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High Anxiety with High Explosives

Cover Illustration: This photo is from an official investigation into a massive explosion that occurred on the night of November 16, 1943 at the Yorktown Mine Depot. The explosion destroyed an ordnance warehouse, killed seven people, and caused two craters each twenty-five deep and 150 feet across. The ensuing investigation looked into whether it was an accident or if something more sinister was afoot.
A Center of Excellence for Naval History Education

The Director’s Column by Becky Pouliot

By now, you should have received the Museum’s 2010 Calendar of Events. Open it and you will find an array of programs aimed at specialized audiences—military and civilian, individuals and groups, children and adults. The Calendar at a Glance section reveals the complexity of what our museum educators now offer. Many of these programs are new, and some of the information is presented on-line. Together, all of these initiatives underscore the museum’s core mission: to share the history and heritage of the Navy in Hampton Roads. Here is a brief synopsis.

Luncheon Lectures

We hit the ground running on February 25 with an event co-sponsored by the Hampton Roads Council of the Navy League. Vice Admiral Mel Williams, Commander of the 2nd Fleet, received a standing ovation after his presentation on the Fleet’s duties and its recent assistance in Haiti. On June 9, we go back in time to the Civil War to officially kick off its Sesquicentennial. The museum is fortunate to host one of the Civil War’s most renowned naval historians—Dr. Craig Symonds. Then in October, the museum will work with Navy officials to commemorate the 10th anniversary of the attack on USS Cole (DDG-67).

After Hours History

This year we will host two evening receptions in concert with the Hampton Roads Council of the Navy League. The idea behind these After Hours events is to provide a relaxed opportunity to meet artists, authors and historians who will share their passion about the Navy’s heritage. Another after hours program is provided courtesy of the Hampton Roads Naval Historical Foundation. Every six months, we have an opportunity to go behind the scenes, to tour either a museum in Hampton Roads, or off-site via a bus trip. The prices are reasonable and being in the company of museum members is incomparable. Learn more about these trips and how to become a member by calling the foundation’s executive director Tom Smith at (757) 445-9932 or visit the Foundation’s website at www.hrnhf.org.

Inside the Museum Walls

The 2010 Calendar of Events notes additions to our general museum walkthrough. We are now offering thematic docent and staff-led tours. Want to learn about women’s roles in the U.S. Navy? Or, perhaps see some Naval archaeological treasures? Mark your calendars and come by for these interesting presentations.

Family Fun activities have been expanded this year. For sailors at sea, each holiday the museum adopts an active-duty ship, provides construction paper and material at the front entry, and encourages guests to make greeting cards. We then mail the batch of cards to the ship’s crew. Sailors have been very appreciative of these efforts, and display the cards on board.

For our smaller guests, we now offer HRNM Kids storytime and make-and-take projects. For families at large, there are other hands-on activities and demonstrations, reenactors, and model-builders at work. The Hampton Roads Naval Museum is an active institution.

The programs outlined above do not even address the on-line programs that complement a museum visit. Check out www.civilwarnavy150.blogspot.com to learn why the Hampton Roads Naval Museum has been put in charge of the Navy’s official commemoration of the Sesquicentennial. Or go on our website and find out more about our on-line offerings, to include new accessions, historical discussion and debates, and a virtual tour @ www.hrnm.navy.mil.

See you soon,
Bellinger Returns to Hampton Roads
by Ira R. Hanna

P.
N.L. Bellinger’s tour as the first commanding officer of N.A.S. Norfolk was just the first of many times his Naval career brought him to the region. One of Bellinger’s additional assignments from October 14 to November 1, 1920, was to be the Naval observer of the Army’s bombing of the obsolete battleship Indiana (BB-1) in Tangier Sound in the Chesapeake Bay. After a series of air attacks by Army planes and planted explosives designed to test the effectiveness of her underwater compartments and double hull, the ship was sunk.

Bellinger determined that it was impressive, but not fully conclusive. He again was chosen to be the Navy’s witness of a similar test in July 1921 when the former German battleship Ostfriesland was sunk by Army Brigadier General “Billy” Mitchell’s planes in the Atlantic Ocean a few miles off the Virginia Capes. Although Mitchell claimed that the success of his land-based planes made Naval aviation unnecessary, Bellinger disagreed and for the rest of his career fought to keep a separate Naval air corps. In fact, in every billet he held, he sought to preserve and expand Naval aviation.

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Friend to sailor and animal alike—Bellinger and his infectious smile are shown here with a kinkajou that served as the mascot of aircraft carrier USS Langley (CV-1). Bellinger at the time was commanding officer of Langley. (HRNM photo)

One of Bellinger’s post World War I assignments was as commanding officer of the Norfolk-based seaplane tender USS Wright (AV-1). The ship participated in several interwar fleet exercises under Bellinger’s command. (Naval History and Heritage Command photo)

Whenever he got the chance, Bellinger stated that aircraft should be with the Fleet to gain control of the air above it, prior to any Naval battle. In 1925, President Calvin Coolidge named a lawyer, Dwight Morrow, to head a board of inquiry to determine the future of military aviation. In his testimony, Bellinger made nine recommendations including the need for Naval aviation to be a combatant force within the fleet. Among other things he recommended that Naval aviation be recognized as a permanent career for officers and enlisted men; that there be established a “flight line” to determine succession to command; that commanders of aviation activities including aircraft carriers and tenders only be officers permanently assigned to Naval aviation; that seniority of officers in Naval aviation be fairly integrated into the fleet; that there be established a school of strategy and tactics for Naval aviation; and that a separate Naval aviation experiment and test station be established. Most of them were included in the board’s final report. In May and June 1926, Congress acted quickly to make them part of bills that authorized the restructuring of the military air forces. Not only was the Naval Air Corps permanently established, but a five-year, 1,000 plane program was approved. Also, the experimental test and repair facilities at N.A.S. Norfolk that Bellinger had opened in 1917 were firmly established.

