solutions are

Across	Down
1. AUTHOR IS	1. AIR FORCE
5. RHEOSTAT	2. THEMATIC
6. OPAQUELY	3. OBSCURED
7. CHIME TEN	4. IN A FLEET

The solutions to the self-referencing clues at 6A and 3D are confirmed by the answers appearing in the second paragraph of the introduction page of the Hunt. 1D is confirmed by question 3 above. 7A is a reference to one more bell ring than the Nine Tailors.

- A photograph of the Red Bull Assassin bug – a reference to the Maclean novel “The Satan Bug”
- A photograph of a puppet with chains instead of strings – a reference to the Maclean novel “Puppet on a Chain”
- A picture of T.E. Lawrence (Lawrence of Arabia) – Maclean wrote a biography of him.
- Three ciphertexts in Playfair, Vigenère and Hill, respectively, for which the keyword is FEAR in each case – a reference to the Maclean novel “Fear is the Key”. The plaintexts are IS THAT SO? GOOD IDEA; and BRAVO A RED HERRING!
- A photograph of Jamaica Inn in Cornwall, which was owned by Maclean
- A photograph of a hunting kilt in the MacLean tartan. Maclean is descended from the Clan MacLean. Also – a HUNTING kilt - a reference to the ATH itself.

Page 9 – John Steinbeck

Steinbeck’s novels “How Mr Hogan Robbed a Bank” and “The Winter of our Discontent” featured bank robberies.

1.	M	The Moon is Down	On 25 December 2019, the moon set at 15:24. “The Moon is Down” is a novel by Steinbeck, featuring the character Major Hunter, whose name is also a reference to the ATH itself.
2.	R	The Red Pony	A “pony” is slang for £25; “in the red” means “in debt”. “The Red Pony is a novel by Steinbeck.
3.	H	Ethan Hawley	Hawley is the protagonist of Steinbeck’s novel “The Winter of our Discontent”.
4.	O	Of Mice and Men	Steinbeck’s novel “Of Mice and Men” is named after a line in Robert Burn’s poem “To a Mouse” – “the best-laid schemes o’ mice an’ men gang aft agley an’ lea’e us nought but grief an’ pain”.
5.	G	The Grapes of Wrath	The title of Steinbeck’s “The Grapes of Wrath” is taken from the song “Battle Hymn of the Republic”

			- "He is tramping out the vintage where the grapes of wrath are stored". This is a reference to the book of Revelation 14:19 - "And the angel thrust his sickle into the earth and gathered the vine of the earth and cast it into the great winepress of the wrath of God". "His truth is marching on" is another line from the same song.
6.	A	King Arthur	Steinbeck's book "The Acts of King Arthur and his Noble Knights" was published 8 years after his death.
7.	N	Nobel Prize	Steinbeck won the Nobel Prize for Literature. Both Linus (Pauling) and Marie (Curie) won two different Nobel Prizes, but neither won the Literature prize.

MR HOGAN is the protagonist of Steinbeck's novel "How Mr Hogan Robbed a Bank".

The enveloped section contains two Playfair ciphertexts and one Hill ciphertext.

MRHOGAN is the key to the first Playfair cipher, which decodes to AUTHOR'S FIRST TWO WIVES CONCATENATED. This is a reference to Steinbeck's first two wives, Carol Henning and Gwyn Conger.

CAROLGWYN is the key to the second Playfair cipher, which decodes to MISTER HOGAN STORY FIVE X FIVE NO Z. This is a reference to Steinbeck's novel "How Mr Hogan Robbed a Bank".

HOWMISTERHOGANROBBEDABANK is the key to the Hill cipher, which decodes to LOOK FOR A TREE WITH VERY MANY TRUNKS.

The enveloped section also contains a pair of clues:

- The second member of the Australian women's medley relay team, which won the silver medal, was Judy Playfair - PLAYFAIR
(The fourth member of the same team was Janet Steinbeck - STEINBECK.)
- The address of Lenox Hill Hospital, New York - HILL
(Steinbeck received treatment here.)

The Rendell link is the three photos of art associated with the name Edgar - the cover of "The Return of Tarzan" by Edgar Rice Burroughs; "Swaying Dancer in Green" by Edgar Degas and the book "Ragtime" by Edgar Doctorow - and the sculpture "Panel 2" by Martin Beck. Rendell won three Edgar awards and the Martin Beck award for her writing.

