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Hello and welcome to the World War II Disinterment Brief for DPAA's Indo-Pacific Directorate!

My name is Dr. Aelwen Wetherby and I am one of a team of historians supporting DPAA's disinterment operations.

Today I'll be introducing you to the process of disinterments in two parts. First, I'll begin with some historical background of how the remains of the dead were identified and buried in World War II and how we ended up with unidentified remains – or unknowns – buried in U.S. cemeteries. Second, I will provide an overview of how the disinterment of these unknowns is researched, proposed, and carried out under current DPAA operations – and what these operations have accomplished thus far.

SLIDE 2

Before we begin, there are a few important terms I want to highlight. When we talk about an **unknown**, we are referring to an unidentified set of remains recovered as a believed-to-be U.S. service member. [*Click for animation*] But a single unknown doesn't necessarily mean a single individual. Although every effort was made in the 1940s to segregate unidentified remains into single individuals, this was not always possible. A single unknown can consist of a single bone fragment – or a commingled collection of unidentified remains from multiple people. An **x-file**, meanwhile, refers specifically to the historical documentation that exists for each unknown. Some x-files have a tremendous amount of information, while others are more limited…but the x-file (or unknown file) is still a foundational historical document for disinterment research.

And, finally, it is worth noting that disinterments – or the process of research, recommending, and disinterring unknowns – are only one piece of DPAA's operations. Fed by extensive historical research, disinterments can not only lead to identifications but can also clarify our knowledge about a given area, potentially informing field investigations as well.

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With these definitions established, let's begin our overview of how remains were historically processed – and why this is important. Much of this history, as we'll see, centers on an entity known as the American Graves Registration Service.

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The American Graves Registration Service (or AGRS), established as a branch of the Quartermaster Corps of the U.S. Army during World War I, was responsible for the recovery, identification, and burial of American war dead during both the First and Second World Wars. As a part of this mission, the AGRS was also responsible for attempts to identify the unknowns during and after World War II.

In order for a set of unidentified remains to be declared an "unknown," the remains had to pass through a long administrative process of review – and U.S. Army officials had to believe that they had exhausted all reasonable means to identify them. This slide provides an overview of those steps, from the initial recovery of the remains to the final AGRS recommendation. Before that final recommendation was made, each unknown often underwent multiple burials, disinterments, and reburials – in addition to analysis according to the latest available scientific methods at the time.

This process is important to disinterment research because when we investigate an unknown, we want to try to understand how each unknown was processed through each step of AGRS efforts. Our research strives to answer questions like:

Where were the remains recovered and who recovered them? Where were the remains subsequently buried? What conclusions did AGRS scientific investigations of the remains draw? Why was the AGRS unable to identify the remains?

After all, just because an Unknown was unidentifiable in 1945, that does not mean that the case cannot be analyzed today, using modern scientific methods, new historical records, and innovative technologies.

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When we talk about the historic burial of remains, we are usually considering multiple burials – as nearly all remains (both identified and unidentified) were buried, disinterred, and reburied at least 2 or 3 times before reaching a final resting place.

In World War I, graves registration units had found that the sooner remains could be recovered, the more likely it was that they could be identified. The same pattern – as we see illustrated graphically here – held true in World War II. This graph shows an analysis of burials made in temporary cemeteries in Saipan, specifically looking at the interval of time between an individual's death and the identification of that person. As we can see, the vast majority of identifications were made within the first few days after an individual's death. The AGRS system of temporary cemeteries – which was established all over the world – not only sought to address issues of morale or public health concerns on or near the battlefields, but also helped military forces make and record identifications promptly.

These temporary cemeteries could be established by military units during or immediately after a battle – or could be established by AGRS forces returning to a battlefield weeks, months, or years later. On the island of Saipan, in the Northern Mariana Islands, the three temporary cemeteries that provided an initial resting place for the deceased of the Battle of Saipan were established by the 2d Marine Division, the 6th Marine Division, and the 27th Infantry Division – as illustrated at right.

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As the war across Asia and the Pacific progressed, hundreds of temporary cemeteries were established by U.S. forces. [*Click for animation.*]

Eventually, as the AGRS was tasked with returning World War II dead to permanent burial locations in the U.S. or in U.S. cemeteries overseas, these temporary cemeteries were disinterred and the remains were consolidated in larger concentration cemeteries. Meanwhile, the next of kin of the deceased who had been identified provided instructions on where they wanted the final burial of their loved one to take place. [*Click for animation.*]

For those remains that could not be identified, however, unknowns recovered by the AGRS across Asia and the Pacific were ultimately buried in one of two permanent U.S. cemeteries: the Manila American Cemetery and Memorial (formerly known as Fort McKinley Cemetery) in Manila or the National Memorial Cemetery of the Pacific in Honolulu.

