

Northern Ireland Unreported Judgments

McGuigan v Secretary of State for Northern Ireland

QUEENS BENCH DIVISION

GIBSON LJ

7 MARCH 1977

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The applicant has appealed from a refusal of her application for compensation for personal criminal injuries. Her case is simple, and, if accepted, she is clearly entitled to full compensation of a very substantial amount. Unfortunately the assessment of all the evidence is anything but easy because of the complex character of the explosion which injured her and the consequent differences in expert opinion as to the conclusions to be drawn from the information available.

The injuries, which are both serious and permanent, occurred on 7 July, 1974. The applicant was then a married woman of 44 years of age with a young family of whom the eldest was 13 years old. Her evidence was that she had been preparing to go to mass when at about 6 pm she discovered that her eldest son was missing. She was then wearing slacks and a short house coat and her hair was in curlers. She donned a short imitation suede coat and went out to look for the boy. On the way she met a neighbour, Mrs McGuigan, with a young child. Mrs McGuigan directed her towards where some boys were playing and accompanied her part of the way. At the doorway of No 22 Carrigart Avenue, which is in the Suffolk area of west Belfast another lady Mrs Burns, was standing. Mrs McGuigan and the child stopped to talk to her while the applicant walked on alone. Her route was along a footpath approximately 6-7 feet wide bounded on the left by a block of flats of which No 22 Carrigart Avenue was the first. The footpath was flagged and under it were at least some of the public services to the flats. Almost at the door of No 22A, Carrigart Avenue, which was about 20 feet from the doorway of No 22 was an inspection trap for the foul water sewer. This was in the pavement and covered with a metal cover about 14 inches square, the top of which was level with the pavement and situated a very few inches from the wall of the flats. The applicant's evidence was that as she walked along the footpath, carrying nothing and noticing nothing unusual, there was an explosion of a bomb to which she did not contribute either deliberately or accidentally, as before the explosion she neither stopped nor touched anything. Mrs McGuigan and Mrs Burns largely supported her evidence. Though they were talking together and did not keep the applicant under observation, their clear impression was that the explosion occurred so quickly after the applicant left them that there had been no time for her to detonate the bomb or interfere with it having regard to the accepted fact that the bomb exploded in the inspection trap.

Having seen and heard the applicant give evidence, I must immediately say that she had all the appearance of a decent, respectable woman - not at all the type of person one would expect to be concerned with explosives. But, alas, experience over the last several years has shown that it is sometimes those who appear least likely who became involved either wittingly or unwillingly in terrorist activities. Again, the time and place of the explosion would point against the applicant having handled or attempted to handle the bomb, 6 pm on a Sunday in July outside a block of flats and within a few feet of potential witnesses is not the most likely situation for a carrier of explosives to operate, especially as to reach the bomb involved lifting the fairly heavy

inspection trap cover. I am also satisfied of the complete bona fides of Mrs McGuigan and Mrs Burns who were both under the impression that the explosion happened just after the applicant had walked away from them. But this does not altogether exclude the possibility that their conversation may have been so engrossing that a greater time had in fact elapsed. Also, if, as they say, they were standing in the doorway, they had only to glance round when they heard the explosion to see what happened. Yet Mrs McGuigan said that the first she saw after the explosion was the applicant leaning against a low wall on the side of the footpath remote from the flats. The trail of blood on the pavement to which I shall refer later would show that this was not the position of the applicant immediately after the explosion.

If, as I conclude, it is unlikely that the applicant by some physical act of interference set off the bomb, almost every other explanation as to how it occurred is equally or almost equally unlikely. I do not believe that any resident in that estate deliberately placed the bomb in that position with the intention that it should explode there. Nor do I accept Mr Doyle's alternative theory that it might have been the work of a Protestant terrorist from an adjoining area. In either case the quantity of explosive was so small as to be unlikely to cause any structural damage down such a drain, and it would be by the merest chance that a person would be injured. Why should a local resident do such a thing? And why should an intruder run such obvious risks to achieve so little when there were, for example, shoppes and other much easier and more vulnerable targets close by? The most likely explanation is that though the bomb was fully primed it exploded accidentally, though, as I shall indicate later, there seems to be obvious difficulties in the way of accepting this conclusion also. I would certainly rule out the hypothesis that the applicant carried the bomb to the scene of the explosion. She was not seen to be carrying anything and indeed the case for the Crown is rather that she was either trying to recover it or for some other reason handling or about to handle it when she caused it to explode.