In late 1926, as aviation aide to Admiral Charles F. Hughes, Battle Fleet Commander and prospective Chief of Naval Operations (CNO), Bellinger was able to further influence future Naval aviation policy, facilities, and ship development. He passed on to Hughes the ideas about carrier doctrine that Rear Admiral Joseph M. Reeves had developed as Commander Air, Battle Fleet.

Even though Hughes was an engineer and a “big gun” sailor, his experience at the Naval War College with Bellinger had changed his mind. He even qualified as a carrier pilot at the age of fifty-three and flew his flag aboard the Navy’s first carrier, the Langley (CV-1), stationed in Hampton Roads.

On July 1, 1931, Commander Bellinger assumed command of the aircraft tender USS Wright (AV-1) and began his preparation for flag rank. He was known to follow “Navy regs” in meting out punishments at captain’s mast. On the other hand, he most enjoyed giving praise at commendatory masts. In February 1932, he was ordered to command Langley. On board in one of the air squadrons was Ensign (later admiral) John T. Haywood. Haywood described the admiration the crew had for Bellinger—from boot seaman to young aviators and all his squadron commanders—by saying “He never got excited when they (the pilots) made rather difficult landings on the flight deck (they were required to make seven safe landings to be qualified). You must remember, in those days, when we came to the fleet, we had never seen a carrier, let alone landed on one.”

On June 15, 1933, Bellinger was
Bellinger continued from page 3

ordered to the Navy’s Bureau of Aeronautics (BuAer) as Admiral Ernest J. King’s Head of Plans Division. As such, he made recommendations to the Navy’s General Board (the Navy’s advisory board for strategy and planning) that oversaw all military spending. He recommended the types of aircraft the Navy should acquire and their rate of production, the scope of new construction at shore stations, and the distribution, organization, and assignment of all aircraft squadrons and detachments. The future of Naval aviation literally was in his hands. He made sure that Naval aviation in Hampton Roads not only survived in those lean times, but expanded.

Bellinger made captain on June 30, 1935, and when he was detached from King’s staff on June 23, 1938, he was ordered for the second time to command N.A.S. Norfolk. At first, his tasks lay mostly in the supervision of civilians who repaired, overhauled and assembled aircraft. But he also commanded and trained 44 officers and 450 enlisted men assigned to Patrol Wing Five. These planes were later used to search for German submarines from the Eastern Shore of Virginia to Wilmington, North Carolina. He also had observation balloons, transport, and utility planes. As required, his station also serviced carrier air groups. While his PB2Y-2 seaplanes were much better than the Curtiss A-2, in which he learned to fly or the F5-L he had at Norfolk in 1917, the planes lacked armor and fuel tank protection. This he corrected very quickly.

When his old friend Rear Admiral Joseph K. Taussig, then Commandant, Fifth Naval District stationed at Naval Operating Base Norfolk, directed him to prepare for an inspection of his air station by President Roosevelt, Bellinger did not know what to expect. When Taussig introduced him to the President, Roosevelt said “Well Pat, I saved you for the Navy.” Bellinger was astounded that Roosevelt remembered that in 1920, when he was Assistant Secretary of the Navy, he had counseled Bellinger not to take the higher paid civilian job he had been offered. Even though Bellinger was disgusted with how Naval aviators were treated, Roosevelt said he was needed more by the Navy and to stay in the service. It was fortunate for Hampton Roads and the Navy that he took the future president’s advice.

Soon though, the mission of N.A.S. Norfolk changed and Bellinger’s job became an important part of America’s preparations for war. The Naval Expansion Act of May 1939 increased the tonnage of aircraft carriers as well as other surface ships and authorized the president to increase the number of Naval aircraft to not less than 3,000. Congress soon raised that number to 15,000. Earlier that year, the Hepburn Board (appointed to survey Naval aviation shore establishments) had recommended the enlargement of the eleven existing air stations and the creation of sixteen new ones. On April 25, Congress appropriated sixty-five million dollars for military construction. Soon thereafter, the Board visited N.A.S. Norfolk to determine how best to spend the ten million allotted to it. Although the station had two grass-covered outlying fields, these were not enough to accommodate the number of carrier squadrons expected to be based there as a result of the increase in the Naval air corps. The patrol wing assigned to the base also would be expected to increase its responsibility as a result of the Neutrality Patrol established after war broke out in Europe in September 1939.

On orders from BuAer, Bellinger sought to acquire at least four additional practice airfields near his station. He selected the sites and also recommended that they have hard-surface runways. The Board disagreed and the Navy Department upheld its decision. Even so, Bellinger got his way. When Virginia’s 2nd District (Norfolk and Portsmouth) Congressman Colgate Darden happened to call him, he told Darden what he needed. Darden had enlisted in the Navy in 1917, had taken Naval flight training, and served in Europe until injured. Darden said he would introduce the necessary legislation. It quickly passed Congress, and Bellinger received the land and paved runways he wanted. One of them was Oceana Naval Air

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Station that is now a Master Jet Complex that dwarfs its original purpose.

Bellinger was promoted to rear admiral on December 1, 1940 and took over Naval aviation in Hawaii. He was in the thick of the fighting on that “infamous day” in December 1941. Later, he helped plan the stunning victory at Midway. In July 1942, he left Pearl Harbor to deliver Admiral Chester Nimitz’s reorganization plan for Naval aviation in the Pacific to Admiral Ernest King, then the Chief of Naval Operations (CNO). Bellinger did not realize that he would not return. When he arrived in Washington, he was ordered to Bethesda Naval Hospital for a physical examination. Bellinger’s generally deteriorating physical condition from overwork had been noticed and a period of rest in the states had been ordered.

