Voiceover: This program is sponsored by the United States Naval Institute.
(Theme music)
Voiceover: The following is a production of the Pritzker Military Museum and Library. Bringing citizens and citizen soldiers together through the exploration of military history, topics, and current affairs, this is *Pritzker Military Presents*.
(Applause)
Havers: Welcome to *Pritzker Military Presents* for a discussion by Trent Hone about his book *Learning War: The Evolution of Fighting Doctrine in the United States Navy 1898-1945*. I'm your host Rob Havers, and this program is coming to you from the Pritzker Military Museum and Library in downtown Chicago, and it's sponsored by the United States Naval Institute. This program and hundreds more besides, covering a full range of military topics, is available on demand at PritzkerMilitary.org. As America turned a new corner in the 20th century, so did its navy. In his book *Learning War*, Trent Hone gives insights into how the United States Navy became the most strategic and powerful navy in the world. In his book Hone examines the US Navy's doctrinal development from 1898 to 1945 and explains why the navy in that era was so successful at fostering innovation, a revolutionary study of one of history's greatest success stories. This book draws profoundly important conclusions that give new insight into how the navy succeeded into becoming the best naval force in the world. The book argues that the navy created a sophisticated learning system in the early years of the 20th century that led to repeated innovations in the development of surface warfare tactics and doctrine. The conditions that allow these innovations to emerge are analyzed through a consideration of the navy as a complex adaptive system. Trent Hone is an authority on the US Navy of the early 20th century and a leader in the application of complexity science to organizational design. He studied religion and archeology at Carleton College in Northfield, Minnesota. He works as a consultant in Arlington, Virginia helping a variety of organizations improve their processes and techniques. Mr. Hone writes and speaks about tactical doctrine, organizational learning, and complexity. Please join me in welcoming Trent Hone to the Pritzker Military Museum and Library.
(Applause)
Hone: Thank you for that lovely introduction. I'm very pleased to be here with you this evening and to share some thoughts about my research and some of its implications with you tonight. Yes, my main thesis is that the United States Navy in the early years of the 20th century became what we call today a learning organization. It was very good at fostering the innovation of new ideas and the embrace of new concepts. This was an extremely effective development and has implications of our understanding of how the United States Navy approached and achieved victory in the Second World War, particularly in the Pacific against the empire of Japan. Now, as we heard in the introduction, I use the lens of a complex adaptive system and complexity science to help understand and draw these ideas out, to explain them a bit more effectively. There's a lot of vocabulary that goes along with that, and that could be a whole other talk. I don't want to pend too much time on that this evening. I want to focus a little bit more on the history. But it is important to bring in one of the main ideas, and that is this idea about constraints, complex adaptive systems evolve and get better through something called constraints-- boundary conditions that define how people within the system or how other aspects within the system can self organize, can lead to do innovative approaches, and it's important that these constraints, the rules of the game, be balanced. They have to provide enough focus to channel activity and effort, but they should not be so constraining that they inhibit the exploration of new techniques and new ideas. So keep

this concept in mind, these constraints that are balanced so that they allow exploration but focused enough that they allow new and innovative concepts to be identified and emerge. This is an engine of innovation that we see, a repeated pattern that is established in the navy of this time period. I'll talk about how that happened and occurred, but before I do that it's important to establish some foundation. We're gonna go back a little bit earlier than 1898 because by the time the United States enters the Spanish American War some important changes have taken place, and one of the most important is this emergence of a new idea, what it means to be a professional naval officer in the United States. One of the foremost advocates of this idea was Stephen B. Luce. He was swept up with the wave of professionalism that was sweeping across the United States and other nations in the mid-to-late 19th century and felt it was important that American naval officers define for themselves what it meant to be a professional. He lobbied hard for the establishment of a new institution that would allow the investigation of those concepts, allow that professional idea to be refined and enhanced, and that led to the establishment of the Naval War College in 1884 in Newport, Rhode Island. Now, Luce was influenced by scientific theories of war. He felt that there were core principles that were present and that could be seen throughout history, and that developing, adhering, and planning around these principles was what was going to allow the United States Navy to become much more effective, and naval officers to grow as professionals. That idea was enhanced somewhat by the war college's second president, Alfred Thayer Mahan. Now, Mahan takes Luce's idea, this concept that there are fundamental principles, and alters it slightly. He doesn't think that these principles are scientific. Instead he believes that these have to be applied contextually. That is, they are not applicable in the same way at the same time throughout history but that the way in which they can best be applied changes. And it is important to keep track of those changes and understand how to apply these principles contextually as circumstances change. Technology is changing rapidly during this time. The strategic situation of the United States Navy is also changing. And Mahan believes it is important to understand how these changing contexts influence