

A Day of Valor, Part One

I. Noguera's Monument

This story has a beginning in 1968 in Whetstone's CIC. It began during a mid-watch as the *Stone* maintained station in its nighttime operating square. The previous day had been busy, just like the one before and the one before that. We had been operating along the coastline of the DMZ, off-loading supplies for the Marines ashore, working with other amphibians in Ready Group Bravo during the Tet Offensive. The coming day would see more of the same, more troops, more equipment, helo details, Condition One Alpha, runs to and from DaNang and back up to the DMZ for repeats of the same. Days were long, nights were long, and the work was long and seemingly unending. There was a war on and we were part of it. Conversations were part of the necessities of life in "Combat." They kept you awake.

Midwatches could be quiet times in CIC, though that was not always the case. Often there would be underway ship to ship replenishments for refueling or highline transfer of critical supplies and ammunition. Sometime there would be vertical replenishment-- supplies by air, via helicopter; sometimes both, at the same time. This night, it was quiet. Somehow banter had settled to the Navy and about the how things were being questioned by citizens, and how sometimes information did not add up as to how the war was going—good or bad. Stars and Stripes and Navy Times seemed to expand on glowing reports of great accomplishment in Vietnam, while at the same time, media sources such as Time Magazine, Newsweek, and others, carried conflicting versions that depicted events which did not match what was being presented as official sanctioned information.

That being as it was, RD2 Noguera and I drifted into talk about with cover-ups, what could or should not be believed and taken as truth and generally questioning the state of world affairs. In this vein he mentioned a discovery he had made in San Diego one day when on liberty. While gadding about one weekend he had visited the National Cemetery located at old Fort Rosecrans on Point Loma. Curiosity had drawn him to a large stone monument.

It was a granite obelisk and it stood over fifty feet high, on a base about eight or ten feet wide. It was the only marker of its kind in the whole cemetery and it commanded the field overlooking San Diego Bay. When he viewed the monument he noted a commemoration, "The Bennington Dead," and what appeared to be a mass grave for a number of sailors. He thought it peculiar-- a mass grave; all enlisted; all with the same day of death in 1905. His conclusion was that the ship had entered San Diego with some fatal contagion on board that had resulted in the sudden demise of part of its crew. He also surmised the Navy had downplayed the incident and it was one of those things that was not talked about and thus forgotten in time. I made a mental note about our conversation and resolved to visit the monument myself when our Westpac deployment was concluded. I never did.

I never forgot, either.

It was almost forty years later while researching ideas for a model that I discovered the answer to Noguera's mystery. While looking up fire tube boilers, a search led me to a type known as a "gunboat" boiler. Reviewing the construction characteristics, I found an article that described an accident that took place aboard USS *Bennington* in San Diego harbor on July 21, 1905. It was a calamity of epic proportions that roiled the city for some time. Citizens followed events on a day to day basis with rapt

attention until the conclusion of several investigations and court martial proceedings that ensued. Then, following that high drama, findings were overturned by naval authority and causative fault readjusted to members of the dead crew. As one reporter spoke, "A mountain was in labor, sending forth dreadful groans, and there was in the region the highest expectation. After all, it brought forth a mouse." However, from all that, the incident produced at least three monuments, two navy ship names, and eleven Medal of Honor awards, presented for actions taken in San Diego Bay July 21, 1905, a fearful day, blotched on the brow of navy history.

II. Gunboat Boilers and Such

Everyone alive in the 1900s would need no explanation as to what a fire tube boiler was. For that matter, most would have known that a "gunboat" boiler was another type of fire tube boiler similar to those found on railroad locomotives. In trite terms, they were a dime a dozen. A typical specimen registered about 41 tons and measured about seventeen feet in length and ten feet in diameter. In 1905, USN gunboats were propelled by four of them, snuggled into two compartments, separated by watertight bulkheads. They satisfied the call for limited space and other requirements that factored toward a steady gun platform--shallow draft, fast steam, and desired speed.

Key parts of a gunboat boiler were the furnaces, the firebox or combustion chamber, and the shell. They were rolled, shaped, and fastened by thousands of rivets driven and flattened into holes, drilled or punched-- though punching was not the preferred method. While cheaper than drilled holes, which were countersunk, punched holes were not. Some considered this method inferior in strength than drilling and countersinking. White hot rivets would be inserted and held in place as one end was flattened against bare metal with hand driven sledges. The process demanded great strength and required large teams of workers. When the rivet cooled, it contracted and drew one plate of steel to another with a sealing force of thousands of tons. Later, riveting would be assisted by the advent of the air hammer or rivet gun. In a move for economy, *Bennington's* boiler holes were punched.

There were three tubular furnaces or flues, fabricated as corrugated tubes for maximum heat surface. They were about forty inches in diameter, thirty seven inches long; arranged somewhat in a pattern of two above and one below, and recessed into the combustion chamber. Components consisted of the grate area--the bed, and an ash pit. The top was "the bed," and beneath it was "the pit." Ash, clinkers, and unburned particles of coal fell or were forced down into the pit as waste to be raked out and disposed. Brickwork inside was arranged to keep unheated air from entering the combustion chamber from beneath the bed. Instead, air was blocked off and entered from the ash pit beneath and through the grates to the burning top surfaces and then into the chamber. At the head of each grate was a firebrick mound called "the bridge," which directed fire and gases up and into a rectangular, box-like cavity. This was the firebox or combustion chamber. They also served as a kind of stop that allowed fuel being shoveled to accumulate and remain on the grates without falling into the combustion chamber ahead.

The combustion chamber took a space forty five inches deep, lengthways in the boiler, nearly nine feet wide and arched upward approximately nine feet, leaving about twelve inches from its top, or crown, to the top shell and rounded side portion of the boiler. The front side was a wall which formed the entry area of the furnace flues. The top was the crown. Backside flanges--the top, sides, and bottom closed the box--were butt riveted to the face of the boiler cylinder. This formed an interior cavity which opened to banks of horizontal fire tubes which led to the smoke box at the opposite end. The chamber resembled a rectangular box lying on one end, with round flues extending out of one side. The other

wide side pressed up to the flat surface of the boiler wall, or face, open to the many tubes. Flues and combustion chambers made the boiler characteristic of being internally fired which meant that all interior surfaces exposed to fire were surrounded by water. Part of the brickwork inside divided the chamber into three parts, one for each furnace end, with a traverse arch and a longitudinal wall between the nests of flues. Essentially, the chamber was bricked similarly to a refractory which segregated the ends of the furnaces like the tip of a blowtorch that directed fire and superheated gasses to the fire tubes. Combustion was completed there and, when managed as intended, temperatures inside could reach up to 2,000 degrees Fahrenheit.

There were 438 fire tubes. They extended horizontally nine or ten feet from the combustion chamber through the shell and opened to a smoke box chamber. There, smoke and gasses climbed upward to the uptakes and were carried to the stack, forced there by high temperature and steam driven air blowers. Water contained in the shell, or cylinder, surrounded the tubes and absorbed the tremendous heat generated in the combustion chamber, making steam. Collectively, the combined exposed heating surfaces in gunboat boiler construction--fire tubes, furnace tubes, combustion chamber, boiler facings, and other exposed surfaces, amounted to 2,053 square feet.

Steam could be raised inside four hours; less, when required, with blowers applied with full vigor. For that purpose each fire room was equipped with two steamdriven forced draft blowers which took air from the fire room and routed it to the fires through ducts in the ash pit fronts and doors. Before being injected to furnaces it was first heated by being ducted through the uptakes. Then the hot, forced- air draft was routed to doors and ducts to make furnaces roar. Brickwork glowed cherry red as black fossil fuel turned to incandescent white heat marked like reveled ice cream with streaks of bright gold, violet blue, dull orange, and cherry red fire.