After his release from the hospital, he went to see King who ordered him to get out of town for a few days. After a week, King told Bellinger to report back to him. The CNO had called Nimitz and it had been arranged for Bellinger to be the CNO’s Deputy Chief of Staff. As such, he continued to fight for a better organization for Naval aviation. Finally, he got King to obtain presidential approval to create a new Deputy CNO for Air. When King asked who he would recommend for the position, Bellinger suggested Rear Admiral Alva D. Bernhard who at the time was Commander Naval Air Forces Atlantic (COMNAVAIRLANT.) He guessed correctly that King would approve of Bernhard because he had taken flight training with King as an over age surface officer in the 1920s. With the position vacant, Bernhard and Bellinger switched jobs and Bellinger came back to Norfolk as COMNAVAIRLANT.

At this time the major problem on the Atlantic coast was that German U-boats had sunk more than 5.7 million tons of merchant shipping. Improvement in Anti-Submarine Warfare (ASW) was paramount. It was the same problem Bellinger faced when he first came to N.A.S. Norfolk in 1917, but more intense. Naval historian Samuel E. Morison stated that “From his Hampton Roads office, Bellinger opened a new and brilliant chapter for Naval antisubmarine warfare.”

He established the Air Anti-Submarine Development Detachment Atlantic that taught pilots the latest ASW tactics, tested new devices, and equipped planes with a microwave search radar that even German Admiral Karl Dönitz acknowledged to be the greatest single factor in defeating the U-boats. In addition, Bellinger created Combat Information Centers and Fighter Director Officer Teams aboard his carriers. With the defeat of the U-boats, the safe passage of convoys of men and supplies to Europe made the success of our armies in Europe possible. On October 5, 1943, Bellinger received his third star and became a vice admiral. For his service as COMNAVAIRLANT, Bellinger received a Distinguished Service Medal from the U.S. Navy. He also was given the Legion of Honor with rank of Officer and the Croix de Guerre with Palm from Charles de Gaulle, the French President, and was made a Knight Commander of the British Empire by King George VI for his service overseas.

After his first wife’s early death of pneumonia in 1920, Bellinger married Miriam Benoist, daughter of a well-known St. Louis banker and aircraft manufacturer. When Bellinger was away on assignments, Miriam and their four children spent their summers at the 170 acre estate of her friend Mary L. Frederick, near Covington, Virginia, called Earlehurst. When Mary died, she left the estate to Mirian. On December 1, 1947, Patrick Bellinger, after forty years of valiant service to his country, and especially to its Naval air corps, retired to Earlehurst and became a gentleman farmer.

In April 1955, the Navy honored Bellinger by having the two mile long road from Gate 3 to Gate 4 at N.A.S. Norfolk renamed from East Field Boulevard to Bellinger Boulevard. In retirement, he was known as an amusing, witty and intelligent conversationalist who often spoke to local retired officer groups and loved to tell “sea stories.” Even though he tried to maintain his good health, his high blood pressure contributed to several mild heart attacks. He finally succumbed on May 26, 1962. In 1981, he was chosen as one of the first twelve pioneer Naval aviators to be admitted to the Naval Aviation Hall of Honor at the Naval Aviation Museum in Pensacola, Florida.

Patrick Bellinger spent twenty five of his forty years of Naval service in Hampton Roads. He started as a midshipman on two of the battleships of the Great White Fleet, one of which was the first Wisconsin. He spent two and a half years on the dreadnought South Carolina, served aboard a cruiser to observe torpedo operations, and commanded a submarine. He commanded the aircraft tender Wright and the Navy’s first aircraft carrier Langley, both of which were stationed in Norfolk. He was the first commanding officer of N.A.S. Norfolk and served again in that assignment from 1938 to 1940 to help prepare the Naval air force for WWII. As COMNAVAIRLANT, from 1943 to 1947, Vice Admiral Bellinger expanded the usefulness of Naval aviation to the fleet as an anti-submarine weapon that helped to win WWII.

Because of his numerous contributions to the birth of Naval aviation and its place today as one of the most powerful arms of the fleet, Patrick Bellinger certainly deserves to be called a hero. As the father of Naval Aviation in Hampton Roads, he should be remembered each time we enter the gates of Naval Station Norfolk or Naval Air Station Oceana.
Early in the morning of November 16, 1943, Captain Richard Kirkpatrick was shaken rudely out of a deep sleep by a very large explosion. The retired Naval officer, recently recalled to be the commanding officer of the Navy’s Yorktown Mine Depot, later reported that he gazed out his bedroom window in the direction of the explosion. He got dressed quickly, expecting a phone call any second. When none came, he dialed up the base operator and asked what just happened. Kirkpatrick was informed that one of the ordnance production plants had just exploded.

He rushed to the scene in his car to find his security chief, a Marine lieutenant colonel, and his executive officer coordinating hundreds of sailors and Marines in fire and rescue operations. Two ships tied up at the Depot’s ammunition loading piers, the minelayers USS Salem (CM-11) and Weehawken (CM-12) rushed hospital corpsmen to the scene. Satisfied that the immediate situation was in good hands, Kirkpatrick proceeded to the blast area where he saw only a few brush fires, but a tremendous amount of debris and unexploded ordnance thrown everywhere.

When the sun came up, the picture became somewhat more clear. Rescue workers and security personnel saw two craters, each 25 feet deep and 150 feet across. Nothing remained of the building, or the trucks and the railroad flat cars parked next to the building. All six men, five African-Americans and one white supervisor, who worked in the building were killed.

A seventh person, a civilian foreman named James Seawell, was going over the night’s work assignments with his men in another building when the explosion threw him against the wall. A refrigerator then landed on his head. He died twenty-four hours later, leaving behind a wife and two daughters.