The treasure route image is the picture of a multiple tree trunk.

Other items on the page include:

- A beer stein with the logo of Beck’s brewery on it – STEIN + BECK.
- A picture of a red pony from My Little Pony – a reference to Steinbeck’s book “The Red Pony”.
- A picture of burning magnesium – a reference to Steinbeck’s book “Burning Bright”.
- A picture of a golden goblet – a reference to Steinbeck’s book “Cup of Gold”.
- A picture of the actress Pearl White – a reference to Steinbeck’s book “The Pearl”.
- A picture of Lady Jane Grey, who reigned as queen for a mere nine days, combined with a picture of Pippin from “Lord of the Rings” and the number 4 – a reference to Steinbeck’s book “The Short Reign of Pippin IV”
- The start of a quotation from Robert Louis Stevenson about “the land of Nod” – the land of Nod was also mentioned in Genesis 4:16, the source of the title of Steinbeck’s book “East of Eden”.
- The Cyrillic characters are the Russian for “red herring”.
- An art installation (“Panel 2”) by sculptor Martin Beck – the second half of SteinBECK, and also a Rendell link, as above.
- Three musical chords; C major played on guitar, B major played on piano, and E major played on ukulele, giving three majors. Three major golf tournaments were won in a single year by Ben Hogan, the first golfer to achieve this feat (in 1953) – a reference to Steinbeck’s short story “How Mr Hogan Robbed a Bank”. Also, the three notes (B, C, E) are the only notes which appear in the name JOHN STEINBECK.
- A picture of Blaise Vigenère and a piece of Vigenère ciphertext which can be decrypted with the key CZECHS to give NOT A CHESS GRANDMASTER.
- A draughts board on which the white squares spell out the message WHITE PLAYS FIRST AND UP CHESS A CHEZ SD. The board is unusual in that pieces are placed on the white squares rather than the black squares, suggesting it may be a modified version of draughts as played in countries like Spain.

Page 10 – Ruth Rendell

Rendell’s novel “Make Death Love Me” featured a bank robbery.

1.	I	Imilac	Imilac is the name of a meteorite which is one of ten star exhibits which are now in Hintze Hall (formerly Central Hall) at the Natural History Museum. This hall used to house two dinosaur skeletons, a diplodocus and a triceratops. It is believed that the extinction of the dinosaurs was caused by a meteorite strike on the Earth.
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2.	B	Brexit	Natalie Loiseau, France's minister for European affairs, claimed her cat was called "Brexit", until admitting not to own a cat at all.
3.	S	Spider	All three are types of spider.
4.	N	nm	1 nautical mile is 1.852×10^{12} times the length of one nanometre; both have the abbreviation "nm".
5.	E	Eugenio Pacelli	Eugenio Maria Giuseppe Giovanni Pacelli, better known as Pope Pius XII, consecrated Russia and wrote various Papal Encyclicals to the people of Russia; while not born in Russia, he was very supportive of the church in Russia. He is buried in the grotto beneath St. Peter's Basilica.
6.	P	Pizza	The formula for the volume of a cylinder is $\pi * r^2 * h$; when the relevant values are substituted, the volume in this case is $\pi * z * z * a$; the "short, hot cylinder" is a pizza.
7.	O	Orestes	Orestes killed his mother Clytemnestra, who had conspired to kill her husband Agamemnon with the help of her lover Aegisthus. Agamemnon had previously sacrificed his daughter Iphigenia to the goddess Artemis, but in some versions of the story, Iphigenia is rescued and meets Orestes again.
8.	F	Gustave Flaubert	Flaubert's novel "Salammbô" was the basis for Modest Mussorgsky's unfinished opera of the same name. Flaubert's novel "Madame Bovary" was the subject of a trial for obscenity, and also the subject of an essay by Mario Vargas Llosa called "The Perpetual Orgy".

On this page, the answers to the questions have no obvious thematic link to the author.

The page contains a number of clues as to how the acrostic is to be used.

Pictures of the Norwegian Eurovision performer Silje VIGE and the African locust bean plant, also known as NERE, when taken together indicate the use of the Vigenère cipher to encode the short piece of ciphertext beneath the picture.

The key for the cipher is clued by the adjacent picture of the actress Emma Stone in "Zombieland" and the arrow pointing at her boots, suggesting the key STONE BOOTS.

