



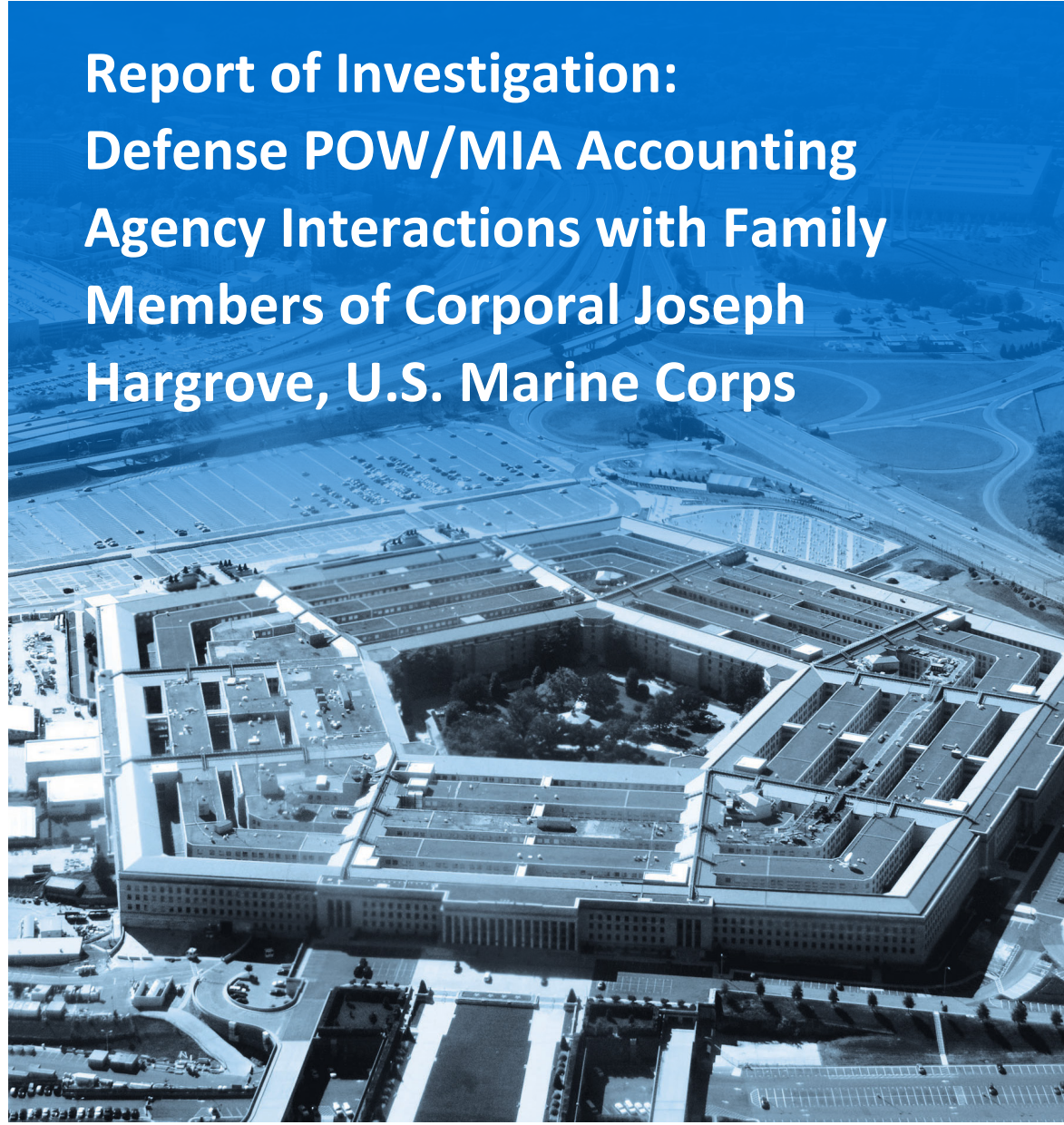
INSPECTOR GENERAL

U.S. Department of Defense

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Report of Investigation: Defense POW/MIA Accounting Agency Interactions with Family Members of Corporal Joseph Hargrove, U.S. Marine Corps



INTEGRITY ★ EFFICIENCY ★ ACCOUNTABILITY ★ EXCELLENCE



**REPORT OF INVESTIGATION:
DEFENSE POW/MIA ACCOUNTING AGENCY
INTERACTIONS WITH FAMILY MEMBERS OF
CORPORAL JOSEPH HARGROVE, U.S. MARINE CORPS**

I. INTRODUCTION AND SUMMARY

Complaint Origin and Allegations

On February 2, 2017, the complainant, a cousin of Corporal Joseph Hargrove, U.S. Marine Corps, e-mailed the Secretary of Defense alleging that the Defense POW/MIA Accounting Agency (DPAA) had recovered Corporal Hargrove's remains from Koh Tang, Cambodia, in 2008 but would not release the remains to the family.¹ DPAA is responsible for the recovery and accounting of missing Service members from past conflicts. The complainant stated that he had been working on his cousin's case for more than 10 years with "no help" from DPAA. He also stated that DPAA lied to him regarding the facts and circumstances surrounding the recovery and repatriation of his cousin's remains.² The complainant stated, "any consideration you give my family will be more than we have received in the past."

On February 15, 2017, the DoD Office of Inspector General (DoD OIG) initiated this investigation in response to a request from the Secretary of Defense to review the facts and circumstances surrounding DPAA interactions with family members of Corporal Hargrove regarding the identification and repatriation of Corporal Hargrove's remains. We investigated whether DPAA recovered Corporal Hargrove's remains from Koh Tang in 2008 and whether DPAA lied about recovering his remains.³

Methodology of the Investigation

We interviewed 24 witnesses, including the complainant, members of the 2008 recovery mission to Koh Tang, current and previous DPAA employees, a U.S. Marine Corps service casualty officer, and an author of a book on events related to the battle on Koh Tang. We also reviewed more than 8,000 pages of classified and unclassified records related to recovery and investigation operations concerning Corporal Hargrove and other Koh Tang losses. Additionally, we reviewed the book the complainant

¹ Corporal Hargrove was a lance corporal at the time of his loss on May 15, 1975. The U.S. Marine Corps subsequently promoted him to the rank of corporal on November 1, 1975. We refer to Corporal Hargrove throughout this report at his permanent rank of corporal.

POW/MIA is the acronym for Prisoner of War/Missing in Action.

Koh is the Cambodian word for island.

² The complainant alleged that the Joint POW/MIA Accounting Command (JPAC) recovered his cousin's remains in 2008 and that JPAC and Defense Prisoner of War Missing Personnel Office (DPMO) officials lied to him in 2009. The DoD deactivated JPAC and DPMO and merged both organizations with other elements to establish DPAA in January 2015. We outline these events in Section VI. We use the term "DPAA" to refer to the organization throughout this report regardless of the period in question.

³ The complaint also contained additional issues that we determined did not warrant investigation. We discuss these issues in Section VI.C.

wrote concerning his efforts to find his cousin's remains, and three YouTube videos of interviews the complainant gave on the matter. DoD OIG investigators also visited DPAA facilities, including the laboratory, where we viewed four sets of remains and material evidence recovered from Koh Tang in 2008. Our review of the information regarding the remains identified that these four sets of remains were Asian and not the remains of Corporal Hargrove.

Conclusions

We summarize our conclusions in this Introduction and Summary, and we provide the facts and analysis underlying these conclusions in Section VI.

Conclusion on the Alleged Recovery of Corporal Hargrove's Remains from Koh Tang in 2008

We determined that DPAA has not recovered Corporal Hargrove's remains. DPAA excavated four sets of Asian remains from Koh Tang in 2008. These remains did not include remains from an "unaccounted-for" Service member.⁴ Three individuals who participated in excavating the four sets of remains and one individual who observed the excavation told us that all four sets of remains were Asian. Additionally, three forensic anthropologists told us that all four sets of remains were Asian and that DPAA personnel knew the remains were Asian even before deoxyribonucleic acid (DNA) tests were completed.⁵ Forensic anthropology reports and DNA tests confirmed that the four sets of remains were Asian. The Armed Forces DNA Identification Laboratory (AFDIL) compared the DNA sequences of each of the four sets of remains with family DNA samples, including Corporal Hargrove's. None of the four sets of remains' DNA sequence matched any family DNA sample.

Additionally, during the 2008 recovery mission, DPAA received a flak vest and four bone fragments from Cambodian military personnel stationed on Koh Tang. DPAA determined that the flak vest was a U.S. Marine Corps issued flak vest but could not associate the flak vest to any specific individual. DPAA identified the four bone fragments as additional portions of two Service members who DPAA previously accounted for in June 2000.⁶

⁴ DoD Directive (DoDD) 5110.10, "Defense POW/MIA Accounting Agency (DPAA)," states that "unaccounted for" is an inclusive personnel accounting term applicable to DoD personnel within a combatant theater for which a campaign or service medal is authorized, a military operation for which hostile fire or danger pay is authorized, or a member of a flight crew lost during a Cold War reconnaissance mission, including enroute to and from, whose casualty status is: (1) Missing (all categories) and who has not returned alive to U.S. Government control; (2) Deceased and whose remains are not recovered or transferred to U.S. Government control; or (3) Changed from "Missing" (all categories) to "Deceased," subsequent to an administrative determination pursuant to the applicable laws and regulations at the time, and whose remains were not recovered or transferred to U.S. Government control.

⁵ A DPAA forensic anthropologist is an anthropologist with specialized training and experience in human skeletal biology, field recovery methods, and general forensic science.

DNA is a double-stranded molecule of helical structure containing genetic code. Individuals inherit DNA from their parents.

⁶ DoDD 5110.10 defines "account for," "accounted for," and "accounting for," as when: (1) the person is returned to the United States alive; (2) the remains of the person are recovered to the extent practicable and, if not identifiable through visual means as those of the missing person, are identified as those of the missing person by a practitioner of an appropriate forensic science; (3) credible evidence exists to support another determination of

DPAA continues to search for Corporal Hargrove and the four other Service members who remain unaccounted for from Koh Tang.

Conclusion on DPAA Communications about Recovering Corporal Hargrove's Remains

We determined that DPAA did not lie about recovering Corporal Hargrove's remains. A repatriation ceremony was held in Phnom Penh, Cambodia, on March 1, 2008, for the Cambodian Government to officially turn over the remains of two U.S. Service members to the U.S. Government.⁷ These remains were not Corporal Hargrove's remains.

The following sections of this report present our findings regarding these allegations in more detail. We also provide a list of recommendations which we believe should be implemented to improve DPAA management processes.

On December 6, 2017, we provided the DPAA Director a copy of our preliminary report, which included our conclusions and recommendations. On December 20, 2017, the DPAA Director concurred with our conclusions and recommendations and provided comments addressing each of our 12 recommendations.

II. OVERVIEW OF ALLEGATIONS AND THE INVESTIGATION

A. Allegations

In the complaint and interview, the complainant told us that DPAA recovered Corporal Hargrove's remains from Koh Tang in 2008 and lied to him about recovering the remains. The complainant told us:

- In February 2009, Cambodian military personnel, through an interpreter, told him that DPAA had recovered his cousin's remains along with the remains of three Asian individuals; and
- In March 2009, a DPAA official lied to him about a repatriation ceremony and not finding any Service member's remains on Koh Tang in 2008.

the person's status; or (4) the remains, regardless of quantity, are individually identified or the person is included in a known group remains determination.

⁷ A repatriation ceremony is a ceremony where a foreign government officially releases remains suspected of being those of missing U.S. personnel to the U.S. Government. The ceremony is normally held at the foreign international airport where the remains are placed in a U.S. flag-draped coffin and loaded onto an aircraft for transport back to the DPAA laboratory.

B. The Investigation

We interviewed 24 witnesses, including the complainant, members of the 2008 recovery mission to Koh Tang, and current and previous DPAA employees from the laboratory (forensic odontologist and anthropologists) and various directorates (analysts and outreach and communications specialists).⁸ We also interviewed the U.S. Marine Corps service casualty officer and an author of a book on events related to the battle on Koh Tang. Additionally, we interviewed the DPAA's Acting Director, the former deputy director for operations, and the chief data officer.

We also reviewed more than 8,000 pages of classified and unclassified records related to recovery and investigation operations concerning Corporal Hargrove and other Koh Tang losses. These records included messages, detailed reports of excavation, excavation summary reports, search and recovery reports, forensic anthropology and odontology reports, material evidence reports, historical reports, analyst reports, laboratory accession documents, applicable directives, policy documents, and standard operating procedures.

Additionally, we reviewed the book the complainant wrote concerning his efforts to find his cousin's remains, and three YouTube videos of interviews the complainant gave on the matter.

DoD OIG investigators also visited DPAA facilities located on Joint Base Pearl Harbor Hickman, Hawaii, from May 8 through 11, 2017, where they interviewed witnesses, obtained evidence, and visited DPAA facilities, including the laboratory. While at the laboratory, DoD OIG investigators viewed the four sets of Asian remains and material evidence recovered from Koh Tang in 2008.

III. BACKGROUND

This section provides an overview of the battle on Koh Tang, the 18 U.S. Service members who were missing at the end of the battle, and a short introduction of the recovery operations.

