

The Twelve Days of Cold Christmas

Pablo's Armchair Treasure Hunt 2021

The James Medhurst Memorial Hunt

Note from the Setters

James Medhurst first took part in the Armchair Treasure Hunt in 2017 in the Rookies team. He was an invaluable team member, and gifted puzzle solver. He also regularly set puzzles for friends, colleagues and family, so it was probably no surprise when James said he wanted to set a future ATH. He already had an idea in mind, and by the time of the 2018 prize giving he was petitioning the ATH committee. Shortly afterwards, in July 2019, James found out he had been selected to set the 2021 ATH and was understandably delighted.

Fast forward a year to the late summer bank holiday 2020. James presented the rest of the team, now renamed *The Urban Marsupial Orchestra*, (his suggestion - bonus point if you worked out why!) with the first draft of the 2021 poster and advent calendar, followed by the main hunt ('so far') a few weeks later. Test solving took us up to November 2020, at a more leisurely pace than a usual hunt. By this point we had attempted a site visit and had seen perhaps 60-70% of the final hunt material, although we didn't have access to all the answers. Efforts were paused to allow us to contest the 2020 ATH.

Towards the end of January 2021 we were scratching our heads over ATH2020 when we found out the sad news about James. After the initial shock we all thought of the hunt - it had meant so much to James. Could we (should we?) attempt to finish it? We checked with James' family and they agreed that we would aim to finish what James had so competently started. With about 10 months to go, we set to the task.

We were confident we could do it. We tried to preserve as much of the original puzzle material as we could, and to honour James' intent and themes. The missing elements were not so numerous, although there were some parts we hadn't fully understood, so had to exclude on that basis. We had no idea what the final parts of the hunt were going to entail so had to devise some new content. We were also aware that we may well have missed things that James had included due to the lack of available answers! We hope that overall the hunt did not feel too disjointed as a result, and that there was a range of diverse puzzles for solvers of differing abilities and knowledge bases.

Thank you for investing your time, brain cells and muddy boots into ATH 2021, we hope you enjoyed it. Hopefully we can raise a glass to James at the prize giving to remember a true ATH-er, both solver and setter.

The Urban Marsupial Orchestra, Jan 2022.

Andy (Crossword Master), Dave (Proofreader Extraordinaire), Lauren (Supreme Setter), Nigel (Cracking Code Cracker & Tech Support) & Suzanne (Chief Project Manager).



James (far left) with the rest of the team after finding the 2019 ATH treasure in Epping Forest

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Scoring

The answers document contains reference identifiers as letters and numbers in square brackets (e.g. [T1]) to indicate where marks were to be awarded. Generally the information in bold needed to be provided to be marked correct. In keeping with ATH tradition the majority of the points were awarded on a scaled system to award a greater number of marks for those items which fewer teams identified. The marking was modified slightly so that even if all teams were to identify a point-scoring item then they would still score 1 point. This resulted in a lot of opportunities for scoring points! There were a few items where we just decided to award a fixed number of points depending on the amount of the puzzle solved (wordsearch, crossword clues, equations on page 10). In this way all teams would be rewarded for their efforts even if the final solution was not found.

There were a number of predetermined bonus points on offer for things that we thought were interesting links or observations but were not obviously something to be solved. These are indicated through the answers document as e.g. [BP00]. The setters may award additional bonus points for observations deemed worthy or partial solving of puzzles.

Solving

It is difficult as setters to fully appreciate how teams will tackle individual puzzles and the hunt overall. We solved all the puzzles, either as a team in our initial test solve for James, or in smaller sections when adding new puzzles or modifying existing ones. On that basis we thought the majority of the hunt was do-able, with some parts being more challenging than others. That said, some pretty hard graft was needed for some of the puzzles. A puzzle with a time limit of about a month should be difficult. We didn't want the treasure to be found in a day or for multiple teams to get 100%, hence some of the puzzles were there to stretch teams.

It is extremely helpful to be able to watch several teams in their solving attempts. The poster and advent calendar seemed a breeze for most of the teams we were watching. Most of these teams did seem to be quite experienced, so being able to see the musings of a novice team would have been helpful. By necessity, the difficulty level for the main hunt increased compared to the poster, but the majority of the teams we were watching made steady progress on many of the difficult puzzles. However, these were mostly ultimately unhelpful in terms of actually finding the treasure. The obvious high difficulty level of several of the puzzles (hexagonal crossword, page 2, party puzzle) were taking up a lot of time for many teams. We released some mid-hunt hints to try and point teams in the direction of the more important puzzles for locating the treasure, and this did seem to help - indeed the treasure was found the day the second hint was released (30 December 2021).

(Deliberate) Mistakes and Red Herrings

We received a number of emails asking about potential mistakes in the hunt. Many of these related to the deliberate misprints in the crossword clues, although most teams quickly realised that there were so many that it had to be intentional. Some teams used alternative

methods than the intended “short weather cipher” (see below) to decode the AC temperatures code, which led to a spelling mistake in the decoded message. There was no mistake if the correct cipher was identified. Several teams queried the enumeration in relation to the “smoking room” message on page 8, but this was also intentional.

A couple of the pictures in the Party Puzzle had some extra letters underneath if the pdf images were extracted. These were left over from an earlier version of the puzzle. If anything they should have just been a confirmer rather than a real advantage to those who found them.

There are a number of pictures throughout the hunt that were chosen to enhance the themes or be deliberate red herrings (depending on your point of view). For example the picture of Garth Algar shows him smoking a pipe, but in that puzzle the picture represents the actor’s name “Dana”, similarly John Travolta is a lady dancing but represents “Turnblad”. There are no extra points for spotting thematic characters such as pipe smokers / ladies dancing where this was not their primary purpose.

Hunt Themes

The central theme of the hunt is **The Twelve Days of Christmas [T1]**. Although many versions of this song exist, as you have no doubt discovered, the lyrics from [Frederic Austin's 1909 publication](#) were used. **The Prime Meridian** is key to the final location of the treasure [T2], and, by extension, prime numbers, and longitude and latitude were used as sub-themes throughout the hunt. There were many references to **Cold [T3]** as a nod to the treasure’s location.

Poster

The poster appetiser consisted of a main poster advertising the hunt as “James’ Advent Calendar” and then ten subsequent advent calendar style doors revealing a puzzle or thematic picture each day from 1st to 10th December, ahead of the release of the main hunt on Friday 10th December 2021.

The twelve pictures at the top of the poster all represented events which took place in December - marks are given for identifying the picture (date not needed for these marks). Identifying the date on which the event occurred provided a simple cipher and a message. This worked by taking 1st December = A, 2nd December = B, etc. The final message was **HAPPY HUNTING [P1]**.

Picture identity	Date	Code Letter
A false colour photograph of the moon , taken by the Galileo Orbiter spacecraft [P2].	8 December 1992	H
Screenshot of Vinette Robinson playing Rosa Parks in the Doctor Who episode ‘ <i>Rosa</i> ’ at the moment she refuses to give up her seat on the bus [P3].	1 December 1955	A

Oliver Cromwell being sworn in as Lord Protector of England, Scotland and Ireland, as depicted on a 19th century French Chocolat-Louit trade card [P4].	16 December 1653	P
A representation of the Boston Tea Party from an 1846 lithograph by Nathaniel Currier entitled <i>The Destruction of Tea at Boston Harbor</i> [P5].	16 December 1773	P
The coronation of William the Conqueror [P6]. The image is in the style of the Bayeux Tapestry, and is readily found with an image search. However, several pieces of the cloth are reportedly missing, and the coronation of William is not actually depicted.	25 December 1066	Y
The Ross Ice Shelf, Antarctica , taken by the Galileo Orbiter spacecraft [P7].	8 December 1990	H
The first published crossword puzzle , which was created by Arthur Wynne and published in Sunday newspaper the <i>New York World</i> [P8].	21 December 1913	U
Roald Amundsen reaching the South Pole . Wikipedia states that some sources give the date as 15 December because the western and eastern hemispheres—and the International Date Line—are conjoined at the South Pole. Either date is therefore acceptable as an answer here, but only the 14th will give you the message [P9].	14 December 1911	N
General Colin Powell (and US Defense Secretary Dick Cheney in the background) briefing reporters about the military operation to remove Panama's General Manuel Noriega from power [P10].	20 December 1989	T
Florrie Lindley in the corner shop in Coronation Street (Lindley's Provisions), as featured in the first episode [P11].	9 December 1960	I
An illustration by Fortunino Matania of a woman casting her vote in the December 1918 UK general election, the first time women were allowed to vote [P12].	14 December 1918	N
Representation of Galileo Orbiter flying past Jupiter's moon Io. The date is when Galileo arrived at Jupiter [P13].	7 December 1995	G

Solvers will note that the Galileo Orbiter is featured three times. This is a hint to two of the themes to come in the main puzzle. **Galileo** worked on the problem of calculating longitude (so a **link to the Prime Meridian theme**) [P14] and the fact that it is mentioned three times is a nod to the lyrics of **Queen's Bohemian Rhapsody** which features in the main hunt as a Christmas number one single on page 6. [P15]

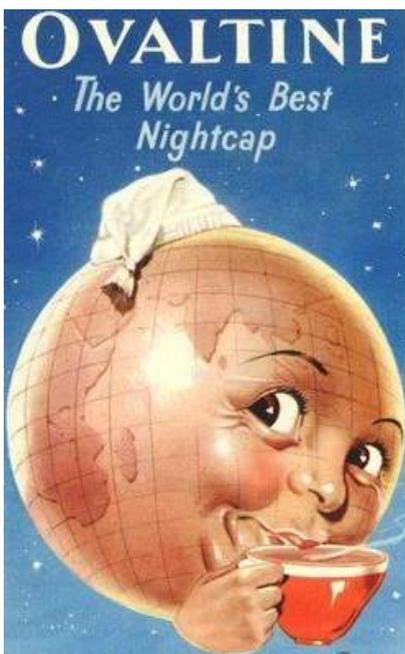
The main picture on the poster is a screen shot from the film '**A Christmas Story**' [P16]. In the film the main character Ralphie is a fan of the Little Orphan Annie radio series. Every episode contains a secret code. The production itself was sponsored by Ovaltine, and an Orphan Annie Secret Society decoder pin could be obtained by saving up and sending off

Ovaltine receipts. Ralphie does this to obtain his pin. In the film the message decodes to an Ovaltine advert. The text beneath the picture provides an extra clue: "Santa Claus, what's that? Who's he?" is from **the musical Annie**, and she has the key to solving this puzzle [P17].

The Christmas Story screenshot has a date on the calendar of 1935. Put all these clues together and you will discover that there is an **Orphan Annie Secret Society decoder pin from 1935** which must be used to decode the message in the speech bubble [P18].



The final piece of information needed to decode the message is taken from the film. Ralphie is instructed to **set the pin to B = 2** [P19], and the same device is used to decode the message here. The result is **DUE FOR MY NIGHTCAP?** [P20]. Like Ralphie, you may have been disappointed by this reference to an **Ovaltine advert** [P21]! [Be sure to drink your Ovaltine - YouTube](#)



Advent Calendar

Each of the puzzles provided in James' Advent Calendar from 1st to 10th December were self-contained miniature puzzles, although several had links to the hunt themes. The treasure location area was actually revealed extremely early in the hunt.

1st December

The four pictures taken together were read as a charade. The man doing sign language represented **BOOK**; umpire Simon Taufel signalling 'out' meant **ONE WORD**; Laurence Fishburne holding his ear indicated **SOUNDS LIKE**; and the Spitting Image puppet of Paul Gascoigne might have made you think **GAZZA TEARS**.

The final answer is **GAZZETTEER(S)** [AC1 - answer accepted with or without the S].

Most of the remaining advent calendar puzzles, when solved, revealed various places connected to Christmas, and could therefore be considered a Gazetteer.

2nd December

"Swampy" the alligator at the Jungle Adventure Nature Park & Zoo in the town of **Christmas, Florida** [AC2].

3rd December

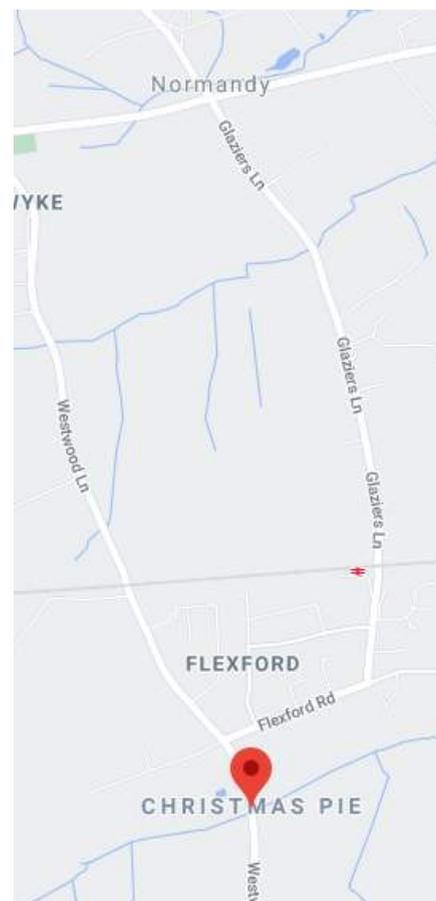
The Fox and Hounds pub at **Christmas Common, Oxfordshire** [AC3], which is used as a polling station. Christmas Common was the location of the treasure in the first ATH.

4th December

The three pictures were Normandy, France; an upside down Ford Flex (and Mark Wahlberg) from the Christmas movie Daddy's Home 2; and a Google maps marker. The arrangement of the pictures provided the clue to solve this one. The village of Normandy is in Surrey, and south of it on Google maps you will see Flexford (i.e. an upside down Ford Flex), and south again is **Christmas Pie** [AC4]. The alignment is less satisfying on the OS map of the area.

5th December

Steps on their "Christmas with Steps" tour December 2012, and a screenshot of a variant of Solitaire called 'Bristol'. Together they represent the **Christmas Steps in Bristol** [AC5].



6th December

The animals (rheas, beagles and tortoises) were a clue to Charles Darwin, who lived in Down House in the village of Downe, hence the 'we heard' homophone hint. If you look up a map of Downe you will find [Christmas Tree Farm](#) just up the road, more in keeping with the Christmas Gazetteer [AC6]. According to the website Christmas Tree Farm has rheas - Darwin observed rheas during his expedition on board the HMS Beagle and noted two species in South America. One is now named after him (Darwin's rhea or the lesser rhea, *Rhea pennata*).

7th December

The equation is a form of Newton's Law of Cooling. Newton attempted to devise his own universal language, and "itor" meant "cold". HBTM is a common abbreviation for Happy Birthday To Me. Based on the Julian calendar (which was in use at the time) **Newton was born on 25 December** 1642, i.e. Christmas Day. Taken together this gives **Cold Christmas** [AC7].

8th December

The pairs of letters are all ISO Alpha-2 Country Codes (also could be interpreted as internet domains or just abbreviations):

Mexico 1 Cameroon 0

Ghana 1 USA 2

Japan 0 Greece 0

Italy 0 Uruguay 1

These are results from group stage matches in the **2014 FIFA World Cup**, held in Brazil [AC8]. All four of these matches were held at the **Arena das Dunas** in the city of **Natal**. In Portuguese **Natal means Christmas** [AC9].

9th December

This advent calendar entry provided an introduction to both the Christmas card puzzle (see later) and the central theme. The song in question was **the Twelve Days of Christmas** [AC10]. The date on the card was the first day of Christmas, and the total number of presents every day increases as a tetrahedral number.

10th December

The final advent calendar puzzle was a two-parter, with a green connection, hence the colour. The first image was a sign post with some letters and numbers. The letters were chemical symbols, which needed to be converted to the atomic number (Scandium, Sc = 21; Bromine, Br = 35; Sulfur, S = 16). The number 5 was to be converted to the letter B, as this is the atomic number for Boron. This gave **B2135** and **B2116** [AC11]. The junction of these two B-roads happens at **Partridge Green** in West Sussex [AC12].

The second clue was in the shape of a gravestone and represents the memorial to **Richard Parker** (RP) in the graveyard at Jesus Chapel, **Peartree Green**, Southampton [AC13]. Parker was the cabin boy of the yacht *Mignonette*, which was shipwrecked in 1884. With no provisions, Parker's companions, Dudley and Stephens, killed and ate him. The subsequent criminal case, Regina v Dudley and Stephens, changed English law by establishing the precedent that necessity is no defence to murder. This case is one studied by all law students during their training, and anyone noting that **James studied law or worked as a lawyer** will be awarded a bonus point [BP1]. The name Richard Parker was used for the Bengal tiger in Life of Pi (hence the π on the gravestone). As a throwback to the 2020 hunt, Edgar Allan Poe's novel, *The Narrative of Arthur Gordon Pym of Nantucket* has a minor character Richard Parker, who is cannibalised by the shipwreck's survivors.

Main Hunt

The Twelve Days of Christmas

The twelve pictures at the top of page 1 represented the **Twelve Days of Christmas** [DOC1]. To get the marks for each picture an explanation was needed for what the picture represents, rather than just identifying the pictures. There was no significance to the layout of the pictures. During testing we asked James about this and his response was "*I just wanted something that wasn't quite as obvious as putting them in order, but had enough structure that missing clues could be worked out from their location.*"

Picture identity	Date
Portrait of Jan III Sobieski , King of Poland and Grand Duke of Lithuania (1674-1696) [DOC2]. In this case the name is important rather than a specific date.	3 January
Nancy Pelosi being inaugurated as Speaker of the House of Representatives [DOC3].	4 January 2007
Photograph showing construction of the Golden Gate Bridge by Chas M. Hiller, July 1934. The date of the start of construction was the one needed [DOC4].	5 January 1933
Photograph of Humphrey Bogart , who was born on Christmas Day [DOC5]. He is sporting a red and white striped hat and party blower, which suggests he is celebrating his birthday - and has another significance which will be explained later.	25 December 1899
A UK Christmas stamp from 1973, designed by David Gentleman, depicting Good King Wenceslas. This represents Saint Stephen's Day [DOC6], which is celebrated on 26 December in Western	26 December

Christianity (and 27 December in Eastern Christianity, or 9 January for the Orthodox church).	
The recovery of the Apollo 8 crew after splashdown in the Pacific Ocean [DOC7].	27 December 1968
Painting ' <i>La rendición de Granada</i> ' (1882) by Francisco Pradilla, depicting King Boabdil's defeat in the War of Granada [DOC8].	2 January 1492
The front page of <i>The Daily Mail</i> on the day the UK joined the European Economic Community [DOC9].	1 January 1973
Donald Campbell and Bluebird K7 preparing to break the world water speed record at Lake Dumbleyung [DOC10].	31 December 1964
Cartoon character Roy G. Biv from the video to the song ' <i>Roy G. Biv</i> ' by They Might Be Giants. ROYGBIV is an acronym for the colours of the rainbow, which can also be remembered as "Richard Of York Gave Battle In Vain". Richard of York died on this date in the Battle of Wakefield [DOC11].	30 December 1460
Stained glass window by Lawrence Lee in the parish church of St Alphege, Solihull. It depicts the murder of Thomas Becket in Canterbury Cathedral [DOC12].	29 December 1170
Picture from the annual festival of Els Enfarinats or Los Enharinados which takes place in the town of Ibi in Alicante [DOC13].	28 December

A Partridge in a Pear Tree

The letter square was used to hide many words and messages. The main feature of the grid was to contain references to **Alan Partridge** [PPT1]. In '*I'm Alan Partridge*' episode 1 '*A room with an Alan*', Alan was told that his chat show had been cancelled. He pitched various ideas for programmes he could present. A transcript from the episode can be found on [IMDB](#). Most of Alan's pitch ideas can be readily found in the wordsearch: **A PARTRIDGE AMONG THE PIGEONS; KNOWING M.E., KNOWING YOU; ARM WRESTLING WITH CHAS AND DAVE; INNER CITY SUMO; SWALLOW; ALAN ATTACK** [PPT2, all 6 needed for the mark]. Several were missing (Cooking in Prison; Youth Hosteling with Chris Eubank and Monkey Tennis), however, these are discussed below.

