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*Judgment: approved by the court for handing down  
(subject to editorial corrections)\**

*Delivered: 20/11/2022*

IN THE CROWN COURT OF NORTHERN IRELAND  
SITTING AT BELFAST

—————  
THE KING

v

PETER GRANAGHAN  
—————

**FOWLER J**

*Introduction*

[1] The accused Peter Granaghan is charged with attempted murder, making and possessing an improvised explosive device with intent to endanger life. This case arises out of the planting of an under vehicle improvised explosive device (“UVIED”) under the car of a serving police officer parked at the driveway of his home in East Belfast on 1 June 2019. The indictment is framed as follow:-

Count 1 - That on a date unknown between 31 May 2019 and 2 June 2019 he attempted to murder a serving member of the Police Service of Northern Ireland, contrary to Article 3(1) of the Criminal Attempts and Conspiracy (NI) Order 1983 and Common Law.

Count 2 - That on a date unknown between 1st June 2018 and 2nd June 2019 he unlawfully and maliciously made a certain explosive substance, namely an under vehicle improvised explosive device with intent by means thereof to endanger life or cause serious injury to property in the UK or to enable some other person to do so, contrary to section 3(1)(b) of the Explosive Substances Act 1883.

Count 3 - That on a date unknown between 1st June 2018 and 2nd June 2019 he unlawfully and maliciously had in his possession or under his control a certain explosive substance, namely an under vehicle improvised explosive device with intent by means thereof to endanger life or cause serious injury to property in the UK or to enable some other person to do so, contrary to section 3(1)(b) of the Explosive Substances Act 1883.

[2] The Director of Public Prosecutions certified pursuant to Section 1 of the Justice and Security (Northern Ireland) Act 2007 that the trial should be conducted without a jury. I have heard oral evidence and read all agreed statements and facts as a judge sitting alone and am required to give the verdict of the court together with my written reasons.

[3] The defendant was arraigned on 12 May 2021 and pleaded not guilty to each of the 3 counts on the bill of indictment.

[4] The prosecution case against Granaghan depends primarily on forensic DNA and circumstantial evidence. The evidence the prosecution rely on includes:

- (i) Presence of the defendant's DNA on the UVIED.
- (ii) The defendant's espoused sympathies to a violent republican ideology.
- (iii) The defendant's association with known terrorists.
- (iv) The defendant's failure without good cause to mention facts which he could reasonably have been expected to mention in interview with police and his failure to give evidence in court.

[5] The prosecution has submitted that when all these circumstances are taken together, they establish an overwhelming case against the defendant with the only conclusion to be drawn from the evidence being that the defendant was in possession of and involved with the device at a stage when it was being constructed and committed the offences as alleged.

[6] The defence reject the prosecution's assertions and have made the central theme of their case the fact the prosecution cannot say whether the DNA profile on the device was deposited by primary, secondary or tertiary transfer. That given the moveable nature of the items the DNA profile was taken from the prosecution cannot rule out the reasonable possibility that the DNA profile was deposited on the wire in the UVIED before being placed into the device. That the prosecution faced with an obvious insufficiency of and inherent weakness in the DNA evidence have been compelled to resort to peripheral 'association evidence' and inferences to be drawn from the defendant's failure to answer questions in interview or give evidence in court.

### *Legal Issues*

[7] Before considering the evidence in this case, it is important when sitting as a judge alone and at the outset of this judgment to remind myself of the relevant law and the legal principles that I must apply when deciding whether the Crown has

proved its case against the defendant in respect of each of the counts he faces. These can be articulated as follows:

- (i) The burden of proof lies on the Crown to establish the defendant's guilt.
- (ii) Before the court can convict the defendant of any count on the bill of indictment the prosecution must prove the defendant is guilty beyond reasonable doubt. I remind myself that proof beyond reasonable doubt is proof that leaves the court firmly convinced of the defendant's guilt. Where I refer to being satisfied of any given fact or matter this is to be regarded as satisfied to the criminal standard of beyond all reasonable doubt.
- (iii) The court must decide the case only on the evidence established before the court and must give separate consideration to each of the three counts on the bill of indictment and return a separate verdict in respect of those counts.
- (iv) The prosecution case is based on circumstantial evidence. I remind myself of the standard direction to juries in relation to circumstantial evidence. That it is not necessary for the evidence to provide an answer to all of the questions raised in a case. It would be an unusual case in which a court could say that it knew everything there was to know about the case. It is not necessary that each fact upon which the prosecution relies taken individually proves the defendant is guilty. The court must decide whether all of the evidence has proved the case against him. In *R v Exall* [1866] 4 F & F 922 at 929 Pollock CB observed:

“What the jury has to consider in each case is, what is the fair inference to be drawn from all the circumstances before them, and whether they believe the account given by the prisoner is, under the circumstances, reasonable and probable or otherwise ... Thus, it is that all the circumstances must be considered together. It has been said that circumstantial evidence is to be considered as a chain, and each piece of evidence as a link in the chain, but that is not so, for then, if any one link breaks, the chain would fall. It is more like the case of a rope comprised of several cords. One strand of the cord might be insufficient to sustain the weight, but three stranded together may be quite of sufficient strength. Thus, it may be in circumstantial evidence - there may be a combination of circumstances, no one of which would raise a reasonable conviction or more than a mere suspicion; but the three taken together may create a conclusion of guilt with as much certainty as human affairs can require or admit of.”

- (v) I further remind myself that it is essential that circumstantial evidence is examined narrowly and with great care for a number of reasons. First of all, such evidence can be fabricated. Secondly, to see whether or not there exists one or more circumstances which are not merely neutral in character but are inconsistent with any other conclusion than that the defendant is guilty. This is particularly important because of the tendency of the human mind to look for (and often to slightly distort) facts in order to establish a proposition, whereas a single circumstance which is inconsistent with the defendant's guilt is more important than all the others because it destroys the conclusion of guilt on the part of the defendant. As Lowry LCJ stated in *R v McGreevy* [1972] NI 125 at 134:

“... a judge ought to point out the circumstances which tend to establish innocence and more especially circumstances which are inconsistent with guilt ...”

- (vi) The questions a court should have at the forefront of its mind in a circumstantial case are set out by Higgins LJ in *R v Jones* [2007] NICA 28 para 33. First, I must consider all the evidence; secondly, I must guard against distorting the facts or the significance of the facts to fit a certain proposition; thirdly, I must be satisfied that no explanation other than guilt is reasonably compatible with the circumstances and fourthly, I must remember that any facts proved that is inconsistent with the conclusion is more important than all the other facts put together. That if there is evidence proved which undermines the prosecution case that the perpetrator was the accused then that is more potent than all the other circumstances.
- (vii) The risks in a circumstantial case is that speculation might become a substitute for the drawing of sure inferences of guilt and the danger of failing to take account of evidence that, if accepted may diminish or even exclude the inference of guilt.
- (viii) I remind myself of the importance of ensuring that circumstantial evidence is examined as a whole rather than piecemeal. This was highlighted in *R v Hillier* [2007] 233 ALR 63 and cited with approval in *R v Wotton and McConville* [2014] NICA 41. Hillier at para 48 observes that:

“Often enough, in a circumstantial case, there will be evidence of matters which, looked at in isolation of other evidence, would yield an inference compatible with the innocence of the accused. But neither at trial, nor on appeal, is a circumstantial case to be considered piecemeal. As Gibbs CJ and Mason J said in *Chamberlain* [No: 2]:

‘At the end of the trial the jury must consider all the evidence, and in doing so they may find that one piece of evidence resolves their doubts as to another. For example, the jury, considering the evidence of one witness by itself, may doubt whether it is truthful, but other evidence may provide corroboration, and when the jury considers the evidence as a whole they may decide that the witness should be believed. Again, the quality of evidence of identification may be poor, but other evidence may support its correctness; in such a case the jury should not be told to look at the evidence of each witness “separately in, so to speak, a hermetically sealed compartment”; they should consider the accumulation of evidence; cf *Weeder v The Queen*.’”