On May 12, 1975, Cambodian forces seized the U.S. container ship, *SS Mayaguez*, and its 39 crew members in the Gulf of Thailand about 60 miles from the coast of Cambodia. On May 13, 1975, the ship was anchored off Koh Tang, a small island approximately 30 miles off the southwest coast of Cambodia. U.S. Air Force pilots reported that they saw the *SS Mayaguez* crew board a fishing boat and disembark at Koh Tang. The pilots incorrectly assumed the *SS Mayaguez* crew was on Koh Tang. President Gerald Ford denounced the seizure as an "act of piracy" and demanded the immediate release of the ship and its crew. On May 14, 1975, after diplomatic efforts failed and assuming the crew was on Koh Tang, President Ford ordered a military assault on Koh Tang to retake the ship and its crew.

Koh Tang, Cambodia

Koh Tang is approximately 30 miles off the southwest coast of Cambodia in the Gulf of Thailand. The 2.3 square mile island is 3.98 miles long, with a width varying from 0.06 to 1.98 miles. Figure 1 shows Koh Tang's location in relation to the coast of Cambodia and Vietnam. Figure 2 shows Koh Tang's basic topography.

⁸ A DPAA forensic odontologist is a dentist with specialized training and experience in the forensic applications of dentistry.

Figure 1. Location of Koh Tang*Figure 2. Koh Tang**Marine Assault on Koh Tang⁹*

At first light on May 15, 1975, U.S. military forces began a helicopter-borne assault on Koh Tang. Eight helicopters approached their designated landing zones on the north end of the island in two waves. Their objective was to land marines simultaneously on the western and eastern sides of the north peninsula.¹⁰ Photograph 1 is a copy of a January 2008 aerial view of Koh Tang taken from the North.

Photograph 1. January 2008 Aerial View of Koh Tang from the North.

Note: The red arrows indicate the locations where U.S. Marines landed on May 15, 1975.

Source: DPAA Search and Recovery Report (CIL 2008-021)

⁹ The historical facts contained in this section are taken from various historical Government sources including "Monograph 5, Fourteen Hours at Koh Tang," dated December 29, 1975, written by Captain Thomas D. Des Brisay for General Louis L. Wilson Jr., then-Commander-in-Chief, Pacific Air Forces.

¹⁰ A few U.S. Navy corpsmen deployed with the marines.

The U.S. military forces met heavier resistance than anticipated. The first helicopter on the island, a CH-53A helicopter (call sign Knife 21), landed on the western beach and met resistance after the marines exited the helicopter. Enemy fire severely damaged the helicopter and disabled one of the two engines as the helicopter lifted off the beach. Knife 21 flew for nearly 1 mile before ditching in the ocean. U.S. military forces rescued three of the four Knife 21 crew members after it crashed.

Enemy fire struck another CH-53A helicopter (call sign Knife 31) as it approached the eastern beach causing it to explode in flames. The helicopter crashed into the water and burned near the shoreline. Many of the Service members managed to exit the helicopter. All were targets of intense enemy fire as they attempted to swim out to sea. U.S. military forces subsequently rescued 13 of the 26 Service members that were aboard Knife 31.

U.S. military forces boarded the *SS Mayaguez* approximately 1 hour and 30 minutes after the military assault began and found it empty. Unbeknownst to the U.S. Government, Cambodia had placed the crew of the *SS Mayaguez* on a Thai fishing vessel at about the time the military assault began. One hour and 30 minutes later, U.S. reconnaissance aircraft spotted a fishing vessel carrying “possible Caucasians” waving white flags. Approximately 1 hour later, the USS WILSON recovered the entire *SS Mayaguez* crew.

President Ford suspended all offensive military actions after the crew was determined to be in U.S. hands. Nonetheless, military officials dispatched a second wave of marines to Koh Tang to protect the marines on the island. In total, approximately 230 U.S. Service members landed on the island during the operation.

Corporal Hargrove was a member of a three-man machine gun crew that landed on the western beach about noon on May 15, 1975. These three marines participated in combat operations throughout the day, manning the last fighting position on the extreme right flank. Fighting continued for several hours, lasting until the last helicopter extraction during hours of darkness on May 15, 1975. None of the marines in the three-man machine gun crew boarded a helicopter leaving the island.

U.S. military forces suffered 68 casualties during the Koh Tang assault -- 50 were wounded and 18 were left on the island or in the waters near the island. Of these 18, 15 were killed in action and 3 were missing in action and presumed dead. The DoD eventually categorized all 18 as unaccounted-for Service members.

Recovery Efforts

From 1973 through January 2015, various DoD organizations participated in recovering and resolving the status of U.S. prisoners of war and missing personnel.

On January 30, 2015, the DoD merged two organizations as well as certain functions of the U.S. Air Force’s Life Sciences Equipment Laboratory into one agency, DPAA, which was responsible for

the recovery and accounting of missing Service members from past conflicts.¹¹ DPAA reports to the Under Secretary of Defense for Policy. DPAA headquarters is located in Arlington, Virginia. DPAA has an operational office in Hawaii, which includes the DPAA Laboratory, and satellite laboratories in Nebraska and Ohio. The DPAA Director serves as the principal advisor to the Secretary of Defense and the Under Secretary of Defense for Policy for past conflict personnel accounting.¹²

According to our review of DPAA documents, DPAA and its predecessor organizations have investigated the 18 unaccounted-for Service members left on Koh Tang or in the waters near Koh Tang more than 35 times, including 10 recovery missions. DPAA tracked the 18 unaccounted-for Service members by the location of their loss. Although this resulted in four distinct cases, DPAA has conducted recovery efforts for each case during every mission to Koh Tang. Table 1 includes the number of unaccounted-for Service members for each case and the year in which DPAA identified and accounted for Service members.

Table 1. The 18 Unaccounted-For Service Members

Number of Unaccounted-For Service Members	Location of Loss Incident	Year Remains Recovered or Received	Year Remains Identified	Number of Service Members Accounted For
13	East Beach Shoreline (Knife 31)	1991, 1992, 1995, 1996, 2007, 2008 ¹	2000	9
			2012	4 ²
1	1-mile from West Beach (Knife 21)	-	-	-
1	West Beach Shoreline (Dropped in surf)	-	-	-
3	West Beach (Machine Gun Crew)	-	-	-

¹ Cambodian military personnel turned over four bone fragments to DPAA during a 2008 recovery mission on Koh Tang. The DPAA Laboratory identified these bones as additional portions of two Service members DPAA previously accounted for in 2000. We discuss these four bone fragments in Section V.A. of this report.

² Based on further laboratory analysis, DPAA made an individual identification of the Service member who DPAA had only been able to identify in 2012 as part of the group related to the crash of Knife 31. We discuss the identification of this Service member in Section V.B. of this report.

Source: DPAA reports and historical information.

¹¹ We include additional information on the background of the POW/MIA accounting mission in Section VI of this report. We also provide additional information on DPAA laboratory personnel, recovery team members, DNA reports, and AFDIL in the Appendix.

¹² DoDD 5110.10 defines “past conflict personnel accounting” as the sum of military, civil, and diplomatic efforts to locate, recover, and identify remains of unaccounted-for DoD personnel in a theater of operation or because of a hostile act.

DPAA resolved the case concerning 13 of the 18 unaccounted-for Service members. The DoD initially designated the 13 unaccounted-for Service members who were aboard Knife 31 as killed in action/body not recovered. However, DPAA recovered portions of remains in the 1990s that resulted in DPAA identifying 9 of the 13 Service members in 2000. Based on further laboratory analyses, DPAA identified the remaining four Service members in 2012; three were “individual identifications” and one was a “group identification.”¹³ In May 2014, DPAA was able to make an individual identification of the Service member who was previously identified as part of the group. DPAA has accounted for all 13 originally unaccounted-for Service members who were aboard Knife 31.

DPAA categorized the cases concerning the remaining 5 of the 18 originally unaccounted-for Service members from the Koh Tang assault as “Active Pursuit” cases, meaning sufficient information exists to justify research, investigation, or recovery operations in the field. According to its policies, DPAA gives priority for operational planning and allocation of resources to Active Pursuit cases.

DPAA grouped the loss of these five unaccounted-for Service members under three cases.

- U.S. military forces did not recover one crew member from Knife 21. DoD officials presumed the crew member drowned and later officially declared him killed in action.
- During the extraction and while under enemy fire, a marine dropped the body of one of the marines killed in action in the shoreline. U.S. military forces left the body behind during the extraction of the assault force.
- After the last helicopter departed the landing zone, the U.S. military forces determined that the three-man machine gun crew, which included Corporal Hargrove, had not boarded any of the helicopters. U. S. military forces did not return to the island to search for Corporal Hargrove and the two other marines. The DoD initially considered these three marines as missing in action but in 1976 changed their status to deceased.

¹³ DPAA defines an “individual identification” as human remains of a specific individual to the exclusion of all other reasonable possibilities. DPAA can make a “group identification” in the absence of an individual identification when the material evidence or reliable circumstantial information clearly identifies human remains as those of known participants in a specific loss. These remains are interred in a Government cemetery as a group.

IV. CHRONOLOGY OF SIGNIFICANT EVENTS

The following table lists a chronology of significant events that are relevant to this investigation.

Table 2. Chronology of Significant Events

Date	Event
January 27, 1973	Paris Peace Accords signed
April 17, 1975	Fall of Cambodia capital (Phnom Penh)
April 30, 1975	Fall of South Vietnam capital (Saigon)
May 12, 1975	Khmer Rouge forces seized the <i>SS Mayaguez</i>
May 15, 1975	U.S. launched military assault on Koh Tang to free <i>SS Mayaguez</i> crew
May 21, 1975	U.S. Marine Corps informed Hargrove family that Corporal Hargrove is MIA
July 21, 1976	U.S. Marine Corps informed Hargrove family that Corporal Hargrove's status changed from MIA to deceased
October 1991 – March 2007	DPAA investigated Koh Tang cases more than 30 times including 7 recovery missions
January 16 - February 26, 2008	During a recovery mission on Koh Tang, Cambodian military personnel gave human bone fragments to the recovery team while the complainant was on the island and the team excavated four nearly complete sets of human remains after the complainant departed the island
March 1, 2008	Repatriation Ceremony conducted at Phnom Penh International Airport
March 19, 2009	On behalf of the complainant, Representative Walter Jones asked the DoD about the "remains of an American servicemember [who] may have been recovered in a site on Koh Tang among three other persons"
March 20, 2009	DPAA responded to Representative Jones that DPAA submitted four samples for DNA testing, and results were pending
March 28, 2009	Members of Hargrove family attended Family Member Update in Bethesda, Maryland, and DPAA officials met with the Hargrove family
June 17, 2009	DoD officials met with Representative Jones concerning four sets of remains and told him the remains were "certainly Asian and likely Vietnamese, and hence not those of the missing marines"
June 2009 – March 2015	DPAA investigated Koh Tang cases 7 times including 2 recovery missions
April 24, 2012	The Armed Forces DNA Identification Laboratory (AFDIL) finalized testing concerning four sets of remains and concluded all four were Asian
February 2, 2017	Complainant e-mailed the Secretary of Defense stating that DoD officials lied to him about recovering his cousin's remains
February 15, 2017	The DoD OIG initiated an investigation of the complaint

V. ANALYSIS OF THE ALLEGATIONS

A. Recovery of Remains from Koh Tang in 2008

The complainant told us that he and a book author visited Koh Tang for about one week in late January 2008 while DPAA conducted a recovery mission on the island. The complainant told us that during the 2008 recovery mission, DPAA excavated four full sets of remains; one set of which he believed was his cousin, Corporal Hargrove.

The complainant told us that he returned to Koh Tang in February 2009 and conducted his own excavation. He stated that during this trip he did not recover any human remains; however, during the boat ride back to the Cambodian mainland, two Cambodian military personnel asked his interpreter why he (the complainant) had returned to the island since DPAA had recovered the “executed American” the year before. The complainant told us that Cambodian military personnel on the island all referred to Corporal Hargrove as the “executed American.” The complainant stated that in February 2009 the Cambodian military personnel told him, through an interpreter, that DPAA had excavated four full sets of remains, one of which was Corporal Hargrove, right after the complainant and the book author departed the island in 2008.

The complainant also told us that the Cambodian military personnel told him, through the interpreter, that three sets of the skeletal remains were white in color and one set was yellow-orange in color. The complainant told us the Cambodian military personnel told his interpreter that yellow-orange was consistent with the color of other American remains found on the island. The complainant stated that the yellow-orange set of remains had a bullet to the skull, a wound above the right knee, was stripped to underwear, and had the hands bound in front. He stated, “the bones were long and not like short Cambodians . . . the teeth were smooth, no cavities, no dental work.” The complainant told us that Corporal Hargrove did not have any dental work and he believed this set of remains was Corporal Hargrove.

The complainant also told us that the Asian remains had their hands bound behind their backs, as opposed to the “executed American” who had his hands bound in front. The complainant also stated that DPAA officials later told him that no one on the DPAA 2008 recovery mission to Koh Tang was qualified to determine whether the remains were American or Asian.

The complainant also told us that his interpreter said that the Cambodian military personnel told the interpreter that DPAA celebrated at Kampong Som, Cambodia, after they found the remains.

The complainant further told us that while he was on Koh Tang in 2008, DPAA received bone portions of human remains and a flak vest. The complainant stated that one bone was in the flak vest and the interior back of the flak vest contained the initials “DB” and a “number” associated with Private First Class Daniel A. Benedett, U.S. Marine Corps. The complainant added that he questioned the recovery leader, “probably five years later,” about the “test results” concerning the bone found in the flak vest and that the recovery leader told him “I don’t know. It should have produced positive

results. It was a good sample.” Photograph 2 is a copy of a photograph the complainant took of the flak vest he asserted belonged to Private First Class Benedett.