how the principles may be applied. This is one of the reasons why he emphasizes the study of history and all his works that investigate those ideas is the influence of sea power upon history and how he approached education at the Naval War College. He emphasizes something called the conference method where officers would come together, they discuss these various ideas and share their different perspectives, that is they develop a broader understanding of each other's context or how they might apply this context to the different principles. This enhances understanding of his students at the war college. Their understanding is further enhanced in the mid 1890s when the next president--or another president of the Naval War College, Henry Clay Taylor, introduces the idea of war games. War games have been played in a variety of different military institutions for some time by this point, but one of the things that is new with the way the United States Navy is doing it is the rigorous application of a competition. So rather than just doing a war game to try to investigate what might happen, the United States Navy is using war games at the Naval War College to enhance the understanding of officers, to make them better, to draw out how these different principles might be contextually applied. So in the late 1890s the Naval War College, we see the emergence of new concept of what professionalism means, competitive exercises that can enhance naval officer's understanding of how these different principles that are embedded in the emerging concept of professionalism might be applied, and an acceptance that there's gonna be some variability in how that might happen, and that we need to test each other to determine which one of these might be best. This is good work, but the rest of the navy needs to catch up. There are some structural changes that need to be introduced to ensure that the navy can begin to

capitalize on these changes. One of the most important occurs in 1899 with the introduction of the Naval Personnel Act. Theodore Roosevelt is pictured here because as assistant secretary he worked very hard to shape this legislation and help ensure that it would be pass. Two important things were accomplished by this legislation. First, it integrated the line officers with the engineering corps. They had been separate prior to this time. Engineers had been a staff function, so technologists in the United States Navy were not allowed to command ships, command men, instead they took care of the machines. As the navy transitioned from a number of ships that were powered by wind and sails and made out of wood to a modern navy that was powered by steam and a variety of other machines and with steel hulls, it became very important in order to be able to command a ship effectively you had to understand how these machines worked. You had to understand their limitations. You had to understand how to maintain them. This led to significant friction between the line officers and the engineers. And that friction needed to be resolved, because it was inhibiting the ability of the navy to command ships effectively and to grow and learn with regard to how to handle these modern ships. So the first thing the Naval Personnel Act does is it integrates line officers and engineers. From this point on, all naval officers will be expected to be engineers. They will have knowledge of the machinery that powers their ships. And our familiarity, our assumption, that the naval academy is an engineering institution dates from this time. Prior to this act, that was not the case. The second thing that the Naval Personnel Act does is it introduces a new mechanism for promoting officers. Throughout the mid-to-late 19th century, naval officers in the United States Navy advanced in line. Don Chisholm has written a very exhaustive and valuable study about this called “Waiting for Dead Men’s Shoes.” That’s the title of the study, because quite literally the officers were waiting for those above them, more senior than them, to either retire from the service or pass away. So in 1899 there's introduced the idea of a plucking board, so now it's possible those officers who are old enough to be promoted to the next rank but are deemed to be insufficiently fit, either because of their level of physical fitness or their aptitude, can be removed from the service. They can be involuntarily retired. This creates a mechanism to ensure that the officers who are reaching higher command can retain greater level of vigor, they can advance up through the ranks more quickly, but it does not allow the most effective of them to advance. And now with this introduction of a new engineering regiment at the naval academy, we begin to see officers who are entering the service who are familiar with scientific concepts and principles and are hungry for more rapid advancement. The solution for that will have to come later. Next major change that occurs is the introduction of the general board in 1900. The United States Navy had lacked any mechanism for centralizing planning or preparation for future war. This was very manifest in the war with Spain in 1898. Secretary of the Navy John Davis Long, when he looked into plans and preparations for a war with Spain, was confronted with three different plans produced by three different arms of his navy department. The Office of Naval Intelligence had a plan, the war college had a plan, and the North Atlantic Squadron also had a plan. Some of these aspects of these various plans were similar, some disagreed, there was serious debate about how extensive any operations in European waters should be. Secretary Long was not a naval man. He didn’t understand effectively how navy’s worked, so he formed an advisory board to help him guide the navy during the war, and he saw this as a potential compromised solution because a number of officers had been advocating for something along the lines of a Prussian general staff. Prussia had been very successful in their war with France in 1870. It was seen as a model for modern military institutions, and American naval officers were advocating for something similar. However, Secretary Long, others like him, civilians in Congress, were very adamant that there not be anything like a general

