

The Robert F. Kennedy Assassination

(Draft)

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Three weeks after Judge Wenke's order, a specific plan was approved for the testing and experts were appointed to conduct it. The identity of the examiners was agreed upon jointly by the six parties, with each party selecting one expert subject to the approval of the other five. The experts were:

Stanton Berg - A private firearms examiner from Minneapolis. (nominated on behalf of the Board of Supervisors.)

Alfred A. Biasotti - A criminalist at the California state Department of Justice. (nominated by the District Attorney's Office)

Lowell Bradford - A private forensic consultant from San Jose, California, formerly chief criminalist of Santa Clara County. (nominated by CBS)

Cortlandt Cunningham - An expert at the Federal Bureau of Investigation. (nominated by the Attorney General's Office)

Patrick Garland - A criminalist with the Bureau of Forensic Sciences in Virginia. (selected by the six other experts)

Charles V. Morton - A criminalist with the Institute of Forensic Sciences in Oakland, California, President Elect of the California Association of Criminalists. (nominated on behalf of Sirhan Sirhan)

Ralph Turner - A professor at Michigan State University. (nominated on behalf of Paul Schrade)

Following the order prescribing the manner of the retesting, the evidence at issue was reviewed at two special hearings and DeWayne Wolfer was called to testify. Several days later, the seven forensic experts assembled in Los Angeles and on September 23 the began their work. Although they were charged with testing and verifying the results of the earlier investigation, the experts soon encountered hin-

were completed, detailing those findings about which all seven experts were in agreement. Each expert submitted individual reports as well, accompanied by a variety of work sheets from the individual bullet examinations. Because of their importance, and because of the nature of the media reaction which followed, these reports and their findings deserve careful examination.

On Tuesday, October 6, the courtroom was jammed with reporters and spectators. Judge Wenke took the bench promptly at 2:00 p.m., but the opening of the sealed material from the panel did not take place immediately. Various legal arguments and delays intervened and it was not until two hours had elapsed that the Comprehensive Joint Report was read. The interest focused on the release of the findings was substantial, particularly by the standards of past coverage of these issues. Yet in spite of the concentration of reporters and newsmen, there was rarely a commensurate appreciation of the complexity of the issues being addressed. As a result, the contribution of the firearms examination was largely negated by the manner in which it was reported and the exigencies of journalistic publicity disasterously blurred a situation which had finally begun to move toward clarity. Although the media competition with respect to speed was intense there was little similar competition with respect to accuracy. Following the accelerated release of the most cursory, and often careless summaries, the issue was largely abandoned, and the public was left with misinformation hastily generated by early, undigested accounts. Some major implications of the examiners' reports would not become apparent for days or weeks, but for most of the country the hasty initial reports of these findings were the only reports.

At 4:00 p.m. Judge Wenke read the Comprehensive Joint Report and it is to read:

The examiners working independently arrived at the same conclusions as follows:

1. There is no substantive or demonstrable evidence to indicate that more than one gun was used to fire any of the bullets examined....

This is as far as he got before signals began to fly around the courtroom. Why stay to hear any more? Newspaper men left their seats in the jury box, hurrying to send the word. Runners left hurriedly, and before the judge had finished reading the balance of the summary three page report a mass exodus of news representatives had occurred. Outside the courtroom, TV cameras were propped up in hallways to record the immediate reactions of principals in the case. By the time these same principals had been able to read the report, however, many of these cameras would long since have been gone. Meanwhile, the type was already being set to flash the authoritative headlines to the public: "Experts Rule Out Second Gun In Robert Kennedy Death," (NYT), "Seven Experts Say RFK Slain by Single Firearm" (BIA), "Panel: One Gun Used in RFK Slaying" (Newsday), "One Gun Killed Bobby: Experts." (Daily News) Each of these headlines was flatly incorrect but the avalanche of certitude which their simultaneous release created defined the atmosphere which would dominate public appreciation of this case in the coming months. Not one of the experts on the firearms panel had excluded the possibility of a second gun.

Also included in the Comprehensive Joint Report was the following finding: "It cannot be concluded that Exhibits 47 (the Kennedy non-fatal bullet, 52 (Goldstein bullet) and 54 (Weisel bullet) were fired from the Sirhan revolver." Had the news representatives heard this paragraph first, they might have considered more soberly the complexity of the issue they were reporting.

If the firearms panel had concluded either that one or more of the bullets fired at the assassination scene could not have come from Sirhan's gun, or that the critical Kennedy bullet had, fundamental uncertainties of the case would have been eliminated. Since, however, neither of these conclusions could be made by any of the seven experts, the major questions at issue were left unresolved. The panelists did put to rest a number of smaller questions, however, as well as consolidating existing information and sharpening the focus with which further questions could be considered. Meanwhile, the findings intensified the doubts about the earlier investigation which had initially brought the panel into being.