The building destroyed was known as P-2. It served as a warehouse for the storage of torpedo warheads and mines that had been recently loaded with the powerful explosive Torpex. Ordnance stored at P-2 had just come from another building, where ordnance mate petty officers from the Yorktown Mine School had poured hot liquid Torpex into shell casings. The ordnance was then allowed to cool down at P-2 into a more solid state over a period of several hours. Workers then moved the live ordnance onto rail flat cars or trucks and then shipped it off to the Fleet. At the time of the explosion, there was 64,000 pounds of loaded Torpex ordnance inside the warehouse, 21,000 pounds of live Mark

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In World War II, the Yorktown Mine Depot was responsible for the assembly of three important tools. At left is the Mark 6 booster, which was the magnetic device that caused a torpedo to explode underneath a ship. In the center are the Mark 13 and Mark 19 mines. Each was loaded with 710 pounds of Torpex and could double as an air dropped bomb. At right is the Mark 18 torpedo warhead, which was loaded with 660 pounds of Torpex. (U.S. Navy photos)

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13 Mines on the flat cars, and 18,000 pounds of torpedo warheads and mines on trucks. In all, about 104,000 pounds of Torpex, or the equivalent of 150,000 pounds of TNT, exploded in an area just under 500 square feet.

Connected to P-2 was another storage site. Here, workers received and stored the familiar explosive TNT purchased from the U.S. Army, which was one of three ingredients used to make Torpex (see side bar on page 9). Investigators concluded early on that this was the reason for two separate craters at the blast site. The first crater was the P-2 warehouse and the second crater was the TNT storage area.

The damage could have been much worse, but basic safety measures kept the explosion limited to a confined area. Specifically, most of the ordnance plants and warehouses had tall barriers of sand and dirt on at least three sides. As a result, most of the force of the explosion went harmlessly upwards. The placement of the Depot in a secluded place along the York River in 1918 was done just in case of such an emergency.

Nonetheless, there were serious concerns that the explosion was not accidental. Just two months before, a massive explosion at Naval Air Station Norfolk killed several sailors. There was a tremendous amount of anxiety that German spies or submarines were active in the area. Within 12 hours of the explosion, the Bureau of Ordnance opened an investigation and convened a court of inquiry.

The Bureau of Ordnance assembled a board of three officers, Captain James G. Ware, Captain Allan W. Ashbrook, and Commander Ashton B. Smith with Lieutenant Wayne Brooks as judge advocate and lead investigator. The Court’s inquiry covered two themes. The first was the production and nature of Torpex, attempting to determine if one of the bombs spontaneously exploded. The second theme looked at the men who handled the explosives and whether or not they were handling it safely.

The Top Secret Explosive

Kirkpatrick and his chief engineer lead off the testimony by briefing the panel on the Depot’s mission of ordnance production and details on the manufacturing process. Investigators quickly focused on the Depot’s Torpex production.

Kirkpatrick testified that since the British handed over the formula for Torpex to the United States in 1942, the Bureau of Ordnance wanted as much ordnance loaded with Torpex and produced as fast as possible. It selected Yorktown to be the first for domestic manufacturing. A new plant was built and running by spring of 1943 and within days, mines, bombs, and torpedoes loaded with explosives were being shipped out to the Fleet.

Initially, engineers believed that 500,000 pounds of live ordnance a month was the maximum amount that could be safely manufactured. Within a few weeks, the demand for Torpex from the Navy and the U.S. Army Air Corps (Torpex was used in bombs for the 8th Army Air Force’s campaign over Germany) was so high that the facility was producing and shipping out over 2,000,000 pounds of live ordnance a month. Kirkpatrick and his staff believed this was too dangerous, and cut back production to 1,400,000 pounds a month.

Even with the lower production levels, live ordnance was piling up in the warehouses. Ordnance recently loaded with hot, liquid Torpex had to be stored somewhere in order to cool off. There was no special place for this stage of production. As a result, 105,000 pounds of live ordnance was stored at P-2 and not a separate building. The court asked Kirkpatrick why this was the case. Kirkpatrick replied that there simply was not room anywhere else, nor was there time to build a new storage facility. It would be the first of many times throughout

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the investigation that a witness would imply that since the demand for Torpex was so high and was considered such a critical tool for Allied war success, the production of the explosive was rushed. More direct complaints along these same lines came from the Depot’s ordnance production officer who testified that the machine used to make Torpex was flawed. He stated that the Depot’s machines came straight from Britain and were operated under the assumption that they were safe.

The court then turned its attention to the safety of Torpex itself and received conflicting answers. Kirkpatrick and others acknowledged that Torpex was somewhat more unstable than other explosives. The witnesses also stated that they were aware that leaking gas caused by Torpex production possibly caused the N.A.S. Norfolk explosion (which was later determined not to be the case) and had taken all necessary steps to monitor gas leaks.

A civilian chemist from the Bureau of Ordnance later testified that Torpex passed accepted safety tests, namely an “anvil” test. In this test the explosive was dropped from a certain height on to a hard surface to see what would happen.

However, the Depot’s chief chemist Lieutenant N.H. Bullard testified that “[Torpex] was an explosive, the research upon which is still in the process of being developed.” He went on to state that he was never fully briefed about the detailed properties of Torpex. His knowledge of the explosive amounted to some papers from British scientists that gave a general overview and a few briefings. There was some research that showed that Torpex was more heat sensitive than other explosives, but not much else was known.

This type of indirect accusation was common throughout the hearing. No one pointed finger directly at another person, but many implied accusations were made.

All of the Depot’s senior staff had Navy lawyers at the hearing, who were allowed to cross-examine the witnesses as needed. On a number of occasions, the officers’ lawyers made sure that their clients were not being implicated. For example, when a third class ordnance man stated that he had heard that P-2’s workers frequently dropped...
Naval investigators looking into the Mine Depot explosion spent much of their time on the finer points of the new secret explosive known as Torpex. It was an extremely effective explosive. It proceeded to be one of the reasons for Allied success in the Battle of the Atlantic and the Submarine Force’s devastating campaign against Japanese shipping in the Pacific. However, due to the demand for the explosive, little research had been done on the substance’s more detailed chemical properties due to its rushed production. American officers overseeing the production readily admitted to investigators that they did not know much about the safety aspects of Torpex.