- (ix) In the present case the prosecution say that the defendant committed the offence together with others and as part of a joint enterprise in that he at least intentionally encouraged or assisted in the planting of an UVIED in order to kill a police officer. It has to be borne in mind that each participant in a plan to commit a crime may play a different role but if they are acting together as part of a joint plan, they are each guilty of it. If looking at the case of the defendant, the tribunal of fact is sure that he intentionally assisted or encouraged others to commit the offence of attempted murder he is guilty.

### *Expert Evidence*

[8] As well as circumstantial evidence, this case also involves DNA expert evidence. A witness called as an expert witness is entitled to express an opinion in respect of their findings and the matters put to them. The court is entitled to and will have regard to such evidence and to the opinions expressed by the experts when coming to its conclusions about those aspects of the case. However, having given the matter careful consideration the court does not have to accept the evidence of the expert and does not have to act upon it. It must remember that the expert evidence relates only to part of the case and while it may be of assistance the court must reach its verdict only after the totality of the evidence is considered.

## *The Evidence*

### *Circumstances surrounding the planting of the UVIED*

[9] It is agreed evidence that on the evening of 31<sup>st</sup> May 2019, a serving police officer, witness A, parked his car across the driveway to his home. Automatic number plate recognition and CCTV evidence was provided to the court which recorded the movement of two suspect vehicles traveling in convoy in the vicinity of the police officers home in the early hours of 1 June 2019. Subsequently, on leaving the area of the officer's home, again in convoy, these vehicles were found burnt out in North Belfast. It is a compelling inference that these vehicles were involved in the deployment of the UVIED under the officer's car.

[10] It was agreed that later on the morning, 1 June 2019, at around 07:30am, witness A left home in his vehicle and travelled to Shandon Park Golf Club. Due to a pedestrian walking close to his vehicle he did not check under his car. On arriving at the golf club he parked in an adjacent car park. On returning from his round of golf he approached his vehicle and observed what appeared to be a box underneath his car. On closer inspection he formed the view that it was an explosive device attached to the underside of the vehicle. He contacted police who arrived and evacuated the area.

[11] Army Technical Officer (ATO), Staff Sergeant Moore, a specialist in explosive ordnance disposal, examined and subsequently disrupted the UVIED. He described the device as consisting of a wooden box, time power unit (TPU), 2 lengths of brown multi core copper wire connected to two nails, one brown multi core wire with an electronic spade connector, one brown multi core wire with two electronic spade connectors, one blue wire soldered to three blue wires, an improvised tilt switch, a 9v battery connector, 9v battery, two toggle switches, two red LED casings, one black commercial timer, one ring magnet, 65g of TNT and one commercial detonator.

[12] The ATO agreed that all but two of the items making up and/or contained in the UVIED were high street items commercially available to purchase. The brown wire within the UVIED it was accepted would be readily available in shops. The ATO confirmed that the separate lengths of brown wire used in the construction of the device could all have been cut from a single original length of brown wire. He confirmed that all of the items with the exception of the detonator and TNT could be sourced commercially.

[13] After ATOs had disrupted and made safe the explosive device, the scene was made available to police and forensic investigators. The remains of the disrupted UVIED were examined in situ by Crime Scene Investigator Smith on 1 June 2019 at 6:07pm. No issue was taken with his evidence in relation to the forensic recovery of

items from the scene. He recovered a sample of the potential explosives and labelled this MOS3, this was later, on forensic analysis, determined to be TNT.

[14] Of particular note he recovered part of the TPU including a length of brown multi-stranded wire and attached battery connector which he labelled item MOS6 (exh 40). This was discovered adjacent to the passenger side of the police officers' car. Its location can be seen in photographs 12-16 in police album of photographs exhibit 4. In the photographs it is identified by police marker 1.

[15] He recovered a circular magnet used to attach the UVIED to the underside of the car. He labelled this magnet as MOS9. It can be seen in situ before recovery in exhibit 4, photographs 19 and 20 and identified by police marker 3.

[16] He recovered another length of brown wire which consisted of two lengths of brown wire connected together in the middle with a metal spade connector. There was also a further spade connector attached to the end of one of these wires. The other end of this joined length of wire was bare and absent of any type of connector. This was photographed in situ and can be seen in exhibit 4 photograph 30 and identified by police marker 9. He labelled this item MOS15 (exh 41).

[17] He left the scene at 8:50pm and submitted these items (along with many others) for forensic examination.

[18] Mr Wilson CSI manager attended the scene of the disrupted UVIED in an advisory and supervisory role. He confirmed that he was CSI Smith's manager and that as his supervisor he had ongoing knowledge of events concerning crime scene management and forensic investigation in the case as a whole. He agreed that he was aware that the defendant's home and car had been swabbed for explosives but no traces of explosives were detected. Tools from the defendant's address were seized and subjected to forensic examination. There was no forensic connection made between any of the tools and the disrupted remnants of the UVIED recovered from the incident scene.

#### ***UVIED***

[19] Senior Forensic Scientific Officer Julian Halligan who has worked in the explosives section of FSNI for over 18 years examined and reported on the recovered remnants of the UVIED. He confirmed the items recovered by CSI Smith at the scene of the incident on 1 June 2019 and received into the laboratory were the remains of a viable UVIED containing trinitrotoluene (TNT), a high order explosive.

[20] Subsequently, after examination of the component parts of the disrupted UVIED, Mr Halligan re-constructed a replica which was introduced in evidence as exhibit 53. Photographs of the reconstructed device were also made available as exhibit 54. With the assistance of both these exhibits he described how the device

was designed to operate and explained the positioning, location and significant of items MOS6 and MOS15 in the construction of the device.

[21] The UVIED had been constructed from a plywood box, with a circular magnet fixed externally to the top of the box to attach it to the underside of a vehicle. Also, on the exterior of the box there were a series of toggle switches, a LED light, mercury tilt switch and timer switch. Internal to the box were a battery, associated wiring, detonator and explosive fill. There was a metal moving connector attached to the timer and a stationary connector protruding from the interior to the exterior of the box. The mechanical timer could be wound back and after a pre-set time delay the moving timer connector would contact the fixed connector arming the device. What prevents the initiation of the devices is a break in continuity of the electrical circuit at the point of the mercury tilt switch. The tilt switch has electrodes at either end and provided the mercury is touching only one electrode there is no completed electrical circuit. However, the tilt switch is designed and placed in such a way that movement of the vehicle causes the mercury to be displaced and connect with both electrodes completing the electrical circuit to initiate the explosive device.