The name '**DAN**' can also be found in the grid **15 times**, consistent with Alan shouting "Dan" 15 times in '*I'm Alan Partridge*' [series 2, episode 3](#) ('*Bravealan*') [PPT3].

There were ten Christmas-related words: **STOCKING; JUMPER; TINSEL; LAPLAND; CANDLE; MERRY XMAS; WIZZARD; BAUBLE; ANGEL; ICE SKATING** [PPT4, score 2 points for any five, or 3 points for all ten]. Any other apparently Christmas related words were unintentional and will not be credited.

There were fifteen species of monkey present: **HOWLER; MANDRILL; TALAPOIN; LANGUR; CAPUCHIN; GRIVET; TAMARIN; VERVET; MANGABEY; DOUC; GELADA; UAKARI; SURILI; GUENON; LESULA** [PPT5, score 1 point for every five monkeys identified up to maximum of 3 points for all monkeys]. There were also two other monkey-related hints: '**Cu 29 Zn 30**' represents **brass**, and this can be interpreted as a **reference to 'cold'** and monkeys (**brass monkeys**) [PPT6]; '**CHILLY PINE**' contains both a **'cold' reference** and is a close homophone of Chilean Pine, or *Araucaria araucana*, the **Monkey Puzzle Tree** [PPT7], indicating this is indeed a monkey puzzle involving a (pear) tree.

There was a specific instruction in the grid: **PLAY PONG** [PPT8]. This is a suggestion to play 'Monkey Tennis', using the classic video game PONG as inspiration. An additional clue to Monkey Tennis was the red letters **AMEMA** in a V-shape in the grid. Closer inspection should have revealed that the point of inflection in the red letters was on one of the monkeys (LANGUR). The message **GAME MARMOSET AND MATCH** [PPT9] can be found starting from TALAPOIN then tracking diagonally to LANGUR, then to MANDRILL, to CAPUCHIN, to DOUC, and finishes at MANDRILL.

Starting from HOWLER and using the same Monkey Tennis technique it is then possible to spell out **THIS YEAR'S QUEST TAKES BECKY BETTS FROM** [PPT10]. A clue to the presence of this message was the repeated pair of red letters **BE** in the grid. This message ends rather abruptly but is continued elsewhere in the grid. Becky Betts was a co-presenter on radio show **Treasure Quest**, which is broadcast on **BBC Radio Norfolk** on Sunday mornings [PPT11]. This also provided another link to Alan Partridge, who worked as a radio presenter at Radio Norwich.

The grid contained four unusual looking words or phrases: **LOCH OTHIAN, THLAIDBURN, PEN-Y-PATH** and **BLACK THAIL**. These are all youth hostels in the United Kingdom, as they might be said by Chris Eubank (Loch Ossian, Slaidburn, Pen-y-pass and Black Sail), and therefore represent Partridge's proposal of '**Youth Hosteling with Chris Eubank**' [PPT12].

The next message could be found by looking at the letters between the youth hostels. As a further clue to the pattern, the pairs of letters **ET** and **TE** were highlighted in red. Starting at THLAIDBURN, heading diagonally up to the left by taking the letters in pairs, and deflecting off the youth hostels in similar fashion to the monkey tennis gives **FRETENHAM TO FAKENHAM** [PPT13]. This helps to narrow down the episode of Treasure Quest to focus on.

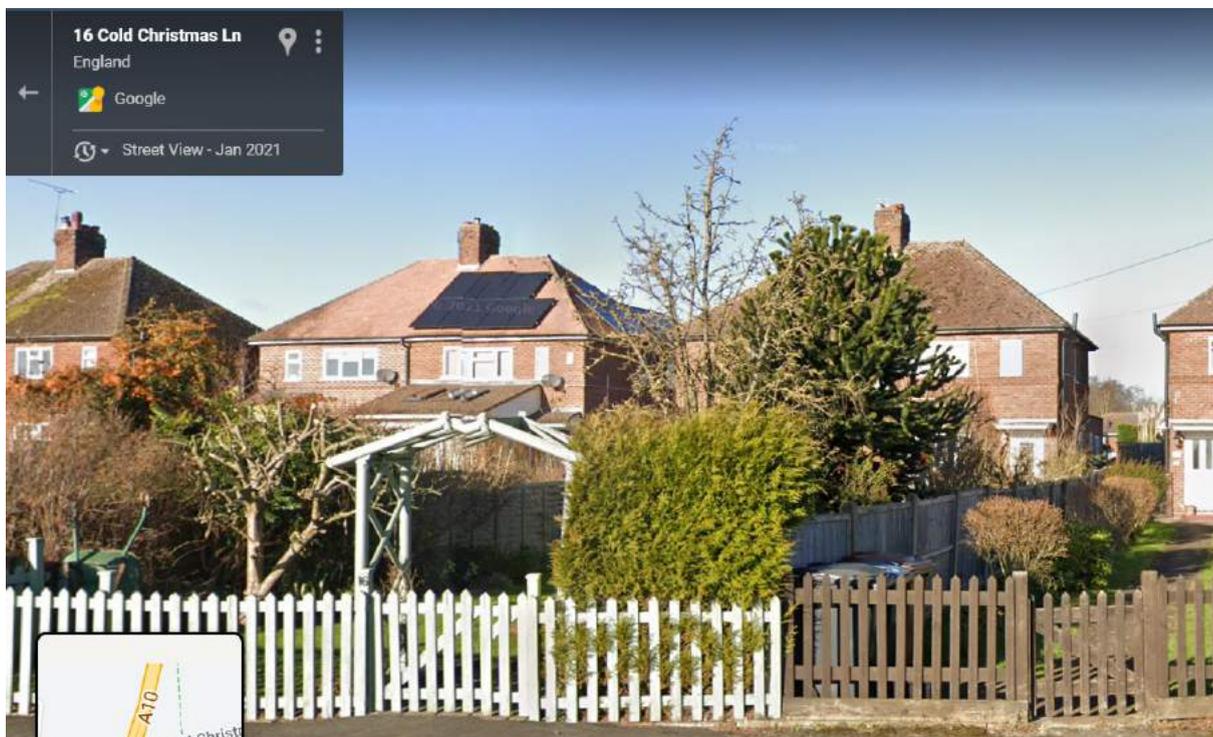
At this point the bottom right corner of the grid might have been looking suspiciously empty. The words **FORD, SING SING** and **SLADE** are present, separating off an 8x8 grid of letters. These words are all real or fictional **prisons** (Slade is NOT a reference to the band - that was a red herring), and therefore represent the final show idea '**Cooking in Prison**' [PPT14]. The letters in the imprisoned area spell out various types of cookery: **MOLECULAR GASTRONOMY, NOUVELLE CUISINE, CORDON BLEU, VEGAN** [PPT15, all four needed for the mark]. The unused letters read from left to right spell out **WHERE WAS CLUE TWO?** [PPT16].

Putting all the information together, the [Treasure Quest episode](#) from **Sunday 27th May 2012** started in Frettenham and ended at Fakenham racecourse [PPT17]. Clue Two was located in a **pear tree** in the **Bishop's Garden in Norwich** [PPT18], and provides the pear tree to complete the first day of Christmas.

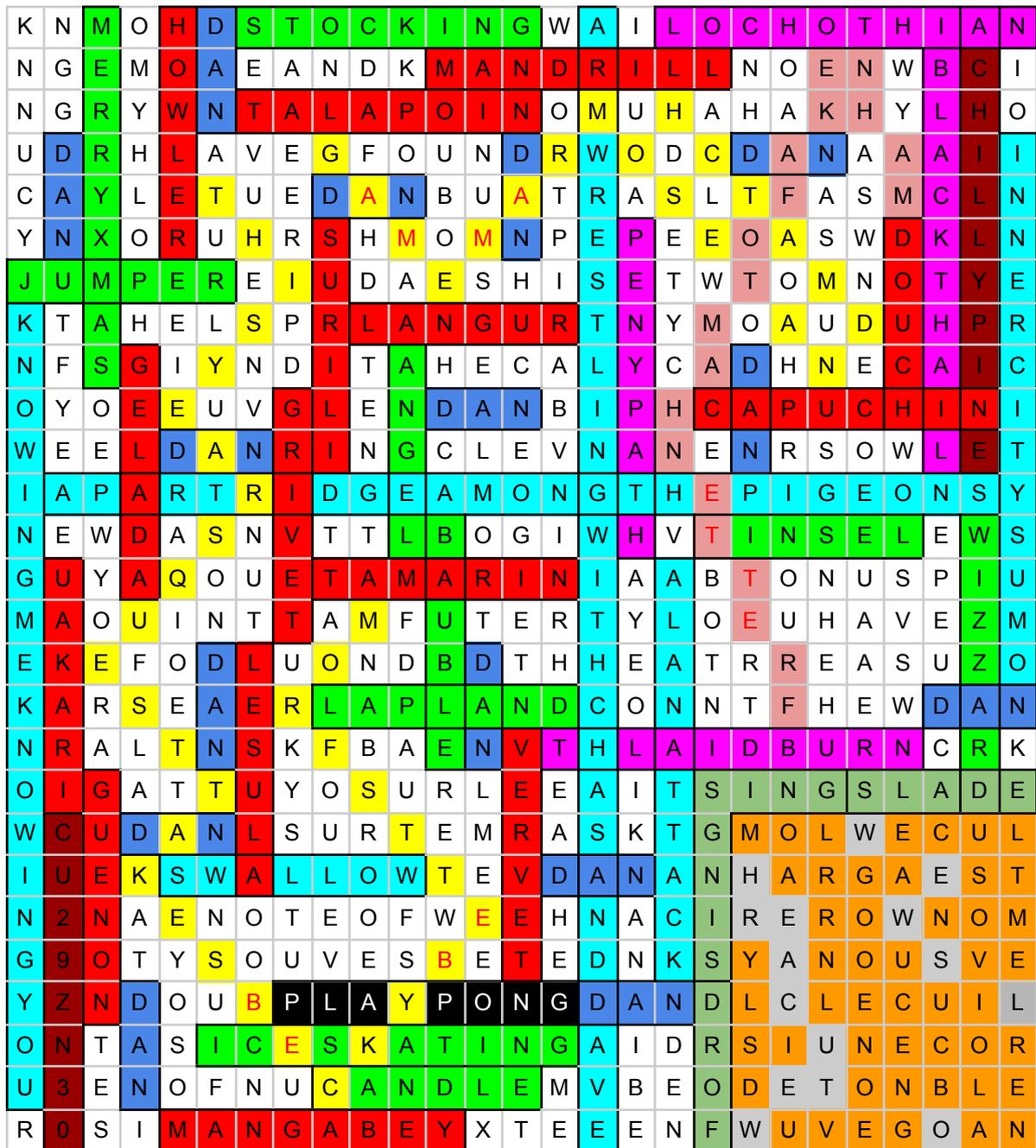
The remaining letters in the grid (not used in any of the hidden words) spelled out another message, reading from left to right and top to bottom:

**KNOWING ME AND KNOWING YOU,
AHA, YOU HAVE FOUND A CLUE!
BUT ALAS YOUR HOPES WE DASH,
IT WON'T HELP YOU FIND THE CACHE.
YOU'VE BEEN CLEVER SO WE WANT TO GIVE YOU A BONUS POINT.
AFTER YOU HAVE FOUND THE TREASURE,
ON THE WALK BACK AT YOUR LEISURE,
MAKE A NOTE WHAT YOU'VE SEEN,
OUTSIDE OF NUMBER SIXTEEN. [PPT19]**

In the **garden of number 16 Cold Christmas Lane** (at the western end) is a **Monkey Puzzle Tree** - a mention of this in your answer will gain you a bonus point (whether or not you actually went to the treasure location - you can see it on the street view pictures of the area, or even if you just took a punt and guessed!) [**BP2**].



The final grid with all the words highlighted is shown below. This does not need to be given as part of the submitted answer. However, just providing the grid with no additional explanations will not gain full credit - marking will be at the discretion of the setters.



Five Gold Rings

During test solving we found that there was no reference to the Five Gold Rings of the Twelve Days of Christmas. James was a huge fan of sport, and the Olympics in particular. We speculated that the plan was to theme the Five Gold Rings puzzle around the postponed Tokyo 2020 Olympics. We decided that we would loosely theme this page around the Olympic rings, and use it to conceal a tribute message for James. The page title, *In Memoriam*, was a hint that this was a tribute page.

The picture puzzle photos at the top of the page were **arranged and coloured for the Olympic rings [GR1]**. Each picture was of an **Olympic gold medal winner named James [GR2]**. The full list was:

- **James Guy** (blue) [GR3]
- **James Cracknell** (black) [GR4]
- **James Hartung** (red) [GR5]
- **James Degale** (yellow) [GR6]
- **Kirani James** (green) [GR7]

Most of our team got to know James during our first ATH, the 2017 Messy extravaganza. Those who also tackled that hunt may recall a series of hexagons which had to be arranged in a specific area. James was convinced that the hexagons must be rotated to reveal a message (and he did manage to come up with the somewhat improbable message TIDY - NINEVEH - MESSI - ELOI - CRESS - MAS i.e. Tidings and have a messy hell of a Christmas!). Ever since “rotating hexagons” has been our team’s catchphrase for overthinking a puzzle or trying to solve a puzzle that is not there. We therefore decided that some rotating hexagons should feature in James’ ATH. Our team is predominantly comprised of crossword setters and solvers, and so we took the opportunity to play to our strengths.

Each of the clues was a relatively ordinary cryptic crossword clue, however, 20 of the 34 clues contained a single letter deliberate misprint. The first 14 clues were straight clues with no misprints, followed by the 20 misprinted clues. The border/decoration around the page were the dividers between answers in the grid, and were to be placed along with the answers.

The answers to each clue, including parsing, are shown in the table below. The correct letters in the clues with a misprint were not significant and are merely given for completeness. Marking: 0.25 points for each correct answer, rounded up to the next whole number, or 10 points if all answers are correct [GR8].

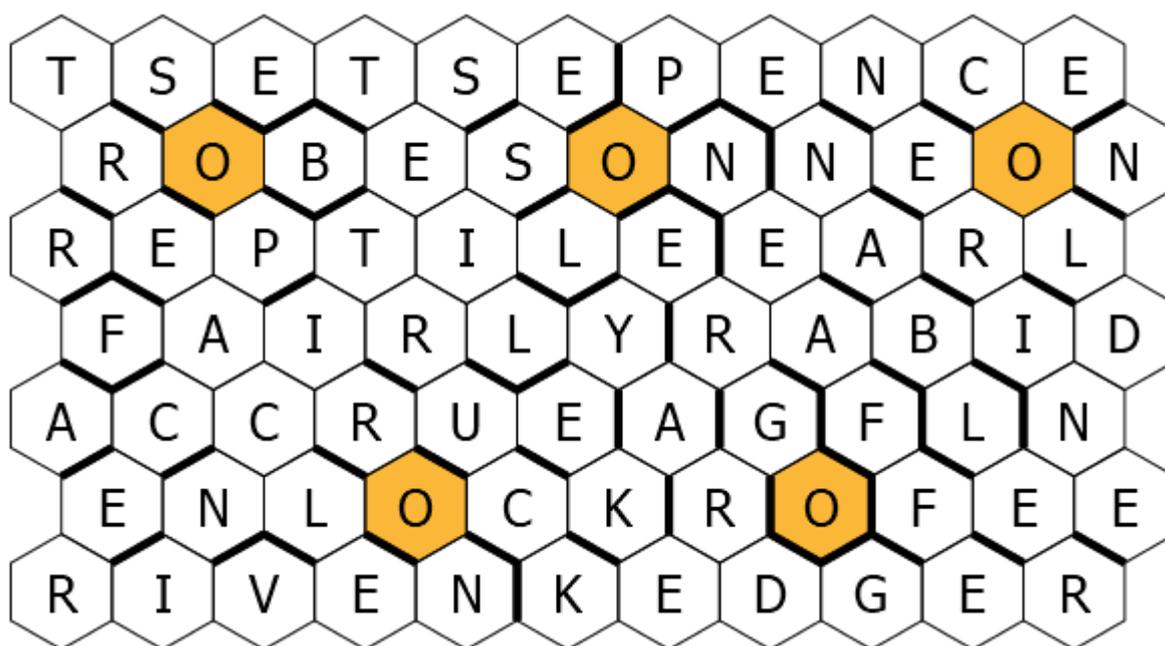
Clue	Answer	Parse	Misprinted letter	Correct letter
Nobleman mostly ahead of schedule (4)	EARL	EARL(-y)	-	-
Seafood is line caught (3)	ROE	Sounds like row	-	-
The last portion of Pernod oddly ditched (3)	END	Odd letters removed from Pernod	-	-
One repeatedly has trapped gas (4)	NEON	Hidden in oNEONe	-	-
Three feet of animal’s home lying around (4)	YARD	Reverse of DRAY	-	-
Regard entrance of mine (3)	EYE	Double definition	-	-
Lengthen boring weekend (3)	EKE	Hidden word	-	-
Cut away or remove borders of incline (3)	LOP	(s)LOP(e)	-	-

Overtaken English teacher's pay increase (4)	RISE	Reverse of E + SIR	-	-
One who facilitates destruction from the south-east by the French rector (7)	ENABLER	Reverse of BANE, + LE + R	-	-
Caught familiar chill (4)	COLD	C + OLD	-	-
Mixing claret wine ultimately leads to unbearable sentimentality (7)	TREACLE	Anagram of CLARET + E	-	-
Provokes one to fly in London and Accra, possibly (7)*	INCITES	IN + CIT(i)ES	-	-
Rees-Mogg and pals' work unit (3)	ERG	Double definition	-	-
Fry battered testes (6)	TSETSE	Anagram of TESTES	R	L
Charming creature tours lake in Quito (6)	FAIRLY	L in FAIRY	O	E
Secure 2012 mascot with stent (6)	ENLOCK	(w)ENLOCK	T	P
Cast liberated without resistance (3)	FEE	F(r)EE	A	O
Summary: someone who talks slowly is backwards (5)	RECAP	Reversal of PACER	T	W
Tern in stream, shortly before noon (5)	RIVEN	RIVE(r) + N	E	O
Fanatical Scotsman beginning to interpret death (5)	RABID	RAB + I + D	A	P
Steal from bouquet rack for singer and activist (7)	ROBESON	ROB + reverse of NOSE	R	B
Collected waste left out in wet broad (3)	SOP	S(I)OP	O	E
American female following dons born in Uist years ago (6)	NEAFFE	A + F + F in NEE	U	F
Last 25% of nice dish discarded – it steadies the ship (6)	KEDGER	KEDGER(ee)	N	R
Dress? Me neither, on reflection (4)	IRON	Reverse of NOR I	D	P
Time to block trite illustrations (4)	TEIL	Hidden word	T	L
Come into the possession of a shop's workers, reportedly (6)	ACCRUE	Sounds like 'a crew'	O	I

