

ABSTRACT

Brian T. Clayton. ON BOARD THE USS NORTH CAROLINA (BB-55): RECOLLECTIONS AND HISTORY OF A BATTLESHIP DURING THE SECOND WORLD WAR. (Under the direction of Dr. Michael A. Palmer) Department of History, July 2005.

The *North Carolina* was the first American battleship built since 1921. The U.S. Navy commissioned the battleship on 9 April 1941. Battleships had served as the strategic centerpiece of the U.S. Navy for more than fifty years. However, during the Pacific war, battleships went through a transformation in roles and missions. The battleship's primary role had been to fight other battleships, but during the war the *North Carolina* served in new roles - supporting aircraft carriers and attacking island installations in shore bombardments.

During the war the ingenuity and "can do" attitude of the *North Carolina*'s crew demonstrated that their battlewagon was a versatile platform. The *North Carolina* demonstrated that while the dreadnought's missions had changed, battleships could still serve effectively in multiple roles. Oral interviews with the members of the *North Carolina*'s crew provide a glimpse of life on the warship during the Second World War as this paradigm shift occurred.

ON BOARD THE USS NORTH CAROLINA (BB-55): RECOLLECTIONS AND
HISTORY OF A BATTLESHIP DURING THE SECOND WORLD WAR

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This thesis is dedicated to my big sister, Dr. Nancy C. Clayton.

Without her help on two occasions, I would have never survived to this day.

It is through her actions that I dedicate this work.

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INTRODUCTION

TRANSFORMATIONS THROUGH TIME

Throughout history, the ship has operated as a tool for exploration, trade, and warfare. The ship of the line epitomizes the warship in the age of sail; the battleship did the same in the steam and post steam ages. The *Dreadnought* symbolized the power and strength of the state, as well as mobility, and technological acuity, just as its predecessors had in previous centuries. The *Dreadnought*, christened in 1906, marked the true beginning of the battleship, and the *North Carolina* descended from the designs of the *Dreadnought*. The idea of the fast battleship and "battle cruiser" may have sprung from the British, but Americans revolutionized the fast battleship concept beginning with the *North Carolina*.

The design and construction of the *North Carolina* was important. The *North Carolina* was the first battleship built by the United States since 1921. The preliminary conceptual designs for a fast battleship began in the early 1930s. The design for the *North Carolina* began in May 1935 for the navy's 1937 fiscal year budget. The United States Navy received input from many sources during the preliminary design phase of the *North Carolina* class. These sources were naval officers, past designs (both foreign and domestic), and lessons learned from the general principles of war as well as the Battle of Jutland. The Bureau of Construction and Repair took all of their suggestions into consideration when it was decided what would be in the new fast battleship.

A warship is but a ship, but with men added to the equation, it becomes a fighting machine. During sea trials, which began in 1941, the different duties the men would perform on the ship evolved, but not to their final form. The manuals for the American battleships built some sixteen years before had become outdated because of advances in ship design and technological leaps – in propulsion, armor, gunnery, and fire control. The *North Carolina* needed new operating procedures for her crew, and the officers and men responded by developing the new manual with alacrity.

Sea trials followed the fitting out of the ship. Captain Olaf Hustevt commanded the *North Carolina* during this period. He asked permission to take the ship to the Caribbean to test the machinery. The ship experienced severe vibrations during this period. Whenever the *North Carolina* proceeded to full speed, the ship would shake violently. Some crewmembers thought that they had hit a mine or torpedo. The documented problem went to the naval architects, who determined that the ship experienced extreme cavitation caused by the propellers. The navy designed and manufactured new propellers. The problem never fully disappeared, but it improved enough to satisfy the navy brass and crew. While solving the propeller dilemma, the crew had many opportunities to train, and train they did. The crew may have disliked training, but when real battles under fire came, they were fully prepared.

The *North Carolina* entered the Pacific war zone in the summer of 1942. The ship's inauguration came by way of a surprise Japanese air attack. The ship repelled the air attack by downing seventeen Japanese aircraft out of a force of forty. In the

heat of battle, the *North Carolina* sent up so much smoke from the guns blasting away that the carrier *Enterprise* called over to see if the battleship had been hit. The new role of carrier screen fit perfectly, and throughout the war, fast battleships with their powerful five-inch secondary batteries would help shield carriers from air attacks.

Another role developed for the fast battleships during the course of the war was shore bombardment. Military planners decided to use battleships to concentrate firepower on enemy targets during island assaults. Air power could provide support for limited amounts of time but battleships could remain on station for the long durations required by the waves of assault troops. Additionally, the amount of explosives carried by an aircraft limited it because of the weight constraint, compared with the numerous supplies of heavy shells carried by the battleships. Through trial and error, battleships performed well in their new role during missions assigned regularly during the course of the war.

As the *North Carolina* performed its new missions, danger lurked in the air and beneath the sea. Narrow escapes were frequent. The *North Carolina's* first air attack occurred at the Battle of Eastern Solomons, 24 August 1942. The air raid and subsequent attacks throughout the war became routine to the crew. The other narrow escape that almost put the *North Carolina* on the bottom of the sea was an underwater attack by the Japanese submarine I-19. A torpedo struck the *North Carolina* on the port side just below the armor belt near turret one. Superb damage control prevented the powder magazine from exploding, while all relevant hatches were closed and counter flooded to put the ship on an even keel. The ship sailed away at a high rate of

speed. The ship evaded torpedo attacks for the rest of the war but the task force sailed much faster after the destroyer *O'Brien*, *North Carolina*, and carrier *Wasp* came under attack during the encounter with I-19. The performance of the ship was a direct reflection of the discipline and morale of the crew.

The men described the *North Carolina* as a happy, taut ship. The *North Carolina* proceeded through five captains during the Pacific War. Most men credit Captain Oscar Badger with creating the ship's atmosphere through disciplinary measures. Most captains were fair, handed out even punishments, and took the men's well being into consideration. From the standpoint of morale, Executive Officer Commander Joe Stryker contributed as much, if not more than the captain did.

The high morale of the ship endured throughout the war by giving the men recreational parties with beer and hotdogs, swimming, and movies. The crew would write letters, listen to music, play cards, and on occasion distill their own alcohol. There were always jobs to do and stations to keep the men busy from the monotony of being on a ship away from port and home. Another important aspect of morale was food. The crew recalled that the food was good and the portions generous. On special occasions, such as Thanksgiving and Christmas, there would be turkeys served. There was a canteen on board the ship where men could buy candy bars and ice cream. Overall, the recollections of the crew credit the ship's officers with giving them high morale; the *North Carolina's* crewmembers knew that the assaulting troops and other ships had it much tougher.

The *North Carolina* was a unique ship, in many ways. When christened in New York Harbor all hailed her as the greatest new ship afloat, hoping that she would bring peace and stability to our nation. However, Pearl Harbor changed that outlook in a single morning. The *North Carolina* then became a symbol of hope and power to defeat the Japanese. Top personnel, hand picked by the navy, manned the battleship. Noted for her excellent gunnery, both primary and secondary guns, the *North Carolina* performed beyond expectations. Her overall record shows fifteen battle engagements and numerous air encounters. Overall, the *North Carolina* deserved special credit for the men who made her what she was – an exceptional ship during the Second World War, a “Showboat.”

CHAPTER ONE

THE MAKING OF A BATTLESHIP

The battleship represented the backbone of the United States Navy for more than fifty years and was the centerpiece of America's sea presence. The battleship was a balanced ship, in that it was distinctive because it composed offensive firepower with defensive force. The use of battleships in the Second World War drew upon the experiences of the First World War, most notably the Battle of Jutland. Command of the sea became the United States' focus, as stated in its naval doctrine after the First World War.¹ The United States Navy concentrated on the battleship and the supporting warships in a *battle fleet*. The fleet changed from operating in tactical columns to concentric circles along with a decentralized command structure. The use of concentric circles allowed increased firepower and the ability to maneuver quickly in tandem. A new warship, the aircraft carrier, joined the circle but the battleship remained the ultimate strategic weapon.