Photograph 2. Complainant’s 2008 Photograph of Flak Vest



Note: We circled in red the initials and number the complainant asserted were those associated with Private First Class Benedett.

2008 Recovery Mission on Koh Tang

We determined that a DPAA recovery team conducted recovery operations on Koh Tang from January 16 through February 26, 2008. The team had a typical composition of a recovery leader, team leader, assistant team leader, and four additional team members (explosive ordnance disposal technician, linguist analyst, photographer, and a life support investigator). We interviewed three members who were on this mission: the recovery leader, who was an archeologist; the team leader, who at the time was a Marine Corps captain; and one of the additional team members. We also interviewed a DPAA analyst who was on the island for unrelated official business while the team was excavating the four sets of remains. Additionally, we interviewed the complainant and the book author who visited the island for about one week, but had left the island before the team found the four sets of remains.

The recovery leader completed three search and recovery reports documenting recovery scene operations from January 16 through February 26, 2008, on Koh Tang that were associated with Knife 21, Knife 31, the marine dropped in the surf, and the machine gun crew, of which Corporal Hargrove was a member.

Search and Recovery Report Concerning Four Sets of Remains

The recovery leader wrote in Search and Recovery Report (CIL 2008-021), dated September 30, 2008, that while on Koh Tang he obtained information about “three alleged burial sites with circumstances most consistent with” the crash of Knife 31. In the search and recovery report, the recovery leader wrote that four individuals from the crash of Knife 31 were unaccounted for at the time of the 2008 recovery mission. The recovery leader wrote:

[two sites] did not yield any evidence or burial feature that could be correlated with the missing U.S. personnel.¹⁴ [A third site] did yield remains in three distinct features. *Field analysis of the evidence and remains recovered suggests that the remains are not consistent with U.S. personnel.* [Emphasis added.]

Photograph 3 shows the location of the third site on Koh Tang where the recovery team excavated remains.

Photograph 3. January 2008 Aerial Photograph of the East and West Beaches



Note: The red circle marks the location of the burial features where the team excavated the remains.

Source: Search and Recovery Report (CIL 2008-021)

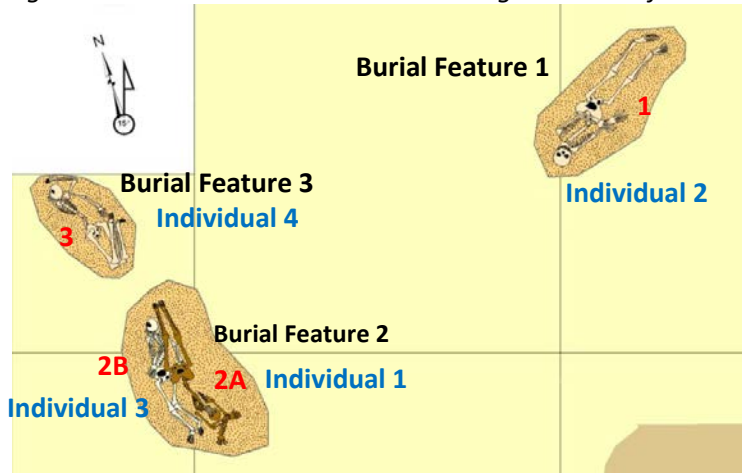
The recovery leader wrote that he found three burial features containing four sets of articulated remains at the third site “alongside a tidal inlet fed from the east beach.”¹⁵ In our interview of the recovery leader, he told us that he decided to dig at this third site after Cambodian military personnel said that the team could find “bodies” in a “sandpit” at the site. The recovery leader added, “I began excavating, sure enough, we began finding bodies right away, but it was pretty apparent that they were most likely Southeast Asians, probably fishermen or something . . . it was a killing field for the Khmer Rouge basically.”

¹⁴ A burial feature is the area where an individual was interred. The excavation of a burial feature should result in an open grave resembling the burial feature as it was originally dug.

¹⁵ Articulated remains are when the bones are in their natural anatomical position.

The report included a drawing of the third site. Figure 3 is the recovery leader's drawing of the three burial features that contained four sets of articulated remains (1, 2A, 2B, and 3). We added the blue text concerning Individuals 1, 2, 3, and 4 to Figure 3. The DPAA laboratory accessioned the four sets of remains under number 2008-021 and assigned these individual tracking numbers to each set of remains.¹⁶ Throughout this report, we refer to these remains as Individuals 1, 2, 3, and 4.

Figure 3. Three Burial Features Containing Four Sets of Articulated Remains



Note: Red and blue text represent the recovery leader's and the DPAA laboratory's labeling of each set of remains, respectively.

Source: Search and Recovery Report (CIL 2008-021)

The report provides the following information about Individuals 1 through 4:

- Individual 1 was wearing a shirt and had arms outstretched over the head, with a rope wrapped around the arms over the shirt tying the elbows together.
- Individual 2 had a rope lying around the wrists and a pair of undershorts pulled down around the knees.¹⁷
- Individual 3 was partially underneath Individual 1 and had no cloth present, but buttons that appeared to be *in situ* indicated that a shirt had been present at the time of interment.¹⁸ Individual 3's arms were pulled behind the back and a rope tied the elbows together.
- Individual 4 was wearing a shirt and pants, and had arms pulled behind the back and tied at the elbow.

¹⁶ DPAA defines "accessioned" as when it receives evidence into custody and introduces the evidence into its evidence casework and management systems at the DPAA laboratory.

¹⁷ The recovery leader's description of Individual 2 was similar to the complainant's description of the remains he believes were those of his cousin.

¹⁸ *In situ* is Latin for "in the place," and refers to an artifact that has not been moved from its original resting place or the place where it was deposited.

In the report, the recovery leader stated that he found the following items in the excavated area:

- Numerous small arms munitions (the majority consistent with an M-1 carbine)
- Shrapnel
- Rockets
- Buttons (not consistent with U.S. military issued equipment)
- Miscellaneous pieces of cloth and nails

The recovery leader wrote that preliminary analysis suggested, “none of the clothing associated with the four sets of remains was consistent with U.S. military-issue uniforms.”

Eyewitnesses to the Excavation of the Four Sets of Remains

We interviewed four individuals (recovery leader, team leader, one team member, and a DPAA analyst) who witnessed the excavation of the four sets of remains.

Recovery Leader

We interviewed the recovery leader and showed him a copy of the search and recovery report he wrote concerning the four sets of remains. The recovery leader told us that the team leader and team members helped him excavate the four sets of remains. He also told us that during the excavation he contacted the DPAA Scientific Director. He stated that he told the Scientific Director “I thought [the four sets of remains] were probably Southeast Asian” and that the Scientific Director told him “[I]et’s go ahead and take them back [to the DPAA laboratory] anyways so we can be sure. Which I thought was the right thing to do.”

The recovery leader added:

[m]y assessment of the site is that they had been tortured and executed. . . . it looked like [Individual 2] had been tied up . . . He had the rope around his hands. His underpants were down around his knees. Someone had cut the rope and he’d fallen into the pit. [Individual 4] I think had taken a bullet close range to the head. . . . [Individual 4] I think had been shot through the skull at close range. Blowing out some of his molars because of the bullet trajectory. Again, this is all preliminary field analysis. I didn’t do the forensic analysis in the laboratory.

When asked what his initial thoughts were as he uncovered these remains, the recovery leader told us that he was “hopeful . . . it was the Americans.” When asked at what point in time he believed these remains were Asian, the recovery leader stated, “I’m sure as soon as I got the first skull uncovered and I could see the characteristics, the teeth, and the shape of the skull would represent Asian, not American.”

Team Leader

We also interviewed the team leader who told us he assisted the recovery leader in excavating “four sets of almost completely intact remains.” The team leader also stated, “however, the [recovery leader] on the site had determined that those were most likely Asian descent. And we did recover those, and bring them back for further testing.”

The team leader stated that during the excavation the recovery leader told him that the four sets of remains were “[m]ost likely Thai or Vietnamese.” The team leader also stated that the recovery leader said the four sets of remains were Asian, because of the shape of the teeth. He added, “they all had that shape. I can remember him showing it to me and describing how the difference is. To me it was evident that they had what he described.”

The team leader told us the recovery leader showed and explained to him that:

[the incisor teeth were] almost like a shovel.¹⁹ That Asian descent incisor kind of has ridges on the end of their incisor, that’s an Asian trait. You don’t see that outside of that area, and I can remember him showing me on the teeth and it’s looking clearly like what he described. . . . I would say that based on the criteria that he showed me, I would not believe any of those were American.

Team Member

We also interviewed one of the team members of the 2008 Recovery Mission. The team member stated that he was a “digger and screener” for the mission. He told us that he assisted in excavating the four sets of remains. He stated that the recovery leader told him the remains were “probably . . . Vietnamese because the Vietnamese were fighting the Khmer Rouge.” The team member told us that the recovery leader could identify ancestry by examining the teeth and the “nasal area, the skull.” The team member added that the team took the remains back to Hawaii, because the recovery leader “thought that maybe the Vietnamese would want them back if they were in fact Vietnamese remains.”

DPAA Analyst

We also interviewed a DPAA analyst with two decades of experience in assisting in excavations of Vietnamese remains, who arrived on Koh Tang during the excavation of the four sets of remains. The analyst told us that all four sets of remains were Asian. The analyst told us that the laboratory did not allow the recovery leader “to leave those [four] sets of remains that were clearly [Asian] on the island,” because the recovery leader was an archeologist.²⁰

¹⁹ Shovel shaped upper incisors is a common characteristic in East Asian and Native American populations but is rare or absent in African and European populations.

²⁰ We reviewed the June 7, 2006, memorandum listing “Bone Certified” anthropologists that was in effect during this 2008 mission. The recovery leader for the 2008 mission was not on this list. The former Scientific Director told us that only an anthropologist on the list could “make the call in the field as to whether [a bone] was human versus non-human or probable American versus probable Cambodian.” He stated that without such an evaluation, “the default was to bring everything back” to Hawaii.

The analyst also stated:

[F]or staying at the Holiday Inn, I could say those were [Asian] remains. You look at those teeth. . . . When you get a close-up of their teeth . . . and see that these are flat as a railroad track, where ours are concave. They eat rice. It's flat. . . . You can tell that based on their diet that no way in hell are these our guys. But [the recovery leader] was not authorized to make that decision. . . . [the recovery leader] called back and requested it. [And the recovery leader was told,] "No, you will bring them back." And they brought them back.

Team Celebration

When asked if there was a celebration after the recovery of the four sets of remains as alleged by the complainant, two members of the 2008 recovery team told us that they did not celebrate. One team member told us, "I don't remember celebrating anything." The team member stated they had a couple of birthday parties and a few dinners at the hotel where they stayed. The team leader told us the team had a dinner to say goodbye to the complainant and the book author and had an end of mission dinner at the hotel after they finally left the island. The team leader stated:

I think we did what we could do and I guess that's maybe why they sent a marine out to that mission because that's an ugly scar on the Marine Corps and on everything that we hold dear, how that whole thing went down. . . . had I found something I thought was American, there would have been a whole lot more hoopla about it.

Forensic Anthropologists' Testimony Concerning the Four Sets of Remains

The DPAA laboratory director told us that DPAA knew the remains were indigenous Southeast Asian as soon as it received them in the laboratory.²¹ He also told us, "in the preliminary analysis we could already see these aren't Americans." He stated that the laboratory final reports showed the remains were "indigenous Southeast Asian individuals" and "not Americans."

The laboratory director also told us "background information implied" that the remains were "Vietnamese fishermen who had been murdered by the Khmer Rouge and buried in the clandestine grave." He stated that DPAA had "a pretty strong partnership with the Vietnamese Office for Seeking Missing Persons and had a responsibility to offer the remains back to Vietnam." He added, "[s]o we produced the reports for the purpose of presenting them to the Vietnamese. . . . We also did DNA testing on them." The laboratory director continued that "DNA testing also confirmed these were Southeast Asians. The haplogroup that came back from the DNA tests showed that these are Southeast Asians. They're not Americans."²²

²¹ The DPAA laboratory director is a board-certified forensic anthropologist who was working in the laboratory in 2008 and assumed the director position in 2009. He was the director when the forensic anthropology reports were completed.

²² A haplogroup is a genetic population group of people who share a common ancestor.

The laboratory director also told us:

[a]ll those remains that were recovered in 2008 were thoroughly tested, and there's no doubt about the ancestry of those remains, and it was both from the anthropology and from the DNA. Both agreed on the ancestry of those remains. . . . the DNA was compared to [Corporal Hargrove and two other marines on the machine gun crew] even though there really was no point in comparing it once you saw the haplogroups. In other words, the DNA came from Southeast Asian population. There's no way it would be guys with European ancestry . . . It's not those guys.

We also interviewed one of the laboratory managers, who told us that each of the four sets of remains was "a nearly complete skeleton or partial skeleton of an Asian individual."²³ None of them are U.S. casualties." The laboratory manager stated:

[w]e have determined that they are Asian through a variety of scientific techniques including odontology, anthropology, as well as DNA testing. Each of the individuals in question had DNA pulled from a tooth. All four teeth came back with Asian haplogroups. Given that we have attempted over several years to repatriate those back to either Cambodia or Vietnam. We feel that they're most likely Vietnamese based on oral history of four Vietnamese fishermen that were killed on the island. We feel that these are most likely those individuals, but so far we have not had any political success at repatriating those to either Cambodia or Vietnam.