Decrypting the ciphertext with this key gives the message CAESAR SHIFT ACROSTIC, suggesting that the acrostic above should be Caesar shifted before use as a key.

A single shift backwards by one letter transforms the acrostic into HARM DONE, the title of a novel by Rendell.

The enveloped section contains one Playfair ciphertext and two Hill ciphertexts.

HARMDONE is the key to the first Playfair cipher, which decodes to MAIN PUNISHMENT FIVE BY FIVE NO Z DECRYPT ISAIDDE. This is a reference to Rendell's novel "Kissing the Gunner's Daughter", a naval term for a punishment involving being tied to a cannon and flogged.

KISSINGTHEGUNNERSDAUGHTER needs to be converted to digits with A=1 and no Z, and the resulting matrix then used directly as a decryption matrix (rather than the encryption matrix used in all other ciphertexts in the Hunt, as shown by DECRYPT in the clue) to produce the key to the first Hill cipher, which decodes to THEMATIC BOOK PLUS AUTHOR'S INITIAL.

The thematic book in question, featuring a bank robbery, is "Make Death Love Me", giving the key MAKEDEATHLOVEMER, which decrypts the final piece of ciphertext as START AT MY BLUE PLAQUE HEAD N. This is the clue to the start of the treasure route; as per the substitution cipher described below, this page is out of order and should be moved to the start.

The clue references the blue memorial plaque for Ruth Rendell, which can be found on the side of a house at 45 Millsmead Way, Loughton, Essex, where she lived from 1951 and began her writing career. The treasure route described (in page order) by the ciphertexts on the other pages therefore starts at this point.

The enveloped section also contains a pair of clues:

- A painting of the view above Ascott towards Brailes Hill by Annabel Playfair - PLAYFAIR
- An urn and the URN (Unique Reference Number) for Hunters Hill College in Worcestershire - HILL, also in HUNTERS a reference to the ATH itself.

The treasure route image is the picture of a stone lion.

Other items on the page include:

- A picture of John Thaw as Inspector Morse, a clue to how to decode the Morse code message below.
- A phrase starting "Australian dislikes..." If in each word, all letters other than I and T are ignored, and I is replaced with a dot and T is replaced with a dash (as appear in the letters), each word can be read as a letter in Morse code, spelling NIHAL SARIN, the name of an Indian chess grandmaster.
- The letters in the first and last row of the chessboard refer to a puzzle set by Sarin in which on the fourth move of a game, black moves a pawn to B5 and checkmates. The complete game is:

1. d4 c6 2. Kd2 Qa5+ 3. Kd3 Qa3+ 4. Kc4 b5#

When the destination squares of these moves are read as letters from the board, they spell 5NG3MATE, which should be read as 5. Ng3#, the final move in another chess problem.

This problem was set by Francois Labelle, and is one in which all moves are uniquely determined by the final move. The complete game is:

1. e3 e6 2. Qg4 Ke7 3. Ne2 Kf6 4. Qxg7+ Kf5 5. Ng3#

When the destination squares of these moves are read as letters from the board, they spell OPEN LOPEZ, a reference to the Ruy Lopez opening:

1. e4 e5 2. Nf3 Nc6. 3. Bb5

When the destination squares of these moves are read as letters from the board, they spell STONE, a reference to the Emma Stone picture and the STONEBOOTS key, and also to Rendell’s novel “A Judgement in Stone”.

- The digits 2019 appear in the final column of the chessboard, a reference to the year of the Hunt.

- A phrase “Breaking News: SNL5 ON BLT3”. This is the solution to the chess problem on the poster (the *ATH News*, in the section about a grandmaster *breaking ribs*); the letters here are the destination squares on the chess board above of each of the ten pieces moved in the game. The complete game is:

1. e4 Nc6 2. Ke2 Nd4+ 3. Ke3 c6 4. Kf4 Ne2+ 5. Ke5 Qa5#

- A message encoded in a simple substitution cipher, which when decrypted reads “Three titles are in the News. This is out of order.” The first sentence indicates that the titles of three Rendell books can be found on the poster, which was headed “ATH News” – the titles are “The Thief”, “Going Wrong” and TBD. The second sentence indicates that while the rest of the pages are in the correct order for the route photos and messages to show the correct route to the treasure, this page is out of order and should in fact appear at the start of the route.

Page 11 – J.K. Rowling

Rowling’s novels “Harry Potter and the Philosopher’s Stone” and “Harry Potter and the Deathly Hallows” both featured a bank robbery.

