

Chapter 19

Allegations Concerning the Assassination of President Kennedy

Allegations have been made that the CIA participated in the assassination of President John F. Kennedy in Dallas, Texas, on November 22, 1963. Two different theories have been advanced in support of those allegations. One theory is that E. Howard Hunt and Frank Sturgis, on behalf of the CIA, personally participated in the assassination. The other is that the CIA had connections with Lee Harvey Oswald or Jack Ruby, or both of them, and that those connections somehow led to the assassination. The Commission staff has investigated these allegations.

Neither the staff nor the Commission undertook a full review of the Report of the Warren Commission. Such a task would have been outside the scope of the Executive Order establishing this Commission, and would have diverted the time of the Commission from its proper function. The investigation was limited to determining whether there was any credible evidence pointing to CIA involvement in the assassination of President Kennedy.

A. The Theory That Hunt and Sturgis Participated in the Assassination

The first of the theories involves charges that E. Howard Hunt and Frank Sturgis, both convicted of burglarizing the Democratic National Committee headquarters at the Watergate in 1972, were CIA employees or agents at the time of the assassination of the President in 1963. It is further alleged that they were together in Dallas on the day of the assassination and that shortly after the assassination they were found in a railroad boxcar situated behind the "grassy knoll," an area located to the right front of the Presidential car at the time of the assassination.

Under this theory, Hunt and Sturgis were allegedly in Dallas on November 22, 1963, and were taken into custody by the police, but were mysteriously released without being booked, photographed or fingerprinted by the police—although they were allegedly photographed by press photographers while they were being accompanied to the Dallas County Sheriff's office.

It is further contended that the persons shown in these press photographs bear "striking resemblances" to photographs taken of Hunt and Sturgis in 1972. Portions of two amateur motion picture films of the assassination (Zapruder and Nix) are alleged to reveal the presence of several riflemen in the area of the grassy knoll.

The Hunt-Sturgis theory also rests on the assumption that at least one of the shots that struck President Kennedy was fired from the area of the grassy knoll, where Hunt and Sturgis were alleged to be present. The direction from which the shots came is claimed to be shown by the backward and leftward movement of President Kennedy's body almost immediately after being struck by that bullet. Taken together, these purported facts are cited as the basis for a possible conclusion that CIA personnel participated in the assassination of President Kennedy, and, at least inferentially, that the CIA itself was involved.

The Commission staff investigated the several elements of this theory to the extent deemed necessary to assess fairly the allegation of CIA participation in the assassination. The findings of that investigation follow.

Findings

1. The Allegation that Hunt and Sturgis Were CIA Employees or Agents in 1963

E. Howard Hunt was an employee of the CIA in November 1963. He had been an employee of the CIA for many years before that, and he continued to be associated with the CIA until his retirement in 1970. Throughout 1963 he was assigned to duty in Washington, D.C., performing work relating to propaganda operations in foreign countries. His duties included travel to several other cities in the United States, but not to any place in the South or Southwest. He lived with his family in the Washington, D.C., metropolitan area throughout that year, and his children attended school there.

Frank Sturgis was not an employee or agent of the CIA either in 1963 or at any other time. He so testified under oath himself, and a search of CIA records failed to discover any evidence that he had ever been employed by the CIA or had ever served it as an agent, informant or other operative. Sturgis testified that he had been engaged in various "adventures" relating to Cuba which he believed to have been organized and financed by the CIA. He testified that he had given

information, directly and indirectly, to federal government officials, who, he believed, were acting for the CIA. He further testified, however, that at no time did he engage in any activity having to do with the assassination of President Kennedy, on behalf of the CIA or otherwise.

2. The Allegation That Hunt and Sturgis Were Together in Dallas on the Day of the Assassination

Hunt and Sturgis testified under oath to members of the Commission staff. They both denied that they were in Dallas on the day of the assassination. Hunt testified that he was in the Washington, D.C., metropolitan area throughout that day, and his testimony was supported by two of his children¹ and a former domestic employee of the Hunt family. Sturgis testified that he was in Miami, Florida, throughout the day of the assassination, and his testimony was supported by that of his wife and a nephew of his wife. The nephew, who was then living with the Sturgis family, is now a practicing attorney in the Midwest.

With the exception of the domestic employee of the Hunt family, all witnesses directly supporting the presence of Hunt and Sturgis in Washington, D.C., and Miami, Florida, on the day of the assassination are family members or relatives. Less weight can be assigned to the testimony of such interested witnesses if there is substantial evidence to the contrary. In the absence of substantial conflicting evidence, however, the testimony of family members cannot be disregarded.

Hunt testifies that he had never met Frank Sturgis before they were introduced by Bernard Barker in Miami in 1972. Sturgis testified to the same effect, except that he did not recall whether the introduction had taken place in late 1971 or early 1972. Sturgis further testified that while he had often heard of "Eduardo," a CIA political officer who had been active in the work of the Cuban Revolutionary Council in Miami prior to the Bay of Pigs operation in April 1961, he had never met him and did not know until 1971 or 1972 that "Eduardo" was E. Howard Hunt. Sturgis had also been active in anti-Castro groups in the Miami area before, during and after Hunt's assignment on the political aspects of the Bay of Pigs project in 1960 and early 1961.