Carpenter perhaps providing tripe in Myanmar (5)	KAREN	Double definition	P	B
Therefore, Grant returns (4)	ERGO	Reverse of OGRE	R	I
A revolutionary hit crocodile, perhaps (7)	REPTILE	Reverse of PER + TILE	I	A
Lorry banter (5)	TRUCK	Double definition	N	R
Trump's GP found in enclosure next to church (5)	PENCE	PEN + CE	G	V
Plant with lily-like flowers and unusual inner ears (6)	NERINE	Anagram of INNER E	S	L

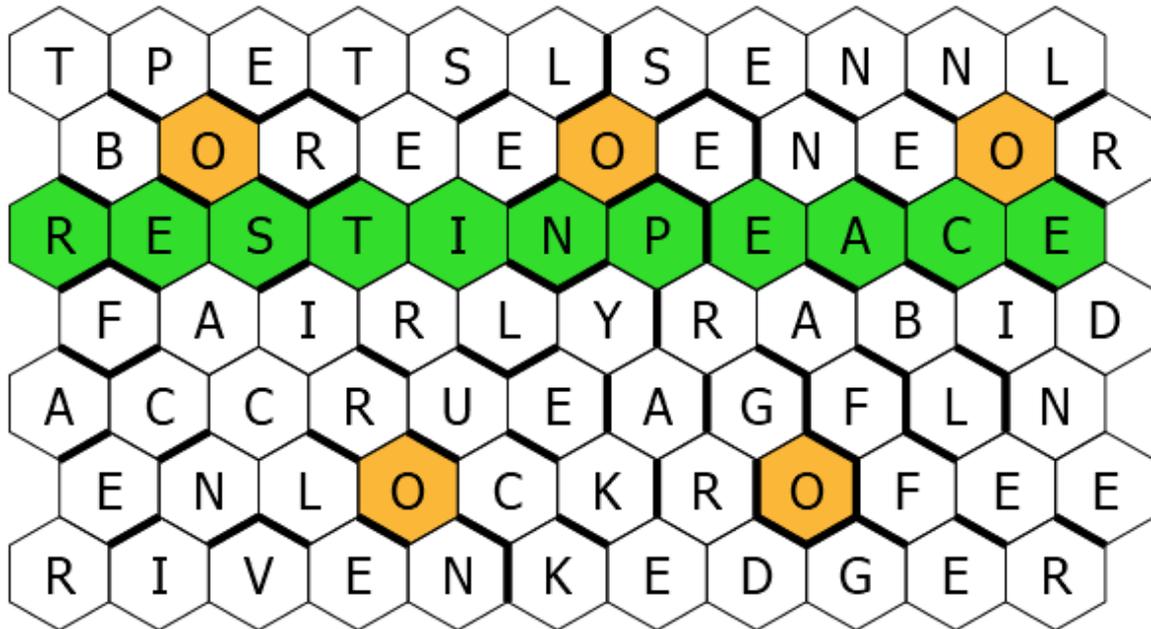
*There was a reference to the **Prime Meridian**, which **passes through both London and Accra** [BP3].

There were several clues to get solvers started in fitting their answers into the grid. The **cells coloured in gold were intended to accommodate the letter O** (a 'ring') and were **laid out in the arrangement of the Olympic rings** [GR9]. A clearer hint towards this was given on 30 December in the Setter's Poem: "a letter may look like a ring". There were only five letter O's in the completed grid. Another hint was in the clue 'One who facilitates destruction from the south-east by the French rector' (ENABLER) - this clue fits in the grid in a north west to south east direction, and is therefore an 'enabler' clue. Finally, the arrows on the left of the grid indicated in which directions the clues should be entered. The bars needed to separate the answers within the grid were illustrated around the outside of the puzzle to help confirm the correct arrangement of answers in the grid, which was as follows [GR10, bars not needed as long as there is an explanation for the border decoration].



The misprinted letters spelled out **ROTATE AROUND TOP RINGS** [GR11]. This instruction indicated that if the six letters around each of the letter O's on the second line (the top

'rings') are rotated from their original position a message will be spelled out: **REST IN PEACE [GR12]**. The number of times to rotate the letters was not significant.



Christmas Pie

This small puzzle on page 12 was a complete red herring. The puzzle idea was devised by James, and we believe he had an intended purpose for it as a clue for the location of the treasure. Without that information we decided to keep it as a minor component with a revised solution. The 'Cornell Recipe' note was a clue to use the [letter frequencies for the English language from Cornell University's website](#). With that identified all that remained was to apply the letter frequencies to the segments of the pie. Starting after 'SNACK' and continuing clockwise gives **HUNT ELSEWHERE [ChP1]**, indicating the treasure is definitely not at Christmas Pie. At least this ruled out one UK location from the Advent Gazetteer. It is surprisingly difficult to come up with a short message that actually fills 100%, particularly if the aim is to ensure all the segments are actually visible. Hence the final segment was called 'SNACK!' just for fun. Several teams noted that the SNACK segment was 1/36th of the circle, in keeping with the theme of the hunt - this was entirely accidental and we hadn't spotted it.

Eight Maids-a-Milking

The eight maids-a-milking were found on page 4 of the hunt. The first four maids were represented by the four gravestones in the green box. The contents of the green box were a pictorial version of the nursery rhyme **Mary, Mary, Quite Contrary [MM1]**. The four bells contained the letters Ag (representing silver) and the number 47, the atomic number for silver. These were the silver bells, and underneath was a row of (cockle) shells. There is a theory that the nursery rhyme refers to Mary, Queen of Scots with the "pretty maids" being her maids of honour. The clue to decipher the gravestones was ODNB or Oxford Dictionary of National Biography. Within that resource is an article entitled [Queen's Maries](#), which gives

details of the four young girls who were chosen to be **maids of honour** to five-year-old **Mary, Queen of Scots**, when she was sent to France in 1548. Each of the girls was also called Mary. Their approximate years of death are given in the article (other resources give different dates, which is why ODNB is specified) and these are the ones shown on the gravestones.

Mary Livingston (died 1585)

Mary Beaton (died 1597)

Mary Fleming (died approx 1600)

Mary Seton (died after 1615) [**MM2** - names needed for the marks].

The next three maids were represented by three cards. These **Three Little Maids** were those from the **Mikado** by Gilbert & Sullivan [**MM3**]. The first card was a yum yum doughnut with the letters MMM MMM, providing the first little maid, **Yum-Yum**. Of course you say 'mmm' when you eat one! The second card was Bo Peep from Toy Story, however, she was upside down, with two arrows suggesting she should be rotated and thus should be called **Peep Bo**, the second little maid from the Mikado. As an extra clue, the words on the card were an anagram of MIKADO. The third little maid was a picture of a blue TIT along with the letters SIP and GIN. These words are an anagram of **Pitti-Sing**, the Mikado's third little maid [**MM4** - correct identification of all three cards needed].

The final maid was the **Old Maid**, or the Queen of Spades, from the card game [**MM5**].

The eight maids were more-or-less the version provided to us by James, however, he had also included some other references to milk in other puzzles which we never worked out. Quite what the intent of these puzzles was, we never established as James did not provide us with the answers. However, we were left with something of a gap - where was the milk? We decided to add a new element to this puzzle.

Mary, Queen of Scots (as mentioned in the clue for the first four maids) was well known for using a cipher to encode messages that plotted to assassinate Queen Elizabeth. Unfortunately for Mary, some of the messages were intercepted, her cipher was cracked, and, ultimately, she was executed. The message underneath the eight maids was encoded using the Mary, Queen of Scots cipher. When decoded the message reads:

**PART OF THIS GIFT HAS GONE ASTRAY,
FIND THE CULPRITS IF YOU MAY. [MM6]**

This was a hint that the milk was missing from this puzzle (not the cows!). The answer to this extra puzzle is provided later in the solution document.

Seven Swans-a-Swimming

The Seven Swans-a-Swimming puzzle was concealed in the form of a set of equations on page 10, where each letter of the alphabet (except O) represented a word or phrase. The letters did not correspond to words that started with the appropriate letter - nothing as simple as that! To get you started the letters L and A were represented on the page. The letter L was on the close-up map of a part of the North Sea coast of Norway. The letter A was found

in the last of the set of six pictures, and represented a Bear. One of the questions on the same page also referred to F, which, if you had answered that question, would tell you that F represented Novaya Zemlya. The full alphabet was as follows, and the instruction for this puzzle was to find X and Y:

A	Bear	N	Christmas
B	Island	O	N/A
C	Sea	P	Baltic
D	Bewick	Q	Sweden
E	Barents	R	Turnblad
F	Novaya Zemlya	S	Gateshead
G	Swimming	T	Swan
H	Svalbard	U	Sven
I	Spitsbergen	V	Jane Eyre
J	Archipelago	W	Siberia
K	Seven	X	Cold Christmas [SS1]
L	Norway	Y	Seven Swans (a) Swimming [SS2]
M	East	Z	Cold

The full decoding of all the equations is shown below. Explanations for the symbols used are given as they are encountered. Correctly deciphering each equation will score one point, the wording does not have to be exact.

- $L \ni AB$
NORWAY includes BEAR ISLAND [SS3].
 \ni typically reads as 'includes' or 'contains'.
- AB was named by E after GA
BEAR ISLAND was named by (Willem) BARENTS after SWIMMING BEAR [SS4].
- the J of H \ni AB and the B of I
The ARCHIPELAGO of SVALBARD includes BEAR ISLAND and the ISLAND of SPITSBERGEN [SS5].
- $L \ni$ the J of H \because the treaty of I
NORWAY includes the ARCHIPELAGO of SVALBARD because of the treaty of SPITSBERGEN [SS6].
 \because is commonly used to represent 'because'.
- the J of F is M of EC, which is M of the J of H
The ARCHIPELAGO of NOVAYA ZEMLYA is EAST of BARENTS SEA which is EAST of the ARCHIPELAGO of SVALBARD [SS7].
- PC is M of Q, which is M of L
BALTIC SEA is EAST of SWEDEN which is EAST of NORWAY [SS8].

- $S \ni$ Part gallery
GATESHEAD contains BALTIC art gallery [**SS9**].
- ch 2 of V \ni S
Chapter 2 of JANE EYRE includes GATESHEAD (Hall) [**SS10**].
- ch 1 of V \ni D, F, I and W
Chapter 1 of JANE EYRE contains BEWICK, NOVAYA ZEMLYA, SPITSBERGEN and SIBERIA [**SS11**].
Jane is reading Thomas Bewick's *A History of British Birds* at the start of the novel.
- D d in S
(Thomas) BEWICK died in GATESHEAD [**SS12**].
'd' is commonly used to indicate 'died', and was previously used on the gravestone on the 10th December advent calendar puzzle, and in the Eight Maids-a-Milking (four Marys) picture puzzle. The lower case letter indicates that this is not D for Bewick again.
- T $\text{---}\otimes\text{---}$ S
(Joseph) SWAN (lived in / developed the lightbulb in) GATESHEAD [**SS13**].
Swan developed an incandescent light bulb, and his house Underhill, in Gateshead, was the first house in the world to be wired for domestic electric lighting. In this case the symbol is that of a lightbulb in an electric circuit.
- F \ni DT and W \ni DT
NOVAYA ZEMLYA contains BEWICK SWAN and SIBERIA contains BEWICK SWAN [**SS14**].
Bewick's Swan, also known as the Tundra Swan, breeds in the Arctic regions, including Novaya Zemlya and Siberia.
- Z \equiv P \equiv (W & n) \neq G
COLD is a synonym for BALTIC which is a synonym for SIBERIA & n (SIBERIAN) which is not equivalent to SWIMMING [**SS15**].
 \equiv is the symbol for equivalency, while \neq means not equivalent.
Although you would not want to go swimming in freezing conditions, this clue should indicate that G is SWIMMING rather than POLAR. Bear Island was named after a *swimming* polar bear.
- if t (DT \rightarrow uk) < late oct then ZN
If the time when BEWICK SWANS migrate to the United Kingdom is before late October then (expect a) COLD CHRISTMAS [**SS16**].
Lower case t is often used to represent time, and the other letters are all lower case (e.g. uk) to indicate they are not part of the encoded alphabet.
[Folklore suggests that an early arrival of the swans means we will have a cold winter.](#)
- X = ZN
X = COLD CHRISTMAS [**SS1** - only awarded once!].
X marks the spot, of course.
- U became TR \therefore Q \rightarrow usa
SVEN (Olofsson) became SWAN TURNBLAD because (he moved from) SWEDEN to the United States [**SS17**].
- K = (U & M)

K = SVEN & EAST = SVEN & E = SEVEN [SS18].

- $Y = K \times TG$
 Y = SEVEN x SWIMMING SWAN
 = SEVEN SWANS (a) SWIMMING [SS2 - only awarded once!].

Marks [SS3] to [SS18] could also be awarded if all the alphabet (table above) was exactly correct.

The row of six pictures at the bottom of page 10 were as follows:

Picture	Explanation	Letter (from equations)
	A portion of the counterseal of Humphrey de Bohun, 4th Earl of Hereford, showing the Bohun Swan [SS19]. Award mark [HB4] for identifying Humphrey de Bohun .	T (SWAN)
	Humphrey Lyttleton hosting the Radio 4 show 'I'm Sorry I Haven't a Clue'. Although the show normally includes 'the lovely' Samantha as the invisible scorekeeper (hence the empty chair), occasionally she is replaced by Swedish Sven [SS20]. Award mark [HB5] for identifying Humphrey Lyttleton . Solvers found further unintentional swan links here by noting that HL was a trumpeter and Sven is mute. There are trumpeter and mute swans [BP4 for noting either link].	U (SVEN)
	Cartoon version of Jason Statham in 'The Expendables 2' where his character's name is Lee CHRISTMAS [SS21].	N (CHRISTMAS)
	Thomas Bewick illustrated various editions of Aesop's Fables. This image is part of <i>The Bear and the Bee-Hives</i> [SS22].	D (BEWICK)
	Screenshot from the film Hairspray, showing Edna Turnblad (played by John Travolta) [SS23].	R (TURNBLAD)

	<p>The Bewick illustration from The Bear and the Bee-Hives again, this time representing Bear, as indicated by the letter A.</p>	<p>A (BEAR)</p>
---	--	-----------------

Each of the images was represented by a letter from the equations. Using the corresponding letters the series of images spelled out **TUNDRA** [SS24]. As noted above, the Bewick Swan is also known as the Tundra Swan and this is another indication of the COLD aspect of the treasure location.

As a further use of the equations alphabet, the letter **K was used to represent the number seven**. The number cipher on the same page used this as the key, so **K = 7**, L = 8, ...Z = 22, A = 23 etc [SS25]. The cipher was straightforward enough to be cracked by brute force, however, to be awarded the mark here the reason for the choice of cipher was required. Many teams identified this as a Caesar shift, which is technically true.

The cipher decoded to: **FIND THE THEMATIC LINKS IN THE QUESTIONS: SIX DATES, ONE PLACE, TWO BIRDS** [SS26], which was a clue to help with the set of nine questions on the same page.

Two Turtle Doves

There were nine questions coloured in blue and red on page 10. The decoding of the number cipher on the same page should have alerted you to the fact that the answers to these questions consisted of six thematic dates, one thematic place and two thematic birds. Therefore this was the Two Turtle Doves puzzle.

The colouration of the questions was significant. Those in **blue were all related to the Cold War** [TD1] (and provided another 'cold' reference for the hunt). Those in **red related to The Hot War Trilogy by Harry Turtledove** [TD2].

Question	Answer & Explanation
<p>1. This operation was organised by a nut; it was a miracle it worked.</p>	<p>Date: 15 to 24 December 1950 The Hungnam evacuation, also known as the Miracle of Christmas, was the evacuation of United Nations (UN) forces and North Korean civilians from the port of Hungnam, North Korea, between 15 and 24 December 1950 during the Korean War. It was organised by US X Corps commander General Edward Almond [TD3].</p>

<p>2. But what if there was no miracle?</p>	<p>Bird: Harry Turtledove's Hot War trilogy, is an alternate history of the Cold War, which starts in November 1950. The first novel is <i>Bombs Away</i>, which imagines the evacuation from North Korea was unsuccessful (i.e. the Miracle of Christmas did not happen) [TD4 - a brief explanation is needed to get the mark].</p>
<p>3. A capital city was destroyed, as was a small town visited by a treasure hunter.</p>	<p>Bird: This refers to <i>Fallout</i>, the second novel of Harry Turtledove's Hot War trilogy, which imagines an alternate history in which both Paris and Washington DC are destroyed. The town of Fakenham in Norfolk (mentioned in the wordsearch puzzle on page 1 as having been visited by Becky Betts on Treasure Quest) featured in the story and was destroyed when the nearby air force base at Sculthorpe was bombed [TD5 - a brief explanation is needed to get the mark].</p>
<p>4. This British Bikini had a particularly devastating effect.</p>	<p>Place: Christmas Island The largest British nuclear weapon ever tested (3 MT of TNT) was dropped off Christmas Island at 10:05 local time on 28 April 1958. The US conducted similar nuclear tests at Bikini Atoll [TD6].</p>
<p>5. A test concerning particle physics marked F for the last time, before having to move underground.</p>	<p>Date: 25 December 1962 The letter F from the equations represents Novaya Zemlya, and was where the USSR conducted nuclear tests. The last external one was reported to be on 25 December 1962 (https://en.wikipedia.org/wiki/1962_Soviet_nuclear_tests). In 1963 the implementation of the Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water meant that subsequent tests were conducted underground [TD7].</p>
<p>6. 51 years after an England v Germany football match, the President tried to play fair, but it didn't last long.</p>	<p>Date: 24 December 1965 During the Christmas Truce of 1914 British and German soldiers reportedly played football together. 51 years later, on 24 December 1965, Lyndon Johnson (pictured in the Playfair puzzle on page 2) ordered a cease in bombings in the Vietnam War (https://en.wikipedia.org/wiki/1965_in_the_Vietnam_War#December) [TD8]. This ceasefire was short-lived.</p>
<p>7. They chose a target with three consecutive letters, so others refused to join in with their games.</p>	<p>Date: 24 December 1979 The Soviet-Afghan war began on 24 December 1979 when the Soviet government, under leader Leonid Brezhnev, deployed 40th Army across the border into Afghanistan (note consecutive letters FGH). As a protest, the US led a boycott of the 1980 Moscow Olympic Games [TD9].</p>

<p>8. Octavian was one of three who dispensed with a chemist and her husband.</p>	<p>Date: 25 December 1989 The trial and execution of Nicolae Ceaușescu, the leader of the Socialist Republic of Romania and his wife Elena on 25 Dec 1989. Elena conducted research as a chemist, and was awarded a PhD in chemistry (although this award was thought to be heavily influenced by her husband). The execution was carried out by a firing squad consisting of three paratroop regiment soldiers: Captain Ionel Boeru, Sergeant-Major Georghin Octavian and Dorin-Marian Cirlan [TD10].</p>
<p>9. Boris led the country into a new era as it left the Union.</p>	<p>Date: 26 December 1991 Boris Yeltsin was the first president of Russia after the break-up of the Soviet Union on 26 December 1991 [TD11].</p>

The questions were ordered chronologically to assist with solving. The dates are all **around Christmas** time (all 24th-26th December) [TD12].