A paradigm shift occurred after the attack on Pearl Harbor crippling the American battle fleet. The carrier became the main striking component for the United States in the campaign against Japan. Battleships would henceforth play a secondary role to the carrier by supporting the carrier with anti-aircraft cover and striking inland targets with shore bombardment. As Michael Palmer wrote: "When the war began again in 1939, weapons that had debuted during the Great War -

¹ Norman Friedman, *U.S. Battleships: An Illustrated Design History* (Annapolis: Naval Institute Press, 1985), 1.

aircraft (including the ship, aircraft carriers, from which they operated) and submarines – dominated the naval battlefield.”² The rise of the battleship began with the construction of the British *Dreadnought*.

In 1906, the HMS *Dreadnought* transformed the battleship. The introduction of the *Dreadnought* changed future battleship designs and made previous ones obsolete overnight. The British navy introduced this new warship as a prototype. The reasons for building the *Dreadnought* were part of a larger building program developed by Admiral John Fisher, but the most important reason was to test new equipment integrated into the new battle cruiser program.³

The new warship incorporated new systems in propulsion and guns. The *Dreadnought* revolutionized battleship design by having mono caliber guns. In addition, the *Dreadnought* had turbine engines. Turbine engines propelled the ship at speeds up to twenty-one knots, but more notably gave reliability in running the engines at high speeds for long periods. Older reciprocating engines normally needed repair after a short high-speed run. Two important ramifications resulted from using turbine engines. First, the hull was lower in the water, thus armor protected important machinery. Secondly, the turbine engines used less fuel and had improved steaming radius.⁴

² Michael A. Palmer, *Command at Sea: Naval Command and Control since the Sixteenth Century* (Cambridge, MA: Harvard University Press, 2005), 461.

³ Nicholas A. Lambert, “Admiral Sir John Fisher and the Concept of Flotilla Defense, 1904-1909,” *The Journal of Military History* 59 (October 1995): 640.

The introduction of the *Dreadnought* resulted in new counter weapons.

Smaller countries that could not afford the large, costly battleships built cheap but deadly weapons – torpedoes – carried by inexpensive vessels. Battleship designers took into account these innovations to produce countermeasures. Heavy guns allowed battleships to engage at a distance and outrange the torpedo. In addition, the size of the ship allowed the designers to incorporate armor to protect against a torpedo hit. Also, secondary guns that rapidly fired could sink attacking torpedo boats. Finally, the size of the battleship allowed for powerful engines to outrun threats.⁵

An enemy threat to battleships was the airplane. During the First World War, aircraft were still in their infancy and were not without problems. However, in the interwar years, most countries prepared for the next war using aircraft and aircraft carriers. The problem for battleships was that aircraft could drop bombs on them, although fast battleships could evade bombers by turning away because of the high altitude required by the aircraft to penetrate deck armor. Some claim that the attack on Pearl Harbor or the sinking of the *Repulse* and *Prince of Wales* marked the end of the battleship era, but Norman Friedman argues that it was the German guidance bomb and the sinking of the Italian *Roma* that truly marked the end of the battleship in September 1943. Needless to say, aircraft and the aircraft carrier became an important part of the United States Navy's arsenal. United States Navy doctrine

⁴ John Roberts, *Anatomy of the Ship: The Battleship Dreadnought* (London: Conway Maritime Press, 1992), 24-26.

⁵ Friedman, *US Battleships*, 1-2

before and during the Second World War used aircraft to strike deep inland and to scout, while the battleships protected the carriers from sea borne attack and provided a screen for aerial strikes.⁶

The introduction of the *Dreadnought* affected the building programs in the United States Navy. The United States Navy already had under construction an all-big-gun battleship in 1905, the *South Carolina* class. The navy completed two ships in 1908, the *South Carolina* and the *Michigan*. The important step for the United States Navy was the placement of the four turrets on the centerline, which differed from the *Dreadnought*.⁷

The creation of the *Dreadnought* resulted in the design of the *Delaware* class. The impetus for building the *Delaware* class was twofold: to counter the *Dreadnought*, and to construct the first ships in a battle fleet program.⁸

President Theodore Roosevelt was a follower of Alfred Thayer Mahan and a believer in naval power for America. President Roosevelt reasoned that it was more cost effective to have a battle fleet than to spend sums of money on coastal defenses. In addition, he believed that it was better to attack the source of problems, rather than wait for it to attack you. In 1883, the United States decided to build battleships. This marked a radical shift in naval attitude and strategy toward the role of naval forces.⁹

⁶ Ibid., 4.

⁷ William E. McMahon, *Dreadnought Battleships and Battle Cruisers* (Washington, D.C.: University Press of America, 1978), 92.

⁸ Ibid., 94-95.

In 1897, Theodore Roosevelt asked for a battle fleet comparable to the German Navy. Over the course of thirty years, the United States Navy concentrated on building battleships. The U.S. Navy, once ranked below the Peruvian Navy, rose up the list to rank second in the world in 1906. By 1914, the United States dropped to third.⁹

The Battle of Jutland, the climatic naval battle fought during the First World War, helped to instigate a change in the doctrine of the United States Navy. There were lessons learned. One such lesson was when the British fleet had an opportunity to pursue the fleeing German fleet but turned away. In addition, naval commanders in the United States realized that Admiral John Jellicoe's fleet should have turned into the torpedo threat. Also, the use of tactical columns appeared antiquated for security purposes for several reasons: protection from attack, light signals for communication, firepower, and maneuverability utilized within concentric rings could project a battle fleet's strength with more power.¹⁰

Another change came in 1916 when the United States Navy adopted the Ford clock used in fire control. During the 1900s, the navy used antiquated fire control techniques. New tactics and ship designs resulted in the use of long-range gunnery. This became evident in the first ten years after the First World War. One important

⁹ Friedman, *U.S. Battleships*, 5.

¹⁰ Ibid.

¹¹ Palmer, *Command at Sea*, 460-462.

aspect in the design of a ship was fire control because it determined the range of battle, as well as the placement of armor – the angle of shell arc depended on range.¹²

A major challenge encountered by naval designers was the effectiveness of their plans during battle. During the Battle of Jutland, the British lost three battle cruisers because of poor flash-protection. At Pearl Harbor, the *Arizona* sank because black powder ignited in the forward magazine. Overall, a small number of dreadnoughts experienced catastrophic battle damage. None of the ship designs before 1915 were the result of combat experience. For the most part, a ship's rating depended on the value of her performance at sea, power plant dependability, armor, and guns.¹³

The design of a battleship encompassed three phases: preliminary, contract, and detail. The navy's Bureau of Construction completed the first phase of construction. The General Board received sketch designs produced by the Bureau of Construction. The secretary of the navy approved the final preliminary draft. Next, the preliminary design led to a contract design. The contract design allowed for major changes, if necessary. Shipyards bid on the contract plans that the navy produced. The shipyards developed the plans further into working drawings from which the ship was constructed.¹⁴

¹² Friedman, *U.S. Battleships*, 6.

¹³ *Ibid.*, 7-9.

¹⁴ *Ibid.*, 10

During the design of the battleship, architects paid particular attention to the weight or displacement of the ship – “the weight of the water which a ship displaces when she is floating.”¹⁵ The guns and armor were exceptionally heavy and increased the displacement of the battleship. The beginning design phases of the battleship called for weight estimates. Sixty percent of the design displacement came from the armor, deck, armament, and machinery. The weight of the battleship was critical during the treaty period. The Washington Treaty of 1922 set tonnage regulations for the major naval powers for Britain, America, and Japan at a 5:5:3 ratio. The *North Carolina* was a treaty battleship and its tonnage was set at 35,000 tons. Defining displacement occurred in various ways. The designers during the treaty period naturally chose artificial numbers that gave the ship a lower displacement. This gave the ship an attractive appeal because it made speeds faster and was politically favorable during the treaty period. In contrast, less weight meant that the ship's waterline would be high, exposing her armor belt. This could lead to poor sea keeping attributes and inadequate protection.¹⁶

The armor on the ship provided necessary protection. There were five significant areas protected on the ship: the waterline, machinery, armaments, the hull structure bearing the armaments and additional structures, and the control quarters – the conning tower and fire control stations. The United States Navy protected its

¹⁵ Peter Kemp, ed., *The Oxford Companion to Ships and the Sea* (Oxford: Oxford University Press, 1976), 249.