Steel plates for boiler construction were called sheets. Those located at the top of the fire box and flues were called crown sheets. The topmost of these, being the most critical with regards to water depth, was specifically identified as, "the crown sheet". It, being the highest portion of the firebox and upper flue surfaces, manifested a critical area where water depths in the shell would be the least. On the front of every boiler face would be a horizontal steel line embossed with the word, "Crown Sheet." Its purpose was to mark the crown sheet explicitly as a reference point used in conjunction with two other water level indicators. It was vital that there always be a layer of water over the crown sheet; otherwise, if the metal surface there was not protected by an adequate depth of water, it would reach near melting temperatures and be subject to fail. The end result would be what firefighters call a "boiling liquid evaporating vapor explosion." They shorten all this down to an acronym--BLEVE. Some forensics experts would refer to such an event as a rapid- massive- catastrophic- disintegration. We would call it a boiler explosion, and that's where this story is going.

Bennington's forward boiler room--number one, bedded boilers A and B, situated longitudinally and parallel to the keel; A being to port; B to starboard. Firing ends faced forward. Uptakes for A and B joined above the smoke boxes at the back end which faced aft. Forward of number one fire room was a coal bunker and forward of it was a powder magazine.

Boiler room number two was the next compartment aft. In it were boilers D and C; C being to port; D to starboard--both situated parallel to the keel. The firing ends of C and D faced aft with combined uptakes rising from forward facing smoke boxes. These united with those of A and B boilers above a separating bulkhead to exhaust up a single stack. Immediately aft of number two fire room was another bunker

and a bulkhead that separated it from the port and starboard engine rooms. Hand dogged watertight doors provided access to the spaces.

Even today boilers are in use. Now, as then, they have safety devices to keep things going without such things as BLEVES. The most prominent thing that most of us already know is the safety valve. In some old fire tube boilers, there were such things as fusible plugs that were supposed to melt if overheated and allow a small jet of steam to extinguish the fire if water got too low over the firebox crown sheet. Fire tube boilers were fitted with another device, the sentinel valve, which in essence was a smaller safety valve whose purpose was to blow off excess steam if boiler pressure began to approach that for which the main or "big" safety valve was calculated to "lift off," as the term goes. If the sentinel valve "popped off" as a warning, main safety valve relief could be avoided by draft control, water injection, rearranging fires over the grates, or using a manual "blow off" valve. By lifting off, pressure was relieved before boiler pressures exceed desired levels. Those who have ever cooked with a pressure cooker can tell how this is accomplished.

As might be expected, ship boiler safety valves were somewhat more sophisticated. They could be adjusted up or down depending on a variety of things concerning the function and operation of the boiler. However, reaching a point of main safety activation was considered poor operation. If it happened, it did so as a loud proclamation of wasted steam, wasted fuel, wasted water, and wasted effort—blown away in a roaring cloud of white vapor—an offensive display of unacceptable thermodynamic inefficiency. The only exception was an unexpected stop or slow bell to the engines. For such, the officer of the deck was accountable to the captain.

In its early days, *Bennington's* boilers were designed to carry a maximum safe working load of around 160 psi. That suggests that hydrostatic fail-test pressures were probably calculated at two hundred or two hundred fifty psi. The difference between the two left a margin of safety. Later, the spring loaded safeties were adjusted to activate at 145 psi. That pressure was judged to give another margin of about fifteen psi before maximum working load was reached. Sentinel valve activation pressure would therefore have been fixed to release in the range of 140 psi, maybe slightly more. That being the case, main boiler gauges would have been marked with a red zone beginning at 145 psi. Needles would have been "taken to the line," or "in the blood," when steaming at top speed.

Besides mechanical devices installed for safety, other means dictated the operation of boilers. Techniques of firing, draft control, water levels, maintenance, cleaning, inspections, repairs, periodic hydrostatic pressure tests, gauge calibration checks, fuel control, and feed water injection were just some examples of what it took to "keep steam up." Detailed inspection of exterior and interior components at every opportunity was a matter of routine. Above all, was vigilance and devout scrutiny to critical gauges and indicators.

Close by, guarding the crown sheet location was the water sight glass by which the depth of water in the boiler was determined. Another was the red zoned main pressure gauge and there were at least six of them--one for each boiler and one for each engine room. They, and water sight glasses, were objects of keen attention and continuous movement. The glasses had small valves that blew off pressurized

water and steam to double check levels indicated and assure visible water columns were not being affected by any stoppages that would cause a false reading. Backing it up was another number of "try cocks," small valves on the boiler front arranged vertically that indicated water and steam levels: — Top, steam; middle, steam and water; lower, water. If that order was not observed, there was trouble. Eyes seldom strayed from the sight glass and the try cocks were exercised frequently to keep the glass honest. In addition, gauges were tested, compared, and calibrated using dead weight testers to assure accuracy. Above all, in fire tube boilers water levels were religiously kept above the horizontal line imprinted on the boiler face that marked the location of the crown sheet.

Now, remember, we are going back to 1905 and we are talking about a marine type locomotive boiler known as a "gunboat boiler." It was a locomotive fire tube type because it was configured like a steam locomotive boiler; however, it was shorter and more rotund and would fit into a tighter space. The main differences, beside some shape modifications, were its size and bulk. Instead of one furnace and one combustion chamber, it had three furnaces and a common combustion chamber. It was made for a ship and because of that it was angled to satisfy water levels that fluctuate from side to side and end to end as a ship might roll and pitch. By this connotation a person might more fully appreciate why railroad grades are very gradual. When steam was king, besides helping locomotive traction, grade construction was vital in addressing water levels over crown sheets at satisfactory levels. By example, if a fireman noted a half full water glass on an upgrade, he could expect less on a down grade. If he did not compensate correctly, on the next level or down grade, the crown sheet would be exposed to danger. Two things could happen: one, the sheet could over heat and fail or two, when the grade leveled off or increased again, boiler water that had gravitated forward would rush back over the red hot steel and there would be flash steam and a sudden surge of steam pressure that would cause the sheet to fail. Gradation was part of the picture to help locomotives work safely.

For clarification, if we lived back in 1905 we would also know there were water tube boilers in which water, not fire, is carried through a system of tubes through furnaces and steam is made that way. Here, we are dealing with the fire tube boiler and will leave water tube boiler construction for another time. In the case of *Bennington*, the marine locomotive type fire tube boiler was the one of choice because it was compact and could be made to fit into a small ship. Its style and application were particularly suited to gunboats and it carried its namesake, "gunboat boiler." *Bennington* was a gunboat. It was a small ship and it carried four gunboat boilers.

In the world's navies of the late 1890s, steam propulsion had settled into its throne as the monarch of power. Steam called for coal and coal is dirty. It called for hand firing in a stoke hold. It called away all hands to coal ships when the bunkers were empty, an event that enveloped ships in layers of black dust that settled over all open spaces and infiltrated compartments and engine spaces. Coaling ship was always followed by another call for all hands: "Now clean ship," which meant as one backbreaking labor ended another began. Bunkers had to be full and that called for coaling stations in the world order which instigated imperialism in the world's oceans.

III. The Black Gang

Keeping boilers fed was hot, grimy, hard, and relentless labor. In the navy's ratings were coal passers and trimmers--the lowest of the low. Passers carried coal in wheelbarrows and buckets from bunkers to the firemen who shoveled it into the yawning mouth of blazing furnaces. For the firemen were left handed shovels and right handed shovels, numbered by size to accommodate the various sized lumps and chunks of bunker coal. In the stoke hole, they were called "banjoes." Twelve shovel loads was a "pitch." Each pitch weighed nearly 135 pounds.

Trimmers stoked the fires with slice bars, or "jumbos"-- essentially large pokers that reached to the end of the furnace. They kept fire on the grates broken up and made the glowing mass of white hot heat hotter. Trimmers and passers were sometime the same; either also maintained the "trim" of the coal load inside the bunkers. Another interchangeable job title of the stoke hole is that of "stoker," which was synonymous with trimmer.

Another tool was the "Devils Claw," a kind of rake used to level fires. Resembling a garden hoe was the "firing hoe," for pulling out coals and clinkers. To remove clinkers from the underside of grates was "the pricker bar." Sometimes lumps of coal were too big to be shoveled. They would be broken into manageable sizes by the application of the pricker bar, used like a club. Finally, there was the ash shovel. Used to shovel ash from the fire pit, it consisted of a coal shovel end with a long steel shaft that could reach to the end of the furnace pit and extract ash and other fallen debris.