staff because they saw this as a threat to civilian control of the military. That was anathema in the American republic, so instead Long sees this advisory board that he has created during the Spanish American War, thinks that he could create something similar. An advisory board. Senior officers who can inform the secretary, help the secretary refine his ideas, and guide the navy that way. The senior board would lack command authority; that would remain with the civilians. And so this compromise was introduced. Secretary Long had the authority to issue a general order installing a general board. Later it was recognized by congressional authority, but he did this initially on his own authority. And this was a uniquely American compromise to the need to have some sort of general staff function and yet not invalidate the principle of civilian control. It immediately began to look at how the navy was organized, what kinds of ships it needed, and how they could be arranged to prepare better for potential conflicts. But for many naval officers it wasn't enough. They felt they needed a more effective mechanism for planning and preparing for war. They continued to agitate for something closer to a general staff, and they agitated enough that they got Congress's attention, and in the 1915 naval appropriations bill they succeeded, some of them, in including in that bill the idea that there would be a chief of naval operations who would be the senior military head within the navy who could help organize it and prepare for war. Now, the secretary of the navy at the time was a man named Josephus Daniels. Josephus Daniels did not like this idea, and he had some allies in Congress, and so he saw to it that the legislation was altered to ensure that civilian control was maintained, and he also looked very long down the list of potential officers who could fill this role and chose William S. Benson. Daniels did this to ensure that he would maintain control of the navy department and that the planning and preparation for war would be guided by civilian authority. It turns out though, as the United States is looking at how it might have to enter a European conflict or at least prevent that conflict from spilling over into the western hemisphere, there's a lot of preparation that has to go on. Daniels and Benson worked very well together. Daniels becomes convinced of the value of the office of chief of naval operations, and so in the next year 1916 in that appropriations bill, the authority of the office is widened, and we have an office of the chief of naval operations that can serve as an effective mechanism for planning and preparing for war. The last major piece that needs to happen also occurs in 1916 as part of that large appropriations bill. Some of you may be familiar with it as the bill that creates or plans for a navy second to none. Right? The idea was to be able to create a United States Navy that would not have to ally itself with any other powers in case the war spilled over and dragged the United States into it. But the other thing that it did is that it finally allowed the navy to promote officers based on merit. In the intervening years since 1899 there had been a lot of proposals back and forth. There had been a lot of ideas about how best to ensure that officers were treated fairly but that the most effective among them were given the greatest authority and the greatest opportunity. So, in the appropriation bill for 1916 we finally see performance-based promotion where Admiral Victor Blue was head of the bureau of navigation at the time, which was responsible for naval personnel, and he declared that this was his proudest achievement, and I would not argue with him. While this was happening, while these structural changes are being put into place, the navy is beginning to explore how it can best coordinate a modern fleet. This was a new challenge for the United States Navy because prior to the introduction of the Atlantic fleet in 1907, something that Teddy Roosevelt is also responsible for, there was no US fleet. The ships of the navy were distributed around the globe in a variety of different squadrons and stations. It was very difficult to get more than a handful of ships together at any one time. This made it very difficult to investigate how some of the new ship types that were being created-- dreadnaught battleships, torpedo boat destroyers, submarines, high-speed cruisers--

could be integrated together and operate effectively as a modern fleet. The creation of the Atlantic fleet in 1907 provides an opportunity to begin to explore this. It's sent around the world. This is the cruise of the Great White Fleet, and in that cruise it begins to operate together. It begins to work out how to maneuver, how to do the simple basic things that fleets are expected to do. Once it returns to the east coast it begins to not just maneuver together to figure out how to operate but to explore and experiment with new techniques. And Charles J. Badger, who is pictured here with his staff, the commander of the fleet in 1913, introduces a new approach. He takes the idea of the war games that have been introduced at the Naval War College and says, "We're gonna conduct war games within the fleet, we're gonna do them in staff rooms, and we're gonna look at what we could potentially do by maneuvers on a game board. This will give us the theory of what is possible. And then we're gonna enhance that. We're gonna actually go do exercises. We're gonna test what looks like it works out on the game board. We're gonna test that in reality, and that will give us actual practical experience. Between the two we're gonna get a sense of what we can actually do, and we're gonna develop new techniques for figuring out how to handle a fleet together." That same year a portion of the fleet begins to experiment with one of these new techniques. So at the naval war college they've been having conferences, they've been sharing discussions about how to apply different principles of war contextually. And one of the topics that they've hit on is this idea of doctrine, and that idea was developed quite a bit by Dudley Knox, and he thinks that this is the most effective way to handle and coordinate a modern fleet in battle. We can't share instructions. Signal flags are not gonna be visible from far enough away. Radio is insufficiently reliable. It can be jammed. We're gonna need some