A BODY, A SECRET POCKET AND A MYSTERIOUS CODE. CAN THE RIDDLE BE SOLVED?

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THE WELL-DRESSED, middle-aged man lay slumped against the seawall at Somerton Beach for at least 12 hours. No one realised he was dying. A jeweller saw him on his way home from work and thought he saw his right arm move. A young couple romancing on a bench above the seawall observed him lying on the sand. Some time before 6.30am on December 1, 1948, the man passed away unnoticed, a half-smoked cigarette resting on his lapel.

In his pockets police found more cigarettes - Kensitas brand in an Army Club packet - a box of Bryant and May matches, two combs, a used bus ticket to Glenelg and an unused rail ticket to Henley Beach. Carefully concealed in a small fob pocket and not discovered until later was a scrap of paper torn from an edition of the book of Persian poetry, Rubaiyat of Omar Khayyam. On it were the words "tamam shud", which means "it is finished".

It was an intriguing case. There were no clues to the corpse's identity and no one claimed him or reported him missing. As the days passed, the mystery only deepened. About six months after the death, a man who lived in the Somerton area came forward to say he had found a copy of the Rubaiyat tossed into his open-roof car. He thought it was odd at the time but had not realised its significance. Police examined it and established it was the same book from which "tamam shud" had been torn. Written on the inside back cover was what looked to be a hand-written code consisting of four lines of jumbled capital letters, and an unlisted seaside telephone number.

With an anonymous body, a secret pocket, what looked like coded messages and early Cold War tensions gripping the world, espionage was an obvious possibility. An inquest boosted that theory when it concluded that the man was killed by a poison suspected to be digitalin, a component of digitalis, a deadly toxin from foxglove plants with fearsome names like Witches' Gloves and Dead Man's Bells. At the inquest, the poison's name was written down and given to the coroner: the public were not be told the name of a lethal poison that was so hard to trace.

Digitalis, which can stop the heart, had already been linked to the murder of Russian spies. A prominent U.S. spy for the Soviets, Harry Dexter White, died of digitalis poisoning in August that year. Perhaps coincidentally, a major Australian-U.S. breakthrough in cracking Soviet codes, Operation Venona, was under way at the time, and the identity of a series of Soviet spies was being revealed. Was there a link to this man?
In a fit of spring cleaning in the late 1980s, police threw out the man's clothes and belongings, including a suitcase left in a locker at Adelaide Railway Station. Inside the case were personal items that included a dressing gown and slippers, thread, four ties and some stencilling equipment. The original copy of Rubaiyat of Omar Khayyam had been lost by police some time in the 1950s.

In 1978, ABC journalist and now Sydney Queen's Counsel Stuart Littlemore made a documentary about the case, interviewing key people and photographing evidence, including the contents of the suitcase.

Other than the code, it provides the sole remaining record of the man's death.

The mystery of who the Somerton Man was and why he died alone on a beach may never be solved, but two University of Adelaide electrical engineering students have now begun working on cracking the hand-written code.

Derek Abbott, a professor at the School of Electrical and Electronic Engineering at the University of Adelaide, read about the Somerton Man 15 years ago in a list of the top 10 unsolved crimes in Australia that also included the disappearance of Harold Holt and the Beaumont Children. The Somerton Man struck him as a potentially fascinating project for his cipher-cracking engineering students. "I tried to ring up the cops and get copies of the code, drew a blank, they wouldn't return my calls," says Professor Abbott, who has developed a broad knowledge and passion for solving the case. "Eventually I found one in The Advertiser and that was the start of my real interest."

In the past six months Abbott has researched the police evidence and source material such as the inquest report. He is fascinated by the details, like the fact the slip of paper on which "tamam shud" was written was so carefully concealed in the man's trousers.

"The pathologist, Sir John Cleland, struggled to find it a second time, even though he had found it before, because it was in a very, very secret pocket," Abbott says. "It was a very special pocket that you don't just find on any old pair of trousers."

He is also intrigued by the fact the labels on the man's double-breasted coat, shirt and pullover had all been cut out and removed, indicating a desire to conceal who he was. The only exception was a Melbourne-made Pelaco shirt which had its label intact.

An adhesive travel label had also been removed from his suitcase and nothing was found that gave a clue to who he was, other than the name, T Keane, handwritten on one of the ties. It was a dead end.

Abbott's inquiries have led him to question some of the police's assumptions. The discovery of Kensitas cigarettes in an Army Club packet was assumed to have been the common practice of putting cheaper cigarettes in a more expensive packet. Abbott tracked down an old gazette that showed it was Army Club cigarettes that were cheaper. "So what was he doing with more expensive cigarettes in a cheaper packet?"

he asks. "Could it be that someone had poisoned the cigarettes and substituted them when he wasn't looking? Or it could be an innocent thing. There was rationing after the war and he was getting cigarettes where he could."

A card of waxed Barbour thread was found in the suitcase and Abbott tracked down one from the same era on eBay. He found the packaging was different, indicating it may have come from overseas. "Sometimes when companies export to different countries you get different packets," he says. "This could
be a huge clue but we have yet to find this out."