¹⁶ Friedman, *U.S. Battleships*, 11.

battleships sufficiently above the waterline to endure extensive strikes. The armor resisted two types of shells: high explosive and armor piercing. The armor belt protected the vital areas from heavy shells fired along flat trajectories. The technological advances in gunnery created high arc trajectories capable of hitting a ship beneath the waterline and deck, so the designers applied armor patches, as they did on the *North Carolina*.¹⁷

The impact of technology on gunnery led to long-range gunnery. From 1905 forward, battle ranges increased but the amount of successful hits declined. For example, an excellent hit ratio was 5 percent during the First World War. Advances in gun ranges made older ships obsolete. A second gunnery revolution was the creation of the all-big-gun warship. Another advance was the use of smokeless, slow burning powder. It created a higher velocity and flatter trajectory at longer ranges. Before the start of the Second World War, Japan designed shells for underwater strikes. They were able to strike underwater by following stable trajectories with special long-delay fuzes. With the advent of the *Dreadnought*, the new warship omitted secondary guns so that the warship had only heavy guns to deal with other battleships. This concept became the all-big-gun warship.¹⁸

Later, the introduction of secondary guns protected the warship against destroyers carrying torpedoes. On the *North Carolina*, the secondary guns were dual-purpose, that is, they protected the ship against destroyers and aircraft. The 5/38

¹⁷ Ibid.

¹⁸ Ibid., 12.

dual-purpose gun produced a combination of high velocity shot and had a maneuverable short barrel to track fast-moving aircraft.¹⁹

¹⁹ Ibid., 15.

CHAPTER TWO

THE DESIGN FEATURES OF THE NORTH CAROLINA

The design of the battleship *North Carolina* entailed complicated equipment and unique features. On 27 October 1937, the New York Navy Yard laid the *North Carolina*'s keel. This was the first battleship built since 1921, and the first battleship to enter service since the *West Virginia* in 1923.

There were a number of complications during the preliminary design phase. The Washington Treaty of 1922 and London Naval Treaty of 1936 affected the displacement of the *North Carolina* class. Treaty limitations decreed a weight constraint of 35,000 tons and restricted gun caliber to fourteen inches for American battleships. The new generation of battleships also had to deal with a number of threats: torpedoes, aerial bombings, and underwater shells. Full application of "three dimensional" warfare had never been fully experienced in wartime, thus personnel incorporated new modifications into the plan of the ship during its preliminary design period. During the course of the planning phase, 1935-1937, naval architects drew seventy-seven drafts of the *North Carolina*.¹

In October 1935, the General Board decided to accept a conservative design over that of a more conventional one because they envisioned a war with Japan in the future. Admiral William H. Standley, the Chief of Naval Operations, requested four fast battleships to operate with the fast carriers *Lexington* and *Saratoga* in two task

¹ Friedman, *U.S. Battleships*, 243.

forces. In addition, Admiral Standley argued that the ships be fast enough to contend with the Japanese *Kongo* class battleships, the main threat to the American battleships. Naval Intelligence reported at the time of the design phase that the maximum speed of the *Kongo* class was twenty-six knots. The Japanese modified the *Kongo* class in the mid-1930s and they attained a maximum speed of thirty and a one-half knots. Later in the war, naval intelligence found out about the modifications²

The President of the Naval War College, Admiral William S. Pye, reacted strongly to the threat of the *Kongo*. He argued that the Japanese would not risk their main battle line unless they could destroy the United States battle fleet first. This was the Japanese philosophy in 1941. The war games played out by American naval officers at the Naval War College showed that the Japanese battleships (*Kongos*) could "exercise enormous influence during the early stages of the Pacific war. They were 'a thorn in the side of the U.S. Fleet.'"³

An integral part of the design was armor, used to protect the ship from various threats from ships, airplanes, and submarines. The ship's armor was a pertinent part of the design phase, due to its weight and treaty limitations. The most critical pieces of armor were the belt to protect against torpedoes and underwater shell hits. The second critical element was the deck armor to protect from aerial bombs and high arc ship shells. The third line of defense was the barbettes and secondary guns on the main deck of the ship. The purpose of the armor was to protect the vital areas of the

² Ibid., 251

³ Ibid.

ship located in the citadel, the box shaped area that contained machinery, magazines, steering, and centers of control in a compact area. Surrounding the box was the armor belt.⁴

The armor belt posed the biggest problem during the design phase for the *North Carolina*. Due to the enormous weight of the specialized armor, STS (special treated steel), the belt became twelve feet wide with a 0.75-inch thickness. It was inclined to fifteen degrees to maximize the immune zone to a range of 20,000 yards from a shell hit. During battle conditions, the belt would be six feet six inches above the maximum draft (thirty-two feet four inches). In addition, the minimum draft (thirty-one feet and one inch) covered the area with similar protection. Designers choose a difference of six and a half feet so that if a single torpedo hit the ship, it still floated high enough so the counter flooding operations could correct the situation.⁵

Another important design feature was the multi-bulkhead torpedo-protection system. The armor belt incorporated these bulkheads, making them parallel so that it would increase the depth to the turn of the bilge. The four bulkheads accommodated liquid in two layers and the others would be void. Designers predicted that with this arrangement the ship would be able to withstand three hits on a side before becoming unstable. If struck by a torpedo a list would occur, therefore counter flooding received special attention. Response to the list took less than five minutes to correct. The

⁴ Ben W. Blee, *Battleship North Carolina (BB-55)* (Wilmington, North Carolina: USS North Carolina Battleship Commission, 1982), 33.

⁵ Friedman, *U.S. Battleships*, 266.

damage-control location was on number three deck, in which men could pass both fore and aft without the worry of flooding. On 15 September 1942, a single Japanese torpedo struck the port side of the *North Carolina*, testing the design of the ship.⁶

Armor also covered the outside of the ship. The newly designed splinter deck sheathed 1.45-inch steel to detonate fused projectiles. Covering the second deck was five inches of steel. Covering the third deck was 0.62-inch steel to provide splinter protection. The conning tower had armor of up to sixteen inches of steel. To protect the guns, designers gave the sixteen-inch rifles considerable armor. The sixteen-inch rifles had as much as sixteen inches of armor covering the barbette. The secondary gun armor for the five-inch dual-purpose guns had 1.95 inches of armor covering the turret. Overall, armor protected the ship against all types of projectiles.⁷

Another unique design feature of the *North Carolina* was its hull. The hull of the *North Carolina* was an unusual design for a battleship. The beam or width of the ship had already been determined to be 108 feet. Designers determined that a longer ship required less power to attain cruising speed. This clearly exemplifies the *North Carolina* class, and the *South Dakota* class with 9,000 more horsepower. This was the maximum beam that the Panama Canal could accommodate. The distinctive hull contained two skegs, where the two inboard shafts emerged from the ends. From 1937 onwards, designers thought that the twin skegs produced higher propulsive efficiency.

⁶ Ibid.

⁷ Randal S. Shoker, *U.S.S. North Carolina: Technical Reference 1* (Oxford, Ohio: Oxford Museum Press, 2000), 53.

Although a 1945 report showed that this was not the case, the skegs did serve a number of purposes such as docking keels, providing longitudinal strength to the ship girder, and giving torpedo protection to the propellers. The General Board in charge of the design of the *North Carolina* ultimately sacrificed the fast capital ship containing nine guns and with a maximum speed of thirty knots for a ship that forfeited "both speed and protection for firepower."⁸ As Norman Friedman pointed out "... a combination unprecedented in American capital ship development."⁹

The *North Carolina* was among the first battleships developed to maintain high speeds along with protection and armament. High-speed turbines with double reduction gears propelled the ship to twenty-seven knots, very fast for a 35,000-ton vessel. Eight double-cased boilers generated steam for the turbines. Two boilers per shaft generated power to the four propellers creating a shaft horsepower of 121,000. The range of the ship on a normal fuel load at fifteen knots was 13,500 nautical miles. The endurance at twenty-seven knots was 3,456 nautical miles. The ship had enormous fuel economy compared to the old *South Dakota* class.¹⁰

The firepower of the *North Carolina* was formidable. The original plans for the new battleship included mounting fourteen-inch rifles, the maximum size allowed by the Washington Treaty. However, "the general board pressed for the sixteen-inch gun on 29 March 1937, the secretary of the navy did not approve this recommendation

⁸ Friedman, *U.S. Battleships*, 262-263.