Faced then with a choice among improbables, it is clear that the forensic evidence must be of critical importance in deciding how the explosion occurred and what part, if any, the applicant had in it. The real difficulty of the case, however, lies in the opposing views of the experts as to the proper inferences to be drawn from the known facts as to the nature of the bomb, the character and cause of the applicant's injuries and the other circumstances of the explosion. Briefly the forensic evidence called on behalf of the applicant was directed towards showing that the facts were consistent with her evidence, whereas that called on behalf of the Crown sought to establish that the only feasible explanation of all the accepted and acceptable facts was that the applicant had precipitated the explosion by some deliberate act and that it occurred while she was either kneeling beside the inspection trap or stopped down with her face over the hole. My approach to the scientific evidence has been that if it leaves open any feasible explanation consistent with the applicant's innocence I would accept it even though in itself less probable than a more sinister interpretation. I do so because that innocent explanation would receive greatly added weight from the view I have formed of the inherent unlikelihood that the applicant was engaging in terrorist activity at the time.

Before turning to the forensic evidence I would interpose a brief word as to the consequences of this appeal. During the hearing I invited counsel to consider whether, assuming that I came to the conclusion that the applicant had herself caused the explosion it might not be possible for me merely to make a deduction from the amount of compensation otherwise payable by applying section 4(6)(a) of the Criminal Injuries to Persons (Compensation) Act (Northern Ireland) 1971 on the basis that her negligent behaviour might be regarded as having contributed to the injuries. Mr Doyle and Mr Campbell each rejected any such suggestion, and as any circumstance which would under that section warrant a deduction from the compensation would also under section 1(3) entitle the court not to make any order for compensation, I can see no basis upon which I could reject their common approach. Indeed, I think that theirs was the correct view, for the entire tenor of the evidence pointed either to the applicant having consciously handled the bomb and set it off by accident or to the explosion having occurred entirely fortuitously while she was nearby.

The forensic evidence upon which, therefore, the outcome of this appeal must largely turn was that of Dr Kee of the Northern Ireland Forensic Science Laboratory for the Crown and Mr Yallop on behalf of the applicant. Both had obviously given the matter very careful consideration and I am indebted to them for their objective analyses of the facts and subjective inferences and conclusions. Though previously unknown to me, the

manner in which Mr Yallop gave his evidence as well as his illustrious record entitle his opinion to great weight. After more than 30 years in the public service dealing with research and investigation in connection with high explosives, during which time he also acted as consultant to the Northern Ireland Department of Industry and Forensic Science in relation to explosions and explosives, he now practises as a consultant specialising in explosions and fires and also acts as consultant to the United Nations in connection with the transport of explosives.

Before dealing with the differences of expert opinion which emerged, I think they can best be understood and assessed if I first set out the main points upon which I understand there was agreement or at least no disagreement. They are:-

1. The bomb which injured the applicant exploded in the inspection trap probably 6" - 18" below the surface of the footpath.

2. The parts of a wrist watch, electric battery and wires found after the explosion establish that it was a time bomb.

3. The wires had been joined by twisting them together and the joint covered with insulating tape. There is just the possibility that such a joint might not be perfect so that a break in the electrical circuit could occur, but, if so, the circuit might be completed by any slight movement of the wire.

4. Judged by the lack of structural damage to the drain and the extent of damage to the watch and battery, the quantity of explosive used must have been very small. Dr Kee thought it was probably a 50 gramme stick of gelnite and Mr Yallop considered 100 grammes more likely. The quantity was therefore somewhere in the range of 2 or 4 ounces.

5. Closely associated with the bomb and probably wrapped around it had been 2 bandoliers containing live .303 ammunition. The bomb and bandoliers had probably been in a leather binocular case which could easily have gone down the vertical hole and was of a size that if placed at the bottom of the hole it could bridge the foul water drain at the bottom.

6. When the bomb exploded, either the force of the blast or violent propulsion against some object caused a number of the bullets which had been in the bandoliers to break in two so that the propellant explosive in the bullet cases was released and it and the parts of the bullets so fractured as well as other whole bullets were blasted out of the whole.

7. After the explosion small quantities of an explosive substance were found in each pocket of both coats of the applicant. This explosive was similar to the bullet propellant and its presence in her pockets could be accounted for by the fact that the propellant from the broken bullets would have been blasted through the air and could have struck the applicant, thereafter either falling or being blown into her pockets. I, therefore, draw no sinister conclusion from the finding of the explosive in her pockets.