Another trimmer job was getting rid of the ashes, clinkers slag, and unburned particles that were raked and pulled from beneath the grates—a load that was proportional to the amount of coal being burned. Sometimes fires had to be "hauled," which meant burning coals being pulled out of the furnace and extinguished with water, making huge steam clouds in the boiler rooms and a stench that has to be imagined throughout a ship.

Ashes were disposed via an ash ejector--something like a blow tube in which there was a chute and some valves and a sudden bust of steam which would propel ash and clinkers overboard. This was used at sea. In pilot waters, ash was lifted using block and tackle and made ready for lowering into an ash barge that came along side. Such ash was stowed temporarily in an "ash room" until the disposal barge made its visit. Everything was done by hand. It was hot, dirty, and hard, hard, work.

Beside passers, trimmers, and stokers, there were water tenders, next step up, who made sure water levels were kept to required levels. They were constantly watching sight glasses, and blowing try cocks to assure the glasses were not lying, all the while keeping eyes peeled on pressure gauges. They regulated the piston driven feed pumps to match water demands created by the engines and auxiliary machinery. Somewhere in the crew roster there were one or two Boiler Maker ratings. The Boiler Maker's responsibility was to make minor repairs to sight glasses, feed pumps, and fire tubes, particularly those that leaked. Overall supervision was relegated to a Chief or first class Water-tender (WT). It is from the Water-tender and Boilermaker that the rating of Boiler-man or BT evolved.

Bennington carried one hundred ninety- seven hands, officers and enlisted. Calculating passers, trimmers, firemen, water tenders, and watch supervisor for each boiler room, each boiler required up to six men to keep it going. That meant that, at one time, a total of up to twenty four crewmen worked in the two fire rooms. Counting off watch personnel, the boiler room manpower requirement was in the

range of forty eight people or about twenty five percent of the entire crew assigned to the firemen's' berthing and mess space, usually located above the stoke hole.

From the boiler rooms, steam was directed to the engine rooms, domain of the machinist mates who attended to the horizontal, reciprocating, triple expansion-- double action engine, and various auxiliaries. Under the machinist mates were oilers whose job was keep various lubricator reservoirs filled, check bearings for heat, and splash the right kind of oil on exposed moving parts. They lubricated the thrust bearings and followed the propeller shafts through alleys to the stern recesses where they checked shaft packing glands at the stern tubes. Behind them were one or two wipers. Their job was to keep excess oil off the engine, deck, ladders, and grate work. They worked under a Chief or first class who answered to the engine room officer of the watch. Each engine room, therefore, had at least three or four men present when underway. With two engines that meant a total of at least eight per watch, giving the engine department's berthing space a requirement for sixteen hammocks. When added to the stoke hole denizens, snipes of the black-gang represented approximately forty seven percent of the entire *Bennington* crew.

For both the boiler room passer and the engine room wiper was a path of advancement. It was a rocky road, often the subject of demotion probability which kept motivation high and discipline at a satisfactory level in either space. For the boiler room it was to water tender, then boiler maker; for the engine room it led from wiper, to oiler, and from there to machinist mate, third class.

Such was the makeup of the black gang of a US naval ship "back then." Anybody who might say the good old days of the old navy were wonderful has never shoveled coal in a stokehold; has never worked in the grime and breathed coal dust or oily steam; has never flinched from touching hot surfaces, in one hundred thirty degree heat. He has never depended on dim lamps or risked being blinded by blazing glare radiating from roaring furnaces or endured the noise of massive engines, escaping steam, clanging furnace doors, and grinding shovels on bare decks. He has never dodged to avoid being roasted by a "blowback" of furnace fire from an opening furnace door. Such persons would wonder why berthing and messing spaces had to be close to the heat of engine and boiler spaces and why his presence was often a point of distain with the rest of the ship's company. The fact that his typical features were occluded by coal grime, his footsteps often betraying coal dust tracking; his clothes, generally black with the by- products of ship propulsion, would be clues for ongoing conflict between deck and hull ratings. Looking at old photos depicting ship boiler rooms there are no smiles--ever.

About the only common thing the boiler room snipe of that day and time might have with the deck ratings of the day was probably the methods of trying to keep clean. There were no washrooms. There were no showers or baths for the enlisted ratings. For that matter, the officers usually shared a common bathtub. Instead each man was issued a bucket. It was his responsibility to use this bucket to bath himself and his clothes on his own time, usually with salt water down from over side. The issued lye soap cakes were harsh and primarily worked only with fresh water which came only with rain. There was no Old Spice and there was no Mennen Speed Stick. It may be imagined that the call, "All hands to air bedding," was taken very seriously in those days! Those times were hard.

IV. US Navy Patrol Gunboat Number 4, Gunboat of the 1900s

By now we have some idea of the black gang of the 1900s. Let us now draw upon *USS Bennington* (PG-4)--US Navy Patrol Gunboat Number 4.

Bennington was becoming an old ship-- a small, old ship. She was designated as a *Yorktown Class* of steel hulled, twin screw gunboat. Like a fading number of other ships of the times her builders had clung to Luddite tradition as she was stepped with three gaff-rigged schooner masts to carry a load of supplemental sails.

Her particulars were not really impressive considering the twitch drive of Theodore Roosevelt to modernize and make the United States a world class power with new capital battleships. Part of his twitching was a desire to show Japan, who had just smashed the Russian Navy at Tsushima, that this country was not to be trifled with. Her official number was Number Four--PG- 4. She slid down the ways on 3 June, 1890, at Chester, Pennsylvania. She was two hundred forty four feet from stem to stern, carried a beam of thirty six feet, cost \$490,000, and displaced 1700 tons. In her early years, two horizontal engines could reach 3,400 hp, pushed by steam from boilers with a designed rated working load of 160 pounds of steam per square inch. Her steam plant supplied the engines with sufficient expansive power to produce 16 knots and a leisurely eight knots for economical speed. It did that for sixteen years without a major overhaul. Her bunker capacity load amounted to 400 tons which gave her a range of 2,800 nautical miles. She was a gunboat and, remember, this was the era of gunboat diplomacy.

Bennington was like a small barracuda. What she was missing in size she made up for with a lot of teeth and speed. She bristled with six, six- inch breech loading guns, four breech loading four pounders, four, one pounders, and two Gatling guns. Cordite had not come into play yet so black powder was still the main propellant of the time, a fact that required powder magazines to be near boiler rooms--such was the fate of battleship, *USS Maine* in 1898.

Early years were spent showing the colors to various ports of the world. In 1892 *Bennington* steamed to Bahia, Brazil, and visited numerous Spanish and Italian ports. Other voyages took her to Spain. Once, she returned with a replica of Columbus's *Pinta* in tow for delivery to Cuba. Later she returned to Europe, cruised the Mediterranean and in February of 1894, she was ordered to the Mare Island Navy Yard. There were several runs to Hawaii where she helped block pro royalist resistance to Hawaiian Islands annexation to the US. Later assignments were a busy mixed bag of protecting American interests by shadowing Latin American unrest and steaming intermittently back and forth to the Hawaiian Islands to help the sugar industry overthrow the monarchy. That's where she was when the Spanish American War commenced.

Two months later she was steaming out of San Francisco for what was to be an extended deployment to the Philippines. After a stopover, again in Hawaii, she detoured long enough to claim Wake Island for the United States. Her Captain, Commander Taussig, then steamed off to Guam and bagged it with the other spoils of the Splendid Little War. From the Philippines she carried the colors in Hong Kong and other parts of China.

At the end of the War, Number Four went to the yards for extensive work, had her superstructure refitted and mainmast removed. She returned to service under the command of Commander Chauncey Thomas, USN. Her role in the post war years closely resembled that of the pre war years: steaming up and down coastlines of the eastern Pacific, back and forth to Hawaii, in and out of various west coast ports. Other commitments involved various revolts and revolutions along the Central and South American coastlines. Not the least of her actions was a role in the Philippines War--the so- called Filipino Insurrection.

By 1905, *Bennington* was sixteen years old and had been worked hard. Further, she was being outclassed by newer fleet additions as the era of the dreadnaught naval arms race approached.