Even when limited to the issues upon which all seven experts agreed, the findings which the panel was able to make were valuable and significant. Within the scope of the tests they had undertaken, for example, they agreed that a second gun possibility was neither sustained by the evidence nor precluded by it. Apart from the specific comparisons which were made among pairs of bullets, information was recorded concerning eleven separate facts about each bullet, (N) many of these dealing with basic "class characteristics." Among the bullets which were subject to testing for particular class characteristics, none were discovered which significantly at variance. Thus, for example, if different guns fired the Kennedy, Weisel, and Goldstein bullets guns with similar class characteristics and similar ammunition would probably have had to be used. Such a simple precaution would hardly be surprising in the planning of a sophisticated murder. Apart from the absence of conflicting class characteristics, however, there was little unanimity of findings in the bullet comparisons. Only a few of the bul-

lets, in fact, were in sufficiently good condition that useful observations could be made concerning individual characteristics at all.

Of the eight bullets reputed to have been fired in the pantry, one was completely unavailable. This was the bullet which was said to have travelled in and out of Kennedy's chest and which had officially been described as "lost in the ceiling interspace." Three of the others (the Evans, Schrade, and fatal Kennedy bullets - all of which were fragmented) were described by the experts as "of no value for classical comparison microscopy because of their physical condition resulting from impact..." (IJR, p. 2) Of the four remaining victim bullets, moreover, one, the Stroll bullet, was incapable of being matched with anything by any of the experts, although 20 different attempts were made. The findings obtained in comparisons with the other three bullets differed from expert to expert, yet none of the seven experts could duplicate the central finding of DeWayne Wolfer. His peripheral findings likewise, with few exceptions, could not be duplicated either.

As succinctly stated by the District Attorney's office in July of 1975, DeWayne Wolfer "unequivocally concluded that the bullets extracted from Kennedy, Weisel, and Goldstein, People's 47, 54 and 52 respectively, were fired from Sirhan's gun." Although in 1971 Wolfer attempted to disavow any such identification based on the four bullets submitted at the Grand Jury, he never wavered from this central, pivotal conclusion, which apart from eyewitness testimony that Sirhan was shooting was the only evidence directly establishing the defendant as the murderer. Wolfer testified to the Kennedy bullet match at the Grand Jury and to all three matches at the trial (p. 4160), and he

reported the matches as well in his lab reports. In the report dated 7-15-68, for example, the following section appears:

The Iver Johnson, Cadet Model .22 caliber revolver #53725 (taken from Sirhan) had been identified as having fired the following bullets:

1. The bullet from Senator Kennedy's 6th cervical vertebrae.
2. The bullet removed from victim Goldstein.
3. The bullet removed from victim Weisel.

The doubts about these conclusions of William Harper and others led to the controversy about Wolfer's firearms procedures, and stimulated the demands for new testing. They were, in fact, the cornerstone of the prosecution's scientific evidence.

The joint and individual findings of the firearms panel, however, flatly failed to support these findings. "It cannot be concluded," they wrote, "that Exhibits 47, 52, and 54 were fired from the Sirhan revolver. The reasons for this are that there are insufficient corresponding individual characteristics to make any identification." (CJR, pp. 1,2. emphasis added.) The report of panel member Bradford was even more explicit: "The examination results contradict the original identification made at the trial of Sirhan B. Sirhan in that there is no basis for an identification of any of the victim bullets through the classical process of microscopically comparing them with test bullets..." (p. 4) The experts were unable to sustain Wolfer's most critical conclusion either on the basis of comparisons with Wolfer's seven copper coated test bullets, or by matching the three victim bullets with the copper and lead bullets which they had fired themselves.

Apparently the original bullet identifications, testified to under oath by the official police expert, were wrong. The only conceivable

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escape from this finding is a claim that somehow the bullets had deteriorated in the intervening period, making unreachable in 1975 a comparison which was possible in 1968. It was this theory, in fact, energetically voiced, which was the chief basis for the objections which had been made by authorities to attempts to re-test the evidence at all. When the tests took place, however, the panel found that it had little substance. As stated in the "Initial Joint Report," a microscopic examination of PN's 1 (Ex. 38), 1a (Ex. 38), 2 (Ex. 47), 5 (Ex. 51), 6 (Ex. 52) and 8 (Ex. 54) and A through G (Ex. 55 and Grand Jury Ex. #5B) does not reveal any unusual amount of oxidation or deterioration of a nature which would substantially affect a classical microscope comparison examination." (p. 3) Moreover, on the basis of the single photomicrograph available the same report also concluded that "It does not appear that PN 2 (Ex. 47) and PN 6 (Ex. 52) have changed appreciably between June 6, 1968... and the present date." (p. 4) Not only were comparisons made between the Wolfer test bullets and the victim bullets, but every expert compared the victim bullets with the new test bullets as well. Yet even on the basis of the eight new bullets, no examiner could conclusively substantiate any of the three positive matches asserted "unequivocally" by DeWayne Wolfer.