8. Parts of the right sleeve of the applicant's outer coat had been charred and her hair was singed. Normally this would mean that the person scorched in this was had been within the range of the fireball, which in an explosion of this size would mean that the head and arm would have been within a foot or so of the seat of the explosion. In this case, however, it would be reasonable to assume that the propellant from the bullets could have ignited on release and the scorching and singeing could have been caused by the afterburn of the propellant at a much greater distance. I do not, therefore, think that this burning can found any conclusion as to whether the applicant was within touching distance of the bomb when it exploded.

9. The blackening of the applicant's face in the explosion and the fact that both eyes were damaged and that her face suffered generalised charring and lacerations and peppering with particles indicate that the applicant had been facing the explosion when it happened.

10. Both the applicant's eardrums were perforated by the blast. This established that she was within an area where the blast pressure was not less than 5 lbs per square inch at ear level. Assuming the maximum suggested charge of 4 ounces of explosives, her ears would not on this basis have been more than 8 feet from the seat of the explosion. If she had been standing upright at the time, then applying simple geometry this would place her not more than 6 feet from the hole, and if the charge were only 2 ounces the maximum distance would be much less. The injuries to the face are, therefore, consistent either with the applicant approaching within 6 feet of the drain when the bomb exploded, or with her having been kneeling or stooping down at the drain.

11. Though the applicant suffered extensive injuries to the head there was no damage to her or to her clothing below head level except to the right hand and wrist and to the right sleeve. The explosion amputated the ends of two fingers of the right hand; the thumb was almost amputated, and she sustained fractures and dislocations of the hand and wrist. The right sleeve of her outer coat was severely damaged. Parts of the cuff and the lower end of the sleeve had been completely torn off and the sleeve of the outer coat was split from end to end in several places, though the lining of the sleeve was apparently undamaged. The conclusion from this is that the head, the right hand and right arm of the applicant were within the range of the main blast but that no other part of her body was.

12. After the explosion the cover of the trap was found lying about one foot from the hole. The underside was blackened by the explosion but this blackening was confined to a few inches along one edge of the underside.

13. A considerable number of pieces of debris from the explosion were found on the footpath. These included the parts of the watch and battery, the bullets and parts of bullets and remnants of the bandoliers and leather case, and some pieces of cloth from the applicant's sleeve. All these items were found within a foot of the seat of the explosion. However, as the number of bullets did not correspond with the number of empty cases it seems clear that some parts were missing, and a few other relevant items, probably pieces of cloth from the applicant's sleeve, were picked up on a grass bank adjoining the footpath and directly opposite the inspection trap. The soldier who described where these articles were found and who preserved the scene had come a distance of 600 yards after hearing the explosion and did not arrive until after the appellant had been taken by car to hospital. The possibility that there had been some interference with these articles by third persons cannot be excluded.

14. After the explosion there was a considerable quantity of blood spattered on the footpath, and though it was of uneven distribution, it was roughly in a line parallel to the front of the flats and appeared from a photograph to extend for a distance of at least 14 feet between the front of No 22 Carrigart Avenue and about 2 feet on that side of the inspection trap. None of the blood was on the third of the footpath furthest from the front of the flats.

15. There was no disagreement as to the mechanical or electrical processes necessary to detonate the bomb, but different theories were advanced as to how it probably was exploded. In order that the bomb should explode it was necessary that the electrical circuit should be complete and should have been completed just before or at the moment of the explosion. Having regard to the nature of the timing mechanism this would normally require that the watch hand should have travelled the distance necessary for it to make contact with the wire or pin attached to the watch, and that there should be no other break in the circuit. Assuming, as I do, that the bomb was not deliberately set to explode in the sewer, it is possible that it could have exploded by accident. It would be most unlikely that the bomb was stored with the watch hand making contact with the pin or wire, or with the watch wound up and going so that the hand would in time make the