With a big push for funds to back the planned Great White Fleet excursion, TR's dream of swinging a big stick was coming true. America had elbowed its way into international affairs and was emerging as a world power. True, also: gunboats were not a high priority item for budgetary allotments but, equally true, they retained an important role in meeting responsibilities wrought by the developing Panama Canal, unpleasantness in the Philippines, unrest in Hawaii, threats by foreign powers in such places as Samoa, and other aggressive notions of Germany, England, France, and Japan. Numerous revolts and revolutions posed threats to American Industrial interests in so called banana republics of Central and South America. America's fleet of gunboats had plenty to do. Yet, even then, it was the same old bean counting story: "Do more, with less." Theirs was not to reason why.

IV. Destiny

On the 7th of July, 1905, *Bennington* steamed from Hawaii to San Diego, arriving there on 19 July. Her operation plan called for bunkering and then continuing to Panama where she was to be stationed for several months, replacing *USS Wyoming*, Monitor Number 10. Guard ships were needed to protect the Pacific side of the new Republic of Panama--America's latest stepchild, and the canal project there. Her crew was geared for liberty action in "Dago," but on arrival, the ship received orders to go to the aid of *Wyoming* and tow it to San Diego. *Wyoming*, another materializing relic, equally subject to budgetary belt tightening was off Point Harford, California, on its way to San Francisco from Panama duty, when it lost a propeller. It had been underway from San Diego for coaling the day before *Bennington* arrived and was tracking northward when the prop dropped off. *Wyoming* experienced difficulty in sea keeping, took shelter at Point Harford, and requested assistance to get back to San Diego.

Sadly, instead of liberty call on the 20th of July, *Bennington*, at anchor in San Diego Bay, went to an all hands coaling ship evolution in preparation to rendezvous with the *Wyoming*. She bunkered 248 tons of "all hands" coal, an operation that carried on until around 0646 of the twenty first, followed by the inevitable, "All Hands Turn To For Cleaning Ship."

Steam was up in boiler C, keeping the necessary auxiliaries and pumps powered. On the quarterdeck, Midshipman Leo Sahm, USN, Officer of the Deck, concluding the 0400 to 0800 watch followed routine and wrote in the deck log: "Overcast, cloudy and cool. Light airs ESE to WSW. Barometer steady. Started fires in boiler D at 4.00." His relief, Ensign Newman K. Perry, USN, assumed duty as acting Officer of the Deck for the 0800 to 1200 morning watch as final preparations for getting underway were completed. No doubt he was busy with details while also keeping a sharp eye for the captain's gig, due to return at any time. Time was approaching 1030, past time for the ship to weigh anchor.

Bennington's anchors rested in the mud of San Diego Bay, in the channel stream off what was then the end of H Street, near the Speckles Sugar Company wharf. In *Whetstone* days, that would have been in the vicinity of the anchorage basin offshore between Broadway and Market Streets. There were no mooring buoys then. To the west was Coronado Island, lying rather flat, if not barren, judging by photos of the period. Its northern end had yet to be designated as Aviation Field. Just visible, beyond what appears as rather thinly spaced houses and streets, is the seventeen year old Hotel Del Coronado, recently renovated and under new ownership, with fresh paint drying in Californian sunshine. If told that one day the northern end of Coronado would be called North Island Naval Air Station, people of the region would have been dumfounded.

Things were quiet. There was really nothing to attract any attention. Ships at anchor were humdrum. As one might surmise at that hour of the morning there was nothing to interfere with the daily routines ashore and afloat. As a major coaling station, San Diego was a navy town, small, growing, but an important navy coaling station and port for the powerful sugar industry. Much of the surrounding area was owned and controlled by one of the era's great captains of Industry, the sugar baron John Dredrich Spreckles, new owner of the Del Coronado. Ashore, late risers sipped morning coffee and mused over the morning paper, The San Diego Union, another Spreckles enterprise. There was a short article that stated the *Bennington* was in port but would be getting underway for an errand that same day.

The ship was falling behind schedule. The captain, Commander Lucien B. Young, USN, was ashore, reportedly on business to "settle bills" and "head off" stores that had been ordered for another trip. With him was the ship surgeon, Allen P. Peck. Later, conjecture would suggest Captain Young was visiting a saloon or two on Fifth Street where there was a line of seven saloons known as "lawyers' row." However, it should be noted that, despite such rumor, Commander Young had made a creditable career in his service. He had served with distinction in the Spanish American War, having been awarded several medals for valor and was recorded as the most decorated officer in the fleet. Besides, what was unusual about a sailor stopping by a bar to escape the summer heat between appointments?

Below decks, passers, firemen, trimmers, and water tenders were at work, "stoking up." Fires were being fed and steam was up on two boilers. On board, the harbor silence competed with the clanging of furnace doors, grating shovels scraping scoops of coal from decks, and crashes of wheel borrows as fresh loads of bunker coal were dumped at the feet of stokehold automatons. Feed pumps completed strokes that shook the deck as water was forced inward against raising steam pressure. In between were crocodile hisses of steam escaping from the occasional loose packing gland. Hot air from the engine room skylights and hatches carried a moist, aroma of hot oil--an effusive, dominating odor, which was to engine rooms as the odor of medicine would be to older hospital hallways. A vigorous column of black smoke rising silently from the stack told the world that fresh coal was being applied to growing boiler room fires. Joining from the ship's whistle and atmospheric exhaust trunk, two ragged, evaporating wisps of steam, like foggy streamers, cotton white, drifted away lazily and vanished into the morning breeze. Overseeing the engine and boiler rooms was Machinist Mate Chief, E. B. Ferguson, standing watch in the starboard engine room.

Boilers C and D were on line. A and B were ordered to be filled with fresh water and fires started in the lower furnace of each around 0800. By 1000 the engines were being turned over and ready to answer all bells. Hands were at station for getting underway. Around 1020 Boiler A was brought on line. There was trouble with Boiler B. **End Part I, Day of Valor**

Day of Valor: Part II.

I. Ambusstio Ex Calor

Boilers A and B had been lit off at 0800. By 0915 firing commenced in the wing furnaces of each--the upper ones, and steam began to build--at least it was supposed to. Boiler A seemed to be building ok. Everything appeared to be normal as pressure built such that it was brought on line about an hour and fifteen minutes after all furnaces were drafting. Boiler B, on the other hand, at 0900 registered only five pounds of pressure. This, after being heated slowly with only the lower furnace supplying heat. Normally, pressure would be expected to gradually build in an accelerating rate with the full ignition of

all furnaces. In truth, its performance should have been duplicating its twin on the port side of boiler room number one.

By 0920 steam pressure indicated on Boiler B registered a static five pounds. At this time oiler Frank De Courtani, working as a water tender sent fireman second class, D. H. Holland, to close an air vent on the top of the boiler, a task which required some ladder work. Holland closed the valve--better to say, Holland closed a valve and returned to his firing position. Neither man seemed to be alarmed when the pressure dropped immediately to zero on the main stream gauge of boiler B. In fact, no one seemed to see the drop or appear to be alert to the fact that the boiler was not registering any pressure at all. In fact, firing continued, perhaps even accelerated by the application of additional draft from the blowers. They continued to work the fires and firing heavily. By this time Boiler A was showing one hundred and thirty five pounds of steam pressure. Boiler B was showing no steam pressure. Firing continued.

At 0945, engines were turned over. Steam from A and B was not expected to be sufficient until early afternoon and the getting underway procedure called for engines to be powered from steam generated by C and D. However, Boiler A indicated sufficient pressure to be brought on line by 1020, a good indication that its steam had been encouraged by the use of extra forced draft. The same was expected from boiler B--the same one that continued to register zero pressure. To this day no one can explain why Boiler B was stoked and fired continuously for a number of hours with no pressure indicated on its main steam line.

At about the same time as Boiler A was connected with C and D, De Courtani noticed a small leak in the lower furnace of Boiler B--the number two furnace its presence no doubt noted by either steam or water being noisily injected into the furnaces. He sent a coal passer, A. J. Worthen, to seek out and inform the duty boiler maker and inform him of the leak. There did not seem to be a concern about a zero registering main stream gauge. The boiler maker was a man named Dustin who was found on the berthing deck. Worthen was leaving Dustin and was returning to the boiler room when hell broke loose within the ship.

