Naval Historical Center
Oral Interview Summary Form

Interviewers:
Capt Gary Hall
CDR Carol O'Hagan
YNCS(AW) Kathleen Wright

Interviewer's Organization:
Navy Historical Center
Navy Historical Center
Navy Historical Center

Interviewee:
Capt Glenn Wagner

Current Address:
Armed Forces Institute of Pathology
Washington, D.C. 20306-6000

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Armed Forces Institute of Pathology

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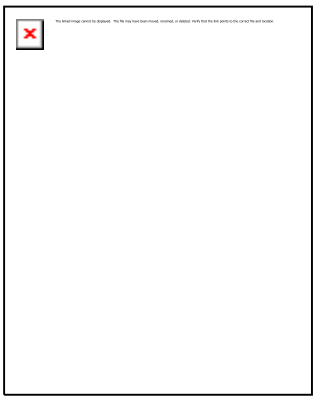
Abstract of Interview:

Interviewee Information:



CAPTAIN GLENN N. WAGNER, MC, USN
Director of the Armed Forces Institute of Pathology

Glenn N. Wagner, Captain, MC, USN, is the Director of the Armed Forces Institute of Pathology (AFIP). CAPT Wagner's most recent assignment was as AFIP Deputy Director (Navy) and director of AFIP's Office of Strategic Planning, Chairman of the DoD Automated Central Tumor Registry (ACTUR) Coordination Committee, and Joint Committee on Aviation Pathology (JCAP).

Previous AFIP administrative duties as Deputy Director included oversight of Ancillary Services, including the National Museum of Health and Medicine, Department of Epidemiology, Research and Repository Services, Department of Medical Education, Scientific Publications, Medical Illustration Services, Quality Assurance, and as commander of the AFIP Naval element.

Previously, CAPT Wagner served as Deputy Chief Medical Examiner (Operations) and Assistant Armed Forces Medical Examiner in the Office of the Armed Forces Medical Examiner (OAFME) at AFIP. As an OAFME staff member, he had frequent temporary assignments to numerous commands overseas and in the continental United States, conducting medico legal death investigations under DoD jurisdiction, and on federal investigations where DoD assistance had been requested. CAPT Wagner is a court-recognized authority in Forensic Pathology; often utilizing his extensive background in forensic medicine, law enforcement, fire-fighting, and emergency medical services.

A native of [redacted], Pa., he is a graduate of Temple University, Philadelphia College of Osteopathic Medicine, and the Naval War College. He completed a rotating internship and pathology training at the Naval Regional Medical Center-San Diego and a fellowship in Forensic Pathology at AFIP. He is a rated naval parachutist and designated Naval Flight Surgeon.

CAPT Wagner is licensed to practice medicine in the states of California, Virginia, Maryland, and the District of Columbia. He is board certified in anatomic, clinical, and forensic pathology. Recently he was certified as a healthcare executive by the American College of Healthcare Executives (ACHE Diplomat). He also has advanced standing in the American College of Physician Executives. He is a Fellow of the College of American Pathologists, American Academy of Forensic Sciences, Aerospace Medical Association, and a member of a number of medical societies. In 1995, CAPT Wagner was appointed Clinical Professor of Pathology at the Uniformed Services University of the Health Sciences, where he continues to lecture and support laboratory sessions in the Department of Pathology, Preventive Medicine, and Military Medicine. He is also the forensic consultant to the National Cancer Institute (National Institutes of Health), and a frequent advisor to the Attorney's Office (DC Superior Court), Northern Virginia Medical Examiner's Office.

Prior assignments include Philadelphia Naval Hospital, Naval Regional Medical Center-San Diego, Armed Forces Institute of Pathology, and the Naval Aero medical and Operational Institute. CAPT Wagner's numerous awards and decorations include the Legion of Merit, Joint Services Commendation, Army Commendation Medal, Joint Services Achievement Medal, and National Defense Medal, as well as multiple unit awards.

Topics Discussed:

The Armed Forces Institute of Pathology has its origins as the Army Medical Museum established during the Civil War to study combat injuries and infectious disease. Its first forensic case was the post mortem of Abraham Lincoln followed by John Wilkes Booth. The first experiment in joint activity was the Armed Forces Institute of Pathology in 1947 initiated by then Secretary of Defense John Forrestal.

The Board of Governors includes the three Surgeon Generals as well as the Secretary of Defense for Health Affairs who is the Chairman, the Surgeon General of the U.S., the Chief Medical Officer of Veteran's Affairs, and a previous Director of the Institute. This Board of Governor's is what gives the institute its authority and guidance.

The science of the Institute is directed by the Scientific Advisory Board, which represents academic, university, government and ad hoc military members.

The AFIP gets 100,000 cases a year, 80% of them federal. 60,000 of those cases come in for second opinion; about 90% of those are tumor cases on live patients. Of that group about 51% of those diagnoses are changed or modified.

The AFIP participates in 500,000 contact hours of education and training in the form of residencies, fellowships, continuing medical education and sponsored programs. They have an aggressive research program.

They have a $60 million operating budget, most of which comes from the Defense Health Program.

The AFIP physically has a number of mandated programs that don't belong in a military treatment facility. Some of these are the Armed Forces Medical Examiner System, the DOD Patient Safety Program, the DOD Automated Central Tumor Registry, DOD Veterinary Program, Department of Legal Medicine, and a Forensic Pathology/Toxicology Division.

They have a staff of 840, with 1/3 contracted mostly with the American Register of Pathology. One third are civil servants and the remaining third are uniform composed in roughly equal numbers of Army, Navy and Air Force.

The Directorate overseeing the AFIP is composed of one representative of each of the three services, two serving as Deputy Directors and one as the Director. These are Secretary of Defense appointments. At present Capt Wagner is in his third year of a four-year term. The Director position will rotate to the Army next, and then Air Force. This rotation h appens every four years.

Largely because of a lack of standard approach, mostly in Navy shipboard operations, Congress directed the DOD to create a uniform medical-legal investigation system. That was created out of the Dept. of Forensic Sciences at the AFIP and has its headquarters there at the AFIP. The medical examiner system is global and has board certified military forensic pathologists assigned to local commands as collateral duty. They are tasked out of AFIP when a forensic issue comes up. They are regional Armed Forces Medical Examiners in Okinawa; San Diego; Fort Campbell; Millington, TN; Portsmouth; and Lonstall Army Medical Center in Germany. Due to the material coming out of Afghanistan and Pakistan the facility in Lonstall is currently the busiest region. The authority for the Armed Forces Medical Examiners is in 10 U.S. Code. This

includes the statement that you can't used military operations stateside unless it's a presidential order and then you can't be involved in criminal pursuit unless there is legislative relief which is why the National Guard is involved in much of Homeland Defense.

Because they are the only federal medical examiner system they support the Departments of State, Justice, Transportation, Treasury and Agriculture. They also do work for the FBI, DEA, National Transportation Safety Board (NTSB), Coast Guard, NASA, Secret Service and the Bureau of Alcohol, Tobacco and Firearms (ATF).

The medical examiner's office trains and provides medical examiners on a worldwide basis to address medical legal issues. They are responsible for conducting medical legal investigations on all operations and legal cases that come under federal jurisdiction. Jurisdiction is driven by where the death occurs, ports of entry, status of forces agreements and other legal issues. The Pentagon disaster became a jurisdiction issue. The first question was whether or not it was exclusive federal jurisdiction or was proprietary, which would mean the bodies belonged to the State of Virginia. It became clear it was exclusive federal jurisdiction so the federal government had the authority to take control. It took the interaction between the Attorney General and the Assistant Secretary of Defense for Health Affairs to move the operation to Dover (also exclusive federal jurisdiction) and arrange for the recovery of the remains coming from the Pentagon to be transferred to Dover. That operation, from a medical perspective, went on for a little over two weeks, with some level of medical representation until 11 Dec. They identified 184 out of 188 or 189 with some physical means of positive identification. DNA played an important role as well as fingerprints. 5 individuals were not found but were able to be legally declared dead because they knew where they were and who they were with and that they no longer existed. They had been ashed from the intensity of the fire and building collapse. They also were involved in identifying the victims of the plane that crashed in Pennsylvania. They identified all the victims as well as the terrorist out of Somerset, PA.

The Dover operation for the Pentagon used reach back capability into the AFIP. Various departments were tasked to assist, including histopathology technicians, specialized pathologists out of the departments of neuropathology, cellular pathology, cardiovascular pathology, soft tissue, dental, medical examiner and administrative support. They brought in regional medical examiners from San Diego, Portsmouth, San Antonia, and Fort Campbell. The USAF Air Mobile Command (AMC) brought in volunteers to augment the Dover operation. They had about 300 people at Dover carrying out the operation. The challenge was with contractors and civilians aboard the American Airlines plane that crashed into the Pentagon in reconstituting medical and dental records.

In medical legal investigations there are a number of concurrent investigations going on. The coroner is focused on the death certificate identifying who, what killed them, when, where and the manner of death. Within the military there is also a safety and JAG investigation.

There is more emphasis put into the behavioral profiling, the human factors contributions that allow them to do serial profiling in the war against terrorism.

Critical documentation is important. The Pentagon operation in Dover had a uniformed, centralized mechanism to obtain or build medical records, comprehensive autopsy records, to support the identification process and method of death. The military spends a great deal of

money in an effort to positively identify the service members. This effort goes back to the Civil War, which was the first appearance of dog tags.

The focus of the identification process is a positive identification rather than a presumptive one or legal one based on exclusive. Involved in positive identification are fingerprints, palm prints or footprints, dental identification; super imposed radiographic efforts, and DNA profiling. Today the DOD uses DNA profiling as the gold standard of identification. This DNA profiling is done at the AFIP in the Armed Forces DNA Identification Laboratory, which is the most accredited forensics DNA laboratory in the world.

The focus of mass casualty operations at Dover is to use an assembly line approach. It begins with getting the remains to Dover and refrigerating them in refrigerator trucks. The remains are brought in to a large mortuary hangar-like structure where they are photographed and evaluated. The remains go through an x-ray scanning process, similar to that at airports, to identify possible ordnance and foreign material. The presumptive identification is begun by identifying and documenting personal effects found on, around or in the body. The positive identification process then begins including finger, palm and footprints followed by extensive dental and medical examinations.