Four Calling Birds

There were six pictures on page 5, each with an adjacent pigpen style text. Only two of the pigpen texts actually decoded to give readable words using the standard pigpen cipher. The remaining four were to be decoded in a different way. The images with these four non-pigpen ciphertexts were all **related to birds and telephones**, and thus represent the **Four Calling Birds** [CB1].

Picture	Pigpen decode
 <p>Mel Gibson and Goldie Hawn in the film 'Bird on a Wire' [CB2].</p>	<p>Not pigpen</p>
 <p>Big Al the Allosaurus, from the BBC series Walking with Dinosaurs, performing his mating call [CB3].</p>	<p>TOO EARLY - this is a reference to modern birds being the descendants of dinosaurs [CB4].</p>
 <p>Part of the logo of Chinese mobile phone manufacturer Ningbo Bird or Bodao [CB5].</p>	<p>Not pigpen</p>

 <p>Snooker player Neal Foulds, who gained the nickname Buzby because he spent a lot of time on the phone. Buzby was a bird character used in British Telecom adverts [CB6].</p> 	<p>Not pigpen</p>
 <p>Britain's Got Talent finalist from 2012 Chandi the border collie [CB7] with her owner Tina Humphrey. Award mark [HB2] for identifying Tina Humphrey.</p>	<p>OLD LINE - this refers to a former line in the Twelve Days of Christmas being "four collie birds" [CB8].</p>
 <p>Grumpy Gertie the goose, in the village of Sandon in Hertfordshire. Gertie was often seen in the old phone box [CB9].</p>	<p>Not pigpen</p>

The clue to decoding the remaining pigpen-style text was just below, in the middle of the page. The series of seven pictures connected by arrows were a "**Six Degrees of Kevin Bacon**" style progression to lead from "Pigpen" to "Bacon" [CB10]. The added clue was the thermometer reading 6 degrees celsius, with 'Made in **Philadelphia**', where **Kevin Bacon was born** [CB11].

The full Six Degrees sequence is as follows:

1. The character **Pigpen** was in **The Peanuts Movie** (voiced by AJ Tecce) along with **Fifi** voiced by **Kristin Chenoweth**
2. Kristin Chenoweth appeared in **Deck the Halls** with **Danny DeVito**
3. Danny DeVito was in **L.A. Confidential** with **Kevin Spacey**
4. Kevin Spacey appeared in **Fred Claus** with **Elizabeth Banks** (or **John Michael Higgins** also works as a link)
5. Elizabeth Banks (and John Michael Higgins) were in **Pitch Perfect 3** with **John Lithgow**
6. John Lithgow was in **Footloose** with **Kevin Bacon** [CB12 - all links needed]

This indicated that the indecipherable pigpen text should actually be treated as a **Bacon cipher** [CB13].

Bacon's cipher relies on there being two different typefaces or characters within the ciphertext. The alphabet of the Baconian cipher is shown below.

Letter	Code	Binary	Letter	Code	Binary
A	aaaaa	00000	N	abbaa	01100
B	aaaab	00001	O	abbab	01101
C	aaaba	00010	P	abbba	01110
D	aaabb	00011	Q	abbbb	01111
E	aabaa	00100	R	baaaa	10000
F	aabab	00101	S	baaab	10001
G	aabba	00110	T	baaba	10010
H	aabbb	00111	U, V	baabb	10011
I, J	abaaa	01000	W	babaa	10100
K	abaab	01001	X	babab	10101
L	ababa	01010	Y	babba	10110
M	ababb	01011	Z	babbb	10111

Here there are no different typefaces or letters, but there are characters with dots and characters without dots. A further hint to the Bacon cipher was that the number of characters was exactly 30, splitting neatly into groups of five. Taking the four pigpen-style texts that did not decode meaningfully, and letting those without dots = a and those with dots = b gives:

7 6 5 7 7 5 6 5 5 5 5 5 7 5 7 5 6 7 7
 5 5 5 5 7 7 7 7

abbaa / abbab / aaabb / abbab / baaba / baaab = **NO DOTS [CB14]**.

This is a clue to remove the dots and consider the coded message without them for the final part of the decoding.

7 5 5 7 7 5 5 5 5 5 5 7
 5 7 5 6 7 5 5 5 5 7 7 7

The method for decoding this final part was clued in the Twelve Drummers Drumming puzzle.

Twelve Drummers Drumming

On page 5 “Turkey legs” refers to drumsticks. This was the indicator that this was the “Twelve Drummers Drumming” puzzle. The initial challenge was to identify the twelve drummers and the two non-drummers, who were also musicians. In order to reach the final answer of the puzzle the initial letters of the relevant bands were needed. The explanation for the clue is not needed to get the marks.

Clue	Answer & explanation	Band
1. That guy whose wife looked downwards when making a greeting. I did not know if she was talking to us or to something else.	Hector ‘Tico’ Torres [DD1] His wife was Eva Herzigova who featured in the ‘Hello Boys’ advert for Wonderbra in 1994.	Bon Jovi
2. That guy who was in a hurry. That other guy Charlie’s namesake said he was fourth best.	Neil Peart [DD2] Charlie is the late Charlie Watts of the Rolling Stones. Rolling Stone magazine’s list of the 100 Greatest Drummers of All Time ranked Peart at number 4.	Rush
3. That guy who put on a show at the Christmas dance, along with his strange relatives.	Philip Selway [DD3] <i>Harry Potter and the Goblet of Fire</i> featured a Christmas Ball, with music provided by the Weird Sisters. In the film version the drummer was played by Selway. The point was also awarded for identifying PS’s character name of Orsino Thruston at this stage, but you would need the Radiohead link for the code.	Radiohead
4. That guy who used his voice training in an animated way.	Ringo Starr [DD4] Ringo narrated the first two series of animated children’s show <i>Thomas the Tank Engine & Friends</i> .	The Beatles
5. That haymaker guy who sounds like he is related to Erica. I could tell from his eyes that he was a dreamer.	Bill Berry [DD5] Bilberries (genus <i>Vaccinium</i>) are in the family Ericaceae. Berry retired to become a hay farmer near Athens.	REM
6. That topless guy who might bite. He previously worked with McFly.	Flea (Michael Balzary, bassist) [DD6] Flea is known for performing without a shirt. He appeared in <i>Back to the Future</i> Parts II & III as Douglas J. Needles alongside Michael J. Fox’s Marty McFly.	Red Hot Chilli Peppers
7. That guy who is easy to mistake for that other guy who reared two tigers.	Roger Taylor [DD7] Not to be confused with Roger Taylor from Queen, who has two children called Tigerlily and Rufus Tiger.	Duran Duran
8. That redheaded guy with Daisy’s daughter and possibly a dentist.	Animal [DD8] The red-headed muppet. The mother of his band-mate Janice, the lead guitarist, is reportedly called Daisy.	Dr Teeth and the Electric Mayhem

9. That guy who once worked as a doorman and had a boss exactly like David Brent.	Will Champion [DD9] Before drumming for Coldplay, Champion worked as a doorman at a bar, where Ricky Gervais was his boss.	Coldplay
10. That guy who claimed that his version of events of his time at the watering hole was entirely accurate.	Tony McCarroll [DD10] The founding drummer with Oasis, McCarroll published a tell-all book ' <i>Oasis: The Truth: My Life as Oasis's Drummer</i> ' in 2011.	Oasis
11. That fully dexterous guy who is said to be like Thor.	Rick Allen [DD11] Allen had his left arm amputated and is nicknamed the Thunder God.	Def Leppard
12. That guy who is the ex of the ex of that other guy who embarrassed himself with a fox. No, not that guy: the guy who sounds like he plays with a London football club.	Don Henley [DD12] Don Henley is the ex of Stevie Nicks, who had a brief affair with Mick Fleetwood of Fleetwood Mac. Fleetwood and Samantha Fox hosted the disastrous Brit Awards in 1989. The second statement avoids an alternative answer (Ian Wallace of King Crimson, who was married to Jenny Boyd, previously an ex wife of Fleetwood). The Eagles is the nickname of Crystal Palace F.C.	The Eagles
13. That guy Buster with the fan club, who also worked with that guy who Robert Davis supposedly said was not the best.	Jim Keltner [DD13] Robert Davis (Jasper Carrott) is credited with the joke that Ringo was not the best drummer in the Beatles (although apparently this actually first appeared on BBC comedy Radio Active two years earlier). Starr's album <i>Ringo</i> encouraged fans to join the Jim Keltner Fan Club. Keltner played with the Traveling Wilburys where he acquired the pseudonym Buster Sidebury.	The Traveling Wilburys
14. That guy who needed a manicure. He won awards for his Soul music.	Trent Reznor (lead singer) [DD14] Along with Atticus Ross (also an acceptable answer), Reznor wrote the score for Disney-Pixar movie <i>Soul</i> , which won the 2021 Golden Globe and Oscar for Best Original Score.	Nine Inch Nails

The initial letter of each band gave the final message **BRR BRR DECODE T9** (or **TN** - either accepted) **[DD15]**. BRR BRR is a hint for both a **telephone** and a "cold" reference **[DD16]** - both needed to be awarded the mark].

The pigpen with dots removed from the Four Calling Birds puzzle is decoded using the T9 cipher. The predictive text function on pre-smart phone keypads involved pressing the number key corresponding to the required letter. In this case the number key to press is denoted by the shape of the cell.

1	2 ABC	3 DEF
4 GHI	5 JKL	6 MNO
7 PQRS	8 TUV	9 WXYZ

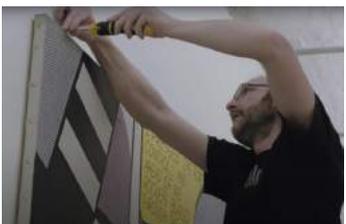
For example,  means to use keypad number 7 and the first letter of the encoded message is one of the letters 'PQRS'. Following this method, and with a bit of trial and error the result is **PEARS BECOME ACORNS AT ZERO DEGREES [DD17]**. This clue is relevant to the start of the instructions to find the treasure (see later).

Christmas Cards & the Christmas Singles Charts

70 Years of Christmas Card Designs 1952-2021

The title above these pictures served two purposes. First a link to the **UK Top 40 Singles Chart**, which officially **began in 1952 [SC1]**. Secondly, it was a hint to consider the pictures alongside the cryptic Christmas cards which were scattered throughout the hunt. A correct answer for the pictures constituted identifying both the picture (where appropriate), and the band or artist this represented. Christmas songs were not needed to claim marks here.

Picture	Identity & Musical Reference
	A kylie ; a boomerang which is flat on one side and convex on the other. Kylie Minogue [SC2]
	Dana Carvey playing Garth Algar in <i>Wayne's World 2</i> . DANA [SC3] (Christmas number 4 with <i>It's Gonna Be a Cold Cold Christmas</i> in 1975.)

	<p>Screenshot of a protest by the WOMBLES (White Overall Movement Building Liberations through Effective Struggle). Wombles [SC4] (Christmas number 5 with <i>Wombling Merry Christmas</i> in 1974.)</p>
	<p>A packet of Jell-O, representing Jennifer Lopez [SC5]. (Jell-O = J-Lo). There are also some sticks of rock but these are a red herring (“<i>Don’t be fooled by the rocks that I got...</i>”) (Christmas number 24 with <i>Jenny from the Block</i> in 2002.)</p>
	<p>Black Mask magazine, a pulp magazine first published in April 1920. These magazines were referred to as “the pulps” and also gave rise to the term pulp fiction. Pulp [SC6]. (Christmas number 15 with <i>Disco 2000</i> in 1996.)</p>
	<p>Whaam! by Roy Lichtenstein (1963). Wham! [SC7]</p>
	<p>Screenshot of Denise Richards playing Dr Christmas Jones in <i>The World is Not Enough</i>. This is a clue to Aled Jones [SC8]. (Christmas number 5 with <i>Walking in the Air</i> in 1985.)</p>
	<p>UNESCO world heritage site, The Old City of Kotor in Montenegro. Hugo Montenegro [SC9] (Christmas number 8 with <i>The Good, The Bad and The Ugly</i> in 1968.)</p>

	<p>The poem has the rhyme scheme ABBA with the added hint of 'swedes'. ABBA [SC10]</p>
	<p>A Mariah FPU microprocessor chip. Mariah Carey [SC11]. (Christmas number 2 with <i>All I Want for Christmas</i> in 1994.)</p>
	<p>Justine Chase from the Marvel comics, who is the daughter of Irene Adler (Destiny), making her Destiny's Child [SC12].</p>
	<p>Astronaut and pilot Colonel Bill Pogue and his wife in the Oklahoma Centennial parade in 2007. The Pogues [SC13]. (Christmas number 2 with <i>Fairytale of New York</i> in 1987.)</p>
	<p>Bright Man from the Mega Man video game franchise. Sarah Brightman [SC14]. (Christmas number 7 with <i>I Lost My Heart to a Starship Trooper</i> in 1978.)</p>
	<p>Cambridge ladies reserve rowing team, nicknamed Blondie [SC15].</p>

	<p>Death of the Historical Buddha (Nehan-zu), 14th century painting of the Buddha Shakyamuni's nirvana. Nirvana [SC16]. (Christmas number 25 with <i>Smells Like Teen Spirit</i> in 1991.)</p>
	<p>Kenneth Branagh and Judi Dench in a screenshot from The Winter's Tale (The Kenneth Branagh Theatre Company – Plays at the Garrick 2015-16). The Winter's Tale might be considered a 'cold play'. Coldplay [SC17] (Kings of Leon is an acceptable alternative answer for SC17. Branagh played King Leontes in <i>The Winter's Tale</i>)</p>

Ten of these pictures matched up with the cryptic Christmas cards (those with the relevant Christmas hit noted above), whilst the remaining six were red herrings. This was important for completing the cryptic Christmas cards puzzle (see below).

Wishing You a Very Lyrical Christmas

There was a set of 16 cryptic Christmas cards similar to that of the Advent Calendar puzzle from 9th December. These were all cryptic re-writes of lyrics or **clues to specific songs which appeared in the UK singles chart at Christmas [LC1]**. First the song needed to be identified based on the clue and the date given on the card. The **date on the card signified the day that the Christmas singles chart was announced for the relevant year [LC2]**. Whilst this doesn't provide an exact year it narrows down the options. Several of the songs charted at Christmas multiple times. Unless otherwise indicated by a clue on the card (e.g. restricted by date) the first time the song charted was the year to use.

The full answers to the Christmas cards in their original hunt order are given below. To get the marks *naming the song and artist is sufficient*, and a full explanation of all the wording on the card is not needed.

Page & Card Text	Interpretation	Song	Artist	Year (Position)
2 Dear Dad (you dirty dog) From not Bill or George or Frank (21 December)	Nice easy one if you know the lyrics	A Boy Named Sue	Johnny Cash	1969 (36) [LC3]

<p>2 Dear MM, It's been 3 months since I last had something to say. P.S. I'm still annoyed I only got a B five years ago (19 December)</p>	<p>MM is Maggie May, the card is dated December, and September was when they last '<i>got somethin' to say to you</i>'. The P.S. refers to the 1971 Christmas chart when Maggie May was the B-side of Reason to Believe (number 29), so makes clear that we are looking for the 1976 chart entry.</p>	<p>Maggie May</p>	<p>Rod Stewart</p>	<p>1976 (36) [LC4]</p>
<p>4 To Jack and Selena, From the show starring Jim Carrey. P.S. It's Noel! (22 December)</p>	<p>Refers to the lyric '<i>From "In Livin' Color" to movie scripts...</i>'. Lopez was in the films '<i>Jack</i>' and '<i>Selena</i>' and the tv series '<i>In Living Color</i>' with Jim Carrey. The P.S. is a tenuous reference to the picture to match this with from page 11: Jello with no 'el' is J-Lo (blame James for that one!).</p>	<p>Jenny From The Block</p>	<p>Jennifer Lopez</p>	<p>2002 (24) [LC5]</p>
<p>4 Logs are burning there upon the fireplace. All I want is you to make it right. P.S. It's here! P.P.S. Somebody found me a match but I think that he is not worthy (21 December)</p>	<p><i>'The log fire's burning bright, oh darling, if only you were here, to make it right'</i>. The P.S. is a nod to the treasure location being Cold Christmas. The P.P.S. refers to the matching picture of Dana Carvey on page 11, and a quote from Wayne's World ('We are not worthy!').</p>	<p>It's Gonna Be A Cold Cold Christmas</p>	<p>Dana</p>	<p>1975 (4) [LC6]</p>
<p>4 Dear Clyde, Further to my last letter, I am awaiting your call. I provided you with my contact details below. P.S. It is my girlfriend's birthday tomorrow (24 December)</p>	<p><i>'Dear Slim, I wrote you but still ain't callin', I left my cell, my pager, and my home phone at the bottom...</i>'. The name Clyde is a reference to the Eminem song '<i>97 Bonnie & Clyde</i>' and the P.S. refers to Dido who played the girlfriend in the video, and whose song '<i>Thank you</i>' was sampled for '<i>Stan</i>'. Her birthday is on Christmas Day.</p>	<p>Stan</p>	<p>Eminem</p>	<p>2000 (3) [LC7]</p>