Reports Concerning the Four Sets of Remains

Forensic Anthropology Reports

We examined the DPAA forensic anthropology reports associated with the recovery and analysis of these four sets of remains.²⁴ DPAA forensic anthropologists analyzed each set of remains. The forensic anthropology reports on the four remains included the following information:

- Individual 1 remains are consistent with Asian individual probably male, aged 20 years old or greater. Function testing classified the bottom jaw as a Chinese male. Could not calculate height due to lack of complete long bone or other requisite elements. A fine white/yellow sand is present in and on the remains. The individual experienced multiple blunt force trauma to the cranium.
- Individual 2 remains represent a male of Asian ancestry, 15 to 20 years old. Slight shoveling on teeth and a blunt nasal sill. Bones are light beige in color. Living stature was estimated at 63 to 69 inches. Sandy soil is present in most elements of the remains. Blunt force trauma was present on the left side of the skull, corresponding to at least two separate blows.

²³ The laboratory manager is a forensic anthropologist who assumed this position in 2008.

²⁴ The DPAA evidence coordinator stated that he took possession of the remains from the recovery leader in the laboratory on March 3, 2008. During our visit to the DPAA laboratory, we examined the four sets of remains and corresponding evidence activity logs.

- Individual 3 remains were consistent with a late adolescent individual 13 to 19 years old, of indeterminate sex, race, and stature. An open-faced crown is present on a bottom jaw tooth, “a feature extremely rarely seen on U.S. military personnel from the Vietnam War era.” A fine white/yellow sand was present in and on the remains. The individual possibly experienced blunt force trauma to the cranium.
- Individual 4 remains were consistent with a probable male Asian individual 14 to 19 years old. The incisors had moderate incisor shoveling, which is characteristic of Asian populations. The individual also lacks an interior nasal sill. A complete lack of or low nasal sill frequently indicates an individual of Asian or African ancestry. Height could not be calculated because of the paucity and condition of the remains. White and yellow sand was present throughout the remains. There were multiple instances of blunt force trauma to the cranium.

Forensic Odontology Reports

A DPAA forensic odontologist analyzed the dental remains of each of the four sets of remains and wrote separate reports for each set of remains. The forensic odontology reports for each set of remains included the following information:

- Individual 1 dental remains consisted of two top jaw fragments, a bottom jaw, and six loose bottom jaw teeth. All teeth were unrestored and exhibit moderate to heavy occlusal or incisal wear.²⁵ The dental characteristics were compared to the Centralized Accounting Repository and Identification System (CARIS) Southeast Asia dental database which resulted in 67 records having the same or a similar profile.²⁶ The remains did not have a distinct morphological feature or unique restorations that would help in segregating them to a single individual.²⁷
- Individual 2 dental remains consisted of a top jaw and a near complete bottom jaw. All teeth were unrestored. The dental characteristics were compared to the CARIS Southeast Asia dental database resulting in 66 records having the same or a similar dental profile. The remains did not have a distinct morphological feature or unique restorations that would help in segregating them to a single individual.

²⁵ Tooth wear is caused by tooth-to-tooth contact resulting in loss of tooth structure, usually starting at the occlusal or incisal surfaces. Occlusal is the contact between the teeth of the upper and lower jaw. Incisal is the cutting edge of the incisor and canine teeth.

²⁶ DPAA does not possess copies of Corporal Hargrove’s dental records. Additionally, DPAA has not entered Corporal Hargrove’s dental characteristics into the CARIS Southeast Asia dental database.

²⁷ A morphological feature is the form and structure of the dental remains. A dental restoration or dental filling is a treatment to restore the function, integrity, and morphology of missing tooth structure.

- Individual 3 dental remains consisted of a top jaw fragment, the right half of the bottom jaw, and 14 loose teeth. All teeth, except tooth 27, were unrestored. Tooth 27 was restored with a non-precious metal, open-faced crown not routinely seen in U.S. dentistry during the Vietnam War era. The dental characteristics were compared to the CARIS Southeast Asia dental database resulting in 71 records having a similar dental profile. A dental search with the parameter of tooth 27 was run against the same database and resulted in no records having this restorative constraint.
- Individual 4 dental remains consisted of two top jaw fragments, two bottom jaw fragments, and 13 loose teeth. All teeth, except tooth 5, were unrestored. Tooth 5 was restored with full coverage, non-precious metal crown. The dental characteristics were compared to the CARIS Southeast Asia dental database resulting in 71 records with a similar dental profile. A dental search with the parameter of tooth 5 was run against the same database and resulted two individuals matching the requested restorative description. However, both of these individuals were excluded from consideration because of restorative discrepancies on other teeth.

We interviewed the forensic odontologist about the examination of dental remains and the information contained in the reports.²⁸ He told us that the odontology section examined and charted all teeth from remains accessed into the laboratory. The odontologist stated:

[w]e chart their characteristics, present, unrestored, restored . . . for all 32 adult teeth, we radiograph, we photograph, . . . Then we can run a comparison . . . we have all the dental records input into a computer. . . . Then we compare . . . the characteristics of the remains to the database of all the dental records . . . from there we get a short list . . . we pull the . . . hardcopy dental records, then we can compare it to the remains. From this comparison we can now present an opinion.

The forensic odontologist told us that all the teeth for Individuals 1 and 2 were “unrestored, meaning no fillings, basically no real characteristics to compare.” The odontologist stated that Individuals 3 and 4 both had nonprecious metal crowns. The odontologist told us that nonprecious metal crowns were “not very common” and “not as consistent with U.S. Service members.” The odontologist stated, “[w]hen we see these nonprecious metal crowns meaning like a silver alloyed colored crown, we tend to think more outside of the U.S., more Asian, more Korean, more Japanese.”

²⁸ The forensic odontologist has more than 20 years of experience with military dentistry, including dental records and restorative dental care. The odontologist began working at DPAA in 2008.

DNA Analysis Concerning the Four Sets of Remains

DPAA submitted one tooth from each set of remains to the Armed Forces DNA Identification Laboratory (AFDIL) for analysis. The AFDIL report of mitochondrial DNA (mtDNA) sequence analysis, dated May 11, 2011, stated, “DNA was extracted, amplified, and mtDNA sequence analysis was performed.”²⁹ The report also stated that the sequences obtained from the samples “were compared to all family reference samples processed to-date and that all family reference samples were excluded.”³⁰

AFDIL also evaluated the mtDNA from the four sequences in the context of the global phylogenetic tree, which depicted the lines of evolutionary descent, and allowed tentative haplogroup assignments.³¹ In a May 2011 memorandum, the then DPAA DNA coordinator concluded that the haplogroup assignments as reported by AFDIL represented individuals of Southeast Asian ancestry.

Color of the Remains

When asked about whether yellow-orange color remains signified an American and white color remains signified an Asian, the recovery leader, the Acting Scientific Director, and the laboratory director told us that the color of the bones had nothing to do with “ancestry,” or “country of origin.”³² The laboratory director added that the “micro environment that the bones have been lying in for all these years” affected the bone color.

Flak Vest and Portions of Human Remains Received on Koh Tang in 2008

Search and Recovery Report

In the September 30, 2008, Search and Recovery Report CIL 2008-021, the recovery leader wrote, “three witnesses unilaterally turned over” to him, “possible human remains and material evidence possibly associated with” unaccounted-for Service members from Knife 31.³³ He also wrote that the remains and material evidence “were reportedly recovered from the general area where [Knife 31] crashed.”

²⁹ Mitochondrial DNA (mtDNA) is the DNA located in mitochondria of the cell. It is used for human identification and forensic testing. It is a lineage marker that is transmitted through the maternal line. MtDNA testing is the most sensitive and is usually the first type of DNA testing used. Mitochondria are structures within cells that convert the chemical energy from food into a form that cells can use.

³⁰ Corporal Hargrove’s brother and sister provided a family reference sample in 1995 and 1998, respectively. AFDIL entered the brother’s mtDNA profile into the Family Reference database in 1996 and was excluded as a match with the mtDNA sequences from these remains. AFDIL entered Corporal Hargrove sister’s mtDNA profile into the Family Reference database in 2010. Although AFDIL did not add the sister’s mtDNA profile until 2010, it did not affect the searching capability because all three siblings have the same mtDNA profile.

³¹ A mtDNA haplogroup is a genetic population group of people who share a common ancestor on the matrilineal.

³² The Acting Scientific Director has been a member of the Armed Forces Medical Examiner System since 2005.

³³ This is the same report that the recovery leader documented the excavation of the four sets of Asian remains. The recovery leader noted that four individuals from the Knife 31 crash “remain unaccounted for” in 2008.

The recovery leader also wrote that a witness found a “possible” flak vest with “possible osseous remains caught inside the material in the waters off the east beach” of Koh Tang.³⁴ He also wrote that based on field analysis, the flak vest appeared to be U.S. military issued equipment from the Vietnam War era. DPAA accessioned these remains and flak vest under numbers 2008-019, 2008-020, and 2008-022.

The Flak Vest Received on Koh Tang in 2008

Material Evidence Report

On March 5, 2008, the DPAA laboratory accessioned the flak vest, under accession number CIL 2008-020. A September 13, 2011, Material Evidence Report stated that the flak vest was similar in appearance and characteristics to the 3rd pattern variation of the U.S. Marine Corps M-1995 flak vest used during the Vietnam War. The report also stated that the flak vest contained:

handwritten, indelible ink characters in two locations on the vest. On the exterior left front of the vest is the number “1.” On the interior center of the vest is the number “1106” above “?B” . . . A review of the [Knife 31] records for individuals listed as unaccounted-for failed to identify a relationship between the handwritten characters and a missing individual.

Photograph 4. Material Evidence Report Photograph of Flak Vest

Material Evidence Report: CIL 1995-114-A



Note: We circled in red the two locations mentioned in the material evidence report as containing handwritten, indelible ink characters.

³⁴ Osseous means bone. “Osseous remains” is a term DPAA uses when unsure whether the bone is human or nonhuman.

Testimony Concerning Flak Vest

The DPAA laboratory manager told us that the material evidence report indicated the flak vest was of a U.S. Marine Corps manufacturer, “but we could not associate the flak vest with any one individual.” The laboratory manager added that DPAA could not relate the numbers on the vest “1106,” to “any particular individual.” The laboratory manager also told us that “[w]e did not understand the first letter” on the vest and the second letter was a “D” or a “B.” He added the letters “could mean any number of things, and we were not willing to opine on what that meant.” The laboratory manager told us that the flak vest in Photograph 2 was the same flak vest that DPAA accessioned and analyzed in the laboratory as depicted in photographs stored in the CARIS database and Photograph 4 contained in the material evidence report.

Portions of Human Remains Received on Koh Tang in 2008

On March 5, 2008, the DPAA Laboratory also accessioned four portions of possible human remains, under three separate accession numbers, CIL 2008-019, CIL 2008-020, and CIL 2008-022.³⁵ The laboratory manager told us that the DPAA Laboratory positively identified the four bones as additional portions of two previously accounted-for U.S. Marines, Lance Corporal Gregory S. Copenhaver and Private First Class Kelton R. Turner.³⁶ Table 3 shows the accession numbers and the bones that the laboratory “positively identified” as additional portions of Lance Corporal Copenhaver and Private First Class Turner.

Table 3. Bone Identification

Accession Number	Bone Description	Identified as Portions of
CIL 2008-019-01A	Left Tibia ³⁷	Lance Corporal Copenhaver
CIL 2008-019-02A	Left Tibia	Private First Class Turner
CIL 2008-020	Upper Half of Right Femur ³⁸	Lance Corporal Copenhaver
CIL 2008-022	Right Tibia	Lance Corporal Copenhaver

Source: DPAA laboratory accession documents and laboratory manager’s interview.

Status of Case Concerning Corporal Hargrove

The DPAA website indicated on June 15, 2017, that DPAA plans to conduct at least one Joint Field Activity per fiscal year in Cambodia; DPAA has a U.S. POW/MIA investigator at Phnom Penh full-time; and U.S. researchers continue to review materials in Cambodian archives.

³⁵ CIL 2008-020 is the same accession number for the flak vest and the bone (an upper half of right femur) found in the flak vest. Also, accession number 2008-019 includes CIL-019-01A and CIL-019-02A.

³⁶ DPAA had accounted for both these Service members in June 2000, because they had previously recovered and identified remains as portions of these two Service members.

³⁷ The tibia (shin bone) is the larger of the two long bones that make up the lower leg.

³⁸ The femur (thigh bone) is the only bone within the human thigh. It is the longest and strongest bone in the body.

In memorandums to the DoD OIG, a DPAA official stated that it carries all three marines, including Corporal Hargrove, who were members of the machine gun crew in a “further pursuit” category. The DPAA official stated that DPAA has investigated the case concerning the loss of the three marines 17 times from October 1991 through March 2015. The DPAA official also stated that DPAA’s “next planned steps” included locating “potential remains traders who might have been active on Koh Tang.”³⁹ The DPAA official also stated that DPAA will investigate the case concerning the machine gun crew along with the two other open Koh Tang cases in December 2017, “in an effort to locate new witnesses to any of the incidents, or to interview witnesses who were sought during previous missions but were unavailable at the time.”

When we asked the DPAA laboratory lead case coordinator for the status of remains or material evidence possibly associated with Corporal Hargrove, she told us, “[t]here’s nothing in the laboratory that is consistent with Corporal Hargrove. There’s no remains that we’ve tested that are consistent with Corporal Hargrove.” When we asked the laboratory manager the same question, he told us, “I don’t have any here that I’m tracking.” The laboratory director told us, “[a]s of this moment, I cannot name any remains or material evidence that are associated to Joseph Hargrove.”