shared set of mental concepts that are gonna allow us to operate together. We're gonna need to develop familiarity with each other. We're gonna need to develop cohesion. And he calls this idea doctrine. At the war college he is introduced to William S. Sims, and Sims thinks this is a really neat idea. He's offered command of the Atlantic fleet's torpedo flotilla, which has torpedo boats, and he thinks that this would be a suitable laboratory to try to figure out how to make doctrine actually work. We could go into the fleet, we can play with this idea, we can see if we can make it work. And so he agrees to command the flotilla provided that he could bring a staff with him, people that he has worked with at the naval war college, including Knox, another gentleman named William V. Pratt, and a few others. And they treat the torpedo boat flotilla as a laboratory and they experiment with this concept of doctrine. They use Badger's idea, explore different options on the game board. They prepare a plan for an exercise, and then they take that plan into the exercise. And they go into that exercise with a shared understanding about how the other ship captains are going to behave. So they begin to develop a way to act cohesively in battle with these small ships without having to communicate directly in real time. Doctrine works for them, and they get much more effective at it over a couple of years. They begin to out-perform other arms of the fleet in the exercises, and by 1915 they have codified a draft doctrine representing their ideas and how they have developed this cohesion. In the intervening year in 1914 the Atlantic fleet got a new commander, Frank Friday Fletcher, and after experiencing what the torpedo flotilla has been able to do, Fletcher decides that his approach to battle needs to build off of and enhance this idea. And so he communicates to the fleet in 1916, he issues a new set of battle instructions, and this set says, "We're gonna go into battle with a plan." Now the instructions don't say what the plan is gonna be. The instructions frame what the plan is gonna look like. He's gonna take into account a variety of different things. He's gonna take into account the prevailing strategic situation. He's gonna take into account factors of strength of the various forces, and so on. But what he's saying is he's going to provide a plan that will craft intent, that is going to give all his subordinates a sense of how they

need to operate in order to carry out that plan. So he's being very deliberate about the fact that the plan is not gonna be very specific instructions to all of you. It's gonna be a backdrop that's gonna inform your approach, and then you will act cohesively using the doctrinal concepts that are starting to emerge from the torpedo flotilla. So by 1916 on the eve of entry--the United States' entry in WWI--they have developed this new approach, doctrine for cohesion and plans for intent to frame how different ships should act that provides a framework for how they're going to approach battle. And WWI provides an opportunity. Sims has gone on from the torpedo flotilla. He has brought the new Battleship Nevada into commission, and then he goes to the Naval War College as its president. He's not there very long before he is sent to European waters, to London, to begin to liaise with the Allied powers to try to work out how the United States can effectively enter the war. Once we do, he acts as the United States naval commander in European waters, and he sees this as a great opportunity to apply the ideas that have emerged from the Atlantic fleet, so he issues to his subordinates the force instructions number twenty-five that you see there, the cover that you see there, and these frame things very much like how the Atlantic fleet is doing it. Develop a doctrine, get some cohesion, and provide plans. Plans that allow sufficient initiatives, sufficient flexibility among subordinates. Sims and the Allied forces, or at least the American forces in European waters that are fighting the U-boats, use this approach. A lot of young officers are exposed to it, it proves effective and becomes the foundation of how the navy is going to enter the interwar period and refine its doctrinal approach and also explore and experiment with new ideas. A key thing to keep in mind with this is there is a great deal of flexibility inherent in it. The instructions that Sims is issuing are not dictations. They're not specific. Instead he says things like "You should develop a doctrine." Where does the doctrine come from? It's not in these instructions. It's something that the individual commands are expected to work out very much like what Sims did in the torpedo flotilla. This allows for a great deal of variability. So, now we have a variety of different American commands immediately after WWI looking into how to coordinate, how to bring cohesion, how to develop a doctrine for their forces, and a new routine is imposed over the top of that. The second chief of naval operations is Robert Coontz, and this is him pictured here. He introduces something he calls the planning cycle. This is an annual feedback loop, and it integrates analysis of the Naval War College, planning in the office of the chief of naval operations, or OPNAV, and exercises in the fleet, all balanced against feedback and forward-looking vision of the general board. Coontz is very deliberate about this. This is what we need. We need to have this integrated cycle. Ties all these different things together. And the most visible aspect of this, of this approach, are the large exercises that the United States Navy introduces in the interwar period. They are called the fleet problems. Many of you have probably heard of the already. There's been a lot of modern discussion of the fleet problems, about how valuable they were for learning in invasion, how we might want to bring them back. One of the key things that I'd like you to take away is that what makes the fleet problems so effective is the way Coontz sets up this planning cycle. It's not just an exercise that happens, it's an exercise that happens that feeds into planning and the next set of exercises. So behind exercises is this constant development of plans for war in the Pacific against the empire of Japan. How will the United States Navy transit across that ocean, bring the Japanese forces to battle, and triumph in the conflict? These are all things that the fleet problems are investigating. While that's happening at lower levels all these various commands are investigating, formulating, working out the different doctrines that they could apply, and because the fleet problems are competitive framework, the fleet is divided into at least two parts that compete against each other. There are trials of different doctrinal concepts through the mock combat of the fleet problems and allows the most effective ideas to