4 Hey, Clementine's other half. P.S. Enjoy the John Lewis Christmas Song. P.P.S. John L has really made a BID this week (21 December)	The song begins ' <i>Hey, Mr. Churchill...</i> ' whose wife was called Clementine. Jona Lewie was born John Lewis. John Lennon was at numbers 2, 4 and 9 in the same chart; converting these numbers to letters gives B D I (i.e. BID). This provides an important clue to how to use these answers (see below).	Stop The Cavalry	Jona Lewie	1980 (3) [LC8]
4 Mrs. Bone, Do you remember how tiny your home was? P.S. Have you noticed it's oh so quiet at No. 4 at the moment? (24 December)	' <i>Oh, Deborah, do you recall? Your house was very small.</i> ' Deborah Bone was the inspiration for the song. In the same chart, Bjork was at number 4 with ' <i>It's Oh So Quiet</i> '.	Disco 2000	Pulp	1995 (15) [LC9]
4 Hello, hello, hello, we have arrived, please start the festivities for our amusement (22 December)	' <i>Hello, hello, hello</i> ' and ' <i>Here we are now, entertain us</i> '	Smells Like Teen Spirit	Nirvana	1991 (25) [LC10]
9 We took a last second flight down to the sea and woke up a whale. Я. P.S. I was thinking of leaving a satsuma for Santa, but I used the last one for something else (22 December)	' <i>Suddenly swooping low on an ocean deep, Rising up a mighty monster from its sleep</i> '. The reverse R is a reference to Toys 'R' Us who used the song on their tv advert that year. The Snowman had a satsuma for a nose.	Walking in the Air	Aled Jones	1985 (5) [LC11]
9 Весела Коледа от България etc. (22 December)	Written in Bulgarian, translates as 'Cheerful Christmas from Bulgaria etc'. Uncle Bulgaria is one of the Wombles.	Wombling Merry Christmas	Wombles	1974 (5) [LC12]
9 Riding my Mustang with no roof above me and air flowing through my beak. P.S. I still feel the high of being at the top but I have just started to drop (23 December)	' <i>Rollin' in my 5.0 With my ragtop down so my hair can blow</i> '. A 5.0 is a Mustang; Vanilla Ice apparently referred to his hairstyle as a beak. This song was number 1 the week before.	Ice Ice Baby	Vanilla Ice	1990 (2) [LC13]
12 It is not enough for me to see the vessel for me to see the results. Anatomically speaking, I need to actually see it (24 December)	' <i>Encounters one and two are not enough for me What my body needs is close encounter three</i> '.	I Lost My Heart to a Starship Trooper	Sarah Brightman	1978 (7) [LC14]

12 I will let myself sleep rather than listen to the sound of those supernatural knee joints (25 December)	<i>'I won't even stay awake to hear those magic reindeer click'.</i>	All I Want for Christmas is You	Mariah Carey	1994 (2) [LC15]
12 My horse won the race when it had only been given a 5.26% chance. P.S. Thanks for the Christmas and birthday presents - I'll open one in the morning and one in the afternoon (20 December)	<i>'Got on a lucky one came in eighteen to one'.</i> Shane MacGowan's birthday is on Christmas Day. This song also contains the lyric " <i>on a <u>Cold Christmas Eve</u></i> ".	Fairytale of New York	The Pogues ft Kirsty Maccoll	1987 (2) [LC16]
13 Ooey ooey oo wa-wa-wa, Ooey ooey oo wa-wa-wa, Ooey ooh Wa-wa-wa-wa Ooey ooey oo wa-wa. P.S. This card is the first letter of many in the next few decades (Wednesday 25 December)	We all know the tune. The P.S. refers to how to solve the next step of the puzzle. In the early years of the charts they were announced on a Wednesday. The other dates are all Sundays.	The Good The Bad and The Ugly	Hugo Montenegro	1968 (8) [LC17]
13 I will take on the role of the Ant Hill Mob and prevent Harmony and Spike from crossing the threshold (23 December).	<i>'I'll protect you from the hooded claw, Keep the vampires from your door'.</i> The Anthill Mob protected Penelope Pitstop from The Hooded Claw in ' <i>The Perils of Penelope Pitstop</i> '. Harmony and Spike are vampires from ' <i>Buffy the Vampire Slayer</i> '.	The Power of Love	Frankie Goes to Hollywood	1984 (6) [LC18]

The songs for the cards on page 2 were both placed at **number 36**, in keeping with the **theme of the page [LC19]**.

The eagle-eyed may have noticed a considerable amount of overlap between the artists featured on these Christmas cards and those pictured on page 11. Indeed, this was a huge hint for what to do next. The Dana card's P.P.S. "*Somebody found me a match but I think that he is not worthy*" was the hint to **match up the cards with the pictures from page 11 [LC20]**. This gave ten matches and six cards which were to be ignored. This was further hinted at in the New Year poem: '*Not all cards that are shown have a twin*'.

The cards needed to be sorted into chronological order, as indicated by the hint on the Hugo Montenegro card, "*This card is the first letter of many in the next few decades*".

Finally, the chart position was to be used to indicate a letter of the alphabet (1 = A, 2 = B etc.). There was a hint on the Jona Lewie card to this effect "*John L has really made a BID this week*" (see full explanation above).

Artist	Song	Year	Position	Match?	Letter
Hugo Montenegro	The Good the Bad and the Ugly	1968	8	Yes (Montenegro)	H
Johnny Cash	A Boy Named Sue	1969	36	No	-
The Wombles	Wombling Merry Christmas	1974	5	Yes (the Wombles)	E
Dana	It's Gonna Be A Cold, Cold Christmas	1975	4	Yes (Dana Carvey)	D
Rod Stewart	Maggie May	1976	36	No	-
Sarah Brightman	I Lost My Heart to a Starship Trooper	1978	7	Yes (Bright Man)	G
Jona Lewie	Stop the Cavalry	1980	3	No	C
Frankie Goes to Hollywood	The Power of Love	1984	6	No	F
Aled Jones	Walking in the Air	1985	5	Yes (Christmas Jones)	E
The Pogues	Fairytale of New York	1987	2	Yes (Bill Pogue)	B
Vanilla Ice	Ice Ice Baby	1990	2	No	B
Nirvana	Smells Like Teen Spirit	1991	25	Yes (Nirvana)	Y
Mariah Carey	All I Want for Christmas	1994	2	Yes (Mariah chip)	B
Pulp	Disco 2000	1995	15	Yes (pulp magazine)	O
Eminem	Stan	2000	3	No	C
Jennifer Lopez	Jenny from the Block	2002	24	Yes (rocks & Jello)	X

The final message after removing the cards which do not match the pictures on page 11 was **HEDGE BY BOX [LC21]**. This was a clue for finding the treasure.

Awards of the Year

The large table on page 6 was designed to be completely filled in using the information provided in and around the table as clues. This puzzle was one initiated by James although it underwent many changes to reach the final version. It was essential to the party puzzle

that the pipers (and roses) be represented, so we didn't feel we could dispense with it altogether.

The picture clues were as follows, reading from top to bottom down the left hand side and then down the right hand side. Each represented a particular entry in the table. As the identification of the pictures was easily achieved using an image search the link to the entry in the table was needed to be awarded the points.

- **Cold Wilson** from The Tweenies representing **Harold Wilson**, Pipe Smoker of the Year in 1976 (Pipeman of the Decade) [AY1].
- **Nigel Hawthorne** playing Sir Humphrey Appleby in *Yes Minister* [AY2]. He represents **The Pet Shop Boys**, who held the Christmas number one spot in 1987 with *Always on My Mind* because, as indicated in the speech bubble, **Nigel Hawthorne bought the house Fabdens on Cold Christmas Lane from Chris Lowe** in 1995 [AY3]. Award mark [HB3] for identifying Humphrey Appleby.
- **Robert Adam**, an architect, representing **Bob the Builder**, Christmas number one in 2000 [AY4].
- **Jethro Tull**, agriculturalist, representing comedian **Jethro**, Pipe Smoker of the Year in 1995 [AY5].
- The **Yorkshire County Cricket Club logo**, representing **Fred Trueman**, pipe smoker of the year in 1974 [AY6].
- **Queen Elizabeth I**, representing the band **Queen**, who had Christmas number ones in 1975 and 1991 [AY7].
- **Joss Ackland**, representing himself as Pipe Smoker of the Year in 2000 [AY8]. **Ackland appeared in the video for the Pet Shop Boys' Christmas number one 'Always on My Mind'** [AY9].
- **Rage Against the Machine**, who took the Christmas top spot in 2009 [AY10].

Initial letters from each of the picture answers spelled out **WHAT YEAR** [AY11].

There were six locations clued within the table with their latitude and longitude, each again representing an entry in the completed table. Reading from top to bottom down column 2 and then column 3 gave the following:

- The Isle of **Harris**, representing **Rolf Harris**, Christmas number one in 1969 [AY12].
- **Houston**, Texas, representing **Whitney Houston**, Christmas number one in 1992 [AY13].
- The Isle of **Lewis**, representing **Leona Lewis**, Christmas number one in 2006 [AY14].
- The town of **Morecambe**, representing **Eric Morecambe**, Pipe Smoker of the Year in 1970 [AY15].
- **Galway** in Ireland, representing **James Galway**, Pipe Smoker of the Year in 1981 [AY16].
- The city of **Hull**, representing **Rod Hull**, Pipe Smoker of the Year in 1993 [AY17].

Again, as identifying the locations was very easy the connection to the entry in the table was needed to be awarded the marks.

Completion of the table was achieved by putting **the years from 1968 to 2009 in the first column** (as indicated by the calendar image in the header - this was a standard ‘calendar’ emoji rather than representing a specific date) [AY18]. The second column was filled with the **Christmas number one act for the respective year**, as indicated by the number ‘1’ in the column header [AY19]. The table was completed by adding the **Pipe Smoker of the Year into the final column**, as indicated by the smoking pipe picture [AY20].

The award of **Pipe Smoker of the Year was stopped after 2003** (as the organisers feared it fell foul of laws banning all advertising and promotion of tobacco) hence the subsequent **boxes were greyed out** [AY21]. SI 3368, or Statutory Instruction number 3368 (**Smoke-free (Premises and Enforcement) Regulations** SI 2006/3368) was introduced in **2006** in England (the smoking ban) [AY22].

Roses

Three short word puzzle clues were given in the table in parentheses, and these corresponded to three ‘Roses’, which was indicated by the rose emoji, also in parentheses, in the column header. Each of the three was a clue to a Billie Piper song: **Billie Piper played Rose Tyler in Doctor Who** [R1]. The songs were **Honey to the Bee**, **Because We Want to and Something Deep Inside** [R2 - all three needed for the mark]. The fact she is also a Piper means she was not out of place in a list of pipers!

The Rose clues identified which of the ‘pipers’ were sending alternates to Pablo’s Christmas Party puzzle (more details in the next section).

The completed table is given below. There was no need to write out the full table in submitted answers in order to claim the marks here, provided the reasons for the contents of the table were explained.

Year	UK Christmas Number 1	Pipe Smoker of the Year / Roses
1968	“Lily the Pink” – Scaffold	Peter Cushing
1969	“Two Little Boys” – Rolf Harris	Jack Hargreaves
1970	“I Hear You Knockin’” – Dave Edmunds	Eric Morecambe
1971	“Ernie (The Fastest Milkman in the West)” – Benny Hill	Lord Shinwell
1972	“Long-Haired Lover from Liverpool” – Jimmy Osmond	Lord Shinwell
1973	“Merry Xmas Everyone” – Slade	Frank Muir
1974	“Lonely this Christmas” – Mud	Fred Trueman
1975	“Bohemian Rhapsody” – Queen	Campbell Adamson / Billie Piper (1)
1976	“When a Child is Born” – Johnny Mathis	Harold Wilson (Pipeman of the Decade)
1977	“Mull of Kintyre/Girls School” – Wings	Brian Barnes
1978	“Mary’s Boy Child/Oh My Lord” – Boney M	Magnus Magnusson
1979	“Another Brick in the Wall” – Pink Floyd	J. B. Priestley
1980	“There’s No One Quite Like Grandma” – St Winifred’s School Choir	Edward Fox
1981	“Don’t You Want Me?” – The Human League	James Galway

1982	"Save Your Love" – Renee & Renato	Dave Lee Travis
1983	"Only You" – The Flying Pickets	Patrick Moore
1984	"Do They Know It's Christmas?" – Band Aid	Henry Cooper / Billie Piper (2)
1985	"Merry Christmas Everyone" – Shakin' Stevens	Jimmy Greaves
1986	"Reet Petite" – Jackie Wilson	David Bryant
1987	"Always on My Mind" – The Pet Shop Boys	Barry Norman
1988	"Mistletoe and Wine" – Cliff Richard	Ian Botham
1989	"Do They Know It's Christmas?" – Band Aid II	Jeremy Brett
1990	"Saviour's Day" – Cliff Richard	Laurence Marks
1991	"Bohemian Rhapsody/These Are the Days of Our Lives" – Queen	John Harvey-Jones
1992	"I Will Always Love You" – Whitney Houston	Tony Benn
1993	"Mr Blobby" – Mr Blobby	Rod Hull
1994	"Stay Another Day" – East 17	Ranulph Fiennes
1995	"Earth Song" – Michael Jackson	Jethro
1996	"2 Become 1" – The Spice Girls	Colin Davis
1997	"Too Much" – The Spice Girls	Malcolm Bradbury
1998	"Goodbye" – The Spice Girls	Willie John McBride
1999	"I Have a Dream/Seasons in the Sun" – Westlife	Trevor Baylis
2000	"Can We Fix it?" – Bob the Builder	Joss Ackland / Billie Piper (3)
2001	"Somethin' Stupid" – Robbie Williams and Nicole Kidman	Russ Abbot
2002	"Sound of the Underground" – Girls Aloud	Richard Dunhill
2003	"Mad World" – Gary Jules and Michael Andrews	Stephen Fry
2004	"Do They Know It's Christmas?" – Band Aid 20	
2005	"That's My Goal" – Shayne Ward	
2006	"A Moment Like This" – Leona Lewis	"Smoke-free (Premises and Enforcement) Regulations SI 2006/3368"
2007	"When You Believe" – Leon Jackson	
2008	"Hallelujah" – Alexandra Burke	
2009	"Killing in the Name" – Rage Against The Machine	

Years Questions

Around the outside of page 6 were a set of ten statements. The **subject of each of these statements featured elsewhere in the hunt [YQ1]**. Solvers needed to find the year each of these things took place (as indicated by the 'WHAT YEAR?' hint from the pictures).

From top left moving clockwise the answers were as follows. It was not necessary to give the page reference for the mark to be awarded.

- **Michael Parkinson** (from page 13, his nickname Parky is a synonym for cold); his chat show first aired in **1971** [YQ2].
- **The Weird Sisters** played at the Christmas Ball in *Harry Potter and the Goblet of Fire* in **1994** in the Harry Potter world timeline, and featured in the Drummers puzzle on page 5 [YQ3].
- The **astronauts of Apollo 8** were Frank Borman, James Lovell, and William Anders. Their spacecraft splashdown was on 27 December **1968**, as featured on page 1 of the hunt [YQ4].
- **James Cracknell**, dressed in black on page 3, was born in **1972** [YQ5].
- **Mary, Queen of Scots**, from page 4, died in 1587. Adding 400 years gives **1987** [YQ6].
- From page 10 equations, P = Baltic and S = Gateshead. **BALTIC Centre for Contemporary Art** in Gateshead opened on Saturday 13 July **2002** [YQ7].
- **ABBA won Eurovision** in Brighton in **1974**, and featured on page 11 in the poem. At the time of the famous battle Waterloo was part of the Kingdom of the Netherlands [YQ8].
- **Lord Sutch**, from the party puzzle, stood in both Bootle by-elections in **1990** [YQ9]. Some teams found an alternative valid answer: Lord Dubs and Lord Kinnock both stood in two general elections for the same seats in two 1974 elections, and credit was also given for these answers, although the year would not be correct.
- **Gus O'Donnell**, who featured on page 9, was first appointed to Most Honourable Order of the Bath in **1994** when he was appointed Companion (CB) in the New Year Honours [YQ10]. He was also appointed Knight Commander (KCB) in the 2005 Birthday Honours and Knight Grand Cross (GCB) in the 2011 Birthday Honours.
- These were triangular numbers, T_8 is 36, T_4 is 10 and T_1 is 1. So the statement actually reads *Song featuring 36 was track 10 on #1 xmas album*. This refers to the **Beautiful South's** compilation album *Carry on up the Charts*, which topped the Christmas album chart in **1994** [YQ11]. Track 10 was 36D which featured in the Playfair grid on page 2.

The questions were numbered with either a '1' or a '•'. **The number 1** indicated that the **list of Christmas number ones** should be used, and the **bullet point** meant that the **pipe smoker of the year list** should be used [YQ12 - any wording conveying this answer gets the mark].

The initial letter of either the person's surname or the name of the band was then needed for each of the years identified by the questions.

- 1971 Pipe Smoker = Lord **S**hinwell
- 1994 Christmas number 1 = **E**ast 17
- 1968 Pipe Smoker = Peter **C**ushing
- 1972 Christmas number 1 = Jimmy **O**smond
- 1987 Pipe Smoker = Barry **N**orman
- 2002 Pipe Smoker = Richard **D**unhill
- 1974 Pipe Smoker = Fred **T**rueman
- 1990 Christmas number 1 = Cliff **R**ichard
- 1994 Christmas number 1 = **E**ast 17

- 1994 Christmas number 1 = East 17

The final answer was **SECOND TREE [YQ13]**, which was an instruction for finding the treasure.

Pablo's Christmas Party Puzzle

This puzzle involved pulling information together from across several other parts of the hunt, and combined the remaining Twelve Days of Christmas gifts (Pipers, Lords, Ladies, Geese and Hens). The puzzle itself consisted of multiple stages to complete. The Hens had a puzzle of their own, and the answers fed into the main puzzle, as explained below. Likewise, there were additional contributions from the Christmas Cracker clues from page 9 and the maps on page 10. The puzzle was the brainchild of James (although we simplified it a little!) and when test solving we reached the intended solution. However, the purpose of this puzzle was never revealed to us. It seemed a shame to lose such an original puzzle, and would have left us with some huge gaping holes to fill with new puzzles. Hence we decided on a strategy that would still use the puzzle, with a few changes, and also use the final answer as a key in another puzzle.

Three French Hens

The three pictures of hens in the colours of the tricolore on page 9, as well as the French text, should have been the big give-away for the Three French Hens puzzle. (No marks for identifying the pictures.) The first part of this puzzle was to realise that the way to read the text was vertically, in the three colour blocks of the tricolore, rather than horizontally across the rows. The colouring of the word '*poule*' in each case was a visual clue to help. This revealed three statements in French. Their English translations are given below (anything with essentially the same meaning counts as a correct answer).

Blue: *non un oeuf ne suffit pas cette poule a battu tous les records il y a cent ans*

Translation: No, one egg is not enough. This hen broke all records a hundred years ago.

White: *il vaudrait mieux se couvrir pour éviter les morsures dans la région d'origine de cette poule*

Translation: It would be better to cover up to avoid bites in the region of origin of this hen.

Red: *un voyage en Eurostar passe par la région d'origine de cette poule*

Translation: A journey on Eurostar passes through the region of origin of this hen [**FH1** - one mark for all three translations].

Each of the three statements was a clue to identify a particular hen breed. The additional clue with this puzzle (*Pas Françaises - mais Anglaise, Australienne, et Roumaine* i.e. not French, but English, Australian and Romanian) indicated the answers were **one English, one Australian and one Romanian breed of hen [FH2]**.

The answers were as follows:

Blue: **Australian Laying Orpington**, or **Australorp** [FH3, either accepted]. Australorps were bred to be prolific egg layers, and in the 1920s they set many world records (see article [here](#)).