The laboratory director also told us that he had a family connection to Corporal Hargrove and Corporal Hargrove’s hometown of Mount Olive, North Carolina. The laboratory director said, “if I could have in any way solved this case I really wanted to solve this case, but so far I just can’t.” He added that as DNA technology had improved, DPAA has identified more missing Service members.

DoD OIG Conclusions regarding Recovery of Remains from Koh Tang in 2008

We concluded that DPAA has not recovered Corporal Hargrove’s remains. DPAA excavated four sets of Asian remains from Koh Tang in 2008. These remains did not include remains from an unaccounted-for Service member. The former Scientific Director, laboratory director, laboratory manager, recovery leader, team leader, team member, and analyst all told us that all four sets of remains were Asian and that DPAA personnel knew the remains were Asian even before DNA tests were completed. Additionally, forensic anthropology reports and mtDNA testing confirmed the four sets of remains were Asian. AFDIL compared the mtDNA sequences of each of the four sets of remains with all family reference samples, including Corporal Hargrove’s, and none of the four sets of remains’ mtDNA sequences matched with any family reference sample.

Separately, DPAA was given a flak vest and four bone fragments during the 2008 mission. DPAA determined that the flak vest was a U.S. Marine Corps issued flak vest but could not associate the flak vest to any specific individual.⁴⁰

DPAA identified the four bone fragments as additional portions of two Service members whom DPAA previously accounted for in June 2000. DPAA continues to search for Corporal Hargrove and the four other Service members unaccounted for from Koh Tang.

³⁹ A remains trader is an individual who collects and sells human bones. Also referred to as “bone dealer.”

⁴⁰ Section V.B. of this report contains additional information on the identification of Private First Class Benedett.

B. DPAA Communications About Recovering Corporal Hargrove's Remains

In his e-mail to the Secretary of Defense, the complainant wrote that during a March 2009 meeting with several DPAA employees, "I was told a number of things that later proved to be lies." The complainant told us that a DPAA official lied to him about a repatriation ceremony and not finding any U.S. Service member's remains on Koh Tang in 2008. The complainant also told us that during the meeting he told DPAA employees, including the DPAA Deputy Director, Outreach and Communications, (OC Deputy), that DPAA found remains on Koh Tang in 2008. The complainant told us that the OC Deputy replied, "I have no knowledge of any remains being found on the island. No knowledge of any full set." The complainant also told us that the OC Deputy said, "I have no knowledge of any repatriation ceremony."

On March 28, 2009, DPAA held a Family Update in Bethesda, Maryland [hereinafter referred to as Bethesda Family Update].⁴¹ More than 120 family members of more than 75 unaccounted-for Service members and 70 DoD officials attended the Bethesda Family Update. The Bethesda Family Update included sessions with individual families. DPAA held a session with the Hargrove family during the Bethesda Family Update. In addition to the complainant, we interviewed four individuals who attended the session with the complainant: three DPAA officials and the U.S. Marine Corps service casualty officer.

A former DPAA case analyst told us that the Hargrove session was "congenial" and "nothing exciting" happened. The Marine Corps service casualty officer told us she did not remember anything about the session. A legislative support specialist told us that during the session the complainant said that he heard DPAA had recovered remains during the 2008 mission "and thought they had been Americans." The support specialist stated that the OC Deputy responded by saying, "[w]ait a minute. Are you saying we recovered Americans? No, we didn't recover Americans."

The OC Deputy told us that he answered all of the Hargrove family's questions. Regarding the four sets of remains, the OC Deputy stated that he told the complainant "looking at the remains, they are not American. They're not -- they show to be [Asian], and testing is being done." The OC Deputy also told us that he recalled the complainant saying, "[t]hey must have been American remains for you to have a repatriation ceremony." The OC Deputy told us that he responded that DPAA was "being conservative and ensuring that we do render honors if there's a possibility they're Americans." When asked to comment on whether he told the complainant that he had no knowledge of any remains being found on the island or of a repatriation ceremony, the OC Deputy told us, "I would have never said that."

⁴¹ DPAA conducts updates for families of unaccounted-for Service members. These updates consist of formal presentations by DoD officials, question and answer sessions, and sessions between DoD officials and family members to discuss the details of their specific case. DPAA hosts these Family Updates eight times a year throughout the United States. The purpose of the update is to address the individual needs of the family while bringing information to communities about the U.S. government's mission to account for missing Service members.

The complainant told us that he believed DPAA was “not telling the truth” at the March 2009 meeting because:

- a summary report, dated November 15, 2008, indicated that DPAA “recovered multiple sets of remains” during the 2008 mission;
- a March 2008 Phnom Penh Post article stated that a repatriation ceremony was held for the remains of a U.S. Service member found on Koh Tang during the 2008 excavation;
- a March 20, 2009, DPAA letter to Representative Walter B. Jones, stated that DPAA had submitted “four samples from the recovered remains” to AFDIL for analysis; and
- in 2008, DPAA received a bone with a flak vest that belonged to Private First Class Benedett.

The Summary Report

We reviewed a November 15, 2008, summary report, which stated that two recovery teams conducted operations in Cambodia from January 15 through March 1, 2008. Paragraph 1B included:

- The two recovery leaders “examined *multiple sets* of recovered and unilateral turned over possible human remains and recommended them for further scientific analysis.” [Emphasis added.]
- On March 1, 2008, the United States and Cambodia conducted a repatriation ceremony at Phnom Penh International Airport.
- The two recovery teams departed Cambodia on March 1, and arrived at the DPAA on March 2, 2008, where the two recovery leaders “turned over the possible human remains, the unilaterally turned over osseous remains, and all the material evidence” to the DPAA laboratory for further scientific analysis.

The Repatriation Ceremony

In addition to the Phnom Penh Post article the complainant provided, we located an Associated Press article concerning the March 2008 repatriation ceremony. Both the Phnom Penh Post and Associated Press articles reported that U.S. officials repatriated the remains of a missing U.S. Service member on March 1, 2008, in a ceremony held at the Phnom Penh International Airport. Both articles stated that U.S. officials placed a U.S. flag-draped coffin aboard a U.S. military plane bound for Hawaii to undergo DNA and forensic identification. The articles also stated that U.S. officials found the remains on Koh Tang.

Four witnesses told us that repatriation ceremonies were conducted when there was a possibility that remains were “American.” The recovery leader for the 2008 mission told us that he did not remember that specific repatriation ceremony. The recovery leader added, “clearly we have an American . . . because of the flak jacket.” The Additional Information Report, dated March 13, 2008, stated that a repatriation ceremony was held “in order to officially turn over the remains” recovered

from Koh Tang and that the DPAA laboratory accessioned these remains under numbers 2008-019, 2008-020, and 2008-022.

We concluded that the March 1, 2008, repatriation ceremony was appropriately held because during this mission the recovery team received four bone portions that the DPAA later identified as being additional portions of two Service members associated with the crash of Knife 31 whom DPAA previously accounted for in June 2000. These are the same remains described in Table 3.

Correspondence Concerning the Four Samples Submitted for DNA Analysis

Congressional Inquiry

In addition to the March 20, 2009, DPAA letter that the complainant provided, we also obtained and examined the March 19, 2009, congressional request that generated the DPAA response.

In a letter dated March 19, 2009, to the Director, DPAA, Representative Jones wrote, “[i]t has come to my attention that the remains of an American Service member may have been recovered in a site on Koh Tang among three other persons.” Representative Jones asked the Director if DPAA identified the Service member.

On March 20, 2009, the OC Deputy responded:

[o]n 16 October 2008, four samples from the recovered remains were sent to the Armed Forces DNA Identification laboratory (AFDIL) for analysis. The results of the AFDIL sequencing process are still pending. No identifications have been made for the recovered remains from this site.

Internal DPAA E-mail Communications

We examined DPAA internal communications relating to this Congressional correspondence. On April 13, 2009, after the letter responding to Representative Jones was sent, a DPAA outreach and communications specialist wrote to the DPAA laboratory DNA coordinator that DPAA needed to respond to a congressional inquiry regarding the DNA test results. The DNA coordinator responded, “[i]s someone specifically asking about 2008-021, or last year's Koh Tang recovery in general? That accession, as I recall, is the four Vietnamese fishermen [the recovery leader] dug up.”

The outreach and communications specialist responded that DPAA had recently replied to the congressional inquiry by stating DPAA submitted samples for DNA testing and were awaiting results. The DNA coordinator replied:

[o]ff the record, we have _never_ had any thought that those remains were American, from the moment we excavated until now, and I do hope that no one in this organization ever gave anyone the impression that they might be.

On the record, we do not have the results back.

The outreach and communications specialist responded to the DNA coordinator that a family member wanted to know the status and results. The outreach and communications specialist then asked, “why cut [samples for DNA] if we knew that?” The DNA coordinator responded:

[u]nofficially, because the sampling dentist was unaware of all the evidence that the remains were not American. However, once he had sent the teeth, we decided that we might as well have AFDIL process them a) to give us four Vietnamese sequences for the database, and b) because we can put the four together as a Vietnamese ID packet to turn over to [the Vietnamese].

This is why inquiries need to go through lab management. No family should ever have been given the impression that those might be American remains when we knew all along that they were not.

DoD Briefing to Representative Jones

On June 17, 2009, the Deputy Assistant Secretary of Defense for POW/Missing Personnel Affairs and two DPAA officials (OC Deputy and a legislative support specialist) met with Representative Jones and briefed him on DPAA’s efforts to recover the remains of the three marine machine gun crew. The legislative support specialist prepared an information memorandum documenting the meeting. The memorandum stated that the matters briefed included:

- DPAA “conducted an excavation of a suspected burial site in January 2008 and recovered the remains of four persons,” and;
- “preliminary analysis indicates the remains are certainly Asian and likely Vietnamese, and hence not those of the missing marines.”

The OC Deputy told us that Representative Jones had wanted an in-person briefing and described the briefing as follows, “[s]o, I went back with the information. I actually took photographs of the skulls of the [four] individuals to show him and brief him on the fact that indeed these were not the remains of any Americans.”

DPAA Updates Concerning Corporal Hargrove

After the June 17, 2009, briefing, Representative Jones requested and received DPAA files on Corporal Hargrove. Additionally, from June 2014 through May 2017, DPAA responded to seven additional requests for information from the complainant or on behalf of the complainant.⁴²

Identification of Private First Class Benedett

The complainant believed that DPAA lied to him, because he perceived a disconnect between DPAA officials telling him during the March 2009 meeting that they did not find any remains of U.S. Service members on Koh Tang in 2008, and a March 2009 letter in which DPAA informed Representative Jones that they sent four samples to AFDIL for DNA testing. This disconnect was

⁴² The complainant sent one request to the White House, three requests to Members of Congress, and three requests to DPAA.

exacerbated by the complainant's belief that DPAA had recovered a bone and flak vest belonging to Private First Class Benedett. The complainant also told us:

that was a problem. So, on January 30, 2013, [DPAA] identified [Private First Class Benedett's] remains . . . they used circumstantial evidence and DNA process of elimination to account for his remains. . . . they had earlier remains and then when they got this one bone [the bone in the flak vest], it was enough to do a DNA and match with the others, and then that was their identification.

As addressed in Section V.A. of this report, DNA analysis identified the bone found with the flak vest as a portion of Lance Corporal Copenhagen and not Private First Class Benedett. Additionally, DPAA did not conclude that the flak vest belonged to Private First Class Benedett.

Private First Class Benedett was one of the 13 unaccounted for Service members who were on the helicopter (call sign Knife 31) that crashed into the surf near the eastern beach of Koh Tang. From October through November 1995, DPAA conducted an underwater recovery of the helicopter crash site and recovered numerous bone fragments as well as artifacts associated with the incident. On June 23, 2000, based on the results of mtDNA testing and laboratory analysis, DPAA identified the remains of 9 of the 13 Service members. On January 23, 2012, based on further laboratory analyses, DPAA identified the remains of three of the remaining four unaccounted-for Service members from Knife 31. DPAA did not individually identify Private First Class Benedett at that time.

The laboratory manager told us that Private First Class Benedett was the only Service member from Knife 31 that the laboratory did not match with a family reference sample. He stated that the DNA sequences of three unidentified bone fragments recovered with other remains from Knife 31 matched with each other but did not match any family reference samples. The laboratory manager stated that Private First Class Benedett was Native American and was adopted, and there was no family reference sample on file. The laboratory manager stated that it "became a quest" of how to "prove that the remains that don't have a valid match actually are" portions of Private First Class Benedett.

The laboratory manager told us that the haplogroup of the unknown remains was most consistent with an individual of Native American ancestry. The laboratory manager stated that the laboratory had just started a program that used isotopic analysis to determine the geographic origin of a human bone. The laboratory manager stated that the objective was to determine whether a human bone originated from an individual who had either an eastern or a western diet. The laboratory manager told us:

[g]iven a large enough sample size of individuals from Southeast Asia and from the United States creating two populations . . . you can ask a question of whether or not the bone sample that you have looks more like one from Southeast Asia or one from the United States. We developed the needed dataset through a variety of testing in the laboratory. We tested the dataset, and then we applied it to this case. The three bone samples in question all had dietary pathways that were consistent with the U.S. at a 95, greater than a 95 percent confidence level.