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The multiple burials that typically feature in the history of each unknown is also reflected in how the unknowns were named. When we talk about unknowns, there can be confusion about how they were named and why, in some cases, the numbers used in naming them changed over time.

When a set of unidentified remains was buried in a cemetery, the standard practice in World War II was to assign an "X-number" to the remains, usually beginning with "X-1" followed by the Cemetery. (In the case of Cabanatuan POW camp, unknowns were initially designated with a "C" instead of an "X", but this was a rare exception!)

Because, as remains moved from one cemetery to another, there was often duplication of the same X-numbers, some unknowns were given a completely new X-number after arriving in a new cemetery. These types of changes, as outlined in the example provided here [Click for animation] are typically documented in the x-file.

Today, when we talk about unknowns, we MUST keep track of the cemetery they came from, since there could be more than one file with the number, "X-1," for example. So we always make sure to include the cemetery name as well as the X-number, saying, for example, "X-1 Finschhafen," or "X-1 2d Marine Division Cemetery Saipan."

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Eventually, all unidentified remains arrived at either an AGRS Central Identification Point (or CIP) or the AGRS Central Identification Laboratory (or CIL) for further analysis. Immediately following the war, the AGRS established a network of identification points for processing remains, culminating in the Central Identification Point in Manila and the Central Identification Laboratory in Honolulu. The Honolulu CIL is shown here in the photo on the right.

While more remote identification points might only be staffed by AGRS and medical personnel to begin the work of identification, scientific experts were employed at the CIP and the CIL with some of the most advanced identification technology available in the 1940s. In the image on the left we see a fluoroscope (a type of x-ray machine) being used to look for pieces of potentially identifying media, such as dog tags, that might have become obscured within a set of remains. In the central image, we see chemical techniques being used to try to reveal possibly washed out or faded names or service numbers in articles of clothing or other material evidence.

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These are, of course, not the only methods that proved valuable in historic identification efforts. As this slides illustrates, many of the methods used evolved based on where the remains were and how much time had passed since the recovery of the remains.

For example, if U.S. forces recovered initially unidentified remains shortly after a battle or other type of loss incident, members of a serviceman's unit might be able to confirm the identity through other means of recognition.

Identifying media, such as dog tags or identification cards, could also prove immensely valuable – although, as we'll discuss later, could sometimes be misleading as well.

Wreckage found at the scene of a recovery could help, in some cases, at least associate remains with a known incident – which, in turn, could lead to identifications. This is part of why, as historians researching unknowns, it is so important to us to try to determine whether U.S. forces conducted the initial recovery of an unknown (and made observations of evidence found at the scene) or whether allied or enemy forces had conducted the initial recovery before later turning the remains over to the AGRS.

Finally, if a set of remains was still unidentified by the time they arrived at the CIP or the CIL, a range of other scientific methods might be applied. This could include some of the forensic methods discussed previously – or skeletal and dental analyses of the remains themselves. Dentition, in particular, was one of the most important methods available, but did depend on the AGRS having access to a casualty's dental records!

[Click for animation] Ultimately, it is important to remember that, across all of these methods, the AGRS was incredibly successful in their efforts. The Central Identification Laboratory in Honolulu reported in the late 1940s that it had, in fact, been able to successfully identify over 94% of the unidentified remains recovered from the Asian and Pacific theaters of World War II and analyzed by the CIL.

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Despite the relative success of the AGRS, there were still thousands of remains that they could not identify. And in considering those remains, there are often patterns in the reasons why. Trying to understand why remains were NOT identified is an important question that we try to answer in the course of disinterment research. Some of the more common reasons might relate to:

- The nature of the loss itself – which might include circumstances, location, or timing

- Challenges with the recovery of the remains – either relating to who recovered the remains or the condition of the remains themselves. For example, if the remains had initially been recovered by enemy forces, inaccurate or misleading information about their recovery might have been passed along to U.S. forces

- Contradictory "identifying" media, e.g. material evidence found with the remains that was determined to belong to someone else

- Limitations in the records accessible by the AGRS – for example, if a set of unidentified remains had dentition, but the AGRS did not have dental records to compare it to in the potentially associated casualty's records, they might not have been able to identify the remains

- Finally, it is also important to remember the limitations to scientific methods at the time. For example, if a set of remains was recovered several years after the individual's death, with limited (or no) associated evidence, and the individual was determined to be of average height and age for the casualties in the area, and had no dentition present (or no unique dentition present) there would have likely been little more the AGRS could do.