If bullet deterioration did somehow occur, it was of a very peculiar kind. Seven test bullets were introduced by Wolfer to support his identification, and three victim bullets were found by Wolfer to be suitable for comparison purposes. If only one bullet from each group had remained in reasonable condition, a replication of at least one of Wolfer's matches would presumably have been possible. No such replication occurred. In fact, some members of the panel saw matches



among the better preserved of the victim bullets, a result which hardly suggested that these bullets had significantly deteriorated. Yet while copper coated bullets fired into human bodies were found to be capable of being matched, copper-coated bullets fired into a water tank were not. Of all of the expert discoveries, this was one of the most peculiar. Since there is no known reason why test fired bullets should deteriorate during storage while victim bullets would not, it is difficult to account for such a result unless the test bullets supposedly "good for comparison purposes" were, in fact, even at the beginning, not very good after all. Even so, with seven original test bullets, eight subsequent ones, and at least three victim bullets capable of serious comparison, 45 separate opportunities existed (7 - 8 - 15, 15 - 3 - 45) for each of the seven expert to make one conclusive identification between Sirhan's gun and bullets fired during the Ambassador Hotel shooting. No definitive match emerged. (N)

The panel was unable to sustain other Wolfer conclusions as well. While recognizing that the bullets other than the Weisel, Goldstein, and Kennedy non-fatal ones were "too badly damaged for comparison purposes" (7/15/68) Wolfer did draw a number of other conclusions about them, in attempting to link them with the bullets which were fired at the scene. At the trial, for example, Wolfer testified that not only the Kennedy fatal bullet, but the Evans and Schrade bullets as well were all demonstrably mini-mag ammunition (4160-4165). "(T)his," he said, "has all been studied to indicate the brand of ammunition by the color applied and the nature of the alloy, the copper applied, and so they (?) can say this is Mini-Mag ammunition." (4164) (N- 4165, 23-25) Since the time it was given, this testimony had been challenged by other firearms experts, and it could not be sustained by any of the examiners on the

1975 panel. In listing both the type and make of the bullets at issue, none of the seven panelists reported that these bullets were mini-mags. In contrast to Wolfer's claims about copper coating, moreover, none of these three bullets was listed in the Initial Joint Report among those which could be determined to be "the same with respect to... copper colored coating as .22 long rifle bullets manufactured by Cascade cartridges." In the findings of this report, "microscopic examinations" of these bullets and two others "were not indicative of the origin of manufacture because of their physical condition resulting from impact damage and/or contamination." "Mini-mag" is a trade name of one specific bullet manufacturer. If not even the manufacturer could be determined it was hardly possible to conclude that a bullet was mini-mag.

Wolfer testified also that some of these same bullets had rifling specifications, and that these were consistent with those in his test bullets. Thus they could be tentatively linked with Sirhan's gun. With respect to the fatal bullet, for example, Wolfer testified at the trial that it was "fired from the gun of the same ballistic rifling specification as that of People's No. 6, but because of the damage I cannot say positively that it was fired from that gun." (4161) (H) This conclusion was subsequently challenged, particularly by Harper, who could find no discernable rifling specifications at all on the fatal bullet, a bullet of which only two-thirds was recovered, and which was fragmented into six pieces. "Bullet fragments from Senator Kennedy's head," claimed a Special Unit Senator Progress Report dated July 18, 1968, "were fired from a weapon with the same rifling specifications as the Sirhan weapon." This claim was based on Wolfer's Employee's Report of three days before.

Yet according to the Initial Joint Report of the 1975 examiners, this bullet has "no value for classical comparison microscopy," and neither is it listed as one of the six crime scene bullets which "have rifling impressions which are available for microscopic comparison with test bullets." None of the experts, moreover, in their individual work sheets, listed any indication of a single demonstrable land or groove mark on the fragments which remained of the fatal bullet. (L, G, L, G for comparison.)

If Wolfer's apparent error on test bullet identifications was central to the official case, the errors on mini-mag identification and rifling specifications were not. What is most significant, however, about each of these errors, is that routine conclusions of the official police expert, about evidence in the most important case of his career had been rendered untenable. This suggested further questions about the care, competence, and even integrity of the original examination of physical evidence.