At 1038, the serene quietness of San Diego Bay was suddenly broken by two deep throated explosions that echoed between Coronado and the harbor front--first one and within seconds, another. Startled people looking up were aghast at the cloud that had enveloped *USS Bennington*. Besides steam, there was soot, and ashes and coal and people falling through the air around the ship. Some had ascended to a height of one hundred feet. Among the crew blown overboard was a man who, seven years before, had survived another navy ship explosion. He was aboard *USS Maine* when it blew to immortality in Havana Harbor, 15 February, 1898. His name was John Henry Turpin. In years to come he would be known as the man who helped develop the Navy's underwater cutting torch and as the Navy's first Black Chief Petty Officer.

As the breeze cleared the smoke and haze sailors were seen in the water and others were jumping from the ship to escape a devastating envelopment of saturated steam that had permeated in milliseconds all decks and compartments of the stricken vessel, sending a deadly hot, suffocating vapor throughout the ship in a massive penetration of scalding heat. Its speed and effect were as quick as an electrical arc coursing like a pressurized cloud laced with razor blades.

Steam is hot. It is formed when vapor pressure meets atmospheric pressure. Its recorded temperature is 212 degrees Fahrenheit. When steam is pressurized its temperature is proportional to its confined pressure. At 135 psi, the temperature of steam is 358 degrees; at 160 psi it is 370 degrees of h-o-t.

When *Bennington's* boilers blew, boiler rooms; engine rooms; berthing spaces; wheelhouse; gun decks; galley; passageways; work spaces, open and enclosed deck spaces—particularly over the boiler rooms fore and aft, were instantly transformed into a scalding cauldron of death with an epicenter amidships that extended in a decreasing intensity to bow and stern.

Boiler B had exploded, and when it did, it was propelled backward into boiler D with a force later estimated as 500,000 tons. In turn, boiler D exploded and blew into the starboard engine room with equal force. The quarterdeck was lifted up and a hole was opened in the starboard side of the ship. Through-hull piping was ripped apart, flanges were ajar and distorted; steam lines were ruptured; water entered, and the ship commenced a list to starboard. Worse, the remaining two boilers exhausted one hundred thirty five pounds of live steam that continued to blow and rush into compartments, berthing spaces, and all areas of the ship. They continued to produce steam which sought any open space exit and prolonged the agonizing wrath of devastation which commanded the ship. Like a blowtorch thrust upon an ant hill, men were killed instantly, some by the force of explosion, most by the terrible burning heat of steam; others lay burned with traumatic injuries from blunt force; others were trapped with massive thermal burns when compartments suddenly became cooking zones. There was chaos. Those that could jumped overboard to escape and cool clothing that clung to flesh, matted with hot water and steam. Some had their clothing blasted off by the force; others were unable to move and tore at the scalding cloth that clung as though glued.

Newspapers described *Bennington* as a "charnel house." Portions of the upper deck were carried away. Mutilated bodies were visible, mixed with blood, ashes, distributed grotesquely all over the ship.

Near the explosion was the Spreckles owned Coronado ferryboat, *Ramona*, which turned immediately and hove to beside the disaster. With it was the government launch, *General De Russe*, and a flotilla of other launches and water craft which assembled around the wrecked ship, picking up swimmers and injured sailors who struggled in the water. In short order they began the task of taking injured aboard. A horde of horse drawn ambulances assembled at the end of H Street and the waterfront of San Diego quickly became an emergency arena. Wagons, carriages, buggies, automobiles, and ambulances began a shuttle to Dan Diego's hospitals which were instantly overwhelmed.

A. F. Yates, Lieutenant, Junior Grade, USN, Executive Officer, *USS Bennington*, was in his cabin located aft when the explosion occurred. Leaving the stateroom, he was nearly blinded by steam. Working his way forward he assessed two immediate needs. One of which was closure of watertight doors; the second: flooding of magazines. A mix of hot coals, ashes, clinkers, soot, boiling water, and steam had been blasted everywhere. Dead and injured sailors were lying about, some beyond help--flesh cooked away. There was screaming and pitiful calls for help. He did what he could to address immediate priorities, joined shortly by Captain Young who arrived about thirty minutes after the explosion. When able, he made a log entry in the quarterdeck log: "8 A.M. to 1038 A.M. Ensign N. K. Perry, USN, had this watch, mortally wounded at 1038 AM." He logged the time of the explosion as 1038.

His continued log approximated eighty percent of the crew had been forced from the ship just to breath, some frantically tearing at their saturated clothes. Those that could reboarded and set about rescue and recovery efforts, individually, at first; then, in organized groups. Until fires were finally hauled in the remainder boilers A and C, steam remained piped to the interior of the ship at ten pounds psi. That steam would have been 239 degrees Fahrenheit. Evidence presented later indicted that a red hot rivet had indeed penetrated the bulkhead of the forward magazine and rubber door gaskets leading there had been hot enough to bubble.

Bennington continued to settle. Hand pumps were engaged but the list and settling continued. Rescue and salvage efforts went on. Still the ship settled. Crew members were unaccounted for and assumed to be trapped below decks. At 1300 the harbor tug, *Santa Fe*, took *Bennington* in tow and beached her in the mud near the end of the Speckles dock at the end of H Street, near the ferry landing. A fire engine was barged out and pumping began. A leak in after steering was staunched but flooding refused to drop in the engine rooms and boiler rooms. Rescue work continued throughout the day. Spaces below decks remained too hot to enter and had to wait. Hours would pass before those spaces could be entered and extrication completed. Around 1600, a muster was called and the grim reality of what had happened became clearer. Salvage work continued. Ashore, burns and injuries were described as hideous. Rescue workers began to work in shifts. A morgue was set up ashore. Some bodies could not be identified. Coroners' death certificates gave scant details of the dead sailors' demise, concluding under the heading of "Cause of Death: " "amustio ex calor"--burned or scalded from heat.

In total, sixty five sailors died in the explosion or within hours later. Fourteen more were seriously wounded and twenty six others injured in lesser degrees. Over half the crew was either dead or injured. As usual there was the inevitable: Why? How? Who was to blame? The phases of accidents began to unroll. There was first shock; then, grief; and then, there was anger and blaming and after that, a process of fading memory. San Diego, the Navy, and the nation were in shock. *Bennington* had captured headlines all over the nation. A state of national mourning was declared.

II. Concatenation

Safety experts proclaim that all accidents result from knowledgeable conditions; therefore, they are predictable, and, as such, they are preventable. Scientists who study accidents are quick to say that man-made disasters usually start from a number of accumulative seemingly insignificant events or factors, beginning on a small scale, that continue to mutate and subdivide among themselves. Like excited electrons given free reign, they build in momentum and unify and suddenly there is a systematic failure of key components exemplified as a cataclysm. Investigators would find that, for *Bennington*, it would be a matter of connecting a trail of dots that led prophetically to the ticking time bomb of Boiler B.

The first topic of business that swept through San Diego in the days that followed the explosion came in the order of a mass funeral. At 1500, 23 July, 1903, flat decked wagons began a long caravan to Point Loma military cemetery, the site of old Fort Rosecrans. There were forty seven crude coffins stacked in the wagons which were followed by several hundred other vehicles and a crowd of mourners described by the San Diego Sun as being in "the thousands." In a simple ceremony two rows of wooden boxes were placed toe to toe in a deep trench, some words were spoken, and the trench was filled.

Eleven crewmember bodies, including that of Ensign Newman K. Perry, were claimed by relatives who arranged to have them shipped to homes across the nation. A short time after the funeral, several graves were opened and remains were removed to be reinterred in home towns. But before that, there was a pause between acts, and the next step of the drama began to unfold.

By the time the last burials had taken place, the Navy was ready with a three man Court of Inquiry to satisfy the nemeses of "why" and "how" and "who." Phases two and three, the anger-blame stages, began on July 28 in San Diego. After only three days, the result was in the hands of the hands of Charles

Bonaparte, Secretary of the Navy. An article in a railroad publication, *The Locomotive*, January 1906, carried specific findings of the Court of Inquiry and subsequent court martial proceedings that ensued.

