for a considerable period of time, and it has not been given the kind of attention that a hunter might give to his favorite weapon.

There may be some question as to whether that weapon may be dangerous to employ in simulated tests now.

Mr. Sawyer. Would the gentleman yield?

On the firing—and I didn't examine closely that Mannlicher-Carcano that was here—is that scope so mounted that there is an option of using the iron sights?
Mr. Blakey. Yes.

Mr. Sawyer. So you can use either on it?

Mr. Blakey. You can use either the iron sights or the telescopic sights. The testimony, if you will recall, Congressman, of our ballistics panel, was that the choice that they would have made would have been to have used the iron sights.

What I might add is that the Dallas Police Department sharpshooters who fired the two weapons in our reconstruction in Dallas in fact used open iron sights, and they were extremely accurate at

that time.

Again, Congressman, I emphasize these are preliminary tests and they will have to be perfected at a later point in time. It seemed to us, though, potentially not the best to introduce evidence and to simply allow the acoustics test to be considered without some clarification being made of that time problem between shots one and two.

Chairman Stokes. The committee calls Mr. Paul McCaghren. Sir, will you raise your right hand and be sworn. You solemnly swear the testimony you give before this committee is the truth, the whole truth, nothing but the truth, so help you God?

Mr. McCaghren. I do.

## TESTIMONY OF PAUL McCAGHREN, PAUL McCAGHREN ASSOCIATES, DALLAS, TEX.

Chairman Stokes. Thank you. You may be seated.

Mr. Cornwell?

Mr. Cornwell. Thank you, Mr. Chairman.

Mr. McCaghren, what is your present occupation?

Mr. McCaghren. I am a private investigator and private security consultant in Dallas, Tex.

Mr. Cornwell. You have your own firm, is that correct?

Mr. McCaghren. Yes, I do.

Mr. Cornwell. What is the name of that firm?

Mr. McCaghren. Paul McCaghren Associates.

Mr. Cornwell. Previously you were a member of the Dallas Police Force?

Mr. McCaghren. Yes, I was.

Mr. Cornwell. During what period of time?

Mr. McCaghren. From 1953 until 1974.

Mr. CORNWELL. And during that period of time, what was your rank?

Mr. McCaghren. I worked up from patrolman to detective in 1958. I was a lieutenant from 1960 to 1965 or 1966. I was a captain from 1966 to 1968. I was the director of the intelligence division in 1969. I was an assistant chief from 1970 to 1972. In 1972, I began to work my way back down. I was a captain, and I retired in 1974. Mr. Cornwell. Would you just give me a brief statement about what caused you to begin to work your way back down in 1972?

Mr. McCaghren. A strong disagreement between myself and the then chief of police. Unfortunately, he was the chief of police and he busted me. If it had been the reverse, I would have busted him. [Laughter.]

Mr. Cornwell. Directing your attention to 1963, what was the

specific nature of your assignment during that time period?

Mr. McCaghren. In 1973?

Mr. Cornwell, 1963.

Mr. McCaghren. I was a lieutenant, burglary and theft at that

particular time.

Mr. Cornwell. During 1963 or 1964, during the period of time that the Warren Commission conducted an investigation of the assassination of President Kennedy, did you as a member of the Dallas Police Force also have any role in that?

Mr. McCaghren. Yes, I did. I was with a group of about four or five lieutenants; we were commissioned to conduct an investigation

of the events occurring at that particular time.

Mr. Cornwell. And particularly what were you investigating?

Mr. McCaghren. My particular investigation concerned the events that occurred in the basement of city hall, regarding Lee Harvey Oswald and Jack Ruby.

Mr. Cornwell. And it was sort of a small special group that was working on that investigation, is that correct?

Mr. McCaghren. Yes, it was.

Mr. Cornwell. In addition to the question of Jack Ruby's entry into the basement, were there other issues that that group worked on?

Mr. McCaghren. Several, ves.

Mr. Cornwell. One of them perhaps being the shooting of Officer Tippit?

Mr. McCaghren. Yes, it was.

