

WHAT HAPPENED ON BB-61?

Investigation Re: The April 1989 Explosion in Turret II, Battleship USS IOWA

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My first view of her was on a warm June day in 1956 from the deck of a motor yacht in Hampton Roads, Virginia. BB-61, or battleship USS IOWA, had just left her drydock at the Norfolk Navy Yard sporting a new sixty-eight foot bow section salvaged from the uncompleted battleship KENTUCKY suffered in a collision in May with the destroyer ETON in heavy fog. Navy officers and crew members could be seen on her bridge and upper works scurrying about their various duties in white and dungaree blue. More than a thousand other unseen crew members were below decks behind her thick hull of grey steel. Wisps of blue-white high pressure steam vented from the funnels while her giant screws churned the blue ocean burying her stern ever deeper.

A crew member of lineage more Barbadian mixed with the Carolina low country and a distinct dialect of the sea, stood by my father and me, blew his nose over the rail, scratched himself obscenely, and offered, "Aye, there she goes all dressed out fit to kill headed for the secret parts of the sea known only to her masters."

None of us could have foreseen that, thirty-three years later on April 19, 1989, the battleship IOWA, cruising 330 nautical miles east of Puerto Rico as a part of FLEETEX 3-89, a training exercise for the U. S. Second Fleet and ships from Brazil and Venezuela, would experience a series of catastrophic events that would rivet for world's attention for months to come.

The exercise, commencing at 1000 hours, would fire twenty-two rounds from her massive sixteen inch gun turrets I and II. The guns of turret II, not fired for a month, will be firing 2,700 pound projectiles with five bags each round of D846 faster burning propellant--specifically disallowed--surprises the gun crew. Each projectile equaled the destructive power of a navy fighter jet of that era. The veteran IOWA was still considered a forbidding instrument of war even with the rapidly advancing technology of surface to air and surface to surface missiles. Few of her young crew are aware that the deadly projectiles, and their heavy silk powder charges, date to the end of World War II. From April to August, 1988, the powder had been stored under questionable conditions in high temperatures at Yorktown, Virginia. Veterans and 'deck plate' philosophers held that such conditions could weaken the stabilizer in the powder grains. Raw recruits, and some old salts, admitted to being terrified by these powder bags.

Lifting the heavy projectiles and powder from the storage magazines below is a delicate process using a system of elevators to the turret where the gun crews slide the heavy bags to the ramming-trays for introduction into the heavy steel breeches, each the size of one of the round tables in this room, and 'ramming' into position. IOWA's guns, from the breech to barrel mouth, would extend from this podium to the front windows of

our Club's drawing room. Protective steel doors open and close from each deck; a system devised by wary marine architects and munitions experts dating to the year 1906 during the birth of America's 'big navy.'

Gun crews, headed by its own 'gun captain,' wear clothing and equipment to prevent static electric charges around the powder. No jewelry, cigarette lighters (termed 'flame devices' by the navy) or other static prone materials are permitted. Trained gun crews execute the loading and ramming with a series of near ballet-type hand signals above the roar of equipment and explosions to load and seat the massive hydraulic rammer in place moving both powder and projectiles to their 'seated' position at thirteen to fourteen feet per second in the barrel. The breech is closed, locked and the order given to fire using electric detonation. There are forty-seven men in turret II and another eleven in the powder magazines at the lowest level. The IOWA's powder cans are clearly marked: "WARNING DO NOT USE B846 PROPELLANT WITH 2,700 LB. PROJECTILE."

Veteran gun crews fear 'hang fires' or 'misfires' when charges do not ignite. To open the breech would allow an inrush of air possibly igniting a smoldering powder bag. Old movies often show a battleship's sixteen inch gun firing followed by a puff of smoke blown out by a venting system. Gun crews have often waited over an hour before carefully opening breeches to clear the powder bags in question. Such projectiles have a range in excess of twenty-five miles with a maximum elevation of around thirty-six thousand feet. It was deadly work with no margin for missed hand signals or 'skylarking' around.

Twenty-five year old GMG2 Clayton Hartwig, one of four men, is the gun captain at the breech for turret II. Hartwig, not scheduled for duty in turret II that day, learns he is being assigned as gun captain for the exercise. Chief Reginald Ziegler in the turret officer's booth is heard over the phones, "Left gun is loaded. Good job! Center gun is having a little trouble. We'll straighten that out." Cradle operator Lawrence is heard excitedly reporting, "I'm not ready yet! I'm not ready yet! We have a problem here!" IOWA Captain Fred P. Moosally is on the bridge with Vice Admiral Jerome L. Johnson along with a navy aide manning a camcorder to record the drills. Moosally turns to Admiral Johnson, "Turret II is my best crew and..."