The dots first connected were with the order for fireman Holland to close the boiler B air vent. While Boiler A showed one hundred and thirty five pounds and in the red, its twin, boiler B, registered zero. Yet firing continued for almost two hours. Fireman Holland had closed the feed line to the main pressure gauge. It was dead. The boiler developed excessive pressure and blew up. Simple. The report did not reveal that if the air vent was left open it would have been blowing off steam. It did not reveal why firing continued though the main steam pressure gauge registered no pressure after heavy firing that went on over an hour after the wing furnaces were lit off. It did not reveal at what pressure the boiler was under when failure occurred. It noted that a small leak had developed in furnace number one and that the boiler maker was being notified. There was no mention of hauling fires or other action to address the leak, though it must be said that a small leak in a boiler in those days did not necessarily mean an absolute emergency. It did not state why an oiler was supervising the fire room of boiler B.

The Inquiry Board established the probable cause of the explosion as the failure of the corrugated flue of Boiler B which suddenly and catastrophically collapsed along its entire length. This was the reactive motion that propelled the boiler aft through a bulkhead into D causing it to rocket Boiler D which tore through another bulkhead into an arresting collision with the starboard engine. Having connected the first dots, the Board continued its probe.

Questions concerned the operation or non operation of the safety valve or the sentinel valve. It noted the safety valve had been adjusted to relieve at 145 psi and that during the voyage back from Hawaii orders had been given to keep pressure no higher than 135 psi. Probing inquiries indicated that the safeties had not been maintained in a timely manner and that no written records were available for documentation of any overhaul to the safety valves since July, 1904. Some of the findings were argumentative, perhaps even capricious, perhaps led on by sway of media opinion.

The boiler had exploded and caused a chain reaction event due to (1) excessive pressure in Boiler B brought on by the closure of the valve feeding the steam gauge; (2) unusual and heavy firing to get steam up quickly; (3) the absence of any activation by either the safety valve or the sentinel valve (4) excessive pressure on the flue of furnace number two--the lowest or middle furnace.

The who question was assigned to three persons: Fireman Holland for closing the pressure gauge valve feed instead of the air cock; Acting water tender, oiler, De Courtani, for pushing the fires continually without benefit of a pressure gauge and not taking appropriate action on the onset of a leak, such as drawing the fires or blowing down the boiler pressure by manually opening valves for that purpose. Machinist Mate Chief E. B. Ferguson was accountable for failing to supervise the actions in the Boiler Room. All three men were dead.

One man was recommended for court-martial. That was the twenty five year old engineering officer, Ensign Charles T. Wade, USN. Wade was, after all, the officer responsible for the ship's propulsion machinery. He was accused of not maintaining the safeties on the boilers and assuring that they were overhauled in a timely matter. He had accepted only oral statements that they had been overhauled in March of 1905--when he assumed the duties of engineering officer, and that was not good enough. He failed to keep sentential valves in good working order; finally, he was accused of not having all the boilers tested in accordance with Navy Regulations--pry bars had been used to test safeties--a common practice, but out of the realm and protection of regs. In other words, he had been negligent. In the

course of the hearing there was some innuendo that Wade was unfamiliar with the workings of the propulsion plant. Newspapers were been unkind to him. Editors had railed, demanding blood, and reporting incompetence, stupidity, dereliction--allowing drunken sailors on duty; "did not know boiler facilities from Navy beans." In the jury box of public opinion he was as good as dead.

There was no mention of Captain Young in the Court of Inquiry findings as being negligent or at fault. In fact, the Board praised the crew and credited him on how it reacted to the explosion. It made special note that the ship was "in an excellent state of discipline, and in a good and efficient condition, with exception of her boiler, which were in fair condition and efficient considering their age (14 years) and the use to which they had been subjected."

Secretary Bonaparte concluded his review of the Court of Inquiry findings by 28 August 1905. He made several exceptions. He did not believe that the ship was in an "excellent state of discipline" as stated by the investigating authority. Instead he noted that there was sufficient evidence to suggest that the engineering force had fallen into "habits of laxity and inattention to the discharge of their duties." He also submitted that the crew had been undertrained, perhaps even improperly trained. He added fuel to the fire by declaring that at least one boiler's safety valves was not in correct working condition and had been in that condition for some time. He disagreed with the idea that the boilers were in fair condition and efficient at the time of the explosion. As he said, "fair and efficient condition" was "inappropriate to the facts disclosed by the proof." Because of the implied "disclosed by the proof" of inefficiency he added Captain Young's name to the order for court-martial. Round two was about to begin. The secretary wanted to "set an example." In the file was an abundance of information with regards to accusations, procedures, training, and protocol that was somewhat glossed over but became very interesting later.

III. Court Martial----The Mouse that Roared

A Naval Court Martial commenced against Commander Young in the Mare Island Navy Yard, 15 September 1905. After preliminaries the matter got down to business by the 18th of that month. Young entered a plea of not guilty of negligence. Beside him was a personal friend, Judge George D. Gear from Honolulu. Three dozen witnesses were called. One, Ensign Wade, became ill and the trial was delayed until the 9th of October, the prosecution closing its case on the 18th. Gear then stepped in and carried the defense. In short order it became apparent that the Judge was an exceptional expert in connecting dots. He tore through the prosecution with a vigor like that ascribed to Sherman marching through Georgia and continued until October 25th. The proceedings were closed, recommendations made, and forwarded to Secretary Bonaparte. He held them until January of 1906. The result was a mere letter of censure which recognized Young's "brilliant services in the past," his "merited reputation for seamanship and gallantry," and his guilt of having not signed the smooth steam log to which the Secretary pointed out was a violation of Navy Regulations. The Secretary carried out the recommendation of the Court Martial and Commander Young received a reprimand with a copy to be placed in his file.

Ensign Wade's trial was carried out by the same Court. He was quickly acquitted. What happened?

There were several things by which the drama of the *Bennington* disaster ended with somewhat of a fizz. First was the chronology of events of the time. Theodore Roosevelt was storming to send the US Navy fleet around to the world in a bold move to demonstrate that the USA was a leading agent in the world order. It was to be the greatest propaganda move of all time.

The story of the great White Fleet venture is one deserving another spot on history's stage of naval achievement. Suffice it to be said that funds were needed and controversy with anything that indicated laxity, slackness, or the call for additional operational expenses of the fleet was not a welcome subject, particularly for Congressmen or the Senators who were less than excited about the enormous expenses of sending sixteen battleships and an accompanying armada of cruisers and support ships around the world.

It is entirely possible that the *Bennington* disaster was viewed as a threat to TR's ambitions. Better it be handled quickly and allowed to more or less fade into the woodwork. Such supposition may or may not have been present in the expediency of the proceedings. More than likely, Judge Gear's defense was so aggressive and thorough that the prosecution was caught off balance and those of the navy brass in the chain of command found themselves busy looking down, urgently checking their shoe shines.

The prosecution's case braced itself on alleged findings that the safety valves had not been overhauled--an omission that ultimately caused them fail; that the boilers had not been properly maintained; that excessive pressure had been the bottom line of cause because the main steam gauge had been disabled and nobody knew what pressure the boiler was under when it burst, except that it was "excessive," and that non regulation procedures had resulted in non functioning equipment--such as using a pry bar to set safeties. Such were the charges, each one stamped with the term "negligence" on the names of Young and Wade.

For nine days the prosecution grilled witnesses. Then the defense stepped in with over twenty four witnesses, several who would be categorized as "expert." The recorded facts presented by the defense were convincing and embarrassing for the navy. Opinions and angry moods to make heads roll swayed and began to weaken.

There was a proven fact that the pressure gauge had been found with its main feed closed off. Therefore nobody knew to what pressure the boiler had been brought. Some said 150 psi while others said as high as 200 psi. However, experts provided convincing testimony that other boilers had exploded with as little as 50 psi. They reasoned successfully that the safeties in question had not performed because the reset pressure engagement established on or just before the return voyage from Hawaii had not been achieved during the course of firing.