Mr. Cornwell. In connection with that investigation, did the group have an occasion to gather evidence?

Mr. McCaghren. Yes, we did.

Mr. Cornwell. At the termination of the investigation, do you know what was done with the evidence?

Mr. McCaghren. All the material in our possession was turned over to Chief Curry, who was the chief of police at that time.

Mr. Cornwell. Would you just basically tell us what types of evidence would have been contained in the package at that point?

Mr. McCaghren. These reports were not in-depth investigations. We were trying to field the hundreds of calls that were coming into the police department at that time. It was a cursory type of investigation. It was called to an abrupt halt after about a month and a half. All of our reports were submitted to Chief Curry at that time.

Mr. Cornwell. So the material, then, would have perhaps included such things as tape recordings of the Dallas dispatcher

tapes during——

Mr. McCaghren. Yes.

Mr. Cornwell [continuing]. November 22, 1963? I recall, for instance, there was an issue involved with the slaying of Officer

Tippit, of what was said that brought him into the area where he was killed; is that correct?

Mr. McCaghren. I am not that familiar with that particular

aspect, sir.

Mr. Cornwell. All right. At any rate, the materials would include interview reports and various other things; is that correct?

Mr. McCaghren. Yes, sir.

Mr. Cornwell. Now, after the materials were gathered in the course of this investigation, and turned over to Chief Curry, when did you next come in contact with them?

Mr. McCaghren. I did not see the material again until approximately 1969. It was in 1969. Chief Batchler was then the chief of police. All of this material was found in a locked filing cabinet, in a

metal filing cabinet, outside of his office.

He called me into his office and asked me how it got there. I did not know. I had not seen the material for years and years. He was very curious. Both of us were curious about how it got around to that particular place.

The filing cabinet had been abandoned and locked up. He had caused the lock to be broken. The filing cabinet had been designated to be disposed of. When he found the material, we reviewed the

material. He gave the material to me.

His exact words were, "Take charge of the material. Make sure that no unauthorized person comes in contact with the material."

This is exactly what happened. I did take charge of the material. He was very concerned of the fact his predecessor had removed numerous articles from the police department—

Mr. Cornwell. And who is the predecessor?

Mr. McCaghren [continuing]. And published this in a book.

Mr. Cornwell. The predecessor you are speaking of is Chief Curry?

Mr. McCaghren. Chief Curry, yes.

Mr. CORNWELL. So the materials were found in a locked file cabinet outside of the current chief of police's office, which of course would have been the former chief of police, Chief Curry's office.

Mr. McCaghren. Yes.

Mr. Cornwell. And you at that time were charged with the responsibility of safekeeping them; is that correct?

Mr. McCaghren. Yes; I was the director of the intelligence divi-

sion at that time.

Mr. Cornwell. What did you do with the materials to discharge

that assignment?

Mr. McCaghren. At that particular time, I kept it in my office until approximately 1971, the latter part of 1971, early part of 1972.

Mr. Cornwell. And during that period of time, you had control of the documents; is that correct?

Mr. McCaghren. Yes, I did.

Mr. Cornwell. Or the materials. In 1971, what happened?

Mr. McCaghren. An outside agency, a private agency under the guidance of—Chief Dyson, Assistant Chief Fulgum, and Assistant Chief Moore brought in an outside agency and permitted these people to go into our intelligence files.

They made pointed questions. They presented pointed questions to me about the absence of any files regarding the assassination. So, I just very quietly removed the files to my own private residence because I didn't trust the people.

I am talking about Fulgum, Dyson, and Moore.

Mr. Cornwell. So you took the materials to your residence and stored them there; is that correct?

Mr. McCaghren. Yes; that is correct.

Mr. CORNWELL. And for how long a period of time did you main-

tain them at your residence?

Mr. McCaghren. Until 19—well, until this year. By chance I knew that one of your investigators had set up an appointment with a colleague of mine, and I asked to sit in on the interview.

When I was satisfied that he was who he said he was, then I told him that I had some material that he would be interested in, and sure enough, he was interested in that material.