At 0955 hours a powerful explosion roars through turret II from five hundred pounds of propellant in the center gun breech instantly killing all four men before roaring into the lower decks of the turret taking all and igniting another two thousand pounds of powder on a lower deck in a spreading fire storm. Pressure in the turret rapidly climbs to more than one thousand pounds per square inch. Edited TV coverage of the event shows the massive turret spewing smoke, articles of clothing, flame and debris through the gun ports into the sea. The IOWA shudders visibly and in seconds the gray paint on the turret roof smolders and bubbles. An additional forty-five bags of powder are open below with four on the powder tray and five bags in the left and right guns. Sister guns are loaded with projectiles and powder raising the fear they, in turn, will explode and rain destruction out of the firing range over friendly ships. It was an 'all or none' principle with forty seven men instantly killed and eleven others surviving without a scratch. The forty-seven men average twenty-three years in age, the youngest just nineteen and the oldest thirty-nine. Seven of the dead, including Clayton Hartwig, are from Ohio.

Brian Scanio, a nineteen year old navy fire-fighter, responds with his mates to secure the heavy doors, release CO2, trigger sprinkler systems and break out hoses to fight the inferno. Bridge officers order the ship sixty-five degrees to starboard to carry smoke off the decks. Sailors rush to their stations; the battle to save the ship continues for hours. The IOWA has survived within moments of being one of the nation's largest peace time tragedies. Damage crews work to quell the fires, vent the spaces of dangerous gases, recover the dead and begin the clean up process. Saving the ship is paramount resulting in most damaged or destroyed material being tossed over the side with no thought at the moment for forensic detective work. Among this debris are the electric firing device from the breech of turret II center gun and the breech primer. Examination by the damage control crew revealed the primer had never been fired.

With all of this 'foreshadowing' behind us, let us turn the camera of history back for a few moments and review the birth and career of the IOWA and her famous sisters.

The IOWA was the first of the battleship class bearing her name, including the MISSOURI, NEW JERSEY, and WISCONSIN. The IOWA's keel was laid June, 1940 in the New York Navy Yard, Brooklyn, New York. She was commissioned in February, 1943. The NEW JERSEY, 1943, MISSOURI and WISCONSIN in 1944. Construction on battleships ILLINOIS and KENTUCKY was halted in 1945 and 1947. One of the IOWA class fathers was William Francis Gibbs who would later go on to design his renowned Atlantic speed queen SS UNITED STATES.

Each IOWA class ship was 887 feet long and displaced 57,450 tons. Cruising speeds in excess of 33 knots with a 15,000 mile unrefueled cruising range. Turret armor steel of 17.5 inches, and decks 5 inches with a hull 'belt' of 12.5 inches. Her massive sixteen inch guns were mounted on three turrets--two forward and one aft--for a total of nine. Ninety other guns of lesser caliber would by 1984 be reduced with the advent of Harpoon and Tomahawk missiles.

The ship served in the Pacific during World War II in key naval battles and entered Tokyo Harbor the day the war ended. She was decommissioned in 1949 and commissioned for a second time in 1951 as Korean hostilities intensified. Decommissioned in 1958 and commissioned again in 1984.

On April 20, 1989, the IOWA turns and steams for her home port of Norfolk, Virginia, arriving Sunday, April 23. Ranking navy officers, family and friends are there to greet her. The navy keeps reporters from talking to survivors on the pier. The following day President and Mrs. Bush, Secretary of Defense Dick Cheney and other officials attend a memorial service and extend sympathy. Among those interviewed are the mother of Clayton Hartwig and his sister Kathy Kubicina who commented that her brother had survived deployment on the ship in the Middle East only to be killed in maneuvers. Kubicina would trigger a series of events within the next few weeks.

In May Kathy Kubicina sent a letter of complaint to the navy attempting to block a fifty-thousand-dollar double indemnity insurance policy on her brother which, she learned, had been signed over to another crew member on the IOWA. Naval Investigative Service (NIS) began an altogether different line of questioning. The 'incident' moved to suspected suicide or murder.