contact, especially as there is no evidence of any deliberate safety break in the circuit. If the bomb exploded without having been deliberately set off, it is most probable that the watch was thought to be, but in fact was not, completely unwound and that at some time it was started by some movement or even vibration. If that were so and the circuit were otherwise complete, the bomb would have exploded when the watch hand made the necessary contact. In that event the initiating movement or vibration would have occurred perhaps hours before the explosion - even perhaps by the person putting the bomb into the sewer - and in that event it would have been entirely fortuitous that the applicant was in the vicinity when the explosion occurred. I would rule out as a practical possibility that there was no break in the circuit other than that caused by the watch and that it was the vibration caused by the applicant's footsteps which started the watch and caused the explosion, because this would mean that the person who assembled the bomb set the watch so that the hand would be a mere second or so from making the contact which would cause the explosion. Such an arrangement would have been fraught with the most imminent and quite unacceptable danger to the bomber. The alternative theory of an accidental explosion and yet one which was precipitated innocently by the applicant herself is that a joint in the wiring was defective. This, however, would as I see it require the double chance that the watch, mistakenly thought to be unwound, would have been started by some movement or vibration perhaps by the act of carrying the bomb to the hole or placing it there, and that in time the hand made the necessary contact and that a further vibration caused by the applicant walking on the footpath moved the wire of the defective joint sufficiently to complete the circuit and cause the explosion as she approached the inspection trap. It was Mr Yallop's opinion that the explosion probably was caused accidentally by the applicant in some such circumstances. Lastly, of course, there is the theory that the final contact was made accidentally by the applicant not by merely walking along the footpath but by handling the device itself or by raising the cover of the trap.

These then are the basic facts relating to the explosion and the various ways in which it is suggested that it was technically possible for it to have happened. If the question were to be judged as a mere theoretical exercise, I should have little hesitation in accepting that the initiation of the explosion was by direct handling of the bomb or perhaps by a banging of the heavy cover of the trap in the course of removing or replacing it. I should think it most unlikely that a bomb, packed as it probably was, in a leather case and wedged or placed more than a foot below ground level, could have been so shaken by a person walking on the pavement above as to cause wires to come together and complete the electrical circuit. Particularly would this be so in the case of the applicant, for the evidence shows the impact to have been to her face, and so she must have been approaching the bomb; and, as will appear later, she must according to the theory of Mr Yallop have been still some feet short of the inspection trap when the bomb exploded. However, this is not just a matter of balancing scientific theories or probabilities in the abstract. As I have already stated I give such weight to the evidence of the applicant and her witnesses that unless there is no reasonably acceptable theory that can be reconciled with that evidence, I am prepared to hold on the balance of probabilities that she was entirely innocent and is entitled to be fully compensated. On the other hand, if on close analysis of all the evidence there is no basis upon which the known facts and the scientific explanations and conclusions can be made compatible with her case or if the balance of the evidence other than that of the applicant and the two ladies is heavily against an innocent explanation I shall be obliged to refuse her application.

This brings one to what I consider is very close to the heart of the case. How can one account for the very localised nature of the injuries to the applicant, and the fact that only the right sleeve of her clothing was damaged? Two quite conflicting explanations were advanced. For the Crown it was suggested that this is entirely consistent, and only consistent, with the applicant bending over the inspection trap at the moment of the explosion with her right hand in or immediately above the hole. This would explain how her face received the serious and generalised injuries and also why these injuries were less devastating than to the hand and wrist. Mr Yallop agreed that the personal injuries could have been caused in this way but voiced one or two reservations which must be considered. In his opinion the applicant's injuries are also consistent with her evidence that she was walking on the footpath. He considered that if she were walking towards the inspection trap one would expect to find the facial injuries she in fact suffered. The absence of any injury or damage to the trunk below the head he explained by the fact that the bomb was in the hole which would mean that the lateral blast would be restricted by the sides of the trap so that the blast zone would have been something like an inverted cone, or perhaps, as the whole was square, an inverted pyramid. If, therefore, the

applicant was within the distance where her eardrums could have been perforated, say within 6 feet from the hole, the face and head alone might have been struck by the main blast and the lower part of her body would merely have been in the turbulent air surrounding the main stream. But how consistently with this theory can one explain the injuries to her hand which would normally have been outside the field of blast and yet was more terribly injured than the face which was within it? The blast from such an explosive at such a distance could not have caused such destruction even had the hand been within the blast zone, but Mr Yallop considered that the shearing off of the tops of two fingers and the utter dislocation of the thumb could have been caused by the impact of bullets or parts of bullets projected by the explosion. Moreover, the hand might have been thus injured outside the field of blast if the bullets had been blasted out of the hole, struck the cover while in the air and been deflected. This is an explanation which is intelligible, though perhaps less likely than that of the Crown, provided one can answer two points made by Mr Yallop as grounds for questioning the validity of the Crown's proposition. But further consideration of the character of the injury to the sleeve caused Mr Yallop to revise this theory. At first he thought that the splitting and shredding of the sleeve might have been caused either by bullet damage or by the hospital staff in removing the coat, but he later agreed without reservation with Dr Kee that this damage had been caused by the blast. Indeed the nature of the splitting of the outer cloth and the fact that the lining was intact compared so exactly in detail with the results of tests conducted by Dr Kee on the exposure of dummy hands and sleeves to blast that no other explanation could reasonably be entertained.