So now we have bones that have a western signature from diet. . . . those bones also have a Native American haplogroup. There is only one individual that

matches that profile out of any of the incidents and that was Benedett. So applying a little bit of Occam's razor there, we identified Benedett.⁴³

In a May 21, 2014 memorandum for record, the former Scientific Director stated, "in his opinion" three bone fragments were portions of Private First Class Benedett based on mtDNA testing. AFDIL reported that samples taken from the bone fragments excavated during 1995 underwater recovery operations concerning the crash of Knife 31, yielded mtDNA sequence data consistent with an individual with some U.S. Native American ancestry. The mtDNA data excluded all of the originally unaccounted-for Knife 31 Service members except Private First Class Benedett. The former Scientific Director noted that Private First Class Benedett was adopted and no maternal-line mtDNA reference sample was available for comparison.

In the memorandum for record, the former Scientific Director also stated that DPAA took samples from the suspected Private First Class Benedett's remains for isotopic testing. The isotopic analysis yielded values consistent with those of individuals raised on a typical U.S. diet and differing significantly from values found in known indigenous Southeast Asians who died in the 1970s. The former Scientific Director concluded "the results of laboratory analysis and the circumstantial evidence made available" suggested that the bone fragments "likely are the remains of" Private First Class Benedett.

DoD OIG Conclusions regarding DPAA Communications about Corporal Hargrove's Remains

We concluded that DPAA did not lie about recovering Corporal Hargrove's remains. During the 2008 recovery mission on Koh Tang, DPAA excavated four sets of Asian remains and received bone fragments that were later identified as additional portions of Service members DPAA accounted for in June 2000. A repatriation ceremony was held in Phnom Penh on March 1, 2008, just prior to the recovery team returning to the DPAA laboratory in Hawaii. This ceremony was appropriate given that DPAA was transporting additional portions of two previously accounted-for U.S. Service members. This ceremony was not for Corporal Hargrove or for any of the four sets of Asian remains.

The March 20, 2009, letter from DPAA to Representative Jones regarding the recovery of the four sets of remains correctly stated that the remains were undergoing DNA analysis. However, the complainant's understanding of the 2008 recovery missions was somewhat limited because the information DPAA provided focused only on efforts associated with Corporal Hargrove or the four sets of Asian remains. DPAA never provided the complainant with a full explanation of all the results of the 2008 mission because the bone fragments DPAA received during that mission were related to other missing Service members. In this case, the narrow-focused nature of information sharing provided the complainant an incomplete picture of DPAA efforts to recover various remains. From this incomplete picture, the complainant formed incorrect assumptions about the veracity of information shared with him because of partial information he gathered through his own research.

DPAA accounted for Private First Class Benedett in 2014 based on a combination of mtDNA analysis and isotopic analysis on three bone fragments DPAA recovered during an underwater excavation of the Knife 31 crash site in 1995. However, DPAA did not identify any remains from the

⁴³ Occam's razor is a scientific and philosophical rule that the simplest of competing theories is preferred or often correct as compared to the more complex theory.

2008 mission as portions of Private First Class Benedett. The complainant incorrectly assumed that DPAA used the bone fragment found with the flak vest to identify Private First Class Benedett.

C. Other Issues

Statement Allegedly Made by Senator John D. Rockefeller IV Concerning Corporal Hargrove's Remains

The complainant told us that his friend and the friend's spouse relayed to him, "anywhere from 2011 to 2013," that Senator John D. Rockefeller IV told the couple that DPAA had identified Corporal Hargrove's remains in September 2009.⁴⁴ The complainant also told us that the couple said that Senator Rockefeller told them, "[i]f you ever go public with this, I'll deny saying it." We interviewed the friend who told us that he never had a conversation with Senator Rockefeller and never met Senator Rockefeller. The friend also told us that, although his spouse personally knew the Rockefeller family, his spouse never discussed the recovery of Corporal Hargrove's remains with Senator Rockefeller or any Rockefeller family member. Accordingly, we determined the issue did not warrant further investigation.

DPAA's Invitation to the Book Author to View the Four Sets of Remains

The complainant told us that in October 2009, DPAA invited a book author to the DPAA laboratory in Hawaii to view photographs of the four sets of remains recovered from Koh Tang in 2008. The complainant stated that the book author called him and said, "this is unheard of. They just don't invite somebody unless they're a family member or have some connection with it." The complainant told us that after the book author returned from Hawaii, the book author told him, "the four sets were all Asian" and that all four sets were white in color. The complainant stated that he told the book author, "They brought you to Hawaii to convince you. They're trying to cover this thing up."

The book author told us that he accompanied the complainant to Koh Tang during the 2008 DPAA recovery mission. He stated that the recovery team received several long bones from Cambodian military personnel while he and the complainant were on Koh Tang. He told us that after he left Koh Tang the recovery leader told him that they did not find any additional remains. He told us that he held the recovery leader in "high regard because I've seen the work he does and I just accepted the fact that they didn't find any more bones." He also stated that in 2009 the interpreter told him that the recovery team found more remains after he and the complainant left Koh Tang.⁴⁵

The book author told us that for the past 25 years he spent two weeks in Hawaii nearly every September. During these trips, he visited DPAA and the laboratory for research purposes. The book author stated that during his 2009 trip the DPAA public affairs office invited him to the laboratory after he questioned them about finding more remains on Koh Tang in 2008. He told us that when he arrived at the laboratory, the public affairs office arranged for the recovery leader to meet with him. He stated, "eventually [I] sat down in [the recovery leader's] office where he had a computer, and he just started bringing up one photo after another of the remains that they had found after we left."

⁴⁴ Senator Rockefeller served as a U.S. Senator from West Virginia from 1985 to 2015. He served on the U.S. Senate Select Committee on Intelligence from January 3, 2007, to January 3, 2009.

⁴⁵ This is the interpreter who told the complainant DPAA recovered more remains after the complainant left Koh Tang in 2008.

The book author stated that the recovery leader told him all four set of remains were Asian, were executed, and were not combat casualties. The book author stated that the recovery leader told him that the clothing and their tied wrists suggested that the four were probably a Vietnamese fishing crew “that had wandered into Khmer Rouge territory.” The book author told us, “[s]o at that point I felt like, ‘okay. Well, they didn’t tell me they found more remains, but the reason is because they’re saying they didn’t find any more U.S. remains.’”

We did not find any evidence to support the complainant’s assertion that DPAA invited the book author to the laboratory to “cover this thing up.”

Unidentified Individual Telling Corporal Hargrove’s Nephew that DPAA Has Corporal Hargrove’s Remains

The complainant provided us with a June 2014 answering machine message left by a relative. On the answering machine message, the relative stated that Corporal Hargrove’s nephew had just returned from Hawaii with a colleague and while in Hawaii the colleague’s son, who was in military intelligence, told the nephew that Corporal Hargrove’s remains were in Hawaii. The complainant told us that the relative and the nephew did not want to get involved and would not cooperate. The complainant added that he did not know the name of the Service member who provided the information to the nephew. The complainant told us that the Service member was from Pennsylvania and left the military on August 8, 2014, because the military lowered the reenlistment bonus from \$80,000 to \$30,000. The complainant did not provide a name, rank, or branch of service of the military intelligence Service member.

We obtained and then compared listings of all military personnel assigned to DPAA’s predecessor organization in June 2014 with listings of those assigned in January 2015 and determined that nearly 30 enlisted male Service members departed during that period. The listings did not distinguish the military occupational specialty of the military personnel; however, we were able to identify and contact three military intelligence noncommissioned officers who were assigned to predecessor organization in 2014. None of these individuals remembered a reenlistment bonus ever being \$30,000 to \$80,000 or a military intelligence male who left the service in August 2014. Additionally, these individuals told us that they had no knowledge of the Koh Tang cases and had not heard anyone talk about the Koh Tang cases. Accordingly, we determined the issue did not warrant further investigation.

Gag Order

The complainant told us that while in Cambodia attending the 40th Anniversary of the battle on Koh Tang in May 2015, a Royal Cambodian Armed Forces general officer refused to talk to the complainant. The complainant stated that the interpreter said that the Cambodian general told the interpreter that the Cambodian general was “not allowed to speak with you.” According to the complainant, after hearing this from the interpreter, the complainant concluded that DPAA put a “gag order” on the Cambodian general.

Two witnesses, who had been part of the United States delegation when coordinating with the Cambodian POW/MIA Committee, told us that DPAA does not have the authority to place a “gag order” on any foreign government official. One witness added that he had no influence or “leverage” over members of the Cambodian government, including on what they could and could not say. We did not

find evidence to support the complainant's assertion that DPAA placed a gag order on a Cambodian general.

VI. EXAMINATION OF MANAGEMENT PROCESSES

Throughout the investigation, we received testimony and reviewed documents on DPAA management processes for the recovery and identification of remains. We identified several process deficiencies that we believe adversely affected the DPAA mission and contributed to the complainant's perception that DPAA withheld information. These deficiencies impacted information sharing both within DPAA and externally between DPAA and the families of unaccounted-for Service members. Although our investigation focused on Corporal Hargrove and the 2008 Koh Tang recovery mission, we believe these deficiencies may affect other cases and warrant improvement.

In addition, the DoD OIG Special Plans and Operations component is conducting a separate ongoing review of DPAA operations as a follow-up to a report it issued regarding DPAA in October 2014.

However, we believe that, as a result of this review, we have identified deficiencies and reasonable recommendations for improvement in DPAA. We discuss these deficiencies and our recommendations in the following parts of this section:

- Case Management System
- Internal Communications
- Organizational Duplication
- Internal Controls
- External Communications

In his December 20, 2017, response to our preliminary report, the DPAA Director concurred with our 12 recommendations. We have included the DPAA Director's comments to each of our recommendations and our response to each.

As noted above, on January 30, 2015, the DoD combined several organizations to establish DPAA. We present a brief history of the various organizations involved in recovering remains of U.S. Service members to provide context for the issues described in this section.

Prisoner of War and Missing in Action Accounting Mission and Organization

In January 1973, the United States signed the Paris Peace Accords to end the Vietnam War. In the same month, the DoD established the Joint Casualty Resolution Center (JCRC) in Saigon, South Vietnam, to resolve the fate of those Service members missing and unaccounted for throughout Southeast Asia. Shortly thereafter, the DoD moved the JCRC to Thailand. The DoD also established the U.S. Army Central Identification Laboratory Thailand (CILTHAI), with the mission to search for, recover, and identify those Service members lost because of the Vietnam conflict.

In May 1976, CILTHAI moved to Hawaii and was redesignated the U.S. Army Central Identification Laboratory Hawaii (CILHI), with the mission to search for, recover, and identify missing Americans from all previous conflicts.

Beginning in September 1988, the Vietnamese permitted U.S. teams to search throughout the country. The U.S. reached similar arrangements within Laos and Cambodia around the same time.

In January 1992, the Commander, U.S. Pacific Command formed Joint Task Force-Full Accounting (JTF-FA) in Hawaii, which replaced the JCRC as the primary organization accounting for Americans missing from the Vietnam conflict. Although CILHI conducted worldwide recovery operations, it conducted Southeast Asia recovery operations under the supervision of JTF-FA.

In July 1993, the DoD established the Defense Prisoner of War Missing Personnel Office (DPMO) to provide centralized management of POW/MIA affairs within the DoD.

In October 2003, the DoD established the Joint POW/MIA Accounting Command (JPAC) by merging CILHI and JTF-FA with the mission to account for American POW/MIA from all past conflicts.

On January 30, 2015, the DoD merged JPAC, DPMO, and certain functions of the U.S. Air Force's Life Sciences Equipment Laboratory into the newly formed DPAA. The DPAA headquarters is located in Arlington, Virginia. DPAA has an operational office and the DPAA laboratory in Hawaii. DPAA also has satellite laboratories in Nebraska and Ohio.

A February 2016 DPAA news release reporting on the reorganization of DPAA stated:

there is still much work to do. The merging of different organizational cultures from the various legacy organizations will take some time to cultivate . . . Some of the key recommendations for the new agency to implement will take more years to be fully integrated. For example, the case management system that will improve efficiency to workflows and communicate case information to the families of the missing has begun development, but is expected to take several months to become fully functional.

Case Management System

According to DPAA, it is modernizing its management processes by implementing a case management system (CMS) that will enable "end-to-end tracking of a case from research to mission to accession and lab work." According to DPAA, some key components of CMS include:

- Improved business process performance by leveraging technology and innovation;
- Increased quality, consistency, and access to the critical data underlying mission effectiveness; and
- Enriched engagement with the families of missing Service members and others.

The DPAA chief data officer told us that DPAA received funding approval in September 2016 to procure the system. The data officer also told us that legacy organizations had created more than 60 data sets of information over the past 40 years. He stated that these data sets contained information and documentation such as lists of individuals, loss incidents, casualties, eyewitnesses, witnesses interviewed and what they said, and locations where organizations searched for remains and found evidence. He told us that legacy organizations tried to consolidate these lists "but because of the

different locations” and other factors, DPAA ended up with “a lot of different systems for tracking very similar information. Sometimes the same information.”

The data officer also told us that DPAA was in the process of standardizing the data sets, aligning the underlying basic data, and migrating the data to CMS while maintaining the accuracy of the data and ensuring no data is lost. He stated that DPAA will migrate data and fully transition to CMS by January 2019. According to the data officer, DPAA is also establishing data exchange protocols with AFDIL that would automatically provide updates to DPAA as AFDIL processes DPAA samples. He also told us that ultimately service casualty officers and family members of missing Service members will have access to certain information within CMS. For instance, family members will be able to access unclassified historic personnel and loss records, operational records, as well as their own correspondence with the DoD about their missing family members.

DPAA is taking steps toward modernizing their case management system. These improvements are critical to ongoing efforts to improve internal and external communications, and we believe that DPAA should strive to ensure that it is fully implemented by January 2019, and the timetable for implementation does not slip.