Other testimony linked Hunt to Sturgis at a date earlier than 1971. One witness asserted that Sturgis is a pseudonym; that his name is Frank Fiorini; and that he took the name Sturgis from a fictional character (Hank Sturgis) in a novel written by Hunt in

¹ A son who was nine years old at the time could not recall whether his parents were present or absent that day; the fourth (and youngest) Hunt child was not born then. Mrs. Hunt is now deceased.

1949. (*Bimini Run*). Sturgis testified that his name at birth was Frank Angelo Fiorini; that his mother's maiden name was Mary Vona; that his father's name was Angelo Anthony Fiorini; that his parents were divorced when he was a child; that his mother subsequently remarried a man named Ralph Sturgis; and that at his mother's urging he legally changed his name in Norfolk, Virginia, sometime in the 1950's, to take the last name of his stepfather.

A search of the relevant court records disclosed that a petition was filed on September 23, 1952, in the Circuit Court of the City of Norfolk (Virginia) pursuant to which a Frank Angelo Fiorino petitioned to change his name to Frank Anthony Sturgis. The petition recited that his mother had divorced his father about 15 years previously and had married one Ralph Sturgis, that he had been living with his mother all of his life, that his mother was known as Mary Sturgis, and that his stepfather also desired him to change his name to Sturgis. An order of the Court was entered on September 23, 1952 (the same date as the petition) changing his name to Frank Anthony Sturgis. The order appears in the records of the Circuit Court of the City of Norfolk, Virginia. In the petition and the order relating to the change of name, *Fiorini* was misspelled as *Fiorino*.

In the light of this documentary evidence, no weight can be given to the claim that Sturgis took his present name from a character in a Hunt novel—or that the name change was associated in any way with Sturgis' knowing Hunt before 1971 or 1972.

The personnel, payroll and travel records of the CIA were checked with respect to E. Howard Hunt. Daily attendance records for the period are no longer available because they are destroyed in the ordinary course of the Agency's records disposal system three years after completion of the audit for each year. What records remain, including annual leave, sick leave, and travel records, disclose that Hunt had no out-of-town travel associated with his employment in the month of November 1963. He used no annual leave and eleven hours of sick leave in the two-week pay period ending November 23, 1963. The exact date or dates on which the sick leave was taken could not be ascertained. There is some indication, however, that some of these eleven hours of sick leave may have been taken by Hunt on November 22, 1963. He testified that, on the afternoon of that day, he was in the company of his wife and family in the Washington, D.C., area, rather than at his employment duties. That was a Friday, and therefore a working day for employees at the CIA. Hunt could not recall whether he was on duty with the CIA on the morning of that day.

Because Sturgis was never an agent or employee of the CIA, the Agency has no personnel, payroll, leave or travel records relating to him.

In examining the charge that Hunt and Sturgis were together in Dallas on the day of the assassination, the investigators were handicapped by the fact that the allegation was first made in 1974, more than ten years after the assassination. Evidence which might have been available at an earlier time was no longer available. Contacts with relatives, friends, neighbors or fellow employees (who might have known of the whereabouts of Hunt and Sturgis on that particular day) could not be recalled. Some of these persons are now dead. Finally, records which might have been the source of relevant information no longer exist.

It cannot be determined with certainty where Hunt and Sturgis actually were on the day of the assassination. However, no credible evidence was found which would contradict their testimony that they were in Washington, D.C., and Miami, Florida, respectively.

3. The Allegation That Hunt and Sturgis Were Found Near the Scene of the Assassination and Taken to the Dallas County Sheriff's Office

This allegation is based upon a purported resemblance between Hunt and Sturgis, on the one hand, and two persons who were briefly taken into custody in Dallas following the assassination.

The shooting of President Kennedy occurred at about 12:30 p.m., Dallas time, on November 22, 1963, while the Presidential motorcade was passing Dealey Plaza as it headed generally westward on Elm Street. Witnesses to the shooting gave the police varying accounts of where they thought the shots had come from. On the basis of the sound of the shots, some believed that they had come from the Texas School Book Depository building (TSBD), which was behind and slightly to the right of President Kennedy when he was hit. Others thought the shots had come from other directions. Law enforcement officials understandably conducted a widespread search for evidence relating to the assassination.

Several hours after the shooting, officers of the Dallas Police Department checked all railroad freight cars situated on tracks anywhere in the vicinity of Dealey Plaza. About six or eight persons, referred to as "derelicts," were found in or near the freight cars. These persons were taken either to the nearby Dallas County Sheriff's office, or to the Dallas Police Department, for questioning. All were released without any arrest record being made, or any fingerprinting or photographing being done by the authorities.