emerge through this process of experimentation. One of the things that is most visible about this is the experimentation that occurs with carrier aviation. The United States develops carrier aviation to a fairly accomplished art through the exercises of the fleet problems by the time of WWII in 1941. But this kind of learning and innovation is occurring with surface tactics and doctrine as well. One of the most important developments occurs in 1929. A new vocabulary for battle plans is introduced. So you will remember Frank Friday Fletcher introduced the concept of battle plans, which frame intent. In 1929 William V. Pratt is commander in chief of the fleet. He worked with Sims in the torpedo boat flotilla before WWI. He's familiar with the value of doctrine, he's familiar with the value of plans. But he's noticed, and subordinates have as well, through the various fleet problems and exercises that the circumstances of a battle will change dynamically. The fleet needs to be able to reconfigure itself based on changing circumstances. There needs to be new adaptability to context. And so rather than just saying, "Well, we're gonna go into battle with a plan, and here's what the plan is gonna say, and it's gonna give you my intent," he creates a framework where his intent and the disposition of the fleet can change very rapidly based on a set of preconfigured plans. These are introduced in 1930. They are tested in the fleet problems, and they give, according to the participants in those problems, a revolutionary new flexibility to the fleet that has not been seen before. In 1934 they're codified in a new doctrinal manual, and they served as the basis for the United States Navy's approach to major fleet actions, large fleet combat through WWII. That is one of the more visible aspects of innovation in surface warfare tactics that is occurring at this time. Something that is less visible are a set of three different heuristics that begin to channel focus and become emphases for US Navy's approach to combat. Now, here I'm using heuristics the same way that Nobel Laureate Daniel Kahneman does. He studied economic decision-making, and when he starred with the field there was an assumption that when you and I and other people make economic decisions, we're rational actors. That is, we analyze all the various potential outcomes of this economic decision, we look at the choices available to us, and we will make a choice that is economically most beneficial to us. All of you know that we don't make decisions that way. Some of us buy cute little red sport cars, some of us invest n fancy guitars, and a variety of other different things, right. We are not rational actors when it comes to economic decision-making. So Kahneman proposed the idea of heuristics, which is how he believes we make decisions. And these are a pattern matching routine. That is when we are confronted with a problem, we look through our memory subconsciously for similar problems that we have solved in the past, and we apply one of the solutions that we have used before. These could be consciously developed. In the United States Navy through conscious work--the fleet problems and the exercises and subconscious habits-- three specific heuristics emerged during the interwar period. And the first of these was the emphasis on aggressive action. Right, the idea was battle is uncertain. The outcome cannot be predicted, but if we can impose our plan upon the enemy, then we are more likely to have the better outcome. Therefore we should act aggressively to try to impose our plan upon them. Naval officers of this era weren't familiar with John Boyd's OODA Loop, observe, orient, decide, and act, but they would have understood what Body was getting at, of getting inside an enemy's decision cycle. The second idea, the best way to ensure aggressive action, would be to attack effectively first. And here I'm borrowing Wayne Hughes' term. He's written a series of books on fleet tactics. This is a term that he coined. Again, naval officers of this era would not have been familiar with this term, but they would have recognized the implications. And this manifested in a variety of different ways. During daylight action battleships would attempt to open fire at extreme range in order to either get a hit very early in the action or at least force the enemy to a maneuver in a way that would get

them off balance. With planes this manifests as the idea of the scout bomber, a plane that can scout while carrying a bomb load, made famous by the dauntless SBD during WWII. And at night it places great emphasis on opening fire not at extreme ranges but at estimated ranges, about how far you can see, because as soon as a ship could be in sight, it would be within lethal range and could be hit. And third we've seen a little bit of this already, the idea of decentralized doctrinal development, but this interweaves with the sense that in battle in order to seize opportunities, we have to make sure that subordinates are granted the authority to act on their own initiative. 