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In some x-files, researchers may find name associations recorded as a part of AGRS investigations. While such name associations can be incredibly helpful in understanding how the AGRS was approaching its investigation, name associations can also be misleading in suggesting an incorrect identity for an unknown.

In some cases, such as what we see here, the name association may be proven false over the course of documentation present in the x-file. In this example, two sets of unidentified remains were recovered from a common grave in the northern Burmese town of Myitkyina – along with the identification tags of two U.S. soldiers. Based on this evidence, the AGRS initially believed the remains to represent those two individuals, although they determined that the remains would have to be assessed by medical personnel to try to determine which set of remains belonged to which person. However, [*click for animation*] as the investigation progressed, the AGRS discovered that one of the identification tags belonged to a soldier who had actually survived the war and returned home – with no idea as to who might have had his identification tag.   So, here, we see an example of a name association proven wrong by the AGRS itself and documented clearly in the x-file.

In other cases, however, a name association might appear *without* clear documentation as to why the name association was ultimately discarded – or why the unknown was not identified as that person. This may require further research in our current investigations to try to determine why. While occasionally a name association may not have led to an identification simply because the scientific evidence available at the time was not conclusive enough to make the identification, in most cases, as we sometimes have to remind ourselves, unknowns are unknown for a reason. In other words, if there was any possible way for the AGRS to have made an identification of unknown based on a suspected name association, it is more likely than not that the identification would have been made. If the identification was not made, there was a reason why – and that reason may still be valid today.

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Having now covered a basic overview of the history of how remains were processed during and after World War II – with some indications along the way of why this history is so important – we are now going to switch gears into a discussion of how current-day disinterment operations at DPAA work and some of their accomplishments so far.

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In total, researchers across the agency are in the process of investigating the history of over 8,600 unknowns for WWII – the majority of which (63%) were recovered from the Asian and Pacific theaters of the war, as illustrated in the pie chart on the left.

Researchers supporting DPAA's Indo-Pacific Directorate, therefore, are focused on analyzing the records of nearly 6,000 World War II Unknowns that were buried in one of two U.S. cemeteries after the war.

The National Memorial Cemetery of the Pacific (also known as "the Punchbowl," referring to the volcanic crater it occupies on the island of Oahu) was established in YEAR and is currently managed by the Veterans Administration.

The Manila American Cemetery and Memorial, initially established in YEAR as the Fort McKinley Cemetery and expanded re-named in the wake of World War II, is currently managed by the American Battle Monuments Commission.

And, as we'll see some indication of in the next two slides, the fact that an unknown might have been buried in the NMCP or the MACM already tells us something about their history. For example, unknowns analyzed at the CIP in Manila were usually buried at the MACM if they could not be identified; unknowns analyzed at the CIL in Honolulu were usually buried at the NMCP in Honolulu if they could not be identified.

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As shown here there are a little over 2,000 World War II Unknowns buried in the NMCP in Honolulu, Hawaii. These unknowns came from all over the Pacific. Nearly all of these unknowns would have been analyzed by scientific staff at the Central Identification Laboratory in Honolulu prior to burial.

Over the last 20 years, [click for animation] the Department of Defense has disinterred over 600 World War II Unknowns from the NMCP.

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As shown here, there are about 3,700 World War II Unknowns interred in the MACM in Manila, Philippines. The majority of these unknowns were recovered from the Philippines, with about 1,000 coming from one of two Prisoner of War Camps in the Philippines. The map shown on the right is a drawing of the cemetery of the Cabanatuan POW Camp, the larger of these.

The remaining 700 unknowns, similar to the NMCP, came from all over the Pacific. As a note, you may notice some overlap in this list of recovery locations as compared to those listed in association with the Punchbowl unknowns. For the most part, the AGRS organized where unidentified remains were processed based on where the remains were recovered, but there were occasional exceptions to this. For example, while the majority of unknowns recovered from Saipan were ultimately sent to and processed through the CIP in Manila, a few of the more complicated unknowns were sent to the CIL in Hawaii – where some of the more senior scientific experts were based.

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As DPAA's Indo-Pacific researchers work through the nearly 6,000 WWII, we strive to organize our research geographically. By doing so, researchers are better able to develop expertise not only in the combat operations in each region, but also in regional variations in how remains were processed.

Our goal is to review and make recommendations to disinter all WWII unknowns that have the potential to be disinterred based on DoD requirements.