White: **Naked Neck**, a Romanian breed [FH4]. The clue was simply a reference to vampires and Transylvania to firmly establish this as being the Romanian chicken. The Wikipedia page on Romanian breeds of chickens is mercifully short (unlike the French one), and Naked Neck is the only option given. If there were vampires around one would certainly want to cover up a naked neck.

Red: **Orpington**, a breed from Kent, England [FH5]. With England being the only one of the three nations given where the Eurostar passes through, this should have narrowed it down. There are several [breeds of chicken from the UK](#), but really only one appears to come from the area the Eurostar passes through on its way from London to the Channel Tunnel. Cross referencing with the party puzzle may have been needed to be confident of this answer (see below).

The three hens were invited to Pablo's Christmas Party, but sent alternates in their place because they were busy (the marks for this are given in the answers for Pablo's Christmas Party Puzzle).

Crackers

There were three Christmas crackers on page 9. The solutions to these three statements were, like the hens, the original invitees for the party. Instead they sent some 'crackers' (or cryptographers) as alternates. The answers were as follows (explanation not needed to be awarded the mark):

1. **Lord Kinnock** [CK1]: As leader of the Labour Party Neil Kinnock suffered a shock defeat to John Major in the 1992 general election. He was then appointed to the European Commission, and served as Transport Commissioner under President Jacques Santer. His wife Glenys was an MEP, so both spent much time in Brussels.
2. **Ross Geller** [CK2]: In the Friends episode "*The One with the Holiday Armadillo*", Ross rents an outfit to entertain his son Ben, and invents Santa's Tex-Mex friend: the Holiday Armadillo. Ross had a pet white-headed capuchin monkey (which was one of the monkeys in the wordsearch on page 1). The final part of the clue refers to the on-off relationship between Ross and Rachel ('We were on a break').
3. **Lord O'Donnell** [CK3]: Gus O'Donnell's first name is Augustine (a saint), and he was nicknamed GOD. He held the roles of Cabinet Secretary, Head of the Civil Service, and Permanent Secretary at the Cabinet Office from 2005 to 2011 when he retired from office. At this point the three roles were split. The last part of the clue is a reference to the answer being a member of the House of Lords, where the Queen delivers her annual speech at the State Opening of Parliament.

Map Puzzles

There was a puzzle of several parts on page 10. There was a map of Great Britain with six locations highlighted by pointers. Five of these had blue markers, and the country was also wearing a scarf - these were clues that there was a 'cold' theme to this puzzle. It was challenging, but not impossible to identify five locations with a cold theme.

From north to south the five locations were: **A'Chill** [MP1], **Frosterley** [MP2]; **Raw** [MP3]; **Snowdon** (or Snowdonia is acceptable) [MP4] and **Cooling** (or Cooling Street or Cooling Castle) [MP5]. These are all **cold synonyms** [MP6]. Taking the initial letter from each location and rearranging gave **SCARF** [MP7].

The sixth pointer on the map marked **Beaufort** in South Wales [MP8], and this was indicated with a **symbol used in the [Beaufort Wind speed scale](#)** [MP9], specifically wind speed 6, strong breeze. This was to indicate that there was a Beaufort cipher somewhere on the page; it was towards the top right hand corner under the additional maps. The Beaufort key was SCARF.

The Beaufort Cipher decoded to **FIND THE FIVE INVITED GUESTS** [MP10]. This referred to the map picture above it, with five highlighted locations. All five of these represented guests who were invited to the Christmas party. However, they all sent a representative in their place (more on this below). The map showed the north eastern coast of Scotland, and part of the western coast of Norway. The **dotted line** on each map **indicated the location of the prime meridian** [BP5]. Each of the locations from top to bottom and the 'guests' they represented were:

- ? **Hutton** oilfield = Lord (Brian) Hutton [MP11]
- ? **Brent** oilfield = Brent Goose [MP12]
- o? **Piper** oilfield = simply a Piper [MP13]. The 'o' was to indicate that "o" for oilfield is the letter to be used in the party puzzle.
- ? **Nelson** oilfield = Lord Nelson [MP14].
- pm? **Aberdeen** = Lord Aberdeen, George Hamilton-Gordon, who became British Prime Minister in 1852 [MP15].

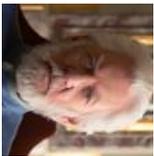
Marks were given for identifying what the ? represented - the actual guest was not needed. The alternate guests are discussed below.

Christmas Party Puzzle Part A

This puzzle contained all the Lords, Ladies, Pipers and Geese from the Twelve Days of Christmas. The first step was to identify each of the pictures. The orientation of some of the pictures was deliberate, in keeping with the Twelve Days of Christmas theme of the hunt. The geese were on their side (a-laying), the ladies were at a 45° angle (a-dancing), and the lords were raised higher than their neighbours (a-leaping) [**CPA1** - mark given for any reasonable explanation relating to the picture orientation]. As explained above, the pipers were interpreted as being pipe smokers, rather than musical pipes, and all the piper guests who had not sent alternates were depicted with a pipe. (More on alternates below.)

The pictures were separated out into small groups, or rooms, at the party. Each room also had a short clue for an acrostic using the initial letters of the guests' names. There was a complication introduced here. As indicated in the party invitation, some of the party guests were busy taking part in other puzzles elsewhere in the hunt, and therefore had sent someone else in their place. This meant that some of the guests did not fit the original seating plan, and hence a first look through most of the acrostics suggested some incorrect letters [**CPA2** - any explanation for what alternate actually meant in the context of the party puzzle]. The number of alternate guests and their categories were indicated using illustrations on the invitation [**CPA3** - mark given for any reasonable explanation of the invitation illustration]. There were 14 alternates in total: three Hens (alternates for the breeds of hen given in the not-French Hens puzzle on page 9, they shared a colour), five Mapmakers (alternates for 3 x lords, 1 x piper and 1 x goose in the Oilfields Map puzzle on page 10), three Cryptographers or “crackers” (alternates for 2 x lords and 1 x goose from the Christmas Cracker motto puzzle on page 9) and three Roses (alternates for 3 x pipers as identified above in the Pipe Smoker of the Year list on page 6; the **Roses share a profession with their alternates** allowing them to be definitively assigned [**BP6**]). The pictures for the alternates were oriented to depict the action for whom they were substituting, if appropriate. Those substituting for pipers did not have pipes as they were not pipers.

The second complication was that, as indicated on the Guest Notice, there were several uninvited guests who were also present “in fancy dress”. So some guests were masquerading as members of a category of guests to which they did not actually belong, and were depicted performing the appropriate action (if goose, lord, or lady) or with a pipe if supposedly a piper. The “imposters” are used in the later parts of the puzzle. For this first part it is sufficient to note that they are uninvited / in fancy dress / imposters (explanations for why the various pictures are imposters are given below, but are not needed for the mark to be awarded). The **identification of the picture** was needed for the mark to be awarded. The roles were not specifically needed for these marks but these are given below. If the wrong initial letter was used then the mark for identifying the picture can still be awarded (e.g. if Lady X was fully identified, but the letter O from Merle Oberon was used then the identification of this image will still be awarded the point). Where an alternate was sent, there is a mark for identifying the original guest. There was also a mark for identifying the word(s) clued for each room (regardless of whether the pictures were correctly identified).

Room 1				
Picture	Identity	Role	Alternate	Initial Letter
	President Snow from <i>The Hunger Games</i> , played by Donald Sutherland .	Goose (a snow goose is a species of goose).	no	S [CPA4]

	Jeremy Irons in the TV film <i>Longitude</i> . A bonus point for noting the thematic link [BP7].	Piper	no	I [CPA5]
	Merle Oberon as Lady X in <i>The Divorce of Lady X</i>	Lady	no	X [CPA6]
Clue: Number of layers Answer: SIX [CPA7]. The number of geese-a-laying.				

Room 2				
Picture	Identity	Role	Alternate	Initial Letter
	King Edward VIII	Piper	no	E [CPA8]
	Vincent Van Gogh self portrait	Piper	no	V [CPA9]
	Baroness Evans of Bowes Park	Lady	no	E [CPA10]
	Toby Stephens as Captain Flint in <i>Black Sails</i> . [CPA11]	Mapmaker - Flint was created by Robert Louis Stevenson in <i>Treasure Island</i> , and was the maker of the map which led to the treasure.	Yes - for Lord Nelson (from Oilfields puzzle)	N [CPA12]

	Lady Campanula "Totty" Tottington from <i>Wallace & Gromit The Curse of the Were-Rabbit</i>	Lady	no	T [CPA13]
Clue: Happening Answer: EVENT [CPA14]				

Room 3				
Picture	Identity	Role	Alternate	Initial Letter
	C. S. Lewis	Piper	no	L [CPA15]
	Lady Elliot Island off the east coast of Australia	Lady	no	E [CPA16]
	Indicates "incomplete answer" which could be 'anser', the Latin word for goose.	Goose	no	A [CPA17]
	Cyril Fletcher playing Mother Goose in panto (note, this image was behind a paywall, however, an image search using TinEye revealed the filename as Fletcher so it was possible to identify).	Imposter (not a lady because he is a man playing the role of a panto dame)	no	F [CPA18]
	Lord Infamous on the album cover of <i>Da Unbreakables</i> by Three 6 Mafia.	Imposter (not a lord, this was the stage name of Ricky T. Dunigan)	no	I [CPA19]

	Albert Einstein	Piper	no	E [CPA20]
	Benedict Cumberbatch playing Sherlock Holmes. This picture was annotated with the word priest as an extra hint.	Lady (Lady Sherlock is ordained as a priest)	no	S [CPA21]
	Former FA chairman David Triesman (& David Beckham).	Lord	no	T [CPA22]
<p>Clue: What Surrey is but a Christmas tree is not. Answer: LEAFIEST [CPA23]. Surrey is reportedly the leafiest county as it has the most trees, whereas Christmas trees have needles rather than leaves (traditionally).</p>				

Room 4				
Picture	Identity	Role	Alternate	Initial Letter
	Batwoman / Kate Kane played by Ruby Rose [CPA24]	Rose	Yes - for Joss Ackland (both actors).	A [CPA25]
	Rushden and Diamonds football club ground, Nene Park .	Goose (there is a nene goose)	no	N [CPA26]
	Sign for a chicken shop from Baton Rouge Louisiana [CPA27].	Hen (red, both in colour and name)	Yes - for Orpington hen	O [CPA28]
	Snow-covered trees . This picture was annotated with the word vet.	Lord Trees is a veterinary professor	no	T [CPA29]

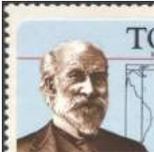
	Lin Manuel Miranda as Alexander Hamilton in <i>Hamilton</i> .	Lady (Lady Hamilton was the mistress of Lord Nelson).	no	H [CPA30]
	One of The Bangles (probably Debbi Peterson) performing ' <i>Walk Like an Egyptian</i> '	Imposter - although there is an animal known as an Egyptian Goose, it is actually a duck.	no	E [CPA31]
	Sean Bean as Sharpe with Lord Rossendale (SB makes his trademark appearance but no extra points for spotting him).	Lord	no	R [CPA32]
	Hugh Rodley	Imposter - he was termed 'Lord of Fraud' by the media but is not an actual lord.	no	R [CPA33]
	At the Sign of the Umbur Chicken (part of the sign for an exhibition of the work of the Poole Hall Press of Grimsby, Ontario).	Imposter - this does not connect to any of the Three French Hens puzzle alternates (umber is not a colour of the tricolore).	no	U [CPA34]
	René Magritte	Imposter - not a pipe smoker, painted <i>The Treachery of Images</i> , with the words 'Ceci n'est pas une pipe'.	no	M [CPA35]
Clue: Something you might ask for at Christmas Answer: ANOTHER RUM [CPA36]				

Room 5				
Picture	Identity	Role	Alternate	Initial Letter
	Baroness Floella Benjamin of Beckenham	Lady	no	B [CPA37]
	Emperor penguin	Goose (there is an emperor goose)	no	E [CPA38]
	Chicken cordon bleu [CPA39].	Hen (blue)	Yes for Australorp	A [CPA40]
	Boxer Brian Rose [CPA41].	Rose	Yes for Henry Cooper (piper) (both boxers).	C [CPA42]
	Lego model of Hugh Hefner	Piper	no	H [CPA43]
	Ordnance survey grid reference for the monument at the birthplace of Major-General William Roy , surveyor and mapmaker [CPA44]. His work led to the creation of the Ordnance Survey. He also contributed accurate measurements of latitude and longitude of the Greenwich Observatory [BP8].	Mapmaker	Yes - for Brent Goose (from the Oilfields puzzle).	B [CPA45]

	Gerardus Mercator - cartographer [CPA46]. He made proposals for the location of the prime meridian in the 16th century [BP9].	Mapmaker	Yes - for Piper Oilfield (the letter to use is shown on the map as 'o' to avoid ambiguity).	O [CPA47]
	Orinoco the Womble	Imposter - the orinoco goose is actually a duck.	no	O [CPA48]
	John Wallis , mathematician and cryptographer [CPA49].	Cracker	Yes - for Lord Kinnock (from cracker puzzle).	K [CPA50]
Clue: Garland production Answer: BEACH BOOK [CPA51] . Alex Garland wrote the book <i>The Beach</i> .				

Room 6				
Picture	Identity	Role	Alternate	Initial Letter
	Yul Brynner	Piper	no	B [CPA52]
	Cartoon of Ada Lovelace	Imposter - she did not really smoke a pipe, this is taken from a webcomic .	no	L [CPA53]
 <p>Inherited mistake here - 24 should have been coloured red.</p>	An Eratosthenes sieve, or a prime number map, named for the mathematician and geographer Eratosthenes [CPA54].	Mapmaker	Yes for Lord Aberdeen , once <i>Prime Minister</i> (from Oilfields puzzle)	A [CPA55]

	He created the first global projection of the world, incorporating parallels and meridians based on the available geographic knowledge of his era [BP10].			
	Laurent Blanc , French footballer [CPA56].	Hen (white)	Yes for Naked Neck	N [CPA57]
	Alf Dubs	Lord	no	D [CPA58]
<p>Clue: Second-rate country like Turkey? Answer: BLAND [CPA59] A second rate country could be B LAND, hopefully your Christs dinner was not bland!</p>				

Room 7				
Picture	Identity	Role	Alternate	Initial Letter
	Baroness Trumpington	Lady	no	T [CPA60]
	Sandford Fleming as depicted on a stamp from Tonga which commemorated the centenary of the international date line [CPA61]. He made proposals for the prime meridian, and attended the International Meridian conference of 1884 which set Greenwich as the Prime Meridian [BP11].	Mapmaker	Yes for Lord Hutton (from Oilfields puzzle).	H [CPA62]

	The picture is a bottle of Onna Joshu sake. The brand was named Onna Joshu (Lady of the Castle) after Lady Otsuya no Kata, ruler of Iwamura Castle in the 16th century. A Japanese series Onna Joshu Naotora has the english title 'Lady Warlord', hence the 'samurai' clue.	Lady	no	O [CPA63]
	Alan Turing [CPA64]	Cracker	Yes for Ross Goose (from cracker puzzle)	R [CPA65]
	Print called <i>The Able Doctor</i> depicting Lord North .	Lord	no	N [CPA66]
	David Sutch aka " Screaming Lord Sutch , 3rd Earl of Harrow".	Imposter - stage name includes lord	no	S [CPA67]
Clue: Dead letters Answer: THORNS [CPA68] . The thorn is an archaic letter, although still used in modern Icelandic.				

There were two other guests in another room with nine empty places. These are explained later, but the identities of these guests are as follows:

Picture	Identity	Role	Alternate	Initial Letter
	Cindy Rose President of Microsoft Western Europe [CPA69].	Rose	Yes for Campbell Adamson (piper) (both business leaders / industrialists).	A [CPA70]
	Charles Babbage , mathematician and cryptographer [CPA71].	Cracker	Yes for Lord O'Donnell (from cracker puzzle).*	O [CPA72]

*Note: although Lord O'Donnell is not a 'piper' he is in the smoking room, and his alternate is already present at the start of the puzzle. Perhaps this is just his misfortune (for having a

name beginning with a useful vowel!). The picture is 'leaping', indicating this picture is a lord, and guests cannot be in multiple categories.

Christmas Party Puzzle Part B

With all the guests identified at the party, the next step was to apply the party rules. The invitation suggested that "smoking rules" would be "strictly enforced". This was a reference to SI 3368, or Statutory Instrument number 3368, [The Smoke-free \(Premises and Enforcement\) Regulations 2006](#), which was indicated in the puzzle on page 6 involving the Pipe Smoker of the Year/Christmas number ones. To complete the next part of the puzzle a solver needed to **apply the regulations from SI 3368**.

To summarise the relevant points from SI 3368:

*...premises are substantially enclosed if they have a ceiling or roof but there is—
an opening in the walls; or an aggregate area of openings in the walls, which is less
than half of the area of the walls...*

*...no account is to be taken of openings in which there are doors, windows or other
fittings that can be opened or shut...*

All the 'rooms' in the puzzle were drawn as top-down plans with the walls, doors and any openings depicted. The intended interpretation was that in any room with more than half of the room perimeter being absent, smoking was permitted. As per the legislation, doors were to be considered as closed walls. The first step was to **decide whether smoking was allowed or not**, then **remove the pipers to the smoking room if smoking was not permitted**. Smoking was only allowed in rooms 1 and 7 [CPB1 - any reasonable explanation reaching the same conclusion gets the mark, but the significance of SI 3368 and the walls of the rooms must be noted].

The position of the evicted pipers in the smoking room was guided by some clues (e.g. 'reserved for a painter') and the intended order is shown below.

Piper (or alternate)	Letter
Hugh Hefner	H
Cindy Rose for Campbell Adamson	A
Vincent Van Gogh (painter)	V
King Edward VIII	E
Ruby Rose for Joss Ackland (actor)	A
Brian Rose for Henry Cooper	C
Gerardus Mercator for piper oilfield (O)	O
Charles Babbage for Lord O'Donnell	O

C. S. Lewis	L
Yul Brynner (actor)	YUL
Albert Einstein (mathematician)	E

The resulting message was **HAVE A COOL YULE** [CPB2 - mark given even if some of the guests put into the smoking room were incorrect]. (Note that Yul Brynner was now being used to represent 'YUL' rather than 'B'. Clearly something strange was going on with the enumerations - this was not a mistake!). This was another reference to 'Cold Christmas'.

The second step was to **remove the uninvited guests** (or guests in 'fancy dress') from their original location to their own room [CPB3]. Again, there was some assistance given to their specific placement, and more words were to be spelled out.

Imposter	Letter
Orinoco	O
Cyril Fletcher (actor)	F
René Magritte (painter)	M
Lord Infamous (musician)	I
Screaming Lord Sutch (musician)	S
Hugh Rodley	R
Umber Chicken	U
Ada Lovelace (mathematician)	L
Egyptian	E

The second message was **OF MISRULE** [CPB4 - mark given even if some of the guests put into this room were incorrect], with the whole message reading HAVE A COOL YULE OF MISRULE. This is a festive message referring to the tradition of appointing a [Lord of Misrule](#) [BP12 any words explaining will get the bonus point].