Anthropology played an important role in the Pentagon incident due to extensive fragmentation of remains. They used the AFIP anthropologist as well at the anthropologist from SoHai (sp? in Hawii) and three from the Smithsonian. These anthropologists worked side by side with the radiologist and pathologist.

The remains at the scene are put into body bags that are marked and identified and then put into metal transfer cases so there is continuity of physical and trace evidence. It enables each case to be individually worked with all the honors and respect necessary. Even when a bag may contain parts from different people it gives a way to subdivide them.

Fingerprints give them about 60% identification because not everybody's fingerprints get in the file for a host of reasons. Often times they can lift latent fingerprints off personal effects.

Premortem and postmortem dental is compared both by hand and by computer. Teeth tend to survive when nothing else does. The duplicate repository for panographs is in Monterrey, CA, but they stopped collecting duplicates in 1996. They are trying to digitize the x-rays on file there. This repository is important because in reality there is about 90% DNA on file for active duty and high 80's for the reserve and low 80's for the National Guard. Every military dentist is trained in forensic dentistry. Dental teams deploy with troops giving a positive means of identification in theater. The DNA effort requires specialized laboratory capability.

When you can account for everybody but you don't have everybody you can make identification by exclusion. That requires a closed population.

The real driver in identifying remains is the dental. It begins with a dental examination. They take the dental records and x-rays and convert it into a database that allows for comparison. The panographs and radiographs of the teeth and jaw become critical in seeing patterns. More people are coming into the service with a mouth with no fillings, which make the identification more challenging with no fillings or deviations. When there are fillings they create a dental fingerprint

that is unique. The jaw also provides a great deal of information on the age, race and sex of the individual.

Skeletal patterns are important, but require finding premortem x-rays for comparison.

DNA is relied on heavily for identification. They use a combination of mitochondrial or nuclear DNA analysis. Nuclear DNA is preferred because it is more unique to an individual representing the genetic code from both mother and father. It allows identification with a high level of reliability. Because DNA degrades quickly mitochondrial sometimes needs to be used. Mitochondrial DNA analysis comes from the cell and the cell's DNA comes from the egg, making this a maternal representation and does not represent the paternal. It requires genealogy studies. Mitochondrial analysis is the primary means they use to identify MIA's, Civil War dead as well as in the Pentagon incident because of the extensive level of burning. This method allowed them to identify many of the casualties as well as the terrorists.

At the DOD DNA repository in Gaithersburg, MD they have over 3 ½ million blood stained cards that can only be used for casualty identification. They cannot be used for genetic screening or any other purpose unless directed by federal court. The Pentagon incident highlighted the need for a DNA repository for folks other than military if rapid screening was needed.

DNA's value is in being able to take many kinds of material difficult to work with and identify it as human and belonging to a particular individual.

Polymerase chain reaction (PCR) is the commonly used form of DNA testing used for forensic cases. This work is carried out at the Armed Forces DNA Identification Laboratory in Rockville, MD. They were able to identify all the Pentagon casualties as well as all the casualties from United Airlines 93. This required around the clock operations from 12 Sep to mid December.

Presumptive identification plays an important role. Visual appearances, personal effects, serology (blood groupings), anthropometrics (physical measurements), congenital and acquired diseases, and general racial and age characteristics make up presumptive identification. Since with trauma there can be misidentifications the DOD calls for positive identification.

They have a national repository, from at least the last 140 years, of over 9 million cases of military medicine and individuals as well as population medicine.

Another major area is determining the cause of death. Oftentimes they do an extensive autopsy with microscopic followed by toxicology and x-ray analysis. That lets them address each case individually and collectively and relate it to the scene and other concurrent investigations. They are particularly proud that they had people in place at Dover within 12 hours of the Pentagon incident as well as having people at the Pentagon such as the Armed Forces Medical Examiner and the AFIP Operations Chief to coordinate armed forces medical examiner issues at the Pentagon with the Virginia State Medical Examiner.

ON 11 Sep Capt Wagner was at AFIP and had CNN on. He saw the results of the first plane crashing into the World Trade Center and then watched the second plane hit the second tower. Later there were reports of something happening in Washington. Within a short period of time the medical examiner's office had been called and were responding to the Pentagon. They were in constant contact with Capt. Wagner's office. They had inquiry about their capability, mostly

from the FBI. It became clear it was uncertain who would handle the casualties. Virginia was mobilizing statewide to support the Northern Virginia medical examiner.

Since it was clearly an act of terrorism and the FBI was running the operation the FBI and the US Attorney General wanted to keep this on the federal side. They were relieved to get confirmation the Pentagon was under federal jurisdiction. At that point the mobilization of AFIP resources became a priority. They had a team in place and could begin processing up to 100 casualties a day within 12 hours of getting the green light to proceed to Dover.

When you have a mass disaster you have an acceleration of local resources. The local folks are the first responders, they get exhausted and it moves to county, regional and then state. In each of those situations the politics, economics and command and control issues become more intense. That was a major driver in this situation. When the US Attorney and Assistant Secretary of Defense for Health Affairs determined the Pentagon was federal jurisdiction, which they did within 24 hours of the event, it alleviated these problems.

The remains went by air from Virgina to Dove,r except one final set that went by truck. This was largely the sifted debris. There was a lot of concern because of the distance and the need for escorts in transporting the remains. The Army provided CH-47's, which flew tandem and transported all the remains over 1-½ weeks.

They knew they would be principal players by COB on 11 Sep. They were in place in Dover on 12 Sep. They started getting casualties on 13 Sep. All casualties were received within two weeks as well as all the sampling being done.

Valuable lessons learned:
They didn't learn anything from a technical point of view that they didn't know before, but reaffirmed a lot.

On a day-to-day basis the AFIP's activities in regard to Dover were reported through the Air Force Air Mobile Command. He also reported on a case-by-case basis to the Army Surgeon General, and General Van Alstyne.

The AFIP people worked well with the people at Dover. It is their home away from home. He got tremendous support from all of the services. The Dover staff is largely small but can expand with contractors, mostly embalmers.

The medial evidence went to the military. The American Airlines data was shared with the FBI. The FBI controlled the investigation until concluded. The material identified to an individual was released to the family unless they elected not to receive it. The leftover material will be buried, following Secretary of Defense guidance, at Arlington Cemetery. The terrorists had to be identified and separated. The terrorists were turned over to the FBI, both from the Pentagon and United Airlines 73. Those profiles are probably being used in ongoing investigations.

They used mitochondrial DNA to identify the terrorists. They were never able to put a name to each of the terrorist remains but they were able to separate the terrorists out from the victims by elimination. They did not get any samples from terrorist's family members.

A large number of identifications were made at Dover because he had a large number of administrative staff up there including an epidemiologist. The data as it came in was put into a massive Excel sheet. The identification process has the same pattern no matter what investigation is involved. There is a period of time where there is little identification. Then as the resources and infrastructure kick in there is a steep slope of identification. Then you get into the problem cases, with a plateau. That plateau is often driven up by material you need from someone else, usually the families, that needs to be transported and analyzed. Then as you get the material it slopes back down. At Dover identification that could be done by fingerprints or dental were done immediately. The DNA and toxicology was transported back to AFIP daily. If they had good material and could use nuclear DNA he had results in about 72 hours. The problem cases, requiring mitochondrial DNA, or involving massive fragmentation, continued to go on after they returned to AFIP. That work was coordinated with Dover who would then bring the remains parts together and coordinate with the family for disposition.

Mitochondrial DNA takes up to a month and single specimen can run up to 3 or 4 thousand dollars.

They did not get involved in the World Trade Center incident.

The remains for flight 93 remained in Pennsylvania because of jurisdiction. The DNA came down to the AFIP.

Abstracted by:
CDR Carol O'Hagan
8 Mar 02

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From official biography:

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Director of the Armed Forces Institute of Pathology

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<u>Topics Discussed:</u>

Wagner: The Armed Forces Institute of Pathology’s a rather unique structure within the Department of Defense. It has its origins as the Army Medical Museum established in the Civil War by the Army Surgeon General’s directive to study combat injuries and infectious disease.

Its first forensic case was the autopsy or medical post mortem of Abraham Lincoln followed by John Wilkes Booth, and it's been involved in military medicine and because of the civilian employ in civilian medicine for a hundred and forty years.

It is at present the pathology reference center for the Department of Defense as well as the Department of Veteran's Affairs and the relationship to Veteran's Affairs goes back to 1926. The Institute's Army Medical Museum became the Army Institute of Pathology in 1946 and then became the first experience within the newly formed Department of Defense as the Armed Forces Institute Pathology in Tri-Service and Joint with Joint Activities. The very first experiment in joint activity was this institution.

That came about when the Navy Department and the War Department joined and the Army Air Corp became the Air Force in 1947. This structure as we have it today was initiated by the first Secretary of Defense John Forrestal. I find it fascinating that it would be a medical facility rather then another facility, a depot or tank farm or something like that, you know, but nonetheless that's the way it is.

So we've been tri-service since '49 and I think the Institute is somewhat unique. Actually I know it's unique within the Department of Defense in that because of its relationship with American Registry of Pathology can accept a case from any patient anywhere in the world. Therefore it allows for DoD resources to be used worldwide, and it makes it very much a national asset.

For largely financial reasons the Army Surgeon General who chaired my Board of Governors at the time, brought the whole issue of the Institute to Congress in 1975, 1976, and then a public law sponsored by Senators KENNEDY and NUNN, they reaffirmed the Institutes importance as a pathology reference center in consultation, education, and research, medicine, dentistry, and veterinary medicine, not only for the armed services, but for the American people, and made that

more legal, if you will, by changing the authority of the American Registry of Pathology, which is how I got those civilian cases, from a public structure within the National Academy of Science as a division of the Institute, to a DC 501 (c)(3) structure. So it became a fiscal intermediary. That public law basically says that the AFIP, in partnership with the ARP has that mission. So it was the first in a public private partnership, which is very common today in government structures. And it changed our Board of Governors to include not only the three surgeon generals, but the Secretary of Defense for Health Affairs, who is our chairman, added the Surgeon General of the United States Public Health Service, and the chief medical officer for the VA, and the previous director of the Institute. So my Board of Governors who should meet, on a quarterly basis, represents all federal medicine and gives the institute its authority and its guidance.