'Cause the battle is fleeting, the outcome is uncertain, and so we must empower subordinates to seize the opportunities that they see. These three fundamental core heuristics are part of the navy's approach to battle, and they emerge through this repetition and refinement that goes on during the interwar period and the various exercises that are part of it. So in this interwar system the learning system, that it is fed by the variability at the low level, the fact that there is no doctrine for the entire navy. Instead doctrine is being developed by small subordinate commands, and then it is refined by the pattern of exercises and the competition that goes on with them. This allows the most effective ideas to be identified, to bubble to the top, and to be exploited for future use. This learning system is in place by the time that WWII breaks out. And so the attack on Pearl Harbor comes, 1941. Now one of the things that the navy has also been investing in in the interwar period--it's not just this learning system, not just variability in terms of how it is gonna approach different things. It's also been thinking very diligently about how to approach a war in the Pacific, and one of the things that has emerged about that is that as the fleet progresses across the Pacific, it will be subjected to a series of attritional attacks. There is no telling what factors of strength will remain by the time it gets to a point where it an actually come to grips with the Japanese fleet. Therefore all the interwar planning emphasizes use or maintenance of different options. We might not have enough battleships left, so we have to make sure we are able to fight with destroyers. We might not have enough destroyers left, so we must make sure that our cruisers are capable. We might not have enough cruisers left, so we must make sure that we can fight with the carrier airplanes. And this is exactly what happens. It mitigates what admiral Isoroku Yamamoto intends Pearl Harbor to be. This is intended to be a knockout blow that shatters the willingness of the American people and the United States Navy to engage in a prolonged war with the Japanese. But immediately the Pacific fleet pivots, and under the leadership of its new commander Admiral Chester Nimitz it invests in the options that are remaining. Options that are remaining are the carrier task force. And so he creates a series of these and sends them on a variety of different missions to begin to act aggressively, because the heuristic of aggressive action has through the 20s and 30s morphed from just an idea that initially was framed around battle to now an operational concept, and it's about how the navy wants to fight a war. So you can see from January to June 1942 there is a whole series of carrier raids, attacks, and battles as Nimitz tries to use these forces aggressively to poke at, probe, and create opportunities to rest the initiative from the Japanese. There's a planned raid on Wake Island in January. It doesn't occur. There's a series of raids on the Marshalls. Those are quite valuable. They get the attention of the Japanese. But the two that are probably most important here are the raid on Lae and Salamaua on the northern coast of New Guinea in March because this destroys some of the Japanese shipping that is planned for the attack on Port Moresby. This raid creates the opportunity by delaying Japanese plans to seize Port Moresby for the Battle of the Coral Sea in May, which although tactically not so wonderful for the United States Navy is a strategic victory. And then the Doolittle raid, the attack on the Japanese mainland in April accelerates Japanese planning for showdown in the Central Pacific trying to draw out United States Navy and defeat it. That results in the Battle of Midway. So now

through aggressive action with the carrier task forces, General Nimitz has created the opportunity to potentially seize the initiative. Admiral Ernest King, the new commander in chief in Washington recognizes the opportunity, urges Nimitz to take the offensive to seize the anchorage at Tulagi, and once it has learned that the Japanese are building an airfield on Guadalcanal across the sound from that, the airfield becomes part of the objective as well. Now, this triggers a whole series of confused and furious night battles in the Solomons, the first of these, the Battle of Savo Island, is a disaster for the United States Navy and its allies. The rest of these do not go as well as the navy would have hoped pre-war. Many commentators have accessed this to mean that the United States Navy was ill-prepared for night combat, that is hadn't invested in night combat doctrine or tactics. The reality is a bit more nuanced. What you see is a breakdown of certain prewar assumptions that would have allowed the navy's forces to act cohesively. The primary one of these being that naval forces that would go into battle would be the organizations that had worked together, operated together, and trained together before the war so they would have cohesion, they would have a doctrine. But under the pressures of a war in two oceans, the Atlantic and the Pacific, the United States Navy isn't able to maintain that force structure. So the ships and the formations that go into battle off Guadalcanal are what are referred to at the time as scratch teams. They lack that cohesion. They fall back on the heuristics that have been emphasized before the war. They use their guns. They try to act aggressively, and when communications and coordination breaks down, they act individually. They are enough. This is a series of carrier battles in the Solomons as well. You've seen on the prior side Corral Sea, Midway, but there is the Eastern Solomons, Battle of the Santa Cruz Island, the Japanese prove to be extremely effective. Their remaining carrier aviators are very talented, so the United States Navy loses more carriers in these fights. The Wasp is torpedoed, the Hornet sunk. But the act of quickly coming to grips with the Japanese seizing the initiative of creating a campaign around the island of Guadalcanal gives the United States Navy the opportunity to activate and capitalize on the learning system, the infrastructure that had been put in place. So the variability that exists in these battles, both the night actions and the carrier fights, allows the United States Navy to explore different ideas to get a sense of how the Japanese want to fight, and then adapt and adjust to them. A variety of lessons emerge very quickly. One of these is the importance of making better sense of all the information that is available. So a lot of the ships that are going into combat have radars. They have very high frequency radios. They have new sources of information. Assessing action reports, Nimitz and his staff at Pearl Harbor recognize that the information to ensure more coordinated action in combat is there, is available, but it's not being used. It's not being used because there's no shipboard structure designed to use it. It defaults to reports that come to captains and formation commanders, and