Mr Halligan described item MOS6 as consisting of:

“...two pieces of plywood approximately 8mm thickness. The larger piece of intact plywood was approximately 220mm x 180mm and the smaller piece, which was broken, was approximately 150mm x 67mm.

Smaller piece of plywood had two large holes approximately 12mm and 13mm in diameter. Below the 12mm hole was handwritten ‘ON’- assumed to be outside surface. The 13mm hole had one surface broken.

Mounted to the outside surface in a hot melt glue type substance, was a spirit level vial, approximately 33mm x 15mm x 15mm containing mercury, consistent with being an improvised mercury tilt switch.

At each of the narrow ends of the tilt switch, attached by a spade connector, was a brown sheath, multi-stranded copper wire that ran through a hole to the inside. Soldered to the end of one wire was a metal rod, approximately 62mm length and 3mm diameter. Attached to the end of the other brown sheath, multi-stranded copper wire was a snap connector for a PP3 type battery that was wired through to the larger piece of plywood.



Larger piece of plywood had:

- as mentioned above, wiring and a snap connector for a PP3 battery, through a hole approximately 6mm diameter (presumed to be inside surface);
- two lengths of hot melt glue type substance at right angles (50mm and 100mm length) possibly indicate the area where the explosive fill had been (presumed to be inside surface). Within this area was a hole approximately 9mm diameter.

In one corner, attached by hot melt glue type substance and two screws, was a plastic shroud, probably the back cover for the run-back mechanical timer, item 44 MOS12. Close by was a hole approximately 9mm diameter and through a 3mm diameter hole the metal rod above had been hot melt glued to surface of plywood (probably the stationary terminal).

Wrapped around various parts of the wiring was black adhesive tape, approximately 18mm in width.

Present was also an 'L' shaped piece of metal, approximately 62mm x 3mm diameter, with pink metal adhering. This possibly was attached to the dial handle of the run-back mechanical timer item 44 MOS12 and acted as the moving terminal.

There was no continuity through the mercury tilt switch."

[22] Concerning the brown wire he reported that the section connected to the battery connector together with the battery connector itself would have been internal to the device. However, the wire appeared to have been connected externally to the back of the timer, then threaded through a hole in the plywood box where the battery would be connected.

[23] Forensic scientist Halligan in evidence described item MOS15 as consisting of:

"... two brown sheath, multi-stranded copper wires attached to a spade connector. One wire was approximately 75mm and had another spade connector at the other end. The other wire was approximately 105mm in length and had exposed wire at the other end. Both wires were approximately 3mm diameter. The spade

connector had a blue plastic sheath and was approximately 21mm x 8mm (Similar to spade connector in items 18 MOS10, 22 MOS17, 28 MOS23 and 31MOS26)."

[24] In relation to these two strands of brown electrical wire he indicated that it was his experience these would be associated with the internal wiring of the device.

[25] It was concluded by Mr Halligan that the items examined by him represented the disrupted and separated remnants of a UVIED. He went on to describe the construction of the device as follows:

"The device had been constructed from a plywood box (approximately 220mm x 180mm x 67mm) fitted with a modified run-back mechanical timer (maximum time dealt of 60 minutes); an improvised mercury tilt switch, two toggle switches, a PP3 battery, and an explosive fill of high explosive TNT (trinitrotoluene). The magnet would have been fitted to the exterior of the box to facilitate attachment of the device to the underside of the vehicle.

In operation, a pre-set time-delay would have been set on the timer and toggle switched set to the 'ON' position. The device would have been attached to the underside of the vehicle. After the pre-set time delay expired any further movement of the vehicle, such that the tilt switch operated, would have completed the electrical firing circuit, initiating a detonator or electrical igniter and subsequently the explosive charge.

However, in this instance there was no electrical continuity thorough the tilt switch which would not have allowed the electrical firing circuit to be completed and thus the device failed to function."

[26] In cross examination Mr Halligan accepted that the use of plywood in the construction of an UVIED has not been seen since in or about 1998. He agreed that prior to 1998 this type of plywood device with a TNT fill would have been considerably more common and the device design in the present case would correspond with a much older pattern. It was agreed in cross examination that the wire in both items MOS6 and MOS15 was brown sheathed electrical wire and could have had a common origin from a single length of brown wire. In the reconstruction of the replica model Mr Halligan confirmed that he used similar brown coloured wire all cut from a single original length of brown wire.

## *DNA Evidence*

[27] Before examining in detail the present DNA evidence in this case it is important to discuss some of the important features of DNA to put in context the DNA expert evidence of Mr Bennett, Ms Theresa McMahon and Ms Pope. The following general matters are not in dispute in the present case. DNA carries genetic information carried in coded form with half inherited from each parent. Mutations on the DNA strands arise as a result of errors in DNA replication and repair and as a result the chances of two individuals (other than identical twins) having identical DNA are infinitesimally small. Certain areas of DNA are known to be particularly variable between people and these are the areas focused on for analysis. The parts of DNA examined are referred to as Loci which consists of short tandem repeats (STRs) with different repeat lengths. The different versions of these repeats are called alleles. The DNA testing also identifies the sex of the individual and is expressed as XY for males and XX for females. In the present case DNA was extracted from the samples and tested using DNA 17 system, which simultaneously determines sexual origin and types the DNA at sixteen loci.

[28] The frequency of occurrence of a specific number of repeating units (a specific allele) at the test Loci in a specific population can be used to calculate how common that allele is within that population. This is then used by forensic scientists to express the relationship of a profile to the DNA of a suspect in terms of probability and to calculate what is referred to as a likelihood ratio.

[29] It is generally accepted that likelihood ratios are the most appropriate method for evaluating the evidential strength of DNA profiles. It allows for different explanations for the observed evidence. A likelihood ratio considers two propositions, usually (i) the prosecution view that the DNA came from the defendant and; (ii) the defence view that the DNA came from an unknown unrelated individual. A calculation is then made with reference to relevant population data and the likelihood ratio calculated.

[30] If the amount of DNA is of sufficient quantity and quality a complete profile with two alleles at each of 16 loci will be produced. However, if the DNA is only present in small amounts then some alleles may not be detected and only a partial profile with alleles being shown for only some of the sites. Forensic scientists are assisted in their interpretation of DNA profiles by utilizing computer software which use different assumptions and statistical methods. The interpretation and statistical analysis for the partial profiles in the present case was performed using commercial STRmix software. There are in place standard operating guidelines and procedures to ensure consistency in interpretation, together with validation, accreditation and external scrutiny of the use of these systems.

[31] It is also generally recognised that DNA can be transferred in a number of ways (i) Primary transfer from a person directly to an object from which their DNA

is obtained; (ii) Secondary transfer by person A to person B and then to an object leaving traces of person A's DNA on the object which person A might never have been in contact with; (iii) Tertiary transfer by person A to object 1 to person B to object 2 from which the sample was taken.

[32] It is accepted that it is not always possible to distinguish between primary, secondary or tertiary transfer of DNA from a suspect. That it is not possible to determine when or for how long DNA has been deposited on an object. Unless there is other evidence of circumstances from which this may be inferred.