Forensics on the part of the navy had revealed a suspicion of foreign substances used in conjunction with a chemical or electronic detonator. Hartwig, trained in ordnance disposal and munitions, could have secured a detonator device for fifteen dollars from any RADIO SHACK or electronics store ashore. The incident was labeled a "wrong intentional act." The navy was sticking to its guns, literally. On May 25 the navy announced that Petty Officer Kendall L. Truitt, 21, was being transferred from duty aboard the IOWA as a "prudent measure," though not charged with any wrongdoing, due to the expanding investigation and publicity surrounding the disaster. NIS reports indicated that Truitt had been involved in a car theft as a teenager a few years before.

Kathy Kubicina stated that her brother and Truitt had a falling out six months prior when Truitt had married and, when asked directly if her brother was homosexual replied..."I can't say for sure and nobody will ever know." NEWSDAY reported that Hartwig's car had produced a crude detonating device and a book, "How to Get Even Without Going to Jail," had been disapproved by Government Officials. Investigators had no evidence Hartwig was suicidal, but that he did create the picture of a "troubled man." Truitt was quoted widely saying, "I think they're trying to find an easy way out." Other personnel aboard the IOWA later recanted statements under oath that Hartwig had made sexual advances and was seen wrestling with Truitt in a suggestive way while on duty. Unnamed navy officers and enlisted men had called Hartwig and Truitt, "Scuzbags." There are no secrets on a ship and men engaging in scuttlebutt can rival a World War II ladies' bandage rolling circle. Extensive interviews of the entire ship's crew from top to bottom were instituted for any evidence or concrete leads. Human forensics on the killed revealed no trace of drugs or alcohol.

Navy forensic experts bolstered the claim that Hartwig had been leaning over or partially inside the breech in a suspicious manner. Independent forensics countered it was impossible to determine what position he was in considering the magnitude of the blast, temperatures of 3,000 degrees, compartment flooding and draining during the clean up process. The question did stick as to why the IOWA had experienced this event in light of her long career both before and after with literally thousands of firings of the sixteen inch guns.

By September, 1989, preliminary investigative reports were filed with violations raining down on the heads of the IOWA'S captain, officers and enlisted crew members. More than a few careers were stopped dead in the water. 1. Failure to ensure uniform training of 16-in gun crews. 2. Ineffective safety procedures within Turret II. 3. Inexperience of gun turret crews linked to poor safety and training programs. 4. Main gun batteries used in unauthorized Research and Development. 5. Poor preparation for gunshoot on April 19th. 6. No musters taken for the pre fire brief The Commanding Officer did not attend. 7. Crews not in proper uniform with remnants of cigarette lighters and other personal metal objects found on site. 8. Confusion over abnormal configuration of five vs. six powder bags. 9. Commanding Officer, Executive Officer, Weapons Officer nor the Gunnery Officer knew the number of stations manned by personnel not qualified. 10. The ramming device was twenty-one inches past its normal point inside the breech at the time of the explosion pushing five powder bags up tight to the projectile.

These findings, along with a multitude of others, fill not only my own personal files on the disaster but a storage building in Alexandria, Virginia. The navy had a job to do but did acknowledge numerous times, "Foul play is the least of about half a dozen possibilities... but we may never know what caused it."

December 7, 1989, saw the involvement of Sandia National Laboratories, Albuquerque, New Mexico, and the expertise of engineer physicist Dr. Richard Schwoebel, to head the independent investigation on the IOWA disaster. Sandia traced its history with the government to 1949 and research on nuclear issues at the invitation of President Harry Truman. Sandia employed some 8,000 scientists in its 'interdisciplinary laboratory' covering many miles of desert and a smaller installation in Livermore, California. Schwoebel, and others, focused their expertise on the ship's powder propellant and the equipment in turret II.

The powder bags and 2,700 lb. projectiles for the IOWA were manufactured and dated at the end of World War II. Each heavy silk bag was filled with pellets 'trimmed off' at the top with an additional thirty or so loose pellets in no particular alignment. Upon loading the breech an 'ignition pad' would be placed on the bag. Repeated 'dead drop' and 'pressure' tests did result in an explosion under experimental conditions. Critics again argued that the humidity of the southwest was inconsistent with the humidity at sea on April 19, 1989. Some screamed you can force just about any reaction under sterile conditions unlike that found on the ship at the time if you try hard enough. The questionable storage of the ship's propellant under extreme heat conditions at Yorktown earlier in 1988 were found to have little to no influence on the health of the powder. The navy's argument that the test results were irrelevant abruptly ended.

It was proven that an over ram of the lower powder bags could go as high as twenty-three thousand pounds at fourteen feet per second, resulting in 'trim pellet ignition' followed by an explosion. Such reactions were produced a number of times experimentally. Misaligned powder pellets, under extreme pressure, was traced as one of the causes of the blast.