The science of the Institute is directed by the Scientific Advisory Board which was created in 1946 and it represents academic, university and government individuals as well as ad hoc military members who meet twice a year to review the various programs at the Institute, and comment on the science to me as the Director who then takes it to the Board of Governors when there's a policy change or a need for further pursuit.

The Institute in addition to functioning under that public law has its own DoD directive, and tri-service regulations that support that, and I understand a DoD instruction is being created in staff as we speak.

The AFIP is a unique structure in that it offers second opinion and gets a hundred thousand cases a year, 80% of which are federal and of that hundred thousand cases, sixty thousand of those come in for second opinion. Of those sixty thousand cases roughly ninety percent of fifty-three thousand are tumor cases on live patients, particularly DoD beneficiaries worldwide, but also

from the civilian population. Of that group about fifty-one to fifty-two percent of those diagnoses are changed or modified. So it's a rather significant impact on patient safety.

The Institute also is involved in roughly a hundred, or half a million contact hours of education and training in the form of residencies, fellowships, continuing medical education, and sponsored programs, and has a fairly aggressive research program that's in support of force health protection in collaboration with government, industry and academics, to the tune of about three hundred approved credit calls at any one time, and maybe 12 to 14 million dollar investment.

The operating budget's currently $60 million dollars and most of that comes from the Defense Health Program with some offsets by DESPERS, for our casualty identification efforts with CILHI (Central Identification Laboratory, Hawaii), and Casualty Memorial Affairs and Counter-Narcotics money.

Within the DoD directive and physically at the AFIPR, a number of medical programs that had been mandated by the President, by Congress, or Secretary of Defense and don't belong for one reason or another in a military treatment facility or the military medical school. They include the Armed Forces Medical Examiner system, the DoD Patient Safety Program, DoD Automated Central Tumor Registry, the DoD Veterinary Program, which trains veterinary pathologists for all biomedical laboratories worldwide, oversees the Navy's Marine Mammal Program and the Military Working Dogs. Department of Legal Medicine that looks at all mal-practices and also is the home of the Patients Safety Program, and a Forensic Pathology, Forensic Toxicology Division has oversight of all of the urine drug testing worldwide for DoD.

Much of their work is focused on change in drug use patterns within the Department of Defense service members to include not only the heroine, cocaine, but use of ecstasy, designer drugs, amphetamine (phonetic – he may have used a term similar to amphetamine, but not the same),

particularly on the West Coast, hallucinogenic drugs coming out of the Far East. Longer matabolоids (phonetic) of drug use as well as applications in biological and accountable threat determination. So they're pretty busy and pretty focused, and all of those programs come here. As an Institute of Pathology and composed largely of pathologists, we have a staff of 840, roughly one-third are contract, mostly with American Registry of Pathology. One-third are civil servants, representing Department of Army, civilians or VA and the remaining third, although a shrinking third are uniform elements composed of the Army, Navy and the Air Force. Roughly equal numbers. Fifty percent officer, fifty percent enlisted.

The organization of the Institute is in the form of a directorate composed of the Army, Navy and the Air Force uniforms, one of whom is selected to be the director. The other two are the Deputy Directors, but it's a tri-service effort and those appointments are Secretary of Defense appointments.

At present the administration is under Navy control through me, and I'm in my third year of a four-year term, and will be stepping down in June 2003 unless relieved earlier. Then it should be Army. Then at this point will be uniform, as it has been, rotating amongst the services on a four-year basis since 1949.

So it gives the Institute an opportunity to a line its massive resources along service lines roughly once every ten years. So it's the Navy-Marine Corps turn in the bucket right now.

The focus of this obviously is the Pentagon disaster and I'd like to comment on the armed forces medical examiner system, because it's the only federal medical examiner system we have. It didn't exist until 1988. We've always done forensics. It's always been part of operational medicine and military medicine, and largely because of a lack of standard approach in Navy investigations, particularly shipboard operations, Congress directed the Department of Defense

to create a uniform medical legal investigation system. That was created out of the Department of Forensic Sciences at the AFIP and has its headquarters here with the Armed Forces Medical Examiner.

It had its own DoD directive up until mid '90s and then it was subsumed into the AFIP directive, and is a component, or element of the Office of Assistant Secretary of Defense for Health Affairs. Since that office should not be involved in operations, that belongs with the services, the day-to-day management of that program and all AFIP programs resides with the Secretary of the Army who's the executive agent for the AFIP, but gets its guidance from this Board of Governors.

The medical examiner system is a global system and it's composed of Board Certified Military Forensic Pathologists assigned to local commands and it is collateral duty. They get tasked out of AFIP when a forensic issue comes up and at present we have regional armed forces medical examiners in the following places: Okinawa representing the Navy, San Diego- Navy, Fort Campbell – Army, Millington, Tennessee BUPERS – Navy, Portsmouth – Navy, and Landstuhl Army Medical Center in EUCOM in Germany. At present the business regional medical examiner is the Landstuhl section because much of the material coming out of Afghanistan, Pakistan at least stop there, if it doesn't come back here. That overall global effort is administered out of this office and out of the Institute.

There is no federal medical examiner-coroner statute, so the authority by which the Institute and the medical examiner system carries that out is in Ten US code, which addresses military operations and has all the limitations that come with that, particularly with the concept of Posse Comititus, which basically says that you can't use military operations stateside, unless it's a Presidential order and then you can't be involved in a criminal pursuit unless there's legislative

relief, and that's why the guard's involved in much of the homeland defense, and that affects me in my work, not only within the Department of Defense, but because it is the only federal medical examiner system in our support of Departments of State, Justice, Transportation, Treasurer and Agriculture, all of whom are clients.

We do a lot of work on a regular basis for FBI, DEA, National Transportation Safety Board, Coast Guard, NASA, Secret Service and Bureau of Alcohol, Tobacco and Firearms.

The Medical Examiner's office is composed of forensic pathologists assigned to the Institute. It has the only forensic pathology residency program, and it basically trains and provides the medical examiners that go out as regional medical examiners on a worldwide basis to address medical legal issues. Our responsibility is to conduct a medical legal investigation in support of the service safety centers, JAG, and the commanders on all operational deaths and all medical legal cases that come under federal jurisdiction. That's driven by where the death and injury occurs, ports of entry, status of forces agreements and a host of legal issues that very much color the operations.

The Pentagon disaster became one of those jurisdictional issues. The first question was whether or not it was exclusive federal jurisdiction. That's it belonged to the federal government or was concurred in the propriety where while the investigation might begin with the FBI and DoD, the bodies would belong to the State of Virginia, and that had to be resolved.

It became clear early on that is was exclusive federal jurisdiction so the military and the federal government had the authority to take control and to keep control unless it decided to waive that case, and there was a lot of discussion whether or not they should from the medical legal point of view. There were a lot of proponents for keeping the investigation local within the Department of Defense and it took interaction on the part of the US Attorney General and the Assistant

Secretary of Defense for Health Affairs, DOCTOR CLINTON, to move that operation to Dover which is also exclusive federal jurisdiction and arrange for the recovery of the remains coming out of the Pentagon to be transported to Dover where we could identify comprehensively and re-associate those remains. That operation from a medical prospective went on for a little over two weeks, but continued with some level of personnel representation from the 11th of September to the middle of December.

We were able to identify every body one way or another, a hundred and eighty-four out of a hundred and eighty-eight or a hundred and eighty-nine, with some physical needs by positive identification and I'll get into what that represents.

DNA played a very important role in that as well as fingerprints, because of the fragmentation and charing. Five individuals were not found, but were able to be legally declared dead because we knew where they were. We knew who they were with and we knew that they no longer existed. They had been "ashed" if you will as a result of the fire, the extent of the fire, the intensity of fire, and the building collapse.

We were also involved, interestingly enough with the investigation of the crash of the United Airlines 93 in Summerset, Pennsylvania and provided input to the DEMOR Teams which are under FEMA, in the recovery of the remains and did all of the DNA. We identified, by DNA, virtually all victims as well as the terrorists out of Summerset, Pennsylvania.

That was part of the argument for having this operation based at Dover Air Force Base, because not only could we do the Pentagon and Pennsylvania cases but we could also support New York if the need was there. And while we hadn't been asked to do that, we have certainly advised them and we did cover two of the three incidents. So it worked out well.

The Dover operation for the Pentagon had significant augmentation. We needed to have reach-back capability within the AFIP, and I tasked a number of programs and departments to assist including Histopathology technicians from scientific labs, specialized pathologists out of the departments of neuropathology, cellular pathology, cardiovascular pathology, soft tissue. Of course had my dentists up there, because the dental effort is a very real, on-going focus of casualty identification, as well as the entire Medical Examiner staff and the administrative support staff.

We found it necessary to bring in many of our region medical examiners. So we had augmentation from San Diego, from Portsmouth, from San Antonio, from Fort Campbell, and had the support staff from the United States Air Force Air Mobile Command, who brought in volunteers and dentists and augmentation of the Dover operation to the tune of several hundred people. So we had about three hundred people up there for an extended period of time to carry out all parts of the operation.

The real challenge, I think in that operation was not with the DoD folks, but with contractors, with the victims aboard the American Airlines that crashed into the Pentagon and reconstituting medical and dental records that would be critical to the identification given the level of char and fragmentation.

I think this is a particular good time to take you through a number of slides that represent that effort and make some comments on that, because it will help you identify in a little bit clearer fashion what the challenges are in any of these investigations and how they apply to the investigations we're involved with at present in Afghanistan and Guantanamo, on various operational aspects.

In medical legal investigations you have a number of concurrent investigations going on. You have the coroner's investigation, which really is focused on the death certificate and that identifies who the person is, what killed them, or the cause of death and what the manner of death is. But within the military we also have a safety investigation. We have a JAG investigation. We oftentimes end up with a Congressional investigation and these are going on simultaneously, but with somewhat different goals and very different rules of discovery.