1.	N	Nearly-Headless Nick / Nicholas de Mimsy-Porpington	A ghost in Hogwarts whose head has been partially severed, he failed to qualify as a member of the Headless Hunt due to the incomplete detachment of his head.
2.	E	Ernie Prang	Nox is Latin for “night” – hence <i>Knight</i> Bus; its driver was Ernie Prang.

3.	C	Dirk Cresswell	Able to speak Gobbledegook, the language of Goblins, he was appointed head of the Goblin Liaison Office in the Ministry of Magic.
4.	R	Ron	Cyclone Ron was a tropical storm which hit Tonga in early 1998. Big Ron was a character in the TV soap opera "Eastenders". Ron Weasley is a character in Rowling's Hogwarts series.
5.	O	Owl	"The Owl Service" was a novel by Alan Garner - the titular "service" was a set of plates with a floral pattern. In Rowling's Hogwarts series, Harry Potter's messenger owl, Hedwig, was a snowy owl.
6.	P	Beatrix Potter	Potter was prevented from presenting a paper to the Linnaean Society because she was female, and hence homozygous in the X chromosome. Harry Potter is the protagonist of Rowling's Hogwarts series.
7.	H	Hogwarts	Sus scrofula is the genus and species of the pig, or "hog", and the papillomavirus causes warts, hence Hogwarts, the name of the school of wizardry in Rowling's series.
8.	A	Albus	The symbol is the geomantic figure known as Albus. (Geomancy is a system of fortune-telling based on geometric shapes.) Albus Dumbledore is the headmaster of Hogwarts.
9.	G	Gringotts	Smirk = grin; I scored = got - Gringotts is the wizard's bank in Rowling's Hogwarts series.
10.	U	Und Der Stein Der Weisen	"Harry Potter and the Philosopher's Stone" had the alternative title "Harry Potter and the Sorcerer's Stone" in the USA. In Germany, it was "Harry Potter Und Der Stein Der Weisen".
11.	S	Sagittarius	Parvati Patil is one of a pair of twins with her sister Padma, hence Gemini. Bane is a centaur, which is how the astrological sign of Sagittarius is usually depicted.

NECROPHAGUS translates as "death eater", the name of the dark wizards in Rowling's Hogwarts series.

The enveloped section contains two Playfair ciphertexts and one Hill ciphertext.

NECROPHAGUS is the key to the first Playfair cipher, which decodes to QUIDDITCH BALL FOLLOWED BY ANOTHER. This is a reference to the game of Quidditch in Rowling's Hogwarts series, in which the balls are quaffles, bludgers and snitches.

BLUDGERSNITCH is the key to the second Playfair cipher, which decodes to NO Z HILL FIRST NAME OF VAULT OWNER. This is a reference to the vault owned by Bellatrix Lestrange in Gringott's bank.

BELLATRIX is the key to the Hill cipher, which decodes to ONE CHAIN BACK FROM KEY HOLE INSIDE TREE CXCIXLVII.

The enveloped section also contains a set of rebus images:

- “Harry Potter and the Cursed Child” promotional photo – PLAY (+ thematic reference)
- Pensacola Interstate Fair – FAIR
- A picture of a stoat with an arrow pointing at its head, a reference to the location Stoatshead Hill in the Hogwarts series – HILL
- A bottle of port and a car key which combined read PORTKEY, a means of transportation in the Hogwarts series, one of which was to be found on the aforementioned hill. The port is a tawny port, which references tawny owls, as used as messengers in Rowling’s Hogwarts series. The key is that used for a Ford Anglia, one of which was used by Harry and Ron to reach Hogwarts one year.

The Rendell link is the picture of portobello mushrooms, a reference to her book “Portobello”.

The treasure route image is the close-up picture of a tree trunk showing a small hole.