Among the six or eight "derelicts" found in the vicinity of the freight cars were three men who, according to the arresting officers, were found in a boxcar about one-half mile *south* of the scene of the assassination. They were taken to the Sheriff's office by the Dallas

police officers, who walked northward along the railroad tracks to a point west of the Texas School Book Depository, then north to Houston Street and back south to the Sheriff's office. This somewhat circuitous route was actually the most convenient one available, according to the Dallas policemen. As the police and the "derelicts" passed the TSBD building and headed for the Sheriff's office, they were photographed by several press photographers on the scene. Copies of five of the photographs showing the "derelicts" were submitted to the Commission's staff as evidence.

A witness who volunteered his testimony stated on the basis of hearsay that the three "derelicts" in question were found in a boxcar situated to the near *northwest* of the assassination scene, which would have been to the right front of the Presidential car at the time of the shooting. Between the area in which that boxcar was claimed by this witness to be located and that part of Elm Street where the assassination occurred was a "grassy knoll."

It was alleged by other witnesses (who were associated with the first witness and who also volunteered testimony) that a bullet fired from the area of that "grassy knoll" struck President Kennedy in the head. It was also claimed by the same witnesses that one of the three photographed "derelicts" bears a "striking" facial resemblance to E. Howard Hunt and that another of them bears a "striking" facial resemblance to Frank Sturgis. Finally, it was alleged that if those two "derelicts" were, in fact, Hunt and Sturgis, and if the President was in fact struck by a bullet fired from his right front, the CIA would be shown to be implicated in the killing of President Kennedy.

The photographs of the "derelicts" in Dallas have been compared with numerous known photographs of Hunt and Sturgis taken both before and after November 22, 1963. Even to non-experts it appeared that there was, at best, only a superficial resemblance between the Dallas "derelicts" and Hunt and Sturgis. The "derelict" allegedly resembling Hunt appeared to be substantially older and smaller than Hunt. The "derelict" allegedly resembling Sturgis appeared to be thinner than Sturgis and to have facial features and hair markedly different from those of Sturgis.

The witnesses who testified to the "striking resemblance" between the "derelicts" and Hunt and Sturgis were not shown to have any qualifications in photo identification beyond that possessed by the average layman. Their testimony appears to have been based on a comparison of the 1963 photographs of the "derelicts" with a single 1972 photograph of Sturgis and two 1972 photographs of Hunt.

Over fifty photographs taken of Hunt and Sturgis both before and after November 22, 1963, were submitted to the FBI photographic laboratory for a comparison with all known photographs of the "derelicts." (The FBI assembled a complete set of all photographs of

the “derelicts” taken by the three photographers known to have photographed them.) The comparison was made by FBI Agent Lyndal L. Shaneyfelt, a nationally-recognized expert in photo identification and photo analysis.

The report of Agent Shaneyfelt, embodied in a Report of the FBI Laboratory, dated April 21, 1975, and signed by Clarence M. Kelley, Director of the FBI, concluded that “neither E. Howard Hunt nor Frank Sturgis appear as any of the three ‘derelicts’ arrested in Dallas, Texas, as shown in the photographs submitted.”

With respect to Hunt, it was found that he had a much younger appearance, a smooth and tightly contoured chin, and a more angular or pointed chin, compared with the “derelict” in question. The latter was much older, had a chin with protruding pouches and a more bulbous nose.

With respect to Sturgis, even more distinguishing characteristics were observed. Sturgis looked like a Latin, whereas the “derelict” had the general appearance of a Nordic. Sturgis had very black, wavy hair—and the “derelict” had light or blond and straighter hair. Sturgis had a rather round face with square chin lines; the “derelict” had an oval face with a more rounded chin. Sturgis and the “derelict” had markedly different ratios between the length of their noses and the height of their foreheads. They also had different ear and nose contours.

Hunt is approximately five feet nine inches tall, and Sturgis is approximately five feet eleven inches tall. The FBI laboratory made an on-site study in Dallas, using the cameras with which the photographs of the “derelicts” were originally taken; it concluded from the study that the “derelict” allegedly resembling Hunt was about five feet, seven inches tall, and that the “derelict” allegedly resembling Sturgis was about six feet two inches tall, with a one inch margin for error in each direction. The difference between the height of the two “derelicts” was therefore about seven inches, while the difference between Hunt’s height and that of Sturgis is only about two inches.

The photographs of the “derelicts” in Dallas have been displayed in various newspapers in the United States, on national television programs, and in the April 28, 1975, issue of *Newsweek* magazine. But no witnesses have provided testimony that either of the “derelicts” was personally known to be Hunt or Sturgis—and no qualified expert was offered to make such an identification.

4. The Allegation That President Kennedy Was Struck in the Head by a Bullet Fired From His Right Front

The witnesses who presented evidence they believed sufficient to implicate the CIA in the assassination of President Kennedy placed

much stress upon the movements of the President's body associated with the head wound that killed the President. Particular attention was called to the Zapruder film, and especially Frame 312 and the succeeding frames of that film. It was urged that the movements of the President's head and body immediately following the head wound evidenced in Frame 313 established that the President was struck by a bullet fired from the right front of the Presidential car—the direction of the grassy knoll and the freight car in which "Hunt" and "Sturgis" were allegedly found.