The Medical Examiner's office really has to have all that in mind as it goes through its work, and its work is focused on a number of basic questions that have to be address. Obviously identification of who is a key one and it's the most labor intensive. Because the family is not a fundamental part of that identification early on, that is making a visual identification, we're held to a higher level of performance, and we use positive identification, which I'll get into later, but basically look at unique characteristics to the individual. Whereas visual identification, which is the basis by which most of us go to the grave or a crematorium and it's a presumptive identification.

Obviously we need to look at what the cause of death is and there may be some contributing causes there so working through mechanisms become critical. The location of injury and location death drives the jurisdiction and there may be significant environmental parameters that need to be addressed before that investigation comes to an end.

Of course the location and the time of death become critical. The mechanism is in the pathophysiology. Now there's more and more emphasize put into the behavioral profiling and the human factors contributions that allow us to do serial profiling such as we're using in this war against terrorism.

Those questions of who, what, when, where and how become major drivers. The investigation concerns for these casualties revolve around jurisdiction and whether or not we have it or can get it. The identification process, documentation of the injuries and their contributions, the pattern of those injuries, particularly if they were caused by instruments and that becomes a key issue when we're looking at new patterns on the battlefield from ordnance, from thermobarics, from laser injuries. So patterns of injury have a significant input in the overall operational plans.
Everybody's got some level of pre-existing disease, so seeing it and identifying that and taking that into account for why one person lives and one person dies becomes an important part in age and immune system, and the presence or absence of heart disease, lung disease, liver disease, central nervous or muscular disease, even if it's sub-clinical become important aspects, and may be a basis for identification. Then extensive toxicology studies supported by DNA is necessary.
So critical documentation becomes important and this is one of the things that the Pentagon operation in Dover allow that to occur. We had a uniform, centralized mechanism by which to obtain or build medical and dental records. We had comprehensive autopsy records, including photographs, x-rays, slides, body diagrams to support the identification process in determination as to cause of death and manner of death. That included toxicology material, DNA analysis and continuing updating of scene data, and scene evidence which was under FBI control.
In casualty identification efforts, as I'd said the identification effort itself was the most labor intensive. In the Gander operations (Newfoundland, Canada) where 256 people died and PRESIDENT REAGAN required that everybody would be identified and everybody would be recovered, we ended up going back to Gander in January and February and excavating a mountaintop in order to get everybody. The cost of that operation was $8.8 million to the Army. So it's a rather substantial investment in our casualty identification, and that effort to

individually identify our service members goes back to the Civil War, which was the first appearance of dog tags, interestingly enough.

This culture and this government and this nation will invest a great deal of effort in the recovery of our dead and their individual identifications, rather then going with mass graves, which were very common. And that's driven much of the effort to repatriate our MIAs out of Korea and Vietnam, and going back to World War I. We're very much involved in that.

The focus of the identification process is a positive identification versus a presumptive one or a legal one based on exclusion, and involved in positive identification are fingerprints, palm prints or footprints which are know as dramataglyphics (phonetic), dental identification which is the workhorse for identification processing, superimposed radiographic (phonetic) efforts.

That became a critical issue in both the Challenger mishaps, which we handled as well as the bombing of the Marine barracks in Beirut on 1983.

Then DNA profiling. Today Department of Defense uses DNA profiling as the gold standard for identification, when it works, when there is DNA to work with. We have the capability of not having the Tomb of the Unknown, beyond what we have already. And in fact it was DNA that was able to identify the remains in the Tomb of the Unknown for Vietnam as Air Force Lieutenant DEAN BLASEY (both names phonetic).

So an enormous amount of effort goes into that and it involved both nuclear and mitochondrial DNA analysis. That analysis is done at the AFIP in the Armed Forces DNA Identification laboratory, which is the most accredited forensics DNA laboratory in the world. It's worked routinely by the FBI, Scotland Yard and, Canadian Mounted Police as well as Department of Defense.

The focus at Dover and in these multiple casualty incidents is you use an assembly line approach in processing the casualties, and it begins with getting the remains to Dover, or to the mortuary and then refrigerating them in refrigerator trucks, close monitoring the temperature until the identification and processing is completed. The remains will be brought into a large mortuary hanger-like structure where it's photographed and what we have to work with is initially evaluated. The remains at this point normally would go through an ex-ray scanning process run by DoD that's very similar to what's used in the airports today, both for baggage and people. That gives us a chance to identify ordnance and foreign material.

We then begin the presumptive identification based on documenting, recovering, and cataloguing all the personal effects that might be on, around or in the body. Then the beginning of the positive identification process including fingerprints, palm prints and foot prints followed by extensive dental examination including x-rays, medical x-rays and then medical examination usually by autopsy, which may include the work of anthropologists, and DNA laboratories and serology work before the bodies are identified and released to the mortuary staff for embalming in preparation for the release to the next of kin.

In the Pentagon incident, because of the level of fragmentation, anthropology played a very important role and not only did I have my own anthropologists but I used forensic anthropologists from CILHI (Central Identification Lab, Hawaii) New York, and three anthropologists from the Smithsonian Institution. So I had eight anthropologists working the table side by side with the radiologists, pathologists, as the casualties worked their way through this assembly line process over that two-week period.

This photograph represents how those remains are worked and what we are demonstrating is that the remains once they are recovered at the scene are put into body bags. Those body bags are

individually marked and identified and then are put into metal transfer cases, so there is continuity of physical and trace evidence and it enables each case to be individual worked with all the honors and all the respect that's necessary, even when one bag or one container may contain parts of a number of different folks. Enables us at least to subdivide that as the investigation goes forward. You can see it becomes a very busy effort as these casualty remains go through the various identification sections.

Aside from fingerprints which are run by the FBI, because they have the need or immediate querying of fingerprints that are on file from a security bases or other means, we also rely very heavily on dental.

Fingerprints pretty much on a regular basis will give us about sixty percent identification. You'd think that we'd be able to pick up all our military folks, because everybody's fingerprinted, but in fact not every fingerprint gets into the file, for a host of reasons. So we may end up with fingerprints that we have on the casualty, but we don't have anything to compare it with. If we have a presumptive identification, go back to personal effects, and oftentimes lift latent prints that's necessary.

A similar approach is used in the dental examination. The pre-mortem dental records are compared with the post mortem dental records, both by hand manually, as well as by computer. That enables us to exclude very rapidly from a dental mechanism folks that it cannot be, and teeth tend to survive when little else do. If you have all of your teeth, you've got thirty-two teeth, so you've got thirty-two opportunities to have a unique positive identification. In the past it's been very much supported by having a duplicate pantograph repository, which is physically in Monterey but that stopped collecting duplicates in 1996. It's still in operation and we're hopefully, currently trying to digitize the seven million x-rays that are on file there to utilize that

in our overall effort with C8CS2 to come up with a computerized patient program. That pantograph repository becomes important because we have more and more reserve and guard interactive with our active duty forces and we may or may not have them on that even though that is a requirement, but the reality is that we run about 90% for the active duty and high 80's for the Reserve and low 80s for the guard. So having multiple means of identification becomes very critical, and dental is there largely, because every military dentist is trained in forensic dentistry and of course the dental teams deploy with our troops which means then that we have a means of positive identification in theater, world-wide. Whereas the DNA effort requires very specialized laboratory capability.

The remains come in in a variety of conditions. They may be intact, they may be quite visible, or they may be fragmented. Many cases they're charred and there are parts missing. So there is an extensive reconstruction effort that is required as these remains are worked through that. That's why the focus is on positive identification which stands out by identifying unique characteristics of that individual rather than class characteristics, based on age, race, occupation, clothing, etc., which are the presumptive means.

When you can account for everybody, but you don't have everybody you can make an identification by exclusion, but that does require closed populations and it does involve political efforts, and that was necessary both in the Pentagon and in New York efforts with the World Trade Organization.

Positive identification is composed of dental comparisons, footprints, fingerprints, palm prints, DNA profiles, or dental or medical radiographic super impositions. Fingerprints play an important role in this and we rely on the FBI for that, although OSI and CIS and CID as well as my investigators certainly have the capability of lifting prints, and oftentimes comparing them.

Many times we identify the finger or the foot, but it's separate from the rest of the body, and so we'll need other medical means to match the parts. This is where DNA, anthropology and medical evaluation takes place.

This is an example where we have a finger, and we can print a finger, but we need a body to go with that finger. The body after death begins to breakdown. This is a process of autolysis and decomposition, and in many cases the skin, including the nails and the fingerprints on that skin can actually be separated from the hand, put onto the hand of the investigator and printed. In this particular slide you see exactly that case, and while it appears gruesome it does ensure that you have a pretty good chance of getting a fingerprint or a foot print.

In general, in the military only the Air Force has been involved in foot printing of its aircrew, but it is a valuable means of identification. Largely because the foot's protected by the shoe and we have the opportunity of lifting the prints, footprints oftentimes even from birth certificates or from the shoe if we know who the shoe belongs to. So there are means to build on that and it becomes very important.

But the real driver is the dental and it begins with dental x-rays and an examination, an extensive examination by a dental team composed of two dentists and recorder. They will take the dental records and they'll take the x-rays and they convert this into a uniform database that allows for comparison, and the pantographs and apical (phonetic) films, the radiographs of the teeth and jaw become critical in not only looking at tooth filings, but the relationship of the tooth roots to the jaw bones patterns, becomes a fairly comprehensive challenge.

More and more of our young people are coming into the service with a clean mouth, there are no fillings. It's a perfect mouth, if you will because of the fluoride. So those identifications become

more and more critical on the ex-ray and the actual characteristics of the tooth and the relationship in order to confirm that.

When there are fillings, they are absolutely unique and basically create a dental fingerprint that is unique. In this particular slide you can see the uniqueness of those amalgams as well as the tooth roots. The tattooing from the amalgam into the guns and then the bone pattern of the jaw itself. All of those are used by not only the dentist, but by the pathologist and the radiologist, and the anthropologist to make those identifications.

The jaw also provides a great deal of information on the age, race, and sex of the individual. So there's quite a bit of uniqueness to not only the teeth but the palate and the jaw itself. It's a reflection of the muscular skeleton system, the bones and structures that make our physical appearance what it is.