Short for “Torpedo Explosive,” Torpex was a mixture of three chemical compounds. British researchers discovered Torpex in the early days of World War II, when they took a mixture of 40 percent of the explosive compound RDX, 40 percent TNT, and 20 percent aluminum powder. The researchers discovered that a bomb with the new mixture had fifty percent more explosive power than a bomb made only with TNT. Torpex made depth charges exponentially more effective as it made the underwater shockwaves more deadly to submarines. British shared their new discovery with the Americans and the Navy’s Bureau of Ordnance rushed it into production using it first in torpedoes. American submarine skippers reported that torpedoes with Torpex were “cracking ships in half.”

Torpex’s effectiveness, however, made it almost as deadly to friend as foe, as it was highly unstable. Two of the chemicals were individually extremely dangerous. RDX had been known about since the turn of the 20th century, and was a very effective explosive. But by itself, was considered so unstable and unsafe, that it was never used in ordnance unless mixed with some other chemical. Aluminum powder, a major skin irritant, will spontaneously ignite in the presence of an oxidizer.

After production began, chemists and engineers at the Bureau of Ordnance warned that a stray bullet fired from a machine-gun could set off a torpedo warhead filled with Torpex, making torpedo bombers and surface ships carrying the weapon more vulnerable. Additionally, there was the worry that the high temperatures and humidity of the South Pacific could cause Torpex to explode prematurely. When told of these issues, Chief of Naval Operations Admiral Ernest King declared that the effectiveness of Torpex far outweighed the added dangers.

In an attempt to offset the potential dangers of a premature explosion, Bureau chemists tried several different desensitizers that would stabilize the explosive while in storage, but keep the big bang that was sought after. The British recommended paraffin wax (i.e. candle wax), but it was rejected by the Americans as lessening Torpex’s effectiveness. Other scientists found that microcrystalline waxes was the answer. The discovery in 1945 led to a explosive mixture called HBX. HBX eventually replaced Torpex as the Navy’s primary explosive. Yorktown Mine Depot manufactured all of this new explosive for the Navy.

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device ordinance, the executive officer’s lawyer got the petty officer to admit he had never actually seen a piece of ordnance dropped.

Given the number of Navy careers possibly in jeopardy because of the incident and to avoid any conflict of interest issues, the court called the U.S. Army’s Chief of Ordnance to provide a more neutral assessment of the damage. Ordnance sent Captain Charles Ford from their Safety and Security Branch to examine the blast site and testify.

Ford first stated that there was little proof for his opinions. His exact words were there was “mute evidence.” The explosion was so powerful and in such a concentrated area, that items like the remains of the building, the rail cars, human remains, or shell casings had literally been obliterated. Having stated that, he believed that the first of four separate explosions occurred inside the building. The first explosion led in quick succession to a series of three more. When asked for his opinion on how the explosion happened, he stated that “rough handling” by P-2’s workers “could have been a cause.” Ford added, that like the Depot’s ordnance officer, he was not sufficiently informed about the properties of Torpex and its sensitivity to being dropped or the effect of extreme temperatures.

The Workforce

Having found the evidence on the safety of Torpex inconclusive, the Court turned its attention to P-2’s workers to determine if “rough handling” of the ordnance was indeed the reason.

Like many industrial activities in the United States during World War II, the Yorktown Mine Depot hired hundreds of additional workers to meet war’s demands for weapons. At the time of the explosion, the Depot employed more than 2,300 civilian workers, including about 600 women and 500 African-American men. Working alongside them were about 900 active duty sailors, many of whom were third class ordnance or mineman petty officers.

Although a few of the senior officers testified that they were of the opinion that some of the civilian workers, particularly the ones involved in manual labor, were not the most educated or qualified, they did not believe any were incompetent or reckless.

Commander Manees, the Depot’s executive officer and safety officer, testified that the workforce was adequately briefed...
The Development of Mobile Logistic Support in Anglo-American Naval Policy, 1900–1953
By Peter V. Nash
Reviewed by Howard Sandefer

This volume is not for general reading. It contains a comprehensive treatment of naval logistics for the period 1900–1953 for the Royal Navy and the U.S. Navy. It is very involved in exploring, not one, but two nations navies’ and their approaches to replenishment at sea. Different methods were tried by each navy and compromise helped evolve better methods.
The book is soporific, but treats a subject of great importance in understanding the evolution of the ability of the U.S. Navy and, to a lesser extent, the Royal Navy to apply sea power almost anywhere in the world. It traces the development of the fleet train from the realization that steam power required fuel through the first and second World Wars to Korea. In the days of sail, motive power was not something that had to be replenished. With the introduction of steam power, fuel became a major consideration.
Underway fuel replenishment began about 1900 as steam powered naval operations began to get away from continental bases. World War I had some distant operations, but the major battles were fought in the North Sea, close to national bases, so refueling and resupply was not a large problem, nor was having repair facilities near and ready.
The early part of World War II, similar to World War I where the fighting was concentrated in the North Atlantic, where bases were available at both ends of the voyages. Pacific campaign success during World War II can be traced to numerous examples of forethought. One of these forethoughts was the development of the fleet train to keep the combatants at sea for extended periods. Fleet trains developed slowly until about 1943, and then the learning curve accelerated considerably.
Many and varied were the problems that were faced in keeping a large fleet at sea for extended periods. Included were underway replenishment of food, fuel and ordnance, forward repair facilities, and supply of forward bases to name a few. Mahanian theory called for forward bases to be prepared beforehand, but this was not possible for the vast reaches of the Pacific. That there were qualified people to develop these procedures and equipment, no matter how crude by today’s standards, was remarkable.

One innovation that cannot be overlooked was the change from coal to oil for fuel. This began just before World War I. Having a liquid to transfer sped up the process of refueling, and that was a great improvement over transferring slings of coal. It was liquid fuel that multiplied the force enough for it to be victorious. The routine evolutions of replenishment at sea that characterize present day operations were unknown in 1940, crude but effective in 1945, and a normal state of affairs in the present time. The advent of the nuclear powered carrier has reduced the fuel requirement for surface ships, but the jets and the escorts still need liquid fuel.