By Frame 312 of the Zapruder film, President Kennedy had already been wounded by a bullet which had struck him in the region of his neck. His body is shown to be facing generally toward the front of the Presidential car. He is leaning toward the left. His head is turned somewhat toward the left front, and it is facing downward toward the floor in the rear portion of the car. His chin appears to be close to his chest.

At Frame 313 of the Zapruder film, the President has been struck by the bullet that killed him, and his head has moved forward noticeably. At Frame 314 (which is about 1/18 of a second later) his head is already moving backward. Succeeding frames of the film show a rapid backward movement of the President's head and upper body, and at the same time his head and body are shown to be turning toward his left. Still later frames show the President's body collapsing onto the back seat of the car.

The evidence presented to the Warren Commission revealed that the speed of the Zapruder motion picture camera was 18.3 frames per second. If the film is projected at that speed, the forward movement of the President's head from Frame 312 to Frame 313 is not readily perceived. On the other hand, such forward movement is evident upon careful measurement of still projections of the relevant frames. It is very short, both in distance and duration. The backward movement and the turning of the President's head toward the left are rapid, pronounced and readily apparent during a running of the film at either normal or slow speed.

It was claimed that the movement of the President's head and body backward and to the left is consistent only with a shot having come from the right front of the Presidential car—that is, from the direction of the grassy knoll.

Medical and ballistics experts were consulted. Also considered were (1) the autopsy report on the body of President Kennedy, and (2) the report of a panel of medical experts who, in February 1968, at the request of Attorney General Ramsey Clark, reviewed the autopsy report and the autopsy photographs, x-ray films, motion picture

films of the assassination, the clothing worn by President Kennedy and other relevant materials.

The autopsy report of James J. Humes, M.D., J. Thornton Boswell, M.D., and Pierre A. Finck, M.D., described the President's head wounds as follows:

The fatal wound entered the skull above and to the right of the external occipital protuberance. A portion of the projectile traversed the cranial cavity in a posterior-anterior direction (see lateral skull roentgenograms) depositing minute particles along its path. A portion of the projectile made its exit through the parietal bone on the right carrying with it portions of the cerebrum, skull and scalp. The two wounds of the skull combined with the force of the missile produced extensive fragmentation of the skull, laceration of the superior sagittal sinus, and of the right cerebral hemisphere.

In February 1968, a panel of physicians met in Washington, D.C., at the request of Attorney General Ramsey Clark, to examine the autopsy report, the autopsy photographs and x-rays, the Zapruder, Nix and Muchmore motion picture films of the assassination, and various other evidence pertaining to the death of President Kennedy. Each of the four physicians constituting the panel had been nominated by a prominent person who was not in the employment of the federal government. They were:

William H. Carnes, M.D., Professor of Pathology, University of Utah, Salt Lake City, Utah; Member of Medical Examiner's Commission, State of Utah. Nominated by Dr. J. E. Wallace Sterling, President of Stanford University.

Russel S. Fisher, M.D., Professor of Forensic Pathology, University of Maryland; and Chief Medical Examiner of the State of Maryland, Baltimore, Maryland. Nominated by Dr. Oscar B. Hunter, Jr., President of the College of American Pathologists.

Russel H. Morgan, M.D., Professor of Radiology, School of Medicine, and Professor of Radiological Science, School of Hygiene and Public Health, The Johns Hopkins University, Baltimore, Maryland. Nominated by Dr. Lincoln Gordon, President of The Johns Hopkins University.

Alan R. Moritz, M.D., Professor of Pathology, Case Western Reserve University, Cleveland, Ohio; and former Professor of Forensic Medicine, Harvard University. Nominated by Dr. John A. Hannah, President of Michigan State University.

After reviewing the autopsy photographs, and making their findings concerning them, the Panel said in its report:

These findings indicate that the back of the head was struck by a single bullet traveling at high velocity, the major portion of which passed through the right cerebral hemisphere, and which produced an explosive type of fragmentation of the skull and laceration of the scalp. The appearance of the entrance wound

in the scalp is consistent with its having been produced by a bullet similar to that of Exhibit CE 399.²

After a review of the autopsy x-rays, the Panel's report states:

The foregoing observations indicate that the decedent's head was struck from behind by a single projectile. It entered the occipital region 25 mm. to the right of the midline and 100 mm. above the external occipital protuberance. The projectile fragmented on entering the skull, one major section leaving a trail of fine metallic debris as it passed forward and laterally to explosively fracture the right frontal and parietal bones as it emerged from the head.

The Panel discussed its findings as follows:

The decedent was wounded by two bullets both of which entered his body from behind.

One bullet struck the back of the decedent's head well above the external occipital protuberance. Based upon the observation that he was leaning forward with his head turned obliquely to the left when this bullet struck, the photographs and x-rays indicate that it came from a site above and slightly to his right.

The absence of metallic fragments in the left cerebral hemisphere or below the level of the frontal fosse on the right side together with the absence of any holes in the skull to the left of the midline or in its base and the absence of any penetrating injury of the left hemisphere eliminate with reasonable certainty the possibility of a projectile having passed through the head in any direction other than from back to front as described in preceding sections of this report.