In the same way, the medical ex-ray plays an important role, and everybody received full medical x-rays and this enabled us to identify displaced body parts, such as teeth as well as foreign material, and to do initial sorts by age and race. In mass disasters, particularly combat injuries, foreign material, whether that's ordnance, or projectiles from grenades, from landmines, or from small arms, become very important. When we recover that material it's a means by which we begin to look at our own casualties from friendly fire. So it plays an important role.

The medical x-rays enable us also to do an identification process and to correlate the x-rays with what is found in the medical examination in autopsy. So these skeletal patterns become very important, and it involves finding pre-mortem x-rays, comparing those side-by-side in the skull and particularly the pretibral (phonetic) column play a very important role in that, because each of us are built a little bit different and if you can get a superimposition you can defend that in any situation.

The same approach applies to the long bones of the hand and feet, of the legs, and particular in older populations where there's arthritis and trauma, changes relative to their occupation or employment. All that becomes very critical in assessing and documenting the overall identification effort.

When all things are said and done, we rely on DNA. We take samples on everybody and we use a combination of nuclear or mitochondrial DNA analysis as necessary. Nuclear DNA is preferred because it is more unique to an individual. It represents the genetic code from the mother and the father, and when it's present and when it can be amplified, using polymerase chain reaction, you can confirm identification with a high level of statistic reliability in excess of fingerprints. That's where you get the one in several hundred million or one in a billion changes. DNA degrades very quickly so oftentimes we have to rely on a second set of analysis known as mitochondrial. Mitochondrial DNA doesn't come from the nucleus, it comes from the cell and the cell's DNA comes from the egg. So mitochondrial DNA represents a maternal representation and it does not represent the paternal. It almost invariably requires genealogy studies. Mitochondrial analysis is the primary means by which we use DNA analysis on our MIAs from Vietnam, from Korea, from World War II, and in fact we've used this material on our Civil War dead and was used to identify Czar Nicholas.

It was also used in the Pentagon incident, because of the extensive level of burning. Many of the cases did not yield nuclear DNA, but it did yield mitochondrial DNA and we were able to not only identify the casualties but the terrorists.

This analysis is much more improved when there's a databank and how that databank is used is a topic of considerable discussion. The Department of Defense when it went with the DNA gold standard required a blood sample from all service members. The hope was to have everybody by

2002. We're not quite there, but we have on file in Gaithersburg, in our DNA repository over three and a half million bloodstain cards. Aside from quality control testing they can only be used for that casualty identification. They cannot be used for any genetic screening. They're not available to anybody else, or for any other purpose, unless directed by federal court. The criteria for that is set by the Assistant Secretary of Defense for Health Affairs and is closely monitored by Congress.

We were able to, we had a large number of blood parts on file from our Pentagon casualties, not only active duty, the Reserve elements there, but retired individuals, but it did highlight the need calling for a DNA repository for contractors and other folks if in fact we wanted to do rapidly screening. That's a topic of considerable discussion even as we speak.

DNA is largely based on extracting the DNA, amplifying it to sufficient quantities that it can be visualized with instruments or radioisotopes and prepared to unique characteristics. So it's constantly on trial and constantly being updated.

Its value is in being able to take a lot of material that's very difficult to work with because of fragmentation, burning and decomposition and identify it as human and identify it as belonging to a particular individual. When recovery is delayed or the condition is modified by trauma or time, DNA, dental and medical become very, very critical.

There are two primary means of identification. Restriction fragment lent polymorphisms which is how DNA analysis is done for genetic defects and then polymerase chain reaction or PCR which is most commonly used for forensic cases, and it's PCR that we use both in nuclear and mitochondrial. That work is carried out in Rockville at the AFIP Annex at the Armed Forces DNA identification laboratory.

This is a laboratory that's divided into nuclear, mitochondrial sections and will extract the DNA and analyze it. Compare it with templates or reference samples that we either have on file or develop from next of kin and will do the genealogy studies.

They were able to identify all of our Pentagon casualties as well as all the casualties from the United Airlines 93. This required round the clock operations on the 12 and 23rd of September until mid December.

Of course the repository with those blood dog tags on file was a significant help in identifying many of our retired military folks.

Presumptive identification played an important role as well in personal effects, school rings, dog tags, credit cards, even the refractive indices of glasses, dental prostheses, all become important. So under presumptive identifications which includes characteristics, are visual appearances, personal effects, serology—the blood groupings that we would use for blood transfusions or paternity testing—anthropometrics, which are the physical measurements of height, weight, muscular build, right or left handedness. Characteristics that make you more white, more Asian and more black even when many of us are mixed. Congenital diseases that might be present and represented, acquired diseases as well as general racial and age characteristics.

That becomes important. This is a slide of an individual who was a casualty of a commercial airlines crash and was identified as CARL STEINBERG based on a visual comparison. The problem is that CARL STEINBERG called from the emergency room and asked if anyone had found his wallet. These are not one and the same. It highlights that fact that with trauma there can be misidentifications. That is why the federal government, particularly the Department of Defense will go to great lengths to go for a positive identification.

Nonetheless we rely very heavily on personal effects, so all that material no matter what its condition, it's charred, is catalogued and if appropriate cleaned up and returned to the next of kin.

It also provides valuable information into the individual. Subtle clues that might help us make identification or proceed with additional laboratory work to confirm a blood group or other characteristic through laboratory analysis.

Interestingly enough tattoos play an important role too, and more and more of the population has tattoos. Interestingly enough our medical records will indicate that a tattoo is present, but it doesn't describe those tattoos. So we end up going back to the family and getting photographs to compare and contrast. Some of them are particularly pertinent.

This is from Desert Shield/Desert Storm. Represents the blood type and social security number of the casualty who I guess had some premonitions about his own level of survival. So it becomes a very important aspect.

We also use hair analysis, too, and it turns out that hair is a pretty good marker of ethnicity as well as oftentimes being able to be used for DNA and toxicology studies. So a lot of information can come from the hair and it turns out that body hair provides more information than head hair. That's a phenomenon we don't quite understand, but it's useful because most people have body hair even if their bald like I am.

So we'll collect hair and other trace evidence and that evidence may be processed by us or may be processed by another crime lab or another forensics laboratory. We'll use the facilities of NCIS, OSI and CID within the military, the FBI and Bureau of Alcohol, Tobacco and Firearms, or Secret Service on a regular basis, and oftentimes need to go back to some very unique

programs that are run by DIA or NSA or reconnaissance programs in order to highlight the data that we need to get.

Anthropology plays an important role. The Armed Forces Medical Examiner's unique in having one of only thirty-five certified forensic anthropologists in the country and we have him fulltime, and that's DOCTOR BILL RODRIGUES. DR. RODRIGUES oversaw the anthropology efforts at Dover and is very good at dealing with skeletal, partial remains and in fact has gone to Kosovo twice to be involved in war crimes which the AFIP's been involved with. Not since Nuremberg have we been involved on a practical basis. Anthropology's used routinely for a lot of the material coming out of Afghanistan, Pakistan, you know. So it's an ongoing event. That was why we also needed the help of Smithsonian and CILHI.

We'll clean up the bony remains and oftentimes examine those under alternate light sources including laser lights. It turns out that the bone will pick up chemical compounds including drugs and fluoresce differently, and oftentimes enables you to identify minute trace evidence that might lead to an identification process, and that's combined with the standard measurements of bone and re-association skeletal remains when fragmented.

It's fairly extensive. This is a slide of a small number of bones recovered from an aircraft mishap involving two Marine pilots, both of whom were roughly the same age, same build, same blood type, suffered from sameness, and yet we were able to identify in this handful of bone fragments that both were represented and actually be able to identify them. That's what the capability is and that's why so much effort goes into this.

We also get involved in facial reconstructions when that's necessary so when you see those on television, or in the movies or we saw it in Berkeley Park (phonetic) we do it here and we do it well. It needs to be tempered a little bit because we use anthropologists and we use artists and in

that facial reconstruction we find that there's a tendency to make all the casualties look like family members, because there's subjective feeling that goes into the eyes, the ears, the nose and lips. So we try to balance that with computer graphics and identi-kits and that kind of normalizes and enables us to take a missing person or an unknown, a John Doe or Jane Doe, and create a facial reconstruction that helps in that identification process.

Forensic toxicology plays an important role as well and that work is done also at the AFIP in a DoD Forensic Toxicology laboratory that has oversight of all forensic toxicology labs in the Department of Defense, and it can screen over 35,000 chemical substances and that capability oftentimes enables us to identify a person not only by drug use, but by therapeutic drug use. So if they have a heart condition or they're taking asthma or they've been exposed to an environmental toxin we have a good chance of picking that up.

That of course becomes a critical issue in dealing with biochem weapons casualties and a enormous amount of effort goes into developing methodologies to identify and characterize along with contaminants.

The basis for that analysis is blood and urine analysis followed by spinal fluid, bile, vitreous humor, which is fluid from the eye and as appropriate drug concentrations within organs. So what we're able to do is not only identify a drug, but to evaluate the use of that drug over time by looking at the distribution within the body.

Of course all of that material has to go into a database and that database needs to be addressed on a fairly aggressive fashion in order to answer the question. So epidemiology plays a very important basis. We do this not only in our human analysis, but we do it in our animal analysis. We live in a world that has a lot of life and we share that with other animals including companion animals, domestic livestock and wildlife and when there's an environmental threat

they reflect that as well. Well, we capture that with our veterinary folks and our dental folks and our medical folks and all those characteristics are there too, so databases become very important. An individual case then becomes part of a population study and that's really the value of the Institute in using evidence based population medicine. Since pathologists never throw out anything, we have everything that we've collected since 1862. So we're the custodian of all the nine million specimens or cases. That is a pretty comprehensive evaluation of the national repository at least for the last hundred and forty years of not only military medicine and of individuals, but of population medicine.

The beauty of that is that that old material can be used in new ways. Recently because of molecular diagnostics we were able to go back in and pull material from the 1918 epidemic, flu epidemic from our military depots and actually use the micro diagnostics from that old material to identify, try to identify why that was such a virulent strain.

As you know that particular flu epidemic stopped World War I. It killed 43,000 service members and an estimated 40 million worldwide. So those databases and the ability to manipulate those databases and use new techniques become very important.