Human reaction is not quick enough to have enabled the applicant at a few feet from a bomb to have raised her hand defensively to head level on perceiving the explosion in time for the hand to be struck by the main blast. So, accepting that the blast only struck the applicant at head level, one can only conclude on the hypothesis that she was approaching the drain that her hand must have been upraised before the explosion. The applicant did not suggest that she had done so. May it be, perhaps, as Mr Doyle suggested that she was unconsciously fingering or adjusting her curlers with her right hand when the explosion occurred? The drain was close to the wall of the flats and so one would expect the bullets to have been angled upwards and from the applicant's left. How then could they strike her hand if it was at the right side of her head? If her hand had been turned to the left, it is just possible that the bullets might have been projected past her nose and struck her hand. But how, I asked, could her thumb be struck when one would expect it to be protected by the rest of her hand if it were raised to the side of the head in the normal way? The only solution that Mr Doyle could offer was that her hand might have been in a position of pronation so that when raised to the head the thumb was towards the front. But as that would mean that the backs of her fingers would have been towards the curlers, I do not think that this suggestion carried any more conviction to the mind of Mr Doyle than it did to me. I think it more probable that if the applicant's right hand was struck by bullets and her right arm by blast while walking a matter of feet from the bomb, it would have been while her arm was raised and in the act of either putting her hand to her head or of removing it at the moment of the explosion, because in that way only would the physical conditions I have mentioned be reasonably compatible.

Hypothesis can take one little further. I must now attempt to assess the validity of the rival theories. Once one surmounts the initial barrier of assuming that the applicant might have been concerned in handling the bomb the case for the Crown is straightforward. The injuries are agreed as being of a nature, distribution and extent likely to have been caused if the applicant had been acting in the way one naturally would if one were to approach the bomb. There were only two question marks raised by Mr Yallop in the way of accepting this view. First there was the absence of charring to the front of the applicant's trousers. Such charring could have been caused in two ways, namely, by the searing heat of the fireball or by the afterburn of the propellant. Assuming the maximum predicated quantity of explosive, the range of the fireball would not have exceeded half a metre from the point of explosion. The range of the burning propellant would, of course, have been much greater. But in either case the charring could only have occurred if the trousers had been within the compass of the fireball or the pressure wave. Even accepting the pyramid description of the blast wave which is more favourable to the applicant than Dr Kee's experience would indicate, it seems reasonable to conclude that if, for example, the applicant had been kneeling a few inches from the edge of the hole no part of her trousers might have been within the blast sector. The speed of the blast zone must depend on the angle at the apex of the pyramid, which in its turn is controlled by the depth of the bomb in the hole. No one was able to help me as to this, but it is clear that as the width of the cover was about 14 inches, the trunk in

which it was bedded must have had a width appreciably less. So unless the bomb was very close to the surface the angle of spread of the pyramid would have been relatively small and the prospect of the trousers being charred would be reduced accordingly.

The second doubt which Mr Yallop entertained on the Crown case was that the charring of the cuff of the right sleeve of the applicant's outer coat seemed to him more consistent with burning propellant than fireball heat. In support of this conclusion he stated that he had tested a piece of the material and found that it only charred when exposed to heat for an appreciable time. Unfortunately he did not elaborate on the nature of the tests he had carried out, nor on the degree of heat he had applied. If the heat was not of an intensity approaching that of an explosive fireball (as I gathered it was not) it could be that no great reliance could be placed on the conclusion based on the tests. However that may be, his opinion even after the tests was that he could not exclude the possibility that the charring of the coat had been caused by blast wave pressure. The objections to the Crown case are, therefore, in no sense insuperable obstacles to its acceptance and are either capable of being resolved or amount to no more than the proposition that on some point the case for the applicant may be more likely. On the other hand, there are a considerable number of points on which the case for the Crown is greatly to be preferred, or that of the applicant so unlikely that upon any balance of probabilities it could not be accepted. I set out below the chief reasons which have led me to reject the applicant's claim.