⁹ *Ibid.*, 263.

¹⁰ William H. Garzke, Jr. and Robert O. Dulin, Jr., *Battleships: United States Battleships, 1935-1992* (Annapolis: Naval Institute Press, 1995), 56-60.

until 15 July."¹¹ Therefore, when the final plans came off the drawing board, all turret fittings housed the new sixteen-inch rifles.¹²

The barbette for three primary guns, ammunition, and supporting hull structure would weigh 6,768 tons. The length of the gun was over 61 feet long (736 inches). An important advance in gunnery was the replacement liner. Rifling replacement occurred without dismantling the turret and the gun came out. The reason was that the average life of the barrel was 395 EFC (equivalent full charges), thus requiring periodic replacement.¹³

The principal gun could fire a 2,700-pound armor piercing shell (AP) at 2,300 feet per second for a maximum range of 36,900 yards at a forty-five degree angle or 21 statute miles. Normal firing of an armor piercing shell required six (ninety-pound) bags of nitrocellulose powder. Another shell that the ship carried was the high capacity shell (HC). This shell contained more explosives (154 pounds) than the armor piercing shell (forty pounds) but weighed less at 1,900 pounds, traveled at 2,635 feet per second and its maximum range was 40,180 yards or 23 statute miles. The AP shell attacked armored ships. Early in World War II, the *North Carolina* experimented with shelling an island with a HC shells. The high capacity shell

¹¹ Friedman, *U.S. Battleships*, 271.

¹² *USS North Carolina: A Battleship at War* (Wilmington, North Carolina: USS North Carolina Battleship Collection 91.13.4, 2004), 10.

¹³ John Campbell, *Naval Weapons of World War Two* (Annapolis: Naval Institute Press, 1985), 117.

proved successful for shore bombardment and the knowledge was passed to the Bureau of War so other fast battleships could use the relevant information.¹⁴

The principal secondary battery on the battleship was the 5/38 twin, developed by the Bureau of Ordnance in the early 1930s. The navy developed the turret mounted 5/38 twin in 1936 and production began in 1940 for battleships, carriers, and cruisers. The gun's main purpose was anti-aircraft protection, but the navy used the gun in shore bombardments, too. "The gun, which navy men said 'could do anything but shoot straight down,' had a range of ten miles, a ceiling of six, and could be fired at a rate of from twelve to fifteen rounds a minute."¹⁵ In this gun, the United States fleet possessed the best long-range anti-aircraft weapon in existence. More importantly, according to Admiral Hussey, "We had it for years before . . . actual hostilities . . . when there was ample time to prove its potentialities, to eliminate any bugs that might show up, to incorporate new techniques of fire control, and to prepare tooling facilities for manufacture"¹⁶

Other light guns covered the deck of *North Carolina* and sailors used them as anti-aircraft weapons. Originally, the navy used the 1.1 gun, a rapid-fire weapon intended for close support. Norman Friedman also stated, "The machine cannons were more than anti-aircraft guns. They were intended to counter motor torpedo boats, which in 1937 were considered a major threat to capital ships in confined

¹⁴ Shoker, *U.S.S. North Carolina*, 8-10.

¹⁵ Buford Rowland and William B. Boyd, *U.S. Navy Bureau of Ordnance in World War II* (Washington, D.C.: U.S. Government Printing Office, 1953), 258.

¹⁶ *Ibid.*

waters."¹⁷ The 1937 design called for sixteen 1.1 guns and twelve 0.50 caliber guns. The 1.1 guns were quadruple-mounted and difficult to position due to the limited amount of space on the deck. The 1.1 guns never performed up to expectations and a series of problems plagued them, such as overheating due to faulty ejection and recoil systems. The sights for the gun were open and contained a very old target-designation system. When tested in the field, the 0.50 caliber gun, the navy's standard close support anti-aircraft weapon, proved to be ineffective against high-speed Japanese aircraft. In January 1941, the navy recognized the weakness in the battleships' close-in defense.¹⁸

New machine guns became available in 1941 and tests began on two types, the Swedish 40mm Bofors and Swiss 20mm Oerlikon. The 40mm Bofors replaced the 1.1 guns. The 40mm maximum rate of fire was 120 rounds per minute and had a range of 5,000 yards. The 40mm proved to be a capable gun, but had trouble toward the end of the war in breaking apart Japanese kamikaze planes. The 20mm Oerlikon replaced the 0.50 caliber gun. The 20mm gun fired 450 rounds per minute and had a maximum range of 4,800 yards. These two guns, along with the 5/38 guns, proved to be successful as anti-aircraft weapons. By the end of the war in 1945, there were sixty 40mm quad guns and thirty-six 20mm single guns on the *North Carolina*. To assist the main guns and secondary guns, there were excellent fire controls and radar.¹⁹

¹⁷ Friedman, *U.S. Battleships*, 266.

¹⁸ Ibid.

¹⁹ Ibid.

The newly built *North Carolina* contained the most sophisticated fire control systems for control of the sixteen-inch main batteries and the five-inch twin dual-purpose batteries. The purpose of fire control in the main batteries was to locate targets and accurately hit them, whether a stationary or moving. The fire control for the secondary guns enabled it to hit fast moving aircraft, stationary or moving vessels, and fixed land targets. Fire control systems for the main batteries and secondary batteries developed before the advent of radar.²⁰

Systems that controlled the sixteen-inch batteries were two Mark 38 directors with optical range finders. They placed them in two separate locations, atop the tower foremast and behind the mainmast. In addition to the directors, there were also optical range finders in each turret. The conning tower, at the upper level, contained the battle control station. Operated by the gunnery officer, this station accommodated a stereoscopic spotting glass and a miniature computer. Located amidships on the first deck were the plotting room and the large computers.²¹

The heart of the fire control system was the plotting room, located in the armored citadel. It was air-conditioned to keep the air at a regulated temperature and low humidity for the two large computers, the range keeper and stable vertical.²²

The range keeper was a primitive analog computer. The computer consisted of cams, gears, and component solvers. Technicians continuously took a target's bearing

²⁰ *Battleship at War*, 19-20.

²¹ *Ibid.*, 15.

²² *Ibid.*

(course) and range (distance) and put the information into the computer to generate the future bearing and range of the target. In addition, the range keeper received inputs concerning the ship's own course and speed. Technicians took variables like wind direction, temperature, powder temperature, velocity of the projectile, weight of the projectile, barrel wear, and sometimes curvature of the Earth into consideration when keying in the information. In shore bombardment, operators took the set (ocean current) into account. Sailors keyed data into the range keeper electronically or manually.²³

The *North Carolina* first tested the high capacity shell in the South Pacific. The Mark VIII battery computer controlled the main guns. Engineers designed the computer to track the movement of ships and not stationary targets such as island installations. The track capability for the computer went to forty knots because expectations for a target ship relegated it to travel no faster than that speed. The men put the information into the computer and it gave them the proper settings for the main guns. The function of the system changed to shore bombardment, a redesign of the ship's original mission - sinking other combat vessels.²⁴

The problem the system encountered was that it could not compute the proper setting for a reduced charge in shore bombardment; it did not match the cam. Robert Celustka, who worked on this problem, stated that if the cam was not working

²³ Ibid.

²⁴ Robert J. Celustka, interview by Don Lennon, 22 November 1985, collection number OH 24, transcript, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 15-16.

properly, then the advance range would be wrong. The cam ability to solve the problem was wrong, so an engineer from M.I.T. figured out an integration problem to solve the problem with the cam. The integration problem was sixty pages long.²⁵

The crew fired their first shot in the war at the island of Nandi, in the Fijis. The spotter planes found where the shells landed and Celustka had him fly to the island to inspect the damage because no one ever knew what to expect. Celustka found the shell crater and measured the conical hole for depth and diameter, as well as the distance shrapnel traveled from the point of impact. This information went to the Bureau of Ordnance as a capability for battleships.²⁶

Another important piece of equipment in the plot room linked to the range keeper was the stable vertical, a high-speed gyroscope to compensate for the pitch, roll, and yawl of the ship. This device helped to establish and maintain a true vertical, indifferent to ship movement. When personnel entered all the data, the system generated a solution that displayed the trajectory (flight path) of the projectile.²⁷

Primary gun control proceeded through different places onboard the ship. If struck in battle and the gunnery officer's position in control destroyed, then control of the main battery transferred to a different station. Through a series of electrical wiring and switchboards, control of all the guns relayed them to different positions

²⁵ Ibid., 16-17.