[33] It is against this backdrop the DNA evidence in the present case must be examined.

[34] Forensic scientist Mr Jason Bennett adopted the contents of his statement at page 65 of the depositions and his deposition taken before the District Judge at committal. He has been a forensic scientist for 33 years and has considerable experience in dealing with DNA evidence in criminal cases. On 11 September 2019, he was provided with a DNA sample obtained from Granaghan by police to enable him to compare this DNA with any DNA that might be recovered from swabs taken from the remnants of the disrupted UVIED. This reference sample was recorded as item 163 with a case number 34732033.

[35] He examined all 26 of the items recovered from the disrupted UVIED at Shandon Park Golf Club for evidence of DNA.

[36] With reference to item MOS6, parts of the disrupted device, Mr Bennett took swabs for DNA analysis from seven different areas/parts of the device. These were from (i) wires and connector, (ii) plywood edges, (iii) three disc edges, (iv) metal parts, (v) spirit level vial edges, (vi) tape ends plywood and (vii) tape ends wire. Results obtained were that six of the samples returned no DNA profile. However, the sample taken from the brown wire and attached battery connector returned a partial profile matching that of the defendant. Mr Bennett accepted that he had swabbed the whole length of the brown wire and connector making no distinction between wire and connector. He was unable to say what particular location on the wire or connector the DNA profile arose from. He conceded it could have come from the wire alone.

[37] Examination of item MOS15, two lengths of brown wire attached together with a metal spade connector was also carried out. The entirety of the exhibit, the wires and spade connectors, were swabbed to recover DNA. A partial profile of the defendant was obtained from the areas swabbed. Again, Mr Bennett agreed that he is unable to say precisely where on the wire and connectors that the DNA profile was obtained from. It was conceded it could have come from the wire alone.

In terms of the partial nature of the profiles obtained from the remnants of the device he stated that they were only 'slightly partial.' He confirmed that the test looked at the sex marker and 32 different alleles, with two areas at each of the 16 loci being tested. This was carried out for both samples. In relation to the first sample 29 results were obtained in respect of the 32 alleles tested and in the second sample results were obtained for 30 of the 32 alleles tested. He agreed that it was a very small possibility one of the missing alleles might exculpate the accused.

[38] When considering the amount of DNA available for testing in MOS6 he agreed this was 84 picograms of DNA and for MOS15 it was 112 picograms. When asked if in his experience that was a low quantity of DNA he replied both quantities would be below the manufacturer's routine threshold for DNA Analysis which is set at 400 picograms. However, he explained that the manufacturers of the DNA software have chosen 400 picograms because that will very reliably produce a full DNA profile. Because lower amounts are less reliable the samples are tested in duplicate and only results seen in both tests are used.

[39] He explained he used an accredited software program called STRmix version 2.5.11 to make a statistical evaluation of the results. He confirmed he was trained in how to use the software and followed the standard operating procedures set out in the guidance provided. It was also confirmed that the software program as far as he was concerned was validated and there was further validation ongoing for a further upgrade of the software. He confirmed that this STRmix is used for interpretation of complex DNA and he used it because he was examining low threshold quantities of DNA. He was asked if he was aware that the software has been the subject of guidance by the UK Forensic Regulator and replied he was aware but was unable to comment on that.

[40] He summarised that the DNA profiles extracted from the samples MOS6, MOS15 from the UVIEAD and Granaghan's reference sample 34732033 were all tested using the DNA 17 system. The partial profiles from MOS6 and MOS15 were interpreted and analysed using STRmix software. His investigations established the partial profiles from MOS6 and MOS15 were a match to that of Granaghan. Using the STRmix software to evaluate this finding he considered two propositions:

"[1] That the DNA came from Granaghan [2] that the DNA came from an unknown unrelated individual. The calculation made with reference to Northern Ireland population survey data showed that this finding is at least one billion (1000,000,000) times more likely to arise under the first proposition."

[41] He agreed that the wires and connectors where the partial profiles were obtained from were moveable items and he could not rule out the possibility that these wires and connectors could have been in multiple places before being fitted to

the device. He could not rule out the possibility that the items had been in contact with persons unconnected with the device. He could not rule out the possibility the DNA profiles had been deposited on the wires and connectors before being placed in the device. It was also accepted that he could not say when the DNA was deposited or how it was deposited. He did confirm that in respect of the 26 items and 48 swabs taken from those items and which he examined, no other DNA profiles partial or otherwise were obtained.

[42] Senior forensic scientist Teresa McMahon gave evidence in relation to the verification of the STRmix continuous probability software package used for the interpretation of the DNA evidence in this case. It uses biological modelling and statistical theory, computer algorithms and population distribution information to give a likelihood ratio for a DNA profile giving two alternative proposition. She was the lead on this verification process. The manufacturer are a company called Environmental Science Research (ESR) based in New Zealand. The peer review material have been accepted in other jurisdiction including UK, USA, Australia, New Zealand and all around the world. As a result FSNI did not carry out a validation but rather an internal verification/end user validation of the use of the STRmix system. This verification process started in FSNI in 2017 and completed in February 2018 and accredited in November 2018.

[43] It was agreed that the results of the partial profiles are logged into the computer and the statistical likelihood ratio is produced. That while there are quality checks on the results there is no basis to challenge the results from the machine, this is what the product validation is for. This was criticised by the defence by virtue of the fact it is the manufacturer and designers/creators of the software who are saying how good their product is. This was met with the observation by Ms McMahon that the validation papers and research have been published and reviewed in peer journals and widely accepted.

[44] An independent forensic scientist DR Susan Pope was asked to comment whether; the use of probabilistic genotyping, and specifically the STRmix software used in this case has generally been accepted in the relevant scientific community of forensic DNA? That whether it was more or less likely that the DNA profile attributable to the defendant was deposited by primary or secondary transfer?

[45] Dr Pope has thirty three years' experience as a forensic scientist and is an expert in DNA analysis and interpretation, including statistical evaluation and issues of transfer and persistence of DNA.

[46] In relation to the acceptance of STRmix software in the scientific community she confirmed that:

“STRmix is widely used across the world, has been the subject of many publications and validations and meets

the standards set by the Forensic Science Regulator in the UK and the European Network for Forensic Science Institutes, International Society for Forensic Genetics and Scientific Working Group on DNA Analysis Methods internationally. The use of STRmix at FSNI has been externally accredited by United Kingdom accreditation service.”

[47] She accepted that the amount of DNA in the profiles obtained from the samples in this case were weak and incomplete. However, each sample was tested twice to confirm the presence of alleles and in these circumstances were therefore suitable for specialist statistical analysis. That STRmix is a suitable continuous probabilistic genotyping software appropriate to be used to provide an estimate of weight of evidence using a likelihood ratio. It has been used for such forensic casework calculations since 2012 in international forensic laboratories in many countries across the world.

[48] In dealing with the question of whether it is more or less likely that the DNA attributable to the defendant was deposited by primary or secondary transfer Ms Pope indicated many factors affect the amount of DNA transferred and the conditions under which it will be lost. She was of the view that:

“The amount of DNA transferred by a person may vary on different occasions, depending on features such as the amount of skin cells they shed, and how clean and dry their skin is. Some medical conditions may increase the amount of skin shed by a person. The amount transferred by different individuals will also vary since some people appear to transfer larger amounts while others transfer very little and even for the same person the amount transferred may vary on different occasions.