Christmas Party Puzzle Part C

The removal of the imposters and pipers (where appropriate) results in the initial set of words (SIX, EVENT etc) being altered by the removal of various letters. The third step was to then apply the seated/mingling allowed instruction and form new words from the remaining letters: '**seated**' meant the order was unchanged, '**mingling allowed**' meant to **change the order** [CPC1 - any words explaining this will be awarded the mark, even if this instruction was not applied in the correct way].

Room	Letters	Smoking allowed?	Letters after removal	Seated or mingling?	Final word
1	SIX	Yes	SIX	Seated	SIX
2	EVENT	No	ENT	Mingling	TEN¹
3	LEAFIEST	No	EAST	Seated	EAST
4	ANOTHER RUM	No	NOTHR	Mingling	NORTH
5	BEACH BOOK	No	BKBEA	Mingling	KEBAB
6	BLAND	No	AND	Seated	AND
7	THORNS	Yes	THORN	Mingling	NORTH

The resulting message was SIX TEN EAST NORTH KEBAB AND NORTH [**CPC2** - all words needed]. This in itself was rather nonsensical, however the words hid another answer. The intended solution was as follows:

SIX = VI in Roman numerals

TEN = X in Roman numerals

EAST = E

NORTH = N

KEBAB = DONER

AND simply meant 'and' or &

NORTH = N

This gave the final solution as **VIXENDONNER** [**CPC3**]. Two of Santa's reindeer, Vixen and Donner were the two additional gatecrashers mentioned in the Guest Notice. One of these is used as a keyword in another puzzle, as discussed below. The other gatecrasher was not actually used (the invitation said '*may* be used elsewhere').

Departure Board Puzzle

The departure board on page 12 was a fairly late addition to the hunt to use the meridian or longitude theme a little more. It was intended to be a straightforward solve through several parts, although most teams did not seem to find it this way. The Christmas Eve hint was an additional solving aid. The first thing to note was that **all the locations were capital cities** [**DB1**]. Using the initial letter of the countries of the capital cities in the 'From' column spelled out **LAMBDA DELTA AS DECIMAL** [**DB2**]. The countries for the 'To' cities had no additional meaning. The **Greek letter lambda λ is used to represent the longitude** of a location (with latitude being represented as phi ϕ) [**DB3**].

Longitude is an angular measurement ranging from 0° at the Prime Meridian to +180° eastward and -180° westward. Each degree of longitude is divided into 60 minutes, each of which is divided into 60 seconds. An alternative representation expresses parts of a minute

¹ Accept NET as an alternative answer when scoring mark [**CPC2**].

in decimal notation. This is the form of lambda that was intended to be used next. Places to the west of the Prime Meridian are given a negative sign, while places to the east are positive. Delta is commonly used to mean difference, hence the next step was to establish the difference in degrees between the 'From' and 'To' locations. The puzzle was built using the list of longitudes at <https://www.jasom.net/list-of-capital-cities-with-latitude-and-longitude/> however, it was also very easy to simply search Google for 'longitude [city]' and an acceptable figure was returned (shown in the table below). For this reason we decided not to include a reference to a particular source for the city coordinates. The resulting delta number could then be rounded to the nearest whole number and mapped to the corresponding letter of the alphabet (mod 26 as needed).

From	To	Long from	Long to	Delta (rounded)	Letter
TRIPOLI	BRUSSELS	13.1913	4.3517	9	I
TIRANA	NICOSIA	19.8187	33.3823	14	N
ANTANANARIVO	SARAJEVO	47.5079	18.4131	29	C
GABORONE	MOSCOW	25.9231	37.6173	12	L
COPENHAGEN	LILONGWE	12.5683	33.7741	21	U
KABUL	ASMARA	69.2075	38.9251	30	D
DJIBOUTI CITY	KUWAIT CITY	43.1456	47.9774	5	E
CAIRO	LOMÉ	31.2357	1.2254	30	D
RIGA	RABAT	24.1052	-6.8498	31	E
ANKARA	WINDHOEK	32.8597	17.0658	16	P
VIENNA	MONROVIA	16.3738	-10.8074	27	A
BUENOS AIRES	KINGSTON	-58.3816	-76.8099	18	R
SEOUL	ULAANBAATAR	126.978	106.9057	20	T
ROSEAU	HAVANA	-61.38808	-82.3666	21	U
MALABO	LISBON	8.7821	-9.1393	18	R
ZAGREB	RIYADH	15.9819	46.6753	31	E
NEW DELHI	DUSHANBE	77.209	68.787	8	H
KUALA LUMPUR	BEIJING	101.6869	116.4074	15	O
ALGIERS	ATHENS	3.0588	23.7275	21	U
VIENTIANE	MUSCAT	102.6331	58.3829	44	R

The resulting message was **INCLUDE DEPARTURE HOUR**. The next step was to add the hour figure from the departure time to the previously established delta, and convert the numbers to letters of the alphabet again. This gave **FINALLY DEDUCT MINUTES**. After subtracting the minutes in the same fashion the result was **PATH SOUTH OR TAKE TRACK [DB4]**. This clue was part of the instructions to find the treasure.

Delta (rounded)	Hour	Delta + hour	Letter	Minutes	Delta + hour - minutes	Letter
9	23	32	F	16	16	P
14	21	35	I	34	1	A
29	11	40	N	20	20	T
12	15	27	A	19	8	H
21	17	38	L	19	19	S
30	08	38	L	23	15	O
5	20	25	Y	04	21	U
30	00	30	D	10	20	T
31	00	31	E	23	8	H
16	14	30	D	15	15	O
27	20	47	U	29	18	R
18	11	29	C	09	20	T
20	00	20	T	19	1	A
21	18	39	M	28	11	K
18	17	35	I	30	5	E
31	09	40	N	20	20	T
8	13	21	U	03	18	R
15	05	20	T	19	1	A
21	10	31	E	28	3	C
44	01	45	S	34	11	K

Cold, Prime Factors & The Alternative Twelve Days of Christmas

Page 13 brought together most of the hunt themes.

AC's Weather Briefs

AC referred to [Anders Celsius](#) who developed the Centigrade temperature scale, which was later renamed Celsius in his honour [WB1]. His **original scale had 0 as the boiling point and 100 as the freezing point** of water, rather than the reverse we use today. First the numbers provided needed to be **converted to current convention** [WB2]. Anders Celsius did work on meridians and longitude [BP13].

The **Short** (i.e. brief) [Weather Cipher](#) was a cipher that was used aboard U-boats of the German Navy during World War II [WB3]. This cipher was used to encode the message.

When decoded the message read: **AC FIRST USED HIS HOT AND COLD SCALE ON CHRISTMAS DAY** [WB4]. The numbers that decoded as **COLD CHRISTMAS** were on the 'cold' side of the scale, while the other words were all on the warmer side (alternatively noting that a different shift was applied to these particular words - see details about alternative solving method below) [WB5], thus highlighting the treasure location.

The Short Weather Cipher basically maps numbers to letters in alphabetical order, so the code could be cracked without necessarily identifying the specific cipher that had been applied. Some teams applied ASCII which coincidentally corresponds to the cold half of the SWC, giving the 'cold' and 'christmas' parts of the message. Others just played around with letter shifts to crack most of the code. They often decoded the message as **AC FIRST USED HIS HOT AND cold SCALE ON christmas DAX**. We got lots of queries about this. It was not an error - the SWC does not contain the letter X, so the shift applied to the letter Y is one out from the rest of the message. This apparent typo might have indicated to teams that their solving method was not the intended one, especially if their query resulted in no corrections being issued. However, teams were given credit for whatever method they used for points [WB4] and [WB5] above.

Cold Pictures

The first row of pictures on page 13 each provided a 'cold' synonym. (The words in bold were needed to get the marks here.)

- **Michael Parkinson** aka "Parky" [CP1]
- **Rhianna**, complete with nose "piercing" [CP2]
- Luis Suarez "biting" **Branislav Ivanovic** [CP3] Suarez is a serial biter so the correct victim needs to be identified for the point.
- "Arctic" Monkeys single **My Propeller** [CP4, the single should be specified for the mark to be awarded]
- **Elsa** from "Frozen" [CP5]
- De Ranke **XXX "Bitter"** [CP6]

Taking an initial letter from each of these pictures spelled out **PRIME X** [CP7, also accept PRIME XXX, or just PRIME]. (The spacing between the fifth and sixth pictures was deliberate to avoid the answer reading as PRIMEX.) This was a clue that prime numbers were important on this page. The X referred to multiplication (although XXX may have been interpreted as 'factors', and was not an indication of Roman numerals). The use of this is discussed further below.

Santa's Workshop

The number eleven was clued in both German (Elf) and Spanish (Once), and the solving method was to take every eleventh letter, wrapping around to the beginning again as needed, until all the letters had been used. This gave **MY TRUE LOVE COUNTS THE TOP ROW ITEMS BASED ON THE VERSIONS BELOW** [SW1]. The meaning of this is explained below.

The Alternative Twelve Days of Christmas

Santa's Workshop message referred to the double row of pictures just below it. For every picture in the top row there was a version of *the Twelve Days of Christmas* in which these items were given as gifts [ATD1 - any reasonable explanation]. By counting the top row items directly, and then applying the cipher 1 = A, 2 = B, etc, this gives the word **CABBAGE** [ATD2]. There is no significance to this answer, but hopefully indicated that you were on the right lines.

The identities of the bottom row of pictures, the versions of the Twelve Days of Christmas they represented, and the number of items in the song version for the top row pictures are given below. Once the version of the song was identified, taking the actual number of items pictured in the top row and converting this to a letter of the alphabet was needed to reach the final solution. Marks are given for identifying most of the bottom row pictures and then for completing the puzzle.

- **Humphrey**, a character from **Sesame Street** [ATD3], (lyrics [here](#)), seven rusty trash cans = G.
- The **New South Wales Christmas Bush**, *Ceratopetalum gummiferum*, at the **Royal Botanic Garden, Sydney** [ATD4]. This represents the [Australian Twelve Days of Christmas](#), twelve parrots prattling = L.
- A screenshot from the film *La Dolce Vita* [ATD5], representing [Joe Dolce's version](#) of the Twelve Days of Christmas. On the first day of Christmas the gift was a bowlful of parmesan cheese = A.
- The **demon nun Valak** [ATD6] from *The Nun* horror film, representing Twisted Sister's version of the Twelve Days of Christmas ([Heavy Metal Christmas](#)), and the gift of three studded belts = C.
- A stock image of a lorry, representing [Eddie Stobart Truckers](#) charity version, in which nine knitted jumpers featured = I.
- The picture of **Stimpy and the Nose Goblins** [ATD7] spanned both rows, and represents Ren and Stimpy's version, [The Twelve Days of Yaksmas](#). A nose goblin stuck to a chair was the first day of Yaksmas = A.
- The bottom row picture was a screenshot from **CMT's Redneck Island** [ATD8] (specifically sneak peek 1 for season 3 on [YouTube](#)). CMT also aired the *Twelve Days of Redneck Christmas* in 2008. [The Redneck Twelve Days of Christmas](#) by Jeff Foxworthy includes twelve packs of Bud on the twelfth day = L.

The result is **GLACIAL**, which is another **cold synonym** [ATD9].

Prime Multiplication Cipher

The font used for the numbers on this page was the same as used in the Photo Trail (see below). Solvers were told that the solution to the alternative Twelve Days of Christmas puzzle = 116365000 4660076. This was a **Prime Multiplication Cipher [PM1]**. Each letter of the alphabet is represented by a prime number (A = 2, B = 3, C = 5 etc - this was hinted at in the 24 December hint in the flight number). The letters in each word are assigned their corresponding prime number and then multiplied together. However, this does not give the order of the letters. To indicate the placing of a letter within a word each letter prime number is raised to the power of the number representing the letter's position in the word. As the cipher numbers rapidly become extremely large, words tend to be split into smaller groups of 2-4 letters.

From solving the alternative twelve days of Christmas puzzle:

GLACIAL = 116365000 4660076

The numbers needed to be expressed as a product of their prime factors, establishing the order of the letters based on the power (or number of times each prime factor occurred) and then converting the prime numbers back to letters.

$$116365000 = 17 \times 37 \times 37 \times 2 \times 2 \times 2 \times 5 \times 5 \times 5 \times 5 = 17 \times 37^2 \times 2^3 \times 5^4 = \text{GLAC}$$

$$4660076 = 23 \times 2^2 \times 37^3 = \text{IAL}$$

The second set of numbers on the page was to be solved in similar fashion. However, there was a minor twist. Each of the numbers had 18.3 added to it, and **after first subtracting 18.3** the prime factorisation could be completed as intended [**PM2**].

$$311852395.3 - 18.3 = 311852377 = 71 \times 19^2 \times 23^3 = \text{THI}$$

$$409283849.3 - 18.3 = 409283831 = 61 \times 71^2 \times 11^3 = \text{RTE}$$

$$20357.3 - 18.3 = 20339 = 11 \times 43^2 = \text{EN}$$

$$449541275.3 - 18.3 = 449541257 = 67 \times 71^2 \times 11^3 = \text{STE}$$

$$237935.3 - 18.3 = 237917 = 53 \times 67^2 = \text{PS}$$

= **THIRTEEN STEPS [PM3]**

This was one of the instructions to find the treasure.

The significance of '-18.3' is that this is the **lowest ever temperature** (in °C) **recorded on Christmas Day in the UK**, and the [record is held by Gainford in Durham from 1878 \[PM4\]](#).

The thermometer picture was a clue to assist solving. This was yet another hint to "Cold Christmas". A vague hint to this record was included in the 30 December poem: '*All that is cold is not coldest*'.

Photo Trail

The final page of the hunt was a series of pictures. Those thinking that these might be pictures near the treasure location were sadly mistaken (apart from one picture!). The first step was to identify the pictures. Most of these should have yielded readily to an image

search, and some may even have been familiar to solvers. We threw in a few we had taken ourselves, and a couple of old pictures to mix it up a bit. Identifying these pictures likely took you fairly quickly to <http://www.thegreenwichmeridian.org/> and <https://www.waymarking.com/wm/search.aspx?f=1&kw=meridian&st=2> . Indeed, **all the pictures are located along the Prime Meridian, or the zero degrees longitude line [PhT1].**

The words around some of the pictures were designed to be read as one, rather unlikely, sentence starting from the top left and going down each column of images. The resulting sentence read:

OFF RAN CEDRIC THE IDEAL GERIATRIC TO GO AND PLOUGH AN ACRE BUT HIS PAIN AND ASTHMA LIMITED HIM [PhT2].

This unusual sentence **hid six countries (FRANCE, ALGERIA, TOGO, GHANA, SPAIN, MALI [PhT3])** through which the **Prime Meridian passes [PhT4]**. This was a further clue to the Prime Meridian being important.

The ATHs often contain a typeface or font that is relevant to the hunt in some way. We looked for an opportunity to include this traditional aspect and were drawing a blank. Finally we found **Courier Prime** as being thematically linked, and decided to use it for the text on the Photo Trail page **[BP14]**. The same font was also used for the numbers in the Prime Cipher puzzle on the previous page.

The locations of the pictures reading from left to right, top to bottom were as follows (as most of these images were readily searchable, there is only one which will get you marks).

- Gilwell Park, Essex
- Easneye Wood, Ware, Herts
- Hainault Road Leytonstone
- New Addington, Meridian High School, Croydon
- Peacehaven, King George Memorial, East Sussex
- Duke Humphrey's Tower, Greenwich (on what is now the site of the Royal Observatory). Award mark **[HB6]** for identifying Duke Humphrey's Tower.
- Channelsea Island, Abbey Lane, London. The picture featured in the 2020 Hunt, and when we noticed Channelsea Island was on the Prime Meridian we couldn't resist reusing it!
- Waltham Abbey, Essex
- Oxted, Surrey
- Hither Green Station, Lewisham (one of our photos)
- Chailey Lane End Common, Newick Hill, East Sussex
- 'Here' sign, Thames Path, Greenwich
- 18 Bromley Hill (dry cleaners), Lewisham - this was one of our pictures. We did test searching for it and were able to find images that seemed close enough to be sure it was the right place.
- Cold Christmas Lane, Herts
- Sheffield Park Station, East Sussex (Bluebell Steam Railway)
- Forest Row, East Sussex

The logical next step (we hoped) was to note down the latitude of all the locations. Possibly counterintuitively the correct order was from south to north, although you may have quickly noted that the **Cold Christmas Lane photo was the most northerly [PhT5]**. Combining this with other information from the hunt should have confirmed you were on the right track.

With the photos in order the next step was to consider the numbers with a degrees sign. There was one number for each photo, and therefore sorting the photos also allowed you to sort the numbers. The presence of the degrees sign ° without any following letter should have indicated that this was **not a temperature** you were considering, but instead **an angular measurement [PhT6]**. All the Prime Meridian hints were aiming to get you to look at the [Wikipedia page](#) on this topic. However, it was not until the poem hint was released that teams really began to solve this puzzle. Scrolling down the page a little would get you to a list of historical Prime Meridians on Earth.

The quest to establish the location of Earth's Prime Meridian was a topic of much debate historically. The discussion was finally resolved in 1884 at the International Meridian Conference in Washington, D.C. where the Greenwich Meridian was adopted as the Prime Meridian of the world. The French argued for a neutral line but eventually abstained and continued to use the Paris Meridian until 1911. Consequently, there is a long list of historic Prime Meridians on Earth, so this seemed a useful way of encoding a message for the hunt.

Using the Wikipedia list of Prime Meridians on Earth, **each of the numbers provided could be matched up with an historic Prime Meridian [PhT7]**. Longitudes with a negative sign are to the west of the modern Prime Meridian at Greenwich, those with a positive sign are to the east. The first few were non-contentious and should have indicated you were on the right lines. Later in the message there was some ambiguity where multiple meridians had the same modern degree of longitude. It was up to the solver to decide which meridian was correct. The intended solution is below.

Location	Latitude	Associated meridian longitude	Meridian	Initial letter
Peacehaven, King George Memorial, East Sussex	50.789694	-18°	El Hierro	E
Chailey Lane End Common, Newick Hill, East Sussex	50.983090	29°	Alexandria	A
Sheffield Park Station, East Sussex	50.995876	30°	Saint Petersburg	S
Forest Row, East Sussex	51.075792	-16°	Tenerife	T
Oxted, Surrey	51.257401	11°	Florence	F
New Addington Meridian High School, LB Croydon	51.334291	-43°	Rio de Janeiro	R

18 Bromley Hill (dry cleaners), LB Lewisham	51.421092	10°	Oslo	O
Hither Green Station, LB Lewisham	51.45227	39°	Mecca	M
Duke Humphrey's Tower, Greenwich (on what is now the site of the Royal Observatory)	51.478015	-6°	Cadiz	C
'Here' sign, Thames Path, Greenwich	51.503050	12°	Copenhagen	C
Channelsea Island, Abbey Lane, London	51.52863	-9°	Lisbon	L
Hainault Road Leytonstone	51.570001	31°	Great Pyramid of Giza	G
Gilwell Park, Essex	51.648574	-3°	Madrid	M
Waltham Abbey, Essex	51.688855	10°	Oslo	O
Easneye Wood, Ware, Herts	51.803910	4°	Amsterdam/ Antwerp	A
Cold Christmas Lane, Herts	51.834701	136°	Kyoto	K

The message was: **EAST FROM CCL GM OAK [PhT9]** (the possibly contentious letters are highlighted). The intended reading was **EAST FROM COLD CHRISTMAS LANE GREENWICH MERIDIAN OAK** and this was an instruction to help you find the treasure.