Another major area, of course. is determining the cause of death versus multiple causes of death and when you've got burning, and when you've got fragmentation, and when you have blunt force injury what you really need is a very extensive autopsy evaluation. Oftentimes with microscopic followed by toxicology and ex-ray analysis. That was brought into play as well. That enables us then to address each case individually and collectively by looking at the pathology, relating that to the scene and other comparative investigations and to build what I think is a very unique, comprehensive repository of the physical evidence and of the circumstances of the particular investigation.

We're particularly proud of our ability to mobilize to the Pentagon incident. Have people in place at Dover within twelve hours. Also have people at the Pentagon including Colonel MARSUPE (phonetic), the Armed Forces Medical Examiner, and Colonel BRUCE HANDSON (phonetic) my Operations Chief to coordinate Armed Forces Medical Examiner efforts at the Pentagon with Dr. MARSELLID (phonetic) the State Medical Examiner for Virginia and Pentagon officials, and to convince the establishment that the Dover solution was the right solution and to ensure that went without a hitch. I guess the proof of the pudding is on the point that we were able to do it. We did it in a timely fashion and we did it in a comprehensive fashion in that there was zero defects.

I think it's important to indicate that the Department of Defense and particularly the AFIP is really the only DoD asset that I'm aware of in mass disasters completely tasked through NDMS, the National Disaster Medical System of FEMA to participate in a number of other activities as well.

It's important from my perspective that the Institute and Department of Defense continue to find the people and train them so that these resources are available and that we can deploy on short notice worldwide. I'm real proud of the Institutes capability to do that and to assist the families and assist the services. Not just in this case but in every case on a day-to-day basis.

Well I've talked now for an hour plus. How about answering some questions that you might have?

Q. (01:07:59) Tell us how you first got the call or what happened post to the attack?

A. Relative to the Pentagon?

Q. (01:08:09) Yes, walk us through that time sequence.

A. I had finished—that was a Tuesday, I think, and I was here reviewing case work and operations that require my reporting AFIP activities on an on-going basis to the Army Surgeon General, who monitors the Institute and has a responsibility of reporting those activities up and down the chain. For reasons I don't quite remember, I had CNN on, and on CNN I saw the results of the first crash and then watched the second plane crash into the building. Then immediately there were reports of something going on in Washington and then certainly it involved the Pentagon, although it wasn't clear what was going on. There was at the time a report of possible explosion at the State Department, and possibly at the FDA. So we watched very closely and within a relatively short period of time the Medical Examiner's office had already been called and was responding to the Pentagon and they were in constant contact with this office, and that continued pretty much for the 12th.

There was inquiry about our capability. Most of that inquiry was coming from the FBI and it became very clear as I indicated early on that it was uncertain who would be handling the casualties, and in fact Virginia was mobilizing state-wide to support that activity out of the northern Virginia office which is on Braddock Road.

So jurisdiction became a very important aspect since it clearly was an act of terrorism and the FBI was running the operation, the FBI and the US Attorney General really wanted to keep this on the federal side and were relieved to get confirmation that the Pentagon was exclusive federal jurisdiction and that there wouldn't have to be anymore state involvement then was absolutely necessary in the search and recovery. At that particular point the AFIP in the mobilization of our resources and the mobilization of DoD resources became a priority, and as I indicated we have a

team in place. We were ready to begin processing up to a hundred casualties a day within twelve hours of getting the green light to proceed to Dover.

Q. (01:10:57) Sir, earlier on the tape you mentioned that there is, in what you just said about there was some people in DoD advocated about possibly keeping it within the local jurisdiction?
A. That's correct.

Q. (01:11:10) What was their rationale?
A. They didn't share that with me. It wasn't a dialogue. Navy felt pretty strongly about keeping the whole investigation here, and I know the Vice Chief of Naval Operations was very concerned about moving that in any period of time, but I was not party to any of those discussions.

Q. (01:11:31) Was that due to it being moved to Dover?
A. Yes, I think they would have preferred to either do it in Virginia, or possibly at Bolling or Andrews, if it was workable, but the jurisdictional issues, the political issues, the fact that the Department of Justice was the driver of this became modifiers. I think that that's really important when you deal with disasters, natural disasters, war disasters, acts of terrorism. What happens is that you, you hopefully you have a pre-disaster plan, but what you have is an acceleration of resource consumption. So the local folks will respond. They're the first responders and they get exhausted. Then it goes to a county or a regional, or a state and in each of those situations the politics, the economics, the control, command and control issues become more and more intense. That was certainly a major driver in this one, because of the enormous amount of damage the Navy sustained. I mean we lost most of the Office of Naval Intelligence configuration. Army

certainly lost some key players, and it had the interest of virtually every flag from the Secretary of Defense down, plus a lot of outsiders. So it was not surprising that there would be a lot of discussion on what the best way to go would be and that only someone needed to say, "I have the authority. I have the responsibility," and do that.

As I indicated that on the FBI, Justice side came from the US Attorney, and from the medical side by my ultimate boss, the Assistant Secretary of Defense for Health Affairs, who at the time was DOCTOR CLINTON.

Q. (01:13:40) And so exactly when did you get the turn on to –?

A. Within, within those twenty-four hours on the 12th.

Q. (01:13:47) The 12th. Did you actually go to the Pentagon then, yourself?

A. No, I did not. I was directed to proceed to Dover directly. Whereas my Medical Examiner, Colonel MARSUPE (phonetic) remained on site at the Pentagon coordinating with Dr. MARSELL (phonetic), who had come up from Richmond to assist in any way, once it was clear the jurisdiction was not going to be Virginia, but with the federal government.

That became important because we had to find body bags. We had to locate those transport aluminum containers. We had to find refrigerator trucks to store those remains onsite before they could be moved to Fort Belvior, which became the staging area, I think, or Fort Myers before removing the remains by air from Virginia to Dover.

Q. (01:14:50) They went by air?

A. Yes, with exception of one final set which was transported by truck and escort from the Pentagon up, and that was largely the debris that was removed and had been sifted through to make sure there was nothing in that. But there was a lot of concern because of the distance and the need for escorts.

Q. (01:15:17) Chain of Evidence.

A. And chain of evidence, and that's what was one of the major discussions, why I think the preference would have been to keep it local and all that logistics had to be worked out. The material, it was worked out and the Army provided CH-47s which generally fly, I guess without exception flew tandem and transported all the remains over probably a week and a half period of time, depending on the recovery, from Virginia to Dover.

Q. (01:15:55) Initially was there a temporary morgue set up at the Pentagon?

A. Yes, and it was truly a temporary morgue. As the casualties were recovered under FBI that recovery effort and documentation and tagging occurred, and then they would be kept there in refrigerated trucks for a period of time until, I would say a critical mass, a number allowed for them to be transported to the staging area so that they could then be transported subsequently to Dover. And of course weather and a host of other conditions would affect that on a fairly regular basis.

I think we started receiving remains either late on the 12th or on the 13th. So we were involved early on on the 11th. We knew we were going to be the principle players by close of business on the 11th or on the 12th. We were in place in Dover on the 12th, and I think we started getting casualties in on the 13th and that continued until it was done.

Q. (01:17:21) You said that the main thrust was a two-week high tempo operations.

A. Yes, right, and this went from basically the 12th of September and for a two week period. I still had people up there, but it was only a small number. In that period of time, all the casualties had been received based on continued interaction with the scene and with the FBI who oversaw that. And all the sampling that needed to be done had been done and one of the decisions I made, no one challenged me on it, I'm glad I made it, was that this would be the most comprehensive forensic investigation that we'd been involved with. That everybody would have a full autopsy, full ex-ray. I usually don't have that luxury in war. You know during Desert Shield/Desert Storm we needed to have Dover capable of running up to two hundred casualties a day and they were anticipating a thirty thousand more casualty.

Now, I would have preferred obviously to autopsy everybody because then I can answer the questions, and this is just not possible. So we had to develop criteria by which you would look at some people or some sets of remains with greater intensity then others. I felt that I didn't have that luxury in this case. That every one of these cases needed everything I could throw at them and then some. Otherwise there would be no reason for DoD doing this and throwing all the resources that we had. As it turned out I needed everything I had to identify everybody. It was not an easy task.

Valuable lessons learned, we didn't learn, from a technical point of view anything that we didn't know before. We reaffirmed a lot, but what became really important in this particular investigation was the criticality of communications. The intensity of this investigation, the personalness of this investigation resulted in significant flag interest at every level, in all service, and looking back on it was a confounding aspect, an inevitable one, but a confounding issue,

because everybody wanted to have the information before the next guy or for their own purposes. It took some pretty tough decisions at pretty high levels.

General JOHN VAN ALSTYNE, was the larger driver, I suppose in terms of the day-to-day activities and my overall marching orders came from ADMIRAL HALDER and J4, who had come up. As you know, all of medical comes under J4 and JCS ultimately. So ADMIRAL HALDER and I guess ADMIRAL JOHN MADISON came up as well as Air Force representation. The Army representation was GENERAL PEAKE, who was the Army Surgeon General.

We, Dover was visited by a large number of folks including representatives from DOCTOR CHEW, CHARLIE ABLE. Army Surgeon General came up on a regular basis. GENERAL CARLTON and his staff, the Air Force Surgeon General came up. To my knowledge, Navy did not, but they were certainly briefed. Of course Navy was one of the last of the personnel units that stayed at Dover. I think CAPTAIN BRYAN left something like 16th of December if I recall. He had a tough job because he inherited a lot of stuff that the Marine Corps picked up in terms of building the backgrounds from the victims of the American Airlines as well as our folks. So he was very busy. Whereas Army's focus was on its people and contractors and I think had a different perspective.

That was an interesting observation from my point of, in spite of the fact that requirements are the same, and the expectations are the same is that the services take a very different focus on how they address those things. When you've got a tri-service or joint activity, you've got to be sensitive to that. It's not unlike the CINC plans, you know where, at least the Navy, Marine Corps elements are always owned by the CNO, the CINC can only task them. So you get into a

number of different communication lines and command and control lines that you need to be sensitive to.

I feel particularly sensitive to that being the medical staff for, or staff corps because ultimately in my perspective your value is only, is measured by how close you are to that soldier, that sailor, that airman and Marine. If you're not very close then maybe you're not particularly relevant. (interviewers chuckle)

So I mean, and that influences my philosophy. It certainly influences my manning, my mission and my budget.