they have to synthesize and analyze all this information in their brains in real time. It's too taxing; they can't do it. So while the decisive battles of Guadalcanal are being fought, this problem has already been recognized, and in November 1942 Nimitz issues instructions to the fleet. Every ship is going to create a combat information center. The combat information center is going to take in all this information that's available. It's going to analyze it, it's going to synthesize it, and it's going to provide it in an actual format to captains and formation commanders. He says what it should do, but he doesn't say how. And so this creates a series of parallel experiments within the fleet as different ships act on how best to organize this new function. And as more effective means for organizing this function aboard different types of ships emerge, the officers who are responsible for those innovative techniques are brought back to Pearl Harbor to develop more standardized approaches. So a feedback loop is created about how to manage shipboard intelligence. That leads to much more

effective approaches, so within a year, by November 1943 a combat information center is very effective, it's operating well in the fleet, formations are now more cohesive, and the United States Navy has achieved a dramatically new level of performance in night combat that completely outclasses what the Japanese are capable of. The lack of coherent formations or cohesive formations is also a serious problem. This requires a more clever approach. Nimitz can't just issue instructions to the fleet. Instead he creates a board to investigate the problem and ostensibly to create new cruising instructions for the Pacific fleet. But they exceed that mandate. They look at the challenges that are existing, and what they decide to do is issue a new set of instructions. They expand on the battle plans that Admiral Pratt had introduced in 1929 and 1930. They create a new extended vocabulary for smaller formations so that ships can be exchanged from one task force to another or one task group to another based on the needs at the moment, allowing the fleet to reconfigure, and this is revolutionary because it means that now we don't need to have a cohesive set of formations to have a doctrine. Instead we have a higher level conception of how we're going to operate and fight together. Before Pac-10 was issued--this is the new manual--you would see instructions the different formation commander were creating the specifics of their approach to battle. Afterwards you just see, "We'll use plans from Pac-10." So any ship across the fleet can just adhere to those instructions, and be exchanged from one formation to another. This is extremely important because as I mentioned in the 20s and 30s trying to work out how best to move across the Pacific with a fleet that can still effectively fight the Japanese is still a challenge, and it's never really solved because the Japanese have dominion over the island groups in the Central Pacific, and they have networked them with airbases and anchorages so that they can route attack planes, submarines, and other light forces between and among them, and the assumption is that if the United States Navy moves into this area it's going to be subject to a series of attritional attacks, and it's going to be whittled down. Whittled down to the extent that when the Japanese finally decide that they will come out and will fight they might have superiority. They might actually be able to win a fleet action. So the shift is to go away from a centralized fleet that's gonna move into these Central Pacific Islands as a unit and instead move into these Central Pacific Islands as a network of task forces, a mutually reinforcing network that can overwhelm multiple nodes in the Japanese defensive network simultaneously. And after hearing Admiral Christopher Grady, one of the United States Navy's current officers, discuss something that he called Distributed Maritime Operations, where we mass effects rather than massing forces, I thought this was an early model for that kind of idea. So I wanted to bring that out and reinforce that concept, the idea of distributed operations is not something that is utterly new to how the United States Navy operates. And this change is extremely important because this is what enables the Pacific offensive to move so rapidly, this transition to a network of carrier task forces. If we compare the offensive in the Solomons, triggered initially by the invasion of Guadalcanal and Tulagi, you'll see in a little over a year it doesn't advance very far. It goes towards the Japanese stronghold the Rabaul, the island of New Britain. Now the Central Pacific in contrast first invades the Gilbert Islands in November 1943, moves to the Marshalls and then to the Marianas. When the Japanese come out, there's a large carrier battle, the battle of the Philippine Sea, sometimes called the Mariana's Turkey Shoot. And a lot of the remaining Japanese carrier air power is destroyed, and this allows in these kinds of instances, the fleet goes from this distributed network of forces and coalesces, because it needs to be more centralized. It needs to have that capability to actually fight against the Japanese, and it's demonstrating that capability. The Palaus are invaded in September 1944 and then the Philippines, Battle of Leyte Gulf in October 1944. The Japanese come out again and are essentially destroyed as an effective naval power. Again the fleet once disrupted

coalesces. So, the US Navy's capability through fostering variability within defined constraints generating feedback loops created a learning system in the interwar period that then was harnessed and fostered, exploited, during the wartime period to accelerate success in the pacific against the empire of Japan. And you can see how these all fit together and build on the introduction of a new concept of professionalism that relied on underlying principles applied in context, context that respected variability of force structure, technology, or specific circumstances. And this is how the navy created a learning system, and I think this is a very effective story, a historical example of how that can be done, and I think there are implications for how the navy might learn effectively today. Thank you for your attention.