The type of handling will also affect the amount of DNA transferred, so that a gentle touch might transfer less DNA than forcible handling, and a short contact may transfer less DNA than a lengthy contact.

The type of surface also affects the amount of DNA transferred onto an item. So, more DNA may be transferred onto a rough, hard surface than a smooth one.

Once transferred onto the item, the length of time for which the DNA persists on it will also vary. DNA can persist indefinitely on an item that is not handled and is kept in temperate dry conditions.

Since there are so many variables, then if there is no other supporting information to assist the scientist it is not possible to evaluate:

- the length of time for which DNA has been on an item
- the order in which DNA from different individuals was deposited
- from which body fluid, parts or all of a DNA result originated.”

[49] Dr Pope concluded that as a general principle the DNA results on MOS6 and on MOS15 each indicated the presence of DNA from one person, with the same profile on each. However, the DNA result in the present case does not in itself provide any assistance in determining whether the DNA was deposited directly by primary transfer or indirectly by secondary transfer, or the time at which it was deposited. She confirmed this is a very difficult area to offer any more helpful information than primary, secondary and tertiary transfer is possible and have been demonstrated in experiments. It is not easy to argue back from the amount of DNA detected to try and assess whether that DNA as detected has been as a result of primary, secondary or tertiary transfer. She agreed it was not possible in this case to determine whether the profiles obtained on MOS6 and MOS15 were deposited by primary, secondary or tertiary transfer. This was especially so since in the present case there was only a tiny amount of DNA on some quite small areas that were sampled. While there may be other information in a case which may assist, simply by just looking at the DNA profiles there is nothing to add scientifically to that question of how the profile came to be transferred. Ms Pope agreed that there is no scientific way to establish when, where or how the DNA primary, secondary or tertiary transfer took place.

#### *Arrest and interview*

[50] The defendant was arrested at his home in Beleek on Wednesday 11 September 2019. When arrested and cautioned he made no reply.

[51] In terms of the defendant’s interviews with police the following facts were agreed at trial:

- (a) For the purposes of these proceedings the arrest of the accused on 11 September 2019 and his subsequent interviewing are accepted as lawful.



- (b) For the purposes of these proceedings the search of the accused's premises at 41 Blackrock Park, Belleek on 11 September 2019 and the seizure of items during the course of that search are accepted as lawful.
- (c) The accused was the subject of a series of interviews between 11 September 2019 at 1441 hours to 12 September 2019 at 1851 hours. The interviews related to the events the subject of the charges in the instant case. Mr Granaghan was cautioned at the commencement of each interview. He had a solicitor present during the interviews. He was not cautioned in respect of the offences of attempted murder, making an explosive device and possession of an explosive device.
- (d) During the course of the interviews, he made no comment. He was specifically asked:
- If he ever had any training as an electrician.
  - Whether he had any trade.
  - What he did as a living.
  - Whether he worked and whether he was self-employed.
  - To give details of any employment.
  - If he had ever been to Shandon Park Golf Club.
  - If he had knowledge of the explosive device used in this case or if he was involved in making the device. He was asked about TNT.
  - If his DNA or fingerprints would be found on the device.
  - If he had any reason that he would use brown multi core copper wire or electric spade connectors.
  - If he used soldering in his employment.
  - If he ever owned a solder iron.
  - If he liked to do a bit of DIY around the house.
  - If his fingerprints or DNA would be found on the device having been shown photographs of the disrupted device.

- If there was any legitimate reason he would have for a timer or that type of wiring having been shown photographs of the disrupted device.
  - If there was any legitimate reason he would have for using MOS6 and MOS15 having been shown photographs of the items.
  - Having been informed his DNA profile had been found on items MOS6 and MOS15 “How else could your DNA be on this device and its also found in the internal parts. What do you have to say about it”?
- (e) He was asked (p57) if he was involved in the planning and preparation of ‘that improvised explosive device, the device that was placed underneath a police officer’s vehicle’ and made no response. He was asked about handling the item, making the item and made no response (p60). He was asked about the tilt switch; detonator; magnet; wires; nails; the LED indicator and 9v battery (p68).
- (f) The accused was not given pre-interview disclosure informing him that a partial DNA profile said to correspond with his DNA profile was found on two items recovered from the relevant device. He was informed that his “DNA profile” was found on the two items, MO6 and MOS15, during the final interview on 12 September 2019 which lasted for 5 minutes between 18:46hrs and 18:51hrs. The accused was not informed that his DNA could have been deposited by secondary or tertiary transfer. In that interview it was put to him specifically that he was the person that constructed the bomb that was put under the police officer’s car; he was asked if he wanted to kill this police officer. He made no response to any questions. He was asked if he wanted to say anything or to seek clarification and made no response

[52] A search of the defendant’s home, car and shed were carried out by police on the day of Granaghan’s arrest. Police recovered various tools and material including, a voltage meter, soldering iron stand and box, solder wire, wire cutters and a magnifying glass and stand. No evidence of trace explosives were discovered in relation to any of the locations, vehicle, clothing, seized items or tools associated with the defendant. There were no other forensic links to connect any of the tools seized to the UVIED.

[53] Computers seized from the defendant’s home included a Toshiba laptop CMG2 and a Samsung Laptop GR9. These were forensically interrogated by D/C Prior. I have viewed all the images contained in exhibit NP1. These images depict support/sympathy for violent republican ideology and an animus towards PSNI. There were also images on the Samsung laptop of magnets and a flak jacket however this laptop does not appear to have been used since September 2014.

[54] While there are numerous photos and images representative of support for violent republican ideology and it may well be a suspicion that the defendant has access to and used these computers. However, there is very little by way of evidential connection to permit attribution of the ownership or use of these computers to him. Item CMG2 the Toshiba laptop had the user name Kiera as did GR9 the Samsung laptop. It is established in evidence that the defendant's wife is called Kiera.

[55] On examination of the defendant's home several items were found within the property associated with the Irish Republic Prisoners' Welfare Association an organisation connected to violent republican prisoners. These items included a picture on the wall with what appeared to a male in a cell with a pair of hands in chains. A picture on the wall of what appears to be a commemoration of two males with two persons holding guns at the side and Portlaoise Jail at the bottom. An Irish Republican Prisoner Welfare Association Christmas Card addressed to the accused and his partner. Clothing in the property included a '32 County Sovereignty Movement' shirt together with camouflage trousers and shirt.

#### *Association Evidence*

[56] The prosecution also relies on evidence from police that the defendant was observed taking part in a 32 County Sovereignty Movement protest in Belcoo on 26 April 2012. Also more recently, the prosecution drew to the court's attention Granaghan having entered Junior McDaid House, Chamberlain Street, Derry in the company of Jason Cuelemans. Evidence was given that Cuelemans is a convicted terrorist having been sentenced on 15 May 2014 for possession of explosives with intent to endanger life or cause serious injury to property, and possession of articles for use in terrorism.