The most exotic aspect of the murder mystery was the discovery of the Omar Khayyam note, the code, and the telephone number which was traced to a recently-married nurse whose name has not been revealed but whose identity Abbott has discovered.

She had admitted giving a copy of the Rubaiyat to another man she met in a hotel who, when interviewed, claimed to have no connection with the case. Significantly, she lived in Moseley St, around the corner from where the mystery man died. Adding to the intrigue, the nurse had written in the book she gave to the second man an inscription copied from a Khayyam poem - which could read as an apology for being drunk - and signed it JEstyn. Abbott noted that when Stuart Littlemore asked the man, Alf Boxall, what the inscription meant, he was evasive and gave no real answer. "I personally feel JEstyn was perhaps a nickname," says Abbott, who tried to track the nurse down but discovered she died two years ago, taking her secrets to the grave.

All this is fascinating background to the codecracking project Abbott has given to two undergraduate Honours electrical engineering students, Denley Bihari and Andrew Turnbull. They have come into the project cold, unaware of any previous work done to decipher what looks to be four lines of letters with an additional line - similar to another - crossed out.

"Work has been done but we haven't seen any of the methodology or results from it, all we know is that people have tried," says Bihari, who is doing a double degree in electrical engineering and economics. "We have come in cold in that sense."

One of the first steps was to establish as much as possible that the letters were a code and not just gibberish.

To do this, they asked people to write down 50 random letters and analysed their distribution. "A few letters are more common than others. For instance R comes up quite frequently and they weren't coming up in the code," says Turnbull, who is studying maths and electrical engineering. "The code has a very distinct letter frequency that is way different to what people would consider random." The next step will be to test whether the influence of alcohol alters the distribution of random letters, given the man may have already been affected by poison when he wrote the letters down. "One day when we're at the pub we'll get some friends to write letters down," Bihari says.

Nothing can be assumed. The code has to be considered with the crossed out line included and excluded, even though it gives the appearance of being a mistake. "It would be a lot easier if it wasn't there, it would be one less line to worry about," Bihari says. "It is very similar to one of the later lines. The last two letters are different and that is a good indication that it was an error, that he started the line too early. But we have to consider all possibilities."

The logical approach would be to assume that something in Rubaiyat was used as a "one-time pad", a movable cipher system used by the Russians which made codes unique and undecipherable without the key. The four-line format of the code appears to follow the quatrain format of Khayyam's poems, supporting the "one-time pad" theory. "Some particular ciphers use a set list of characters to cipher it so someone else can get the same book and decipher it," Bihari says. "We are investigating Rubaiyat as that book, also the Talmud and the Bible."

Bringing powerful computers into the code-cracking exercise should give the two students a greater chance than anyone before of working out what the message means. They can write out a cipher and run
it through a number of books to get a letter distribution that will give a reasonable approximation of the language based on letter frequencies. "That gives us a significant advantage over what people used to do because it puts a statistical base on it," Turnbull says.

"However, the fact that the code is so short does make that very difficult. It is difficult to know whether the statistics will be accurately reflected in the code."

Discovering what the encoded message means is far from guaranteed and it may be the students contribute to a body of knowledge about the code without actually cracking it. "You are right in the sense that we do have a significant advantage over everyone else but the only real method you can take to try and solve it is to rule out what it is not," Bihari says. "You keep running through things and you rule them out selectively.

So we are going to have a long list of things it's not, in the end. We can't be sure that we are going to have something that it is."

Abbott is using a Facebook site about the Somerton Man to invite theories and discussion, and to try to find an original matching Fitzgerald edition of Rubaiyat of Omar Khayyam, mainly to double-check the font. He has found copies that have been close but not exact and Abbott will continue the search in London this month. He also has a long-term plan to request that the body of Somerton Man, buried at West Terrace, be exhumed. In 1949 a plaster cast was made of the dead man to help the public identify him. In making the cast, the mould grabbed hairs from the dead man's body. Abbott, whose enthusiasm for the project has become infectious - you want to know what happened - hopes to test DNA embedded in the roots of the hair. But to do so would mean destroying the police cast, which is a heritage item. An alternative would be to disinter the body and collect the DNA. "If we matched his paternal DNA on a database with hundreds of thousands of people's DNA you can see which they most match and which family groups he was nearest to," Abbott says. "That could help us to know who he is, so that's exciting."

Access to the body would also allow a bone isotope test - a technique that identifies background radiation levels - to establish what country he was from and his bones and teeth could be X-rayed and checked against medical records.

"The fact that no one came forward and claimed him is suggestive of a spy, and the fact that no records could be found of the guy's teeth or fingerprints," Abbott says. "On the other hand you have this mysterious thing with the nurse. He was obviously on a mission to see her, he had her phone number in the back of his book and he died just down the road from her. There is nothing political that we know about her so that doesn't seem like spying any more; it seems like an affair of the heart. Could it be that it's one or the other, or could it be both?"

Nothing can be ruled out, and the students are trying not to be swayed either way by the exotic and plausible theories involving Russian spies or doomed love trysts. "I like to keep an open mind," Bihari says.

"He could have just been a crazy man writing down letters."

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