²⁶ Ibid., 17-19.

²⁷ *Battleship at War*, 15.

such as control, spot two, or to individual turrets. In battle, individual turrets could track and fire their batteries independently when more than one target appeared.²⁸

The detection of falling projectiles (spotting) was an integral part in the operation of the main batteries. When the main batteries fired their guns, the projectiles would either hit a target or miss. To correct the firing solution from a previous barrage, lookouts stationed themselves atop the ship in the directors to watch the falling shells (splashes) with the twenty-six and a half foot optical range finders. The operators in the directors calculated estimates and relayed them back to the plot room where the sailors keyed in the new solutions.²⁹

To help with spotting were three aircraft on the fantail of the ship, later reduced to two. The Vought O2SU-3 Kingfishers were an important part of the ship's role before the advent of radar. Spotting (and giving corrections to the operators) was the main mission of the Kingfisher when firing the sixteen-inch main batteries at long ranges. Secondary roles played by the Kingfisher were anti-submarine patrols and scouting.³⁰

With the advent of radar and alternate roles for the battleship, such as carrier escort and shore bombardment, the Kingfishers undertook new responsibilities. The aircraft still provided spotting for gunfire and performed anti-submarine patrols. However, as aircraft from carriers undertook ever more missions, Kingfishers began

²⁸ Ibid., 17.

²⁹ Ibid., 16.

³⁰ William Neufeld, *Slingshot Warbirds: World War II U.S. Navy Scout-Observation Airmen* (Jefferson, North Carolina: McFarland and Company, Inc., 2003), 15.

rescuing downed pilots. When the navy integrated radar into the fire control systems of the ships' batteries, Kingfishers towed targets in the air to test the anti-aircraft batteries and made flights for radar calibration. Kingfishers also served as postal carriers, making letter and package runs to ports to pick up and deliver mail. During periods of radio silence, the aircraft made message drops to ships at sea.³¹

As aircraft became the main threat to the battleship, fire control had to adapt. The system of fire control for the five-inch dual-purpose guns was similar to sixteen-inch main battery fire control systems. The basics were the same: track a target and have a solution by which the guns would fire. The difference between the main and secondary batteries were that the systems had to take into account the z-axis (altitude) in its firing solution when plotting aircraft. In addition, the aircraft targets traveled at high speeds. Supervision for the 5-inch guns came under the air defense officer located in "sky control," a position in the upper foremast. A range finder located targets.³²

The Mark 37 generated solutions for tracking targets. There were four battery directors atop trunks both forward and aft forming a diamond pattern. Directors operated fifteen-foot optical stereoscopic range finders to spot targets. When sky control located a target, the director(s) maintained control of the guns, the most

³¹ *Battleship at War*, 28.

³² *Ibid.*, 21.

positioned person(s) to view the target(s). The directors tracked the target and automatically sent range, bearing and elevation data to the plot room.³³

The plot room was the nerve center for the secondary batteries. The room contained four analog computers and stable vertical elements, one for each of the directors. The computers generated firing solutions and sent them back to the guns for air, surface, and shore targets. The solutions were continuous because of the changing variables. The fuse settings for the ammunition were automatic. Once a target became available, the plot room sent the information electrically to the guns to train and elevate them. An integral part of the process was setting the fuse.³⁴

Before the advent of radar and the VT (proximity) fuse, there was AAC (anti-aircraft common) ammunition containing a fuse mechanically timed before being loaded into the gun. A device mechanically set the fuse. Theoretically, the fuse settings contained time for the loading of the shell by the gun crews and the time of flight to a predicted position before exploding. The accuracy of the guns for hitting aircraft was marginal.³⁵

The VT (proximity) fuse greatly improved the accuracy of the secondary batteries. On board the *North Carolina*, the gunnery officers decided not to fully rely on the proximity fuses. They chose to mix the rounds of AAC ammunition and proximity fuses. Admiral John Kirkpatrick states:

³³ Ibid.

³⁴ Ibid., 22.

³⁵ Ibid.

Well, we did not want to put all our eggs in one basket. You cannot tell if ammunition is going to work like it's supposed to. We had an awful lot of dysfunction with star shells so that you did not count totally on that factor. You would have a little of both. We had enough volume of fire that we could get a hell of a blanket going.³⁶

The development of the proximity fuse began in early 1940. The properties of the fuse were revolutionary. The tip of the shell contained the fuse. It emitted a continuous radio pulse into space when fired. The signals reflected back to the oscillator when radio reflection detected the target's signal. When the shell came within seventy feet of the target, the strength of the radio signal created a "ripple," thus setting off a charge to detonate the shell. The navy introduced the proximity fuse in November 1942. In 1943, the navy expended 36,370 rounds of 5-inch shells. There were only 9,100 proximity-fused shells spent, but 51 percent of the kills accredited to the proximity fuse. The new fuses had a direct impact on the war and Japanese planes began falling at a steady rate.³⁷

Another technological development during the war was radar. The major development in the 1940s was the creation of radar (radio detection and ranging). Radar came to the *North Carolina* in August 1941. The radar named CXAM-1 was an early version installed on the ship. There were two types of radar installed on the ship, surface search (SG) and air search (SK). The radar detected targets up to 100 miles away. Radar allowed the ship to track targets in low visibility and at night, as

³⁶ A.G. Ward, interview by Don Lennon, 22 November 1985, collection number OH 24, transcript, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 7

³⁷ Rowland and Boyd, *U.S. Navy Bureau of Ordnance*, 278-286.

well as giving the crew a "heads up" for incoming targets. As technology advanced, so did the radar systems on the ship. By the end of the war, there were eleven sets of radar on board the *North Carolina*.³⁸

Radar operated by using radio waves. The transmitter sent out high pulses of ultra high frequency (UHF) radio signals. When the signal hit an object, a small amount of the radio wave would echo back and the receiver would pick up the signal. A console transformed the signal into an image (blip) onto a screen. The importance of radar allowed for precise bearing, range, and altitude, thus incorporating it into the firing control systems of the 16-inch batteries and 5-inch batteries greatly improved the effectiveness the system.³⁹

Everett Beaver, a seaman who served on the *North Carolina*, came to the ship trained in radar operation. He explained that radar was so top secret at the time that you could not even mention the word. The early system installed on the *North Carolina* consisted of antenna that looked like old bedsprings. The air search radar contained a small cathode ray tube. There were no calibrations on the screen at all. Beaver recounted how the radar man put a piece of scotch tape across the front and marked it with ink in increments of ten, twenty, thirty, forty, fifty, and sixty. He explained that it was very primitive and a lot of trial and error went along with the

³⁸ Norman Friedman, *Naval Radar* (Annapolis: Naval Institute Press, 1981), 145.

³⁹ *Battleship at War*, 49.

new system. Lastly, he reiterated that the *North Carolina* was only one of a few ships that operated radar early in the war.⁴⁰

Beaver also described later upgrades to the system. He said:

Radar grew more sophisticated. As a matter of fact, where the radar was located in the radio room up on the signal bridge. As we got more sophisticated equipment, we came back to Bremerton, Washington and got a CIC [Combat Information Center]. It was air-conditioned and we began to do many things what we did not do prior to that [1944].⁴¹

For example, Beavers watched an unidentified bogey approach the task force that the *North Carolina* accompanied. A plane flying at about 180 miles per hour traveled about three miles a minute. A plane that was out forty miles took about thirteen minutes to reach its target. That was not a lot of time to prepare for an attack if the enemy targeted you.⁴²

Many considerations preceded the development stage of the battleship such as firepower, protection, and speed. Designers originally planned to outfit the battleship with fourteen-inch rifles, but when the Japanese dropped out of the London Treaty of 1936 (limiting battleship size to 35,000 tons and fourteen-inch rifles) in March 1937, the United States changed the configuration of its battleships. The United States increased the caliber of its weapons to sixteen-inch rifles. The navy always preferred the sixteen-inch to the fourteen-inch shells due to the penetrative power of the heavier shell (2,700 pounds versus 1,600), especially at long ranges. The protection of

⁴⁰ Everett Beavers, interview by Don Lennon, 7 April 1991, collection number OH 24, transcript, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 2.