Because DPAA is not the final approval authority for disinterring remains, we must work with various outside agencies, including the higher DOD approval authority for disinterments, the Armed Forces Medical Examiner System (AFMES), the services, and the cemeteries where the unknowns are buried.

Researchers within DPAA's Indo-Pacific directorate must also collaborate with DPAA Laboratory staff and Laboratory capacity – the nature of disinterments, as with so many other DPAA operations, is highly interdisciplinary.

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As an interdisciplinary process, research into an unknown starts with historical research. After a historian has conducted a detailed review of the unknown file and compiled a shortlist of possibly associated casualties, the records gathered will be reviewed by scientific staff in DPAA's Laboratory. Ultimately, the proposal to disinter an unknown is something compiled by both historical and scientific staff. Each of these proposals is ultimately reviewed by the director of DPAA, before the proposal can move along to the DOD authority for approving disinterments.

In order for a proposal to be reviewed by the DoD approval authority, DPAA must show that we meet certain thresholds set out by the DoD. The table shown here is an illustration of the lines of evidence we use to support that recommendation.

Our analysis seeks to come up with the strongest possible case so that *someone* will be identified. We do not try to match one person with an unknown; rather, we cast a wide net and look for all possible associations.

According DoD guidance released in April of 2015 by the Deputy Secretary of Defense, in order to propose a single unknown for disinterment we need to have a means of identification at hand for at least 50% of the possibly associated candidates and for a group of unknowns we need to show that we have the ability to identify 60% or more of the group of unknowns. If there is a case that doesn't meet these thresholds, but research has still indicated the possibility of identification, we may submit a request for an exception to this policy.

But how do we quantify the possibility of identification from historical research? In practice, these 50% and 60% thresholds end up applying most directly to the number of Family Reference Samples (or FRS) we have on hand, although in some cases can apply to scientific means of identification. For example, if we are proposing a single unknown for disinterment and the historic and scientific review of the records suggest that there are 5 individuals that could be associated with that unknown, we need to have the FRS on hand for at least 3 of those 5 casualties before we can submit our recommendation to disinter the remains.

If we do not meet the requirements, the case does not end. We place the case in a "hold" status until it can go forward.

It is worth noting, that prior to the implementation of these standards in 2015, DPAA operated under much more stringent thresholds and only proposed disinterring unknowns where an identification appeared to be almost certain. While modern scientific methods offer tremendous potential in being

able to identify many unknowns, being able to narrow down a shortlist of possible associated candidates to a single individual from the records alone is very rare!

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As this graph illustrates, although some limited WWII dinsterments had been conducted prior to 2015, larger scale disinterment operations did not really get underway for WWII Unknowns until 2015 – the same year that the DOD had established the policy that guides the thresholds for disinterments that we just discussed.

Much of this trajectory has been dependent on the development of DNA technology – a potential means of identification available to us today that had not been available to AGRS personnel and scientific staff in the 1940s!

The potential of this new line of evidence has supported the expansion of DPAA's disinterment program, involving dozens of historians across multiple agency directorates, outside research support from DPAA's Partnerships and Innovations directorate, and collaboration between DPAA and other agencies

[Click for animation] Many of these disinterments, as we see indicated by the large number of unknowns disinterred in 2015, have been associated with *projects*, such as that associated with the unknowns recovered from the USS *Oklahoma.* The nature of our research often finds groups of unknowns either associated with a single incident or battle that share a common history so, whenever possible, we try to consider such unknowns together. In some cases, this is simply a means of streamlining our research and the number of memos we have to prepare to propose a set of unknowns for disinterment. In other cases, such as a the USS *Oklahoma*, where we KNOW commingling is present in the remains, pursuing the disinterment of the remains as a group is essential to set our Laboratory staff up for success in making as many identifications as possible as efficiently as possible.

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All of which brings us to our final slide – and the ultimate objective of DPAA's disinterment operations. Identifications.

The disinterment of World War II Unknowns from the NMCP and MACM has, so far, led to more than 400 identifications. (And, keep in mind, the disinterment of WWII Unknowns from cemeteries in Europe and the Mediterranean and the disinterment of Korean War Unknowns has led to even more!) The pictures we see here highlight only a handful of recent identifications made. The soldiers, sailors, and marines shown here had all remained missing after the war – with no remains to return to their families. However, we now know that their remains had been recovered, but as World War II unknowns that the AGRS had not been able to identify. We are grateful for the resources, methods, and support that has enabled us to re-write the ending of their stories – and return these men home.

Identifications