(Applause)
1: Question for you is, where do you think the Chinese Navy is on this learning curve, and what's your assessment of their power relative to the US on the seas? Thanks.
Hone: I think that the Chinese are trying to figure this sort of thing out, too, and I'm impressed with how they are approaching it asymmetrically, meaning they're not looking to meet the United States head-on in terms of organization, force structure, capabilities, and those kinds of things. They're thinking about different avenues. And if we look at the historic example I think there are things that are valuable there because the Japanese restricted by treaty from building a fleet that was mirror image of what the United States could create also approached the problem asymmetrical, and a lot of the asymmetric approaches that they developed were surprises. And so the apprehension taht I have is that we may be in a similar situation where a potential opponent is thinking about the problem differently, solving it from a logical perspective on their end, but we're not thinking creatively enough to anticipate that.
2: How much internal debate, if any, was there in the United States Navy on the island hopping campaign against what, if I have this right, MacArthur's concerns about loss of men in skipping from island to island?
Hone: There's a good deal of debate. So, there's a lot of pressure after the Guadalcanal campaign begins to wind down or begins to become seen as a victory. King in Washington, Joint Chiefs of Staff, Nimitz, they want to move quickly. There's a lot of discussion about how they might hop through the Solomons. Initially they don't think they can. Ultimately they figure out ways to do that. There's a very passionate debate after the invasion of the Gilbert Islands about what to do with the assault on the Marshalls. The consensus of opinion at Nimitz's headquarters prior to that operation is that it needs to occur in two phases. The Eastern Marshall need to be occupied first, the Western Marshalls second. Through investigating the options, Nimitz and a few key advisors decide that's not what they're gonna do. They're gonna go right to the heart of the Marshalls right away because they believe the fleet can execute the kind of network denial that I was describing, and that's one of the reasons why it's so important. It's the thing that enables the kind of rapid island-hopping campaign. Now, you mentioned MacArthur. What MacArthur highlights or tries to use as a bludgeon against the navy is the idea that well, I can run an operation, and we're not making frontal attacks, and not so many people die. What is it about the navy? Why do they have to do this? And the differences in terrain are a key aspect of that, right. If you're moving up the north coast of New Guinea you have the opportunity to land in places where the Japanese are not, create an airfield, and isolate the groups that they have established. If you're landing on an island like Taroa, you don't have that option. You're just seizing the island, and the Japanese have built their defenses right there.
3: This is an interesting presentation because it reaffirms the ability to plan, and after so many corporations go through what I call the etch-a-sketch du jour organization change on a yearly basis change, the fact this was actually successful. But what intrigues me is

the DMO and the origins of DMO now. There's an article in the current issue of *Proceedings* about the Truman being decommissioned potentially, and it just seems that DMO requires a certain critical mass of ships. Is that your impression? Is that one reason why it may have been more successful back then as opposed to now?
Hone: I think that's an excellent question. One of the things that is obvious, different then and now, is there is a certain--the navy has the mass, the navy has the number of ships to actually build a network that has some resiliency in it, so the carrier task forces that are operating in early 1942 have a carrier. The carrier task forces that are operating in late 1943, early 1944 have multiple, three or four. And that's a fundamental difference. I think there may be something to that, that you need a certain amount of numbers. My understanding is that the navy today is trying to make up for that with speed of networking and intercommunication between different ships and platforms and so on. But I wonder how feasible it is because if you start shooting some of these platforms are gonna be rendered incapable, and then what? If you don't have enough redundancy within the network, it's not resilient. So yeah, I'd worry about that.
(Applause)
Havers: Thank you to Trent Hone for a great discussion, and thank you to the United States Naval Institute for sponsoring this program of *Pritzker Military Presents*. The book is *Learning War: The Evolution of Fighting Doctrine in the US Navy, 1898-1945*, published by the Naval Institute Press. To learn more about the Pritzker Military Museum and Library, visit us in person or online at PritzkerMilitary.org. Thank you, and please join us next time on *Pritzker Military Presents*.
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(Theme music)
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(Theme music)
Voiceover: The preceding program was produced by the Pritzker Military Museum and Library.