Recommendation 1: DPAA should fully implement CMS by January 2019.

In his December 20, 2017, response to our preliminary report, the DPAA Director stated:

CMS, which has been under contract for development since 2016, is the Agency’s technical solution to decades of material and information storage and collaboration shortfalls. This tailored solution has a two-year development and implementation timeline with [initial operational capability] in February 2018 and [full operational capability] scheduled for December 2018. Digitization efforts, sustained through DPAA’s planning and budgeting process, will continue beyond that date in order to integrate the millions of documents and all types of media dating back to WW II.

Comments from the DPAA Director addressed the intent of the recommendation; therefore, the recommendation is resolved but remains open. We will close the recommendation when we confirm that CMS has been fully implemented.

Internal Communications

We found inaccurate and incomplete information listed on an analyst report with notes concerning Corporal Hargrove’s case. The following is a summary of the deficiencies.

On February 22, 2017, DPAA printed the analyst report with notes for the Hargrove case from its database. In an undated entry on the notes section of this report, a former case analyst wrote that Corporal Hargrove’s widow wanted to see if the wallet DPAA recovered during its 2008 mission was the one she gave to Corporal Hargrove before he deployed to Koh Tang. The former case analyst also wrote in the notes section of the report that during the March 2009 Bethesda Family Update he learned that the “wallet was reportedly sent to an unidentified third party in North Carolina for some unknown reason.” The report did not contain any information about the status of the wallet or the results of Mrs. Hargrove’s request to see the wallet.

We interviewed the former case analyst, who told us that he could not show Mrs. Hargrove the wallet “because we somehow managed to lose it.” The former analyst added that the OC Deputy, who was also present at the Family Update, told Mrs. Hargrove that he (the OC Deputy) would look into the matter. The former case analyst stated, “to the best of my knowledge nobody ever found the wallet.”

However, we found additional evidence concerning the wallet. In a November 5, 2010, email, the OC Deputy informed the former scientific director that Mrs. Hargrove had requested to see a photograph of the wallet DPAA excavated in 2008 from Koh Tang. On November 8, 2010, the DPAA laboratory evidence coordinator provided the U.S. Marine Corps service casualty officer a photograph of the wallet in question. In a November 18, 2010, letter, the Marine Corps service casualty officer provided Mrs. Hargrove a photograph of the wallet DPAA recovered from Koh Tang.

The laboratory manager told us that the material evidence report indicated the wallet “was local manufacture and not likely a U.S. manufactured wallet.” The laboratory manager added that the wallet “was not released to anyone.” On May 11, 2017, we confirmed with the evidence coordinator that the wallet never left the laboratory. We also viewed the wallet and confirmed that the laboratory still had possession of the wallet.

When we showed a supervisory analyst from Hawaii the analyst report with notes concerning Corporal Hargrove, the analyst told us it was the first time he had ever seen this type of report. He stated that analysts based in Hawaii only see redacted copies of the family conference reports, the same report DPAA provides to family members.

The analyst report with notes did not include any information on whether DPAA or the Marine Corps service casualty officer followed up with Mrs. Hargrove concerning the wallet. Additionally, the report contained inaccurate information since the wallet was never sent to a third party in North Carolina. DPAA could have avoided these inaccuracies if everyone involved in the Hargrove case had full access to all relevant reports and coordinated their efforts.

Recommendation 2: DPAA should ensure all personnel working on cases have access to all relevant information and reports.

Recommendation 3: DPAA should implement a process to require employees to coordinate and share case information throughout the organization.

Recommendation 4: DPAA, in conjunction with service casualty officers, should implement a process to ensure questions and concerns from family members are adequately addressed and documented.

In his response, the DPAA Director stated that Recommendations 2 and 3 are CMS objectives.

With regard to Recommendation 4, the DPAA Director stated:

[t]he initial fielding of DPAA’s cloud-based CMS and the ongoing use of the newly established Salesforce Public Portal will continue to improve DPAA’s ability to respond to family members’ inquiries. Currently, the Salesforce cloud platform DPAA uses to support the family inquiry tracker process has also been adopted

by the service casualty offices. It enables the entire past conflict accounting community to share a common operating picture and enhances DPAA's ability to communicate with the families of the missing.

Comments from the DPAA Director only partially addressed Recommendations 2, 3, and 4; therefore, the recommendations are unresolved and remain open. While the CMS objectives include access to information and the coordination of efforts, there is still a current gap in the process that needs to be addressed in the near term to avoid similar communication issues occurring while CMS is under development. We request that the DPAA Director provide additional comments that include a written plan of actions DPAA will take to address Recommendations 2 and 3 while CMS is under development. We also request that the DPAA Director provide an estimated completion date for providing this plan.

With regard to the Salesforce cloud platform, we request that the DPAA Director provide a written plan for implementing this platform. We also request that the DPAA Director provide an estimated completion date for implementing the platform.

Organizational Duplication

DPAA appears to have a duplication of personnel and functions—an issue that the Government Accountability Office (GAO) and the DoD OIG previously identified at DPAA.⁴⁶

For example, several Southeast Asia analysts we interviewed were assigned to the same DPAA element, the Asia Pacific Directorate, located in two different offices – Hawaii and Virginia. We reviewed the position descriptions for the Southeast Asia analysts located in both Hawaii and Virginia. These descriptions did not contain significant differences and their responsibilities appeared similar. We found no evidence that the individuals in these two offices were performing appreciably different duties. Additionally, based on our interviews and reviews of reports concerning Corporal Hargrove, it does not appear that the analysts in the two different offices were working closely together or sharing appropriate information.

The DPAA Acting Director told us, “breaking the rice bowls is challenging. Some of our people have been here 20 plus years, but they are transitioning.” She told us that she reorganized DPAA by determining where personnel positions “best fit” the mission and moved some historians and archeologists to the headquarters in Virginia.

Recommendation 5: DPAA should clarify the Southeast Asia analysts’ relationships, reporting responsibilities, and job requirements.

In his response, the DPAA Director stated that the areas of primary responsibilities for Southeast Asia analysts located in Hawaii and Virginia are identified and explained in a draft standard operating procedure.

⁴⁶ The GAO Report to Congressional Committees was dated July 2013, and titled “DOD’s POW/MIA Mission: Top-Level Leadership Attention Needed to Resolve Longstanding Challenges in Accounting for Missing Persons from Past Conflicts.”

The DoD OIG Report was dated October 17, 2014, and titled “Assessment of the Department of Defense Prisoner of War/Missing in Action Accounting Community.”

Comments from the DPAA Director only partially addressed the recommendation; therefore, the recommendation is unresolved and remains open. We request that the DPAA Director provide the final standard operating procedure that clarify the Southeast Asian analysts' relationships, reporting responsibilities, and job requirements. We also request that the DPAA Director provide an estimated completion date for the final standard operating procedure.

Internal Controls

During our investigation, we found three instances of DPAA's failure to complete required work that suggested a possible material weakness in internal controls. Specifically, DPAA recovery leaders did not complete two required search and recovery reports and laboratory managers failed to assign material evidence for analysis in a timely manner. Additionally, the DPAA collection of dental records for unaccounted-for Service members was incomplete. The following is a summary of each deficiency.

Search and Recovery Reports

Two different recovery leaders did not complete search and recovery reports for their respective recovery missions (1999 and 2015) on Koh Tang. The DPAA Laboratory Manual, revised March 30, 2017, states that the "Laboratory Manual is the primary instrument for implementing the quality assurance dogma of: write what you do; do what you write; and if it is not written down—it did not happen." The manual adds that the recovery leader should complete the search and recovery report within 9 working days after returning from the recovery mission.⁴⁷ The search and recovery report is the final report the recovery leader completes concerning the processing of a particular recovery scene from a recovery mission.

A recovery leader for one of the missions that followed the 1999 mission told us that the "failure to record the results of the excavation . . . makes it difficult to systematically track our efforts and locations where we have worked." He added that the recovery leader for the 1999 mission did not complete a search and recovery report and could not provide him with a map of the 1999 excavation site.

The follow-on recovery leader stated:

[s]o, when I got out there, there were some strange rectangular features and I didn't know if they were old foundations from buildings or what. . . . if you don't have a record you don't necessarily know what something is until you start excavating it again and that was the problem. It leads to redundant activity, lost data

Additionally, a different recovery leader did not complete a search and recovery report for a 2015 recovery mission. Witnesses told us that the recovery leader experienced an extended medical situation soon after returning from the 2015 recovery mission. Witnesses added that the recovery leader excavated the burial feature of Private First Class Gary L. Hall, U.S. Marine Corps, a member of the machine gun crew with Corporal Hargrove. A DPAA analyst told us that the recovery leader found

⁴⁷ The recovery leader completes one search and recovery report per recovery scene, but may negotiate a longer suspense date when multiple reports are required for the recovery mission.

Private First Class Hall's wallet, identification card and tags, and some clothing on the west side of the island about 5 meters from where a 2008 recovery mission had conducted an excavation. The analyst stated that the recovery leader did not find any remains and only located the burial feature and the material evidence.

The completion of recovery reports is a fundamental aspect of the DPAA mission. The absence of these two search and recovery reports may hamper subsequent investigation and recovery missions.

Recommendation 6: DPAA should develop internal controls to ensure that recovery leaders complete all search and recovery reports within 9 working days after returning from the recovery mission, in accordance with the DPAA Laboratory Manual.

In his response, the DPAA Director stated, "[e]very case is unique, and at times, going beyond the expected time frame is both reasonable and necessary. DPAA continuously reviews current policy to optimally meet mission intent."

Comments from the DPAA Director did not identify specific internal controls to ensure timely reporting; therefore, the recommendation is unresolved and remains open. We recognize that circumstances may require extending the expected 9 working day time frame for completing search and recovery reports. However, as discussed in this report, DPAA failed to complete reports from two recovery missions (1999 and 2015) and does not have a plan to complete them. Accordingly, we believe that DPAA should develop internal controls that ensure reports are completed within the 9 working day time frame and to ensure that reports that exceed the 9 working day time frame are still completed in a timely manner. We request that the DPAA Director provide additional comments that include the internal controls that will be implemented to ensure timely completion of search and recovery reports. We also request that the DPAA Director provide an estimated completion date for implementing these internal controls.

Material Evidence

During our visit to the laboratory in May 2017, we asked why DPAA had not yet assigned the material evidence (Private First Class Hall's wallet, identification card and tags, and other associated material) excavated from Koh Tang in 2015 for forensic analysis. One witness told us that the laboratory had a finite number of individuals who could perform the analysis of the artifacts and that the priority was identifying remains. The witness told us that the Hall family had not requested that DPAA provide them with Private First Class Hall's identification card and tags. The witness stated:

I would love to be able to provide everything back to the family. Right now, unfortunately, the way things work, we don't generally send items back to the family unless the family requests the item. Now, that's something that you talk to various parts of the agency and especially the [Acting Director] they very much want a change. They would like this to be more of, "Hey, let's push the information to you, and you don't need to ask for it." But that's the way that the process has been . . . we don't send it back until it's asked for.

Another witness told us that the laboratory would complete a material evidence report and send the wallet, identification card and tags to Private First Class Hall's family but only after the Hall family requested these artifacts.

We reviewed documentation that nearly a year earlier Private First Class Hall's brother had asked DPAA to release his brother's personal effects to him. In an email dated June 8, 2016, the Marine Corps service casualty officer informed a DPAA outreach and communications specialist of the brother's request. Although the service casualty officer was "in constant contact" with Private First Class Hall's oldest brother, there was no progress to report to him about his request. Private First Class Hall's brother passed away in March 2017.

After our visit in May 2017, DPAA assigned the material evidence for analysis. On June 13, 2017, DPAA issued the material evidence report. The report stated that 10 items were recovered from a single excavation scene. The items included Private First Class Hall's identification tag with necklace; a wallet containing Private First Class Hall's identification card, banking calendar, social security card, and Geneva Convention identification card; remnants of a pair of size 12 wide combat boots; socks; underwear; buttons; and belt buckle.

On July 6, 2017, by e-mail, the DPAA evidence coordinator provided the service casualty officer with a copy of the completed report concerning the material evidence recovered on Koh Tang from January 19 to February 21, 2015.

The analysis of material evidence and completion of material evidence reports are fundamental aspects of the DPAA mission. The DPAA's failure to assign this material evidence for forensic analysis in a timely manner impeded information sharing with Private First Class Hall's brother. Although the service casualty officer was "in constant contact" with Private First Class Hall's brother, he died before DPAA took the first step to fulfill his request to release his brother's personal effects.

Recommendation 7: DPAA should develop a process to ensure all material evidence believed to be personal effects belonging to a missing Service member is analyzed in a timely manner and documented in appropriate reports. When appropriate, DPAA should proactively provide the information in these reports to the service casualty officer for dissemination to the family of the missing Service member.

In his response, the DPAA Director stated:

[o]ur current lab policy is that all material evidence associated with an identified Service member is analyzed in a timely manner and is included in the Medical Examiner Summary Report. A copy of the Material Evidence Report is provided to the family.

While the DPAA Director's response to this recommendation addressed how DPAA would provide the analysis of personnel effects to the family, the response did not address one of the concerns identified in the report related to timely analysis of personal effects belonging to a missing Service member. Therefore, the recommendation is unresolved and remains open. We request that the DPAA Director provide a written plan for ensuring personnel effects are analyzed in a timely manner. The written plan should include standards for timeliness. We also request that the DPAA Director provide an estimated completion date for this written plan.