[57] Further evidence relied on by the prosecution of Granaghan's terrorist connections is that on 13 September 2019, the day of Granaghan's first remand on the present charges, Damien McLaughlin, a convicted terrorist was present in court as a supporter. It appears Granaghan and gave a 'thumbs up' sign to Damien McLaughlin which was reciprocated. Evidence was given that McLaughlin was sentenced on 30 June 2011 for possession of articles for use in terrorism. It is also part of the prosecution case that other convicted terrorists have visited Granaghan in prison since his remand in custody. Since his committal to prison Granaghan has received visits from Neill Hegarty; Thomas Mellon; James Kelly; Patrick McDaid and Damien McLaughlin, - all convicted terrorists.

[58] The prosecution case is that attendance of a group of convicted terrorists with the defendant in prison is strong evidence of the defendant's association with that group, his sympathy/support for them and their sympathy/support for him, after his arrest and incarceration for these offences.

[59] At the end of the prosecution case an application for a direction of no case to answer was refused. Subsequently, the court addressed counsel for the defendant in the usual terms stating that if the defendant chose not to give evidence the court may draw such inferences as appear proper from their failure to do so. I enquired if the defendant intended to give evidence and if not had he been advised about the inferences which might be drawn if he chose not to do so. Mr Larkin KC stated that his client did not intend to give evidence and stated his client had been advised about the inferences which might be drawn from his failure to do so.

### *Prosecution Argument*

[60] The prosecution case is that, in what is essentially a circumstantial case, the evidence should be looked at as a whole to assess the overall strengths and weakness of the completed case. This being necessary to test the overall integrity of the prosecution case in light of the interlinking and interdependency of the various strands of the overall prosecution case. While the DNA evidence is the foundation of the prosecution case, that the defendant was involved in the construction of the device, the surrounding evidence supports and underpins that conclusion.

[61] In support of the proposition that the defendant's DNA profile was deposited by primary transfer from the defendant onto wires internal to the device at the time of construction the prosecution point to the fact the two profiles obtained were of the defendant alone and not a mixed profile. That no other DNA profiles were obtained from any part of the device. That the likelihood ratio calculated with reference to the Northern Ireland population survey data shows that it is at least one billion times more likely that this DNA came from the defendant. A very high level of match probability, found on a device in Belfast when the defendant lives in Beleek, County Fermanagh.

[62] The prosecution say this DNA deposit during construction of this device by the defendant is supported by items which would be associated with the construction of such a device discovered in his home. A soldering iron stand, solder wire, magnifying glass and stand and voltage meter. Together with photos of magnets on the Samsung laptop GR9, while benign in themselves but when viewed in the context of the nature and construction of the UVIED are, the prosecution say relevant and supportive of the defendant being involved in the construction of the UVIED.

[63] Equally supportive of the prosecution case that the defendant was intimately concerned in the construction of the device is his association with convicted terrorists who he associated with before and after his remand in custody on the present offences. Terrorists who espouse violent republicanism. This evidence, the prosecution say, rebuts the argument, - Why should this defendant, who has no proven connection with, or dispute with the target of the attack, a serving police officer, decide to possess/make an UVIED which was deployed against that officer?

[64] The prosecution suggest that it is a remarkable coincidence that the accused's DNA ends up in Belfast inside a disrupted explosive device, the target being a police officer. The prosecution say it should be inferred from the materials recovered and the defendant's association with and attendance at protests has an animus against the police and the State and is an associate of and supported by several known terrorists.

[65] Further, the prosecution invite the court to draw adverse inferences from the defendant's failure to answer questions in interview and give evidence when called upon to do so in court. The prosecution say this case calls out for an answer as to how his DNA alone and no others, came to be on wiring inside an UVIED. The prosecution submit that it would be reasonable to expect an individual to put forward a case in relation to the presence of their DNA on a particular item, when first confronted with the allegations. No explanation was/has been given by this defendant. The facts, the prosecution say, call for an explanation. This may be particularly so where the defendant's address is in the western part of Northern Ireland which could reduce the possibility of any innocent transfer of DNA to this device. His place of residence, the prosecution say, makes it much less likely that secondary transfer could have occurred and makes it more likely that it is a direct link between him and the explosive device.

[66] The prosecution does not suggest the accused himself deployed the device against the intended victim. However, the Court can readily infer that the depositing of his DNA was consistent with the accused being in possession of and involved with the device at a stage when it was being constructed. That being the case the Court is entitled to infer not only that the intent was to endanger life, but that in being involved with the possession/making of such a device, which is commonly deployed by terrorists in murderous attacks in Northern Ireland, the accused acted as a secondary party with the requisite intent in respect of the charge of Attempted Murder. He did not have to know the actual target of the attack or to be in any way directly involved.

[67] In respect of the charge of Attempted Murder a jury could properly infer in the context of terrorist violence in NI that anyone involved in the making of such a device which is then transmitted onward must have known that it may be deployed in such a murderous attack as this and could further infer that he intended to assist those who were to carry out such an attack in carrying out his action. The onward transmission of such a device after his possession/making, readily gives rise to such an inference given the nature of the device.

### *Defence Case*

[68] In stark contrast to the prosecution case the defence argue that a fundamental and incurable weakness of the prosecution case is demonstrated in the DNA expert

evidence. That Dr Pope's evidence is such that it cannot be excluded as a reasonable possibility the DNA profile recovered from the device was deposited by tertiary transfer. Mr Bennet's evidence could not rule out the reasonable possibility that the DNA profile was deposited on the items MOS6 and MOS15 before they were placed into the device and Mr Halligan could not rule out as a reasonable possibility that the brown sheathed wire in both items had a common origin in a single piece of wire. The defence argue that absent any other forensic connection between the defendant, his home, car, tools, clothing or location and the device, the prosecution case is inherently weak and speculative and ultimately wholly unsustainable. Leaving aside the DNA the defence say there is no evidence that the defendant had any involvement in making this explosive device.

[69] Faced with this terminal defect in the prosecution case the defence say the prosecution are forced to seek to rely on disparate and tangential sources of 'association' evidence in some way to support an inherently inadequate forensic DNA connection at the core of the prosecution case.

[70] Looked at individually the defence say the supporting evidence is weak, peripheral and speculative, designed to distract away from the inadequacy of the DNA findings to support the assertion the defendant was involved in the actual construction of this device.

[71] The defence argue evidence relating to the 2012 protests and 2016 search are merely historical narrative and have no probative value. The evidence on the computers, items CMG2 and GR9, is of considerable vintage, with the Toshiba laptop last used in 2017 and the Samsung in 2014. The defence say, even if relevant there is not direct links made between these computers and the defendant to establish attribution of either computer to the defendant. That the evidence of republican items in the defendant's home the defence say are an expression of political opinion which he expresses peacefully as manifested in peaceful protests in 2012. To infer a tendency to violent terrorist offending from these items would be wrong. In terms of association with Junior McDaid House it is argued that a single sighting at these premises cannot be inflated to association with the premises or those who occupy the premises. In terms of association with convicted terrorists the defence say again whether persons lawfully attend a court remand hearing and/or visit the defendant in prison is of limited probative value in assessing whether or not the defendant's DNA was deposited on the device at the time of construction. If anything, the defence say if there was association with those having a terrorist background it is reasonably possible the defendant's DNA could have been deposited via tertiary transfer from contact with one of these persons.