Judge Gray dug under the prosecution's nails with the revelation that a lack of long term maintenance on *Bennington's* boilers was the culprit. The boilers had exceeded their expected life of nine years without complete renewal. He quickly established the age of *Bennington's* steam plant at 15 years. Backing this discovery, the knife was driven deeper into the prosecution's charges by proving that Wade had recommended major work on the boilers and machinery at Mare Island in April and May of 1905. The request had been endorsed and approved by Commander Young and forwarded to the Navy Department. It was rejected. Instead, *Bennington* was ordered to Hawaii in May where it found no mission and was ordered to return to the west coast. It was during that voyage that the boiler pressures were ordered reduced to 135 lbs and safeties set accordingly, action taken, no doubt, in response to leaking tubes and other material observations which left concerns about operational safety. This evidence quickly undermined accusations that Ensign Wade and Commander Young were negligent in their duties. The attack went further.

Boiler B wreckage revealed that a longitudinal brace in the lower furnace had been torn away by the explosion. Punched rivet holes, worn away after years of wear and tear without routine maintenance,

had given away causing the brace to be dislocated, allowing the crown sheet to be stressed. Experts pointed out that three other Navy ships, those with drilled and countersunk rivet fabrication, had suffered collapsed crown sheet without an explosion. With a request for major boiler work nullified and subsequent reduction in operating pressure clearly logged, the prosecution's stance became defensive as other testimony countered the charges of negligence by the captain and engineering officer.

Much time was expended on the issue of safety valves and sentinel valves and their operation. After establishing that major boiler overhaul had been requested and refused and that Wade had directed a lower operating pressure, attention was directed to the design and installation of the main safeties. A design feature of the *Yorktown Class* gunboat put space at a high premium. Accordingly, safety valves were installed horizontally instead of vertically. Condensed steam around the internal spring mechanism accumulated and created quantities of rust debris and sediment potentially affecting operation.

Evidence was presented to the Court that Wade had seen that Boiler B's safety had been overhauled as he and others had claimed. This was further substantiated when the valve was examined and found to be essentially clear of rust and sediment, proving that they were in functioning condition when the explosion occurred. Other experts came to the court and presented findings of fact that these safeties would function even if they were filled with rust, sand, and springs covered with cement. When the defense finished on the coverage of the *Bennington* safety valves the consensus of everyone present was that they were the most reliable equipment in the gunboat boiler rooms. The prosecution found itself in dignified retreat, a motion which soon became a rout when additional witnesses were examined and the subject of the sentinel valves was dissected.

Engineering officers and sailors from the fleet were called in, some of which had served on board *Bennington* in prior years dating back to the late 1890s. Their testimony was like icing on a cake.

In all *Yorktown Class* gunboats the sentinel valves had proven themselves as a nuisance. They had been that way from day one. A result of poor design and poor installation, they opened continually and falsely with steam nowhere near the supposedly correct settings. Not only were they a nuisance, they were dangerous. Complaints had been filed with the Navy department since 1895 and copies of these records were presented from *USS Yorktown*, *USS Concord*, and *USS Bennington* of this condition. The culprits were rendered inoperative, an action deemed a better alternative for the crew to being injured or killed by unexpected releases of steam. The "fix" became permanent and was known and condoned in the fleet as part of normal operations. Nothing was done to correct the problem, and so there were no sentinel valve warnings where there should have been. The prosecution had rested a large portion of its case on the sentinel valves and the fact that everyone who testified admitted they knew nothing about them or had never used them, or seen them activate. When the defense carried this subject further with dozens of witnesses and the state of affairs with gunboat sentinel valves was exposed, the prosecution team began to bail. Its ship was sinking. But there was another hit.

With the defense's feet now heavily upon the other side's head, there was one more heavy motion to push it below the surface. It was a final shot, a clincher, fired in the form of a slow pitch that transformed into a mean, fast, curve ball. Expert witnesses were called who gave extensive testimony about the effects of oil contamination in boiler feed water. Questions were asked regarding reasons why *Bennington's* lower crown sheet might have failed when water indicators exhibited safe levels above the crowns of the upper flues. Evidence was submitted that supported the idea that a slight sheen of oil or grease on the crown sheets of boilers could separate the metal from surrounding water

sufficiently to cause overheating of the metal. A sheen need not have been any thicker than one hundredth of an inch. Roughly speaking, that is about the thickness of business card.

This information was accepted by the court and there was general agreement that means of separating oil and grease from condensate originating from condensers was standard equipment on ocean going steam vessels. It was called an extractor and it filtered feed water before it was returned to the boilers. Then, the trap door under the prosecution was dropped. Records were produced dating back to the ship's launching. From launching date to the day of the explosion extractors had never been installed on *Bennington*. The Navy had never addressed the problem since it was first recognized, leaving an open door to a room full of questions as blame shifted to Uncle Sam and the US Navy.

By now, arm chair pundits were drawing their own conclusions. Thoughts flowed to pry bars being used to lift safeties--expedience, or, necessitated, perhaps, because of inaccessibility due to awkward positioning of the valves? Adding more sour punch to the subject was the questioning doubt that cloaked equipment--was this another common practice directed to overcome a design weakness. Punched rivet holes? Sentinel valves that were useless because of a design fault? No oil extractors? Ever! How about all those reports of reduced boiler pressure, of having to steam at eight knots instead of the rated twelve? The boilers needed work. The reports said so. The continued firing of the boilers with the pressure gauge still did not make sense. With the all other things considered would it have been possible that the steam gauge did not work routinely and the crew had found some "fix" to substitute for its absence? It seemed plausible, but there was no testimony that supported the idea. Certainly, the firing crew must have had some grasp of the situation. The closed steam feed to B's gauge remained starkly present with no other explanation. It still does. Beginning with the ship's birth, all the points in her boiler history connected and the normal flow of accident stages marched in a trail of dots to the inevitable result. There was knowledge of deficiencies, there was a track record that made the explosion predictable, and there was an abundance of evidence to justify the conclusion: It was preventable.

Poorly designed equipment function wrought by cutting corners in budgetary application, installation defects; lack of equipment, deficiencies in a required maintenance and prudent inspections; overhaul of boilers--a lack thereof; eyewitness accounts, testimony of experts, and a sufficiency of documentation--particularly the most recent one by Ensign Wade, left the Court Martial Panel with little choice but to acquit. The glove of guilt did not fit the Ensign or the Commanding Officer. Thus, the blast that had been anticipated by the press and the American public did not come. Charges of negligence had been disproven. There was nothing left but dead men and a flustered government clinging to human error while trying to distance itself from hard truth. There was no bang and there was no whimper. The proceedings were summarized and forwarded to a red faced Secretary of the Navy, stuck with a foot in his mouth, holding an empty bag. The matter was closed.

But that is not all.

IV. Wreaths

Before the court-martial drama unrolled other deeds were afoot. There was a near scandal regarding the transportation of the dead to home towns. At first the Navy said there were no funds. Then, as a result of the *USS Maine* explosion, it was found that Congress had authorized the transportation of remains of *Maine's* dead to various homes throughout the nation and authorization remained effective for deceased sailors. Nine *Bennington* sailors' remains were transported to relatives. In due course, two

other bodies were exhumed from the *Bennington* site and transported to final resting places at government expense. Thirty six graves were left intact and they remain there today.

Much attention was paid to the funeral of Ensign Newman Kersaw Perry, the one officer killed in the explosion. On July 28, the excited press followed a large ceremony in San Diego at St. Paul's Episcopal Church, attended by hundreds of San Diego citizens. Pressmen continued to report detailed descriptions of his naval burial in the family plot of St. Paul's Episcopal Church, Stockbridge, Massachusetts, August 4, 1905. A single stone marks the grave and there is an inscription: "Newman Kershaw Perry, Ensign United States Navy November 28, 1881-July 21, 1905—And We Retain the Memory of a Man Unspoiled Sweet, Generous, and Humane." With the stone is a weathered bronze Veteran Grave marker with an American Flag. His wife of two years, twenty-one year old Vipont Perry, devoted the rest of her life to helping sick and injured sailors and soldiers as a nurse. She married twice more and lived until 1965.

Five months after the disaster, Secretary of the Navy Bonaparte issued General Order 13, as authorized by Congress, and awarded the Medal of Honor to eleven *Bennington* shipmates. Specifics of each case of valor have dissolved into wording which acknowledged "acts of heroism" during the course of events that took place on that fateful day.