1. I have already referred to the fact that the case advanced on behalf of the applicant postulates either that the occurrence of the explosion when she was in the immediate vicinity was a mere coincidence or else that the bomb was detonated by the remote and necessary inconsiderable vibration of her footsteps while walking normally on the pavement some feet, or yards from the bomb, which seems a surprising result having regard to the fact that the vibration would have to be sufficient to bring into contact the wires which were apparently wrapped in two bandoliers and enclosed in a leather case some distance below ground level.

2. The explanation of the selective areas of injury and damage to the applicant propounded on her behalf involve the premise that the pattern of blast was that of an inverted cone. Whether it would follow that pattern and the extent to which it could do so would be dictated by the cross-section of the hole and the depth of the charge when it exploded. One knows, for example, that shrapnel discharged from an ancient short-barrelled, wide-calibre cannon had a fairly narrow spread. Moreover, the experiments which Dr Kee conducted of exploding small charges in the bottom of a bucket immersed in sand establish that in those not dissimilar conditions the blast was perpendicular with very little side effect.

3. As there was no way consistently with the applicant's evidence that her right hand could have been so close to the bomb as to be so seriously injured by blast, Mr Yallop had to assume injury by missiles as the only possible alternative, though the nature and extent of the injuries were consistent with blast damage. This assumption, however, introduced a complexity into the matter that did not otherwise exist. It meant that the hand was injured by a number of flying missiles (at last one damaging the two fingers and at least one other dislocating the thumb and both causing the other fractures and dislocations). The sleeve, on the other hand, was undoubtedly damaged by blast and not by missiles. Between these were the cuff and wrist which one would naturally think would be injured in the same way. Yet though the tearing off of the pieces of the cuff was agreed as blast damage, Mr Yallop had to designate the dislocated wrist as missile damage (for blast at such a distance could not cause such a dislocation). It was, however, if I understand him aright, a dislocation caused by transferred force due to the missile striking the fingers and thumb. I had no evidence as to whether flying bullets or bullet cases striking digits of the hand would cause any of the dislocations which occurred, but the assumption that they would do so had to be made to complete Mr Yallop's thesis.

4. Another matter which causes me to be very hesitant in accepting the applicant's case is the difficulty of discovering an acceptable way in which her hand could have been struck by bullets and her arm by blast. Either her hand was being held in an unusual and ineffectual if not unneutral posture against or close to her head, as Mr Doyle suggested, or else the hand and arm were struck in that fleeting function of a second when the arm was above shoulder level and before the hand reached the head, or in the similar moment of

time when the action was being reversed. Again, I cannot avoid some surprise that an object as small as the hand should have been struck twice by missiles at such a distance but no other part of the applicant was struck, though upon this hypothesis at least the head and arm were necessarily exposed. Nor was there any evidence to indicate that any other object had been struck by any flying missile.

5. An examination of the sleeve shows quite clearly that the main impact of the blast was to the region of the cuff. Parts of it were actually ripped off and charred whereas the rest of the sleeve was merely split and ripped open. The damage was accepted as progressively diminishing as one moved from cuff to shoulder. There is nothing to establish that the cuffs was at the centre of the pressure wave, so that if one were to project the increasing blast damage from shoulder to cuff on to the region of the hand one could arrive at the very conclusion which is the basis of the Crown case, namely that the hand was destroyed by blast. Common sense does not commend an explanation that the cuff was destroyed by blast but the hand which protruded from the cuff was unaffected by blast. Moreover, if the arm were raised, as is suggested on behalf of the applicant, it would be the elbow and not the cuff which would be nearest to the centre of the blast, and there would seem to be difficulty in explaining why the cuff should have been disintegrated and yet the elbow left comparatively undamaged by blast.