But what about the massive hydraulic rammer? Each of the ship's sixteen inch guns was fed by an independent hydraulic rammer. The guns were cushioned by another hydraulic system to control the recoil on firing. The day of the explosion the hydraulic lines ruptured with the imminent threat that additional explosions would propel the guns with violent force back into the ship's superstructure or, worse yet, down into the decks below housing the projectiles and additional tons of stored powder. All existing powder was promptly removed from the IOWA class ships. The USS WISCONSIN was scheduled for deployment to the Mediterranean and Schwoebel was asked, "What will you require to allow the ship to shoot its 16 inch guns?"

When you don't now the answer to a problem in any organization, go to the lowest ranking man for an opinion. Testimony from surviving gun crew personnel familiar with the rammer in turret II revealed that it had been known for erratic behavior. The day of the explosion GMG3 Robert Blackburn, age 30, was assigned to his first active firing exercise. What he experienced or did in those moments will never be known as his hand only controlled the lever guiding the rammer. Dr. Schwoebel grimly reported

his examinations of the rammer removed ashore and found it covered with a sickening reddish brown substance emitting a "strange odor."

Navy investigators admitted to finding a very dirty oil filter in the IOWA rammer after the explosion. Kendell Truitt had testified before the House in 1989 that the rammer in question was erratic in operation. "... we had a problem with it ...we lost control of it. We would try to ram, and suddenly it was if it was a car... you couldn't control it... take off suddenly, stop without warning. They shut the whole system down. They tore apart the filters. They reworked it." Had the faulty rammer caused Robert Blackburn to over extend the lever with the ram mechanism going out of control? Death to all in turret II and related massive destruction linked with failure to have pertinent materials for forensic studies, never allowed for conclusive evidence regarding erratic operation. It remained an unresolved possibility the navy had waffled between the suspicions of an electrical or chemical detonator made by Hartwig. Chemical analysis of elements, primarily foreign wires, were proven to be from a gun cleaning chemical known as BREAK FREE and strictly forbidden steel wool employed by gun maintenance crews.

On November 8, 1990, Congresswoman Mary Rose Oaker (D-Ohio) convened a hearing on the USS IOWA investigation as chairman of the House Banking, and Urban Affairs, Economic Stabilization Committee. Okar went for the gut in questioning top navy brass on the findings of the investigation. Reflecting on the two billion dollars spent on the IOWA class ships, with a daily average operating expense of one million each, she grilled the navy's Admiral Heckman on poor manning and training using World War II movies relating to gun drills, "I have had the impression that the navy... would rather sweep this whole incident under the rug, blame some young man for the incident and then feel you got away with it." She referenced Clayton Hartwig and the navy's findings to prove beyond any reasonable doubt.

The costs had been high in human lives, financial resources, damaged reputations and blocked ranking naval careers. Captain Moosally testified that he had suffered the spectacle of an IOWA deserter, claiming to know just what happened on the ship, being interviewed with a pillow case over his head. Cost relating to the navy's investigation alone ran up a tab of eight million dollars.

Congressional hearings were punctuated by numerous protestors carrying signs and shouting slogans. One news reporter described it as a "Noah's ark with two of everything." Pro and anti military groups stood side by side with gay rights advocates who held Hartwig was a token to carry the blame. One young man shouted, "Republican presidents love old battleships." Other knowledgeable critics promoted the view that the nation's battleships were obsolete, out dated, hearkening to the Victorian age in a time of rapidly changing technology and strategy.

The implements of war and their vehicles are dangerous commodities to store, maintain and use properly. Have there been other gun disasters in the past as a comparison? Yes.

In 1844 the USS PRINCETON was demonstrating her new gun named 'Peacemaker' when it exploded killing the Secretary of State and Secretary of the Navy along with a number of other navy and civilian spectators. Senator Thomas Hart Benton was among those seriously wounded.

In 1905 the boilers of the gunboat BENNINGTON exploded killing sixty-six men. Evidence pointed to an inexperienced young ensign being assigned to her engineering department without proper training.

A 1924 explosion in a fourteen inch gun aboard the battleship USS MISSISSIPPI during training maneuvers killed forty-eight crewmen. In 1943 the MISSISSIPPI again exploded the same gun in turret n with a similar loss of life.

In 1972 the heavy cruiser NEWPORT NEWS, shelling North Vietnamese positions near the DMZ, experienced an explosion in her number II eight inch gun turret with a lost of twenty men. The phenomenon of ships experiencing gun explosions in turrets II was never scientifically explained and may be attributed to plain bad luck.