None of this could have been guessed, however, from the official statements which followed the release of the examiners' reports. "After years of unwarranted attack on criminalist DeWayne Wolfer," Police Chief Ed Davis asserted, "his integrity and professional excellence have been vindicated." According to City Attorney's office counsel Dion Morrow, the findings constituted a "complete vindication" of the LAPD bullet examination. "It will be gratifying to LAPD criminalist DeWayne Wolfer," Morrow said, "that his professional judgement and the quality of his work has been upheld."

Apart from their willow absence of findings to support the original police conclusions, the experts were unanimous about some

Additional issues of consequence as well. In the Initial Joint Report, for example, they agreed that the non-fatal Kennedy bullet, exhibit 47, had "the same number and position of cannellures as a known CCI caliber .22 Long Rifle copper-coated hollow point bullet.". (IJR, p. 2.) The quality and the absence of color in the "Balliscan" photographs ("Harper Ex. 47, Ex. 54" and "Hearing Ex. 47 and Ex. 54") did not permit the determination of the number of cannellures on FN 2 (Ex. 47). The traces of this apparent second cannellure were so faint that five of the examiners were still uncertain as to its existence after examining it visually under a microscope. Only when the bullets were photographed with a sensitive color process did additional traces of what seemed to be a cannellure become clear.

Because of concern about the extent of the damage to bullets 47 and 54, only "preliminary" rifling angle measurements were attempted. ((CJR, p. 2.) Because such damage might prevent the precise measurement of bullet axis, and since, as became apparent in subsequent questioning, research into the measurement and evaluation of rifling angles is still progressing, conclusive judgements were deemed difficult on the basis of present knowledge. Only partial tests were conducted. "The results," the experts concluded, "are not definitive based on the data presently available."

One of the more confusing findings listed in the joint reports was the statement that "The examiners make no recommendations for additional types of testing of the physical evidence in this case." This was widely interpreted, not perhaps unnaturally, as meaning that agreement had been reached that no further scientific tests would be of value. But since only bullet examinations were being considered in the first place

any findings of the experts in relation to further testing could have applied only to this area. At the questioning of the experts in November and December, however, this phrase turned out to mean only that the experts could not agree among themselves on specific additional tests and thus could jointly "make no recommendation." A number of the experts listed additional tests which might be performed on the firearms evidence and which offered reasonable prospect of helpful information. All acknowledged the importance of testing valid evidence which suggested the presence of more than eight bullets.

Although less definitive than many had hoped, the conclusions about which the experts were unanimous were helpful in clarifying a number of issues which had long been in dispute, as well as shedding light on others which had not formerly been closely considered. They concluded, in sum, that none of the evidence examined either supported or ruled out a second gun. In fact, such a conclusion could only have been "supported" by evidence that suggested or proved that the bullets under examination had passed through different gun barrels. But since the class characteristics capable of being determined were all similar, it seemed likely that all of the bullets under examination had been fired from the same class of gun. The class of ammunition used likewise appeared to be the same. Since any class of guns contains hundreds or thousands of individual weapons, and since ammunition of the same class is even more widely available, this finding hardly did more than narrow the field of possible second guns. Differences in class characteristics would have been attributed with confidence to the use of more than one gun, but differences in individual characteristics could not be relied upon to demonstrate that more than one gun within a class had been used.

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As noted before, any given shot by a gun will produce a number of "accidental" markings which will not recur with any predictability. Since "accidental" and "individual" characteristics cannot reliably be distinguished, while similar striations on different bullets may demonstrate that they were fired from the same gun, dissimilar striations almost never prove that they were fired from different guns. According to the report of FBI expert Cunningham, for example, "Although the T2 through T8 test bullets from Sirhan's revolver can be identified with each other, there are significant differences between the individual characteristics on these bullets and the marks present on PN 2, 6, and 8." (p. 1, emphasis added.) But though there were different markings on panel and victim bullets, this did not establish that the victim bullets were fired from a gun other than Sirhan's. Such a <sup>DIME</sup> finding, in fact, is nearly unheard of in comparisons of ~~bullets~~ of the same class characteristics. Although the bullet worksheets used by the experts included notations for "identifications" and "inconclusive," therefore, no listing whatsoever was made for the third obvious category: "differentiation." However different specific individual characteristics may seem "differentiation" on the basis of these alone is almost never possible.