A major problem that had to be solved was the replenishment of heavy ordnance, like bombs and projectiles for the big guns of the battleships and cruisers. It was vital for both the Iwo Jima and Okinawa campaigns that both the carriers and heavy bombardment ships be rearmed. It is not surprising that the officer seeing the need and driving the solution was Admiral Spruance.

Korea imposed the need for day and night carrier operations and the accelerated need for fuel and armament resupply. The author traced the evolution of replenishment from daylight operations only to nighttime operations as a result of the massive expenditure of ordnance by carriers. Such evolutions in delivery methods and tactics marked the continuing search for rapid and efficient methods of keeping the fleet on station and in operation.

The limitations of the book prevent treatment of Vietnam, Iraq and Afghanistan, but the continuing results show an evolution of equipment and procedures. Fleet mobility and resupply continue to be highly regarded in the modern world, where threats to national interest take on additional menace with the proliferation of nuclear weapons.

There are those who would appreciate the distinctions between the House-fall, Burton, Span-wire, close-in and High Line rigs. The knowledge is a little esoteric for the usual reader, but necessary to understand the complexity of the underway replenishing evolutions. It will probably not make the list for any movie production, but it does illustrate where we were and give some appreciation for the modern methods involving constant tension winches and other innovations. Most of these rigs were developed to handle cargo from a pier to a ship moored alongside. The versatility of the operations show how innovations can lead to multiple uses. They were adapted for use at sea with both the transfer point and receiving point in motion. Such rigs put a premium on station keeping and ship handling at close quarters.

This book is not for everyone, but should be reserved for planners in all fields to show what can be done with a few good ideas and some perseverance. It is well researched and as complete as it can be, given the complexity of the subject.
Flotilla: The Patuxent Naval Campaign in the War of 1812
By Donald G. Shomette
Reviewed by Joseph Judge

Even the most casual students of history are familiar with the two most famous assaults on American soil: 1941 air raid on Pearl Harbor, and September 11, 2001 terrorist attack. Chances are that they are less familiar with a third attack in which American lives were lost: the British incursion into the Chesapeake in 1813-1814. Historian and archaeologist Donald G. Shomette has expanded and revised an earlier history of that campaign into a comprehensive account of one of the nation’s darkest military chapters.

In early 1813 the war between Britain and her erstwhile colonies centered on the Canadian frontier. Great Britain hoped to relieve pressure on Canada by creating a diversion in the Chesapeake area of Maryland and Virginia. The job was entrusted to Admiral George Cockburn, who entered the Virginia Capes on March 3, 1813 with a fleet of warships. Cockburn had orders to blockade the Bay, to capture or destroy American shipping, and to gather intelligence. Cockburn’s strategy was coldly calculated to bring the war to the civilian population in a blitzkrieg of arson and terror that reigned up and down the Bay.

What of the American opposition? Twenty-first century readers will no doubt be shocked to read that there “was a complete lack of American unity of command in the Chesapeake Tidewater.” Regardless of the ongoing political futility, the ability of the British to rampage at will on the Chesapeake was the result of their naval strength (and America’s naval weakness.) An American naval officer felt the frustration keenly. He was fifty-three year old Commodore John Barney, a veteran of the Continental navy. This native Marylander channeled his frustration with American lack of action into a plan for a fleet of barges. With little else in place for resistance, the Secretary of the Navy authorized the U.S. Flotilla Service, with Barney in command carrying the rank of Acting Master Commandant.

Barney faced a nearly impossible task, and in the best tradition of the Navy he threw himself into it tirelessly. Barney began a building program for first and second class barges (or galleys) and opened a recruiting center. Most of the vessels in his flotilla were light, trim ships of 50 to 75 feet in length and carrying a wide variety of naval guns, including carronades for close-in fighting.

Barney had the personal courage of the professional military officer, proved by his willingness to take his small fleet and engage the superior British force in three days of continuous combat in June 1814. In this “Battle of the Barges” the Americans succeeded in forcing the British schooner St. Lawrence ashore. Despite that modest achievement, Barney was forced to pull back, his success perhaps best measured by the new respect the British showed him. They were content to blockade the flotilla and to continue their systematic destruction of property on the Patuxent River.

Courage alone cannot deflect the weight of superior naval power, and Shomette outlines the steady progress of the British military machine, which continued its brutally efficient progress until the capital city, Washington, was under attack. By the time of that fateful battle, the small flotilla had been demolished, and its crew detached to join in the defense of the capital, which was ultimately unsuccessful. Commodore Barney himself fell wounded in defense of Washington, where he met face to face with Cockburn, now his captor. Only the staunch defense of Ft. McHenry and Baltimore put an end to Cockburn’s record of success.

Donald Shomette’s book is a well researched account into one of the most traumatic military failures in American history. Besides the details of the military campaign, the author examines other elements of the conflict in the Chesapeake. One of the most interesting is the British strategy, calculated if not cynical, of encouraging the local African-American slave population to enlist in the Royal Navy and marines. Thousands of freed slaves accepted the invitation motivated by the intense desire to escape slavery. However, notes Shomette, most of them were shipped off to Halifax or to Trinidad. Many did serve in the British Colonial Corps of Marines.

Another matter of interest is the failure of the national government to divine the intent of the British, either strategically or tactically. The British designation of the Chesapeake as a major theatre of operations was “the horrific moment everyone had chosen to ignore.” Shomette also offers a concluding chapter on the archaeology of the Chesapeake flotilla, which has been the subject of recent excavations.