[72] It is the defence case that taken individually or collectively the supporting evidence led by the prosecution is weak and tenuous. It should not be allowed to distract from what is a fundamental and irredeemable flaw in the prosecution case, that DNA capable of being deposited on the device by tertiary transfer and/or

deposited on a single piece of wire prior to being incorporated into the device should be elevated to having been deposited during the construction of the device.

[73] The defence submit the prosecution evidence falls far short of proof beyond reasonable doubt that the (a) defendant handled the wires (wire), (b) in the course of making an explosive device and (c) that he then provided this complete device to others, (d) knowing that it was intended to be used to murder a police officer.

[74] In terms of the defendant's failure to give evidence and the inferences capable of being drawn, the defence say the prosecution case is weak and, irreparably so. In such circumstances where the prosecution case has so little value the defence say it calls for no answer and no inferences should be made.

### *Consideration*

[75] At this stage the various strands of the circumstantial evidence in this case must be considered in combination, assessed holistically and reviewed in light of any inference that may properly be drawn from the fact the defendant has declined to give evidence.

[76] The foundation of the prosecution case is the presence of a partial DNA profile attributed to the defendant on wires primarily located within the device. In relation to attribution of the DNA I have carefully considered the evidence of Mr Bennett. In dealing with the issue of the sample amount of DNA available for testing from MOS6 and MOS15 he agreed they were below the manufacturer's routine threshold for DNA analysis. Dr Pope confirmed that the amount of DNA obtained in the samples for examination were weak and incomplete. However, it was explained by both Mr Bennett and Dr Pope that lower amounts of DNA can be tested in duplicate using DNA 17 system and the presence of alleles confirmed. This happened in the present case and the results were suitable for specialist statistical analysis using an internationally recognised and validated software package designed to produce a likelihood ratio from samples containing low amounts of DNA. The test result was that the partial DNA profiles were one billion times more likely if the DNA came from the defendant than if it was someone other than and unrelated to him. I am satisfied beyond reasonable doubt that the DNA deposited on the wires was that of the defendant Granaghan.

[77] In light of this finding the issue of the inherent strengths and weaknesses of the DNA evidence and supporting circumstantial evidence must be considered.

[78] In relation to the items MOS6 and MOS15 it is clear from the evidence of Mr Halligan the brown electrical wires were similar in appearance and could well have come from a single origin longer single piece of wire. That in relation to the reconstruction of the mock device he himself used a single long piece of brown wire to reconstruct MOS6 and MOS15. In these circumstances I cannot exclude the

reasonable possibility that the wiring present in MOS6 and MOS15 originated from a single piece of relatively common and moveable electrical wire. In such circumstances I find that it is a reasonable possibility that the DNA originated from what was one item and not two separate items. This is of significance in light of Mr Bennett's evidence that it cannot be determined where on MOS6 or MOS15 the DNA sample was obtained from, leaving the possibility that it was recovered from the wire alone.

[79] It is then necessary to consider the circumstances surrounding how the DNA was deposited on the wire within the device. Mr Bennett gave evidence that he could not say when the DNA was deposited on the wire or how long it had been there. He accepted that it was possible that the defendant's DNA was deposited on the wire before the wire was placed into the device. That the wire could have been in numerous places and in contact with persons unconnected to the device. He was unable to say anything about the mechanics of the how the DNA was transferred onto the wire. Dr Pope dealt with this issue of DNA transfer and indicated that it was not possible in this case to determine whether it was deposited by primary, secondary or tertiary transfer. Interestingly, she indicated that this was so because in the present case the DNA deposits were a tiny amount on quite small areas and quite simply there was no scientific way to establish how the DNA transfer took place. Absent of any other supporting evidence the reasonable possibility that the transfer was tertiary cannot be excluded. Further, she said there was no scientific way to establish when, where or how the DNA primary, secondary or tertiary transfer took place.

[80] The proper approach to the analysis of DNA evidence has been considered in a number of cases. In *R v Tsekiri* [2017] 1 WLR 2879 the Court of Appeal considered that DNA left on an article at the scene of a crime may be sufficient without more to raise a case to answer where, (as in the present case) the match probability/likelihood ratio to the defendant is one to one billion or similar. The court held that there was no evidential or legal principle which prevented a case solely dependent on the presence of the defendant's DNA profile on an article left at the scene of a crime being considered by the jury. Whether or not a jury will convict in those circumstances will very much depend on the facts of the particular case. Relevant factors to be considered include the following non-exhaustive list:

- (i) Is there any evidence of some other explanation for the presence of the defendant's DNA on the item other than involvement in the crime?
- (ii) Was the article apparently associated with the offence itself?
- (iii) How readily movable was the article in question?
- (iv) Is there evidence of some geographical association between the offence and the offender?



- (v) In the case of a mixed profile is the DNA profile which matches the defendant the major contributor to the overall DNA profile?
- (vi) Is it more or less likely that the DNA profile attributable to the defendant was deposited by primary or secondary transfer?

[81] Of particular relevance in the present case is how likely the defendant's DNA profile was deposited by primary, secondary or tertiary transfer. In *R v Jones* [2020] 2 Cr App R 26 the Court of Appeal dealing with a case involving DNA deposited on the pin of a hand grenade held that where the evidence is not enough to distinguish between primary deposit of DNA and a secondary transfer, without more, there was no basis for a safe conviction. The court in *Jones* observed that:

“The crown accepted that the proposition that a direct deposit of DNA was more probable than an indirect deposit was the height of its case. Probability was insufficient for conviction. In the absence of at least some further evidence, neither the judge nor the jury had the basis for a safe conviction.”

[82] In the present case the prosecution evidence does not suggest that primary transfer is 'more probable.' The prosecution in the present case have accepted that '... where secondary transfer is a viable explanation for the presence of the accused's DNA on an object it will not be open to a jury to infer an activity level conclusion (i.e., whether how and/or when the defendant came into contact with the object) solely from the source level finding (i.e., that the DNA was the defendant's).'

[83] It is the prosecution case that the defendant was intimately concerned in the construction of this device. Yet the DNA evidence cannot exclude as a reasonable possibility the defendant's DNA came to be on the wire in the device by tertiary transfer. Paradoxically, in this case the prosecution have called evidence of the defendant having association with persons with terrorist convictions. This taken in conjunction with the possibility of secondary or tertiary transfer offers the possibility of the presence of the defendant's DNA being on the wire other than through his involvement in the construction of the device.

[84] It is also clear from the photos of the defendant's garden shed he appears to be engaged in some form of construction/building work from the general tools seen in his shed. There is some evidence of the defendant having worked in the general construction/building trade as a dry liner/plaster in the past. While this if of some vintage it is raised as possible evidence of his coming into innocent contact with electrical wire.

[85] Accordingly, in answer to the *Tsekiri* questions (i), (ii) and (vi) above there is the reasonable possibility that the defendant's DNA came to be on the device by secondary or tertiary transfer and not during the construction of the device; and the prosecution do not make the case that primary transfer is more probable.