Certain other evidence relating to the source of the bullets that struck President Kennedy was noted. This included the following:

a. The bullet fragments found in the Presidential car which were large enough to bear ballistics marks were determined by the FBI to have been fired by the Oswald rifle found on the sixth floor of the Texas School Book Depository building, and not from any other weapon. CE 399 was also fired from that rifle.

b. No physical evidence, such as a rifle, shell casings, bullets, or damage to the Presidential car, was ever found which would support a theory that one or more shots were fired from a direction other than from behind and above the President.

c. Most eyewitnesses testified that three shots were fired. Three shell casings were found near the window at the southeast corner of the sixth floor of the Texas School Book Depository building, and all of them were determined by the FBI to have been fired by the Oswald rifle to the exclusion of any other weapon. That window was also the one in which a man firing a rifle was seen by witnesses who testified before the Warren Commission. The

² CE 399 was Warren Commission Exhibit 399, a nearly whole bullet found in Parkland Memorial Hospital in Dallas on the day of the assassination. It was established by ballistics experts as having been fired by the rifle found on the sixth floor of the TSED building and found by the Warren Commission to have belonged to Lee Harvey Oswald. The Warren Commission determined that bullet passed through President Kennedy's neck and then struck Governor Connally, who was sitting directly in front of President Kennedy, and who was taken to Parkland Hospital.

Oswald rifle was found on the sixth floor of the TSBD building within an hour after the assassination.

d. No witness at the scene was found who saw any other assassin, or who saw anyone firing, or disposing of a weapon in any other location, or who heard the bolt of a rifle being operated at any other location. Three TSBD employees testified before the Warren Commission that they had been watching the motorcade from open windows near the southeast corner of the fifth floor of the TSBD building. One of them testified that he heard not only the three shots, but also the sound above him of a rifle bolt in action and the sound of empty shells hitting the floor. All three of them testified that "debris" fell down from above them at the time of the shots, and that they talked to each other at that time about the shots having come from above them.

e. A shot fired from the direct front of the Presidential car can be ruled out. Such a bullet would have had to pass through the windshield of the car unless fired from above the overpass just ahead of the Presidential car. There were no holes in the windshield, and the overpass was guarded by two policemen in the presence of some fifteen railroad employees. None of them saw or heard any shooting take place from the overpass.

Nonetheless, a re-examination was made of the question whether the movements of the President's head and body following the fatal shot are consistent with the President being struck from (a) the rear, (b) the right front, or (c) both the rear and the right front. The Zapruder, Nix and Muchmore films, a set of all relevant color slides of the Zapruder film, the autopsy photographs and x-rays, the President's clothing and back brace, the bullet and bullet fragments recovered, and various other materials, were reviewed at the request of the Commission staff by a panel of experts consisting of:

Lieutenant Colonel Robert R. McMeekin, MC, USA; Chief, Division of Aerospace Pathology, Armed Forces Institute of Pathology, Washington, D.C.

Richard Lindenberg, M.D., Director of Neuropathology & Legal Medicine, Department of Mental Health, State of Maryland, Baltimore, Maryland.

Werner U. Spitz, M.D., Chief Medical Examiner, Wayne County, Detroit, Michigan.

Fred J. Hodges III, M.D., Professor of Radiology, The Johns Hopkins School of Medicine, Baltimore, Maryland.

Alfred G. Olivier, V.M.D., Director, Department of Biophysics, Biomedical Laboratories, Edgewood Arsenal, Aberdeen Proving Grounds, Maryland.³

The Panel members separately submitted their respective conclusions. They were unanimous in finding that the President was struck by only two bullets, both of which were fired from the rear, and that there is no medical evidence to support a contention that the President was struck by any bullet coming from any other direction.

They were also unanimous in finding that the violent backward and leftward motion of the President's upper body following the head shot was not caused by the impact of a bullet coming from the front or right front.

Drs. Spitz, Lindenberg and Hodges reported that such a motion would be caused by a violent straightening and stiffening of the entire body as a result of a seizure-like neuromuscular reaction to major damage inflicted to nerve centers in the brain.

Dr. Olivier reported that experiments which have been conducted at Edgewood Arsenal disclosed that goats shot through the brain evidenced just such a violent neuromuscular reaction. There was a convulsive stiffening and extension of their legs to front and rear, commencing forty milliseconds ($1/25$ of a second) after the bullet entered the brain. In the past two decades, Dr. Olivier and his associates have conducted extensive tests on the effects of high velocity bullets fired into live animals, using high speed photography to record the results.

Dr. Olivier reported that the violent motions of the President's body following the head shot could not possibly have been caused by the *impact* of the bullet. He attributed the popular misconception on this subject to the dramatic effects employed in television and motion picture productions. The *impact* of such a bullet, he explained, can cause some immediate movement of the *head* in the direction of the bullet, but it would not produce any significant movement of the *body*. He also explained that a head wound such as that sustained by President Kennedy produces an "explosion" of tissue at the area where the bullet exits from the head, causing a "jet effect" which almost instantly moves the head back in the direction from which the bullet came.