Not to be discounted in this history is the geography and character of the Chesapeake Bay, which Shomette details with great knowledge and insight. Readers who are fond of spending summers boating on the Bay may wish to stow this volume in their cabin and turn to it as they explore the tributaries and byways that were the scenes of intense suffering two hundred years ago. They may wish to leave a flower in the water as they pass by the battle sites of the flotilla sailors.
High Anxiety with High Explosives

S

ometimes an accident is just that, an accident and the simplest explanation will do. This was not the case with explosion at Yorktown. The Sage has never been a fan of conspiracy theories or other unsubstantiated hypotheses. However, in the spirit of not judging people of the past, the Sage is willing to at least entertain the idea that the investigators were influenced by the security environment caused by World War II.

Long-time director of the F.B.I. J. Edgar Hoover wrote in a 1944 essay “Keeping Up the Fight,” that Bureau agents were monitoring over 2,300 factories and facilities to ensure they were safe from Axis spies. Within twenty-four hours after the raid on Pearl Harbor, agents arrested 1,771 Naval defenses and made its way into Hampton Roads (only to be sunk, so the untrue story goes, at Willoughby Spit.)

But if one reads further into Hoover’s account of the Bureau’s efforts to secure America, one finds that foreign spies were not the problem. The biggest threats to America’s war production were laziness and carelessness. The Bureau investigated 14,500 cases of reported sabotage and landed 525 convictions. In all cases, the acts were not foreign sponsored acts, but rather accidents and pranks. Hoover and the G-Men had no time for such games. “These people, engaging in horseplay, are responsible for a big drain on our manpower and production,” the director wrote.

As for the Navy, the Department as an institution was not as paranoid about spies, as the Depot’s investigators were. Within twenty-four hours of the explosion at N.A.S. Norfolk, the Navy released photos of the incident. Local newspaper published stories, verified by witnesses that the explosion was caused by a sailor who did not see that one of the depth charges he was transporting was scraping the ground. Official inquiries into the incident confirmed the account.

The Department knew that accidents were the more serious problem. The Yorktown and the Norfolk incidents were just two of several involving mishandled ordnance that occurred at Naval installations around the world during the war. The most infamous stateside accident was the Port Chicago, California explosion where safety violations and mishandled ordnance on a cargo ship led to 5,000 tons of bombs and incendiary devices to explode. The explosions killed 320 people and led to a serious work stoppage over safety concerns. In addition, there was the West Loch disaster at Pearl Harbor in 1944 where mishandled mortar shells by soldiers loading a landing ship for the Saipan Campaign The ensuring explosion caused five other landing ships also loading with ordnance to explode and killed 163 men. In both of these cases, investigators blamed poor training and an accelerated loading schedule.

Further inland, there were three different incidents at the Naval ammunition depot in Hastings, Nebraska that killed a total of twenty-six workers. One of them involved mishandling of Torpex-loaded ordnance in the cooling off warehouse, just like the cause of the Yorktown explosion. There was also one accident at the Naval ammunition depot in McAlester, Oklahoma that also involved Torpex. On top of the incidents at Naval depots, there were 100 other incidents at Army and private ordnance facilities that occurred throughout the war.

No workers were ever killed through sabotage. It is unknown whether this was because of the hard work of the F.B.I. or the difficulty of infiltrating the United States in the 1940s. The data concludes that the Sage was right all along: the simplest answer is usually the correct one. Accidents were far more deadly to America’s war workers than espionage.
The museum has recently unveiled the USS Cumberland Center on its website. This interactive web module allows visitors to explore the ship’s rich twenty year operational history; see what the museum and its partners at the Naval History and Heritage Command and the National Oceanographic and Atmospheric Administration have been doing on archeological survey missions to the wreck site; explore the different parts of the ship; and see some of the artifacts from the ship, many of which are not on display in the museum’s gallery. The center can be found at http://www.hrnm.navy.mil/cumberland.html.

Cumberland was sunk in Hampton Roads on March 8, 1862 by the ironclad CSS Virginia on the first day of the Battle of Hampton Roads. One hundred twenty sailors died in the battle and the wreck is protected by Federal law.

The museum is the official repository for artifacts from the 19th century vessels USS Cumberland and CSS Florida. It is responsible for the care and interpretation of artifacts from the vessel and the ship’s operational history.

Attention Internet Nation!
The Hampton Roads Naval Museum Has Expanded Its Presence on the Web

The museum’s main website is http://www.hrnm.navy.mil. We also have expanded our presence on the Internet to other popular social networking sites including Facebook, Twitter, and Blogger. On Facebook and Twitter, you can keep up to date with the museum’s events in real time. On our blog, you can read more about the museum’s collection and events. We have future endeavors planned, so keep a watch for them!

Museum Web site: www.hrnm.navy.mil
Blogger: hamptonroadsnavalmuseum.blogspot.com
Facebook: www.facebook.com, look for the Hampton Roads Naval Museum “Page” and become a “fan.”
Twitter: www.twitter.com/hrnm
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on safety regulations. The workers were subject to eleven different safety memos that covered everything from how to handle live ordnance to the dangers of smoking around live ordnance. Safety officers often asked random questions to test their knowledge. As the Depot’s ordnance officer stated “Personally, I have not seen any cases of unsafe handling of Torpex. I think that most people who handle it, treat it with the greatest respect.”

A few witnesses testified that they believed the Depot could have been safer. Two railroad engineers, for example, stated that when they worked on civilian railroads, hazardous cargo was handled with more care and more gently. A few other witnesses testified that they had heard that the P-2 workforce handled cargo recklessly, but admitted that they never personally witnessed it.

The court moved on from safety procedures to focus on the whereabouts of the six men working in P-2. The work team in P-2 consisted of five African-American laborers and a supervised by a Caucasian named Jay Remie. Remie’s supervisor testified that he had personally hand picked this group out of a pool of several hundred workers, and had never had to correct any of them for safety violations. He stated that he had personally known all of the laborers since they were young boys.

Several witnesses were in agreement when they testified that the laborers were standing around two Mark 13 mines awaiting moving instructions, while Remie was in the warehouse’s office making a phone call. The call was made about twenty minutes after Midnight. Seven minutes later, P-2 exploded.