Q. (01:23:24) But was it clear to you while you were there to whom you needed to report and how frequently?

A. Yes.

Q. (01:23:32) And to whom was that?

A. On a regular basis the day-to-day activities was reported through Air Force and the Air Mobile Command to all the various places, but I also had an obligation to report on a case-by-case basis to the Army Surgeon General's office and General VAN ALSTYNE. My staff and I continued to field calls, no matter where we were around the clock.

Q. (01:24:13) What was your relationship with the folks at Dover, the permanent folks that were there, the director, the –

A. To be glib or butts, the AFIP lives at Dover in the Medical Examiner's office on a regular basis. I mean that's kind of our home away from home. The Department of Defense until couple

of years ago had two port mortuaries by which all of our casualties would come home. One was at Travis Air Force Base in California and the other one's Dover.

Travis was used extensively during the Vietnam conflict, but it has some unique jurisdictional issues. It turns out that the runway is exclusive jurisdiction, but the rest of the base is not. The local Coroner, as an elected Coroner could actually collect by head. Well, that was an untenable situation, and you have a staffing issue. So early on Dover was used far more frequently, largely because we're the ones that provide the forensics and I have all the resources of Washington available. I've got the FBI. I've got my own laboratories and we're up there what, in two and a half hours or so. It's a hundred and twenty-two miles. So when we have multiple casualty incidents, and that may be as few as four or hundreds, that's the way to go. The base, the, I'm trying to think, I think it's the 536 that has oversight of the port mortuary. Air Mobile Command, of course, Air Force is really a number of different Air Forces. So SAC, MAC and TAC have all been changed, but Air Mobile Command which is the old MAC is who I rely with, and that's a four-star. So you've got an enormous amount of support there. They do a wonderful job of supporting the Institute as does the Dover Hospital Clinic there, and our dentist, and you know, any additional, radiologist, as well as my own folks become a basis for that. It works very well. I got tremendous support from all the services. A number of my regionals, I mentioned those earlier, came from naval facilities. They were my regionals and of course that was coordinated with BUMED, and ADMIRAL ARTHUR and his staff. Got Army support. Of course that was coming from Army operations, and since the Army's an executive agency, the Army Medical Command oversees my administration. That's where my budget comes from. That's where my reporting, that's where my OER comes out of so my evaluation's an Army evaluation. Makes for some interesting rights.

But we spend a lot of time up there and the Dover staff, the mortuary staff is a relatively small staff that can expand with contractors, largely embalmers, as necessary. But that's a relationship with the Institute that goes back to Tenerife (Canary Islands) so it goes back too the late 70's. So it's a very strong one and even though people change on both sides, it's a very good relationship. That's really the value of the Institute. The Institute lives, at least in part on Walter Reed, we're actually in nine buildings, in five locations, but it's the people's Institute. We're only stewards of it, and I'm glad when the Institute is seen not as an Army structure, but as a Navy or Air Force or DoD structure, or as the people's structure, a national repository. I think what we have, in addition to an international reputation and international capability, oftentimes as I've indicated one of a kind, I think we do a good job given the size of us. It distresses me from time to time that I have to argue for our existence, fight for the budget and manning, but I guess in the times of no new money and expanded missions that's not out of the ordinary. But I do think this is a very special place and I probably wouldn't have spent—I'll have what thirty-four years in when I finally step down, I don't know that I would have stayed that long had it not been for the Institute and what I'll call one hell of a ride.

(everyone chuckles)

Q. (01:29:35) You said that at Dover you did the sampling, is it my correct understanding that then you had to send those samples elsewhere to have the –

A. Oh, yes, Dover has only the capability to process, not to analyze. So I mean, we could do the dental records up there and the fingerprints certainly can be prepared, but the fingerprint, even the fingerprint comparison was dependent on the FBI's database which is out of West Virginia, and it's electronic. But the toxicology, the DNA, the microscopic sections all had to be brought

back here for processing. Even when we wrapped up the operation at Dover, and the actually processing of the body as you will, that laboratory work continued on into October, November and December. That was nonstop. That's by courier, with chain of custody and chain of evidence.

Q. (01:30:38) How about the flow of information. I mean if you were at, you just, you just worked there for two weeks?

A. The medical evidence went back to the military, to the services because the services were handling the individual. The American Airlines data and material went, or was shared with the FBI and we continued to have interaction. The FBI was controlling the investigation until it was concluded.

The end result with that was that material that was identified to an individual was released to the families, unless they elected not to receive that and that materials, I guess would be buried or cremated and buried following Secretary of Defense guidance at Arlington. But the terrorists had to be identified, and terrorists had to be separated and the terrorists were turned over to the FBI, both from the Pentagon and from United Airlines 93. Those profiles, it's a small amount of material, those profiles are probably being used on ongoing investigations and ongoing intelligence.

Q. (01:31:56) Speaking of the terrorists, you used the term about the DNA that you get from the mother, the mitochondrial –

A. Yes.

Q. (01:32:02) DNA . You used the phrase that that DNA was used to ID the terrorists?

A. It was used to identify many of our folks who we couldn't get nuclear, and was the basis for our terrorists. Now we never were able to put a name to a particular set of remains, but we were able to separate the terrorists out from the victims, and we were able to do that by elimination.

Q. (01:32:31) Elimination. We did not get any samples from any –

A. That's correct.

Q. (01:32:34) any family members, that was –

A. That's correct, then what I wanted to do was I wanted to push the technology and I'll try and explain what I mean by that.

(shuffling through slides)

This is a slide of forensic serology. This is the way I was trained when we first went into crime labs. It starts with a blood smear and what you can do with it, and that blood, you begin the identification process, you physically look at it, you chemically look at it, and this is where the luminal and all the various things that we watch, Crossing Jordan, CSI and many of those get into play. What we can do is determine first is this human blood or not? Then we can actually sex blood. You can look for the chromosomes. You can look for the male testosterone, and estrogen and you can look at the age of the blood based on largely protein changes. There are oftentimes racial markers, simple or particular blood groups, to determine blood is actually from the vessel versus not. You can separate menstrual fluid, or seminal blood. So blood's not necessarily blood. Blood that would be in an abscess, sequester, all those different characteristics and include an enormous amount of separation and categorization by basic kinds of

(_____Inaudible 01:34:39) (_____Inaudible 01:34:43) (_____Inaudible) kind of comparative (01:34:45) basis.

We then can individualize that blood using cellular anogens, serum proteins and cellular proteins. This is how blood is typed then for transfusions. This is how you would characterize the victim or the perpetrator.

Now as good as this is it doesn't say, "This is Glen Wagner." It says, "The blood that you have there belongs to a human. It's male," and the combination of this suggests that they are white, or mostly white. If I were taking drugs, high blood pressure, cold medication, they can tell that too. They're class characteristics.

Well, what I wanted from the terrorist material was the same thing that mitochondria DNA…wanted to know if I could show whether they were Arabic, and whether I could with other databases, help determine national databases characterize that terrorists, and we think we were able to accomplish that. We were able to do that not once, but five times (_____Inaudible 01:36:14) and I suspect (_____Inaudible) material coming out of Afghanistan and (_____Inaudible), participating (_____Inaudible).

Q. (01:36:35) I had another question related to the flow of communications, you weren't actually able to do the analysis at Dover, what then was the flow of information from where they did that analysis to Dover for your –

A. Well, actually the analysis was done up there in terms of most identification process. You've got to be careful you don't mix apples and oranges. The bulk of, well I won't say the bulk, a large number of identifications were made there because I had administrative side including an epidemiologist up there and the data as it came in was constantly updated into a massive excel

sheet. OK, which is what CAPTAIN O'BRIEN and TOM ALLISON on the Army side and the Air Force mortuary folks and the Army Surgeon General VAN ALSTYNE would use to update the progression of identification process.

The identification process is kind of an interesting one and it seems to have a, the same pattern no matter what investigation you're talking about. You have a period of time where there's a very little identification and then as the resources and the infrastructure kicks in, you have a fairly steep slope of identifications, and you knock out a large number. Then you get into the problem cases and there's a plateau that goes for a period of time and that plateau oftentimes is driven up by, with the material you have, but the material you need from somebody else that has to be gotten from the families. It needs to be transported, needs to be analyzed, and then of course as you get the bulk of the cases, or you, you know, you get a cease and desist, it slips back down again. So it's kind of alike a plateau. That's the best way you know, with two slopes on either side.

The slope on the backside is usually considerably less steep then the one on the front side, so there's an enormous amount of activity and a positive identification. And at Dover, identifications that could be done by fingerprints or dental obviously were there right away. The DNA and toxicology was transported back daily, and in general if we had good material that we could use nuclear DNA, I had results in about 72 hours.

So a lot of identifications even if they were DNA identifications were actually done at Dover, while we were physically up there. The problem cases, those that required mitochondrial DNA, where there was massive fragmentation and we had to sample multiple specimens and then get them all back together again, continued to go on after we returned, but that work was coordinated with Dover, who then would go back into the refrigerator trucks and based on the numbering

system we had, and it was a triple number system, bring those parts together and coordinate with the services in terms of releasing that material to the family or saving for a group disposition.

Q. (1:40:08) You said it took about 72 hours for a nuclear DNA to get a match or a -?

A. On an average, right, and that was with the laboratory running around the clock.

Q. (01:40:15) How about the other mitochondrial?

A. Takes up to a month or two.

Q. (01:40:21) A month or two?

A. Yes, that is a very extensive operation, and a single specimen can run as much as three or four thousand dollars. It's not cheap, and not everybody can do it. One of the problems that I've watched come out of New York is that they didn't use us. They talked with us and we actually trained some, but they, they had to employ a number of commercial organizations to do that work, and they don't have that experience. They're very good in DNA analysis. They're not good in this kind of stuff.

Q. (01:41:04) Of mass casualties?

A. Yes, and you know because you, you just can't get a piece of material, stick it in a test tube and pull out DNA analysis, I wish you could. In real cases, any of us you could do that, but in the cases the Institute gets and the Department of Defense gets, you don't have that luxury. You've got a lot of contamination. You've got a lot of alteration, from fire, fuels, delayed deliveries. It may be in the ocean for an extended period of time. So, and yet they're the ones, they're the

cases that we need the most information, and the forensic infrastructure within the Department of Defense has been developed to answer those operational questions and that's what makes it the best in the world.