6. One reason why Mr Yallop expressed the view that the injuries to the hand were caused by missiles rather than blast was because there appeared to be no evidence of lacerations to the hand. For this conclusion he was relying on his observation of the hand more than two years after the occurrence. He had not seen the report of Dr Bingham who treated the applicant on her admission to hospital when he gave this evidence. Dr Bingham's report, however, reveals that on admission to the hospital the applicant's right hand had sustained multiple lacerations. Severe blast normally causes multiple lacerations and possibly maceration to the exposed human body but being struck by a few missiles does not. On being apprised of the contents of the medical report Mr Yallop's reply was that perhaps the multiple lacerations were those caused by the blowing off of the tips of the fingers and the tearing of the thumb. As the report dealt specifically with the injuries to fingers and thumb and in connection with the disruption of the thumb mentioned the laceration of the first web space I considered it unlikely that the separate itemisation of the multiple lacerations could refer to such incidental injuries. Hoping to resolve any doubt that might exist I gave other party leave to call Dr Bingham or other medical evidence to deal with the nature of the lacerations and adjourned the hearing for that purpose. Unfortunately Dr Bingham apparently had no specific memory of the matter and though I was furnished by agreement with a copy of the hospital record on admission of the applicant it was almost entirely illegible and a resume of the operation note and observations on admission did not greatly help. The only relevant references were to superficial abrasions to the forearms, laceration on the first web space and superficial lacerations of the little finger. I, therefore, concluded that no clear help to either theory could be elicited from the various descriptions of the applicant's injuries.

7. Still dealing with the injuries to the hand, there is a further consideration which leads me to reject the applicant's explanation. If the applicant's hand was not damaged by blast it must have been struck by at least two bullets or parts of bullets: this was the evidence of Mr Yallop. The first sheared off the fingers. The second, according to the applicant's case tore the thumb almost off. Yet there was apparently no other injury to the thumb. I find it almost impossible to conceive how a small object such as a bullet could strike the applicant's thumb with such terrific force as to leave it hanging off and yet not cause a deep, penetrating wound. The description of the injury to the thumb is to me in the circumstances consistent only with having been struck by a much larger object (which is not suggested) or by blast.

8. A fact which appears to me not to be without significance is that the underside of the trap cover was blackened but only over perhaps one-sixth of its area and this all near one edge. Mr Yallop thought this to be consistent with the cover having been in position when the explosion occurred but did not explain why. In cross-examination he said that if at the time of the explosion the cover was half off one could find such a limited degree of blackening as occurred. Dr Kee stated that all his conclusions were that the cover had been partially off. Having regard to the fact that the estimated weight of the cover was 20 lbs, it seems to me more than likely that if the cover had been in position the entire chamber in which the explosion occurred would

have been filled with smoke from the explosion and the burning bandoliers, leather case and propellant before the force of the blast overcame the considerable gravity of the cover, so that unless there was some special reason of which I am unaware the blackening would have extended over most, if not all, of the underside of the cover. That it did not is to me an additional pointer to the conclusion that the applicant was handling or had handled the cover and partially removed it.

9. The distribution of blood on the footpath after the explosion lends powerful support to the Crown case. As already mentioned, it commenced within 2 feet of the inspection trap and led in an erratic line back along the inner side of the footpath in the direction from which the applicant had come. How, consistently with the applicant's case, can one explain the presence of blood within an area where according to Mr Yallop, the applicant had not been at the time of the explosion? Two possible explanations occurred to me. First, perhaps, contrary to what one would imagine, the gouts had been sucked back towards the centre of the explosion by the rarefaction wave. This, however, was firmly ruled out by the experts. The only other possible explanation was that after her injury the applicant, blinded and deafened by the explosion as she was, had staggered forwards in the direction of the hole and then retraced her steps and continued on towards No 22 Carrigart Avenue. Scrutiny of the photographs showing the bloodstains seems clearly to negative this theory. There certainly is no evidence of a double trail of blood near the hole. In fact the quantity of blood only becomes very substantial about 4 foot from the hole, which is quite consistent with the applicant having been blasted back from the immediate region of the hole and standing there for a moment before making her way back along the pavement.

Because of the very clear opinion I have formed from the above considerations I leave out of account such further facts as that the bullets and parts of bullets were all found within a foot of the hole and that one of the applicant's shoes was lying in just the position her foot would have been had she been kneeling by the hole facing the flats, because all those matters, while apparently inconsistent with or unhelpful to the applicant's case, are capable of different interpretations or explanations.

Starting then with a strong predisposition in favour of the innocence of the applicant, the whole body of evidence and the picture which it gradually painted have driven me ineluctably to the conclusion that there is no explanation of the facts other than that the applicant must have been interfering with the bomb or have been taking steps preparatory to handling it when the explosion occurred. The agreement of counsel as to the consequences which follow from that conclusion leaves me no option but to affirm the refusal of the application and dismiss the appeal.

Appeal dismissed