Statistics on gun disasters in time of hostilities aboard the ships of allies and enemy alike aren't so readily available due to censorship of the time and the accepted calculated risk of waging a war. Were naval guns larger than sixteen inches ever designed? Yes.

The Japanese Imperial Navy built two of the YAMATO class battleships equipped with nine eighteen inch guns but never fired in conflict. Eighteen inch guns were contemplated for our own ships but scuttled when wet tank tests and calculations proved the added weight on existing hulls would create instability in rolling seas.

For generations gun crews on ships of war have engaged in friendly, though at times heated, competition with fellow crews for the coveted 'gun flag.' It is a job requiring the wiry agility, strength and speed of young men in dangerously crowded spaces surrounded by powerful intricate machinery and the loading of explosives and shells standing just over six feet in height. Imagine the mounting excitement, sweat, curses, the roar of huge guns and their recoil, smoke and flame belching from the barrels, the acrid smell of spent powder and that hypnotic sense of deep chest percussion with each firing. The gun crews on the IOWA were no exception. There was a tradition in the navies of old that a new recruit in the gun room hadn't proven himself to his mates until he had coughed up blood.

My own overtures to the navy in preparing this narrative were met with a cool reception veiled in polite curiosity. I was put on hold with the phone clearly transmitting whispers and throat clearings on the other line. Would I be writing my paper as an advocate for any of the individuals involved? How wide would my paper go in readership? Just what is the composition of your Literary Club? I assured all concerned of my intent not to negatively rehash the disaster or trouble privately any of the survivors or family members in such a pursuit. No doubt records covering my years in the Naval Reserve and Marine Corps fresh out of University of Cincinnati were pulled and scrutinized. I was required to provide my complete home address, telephone and E=Mail.

I consulted several Internet web sites on the IOWA and received replies from former crew members and their families. A vigorous network exists between these individuals. All testified that Captain Moosally of the IOWA was an exceptional man dedicated to the navy, his ship and men. Numerous times he had visited ailing sailors under his command in hospitals ashore and at home. One website warns, "Negative postings relevant to the explosion and related events would be deleted by 'Mother.'" I

visualized a crusty navy salt with computer savvy. All of my correspondents hold that, "The IOWA disaster was nothing more than a terrible accident."

Kathy Kubicina, Clayton Hartwig's sister, appears from time to time on the web with pertinent comments and courtesy. She remains very much dedicated to her brother, the navy and the IOWA. Never once did I mention the case of the IOWA to Congresswoman Okar in writing on unrelated educational issues in Ohio. This past August I was warmly invited to attend the IOWA reunion in Norfolk, Virginia. I declined due to distance and summer vacation plans. Perhaps next year.

Epilogue

The real fate of the IOWA and her sisters lay in advanced missile technology; their age; changing needs and the sure grinding of accountant calculators in GAO offices. In short they had outlived their purpose regarded as survivors of another age.

On April 22, 2001, the IOWA arrived under tow in Suisin Bay, California--her first return there in nearly fifty years--with many of her former crew members on hand. Renovations have been made to open the ship to visitors as a combination memorial and tourist attraction. An on board ship's store, linked to the Internet, offers an array of shirts, hats, souvenirs and related memorabilia to a new generation interested in the sixty year old ship.

I recalled an incident during my own navy years attached to the base public relations office at Camp Lejeune. We were sent down to assist with an open house aboard the decommissioned battleship NORTH CAROLINA and 'show the colors' to a group of veterans invited to view the ship. Standing near the gangway in whites I greeted an elderly gentlemen, obviously from the 'old navy,' sporting work boots, crisp bib overalls, flannel shirt and straw hat hobbling up to the deck. We talked for a moment with me exclaiming on the size of the ship, her guns and armaments in the euphoria of youth. He took a long look and retorted, "Son, I was there then and you are here now. All of this to me is about as modern as last year's birds nest."

In reflecting on the design, history and events of the IOWA, I was reminded of a statement penned by then Secretary of the Navy John D. Long, February 24, 1898, regarding the loss of the battleship MAINE in Havana Harbor. He had not slept well that night. "Our great battleships are experiments which have never been tried, and in the friction of a fight have almost as much to fear from some disarrangement of their own delicate machinery or some explosion of their own tremendous ammunition as from the foe."

I have no doubts that some youngster will stand in awe and wonder on the now cold, still IOWA with his father as I did so long ago viewing BB-61 as she steamed through Hampton Roads for the open Atlantic, "all dressed out fit to kill."