⁴¹ Ibid., 4.

⁴² Ibid., 7.

the ship was state of the art, designed to repel a fourteen-inch shell from a distance of 19,000 to 30,000 yards. Speed for the battleship was six knots faster than the last battleship commissioned in 1921 and the battleship speed allowed it to accompany the carrier within a task force. Overall, the newly built *North Carolina* was a well-balanced ship. Navy personnel considered the man-of-war a prime assignment and regarded her as a "smart ship." Robert Celustka, a former officer on the *North Carolina*, recalled:

It was a well known fact that this ship was a special breed of cat and being a very special ship, so called, we had the pick of the navy assigned to her . . . the gunnery officer was the top gunnery officer in the navy . . . we had the foremost spotter. It ricocheted all the way down through the senior officers and the head of the departments particularly.⁴³

⁴³ Celustka Oral History, 3.

CHAPTER THREE

AWEIGH ANCHORS

The commissioning of the *North Carolina* on 9 April 1941, eight months before the attack on Pearl Harbor, provided the navy a new weapon. Secretary of the Navy Frank Knox gave an impressive speech at the commissioning. He began by describing the failure to produce a single battleship in sixteen years, commenting that it had been rooted in America's "sincere desire for world peace." Secretary Knox went on to explain: "We have finally become convinced that security and peace for the United States may only be secured through adequate defense." Secretary Knox continued:

I promise you . . . every ounce of energy and every spark of resource we have, and a sufficient sum of money, no matter how great, will be expended to make the United States able to defend itself against all comers. And in closing, to all you officers and men, our hearts and hopes go with you. The sacrifices you are prepared to make for the country are examples now needed by our civilian population.¹

The new fast battleship had many obstacles to overcome before she saw action in the Pacific against the Japanese. There was the fitting out process and working up.

John Kirkpatrick, an officer on board the *North Carolina*, stated:

Our first problem was to get the equipment cleaned up and get the paint out of it and get your watch quartering bells all organized and try to figure out how to man a gun and how to shelve supplies and get acquainted with spare parts and hydraulic systems, the emergency checking of them. Then it was a matter of realizing that the gunnery effort relied on the coordination of a hell of a lot of people. That made it a great challenge to get the thing working.²

¹ "Secretary of the Navy," *Tarheel*, 1, no. 1, 12 April 1941, 2, Harry Z. Miller Papers, collection number 848.2.m, East Carolina Manuscript Collection, East Carolina University, Greenville, NC.

Kirkpatrick goes on to describe that most of the enlisted personnel had experience in their field of duty on the ship. If the men did not have experience, then there were special schools set up to train the men.³ Doug Blancheri, a yeoman in the executive's office on the *North Carolina*, explained that at the commissioning of the ship the organizational books furnished from the Bureau were old and outdated. Sixteen years of delayed construction resulted in outdated operating manuals. The officers in charge took the complement of men assigned to the ship and decided which divisions would have rates, billets, and job descriptions. Blancheri believed this organizational revamping to be a tremendous feat in a short period of time.⁴

The first firing exercise occurred two months after the commissioning of the ship off the coast of Guatemala in Central America. The *North Carolina* test fired all of its guns at once, as Kirkpatrick recalled: "To see if the ship would fall apart."⁵ The first real target practice occurred at Guantanamo, Cuba. Off the waters of Guantanamo, the crew realized the problems with the 1.1 anti-aircraft guns. Kirkpatrick stated: "They were faulty in their recoil and ejection system so that it required a great effort on the part of the gunner's mates to keep them firing."⁶

² John Kirkpatrick, interviewed by Ben Blee, 30 April 1976, collection number OH 24, transcript, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 9.

³ Ibid.

⁴ Doug Blancheri, interviewed by Don Lennon, 22 November 1985, collection number OH 24, transcript, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 2-3.

⁵ Kirkpatrick Oral History, 10.

After returning from their first sortie in the Pacific at Guadalcanal, the naval yard replaced the 1.1s with newly acquired forty-millimeter Bofors. They also added more twenty-millimeters. While in the Gulf of Mexico during sea trials, Walter Babcock, a cook on the *North Carolina*, recalled that the ship came from the navy yard with red linoleum on all the decks along with enamel paint. The Navy Department learned early in the war that these decks and paint would burn in a fire. Babcock remembered long hours tearing up the floors, chipping the paint off the ship, and repainting the vessel with paint that would not burn.⁷

The navy hand picked the personnel for the battlewagon. This went straight from the top down to the bottom. The crew had some fond memories of its officers, such as Captain Olaf Hustvedt. The Navy Department selected him for command of the *North Carolina* due to his age and experience.⁸ Robert Celustka, another officer on board, considered Captain Hustvedt a "gentleman's gentleman, very staid."⁹

Admiral Hustvedt recalled that the term for a captain on the *North Carolina* was very short, about six months until promotion to Admiral. He stated, "In wartime commands changed very quickly. He supposes it was because of the

⁶ Ibid.

⁷ Walter T. Babcock, interviewed by Don Lennon, 22 November 1985, collection number OH 24, transcript, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 1-2.

⁸ Adm. Olaf M. Hustvedt, interviewed by John T. Mason Jr., 2 April 1975, collection number OH 83, transcript, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 187.

⁹ Celustka Oral History, 4.

necessity for promoting people to take over new commands as they were organized."¹⁰

Captain Hustvedt did not have a strong voice in the selection of his officers; he took whoever the navy thought were the best men for the job.¹¹ In his interview, Admiral Hustvedt explained how the *North Carolina* received the nickname, "Showboat." Some officers from the *Washington*, the sister ship in the *North Carolina* class, were on board the *North Carolina* and commented that their men were calling the *North Carolina* a "showboat." The officers explained that the crew of the *Washington* was jealous because of the publicity given to the *North Carolina* in magazines such as the *New Yorker*. In Hampton Roads, the *North Carolina* and the *Washington* moored together. When the *North Carolina* left the harbor and passed by the *Washington*, Captain Hustvedt told Commander Shepherd for the ship's band to play, "Here comes the Showboat," a tune from a Broadway show. The name stuck to the ship and it became known as the "Showboat."¹²

The next captain to assume command of the *North Carolina* was Oscar Badger.

Robert Celustka recalled his perception of Badger:

Then we got Oscar Badger, the wild man. He was a showman, a fire-eater, and a very brilliant and most distinguished naval officer. He would put up with no foolishness whatsoever. He really created the ship. He built it mentally and physically because he pursued those yard birds whether it was equipment, personnel, or whatever. He would eat them alive. Captains, admirals, it did not mean a damn to him. The main thing of importance was

¹⁰ Hustvedt Oral History, 188.

¹¹ Ibid., 190.

¹² Ibid., 194-197.

the ship, getting it ready and to do the job. And boy he did, no question about it.¹³

Hustvedt commented that Captain Badger was four years younger than he was. Someone younger succeeded each new captain of the *North Carolina*, until the war ended.¹⁴ Badger made the men train and train until it became second nature. He really prepared the ship for the battles in the Pacific.¹⁵

Another towering figure who helped shape the ship was Commander Joe Stryker. Stryker came on board through an interesting sequence of events. Then Lieutenant Commander Stryker missed promotion to commander due to a typographical error in a fitness report. The navy put him in a new category and restricted him from serving on a combat ship. Instead, he commanded a minesweeper.¹⁶

During his command, he escorted the *North Carolina* up and down the east coast of the United States. Captain Badger commanded the *North Carolina* at that time. Stryker related that once when the ship was entering Norfolk harbor it was foggy. Captain Badger asked the navigator what buoy they were anchored near. The navigator had no idea, so he asked the quartermaster and the quartermaster gave the wrong number for the buoy. The fog lifted in the morning and Captain Badger

¹³ Celustka Oral History, 4.

¹⁴ Hustvedt Oral History, 188.