One witness stated that Remie had called to ask where to move a mine. Others, however, were not so sure. The lack of any known safety violations and the lack of any hard evidence that Torpex was unsafe led some to believe that the timing of Remie’s phone call and the explosion was not a coincidence. The Depot’s judge advocate and Captain Kirkpatrick’s lawyer in particular believed that Remie’s activities were suspicious and strongly believed that Remie received the signal to set off the explosion as an act of sabotage. Not only did they believe that Remie blew up P-2 intentionally, the two lawyers were of the opinion that Remie escaped and was still alive.

F.B.I. File #98-1843

On the fifth day of the hearing, Captain Ware closed the proceedings to the public to discuss this new hypothesis. Five officers from the Fifth Naval District’s intelligence office arrived and were briefed. Later in the day, Special Agents John Kissner and Fred Coote of the F.B.I.’s Norfolk field

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office arrived and were also briefed. The court then formally requested that the F.B.I. investigate Remie as a possible Nazi agent. The F.B.I.’s Norfolk office was one of the Bureau’s newest. Stood up in 1940, agents were specifically tasked with assisting Hampton Roads base commanders with internal security and counter sabotage operations.

The F.B.I. agents discovered that Remie was a child born out of wedlock, had dropped out of high school, then entered the U.S. Army during World War I, and later received an honorable discharge as a second lieutenant. After the war, he worked in his native Tennessee as a phone operator at a soldier’s home, before moving to Virginia to work at Newport News Shipbuilding and then at the Mine Depot.

The agents discovered that Remie was a real life Stanley Kowalski. He was a loner. He had a temper and liked to argue and lecture others about what was wrong with the world. He also liked to brag about his latest business scheme that would make him rich. At one point in his life, he expressed interest in joining the International Workers of the World, a Socialist political front whose members had been accused of sabotage in World War I. He liked to read, particularly works on political theory and practice.

While working at Newport News, someone from Berlin sent him the book The Case for Germany by Arthur P. Laurie. Published in 1939, this book attempted to show that Nazi Germany was a peaceful, modern state, ready to take its place in the civilized world and not the war mongering, hate-filled empire that it had been made out to be.

An unidentified informant told the F.B.I. that he saw Remie in possession of $3,000 in cash and showed it off to people. Considering that Remie only made $1.10 an hour, this was an enormous amount of money. All local banks from Williamsburg to Hampton were alerted to be on the lookout for a large deposit of money.

But over and over again, witnesses in both Tennessee and Virginia told the F.B.I. that while Remie liked to fuss about what was wrong with the world, he never expressed any sympathy or love for the Nazis or any other extremist organization. They believed Remie to be a completely loyal, hard working citizen that excessively exercised his First Amendment rights.

In their final report, Agents Kissner and Coote concluded the same. In their opinion, there was no reason to believe that Remie was a Nazi agent or was ever a threat to national security. They also believed that Remie was truly dead. There was no reason to believe that he had somehow miraculously escaped the mammoth explosion.

The Court’s Findings

After seven days of testimony and investigation, the court closed the hearing. It concluded that the Depot’s command staff had taken all necessary safety and security measures. The workforce had been properly trained and there were a sufficient number of Marines keeping a close watch over the Depot’s activities. It concluded that all brush fires were caused by the explosion and not intentionally set.

The court did make several points about the ordnance itself. A series of radiographic images of mine cases showed that the mine cases had serious cracks in the welds. Also, rail flat cars loaded with ordnance and parked next to P-2, should not have been left there.

As for Torpex, the court highly recommended further study. It noted that not only was there no chemical analysis made of the Torpex produced at the Depot, the Bureau did not even mandate tests, in order to speed up production. It concluded that “no clue as to the cause of the explosion” and “no offenses were committed and that no blame is attached to any personnel.”

Having said all that, and despite the F.B.I.’s report, the court further concluded that “It is the opinion of this court that due to the United States being in a state of war, the potential presence of enemy saboteurs is indicated and the possibility of sabotage being the cause of the explosion cannot be overlooked. The absence of an explanation for the explosion based upon spontaneous combustion or chemical disintegration, accentuates the possibility of sabotage being the cause of the explosion.” In other words, despite all the evidence, the court went with the sabotage hypothesis put forward by the judge advocate and Kirkpatrick’s lawyer.

The Court is Overruled

When the findings reached the Bureau of Ordnance office in Washington, D.C., the Bureau came to a much different conclusion. About seven months after the explosion, Bureau investigators believed it was an accident after all. Chief of the Bureau of Ordnance Vice Admiral George Hussey wrote a secret memo to Fleet Admiral Ernest King stating, “this explosion resulted from an aircraft mine or similar explosive container being accidentally dropped or bumped against a hard and fairly sharp surface during handling.”

The memo stated that Torpex’s sensitivity was not necessarily to blame. Similar accidents occurred with bombs made only with TNT. The deciding factor in all these accidents was the fact that the bomb hit the ground at a very sharp angle, causing the explosive to detonate.

The memo confirmed that despite its inherent danger, Naval ordnance depots and arsenals are all integral to the Fleet’ success. 


When Navy lawyers raised the possibility that one of the workers who died in the explosion might have caused it on purpose, two agents from the Federal Bureau of Investigation’s Norfolk field office began a nationwide investigation into the worker’s background. The F.B.I. had only recently opened the Norfolk office in 1940 and having organized with the expressed purpose of protecting Hampton Roads military installations from Axis sabotage attempts.
Warbirds
An Aerial Shot of Chambers Field, 1944

This aerial shot shows hundreds of warplanes at N.A.S. Norfolk’s Chambers Field in 1944. Most of the small aircraft are Dauntless dive bombers or Wildcat fighters, while the larger aircraft are PBY patrol bombers. A few PB4Y-1 (Navy B-24s) bombers are mixed in, which the Navy used as long range ASW aircraft. (HRNM photo)

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