Mr. CORNWELL. You turned over a great body of material to him.

That was to Jack Moriarty; is that correct?

Mr. McCaghren. Yes; that is correct.

Mr. Cornwell. And included among the material was a tape recording and a dictabelt tape which we have been discussing here today?

Mr. McCaghren. Yes.

Mr. Cornwell. Now, throughout the period of time that the materials including the tape recording and the dictabelt were in your possession—in other words, continually from 1969, at which time they were removed from the locked filing cabinet—did you or anyone else tamper with the tape recording or the dictabelt?

Mr. McCaghren. No, sir. I had control of this property at all times, from 1969 until this year. No one, no one tampered with

that material.

Mr. Cornwell. Thank you. No further questions.

Chairman Stokes. Any members of the committee have any questions?

Thank you very much, sir.

Mr. McCaghren. Thank you.

Chairman Stokes. You are excused.

Professor Blakey?

Mr. Blakey. Thank you, Mr. Chairman.

As the testimony today has indicated, the committee has examined motion pictures for jiggle, and a tape for sound impulses in an effort to determine the number, time, and direction of the shots fired at President Kennedy.

The committee has also considered the testimony of witnesses to the assassination itself. Specifically, it sought to determine the extent to which ear-witness accounts as to the number and direc-

tion could be relied on.

For this purpose, the committee compiled all of the pertinent testimony taken soon after the assassination and had it subjected to psychoacoustical analysis, and all the testimony of 178 witnesses extracted from FBI reports and other Warren Commission documents stored at the National Archives were studied, and statistically charted.

In addition, the team that performed the psychoacoustical analysis went to Dallas to witness the live firing in Dealey Plaza described earlier here today.

The purpose was to listen to the shots and get an on-the-scene

feeling for their possible source and their magnitude.

The chief scientist in the ear-witness project is Dr. David Green. Dr. Green is a professor of psychophysics and chairman of the Department of Psychology and Social Relations at Harvard University.

He received a B.A. degree from the University of Chicago in 1952, and from the University of Michigan he received a B.A. degree in 1954, an M.A. degree in 1955, and a Ph. D. degree in

1958.

He has been a professor of psychology at the University of California and an associate professor of psychology at the University of Pennsylvania, and an assistant professor of psychology at the Massachusetts Institute of Technology.

Dr. Green is the author of numerous scientific publications, and he serves on the editorial boards of several scientific journals. He is a fellow of the American Psychological Association and the Acous-

tical Society of America.

Dr. Green is the chairman of the National Research Council Committee on Hearing, Bioacoustics and Biomechanics. He has received the Acoustial Society of America's Biennial Award and a Guggenheim fellowship. He was an overseas fellow at St. John's College in Cambridge, and in 1978 he was elected to the National Academy of Science.

At this time, Mr. Chairman, it would be——Mr. FITHIAN. Would the gentleman suspend.

Just for clarification, Mr. Chairman, were we not going to ask

any questions of Dr. Hartmann, or does that follow this?

Mr. Blakey. My understanding is that Dr. Hartmann will be called back to the stand at the conclusion of Dr. Green's testimony. Mr. Fithian. Thank you.

Chairman STOKES. The committee calls Dr. Green.

Doctor, will you raise your right hand and be sworn.

Do you solemnly swear the testimony you give before this committee is the truth, the whole truth, and nothing but the truth, so help you God?

Dr. Green. I do.

Chairman Stokes. Thank you. You may be seated.

The Chair recognizes counsel for committee, Lee Matthews.

Mr. Matthews. Thank you, Mr. Chairman.

## TESTIMONY OF DAVID GREEN, PROFESSOR OF PSYCHOPHY-SICS AND CHAIRMAN OF THE DEPARTMENT OF PSYCHOL-OGY AND SOCIAL RELATIONS, HARVARD UNIVERSITY

Mr. MATTHEWS. Dr. Green, would you begin by tracing the history and development of psychoacoustics in America?

Dr. Green. Well, the field of psychoacoustics I think, at least modern psychoacoustics, dates from the development of electronic equipment.