¹⁵ John P. VanSambeek, interviewed by Don Lennon, 8 April 1991, collection number OH 24, transcript, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 20.

¹⁶ Joe W. Stryker, interviewed by Don Lennon, 22 November 1985, collection number OH 24, transcript, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 2.

looked out and saw the ship moored near a different buoy and that the navigator did not know where he was. Badger said to the navigator, "Pack your bag, I am putting you ashore."¹⁷

Badger immediately called the Navy Department to order Lieutenant Commander Stryker on the ship. It was nearly Christmas when Lieutenant Commander Stryker received a special message from the captain of the *North Carolina*. It read: "Stand by for rapid transfer."¹⁸ Lieutenant Commander Stryker helped Badger several times before, such as planting buoys from his minesweeper in the Chesapeake Bay where there were no aids to navigation because it could aid the German U-boats that operated off the east coast of America. Badger returned the favor by giving Stryker the position as navigator for the *North Carolina*.¹⁹

Stryker recalled:

I immediately found out that Captain Badger was one of the finest men I had ever seen. He had been the chief of staff for Admiral King and he was a hard task master. But if you stood up to him when you were right and you did your job, he was always your friend. Incidentally, I never navigated, never taken a sight since I had left the Naval Academy. When I was in China, I took my promotions examination for JG and they let us take them at the officer's club in Chefoo. I had a couple of extra drinks for lunch and I failed my navigation examination. So when I got on board, I had to keep struggling and working hard to become a proficient navigator.²⁰

¹⁷ Stryker Oral History, 2-3.

¹⁸ Ibid., 4.

¹⁹ Ibid., 2-3.

²⁰ Ibid., 4.

The crew regarded Commander Stryker with the utmost respect. He was probably the best-known figure on the ship, serving from 1941 to 1943. The oral histories explained that he was a tough individual but admired greatly.²¹ When Stryker left the ship, the crew liked him so much they gave a money order to his wife for \$1,280 dollars. Admiral Stryker said his face dropped because he had never before heard of anything like that. The Strykers used the money for a down payment on a house. Later, they sold it for an \$8,000-dollar profit. Admiral Stryker figured the *North Carolina* crew gave him about \$10,000 dollars that day.²²

The ship then went to Casco Bay for a short time and then back to the Brooklyn Navy Yard. The captain wanted the *North Carolina* better prepared for battle so he took Lieutenant Commander Stryker with him to see the superintendent of the navy yard. Admiral Stryker recalled the conversation:

"I want one hundred more twenty-millimeter guns on the ship." The admiral said, "For God's sake, we designed this ship with the number of guns that you have on board now. You cannot carry anymore. The experts did that." Captain Badger let loose with a little salty language and said, "I will tell you where to put them. I want this many up on the forecastle. I want this many on top of the pilothouse. I want this many here and there." They said it could not be done. That if you had men up there on the forecastle firing twenty-millimeter anti-aircraft guns and you fired your main battery; you would blow everybody off the forecastle. The captain said, "I do not know why they have people running these naval yards who do not know a damn thing about the sea. How many times do you think we are going to be using our main battery over the bow when we are shooting at airplanes?" He said, "I want those goddamn guns, and I want them fast."²³

²¹ Max Jenkins, interviewed by Ben Blee, 22 November 1985, collection number OH 24, transcript, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 11.

²² Stryker Oral History, 29.

²³ *Ibid.*, 6.

Admiral Stryker could not recall how many new guns they received but he remembered that there were a lot of them put on the ship after the incident. Stryker also stated that he came to regret that the yard put four guns on top of the pilothouse because they generated so much noise when fired.²⁴ Doug Blancheri, chief yeoman, worked under Commander Stryker and recalled: "Well, you couldn't ask for a nicer person, you know, to work for. In all respects, he was just a well-rounded, fair, patient person."²⁵

Another captain fondly remembered by the crew was Captain George Fort.

Jackson Belford recalled him as a realistic captain. In one story, Belford stated:

Captain Fort disliked sailors absent or over leave, not reporting to your ship on time. One sailor was late reporting aboard ship. He went up to the captain's mess and the captain asked what happened. The sailor said he missed the last train out of Boston up to Portland. He was not too late. The captain said, "Well how did you get here?" The sailor said, "Well I took a cab." The captain said, "You took a cab all the way from Boston to Portland, Maine?" The sailor said, "Yes sir I did." The sailor showed the captain the receipt from the cabby. It was twenty-five dollars and twenty-five dollars to a seaman in those days, you are talking about half a months pay, at least. He restricted the sailor to one liberty and told the yeoman to tell the ship service to give him twelve dollars and fifty cents back. That was a man that most of us would go to hell for.²⁶

A few other men also remembered fondly Commander Maxwell, who headed the engineering department. Edward Hall, who served as a seaman, recalled that Commander Maxwell talked to him while he was on the fantail having coffee.

²⁴ Ibid., 7.

²⁵ Blancheri Oral History, 4.

²⁶ Jackson Belford, interviewed by Don Lennon, 7 April 1991, collection number OH 24, transcript, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 9-10.

Maxwell talked to Hall as a "regular Joe," even though navy regulations prohibited fraternization between officers and enlisted men.²⁷ Richard Downing called Maxwell very personable and a knowledgeable individual and Charlie Rosell recalled fond memories of him. Rosell said he was a "terrific leader."²⁸

Charlie Rosell also called to mind Chief Warrant Officer William Doyle. Rosell remembered that they called Bill Doyle every name in the book, because he made them train so hard, until a torpedo struck the ship. They did not know why they trained so much until that day. They thanked him profusely after that day because everyone worked together automatically. "That was the type of training you got in those days."²⁹

Crewmembers had all sorts of jobs on the *North Carolina*, from the captain of the ship to the ordinary seaman, all performing different roles. Otho Farrar recalled his position in the engine room and the temperature below. It was extremely hot in the Pacific and the ventilation brought the warm air into a hot environment. He remembered getting terrible heat rashes from engine room duty.³⁰

²⁷ Edward Hall, interviewed by Don Lennon, 7 April 1991, collection number OH 24, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 8.

²⁸ Charlie, Rosell, interviewed by Don Lennon, 25 June 1975, collection number OH 24, transcript, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 8; Richard L. Downing, interviewed by Don Lennon, 5 October 1992, collection number OH 24, transcript, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 21.

²⁹ Rosell Oral History, 3.

³⁰ Otho E. Farrar, interviewed by Ben Blee, 22 November 1985, collection number OH 24, transcript, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 5-6.

Other people enjoyed their jobs, for example, Dick Evans. He recounted working in the sixteen-inch turret. He recalled: "I enjoyed sitting there as a pointer and a trainer. Getting the vertical and horizontal and catching this salvo as it comes out and seeing where it hits, and the damage it does." Like everyone else, during his first battle he said he was scared to death.³¹ Richard Downing claimed that "... the battles of Eastern Solomons and the torpedoing were the most exciting experiences aboard the *Carolina* for me."³²

The ship did have a recurring problem – vibrations. Harry Miller recalled the vibration problems in the shaft caused by the propellers. The ship shook violently when they were at high speed. Everyone knew about the vibration problem during the shakedown cruise. They went into dry dock four or five times, as he recalled, switching out the propellers for new ones. They tried different schemes, like putting four bladed propellers on the outboards and three bladed propellers on the inboards. Miller said that finally they shaved the propellers down and that fixed the problem.³³

When the ship received all the personnel on board and finished the repetitive training sessions, it sailed to the Pacific to begin its fight against the Japanese. Robert Celustka remembered the ship's readiness. He recalled: "There was no question in my mind that the ship was ready because we had such a gunnery reputation. It was

³¹ Dick Evans, interviewed by Ben Blee, 23 June 1976, collection number OH 24, transcript, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 8

³² Downing Oral History, 17.