Dental Records

During our investigation, we discovered that neither the DPAA nor the Marine Corps service casualty officer had a copy of Corporal Hargrove's dental records. The DPAA website states, "dental records are often the best way to identify remains as they have unique individual characteristics . . . even handwritten charts and treatment notes can be critical to the research and identification process."

We reviewed Koh Tang-related DPAA reports stating that DPAA compared recovered dental remains to the Southeast Asia dental record database of missing Service members and that the result of the comparison was "no matches." In the case of Corporal Hargrove, this statement is misleading because his dental characteristics were not included in the Southeast Asia database when DPAA made the comparison. DPAA had not obtained a copy of Corporal Hargrove's dental records in order to enter the characteristics in the database.

The collection of all relevant medical records for unaccounted-for Service members is a fundamental aspect of the DPAA mission. Witnesses could not describe for us any DPAA policy for what medical and dental records are required for unaccounted-for Service members. Additionally, witnesses could not describe a process for obtaining such records or documenting the unavailability of those records.

Recommendation 8: DPAA should develop a policy for medical and dental records, which includes guidance for when to obtain those records for each unaccounted-for Service member or document the unavailability of those records.

In his response, the DPAA Director stated that the "ongoing massive DPAA digitization effort will meet this intent."

Comments from the DPAA Director did not address the policy that would be applied within the digitization effort or describe how the digitization effort would address this recommendation. Therefore, this recommendation is unresolved and remains open. We request that the DPAA Director provide a written plan that includes the policies that DPAA will implement to ensure consistent actions for obtaining medical and dental records or documenting the unavailability of those records. We also request that the DPAA Director provide an estimated completion date for the written plan.

External Communication

We observed several examples of information sharing deficiencies between DPAA and families of unaccounted-for Service members.

Written Policy

DPAA does not have a comprehensive written policy on employee communications with family members. By default, information sharing between DPAA and family members is largely dependent on family members requesting information or attending a family member event, rather than DPAA proactively providing family members relevant information in a timely manner.

Based on the information we reviewed in this investigation, we believe that this lack of comprehensive written policy on DPAA external communications prevents consistency in information

sharing between DPAA officials and family members. In addition, a written policy that promotes proactive information sharing in appropriate circumstances could help avoid the type of communication issues and misunderstandings we found in this case.

Recommendation 9: DPAA should develop a written policy regarding communications with family members.

In his response, the DPAA Director stated, "DPAA is drafting an Administrative Instruction (AI) to describe how communications with families should be conducted."

Comments from the DPAA Director addressed the intent of this recommendation; therefore, the recommendation is resolved but will remain open. We request that the DPAA Director provide an estimated completion date for the final administrative instruction. We will close the recommendation when we confirm that the final administrative instruction includes a written policy regarding communications with family members.

Family Conference Reports

We found that family conference reports produced by the Research Support Branch within DPAA's Asia Pacific Directorate and provided to family members are not written in plain language and are difficult to comprehend. These reports do not provide a concise summary of completed recovery and investigative events. Additionally, these reports do not provide an overview of anticipated future events.

We believe that family conference reports written in plain language in a format that includes a concise summary and overview of anticipated future events would enhance information sharing with family members.

We also noted formatting errors in the family conference report that DPAA provided to Mrs. Hargrove. The dates listed in the case coordination chronology section did not correspond to the actual events. DPAA officials generate this type of report from a database. The report includes a list of events with completion dates. A formatting error results when any event fills more than one line, because the completion dates field is listed by line and not by event. For example in a family conference report provided to Mrs. Hargrove the first event fills two lines and has two dates associated with it. The next 18 events have inaccurate dates and the last 4 events have no dates.

Recommendation 10: DPAA should develop a plain language, user-friendly family conference report format.

Recommendation 11: DPAA should correct the formatting issues associated with the case coordination chronology section of the family conference report.

In his response, the DPAA Director stated that the draft standard operating procedure would address these recommendations.

Comments from the DPAA Director addressed the intent of these recommendations; therefore, the recommendations are resolved but will remain open. We request that the DPAA Director provide an estimated completion date for the final standard operating procedure. We will close the

recommendations when we confirm that the final standard operating procedure includes family conference report formatting improvements.

Narrow-focused Communication with Family Members

The complainant's understanding of the 2008 recovery missions was somewhat limited because the information DPAA provided focused only on efforts associated with Corporal Hargrove or the four sets of Asian remains. DPAA never provided the complainant with a full explanation of all the results of the 2008 mission because the bone fragments DPAA received during that mission were related to other missing Service members. In this case, the narrow-focused nature of information sharing provided an incomplete picture of DPAA efforts to recover various remains. From this incomplete picture, the complainant formed incorrect assumptions about the veracity of information shared with him because of partial information he gathered through his own research.

Recommendation 12: DPAA should create a process to provide family members with a summary of relevant recovery efforts, without compromising the privacy interests of family members of other missing Service members.

In his response, the DPAA Director stated, "DPAA is working to create a formal AI to better shape the requirements supporting proactive communications with families."

Comments from the DPAA Director addressed the intent of this recommendation; therefore, the recommendation is resolved but will remain open. We request that the DPAA Director provide an estimated completion date for the final administrative instruction. We will close this recommendation when we confirm that the final administrative instruction includes requirements for providing family members a summary of recovery efforts.

VII. OVERALL CONCLUSIONS

As discussed above, we concluded that DPAA has not recovered Corporal Hargrove's remains, and that DPAA did not lie about recovering Corporal Hargrove's remains. However, we provide 12 recommendations for improvements in DPAA's processes, some of which could avoid the communication issues and misunderstandings that occurred in this case.

VIII. LIST OF RECOMMENDATIONS

1. DPAA should fully implement CMS by January 2019.
2. DPAA should ensure all personnel working on cases have access to all relevant information and reports.
3. DPAA should implement a process to require employees to coordinate and share case information throughout the organization.
4. DPAA, in conjunction with service casualty officers, should implement a process to ensure questions and concerns from family members are adequately addressed and documented.

5. DPAA should clarify the Southeast Asia analysts' relationships, reporting responsibilities, and job requirements.
6. DPAA should develop internal controls to ensure that recovery leaders complete all search and recovery reports within 9 working days after returning from the recovery mission, in accordance with the DPAA Laboratory Manual.
7. DPAA should develop a process to ensure all material evidence believed to be personal effects belonging to a missing Service member is analyzed in a timely manner and documented in appropriate reports. When appropriate, DPAA should proactively provide the information in these reports to the service casualty officer for dissemination to the family of the missing Service member.
8. DPAA should develop a policy for medical and dental records, which includes guidance for when to obtain those records for each unaccounted-for Service member or document the unavailability of those records.
9. DPAA should develop a written policy regarding communications with family members.
10. DPAA should develop a plain language, user-friendly family conference report format.
11. DPAA should correct the formatting issues associated with the case coordination chronology section of the family conference report.
12. DPAA should create a process to provide family members with a summary of relevant recovery efforts, without compromising the privacy interests of family members of other missing Service members.

Appendix

DPAA Evidence Recovery and Analysis

DPAA conducts global search, recovery, and laboratory operations to identify unaccounted-for U.S. personnel from past conflicts. The DPAA Laboratory is led by a Scientific Director who is normally a uniformed medical examiner in the grade of O-6. The DPAA Laboratory is accredited by the American Society of Crime Laboratory Directors-Laboratory Accreditation Board. We include responsibilities of some of the laboratory personnel in Table 4.

Table 4. DPAA Laboratory Personnel and Responsibilities

Position	Personnel Type	Responsibilities Include
Scientific Director	Military O-6 - medical examiner (Jan. 2015 to present) Senior Executive Service member - forensic anthropologist (before Jan. 2015)	Overall responsibility for laboratory and laboratory staff; maintains scientific integrity of laboratory and DPAA mission; establishes all identifications within the laboratories jurisdiction; and approves laboratory case disposition.
Laboratory Director	Government Civilian	Daily operations of laboratory.
Laboratory Manager	Government Civilian	Daily operations and supervision of a specific functional area.
Forensic Anthropologist	Government civilian	Physical anthropologist employed to examine, analyze, and interpret non-dental biological and material evidence.
Forensic Archaeologist	Government Civilian	Archaeologist employed to examine material evidence and serve as recovery leader on recovery scene operations and site investigations.
Forensic Odontologist	Military or Government Civilian	Dentist employed to examine and analyze dental remains and oral and maxillofacial evidence.

Source: DPAA Laboratory Manual.

Recovery Operations

DPAA defines a recovery scene as a location where human remains and associated material evidence have been, or are believed to be, deposited. Associated materials include, but are not limited to, identification media, aircraft debris, data plates from mechanical part, military hardware, clothing, and other material evidence. These human remains and associated material were typically deposited decades ago and consequently most sites require excavation using archaeological techniques.

DPAA recovery teams consist of civilian and military personnel. Team members consist of a recovery leader, team leader, and assistant team leader, with the remainder of team members tailored to the recovery mission. The recovery leader and team leader have distinct leadership responsibilities for the mission. We include these major responsibilities in Table 5.

Table 5. Recovery Team Members and Responsibilities

Position	Personnel Type	Responsibilities Include
Recovery Leader	Civilian archeologist or anthropologist – the technical and subject matter expert	Developing and organizing all aspects of the recovery operations to ensure scientific integrity of evidence recovery and handling during the mission.
Team Leader	Usually military grade O3 or higher – ranking military team member	Overall, mission preparation, execution, and welfare of team members. Specifically, administration and logistics to include: personnel movements, budgeting, dealing with embassy officials, negotiating with foreign officials, and team safety.
Team Member	Military or Government civilian -- mortuary affairs specialist, infantry soldier, combat engineers, medic, explosive ordnance disposal technician, photographer, linguist/analyst, and a life support investigator	Team tailored to the specific mission.

Source: DPAA Laboratory Manual.

DPAA Analytical Reports

Table 6. DPAA Analytical Reports

Report Type	Who Prepares	Report Description
Search and Recovery Report	Recovery Leader	Final report on the processing of a recovery scene. Documents recovery evidence. May have multiple reports per recovery mission.*
Forensic Anthropology Report	Forensic Anthropologist	Documents the findings after completing an examination of the skeletal and non-skeletal evidence - analysis of biological tissue, general osseous, for the purpose of: determining human from non-human remains; generating a biological profile (including ancestry, age, sex, ancestry, stature, antemortem pathological conditions, anomalies, and traits of the individual).
Forensic Odontology Report	Forensic Anthropologist	Analysis of dental remains for the purpose of comparison to antemortem dental records of known individuals.
Material Evidence Report	Forensic Anthropologist	Material evidence testing of personal effects and military items; aims to achieve individuation of items when possible; goal is to aid in and support casualty resolution by documenting circumstantial evidence.

* The search and recovery report is due within 9 working days after returning from recovery mission. One report per recovery scene, but may negotiate longer suspense date when multiple reports are required for the recovery mission.

Source: DPAA Laboratory Manual.

Deoxyribonucleic Acid (DNA) Analysis and the Armed Forces DNA Identification Laboratory (AFDIL)

Deoxyribonucleic Acid (DNA) Analysis

DNA is a double-stranded molecule of helical structure containing genetic code. Individuals inherit DNA from their parents. All human cells with a nucleus contain two types of DNA: 1) mitochondrial DNA (mtDNA), which is found within the mitochondria of the cell; and 2) nuclear DNA, which is found within the nucleus of the cell. There are two types of nuclear DNA: autosomal, which is unique to each individual; and Y chromosomal (males only), which is passed from father to son. There is a single copy of autosomal DNA and Y chromosome DNA within each cell. However, there are hundreds to thousands of mitochondria per cell. Each mitochondrial contains its own DNA, separate from the nucleus.

Both mitochondrial and nuclear DNA can be utilized for human identification and forensic testing. Mitochondrial DNA sequencing is used to analyze mtDNA. Autosomal Short Tandem Repeat (auSTR) and Y chromosomal Short Tandem Repeat (Y-STR) tests are used to analyze nuclear DNA. Because of the age and degradation of DNA due to environmental conditions, mtDNA testing is the most sensitive and is usually the first type of DNA testing used.

Table 7. DNA Types and Testing

DNA Type	Description	Subtype	Testing
Mitochondrial DNA (mtDNA)	Lineage marker - only transmitted through the maternal line – all siblings have same mtDNA as biological mother – hundreds to thousands of mitochondria per cell	NA	mtDNA is the most sensitive and usually the first type of DNA testing used because it is highly effective
Nuclear DNA	Found within the nucleus of the cell 23 chromosomal pairs - one chromosome from each pair inherited from each parent for a total of 46 chromosomes	Autosomal DNA - unique to each individual – single copy within each cell	Autosomal Short Tandem Repeat (auSTR)
		Y chromosomal DNA – males only - passed from father to son through paternal line – single copy within each cell	Y chromosomal Short Tandem Repeat (Y-STR) – males only

Source: Armed Forces Medical Examiner System DNA Frequently Asked Questions.

Armed Forces DNA Identification Laboratory (AFDIL)

The Armed Forces DNA Identification Laboratory (AFDIL) supports the past accounting identification process by creating and maintaining a past conflict mtDNA, auSTR, and Y-STR family reference database.

The DPAA laboratory sends samples of human remains to AFDIL for DNA analysis. AFDIL in turn processes the samples and performs DNA testing. AFDIL then analyzes the DNA sequences of each sample and compares it to DNA sequences maintained in the family reference database. AFDIL reports the results of their analysis and database comparison to the DPAA laboratory.



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