³ Dr. McMeekin is a forensic pathologist who has done extensive studies in the field of accident reconstruction, utilizing computer-assisted analysis of the reactions of human body components to the application of various forces. Dr. Lindenberg is a prominent authority in the field of neuropathology, i.e., the pathology of the brain and nervous system. Dr. Spitz is a forensic pathologist who has had extensive experience with gunshot wounds and is an editor of a textbook on forensic pathology. Dr. Hodges is a specialist in radiology and surgery associated with the brain and nervous system. In 1973-1974 he served as President of the American Society of Neuroradiology. Dr. Olivier has conducted numerous experiments to study the effects on animals and humans of penetrating wounds from high velocity bullets. Drs. Spitz, Lindenberg and Hodges hold faculty positions in the Medical Schools of Wayne State University, the University of Maryland, and The Johns Hopkins University, respectively.

Drs. Olivier and McMeekin, utilizing enlargement of the film and an accurate measuring device, made measurements of the movement of the President's head associated with the head shot. They found that in the interval between Zapruder Frames 312 and 313, the President's head moved forward significantly; at Frame 314 (1/18 of a second later) it was already moving backward and it continued to move backward in the succeeding frames.

Dr. Olivier was of the opinion that the start of the backward movement resulted from both a neuromuscular reaction and a "jet effect" from the explosion at the right front of the head where the bullet exited. Thereafter, the violent backward and leftward movement of the upper body, he believes, was a continuing result of the neuromuscular reaction. Dr. McMeekin's report to the Commission contained no reference to the subject of a "jet effect."

Dr. Olivier credited Dr. Luis Alvarez with originating studies into the "jet effect" produced by high velocity bullets fired into the head. Dr. Alvarez is a Nobel Prize-winning physicist at the Lawrence Berkeley Laboratories, University of California at Berkeley. An article describing his experiments is soon to be published.

Dr. John K. Lattimer of New York and Dr. Cyril H. Wecht of Pittsburgh were also interviewed. Each of them has studied in detail the autopsy photographs, x-rays, and other materials, as well as the motion pictures of the assassination, and has published the results of his findings.

Dr. Lattimer testified that there was no medical evidence to support a theory that the President had been hit by a bullet from any direction other than from the rear and above. The medical evidence showed that the President had not been hit from the front or right front. Had a second and nearly simultaneous bullet from the front or right front hit the President's head after Frame 313 of the Zapruder film, it would either have encountered no skull (in which case it would have passed through the brain and exited elsewhere) or it would have struck the skull. In either case, it would have left evidence which would be revealed by the autopsy photographs and x-rays.

Dr. Lattimer also testified that he has performed experiments to test both the damage effects of a bullet fired into the rear of the head (in the precise area where the President was hit) and the principle of the "jet effect." He utilized a Mannlicher-Carcano 6.5 millimeter rifle of the same model as the one found by the Warren Commission to belong to Lee Harvey Oswald, and ammunition from the same manufacturer and lot number as that found to have been used by Oswald. The results, he said, confirmed both the head injuries shown in the autopsy photographs and x-rays and the principle of the "jet-effect." Dr. Lattimer presented to the Commission staff as evidence a

motion picture film and still photographs showing the results of his experiments.

Dr. Wecht testified that the available evidence all points to the President being struck only by two bullets coming from his rear, and that no support can be found for theories which postulate gunmen to the front or right front of the Presidential car.

In a 1974 article written by Dr. Wecht and an associate, an article which was made an exhibit to his testimony, Dr. Wecht stated that "if any other bullet struck the President's head, whether before, after, or simultaneously with the known shot, there is no evidence for it in the available autopsy materials." He testified that on the autopsy photographs of the back of the President's head, there was something above the hairline which he could not identify at all, and he thought it was possible that this was an exit wound. He stated that the other autopsy photographs and the autopsy x-rays provided no support to that possibility, but he thought it was possible that the physicians who performed the autopsy could have missed finding such a wound.

Dr. Wecht said that there was some question about the backward and leftward movement of the President's head and upper body after Frame 313, but he also said that a neuromuscular reaction could occur within about one-tenth of a second.

The Commission staff also interviewed by telephone Dr. E. Forrest Chapman of Michigan, the only other physician who is known to have studied the autopsy photographs and x-rays. Dr. Chapman declared that if there were any assassins firing at the President from the grassy knoll, "they must have been very poor shots because they didn't hit anything."

No witness who urged the view that the Zapruder and other motion picture films proved that President Kennedy was struck by a bullet fired from his right front was shown to possess any professional or other special qualifications on the subject.

On the basis of the investigation conducted by its staff, the Commission believes that there is no evidence to support the claim that President Kennedy was struck by a bullet fired from either the grassy knoll or any other position to his front, right front or right side, and that the motions of the President's head and body, following the shot that struck him in the head, are fully consistent with that shot having come from a point to his rear, above him and slightly to his right.