Q. (01:42:01) Were you surprised with your success rate?

A. No.

Q. (01:42:05) No?

A. I believe in this place. Remember I have twenty-two years here, and it's my operation, so it's a personal issue, and I can be a son-of-a-bitch when I need to be.

Q. (01:42:22) Are you -?

A. Didn't need to be.

Q. (01:42:21) That's good. Do you know why the decision was not to include you with the New York operation?

A. No, but I can guess. New York's very proud, and it has a very extensive operation and, you know, much of the country's resources were focused there anyway. I mean certainly the numbers were far greater than us. Much of their Medical Examiner staff or Public Health Department support either came from the Institute or are interactive with the Institute. I mean, the forensic community nation-wide is relatively small so we, you know, there were no surprises. An example is Dr. ARMTER SMOCKEER (both names phonetic) who's on my Scientific Advisory Board was the director when I first became a Deputy Director. He's a medical examiner and

neuroforensic pathologist in New York and his primary job since the 11th of September has been the medical examiner examination of the recovered remains from the World Trade Organization. Well, you know, when your own alumni are part of that, you can bet, we're in Georgia right now with his crematorium. You know, that's not a federal issue, it's a state issue, but we have a particular talent and the states willing to pay for it and the Department of Defense is willing to let me put some resources there.

That's the beauty of a place like this and there is no other Institute of Pathology worldwide, you know. And my guess is that you wouldn't have this one if they had to build it today. But it wasn't built today. It was built in the Civil War, and it's evolved into what it is today and you know with the repository, with the dept and breath in every system, with most of the staff being civilian and Air Force stable, with the vast majority of them never retiring. You go from a vertical to a horizontal position, you've got a, I won't say stability, because you know you still get caught up, but you have a level of interconnectivity, and synergy that would be real hard to beat.

You know, that's really critical. When I've been away from here in a real military environment, you've got the squadron or that ship esprit de corps. You take care of your own. You know, there are social activities that go on. It's a family affair. That's not true in Washington. You've got people coming in from every jurisdiction. It's expensive as hell and most of us can't wait to get out, you know. So you've got other drivers in place that people don't want to talk about that become really critical when you have to deploy a team and that team needs inherently, to. You know, it comes from here and it comes from here, but I value the McGivers (phonetic), because no case is the same and that creativity, that innovativeness, that opportunity to build on pass experience becomes very important, but even the best of us has to go and so the mentoring

process and the training process becomes equally important because you're going to pass that man along to the next generation who hopefully will not only run with it, but do it even better.

Q. (01:46:29) You talked about that there were some lessons learned, were there any, did you have to put together any reports from this, or -?

A. Yes, we have an after action report. You should be able to get that from each of the services. I'll be glad to provide it if it's appropriate. Our after action report and my guess would be rolled into bigger ones, but I felt it was important to capture what worked and what didn't. What could be better, and what wasn't, but in general it was a very favorable report.

The department of Defense does a darn good job, you know. Despite all the challenges we have, we can deliver where we need it and we do it worldwide. That's pretty impressive. Hell we do it in space.

And that's why, I think, of all the federal agencies there is so much concern, I mean yes, we're big, and yes there are a lot of limitations, but the nature of national defense, the infrastructure is necessary. The training, the continuity, the command and control, the accountability if you will, makes this a much more powerful effort. Veterans of Health and Human Services and DOJ, so it's not surprising we would stick to the deck. We're the 911, on nine one one.

Q. (01:48:11) The flight 93 in Pennsylvania?

A. Yes.

Q. (01:48:13) Did the remains stay up in Pennsylvania and then the samples –

A. Except for the DNA, yes.

Q. (01:48:19) The DNA came down to your lab and then –

A. Yes, this gets back to jurisdiction.

Q. (01:48:22) and then the restriction. OK.

A. It's so critical. The Country coroner has jurisdiction. We run into some interesting points here. You may have a number of players involved in the investigation who get involved from when the injury occurs, but from a coroner point of view it's where the death occurs, and that was why there was so much discussion with Foster who was found dead. He was a –

Q. (01:48:50) VINCE FOSTER?

A. Right, in –

Q. (01:48:54) Fort Marcy Park.

A. Yes, George Washington Parkway. The federal property, federal investigation, but the case was done by a Virginia medical examiner, because it was concurrent. Or the CNO's suicide, that's what it was. You know, that was handled by Metropolitan Police department and the DC Medical Examiner. We were there. We had a vested interest, but we didn't have jurisdiction and that's what happened in Pennsylvania.

Interestingly enough the bulk of the US is still under a coroner's program, which are elected officials rather then medical examiners. And they hire or use a variety of folks and of course, because this was an act of terrorism the FBI had jurisdiction, that's legislative responsibility, and because of the size, overwhelming local resources, a trip to DEMORT Teams and then DMS. It

turns out that one of my elements, I have three major elements here. I have administrative element. I have the Center for Advanced Pathology which is where my science is and I have the National Museum of Health and Medicine, which is the old Army Medical museum and within my museum are anthropologists and archeologists who also assist, and one of the those happens to be the MidAtlantic Commission for the DEMORT Teams. So he's the one that directed once he was tasked with putting the DEMORT volunteers into not just Pennsylvania, but supplementing New York. It was the DEMORT Teams with our teams on site then that would take samples of what were very fragmented remains. Bring those appropriate samples down here for testing and then get them back there.

Q. (01:50:57) OK.

A. We end up not owning anything, but being a help, you know, and my general philosophy is that we're always part of the solution and part of the problem and it starts with not saying, "Step aside, I'm from Washington, and I'm here." But rather saying, "How can I help?" Even if I end up taking control. I don't flaunt that, because you only get one shot, and I don't have the teeth to back it up. Bottom line.

Q. (01:51:31) What are your plans for when you leave here?

A. I don't know. I had considered staying on in some fashion in forensics and being focused. I have a dream of creating a very comprehensive, even more comprehensive forensic program then we have now, because I see the need there. There are real problems coming out of our current prosecution and trying to coordinate activities at SOUTHCOM, and CENTCOM, and EUCOM, and doing, though I think I would provide a solution to, but I'm tired. You know, I mean I'm

fighting hard to keep the Institute open. My manning is down, particularly my Navy manning, because of decisions made two SGs ago.

I want to kind of go fishing and lick my wounds, I think.

(everyone chuckles)

I love this job and I'm going to have a tough time, I think, hanging up the uniform and maybe even medicine. I've considered becoming a veterinarian and going back to law school even. I do know that I can't stay at home. I'll drive everybody crazy and if my health holds up, you know, I've got another twenty years.

I didn't think I'd have this job and I started job hunting three years ago now. I looked in five areas at that time. Healthcare Administration, because I have certification in that. Pathology, Forensic Pathology, Family Practice because I was still board eligible, and Pharmaceutical Medicine, because I had started as a toxicologist. While I had some job opportunities they weren't knocking down the door. I concluded that a 55 year old Osteopath, Forensic Pathologist with thirty plus military years was not nearly as marketable as he thought, and was a legend in his own head. You know, and I concluded that I'll probably end up working for myself, and that fundamentally changed my approach on how to handle what comes up. Fortunately, I don't have to work. I worked hard at saving, in real estate as well as stuff, I think I can make it.

I do know I want to be able to go to bed at night and know that I did something worth while. Got a young Chesapeake that's pushing my buttons on a regular basis right now. I've flown, actually I have flown with the Coast Guard. I'm jump qualified. I'm a diver. I like surfing. Like hiking. Love oceanography. I guess the problem is that there's not a lot of space for a renaissance person today. That's why the military was such a convenient fit. It's a place where misfits actually can fit.

You know, I went, I would say I probably haven't been the best disciplinary. I've had my share of counseling sessions I suppose, but I've also been promoted, so I guess I can't be that bad.

It is time to go. Many of the current medical flags were residences of mine and it's been difficult to go from calling them by their last name to Sir, and I'm always waiting for, you know a 32 hearing, because of bad mouthing my bosses, you know, but they're still my kids, and that's taking a while to get use to. I guess my biggest concern is that when I was a young whippersnapper, there were a lot of bury planners, Vietnam was going on, and it was probably a nightmare from command and control, but it was an exciting time, because they were, I mean these were crazy people, and they were in uniform protesting (_____Inaudible 01:55:53) but they were, at least on the medical side, they were bright.

I remember looking at Lieutenant Commanders and Commanders who I thought would go on to Captains and think, you know, I'd follow this person to hell and back. This is a real leader. In many cases if they stayed they got changed. I resolved that wouldn't happen and then one day I looked in the mirror as a Commander, and I saw a change I wasn't particularly happy with. So I use that today to remind me that there is a high price for being part of the system and you need to be prepared to do that. I try to share that with my troops. I try to get them to look in the mirror and look at themselves differently. Sometimes they do and sometimes they don't. I had an interesting experience with strategic planning after, that I had some time ago and I had tracked down some funhouse mirrors and put them in strategic places and you couldn't come into the conference without looking at the mirror. The first round, you know, they were kind of amused. Then they started taking exception to the breath and bead, you know, or the hair do or whatever and within twenty-four hours they were avoiding those mirrors and I thought that that was telling. I reflect on that from time and again. I like my legacy to stay and I like Paul, "I kept the

faith, fought the fight," and I think I can say that. Maybe that should be my epitaph as well, but I have no idea why.

Q. (01:57:42) Well we really want to thank you for taking time out of your business schedule.

A. I hope it helped.

Q. (01:57:46) It really does.

A. I hope it did not cloud stuff, as you go and you talk with folks you'll get a different perception, maybe, but I think the factual you'll get a validation of and the time lines. The thing is we do this everyday. Maybe not to the same size, but right now there are a number of issues going on and there are biopsies being worked and diagnosis being made by our folks at Walter Reed, Bethesda Medical School, and we're interactive with the CINC surgeons on an ongoing basis, and it's kind of like switchboards, and fiber-optics. They get the call from one place to another, never the wiser. Maybe that's the way it's supposed to be.

Q. Thanks again.

Transcribed by:
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