[86] In answer to the remaining *Tsekiri* questions: There is no geographical association between the offence or offender. In such circumstances the prosecution make the case that given the distance between the defendant's home in Beleek and Belfast, the risk of innocent secondary/tertiary transfer might be thought to be much lower. However, as identified above, paradoxically, the prosecution have called evidence of the defendant having association with persons with terrorist convictions and a casual handshake, sharing of a mobile phone or such like cannot be excluded as a reasonable possibility in these circumstances.

[87] In terms of the electrical wire this is clearly a readily movable item. The Court of Appeal in Northern Ireland in the case of *R v McLaughlin* [2020] NICA 58 considered a case in which the appellant's DNA was located on plastic bags containing 695 assorted rounds of ammunition, an AK47 rifle magazine, three mercury tilt switches, small arms propellant, fireworks composition, a modified large calibre firearms cartridge, improvised detonator cord, detonators and initiators. The court held that:

“Ubiquitous bags, whether paper or plastic, are precisely the kind of items that do get used and reused by many people over the course of many different transactions. Fragile threads do not make a strong rope. The jury would have been entitled to infer that the appellant had at some time come into contact with the bags which had been used to conceal the items. However, the evidence was insufficient to entitle a jury to draw the inference beyond reasonable doubt that the appellant had knowledge and control of the items.”

[88] While electrical wire is not as common as plastic bags, it is nevertheless produced in large quantities and a readily movable item. This becomes all the more significant when the possibility of the defendant's DNA being deposited by tertiary transfer is considered. In the circumstances of the present case, absent some other supporting evidence it would in my view be insufficient to entitle a jury to draw an inference beyond reasonable doubt that the defendant Granaghan deposited his DNA on the wire during the construction of this explosive device.

[89] The prosecution in furthering their argument that in the present case the court should be satisfied there is confirmatory evidence supporting direct deposit of DNA during the construction of the device as opposed to indirect secondary or tertiary transfer. They ask the court to infer that the UVIED was planted by a group

espousing a violent republican ideology, in a carefully planned attack on a police officer. The court has viewed the CCTV of the two vehicles who I infer were involved in the placing of the UVIED. They clearly had planned their route and in the court's view had reconnoitred the area. They were forensically aware and burnt the two vehicle out after planting the device. The device, while of an older design, was characteristic of a device used by violent republicans. It was viable and lethal. I am satisfied that the device was planted by such a grouping.

[90] The prosecution then in support of their contention the defendant was involved in the construction of this device have led evidence that the defendant is sympathetic to a violent republican ideology as evidence by the materials and images found in his home and on the two computers seized from his home. The Toshiba laptop appears to have been last logged into in January 2017 and the Samsung in September 2014. There are no user/computer names, email accounts, social networking platforms or internet connections/purchases associated with the defendant on either of the laptops. Further, the Samsung laptop on which images of magnets and a flak jacket are located does not appear to have been used since September 2014.

[91] Further evidence led by the prosecution in respect of violent republican sympathies was that he had been noted to associate with known terrorists who have supported him at his first remand hearing and visited him while in prison.

[92] The issue of support of violent republicanism and association with such was considered in the case of *R v Robinson* [2021] NICA 65, this was an appeal against conviction by the appellant in respect of the murder of a prison officer who died as a result of an UVIED explosion outside his home. The appeal against conviction which was dismissed was based on very considerable circumstantial evidence, an aspect of which was the appellant's sympathies towards violent republicanism, including material supporting the Irish Prisoners Welfare Association and Republican Prisoners. While accepting this material can be properly admitted in circumstantial cases it was the view of the Court of Appeal that:

"The learned trial judge may have placed a little too much emphasis on the appellant's Facebook pictures and his political support however this does not affect the overall result in this case given the overwhelming amount of other evidence about the appellant's motivations and interests in the run up to Mr Ismay's murder. The appellant's own actions amply demonstrate a sinister and evil purpose."

[93] Accordingly, the weight to be attributed to the circumstantial evidence in this case must be balanced.

[94] In the *Robinson* case the appellant had purchased material for use in such an attack, there was connection between the appellant and the vehicle that deployed the device, he disabled CCTV to attempt to avoid detection and lied to police and there was significant mobile telephone and cell site evidence. None of which appear in the present case.

[95] The prosecution also rely on the defendant's failure to answer questions in interview and give evidence and be cross-examined at trial. In relation to the defendant's failure to answer questions when interviewed by police, article 3 of the Criminal Evidence (NI) Order 1988 provides that on being questioned under caution fails to mention any fact relied on in his defence or fails to mention facts which he could have reasonably been expected to mention. The court may draw such inferences from his failure as appear proper. The defendant was not cautioned for the offences of attempted murder, making an explosive device or possession of an explosive device. He was only told of his DNA being on the device at the very end of the interviews. In such circumstances I do not intend to draw any adverse inference.

[96] During the trial, like any defendant Granaghan is entitled not to give evidence, to remain silent and to make the prosecution prove its case beyond reasonable doubt. He has not given evidence in trial to explain the presence of his DNA on the wire in the device. Article 4 of the Criminal Evidence (NI) Order 1988 permits me to draw an adverse inference from his failure to give evidence. As identified in *R v Murray* [1993] NI 105 the Court of Appeal stated that:

“... where common sense permits it, it is proper in an appropriate case for the court to draw the inference from the refusal of the accused to give evidence that there is no reasonable possibility of an innocent explanation to rebut the prima facie case established by the evidence adduced by the Crown ...”

[97] I consider that the presence of his DNA on the wire establishes a case to answer, that he was in some way involved with this device. I am satisfied that it is fair to draw an adverse inference from his failure to give evidence because I am satisfied that the only sensible explanation for his silence is that he has no answer, or no answer that would stand up to examination, when questioned. However, I caution myself whilst his failure to give evidence provides some support for the prosecution case, I must not find him guilty only, or mainly, because he did not give evidence.

[98] In the present case involving circumstantial evidence as it does, it is the totality of the evidence which has to be weighed and scrutinised anxiously and carefully. Looking at the evidence in this case it is essential to look at evidence which points away from the defendant having committed this offence as well as

circumstances pointing to the defendant's involvement. Such evidence having greater potency in a circumstantial case. A significant circumstance in the present matter is that the prosecution's case is the defendant's DNA was deposited in the device at the time of construction. Considerable credence must be given to evidence that points away from the defendant's involvement at the time of construction of this device. I have looked at this issue anxiously as I am obliged to do and in accordance with the direction I gave myself at the start of this judgment. A significant matter pointing away from the conclusion the defendant was involved in the construction of this device is the expert evidence confirming that it is a reasonable possibility that the defendant's DNA could have been deposited by tertiary transfer. While there is some supporting evidence in this case in terms of association with violent republicanism and the defendant's failure to give evidence the weight to be attached to it in the circumstances of this case does not in my view negate the evidence pointing away from the defendant's guilt and casting doubt on the prosecution premise that the defendant's DNA was deposited by primary transfer when the device was being constructed.

[99] In these circumstances while the other circumstantial evidence may create the suspicion the defendant was involved in this incident, no matter how strong the suspicion, it is not sufficient to establish proof beyond reasonable doubt and is insufficient to persuade me beyond reasonable doubt that the defendant was involved in the construction or preparation of this device. Accordingly, I find the defendant not guilty on each count.