Other items on the page include:

- A picture of a goblet – a reference to the book “Harry Potter and the Goblet of Fire”.
- A reference to a circle inscribed in a triangle with an altitude – this is the Deathly Hallows symbol described in Rowling’s Hogwarts series. (We suspect there is also a deliberate red herring here, as the description is close to that of the symbol for a trig pillar on an Ordnance Survey map, although that would have an “elevation” rather than an “altitude”. Some of the locations clued elsewhere in the Hunt, such as Cock Hill and Brailes Hill, have trig pillars.)
- The text “I expect PANS1/2!” – this is a reference to the spell cast by Harry Potter to summon a patronus, “Expecto Patronum!”. “Expecto” is (fake) Latin for “I expect”, and PANS1/2 are the codes for two proteins, Patronus 1 and Patronus 2.
- A picture of Guy Fawkes – Dumbledore’s phoenix was named Fawkes after him.
- A picture of the French frigate Hermione – Hermione Grainger is a character in Rowling’s Hogwarts series.
- The constellation Draco – Draco Malfoy is a character in Rowling’s Hogwarts series.
- A picture of Hedwig of Denmark – Hedwig is the name of Harry Potter’s owl.
- A picture of Henri L’Estrange, a French tightrope walker – the Lestrange family are characters in Rowling’s Hogwarts series.

- A quotation from the Scottish poet William McGonagall’s poem “The Tay Bridge Disaster” – Minerva McGonagall is the housemistress of Gryffindor in the Hogwarts series
- A picture of the footballer Terry Butcher – Butcher’s name is similar to that of Harry Potter, having a first name with the same number of letters and the same ending, and a surname which describes an occupation.

Page 12 – Emile Gaboriau

Gaboriau’s novel “Le Dossier No. 113” (File 113) featured a bank robbery.

This page is different from the others in the Hunt, in that it contains no questions and only a single Hill ciphertext.

The key for the Hill cipher is given in numerical form based on numbers which can be found in Gaboriau’s novel “Le Dossier No. 113”, as follows:

113 - the number of the titular file.	87 - the address of the bank of Andre Fauvel on Rue De Provence.	39 - the number of the house in which Auguste Prosper Bertomy lived.
93 - the year referred to by the marquis when mentioning Gaston’s “old tricks”.	2 – the second picture shown by the clown was an old lady.	93 – the article of the Criminal Code which requires prisoners to be interrogated within 24 hours of arrest.
81 – the address of the “Fashionable Dressmaker”.	15 – the date of the marriage of Bertomy and Fauvel.	22 – the chapter number titled “The Catastrophe”.

If this key is used to decrypt the Hill ciphertext, it decodes to ON WAY BACK PASS BENCH TO BIKE IF THIRSTY, a suggestion to visit The Foresters Arms, which has a bicycle above the door, after finding the treasure.

The enveloped section also contains a set of rebus images:

- A bottle of Rooster Hill Chardonnay – HILL (+ ROOSTER, a reference to Monsieur Lecoq, the protagonist of Gaboriau’s novels)
- A Scrabble tile A, indicating that A=1 in the Hill cipher
- The OS grid reference (405931 396189, or SK 05931 96189) of Cock Hill in the Peak District – HILL (+ COCK, another reference to Monsieur Lecoq)

The Rendell link is the picture of a staircase, a reference to her book “House of Stairs”.

The treasure route image is the picture of a bicycle being used as a sign for the pub The Forester’s Arms near the treasure location.

Other items on the page include:

• A set of equations which correspond to the identities (real and assumed) of characters in Gaboriau's novels:

- The logo of Le Coq Sportif - LECOQ
- Francisco Jose de Caldas - CALDAS
- "Vet murder" - anagram of M. VERDURET

All three are identities of Monsieur Lecoq in "File 113". This is further confirmed by the French for "miserable bungler" ("bousilleur miserable"), which is how Sherlock Holmes described Lecoq in "A Study in Scarlet".

- "Fern aloft" - anagram of FANFERLOT
- A grey squirrel - L'ECUREIL
- Pierre Joseph Dubois - JOSEPH DUBOIS

All three are identities of Fanferlot in "File 113".

- "Glad Rose" - anagram of DE LAGORS
- The logo of Valent BioSciences inside the logo of Wilson Sporting Goods - VALENT IN (Valentin) WILSON
- James Spencer - JAMES SPENCER

All three are identities of Raoul-Valentin in "File 113".

- The quotation "Sauvez au moins..." from Pierre Jean Béranger, which means "Keep at least the right to hunt for honour", a reference to the ATH itself.
- The statue of the Virgin and Child in Orcival – a reference to Gaboriau's story "Le Crime d'Orcival" (The Mystery of Orcival).
- The Alexandre Dumas slavery memorial in Paris – a reference to Gaboriau's story "Les Esclaves de Paris" (Slaves of Paris).
- A diagram of a magic trick which makes a toothpick disappear – a reference to Gaboriau's story "Une Disparition" (A Disappearance).
- LE BLANC in Indre + Stendhal's "LE ROUGE ET LE NOIR" – Voltaire's "LE BLANC ET LE NOIR" resulting in "LE ROUGE" – a reference to Gaboriau's story "L'Affaire Lerouge" (The Lerouge Case), further confirmed by the picture of a tiny red sphere.