This being the case, any "second gun" of the same class characteristics as the "first gun" would have been nearly un-detectable on the basis of the tests performed. Some of the bullets, moreover, were so severely damaged that even class characteristics could not be determined. None of the experts would establish the make of the fatal Kennedy bullet, or of at least four other bullets they examined (1, 1a, 4, and 7.) Two of the bullets were completely indeterminate even as to caliber (4 and 7). On four of the bullets, the number of lands and

(grooves was not apparent (1a, 3, 4, 7) and on two even the direction of the rifling could not be established (4, 7). Although the heaviest of the victim bullets recovered weighed 37.4 grains, only about two grains short of the original bullet weight, the lightest weighed 11.3 grains and 25.9 grains respectively. Under these conditions not even elementary information could be obtained about some of the bullets in evidence, to say nothing of the eighth acknowledged crime scene bullet on which no information was available at all. Where class characteristics were available, they could only succeed in narrowing the field of possible guns from millions to thousands. Referring to one particular class characteristic of three separate bullets, expert Cunningham, for example, wrote that "the widths of the land impressions in these bullets are the same as those produced by Sirhan's revolver." (p. 1.) But the necessary implications of this fact were slender: "wherefore, these bullets could have been fired from this revolver, or another revolver which produces the same width land impressions." (p. 1, emphasis added.) Helpful as they were, therefore, in their factual determinations and in the light which they shed on the previous examination, the findings on which the experts were unanimous failed to resolve the central issues of the case.

One finding which was not unanimous, however, did command a considerable amount of attention. None of the experts could conclusively match the Sirhan gun with any of the crime scene bullets, but four of them did make various matches among the three victim bullets in the best condition. Bradford, Cunningham, and Garland, for example, made a conclusive match between the Weisel, Goldstein, and Kennedy non-fatal bullet. Stanton Berg made a positive match between the Kennedy and

and Goldstein bullets, and the Goldstein and Weisel bullets, but could not match the Kennedy and Weisel bullets directly. Two other panelists, Morton and Turner, found insufficient evidence for any of these matches, though they observed some similarity in individual characteristics and did not deny that the three bullets might have come from the same gun. Panelist Alfred Biasotti, finally, found a three way match of Kennedy, Weisel, and Goldstein highly probable, but not sufficiently clear to make an unequivocal, objective determination. (This position he designated by the symbol "ID?".)

In spite of the expert split on this question, the suggestion that these three bullets were fired from the same gun was important. There is some possibility that a second gun and not Sirhan's had fired the shots which struck Weisel and Goldstein and conceivably one or more other victims as well as Kennedy. It is also not impossible that bullets from more than one gun struck Kennedy, with a bullet from Sirhan lodging in the neck. Neither of these possibilities had been considered extensively before the firearms panel, and neither can be finally ruled out. Because of the possible implications of a match between the Goldstein, Weisel and Kennedy non-fatal bullets, it seemed especially important to test these bullets more thoroughly, using neutron activation analysis, for example, to determine if they came from the same batch. This step was endorsed by some of the experts.

All of the bullet conclusions, of course, are conditional on the integrity of the evidence, and lingering questions in this regard deserve to be mentioned. Of the seven victim bullets recovered, the Kennedy neck bullet was one of the two in best condition, and it was also the most pivotal to all the conclusions to be reached. Since



the bullets examined were taken from human tissue, "contamination" by organic matter would naturally be expected adhering to their surfaces. According to Wolfer's work log, the fatal Kennedy bullet was "cleaned" on June 14, 1968, and yet in spite of this fact, contamination was noted on it by several of the experts. Of the seven victim bullets, in fact, the only one on which no contamination was noted was the one which was recovered from Kennedy's neck. For years, the District Attorney's office had been most articulate about the possibility that the evidence bullets might have been mishandled. Accepting this concern, however, it is difficult to deny that the greatest potential for the tampering with evidence occurred not after it was in the possession of the court, but before it was ever received into evidence. "In view of the absolute centrality of this bullet to any scientific consideration of a second gun," the petition filed on behalf of Paul Schrade made a proposal in this connection on December 4, 1975. All appropriate authorities should be consulted, it said, "to ascertain appropriate measures to determine if this bullet ever entered a human body..." (p. 22. check.)

The most important expert disagreement appeared to center on the Weisel, "oldstein, and Kennedy comparison, but this was by no means the only one. 36 comparisons were made by five or more panel members. Although on 14 of these the panelists agreed, they disagreed on 15 others, and 7 more contained a potential disagreement due to the use of an intermediate category of judgement (ID?) by Biasotti. One of the differences which existed between the experts had to do with their respective "thresholds" on judgements concerning positive identification. Lowell Bradford, for example, who made only two positive identifications in the 15 cases in dispute seemed to have a relatively