Some specifics remain, such those of twenty two year old BM William S. Cronan, who was blown over board but climbed back up the anchor chair ship and began to pull men from the steaming compartments. Another, GMC John J. Causey, had dashed below into the cauldron the ship had become and opened valves to flood the magazines. Another, SN Rade Grbitch, ran below into the forward compartment to help blinded and burned men out. CM1 Frank E. Hill retrieved injured men from steam charged passageways and the machine shop. Hospital Stewart William S. Shackette ran to the crew berthing deck to help the wounded. In the process he received a blow to the head and lay for a short while on a deck that was awash with scalding water. Coming to, with near fatal burns, he continued his work on board. When brought ashore for treatment he refused help until all others had been attended by physicians. The roll of honor includes the names of MM1 Oscar Nelson; QM3 Raymond Davis; CM2 George Rock; SN Otto Schmidt, SN Edward W. Boers, and WT Emil Frederickson--all bonded to a brotherhood of bravery and extraordinary courage.

There were other acts of heroism that did not make the cuts in determining who received the nation's highest military peacetime award. Such is the way of affairs in such matters--some do, and some do not. But to the credit of honorable mentions was quick thinking H. B. Nidever who had leaped into an engine room storage locker to escape steam. At intervals he opened the door of his haven long enough to drag three other men inside. When the steam had dissipated, he gained the upper decks and continued to carry injured men to safety. When the Spreckels tug, *Santa Fe*, came along side to work the sinking ship shoreward to ground it, Chief Boatswain's Mate Lynn J. Gauthier, dashed below and slipped the anchor gear, thus saving the ship from sinking. In the process his lungs were fatally burned. Lt. Yates, the command duty officer, was credited for rallying the crew, bringing order to disorder, and taking command. His actions were pressed on to Roosevelt but there was no Medal of Honor. Instead he was assured rapid promotion. Doubtless there were others who, it would seem, were equally deserving of the title, "hero." Even Ensign Perry, brave and suffering to the last, horribly injured, and refusing treatment until others had been cared for was not on the list. Officers were not eligible for the Naval Medal of Honor until 1915. By such, it would seem that for all aboard, if they were there, they were.

Commemorations continued. One is found at the Mare Island Naval Shipyard's St. Peter's Chapel, the oldest naval chapel in the nation. On the wall is a large bronze memorial plaque to the *Bennington* dead. It has been there since June 2, 1906. On it are the names of all the sailors killed in the explosion. Its sentiment is touching: "In Memory of Those Sixty-Five Who Were Killed on July 21st, 1905, By An Explosion On Board The U.S. Gun Boat *Bennington* In The Harbor of San Diego, In The Line of Duty, And Under The Flag They Served So Well, They Died As Heroes Die. The Mourning Nation Honors Their Names Forever, And Death's Angel Enfolds Them With Her Wings."

The predominant monument is at Rosecrans National Cemetery. Up to 1934 it was known as The *Bennington* Burial Ground on the site of old Fort Rosecrans. That year it became a National Cemetery under the National Parks Department. It is now maintained by Veterans Administration National Cemetery System. Over 100,000 service members rest there. The possessing obelisk tribute that commands the site perpetuates the name: *Bennington*. On the front side is the chiseled inscription: "To the *Bennington* Dead, July 21, 1905." On the obverse is another that explains how the monument got there: "Erected by the officers and men of the Pacific Squadron to the Memory of Those Who Lost Their Lives in the Performance of Duty."

In the months that followed the dreadful event, the officers and men of the Pacific Squadron chipped in and accrued funds for the materials and erection of the monument. San Diego printers kept memories fresh with penny post cards which continued to highlight pictures of the ship and scenes that detailed the wreckage. The origins of the drive and its ultimate conclusion are left to the imagination, but it speaks loudly for the sailors of the Pacific Squadron. It was dedicated January 7th, 1908. Bells tolled, bands played, thousands came, words were said, and Taps again echoed off the hills of Point Loma. The crowd left, leaving half-mast flags snapping in the breeze, the cry of sea gulls and waves washing against the shore below. The rest was silence.

USS Bennington was towed to Mare Island. When repairs were deemed too expensive and with the ship's age in account, it was decommissioned on October 31, 1905. For five years she was left to tug at her anchors, stricken from the Navy's Registry of Ships. On September 10, 1910, she was auctioned off to Matson Navigation Company which stripped and gutted her leaving an empty hulk. During June of 1912 she was towed to Hawaii and began the ignoble service of being a water and molasses barge, plying between Honolulu and Pearl Harbor. She was sold again in 1924, but her age and condition had caught up with her. She was scuttled off Diamond Head December 13, 1926, and forgotten.

There are two more twists to the *Bennington* saga. One is the launching of DD 883, *Newman K. Perry*, in 1945. It was christened by Perry's sister. The ship was launched just a few months before *Whetstone* and served in Vietnam waters during periods that *Whetstone* was deployed there. One of its primary tasks was to provide inshore fire support. *USS Newman K. Perry* maintained an honorable role in the fleet until her decommissioning in 1981.

Still later another tribute to *Bennington* was attached to the launching of another ship with its namesake. *USS Bennington (CV20)*, commissioned in 1944, maintained a career of distinction in WW II, including major fleet actions against Japan. She continued in service during the Korean War and was one of the first carriers to convert for jet planes. In the Vietnam War, she earned five battle stars. One of her last duties was to be the recovery vessel for Apollo 4. After being decommissioned in 1970, CV20 was sold for scrap in 1994. Ironically, in 1953 a slipped water tube in Boiler Room one caused a steam explosion that killed eleven men. A year later, on 26 May, 1954, this ship suffered another explosion

when a hydraulic launching catapult exploded and set off a series of fires and explosions. 103 sailors were killed.

On a lighter side of remarkable events, in May of 1957, while in Sydney, a group of fundraising college students dressed as buccaneers managed to get on the bridge, whereupon they announced over the IMC that *USS Bennington* had been captured by pirates. They then sounded collision, chemical and general quarters alarms. Bedlam broke loose. The fund drive ended suddenly. Marines escorted the students to shore. The reports indicate no charges were filed.

Visitors to Rosecrans National Cemetery should know the story of *USS Bennington (GB-4)* has not faded into an historical memory hole. A glimpse of the story made its way to a Masters dissertation in 1975. As early as 1969, Naval Institute Proceedings featured a two page report. Beginning in the 1990s, a chance meeting of heirs of some of the victims and heroes of the event took place. Their continued efforts and contacts with San Diego historians enjoined with annual commemorations to the *Bennington* dead. At first, the effort was led by San Diego Historians, Navy League members, and a host of retired and active navy officials, who organized a memorial ceremony that was held at the Monument in July of 2005, the one hundredth anniversary of the disaster. It was decided to continue the event on an annual basis, and now a commemoration is sponsored by the San Diego Chapter of Sons of the American Revolution. This group completes the final connection with the 1717 Revolutionary Battle of Bennington, Vermont, and the two US Navy ships honored to carry its name. A ceremony is held in Rosecrans National Cemetery at the base of the monument each year on the July Saturday closest to the fateful date of 21 July.

The last memorial was dedicated on November 11, 2013. It is found in the shade of a large torrey pine and a blue US mailbox on a stately bench located beside Pomona Avenue parkway at the intersection of Sixth Street and Margarita Avenue on Coronado Island, not far from the Coronado Municipal Golf Course. There is a substantial bronze plaque on the bench which honors the memory of William S. Cronan, USN, Medal of Honor. Having been blown overboard, he re-boarded by climbing the anchor chain and, though seriously burned, worked to pull men from below. BM2 Cronan stayed with the navy and latter earned a commission retiring as a LCDR. He died in 1959, having lived in Coronado for thirty years. It was his wish to be buried in Rosecrans National Cemetery.

Some satisfaction may be credited to two sailors in the Combat Information Center of *USS Whetstone*, another ship in another age, standing watch and musing the unknown reasons for the number and brotherhood of graves, marked by a large monument found on a weekend liberty. Like other tourists seeing a field of white markers, row on row, the universal curiosity then, like now, retained its interrogative form: "What place is this; where are we now?" The years pass and *Bennington's* monument maintains its faithful guard over thirty six sailors left to rest in its shadow, leaving the grass there to do its work. **The End**

Everett Ward, YN3, 1967-1970