5. The Allegation That Assassins (Allegedly Including "Hunt" and "Sturgis") Are Revealed by the Zapruder and Nix Films To Be Present in the Area of the Grassy Knoll

In further support of his contention that shots were fired at President Kennedy from the grassy knoll—and inferentially by "Hunt"

and "Sturgis"—a witness called attention to certain frames of motion picture films taken at the time of the assassination. He asserted that these frames, including Frames 413 and 454—478 of the Zapruder film, reveal the presence of other "assassins" bearing rifles in the area of the grassy knoll.

The Zapruder and Nix films have been carefully reviewed. Frames alleged to reveal the presence of assassins in the area of the grassy knoll have received particularly close attention, together with those frames immediately preceding them and immediately following them. In addition, the Commission has had the benefit of a study of these films by the photographic laboratory of the FBI, and a report on that study.

The Commission staff members who reviewed the films were of the opinion that the images allegedly representing assassins are far too vague to be identifiable even as human beings. For example, Zapruder Frames 412, 413, and 414, which have tree foliage in the foreground, show combinations of light and shadow along their lower margins which are varyingly shaped somewhat in the form of a rain hat or a German army helmet of World War II vintage. In Frames 411 and 415, however, the contours of the shadows are markedly different and bear no resemblance to a human head—with or without a rain hat or helmet.

Since each frame of the film is only about 1/18 of a second removed in time from its adjacent frame, it was not believed reasonable to postulate that an assassin's head would come into view, and then disappear, directly in front of the Zapruder camera, in the space of about 1/4 of a second (the elapsed time between Frames 411 and 415), or that the shape of a head would change so rapidly and markedly.

The conclusion was that the alleged assassin's head was merely the momentary image produced by sunlight, shadows, and leaves within or beyond the foliage. The same was true of the "rifle" allegedly in evidence in Frame 413. Even to make out the rough image of a rifle in that frame required imagination—and in the adjacent frames, it is nowhere in evidence.

From the extensive photographic work done in connection with the Warren Commission investigation, the FBI has a substantial library of both its own photographs and copies of the photographs and motion pictures of others taken at the assassination scene.

The place where Abraham Zapruder was standing when he took his famous motion picture has been established. (He was standing on a concrete wall elevated approximately four feet, two inches above the ground to his front.) Based upon an analysis of the direction in which the Zapruder camera was facing at Frame 413, the FBI Laboratory was able to identify from other photographs

the exact tree shown in that frame. With the aid of reports from the FBI Laboratory, it was concluded that: (1) The tree was between 6 feet and 6½ feet high; (2) it was barren of any branches or leaves to a height of about 4 feet to 4½ feet above the ground; (3) its foliage was about 2 feet high and 4 feet wide; (4) the near side of its foliage was about five feet directly in front of Mr. Zapruder's legs; (5) its trunk was only a few inches in diameter; (6) only the top of the tree came within view of the Zapruder camera; (7) it was the only tree in the immediate vicinity; (8) a human head (even without a helmet) 5 feet in front of Mr. Zapruder would have occupied about one-half of the total area of Frame 413 (many times as much as is occupied by the image of the alleged assassin's head); and (9) it is not reasonable to postulate an assassin in or behind that tree.

An assassin would be unlikely to hide himself behind the barren trunk of a tree only a few inches in diameter, with only his head and shoulders behind the foliage, and with his whole person almost within arm's length in front of a spectator taking movies of the motorcade. Neither would such an assassin go unseen and undiscovered, able to make his escape over open ground with a rifle in hand, again unseen by anyone among the numerous motorcade police, spectators and Secret Service personnel present.

A clear photograph of the tree in question, taken on May 24, 1964 (about six months after the assassination), was made a part of the FBI Laboratory Report. It was marked to show the place where Zapruder was standing as he took his motion picture.

The FBI photography laboratory was also able to identify the tree in question on some of the frames of the Nix film, which was also being taken at the time of the assassination. An examination of those frames of the Nix film reveals that there was nobody in or behind that tree. Also made a part of the FBI Laboratory Report was a series of frames from the Nix film, with the tree in question, Mr. Zapruder, and the alleged positions of "assassins" separately marked.

A similar examination was made by the FBI photography laboratory of other frames of the Zapruder and Nix films alleged to reveal assassins in the area of the grassy knoll. Frames 454 through 478 of the Zapruder film were found to reveal no formation "identifiable as a human being or an assassin with a rifle or other weapon." With respect to the Nix film, the FBI reported that "no figure of a human being could be found in the area" of another alleged rifleman, which was determined to be "approximately nineteen feet to the right of where Mr. Zapruder was standing and clearly visible to him." The FBI concluded that the configuration described as a rifleman was actually produced by some "clump type shrubbery" in the background.

On the basis of its staff investigation, the Commission believes that there is no credible basis in fact for the claim that any of the known

motion pictures relating to the assassination of President Kennedy reveals the presence of an assassin or assassins in the area of the grassy knoll.

B. The Theory That the CIA Had Relationships With Lee Harvey Oswald and Jack Ruby

The second theory advanced in support of allegations of CIA participation in the assassination of President Kennedy is that various links existed between the CIA, Oswald and Ruby. Lee Harvey Oswald was found by the Warren Commission to be the person who assassinated the President. Jack Ruby shot and killed Oswald two days after the President's assassination.