The Website Puzzle

In addition to the Hunt proper described above, a second set of puzzles are concealed in weblinks in the document. This is the reason for the hint on the website that "some things may only make sense if you visit the site itself".

Each treasure route photograph contains an embedded weblink to a page on the pablosath.com site which contains a high-resolution version of the image. Each of these images contains additional information embedded in the EXIF data. This is clued by the fact that two of the pages contain titles which are identical to the messages included in the blue boxes on the relevant pages of the Hunt itself but with the letters EXIF removed – the page linked from page 2 has the title “HEX I FIND IS READABLE”, which becomes “HIND IS READABLE”, and the page linked from page 3 has the title “NOW WE COMPLEXIFY”, which becomes “NOW WE COMPLY”.

The weblinks all have five letter titles, as follows.

Page	Link name	Image EXIF date
2	moral	06/12/02 23:59
3	reuse	14/12/07 20:30
4	miner	15/12/08 12:00
5	treat	07/12/09 00:30
6	yeast	05/12/10 23:59
7	foxes	15/12/11 00:00
8	comma	14/12/12 18:00
9	aisle	21/12/13 00:08
10	sword	19/12/14 18:30
11	t1ake	18/12/15 00:01
12	aw9ay	14/12/16 19:30

The EXIF data for the images contains author data, a date which is not that on which the photograph was taken (but are all in December, and the pages are in chronological order), and a comment. Some images contain additional data strings in the copyright and title / subject fields.

On page 2, the comment field contains hexadecimal letters which are ASCII text (hinted at by the phrase “Hex, I find, is readable”); when decoded these give the message “The date helps solve the code”.

Ruddigore

On pages 4, 6, 8, 9 and 11, the author field is “G&S”, a reference to the composers Gilbert and Sullivan. The comment fields in these pages contain hexadecimal letters which are ASCII text; when decoded, these produce a verse from the song “My eyes are fully open” from the Gilbert and Sullivan operetta “Ruddigore”:

“If were not a little mad and generally silly
 I should give you my advice upon the subject, willy-nilly;
 I should show you in a moment how to grapple with the question,
 And you'd really be astonished at the force of my suggestion.
 On the subject I shall write you a most valuable letter, “

Cricket Code

On page 12, a message is encoded using the cricketer code from previous Hunts – this is made up of the cap numbers of Test cricketers for England (E), New Zealand (N), the West Indies (W), South Africa (S) and Sri Lanka (s) - taking the initial letter of the surname of the player with that cap number gives the message STEP IN DATE ORDER OF THE SUBJECTS

Ciphertext

On page 7, the comment field contains plain ASCII ciphertext. This is headed by the string “DEB DE N 2012 = 99 = ATH RJA = PABLO...”. DEB DE N is a reference to Debden, the London Underground station closest to the treasure site, and ATH and PABLO are references to the Hunt itself. We suspect the ciphertext to be either Vigenère or Hill-encoded, due to their use elsewhere in the Hunt; the double letter means it cannot be Playfair.

Other codes

The code used for page 3 looks like a book or other text lookup cipher.

The code used for page 5 looks like binhex’ed binary data, so may be a modern PC based cipher such as RSA or AES.

Muddy Boots Award

Released on the Hunt site on the anniversary of the birthday of goalkeeper Gordon Banks, 30 December.

The title line of the poster contains pictures of the footballer Pablo Sisniega (PABLO), and the logo of the Sport at the Heart charity (SATH). These combine to make the phrase PABLO’S ATH, a reference to the title of the Hunt.

The sentence “Have all possible paths yielded nothing else when you examine and recalculate?” is an acrostic reading HAPPY NEW YEAR.

The reference to the theft of ATHEXIT is a hint to the bank robberies which are a sub-theme of the Hunt.

The mention of “muddy boots” is very appropriate given the quagmire-like state of the ground en route to the treasure site in Epping Forest, so much so that the quotation about not noticing the mud when close to the goal is rather inaccurate...