The fact that part of the sentence saying "...go and plough..." is underneath the picture of the Cold Christmas oak tree could be interpreted as a clue that this is where solvers should go to seek the treasure. We are not sure if this was intentional on James' part but we think it is worth a bonus point [BP15]. As it happens, no ploughing or digging were required. As an interesting fact, the Monday after Twelfth Night is sometimes called Plough Monday (the traditional start of the English agricultural year), and coincided with the close of ATH2021.

Cryptography (Page 2)

James created the Playfair and Vigenère puzzles on page 2, and these had very few modifications to the final version. He wanted this page to be all about cryptography. When we were testing the Playfair he refused to make it easier saying "*This one is meant to be hard, and is very much aimed at the cryptographic old hands from Pablo's glory days.*" The initial purpose of the page was to hide a 'welcome to the hunt' message, and celebrate the number 36, this being **the 36th instalment of Pablo's ATH [BP16]** - note that there was no hunt in 1987. This bonus point was only awarded to teams who noted this but did not solve

the Vigenère (mark [VC2], see below)]. We added several elements to the page to further enhance the 36 theme (including the two cryptic Christmas cards at number 36 - see above for explanation and marks) and make use of other information from elsewhere in the hunt. We make no apologies for the difficulty of this page, as we did not feel that the information contained was critical to locating the treasure.

Playfair Cipher

The first picture was the **Playfair Cricket Annual 1983**. This indicated that a **Playfair cipher** was needed [PC1] and the **edition shown was the 36th** [PC2]. *All the messages on the page contained 36 characters* when decoded (and this applied to all the encoded text except for the ADFGVX, see below) [PC3]. The 6x6 grid is the Playfair key table, and in addition to the standard 26 alphabet letters the numbers 0-9 are used to give 36 characters. There is no specific keyword for this cipher; the placement of the characters in the grid is determined by the pictures.

Although the pictures in the grid needed first to be identified this was the minor part of the puzzle. Finding a **link to the number 36** was generally easy once this was achieved [PC4 for noting that all the pictures related to the number 36]. The hard part was then working out which letter / number to use for the Playfair cipher. There were often several options for which letter / number to use: the point was that it was supposed to be a test of cryptography skills and not just identifying the pictures.

To get the mark for each picture, teams need to identify both the picture and the rationale for the 36 link. The letter required for the grid is highlighted.

- **German Destroyer Z-36** [PC5].
- **Tom Brady** quarterback of the New England Patriots who won the **36th Superbowl** [PC6].
- A triangular number which is a factor of 36 is **3**.
- Rachel Walters' shop on Etsy is called **Undecillion**, a **one followed by 36 zeros**, or 10^{36} . The answer is **0** [PC7].
- One of **Hokusai's 36 Views of Mount Fuji** [PC8] specifically view number 36, Ushibori in Hitachi Province.
- The number **9** is a square number that is a factor of 36.
- A picture of **three feet** representing a **Yard**, or **36 inches**. [PC9].
- **Huyton Parish Church** (St. Michael's); the postcode is **L36** [PC10].
- Painting of **Emperor Guangwu of Han**, who **reunified China in AD 36** [PC11].
- The state of **Nevada**, which was the **36th state** to join the union [PC12].
- **Two dice** adding up to **Twelve**. **The number of possible outcomes from rolling two dice is 36** [PC13].
- The formation patch of the **36th Indian Infantry Division** of the Indian Army during World War II [PC14].
- The square root of 36 is **6**.
- Taking away 1 from 36 gives 35. The number **7** is one of its factors.
- **Murray the Magpie**, mascot of the **Adelaide 36ers** basketball team [PC15].
- The number **2** is a factor of 36.

- A modified image of the blue plaque for **William Henry Pratt, aka Boris Karloff** which is located at **36 Forest Hill Road**, London [PC16].
- Taking away 1 from 36 gives 35. The number **5** is one of its factors.
- **Eighteen** is a factor of 36 [PC17].
- **Memorial for the 36th Ulster Division** situated in the Island of Ireland Peace Park in Mesen, Belgium [PC18].
- The number 36 is the 8th triangular number, and the triangular root of 36 is **8** by the [formula](#) below (where $x = 36$).

$$n = \frac{\sqrt{8x + 1} - 1}{2}$$

- Logo of hip-hop group the **Wu-Tang Clan**. Their first album was Enter the Wu-Tang Clan (**36 Chambers**) [PC19].
- A screenshot of the TV game show **The Krypton Factor**. Krypton is **atomic number 36** [PC20].
- **A Hungarian telephone box**. The **international dialling code for Hungary is 36** [PC21].
- An image of **Lyndon B Johnson** and his vice president Hubert Humphrey. Johnson was the 36th US president [PC22]. Award mark [HB1] for identifying Hubert Humphrey.
- **Sir Garfield Sobers**, who was born in 1936 and was the first person to score a perfect over score of 36 in first class cricket in 1968 [PC23 - point for either, but we really had the six sixes in mind].
- A screenshot from the kung-fu film **36 Crazy Fists** [PC24].
- Represents three of the **36 Questions** devised by psychologist **Arthur Aron** in his 1996 publication '*The Experimental Generation of Interpersonal Closeness: A Procedure and Some Preliminary Findings*' [PC25].
- A screenshot from the music video of the song **36D by the Beautiful South** [PC26].
- The number **1** is a triangular number which is a factor of 36.
- The NASA/**Boeing X-36** Tailless Fighter Agility Research Aircraft [PC27].
- A **Roulette wheel** which has numbers up to 36 [PC28].
- The number **4** is a square number that is a factor of 36.
- Hip hop group **Three 6 Mafia** [PC29].
- A **Barrel** - in the UK a standard barrel is 36 gallons [PC30].
- **Princess Alexandra** aka the Honourable Lady **Ogilvy** born **Christmas Day 1936** [PC31].

The final Playfair grid was:

Z	P	3	0	V	9
Y	L	G	N	T	I
6	7	A	2	F	5
E	U	8	W	K	H
J	S	C	Q	D	1
X	R	4	M	B	O

Using this grid, the decoding of the message at the top of the page gives **USE A 36 CHARACTER VIGENERE FOR THE 2ND TEXT [PC32]**. This tells you that the message under the Playfair grid is not encoded using the Playfair cipher but is instead a Vigenère cipher.

Vigenère Cipher

The 36 gold coins under the grid were discovered during the **Ophel Excavations** to the South of the Temple Mount in Jerusalem [**VC1** - any correct explanation for what the coins are will get the mark]. They depict eight different Byzantine emperors. The arrangement of these coins in a 9x4 grid was something of a deliberate red herring.

Based on the decoding of the Playfair the alphabet for the Vigenère needs to be 36 characters, i.e. both letters and numbers. The correct alphabet was ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789. The decoding of the Vigenère gives **WELCOME TO THE 36TH ATH USE SAME GRID AND KEY [VC2]**, when using the key **VISQUARED** (i.e. 6 squared). This was an instruction that to solve the next cipher (ADFGVX) the Playfair grid and the Vigenère key (VISQUARED) should be used.

ADFGVX Code

Two sets of letters consisting only of the letters ADFGVX were also present on page 2. Rather than 36 letters, each message contained 72 letters split into two rows of 36. That the cipher used was the [ADFGVX cipher](#) should have been obvious. The Vigenère decoding provided the clue for how to decode the first cipher text. This gave the first message as **2ND KEY 1ST GATECRASHER PLUS COLLEAGUE NO 9 [ADF1]**. This message also has 36 letters.

The second ADFGVX decoding required a different keyword. The solving of the Christmas Party Puzzle should have revealed the two gatecrashers (VIXEN and DONNER). One of their colleagues would be another of Santa's reindeer. The reindeer names are based on those used in the 1823 poem *A Visit from St. Nicholas* (or *The Night Before Christmas*) by Clement Clarke Moore. Later, a ninth reindeer, Rudolph, was introduced. The key to use was therefore **VIXENRUDOLPH [ADF2]**. Some teams were able to get the message through a relatively labour intensive brute force decode, but the key was more elusive.

The decoding of the second message gave **FINAL ORDER PHOTO TRAIL CARDS PAGE 13 P12 P6 [ADF3]**. Again, the message contained 36 letters. This message **indicated the order in which the clues to locate the treasure should be applied [ADF4]**. In James' original, this whole page just led to a message welcoming ATHers to the 36th hunt. We wanted to give successful solvers something a bit more useful after all the work that would have gone into cracking this, but on the other hand we did not want to make such a hard puzzle crucial to a find. We settled on a nice hint to the order of the final direction clues - telling teams where they should focus their energies if they were missing any of these. However, we did expect that anyone visiting the site with most of the direction clues in hand

would be able to reach the treasure without this extra instruction. This is more fully explained below.

These ADFGVX codes are actually very easy to do by hand and are extremely satisfying.

Base 36 Code

At the 'base' of the page (pun intended) was a series of 36 numbers, split into several groups, which indicated the spacing between words once decoded. These had nothing to do with the ciphers above on the page. The numbers were in decimal format, however, converting each of these numbers from base 10 to base 36 revealed a message. This uses the alphabet 0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ (different to the order in the Vigenère, but this was in keeping with convention for base 36). It decodes to **36K FROM EQUAL PAY HEROINES [BC1]**. The **treasure location is approximately 36 km from the Ford Motors plant at Dagenham** as the crow flies **[BC2]**. The Dagenham Ford plant was the location of the strike that ultimately led to the Equal Pay Act. A bonus point was available for anyone noting in their solution that **James was an employment lawyer [BP1]**; as this was essentially the same as for the 10th December advent calendar puzzle, the bonus point can only be awarded once!

Treasure Location

The treasure was located near to **Cold Christmas in Hertfordshire [TL1]**. There were multiple references to Cold Christmas throughout the hunt, and many others to Cold, as well as the general Christmas feel. The answer to the Monkey Puzzle on page 1 (A PEAR TREE) - combined with the Four Calling Birds puzzle (PEARS BECOME ACORNS AT ZERO DEGREES) revealed that solvers needed to find an oak tree. The Photo Trail's most northerly picture was intended to indicate the start of the route to the treasure, i.e. the **Oak Tree Meridian Marker (or the bollard) on Cold Christmas Lane [TL2]**. The Greenwich Meridian website notes that the tree was planted to celebrate the millennium in 2000, as was the case in many places. The local residents take their tree pruning very seriously, and the oak is rather smaller than might be expected.

When we agreed to complete this hunt we had this much information, and had a good idea of where the treasure should be hidden. Fortunately, one of the team lived nearby and was able to complete an early reconnaissance of the area in October 2020. Aside from the Meridian marker on the lane, there were several other large oak trees that were approximately on the Meridian to the south, were accessible by local footpaths, and seemed to potentially fit the bill. James had not hidden a test treasure, so at that point there was nothing to find. He indicated we were close to his intended site, but did not reveal any more information. This left us with a few problems: (1) find a suitable treasure site, and (2) provide sufficient clues to reach it. We were hoping that extensive encoded text to find the treasure would not be needed, and aimed to keep the instructions concise. James had also provided us with 'HEDGE BY BOX' from the Cryptic Christmas Cards, and we wanted to keep this clue if at all possible, although the reconnaissance mission had not revealed anything all that promising.

Roll on spring 2021, and with lockdown restrictions gradually being eased it was time to find a suitable treasure site. After several hours wandering, many deliberations and inspections of oak trees, a test treasure was hidden. Some new puzzles were hastily devised. Within a couple of weeks another of the team was able to locate the treasure - test solve completed, we had a hunt!

We were fairly confident that with most of the clues deciphered a team would be able to find the treasure site with little difficulty, even without knowing the order in which to use the clues. However, we did decide to use the mass of ciphers on page 2 to conceal an extra message which would confirm the clue order.

The message from page 2 was: FINAL ORDER: PHOTO TRAIL, CARDS, PAGE 13, P12, P6. Therefore the clues should have been arranged as follows to map out the route to the treasure:

- EAST FROM COLD CHRISTMAS LANE GREENWICH MERIDIAN OAK from the Photo Trail. Quite simply, go east along the road until reaching the next clue.



- HEDGE BY BOX from the cryptic Christmas cards. We took this to mean the post box, just before the road bends to the north. Anyone checking out the area using Google maps would have been able to see this. The Google maps pictures were updated in January 2021, which was fortunate for solvers - when we were test solving, the pictures were at least a decade out of date, and the post box was actually in a different place!



- THIRTEEN STEPS from page 13 prime multiplication cipher. To the side of the post box a footpath is marked which goes up a set of thirteen wooden steps.
- PATH SOUTH OR TAKE TRACK from page 12 departure board puzzle. This one was deliberately a bit cryptic and wouldn't really make sense until arriving at the site. There was a footpath marked directly ahead (roughly south) from the top of the steps across a crop field. However, this path did not appear to be one in regular use. As an alternative, there was a very clear track to the left which wound around and connected up with the field path.



- SECOND TREE from page 6 years puzzle. There were three distinctive trees on the right hand side of the track, which could be seen from the top of the steps on the horizon. They were close to the meridian. The second one, an oak, had a rather useful hollow about 6 feet up. Admittedly it was high, however, you could see the treasure box if you looked from the right angle, so we decided this would suffice.



The prize for solvers was a Twelve Days of Christmas miniature card with a picture of a stamp from Christmas Island featuring illustrations of the Twelve Days of Christmas - wishing you a very lyrical Christmas, of course! The actual year of the stamps was 1977, but the dates were modified to start at 1952 for the first to treasure, to align with the UK singles chart. No points for noting these thematic additions.

You can watch the route to the treasure [here](#).

The treasure was first located on 30 Dec 2021, with the second find being reported just 15 minutes later.

Humphreys Bonus Puzzle

From the Eight Maids-a-milking puzzle, solvers were informed that
PART OF THIS GIFT HAS GONE ASTRAY,
FIND THE CULPRITS IF YOU MAY.

The 'a-milking' part was entirely missing from the Eight Maids puzzle, but where could it be? When we were pondering this question, one of the team recalled the Unigate TV ads from the 1970s featuring characters called the Humphreys, who were milk thieves. Their only visible presence was a red-and-white striped straw with which to suck up the milk. The campaign slogan was "Watch out, watch out—there's a Humphrey about!" We decided a bonus puzzle, and a lot of people called Humphrey, would be fun additions to the hunt.

The full list of hidden Humphreys is given below. Each of the Humphreys was awarded a full mark, either here or where they were encountered in the main puzzle.

1. Page 1 - Humphrey Bogart - already identified and awarded mark **[DOC5]**.
2. Page 2 - **Hubert Humphrey** hiding with Lyndon B Johnson in the Playfair grid **[HB1]**.
3. Page 5 - **Tina Humphrey** with her collie dog **[HB2]**
4. Page 6 - **Sir Humphrey Appleby** portrayed by Nigel Hawthorne **[HB3]**
5. Page 10 - **Humphrey de Bohun** represented by the Bohun Swan **[HB4]**
6. Page 10 - **Humphrey Lyttleton** sitting next to Sven **[HB5]**
7. Page 13 - Humphrey from Sesame Street - already identified and awarded mark **[ATD3]**.
8. Page 14 - **Duke Humphrey's Tower** **[HB6]**

Marks were also awarded for:

- Noting there were **eight Humphreys and eight maids** **[HB7]**;
- Any reference to the [Unigate advert](#) with the **Humphrey milk thieves** **[HB8]**.
- The red and white stripes were used on Bogart's hat and party blower, the scarf on page 10 (where two Humphrey's were hiding) and also on the 24 December plane ticket. Noting the significance of any in relation to the Humphreys' signature straw was worth a bonus point **[BP17]**.

Extra Hints

We released a hint on Christmas Eve as an additional advent calendar window (number 24). This was a flight ticket from **San Nicolas Island**, California to **Stocking Island**, The Bahamas [H1]. These were clued using the latitude and longitude, and the locations were chosen to be appropriate for Christmas Eve. There was a little nod to last year's hunt in the use of island locations. The seat number, 44R, was an indication that **44 = R when using a standard alphanumeric cipher, modulo 26** (A = 1, 27, ...; B = 2, 28, .. etc) [H2]. The idea here was to get solvers thinking about where the number 44 came from, and it should have been apparent that the **difference in the longitude figures** for the two locations, when **rounded to the nearest whole number, gave 44** [H3]. This was a clue to help with solving the Departure Board puzzle. The flight number was ABC235, which was a hint that a **prime number cipher was needed**, where each letter of the alphabet is represented by a prime number (A = 2, B = 3, C = 5... etc) [H4]. This was to help with solving the number puzzle on page 13. The barcode was entirely for decorative purposes only. The red and white striped border was a visual hint to the Humphreys (see above).

On 30th December we released a series of hints in the form of a poem. The poem itself was based on *The Riddle of Strider* from ***The Fellowship of the Ring*** [BP18]. The original generally suggests that things may not be as they seem (in this case regarding the character Strider/Aragorn) which, along with the 'ring' and 'lord' references, seemed appropriate for the hunt. Our intended interpretation and the hidden clues are as follows:

All that is cold is not coldest,

A loose hint that the record for the coldest Christmas day was in Gainford, Durham, at -18.3°C in 1878.

*Not all cards that are shown
have a twin;*

The cryptic Christmas cards and the pictures on page 11 do not *all* match (but most do).

*The primes, Ptolemy's was the
oldest,*

The **first consistently used Prime Meridian was defined by Ptolemy, and ran through the Fortunate Islands** [H5]. This was a hint to consider historic prime meridians (e.g. see [Wikipedia](#)).

*Answers can be found from
within.*

A reference to the previous line in the poem to find answers in the historic prime meridians. It also relates to page 6 where all the answers to the ten questions around the edge were to be found elsewhere in the hunt.

*From the themes an idea shall
be woken,*

General encouragement to focus on the themes to help solve the remaining puzzles.

*And words from the puzzles
shall spring;*

Unsurprisingly, some words will be spelled out when some of the puzzles are solved, and these may help find the treasure.

*Renewed shall be spirits that
were broken,*

General encouragement for those who may have become dispirited.

A letter may look like a ring.

A big hint for how to arrange the words in the hexagonal crossword grid.

The Urban Marsupial Orchestra

A strange name you might think, but actually not so strange. It is an anagram of **Pablo's Armchair Treasure Hunt [BP19]**. As a team we had been the Rookies, in various guises, for three years. That name was wearing thin and we hadn't settled on a new one. James offered us another anagram of Pablo's Armchair Treasure Hunt (something so boring we forgot it instantly), or "if you want something more whimsical, how about The Urban Marsupial Orchestra?".