There is no credible evidence that either Lee Harvey Oswald or Jack Ruby was ever employed by the CIA or ever acted for the CIA in any capacity whatever, either directly or indirectly.

Testimony was offered purporting to show CIA relationships with Oswald and Ruby. It was stated, for example, that E. Howard Hunt, as an employee of the CIA, engaged in political activity with elements of the anti-Castro Cuban community in the United States on behalf of the CIA prior to the Bay of Pigs operation in April 1961. In connection with those duties, it was further alleged that Hunt was instrumental in organizing the Cuban Revolutionary Council and that the Cuban Revolutionary Council had an office in New Orleans. Finally, it was claimed that Lee Harvey Oswald lived in New Orleans from April to September 1963, and that a pamphlet prepared and distributed by Oswald on behalf of the Fair Play for Cuba Committee during that period indicated that the office of the Fair Play for Cuba Committee was situated in a building which was also the address of the New Orleans office of the Cuban Revolutionary Council.⁴

It was therefore implied that Hunt *could* have had contact with Lee Harvey Oswald in New Orleans during the spring or summer of 1963. No evidence was presented that Hunt ever met Oswald, or that he was ever in New Orleans in 1963, or that he had any contact with any New Orleans office of the Cuban Revolutionary Council.

Hunt's employment record with the CIA indicated that he had no duties involving contacts with Cuban exile elements or organiza-

⁴ Each of these statements is substantially true, but many other relevant facts disclosed in the Warren Commission Report are omitted. It is not mentioned, for example, that Oswald made up the Fair Play for Cuba Committee pamphlets; that the address he stamped on the pamphlets was never an office of that Committee; that he fabricated a non-existent New Orleans Chapter of the Committee, a non-existent President of that Committee, and a non-existent office for it; that the building in question was a *former office*, rather than a current office, of an anti-Castro organization when Oswald made up his pamphlets, and that Oswald had tried to infiltrate the anti-Castro organization.

tions inside or outside the United States after the early months of 1961. This was more than two years before Oswald went to New Orleans in April 1963 and more than a year before Oswald returned to the United States from the Soviet Union, where he had lived for almost three years.

An example of the testimony relating to an alleged relationship between the CIA and Jack Ruby consisted of a statement that Frank Sturgis was engaged in a series of revolutionary activities among Cuban exiles in the United States in the 1950's and 1960's and that the CIA also sponsored and organized anti-Castro activities among Cuban exiles in the United States in 1959 and the early 1960's.

It was further stated that someone once reported to the FBI that Jack Ruby had engaged in supplying arms to persons in Cuba in the early 1950's in association with a former Cuban President, Carlos Prio, and that Frank Sturgis also had connections with Carlos Prio during the 1950's and 1960's.

In addition, it was alleged that Frank Sturgis was at one time (before he escaped from Cuba in June 1959) a director of gambling and gaming establishments in Havana for the Castro government, and that in August or September, 1959, Jack Ruby made a trip to Havana at the invitation of a friend who had interests in gambling establishments in Cuba and the United States.

Moreover, both Sturgis and Ruby were alleged to have had connections with underground figures who had interests in the United States and Cuba.

From this group of allegations, the witness inferred that Sturgis and Ruby *could* have met and known each other—although no actual evidence was presented to show that Ruby or Sturgis ever met each other.

Even if the individual items contained in the foregoing recitations were assumed to be true, it was concluded that the inferences drawn must be considered farfetched speculation insofar as they purport to show a connection between the CIA and either Oswald or Ruby.

Even in the absence of denials by living persons that such connections existed, no weight could be assigned to such testimony. Moreover, Sturgis was never an employee or agent of the CIA.

A witness, a telephone caller, and a mail correspondent tendered additional information of the same nature. None of it was more than a strained effort to draw inferences of conspiracy from facts which would not fairly support the inferences. A CIA involvement in the assassination was implied by the witness, for example, from the fact that the Mayor of Dallas at that time was a brother of a CIA official who had been involved in the planning of the Bay of Pigs operation

in Cuba several years previously, and from the fact that President Kennedy reportedly blamed the CIA for the Bay of Pigs failure.

The same witness testified that E. Howard Hunt was Acting Chief of a CIA station in Mexico City in 1963, implying that he *could* have had contact with Oswald when Oswald visited Mexico City in September 1963. Hunt's service in Mexico City, however, was twelve years earlier—in 1950 and 1951—and his only other CIA duty in Mexico covered only a few weeks in 1960. At no time was he ever the Chief, or Acting Chief, of a CIA station in Mexico City.

Hunt and Sturgis categorically denied that they had ever met or known Oswald or Ruby. They further denied that they ever had any connection whatever with either Oswald or Ruby.

Conclusions

Numerous allegations have been made that the CIA participated in the assassination of President John F. Kennedy. The Commission staff investigated these allegations. On the basis of the staff's investigation, the Commission concluded there was no credible evidence of any CIA involvement.