³³ Harry Z. Miller, interviewed by Don Lennon, 7 February 1999, collection number OH 176, transcript, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 8-9.

just unbelievable. We drilled and trained and were honed to an edge that you would not believe."³⁴ Walter Babcock considered himself green at the beginning of his service, but highly trained when he left the ship. He recalled that his reactions during general quarters or air defense were automatic from so much training.³⁵

The first order was to get the *North Carolina* into the Pacific by way of the Panama Canal. The Panama Canal was only 110 feet wide and the *North Carolina's* beam was 108 feet. That called for a tight squeeze, with only one foot on either side for error. One interesting story happened while transiting the Panama Canal. The navy tried to keep the transfer of the battleship into the Pacific a secret so they covered all the numbers and names on the ship, except they forgot the commissioning plaque. In the canal, a person read the plaque and said, "Boy that *North Carolina* sure is big," so much for the secret.³⁶

From the Panama Canal, the *North Carolina* traveled to Long Beach, California and then to Pearl Harbor, where another memorable moment occurred.

³⁴ Celustka Oral History, 6.

³⁵ Babcock Oral History, 5.

³⁶ Belford Oral History, 39.

CHAPTER FOUR
THE BATTLES OF EASTERN SOLOMONS AND KWAJALEIN
ATOLL

When the *North Carolina* first appeared at Pearl Harbor, a remarkable thing happened. Ben Blee recounted this experience:

Then on July 11, 1942, at Pearl Harbor, a remarkable thing happened. Late that afternoon, word came down from the signal bridge on my ship that a ship nobody could identify was standing in the channel to Pearl Harbor. The word spread quickly throughout the ship and soon all hands were scrambling topside to see what it was. We looked out across Ford Island and above the tops of the palm trees, moving slowly across the scene was that great tower foremast. What a welcome sight it was, and this whole immense battlewagon glided into view as she came around the end of the island. Believe me, I've never seen anything more beautiful in my life. My ship was moored side by side with the *Northhampton* and the *Salt Lake City* and there were hundreds of men watching you from every conceivable vantage point as you stood a quarter and the *North Carolina* stood astern of us at a distance of about 100 yards, and then a gristly old chief stood up on tower three of the *Northhampton* and led us in three cheers that must have been heard all the way to Honolulu, ten miles away.¹

Harold Smith commented that he had the same impression when traveling into Pearl Harbor.²

While in Hawaii, the *North Carolina* underwent intensive firing drills. The crew practiced with flying drones to hone their anti-aircraft firing skills. Larry Resen commented on the damage at Pearl Harbor. He said:

¹ Capt. Ben Blee, "Battleship Association's 13th Reunion Speech," 25 June 1975, collection number OH 24, transcript, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 1-2.

² Harold Smith, interviewed by Don Lennon, 8 April 1991, collection number OH 24, transcript, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 7.

Even with all the movies and pictures you saw you couldn't appreciate the devastation that had taken place there. When these other ships were there docking, the men there all they had really ever gotten was a very sharp kick in the teeth at Pearl Harbor, and all the ships that had been lost in between; when they cheered us, it just broke me up. We hadn't done anything, we were going to have a chance to do something.³

Max Jenkins reported a similar experience.⁴

Robert Downing, an officer of the ship's crew, related how the *North Carolina* worked out the bugs before heading north to the Solomons. In the summer of 1942, the ship was in the Noumea area because the ship had electrical problems. The *North Carolina* would lose power when the crew turned the turrets because the drive put tremendous drains on the electricity. He related that a loud noise would follow the crash of the power system. Once they added more generators to the ship everything worked out fine and the ship proceeded north to work with the aircraft carriers.⁵

The action on 24 August 1942, better known as the Battle of Eastern Solomons, consisted of a large Japanese offensive air attack on the *Enterprise* and *North Carolina* during late afternoon. A coordinated strike consisting of about forty enemy aircraft was "notable for the large number of planes reaching bombing attack points and the enormous volume of anti-aircraft fire."⁶

³ Larry Resen, interviewed by Don Lennon, 20 April 1977, collection number OH 24, transcript, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 5.

⁴ Jenkins Oral History, 8.

⁵ Downing Oral History, 14.

⁶ "U.S.S. North Carolina - Action of August 24, 1942", U.S.S. North Carolina Commission Papers, collection number 292.3.a, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 1.

The basic action was straightforward. The rival forces contacted each other about the same time with aircraft. The Japanese forces dive-bombed the Americans as the latter bombed the Japanese. In terms of damage, the American forces exacted more than it suffered. Central to the American advantage was the destruction of the Japanese aircraft, though little damage occurred to the Japanese fleet. There are many phases in the complex battle, but this account will focus on the *North Carolina's* role.⁷

The attack on the *Enterprise*, which the *North Carolina* protected, came about 1709 in the late afternoon. Official calculations of the Japanese force estimated their strength to include about "seventy- five planes – thirty-six dive-bombers, twenty-seven fighters, and twelve torpedo planes."⁸

The Japanese aircraft arrived from two Japanese carriers, *Zuikaku* and *Shokaku*. Radar acquired the Japanese aircraft eighty-eight miles out and followed their track until the battle commenced. An estimated thirty-six planes attacked the *North Carolina* – sixteen dive-bombers, twelve level bombers, and eight glide bombers. Officially, Japanese bombers dropped three bombs near the *North Carolina* – two fell fifteen yards away and one fell twenty-five yards away. The blasts from the bombs shook the ship and soaked the crews' operating the outside guns.⁹

⁷ *The Battles of Savo Islands and the Eastern Solomons* (Washington, D.C.: Naval Historical Center, 1993), 53.

⁸ *Ibid.*, 64.

⁹ *Ibid.*, 64-67.

During the peak of battle, the *North Carolina* fired all of her anti-aircraft guns simultaneously. The *North Carolina* put up such a volume of anti-aircraft fire that the *Enterprise* called over the radio to ask if she was on fire. Determining credit for downed enemy aircraft by American ships remained difficult. There were so many American ships firing on Japanese aircraft that more than one ship often claimed responsibility for the "splash" (downed aircraft). In all, the *North Carolina* claimed she shot down fifteen Japanese planes.¹⁰

John Kirkpatrick's official report recorded the disposition of the anti-aircraft batteries (five-inch). He discussed the action in detail. He talked about two problems incurred during the battle. One was the optics used to direct the batteries. There was so much vibration in the ship caused by excessive speed and turning erratically that the targets appeared as blurs in the optics. The second point he made was the ineffective use of radar; because the enemy aircraft were at close range the radar had a hard time picking up targets and needed corrections. Another problem noticed was in Group 4. A control officer neglected to wear his goggles and the effects from firing the guns (heat, smoke, flash, ect.) hampered his ability to direct fire accurately. The batteries expended 841 rounds. Overall, the five-inch batteries performed well in their first engagement.¹¹

¹⁰ Ibid., 68

¹¹ John E. Kirkpatrick Papers, 24 August 1942, collection number 292.1.g, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 1-3.

The smaller anti-aircraft guns also performed well during battle, with a few exceptions. The gun crew opened up when the enemy aircraft were between 5,000 to 8,000 yards after the five-inch batteries. All guns used tracer control to direct their fire, except for a few guns that used sights. The biggest problem was the 1.1s. They had fifty rounds that jammed and sailors threw them overboard. The total amount of ammunition expended was 1.1, 1,037 rounds, 20-mil., 7,425 rounds, and 50-cal., 8,641 rounds total. Kirkpatrick stated, "Personal performance was commendable."¹² Harold Smith recalled that the five-inch mounts fired so much that the paint peeled off the barrels of the guns. In the action, a Japanese plane strafed the aft end of the ship and killed one seaman.¹³

Admiral Stryker offered an interesting point concerning the Battle of Eastern Solomons. He discussed the gunners' role and problem associated with getting gunners to stop firing. Even though the targets were out of range or a ship came in range, the gunners continued to fire. Friendly fire was a problem; even the *North Carolina* found that out the hard way. Admiral Stryker recalled, "The only way we got our intrepid 20mm gunners to cease firing was to have the telephone talker kick them smack in the ass. That would make them pay attention."¹⁴

¹² Ibid., 4, 8.

¹³ Smith Oral History, 9.

¹⁴ Joe W. Stryker Papers, "Battle of Eastern Solomons," collection number 292.2.a, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 1-2.

At the Battle of Eastern Solomons, the guns above made so much noise that no one in the pilothouse could hear. This was the reason that Admiral Stryker devised the method of navigating the ship by using hand signals. Admiral Stryker recalled:

The quartermaster did not know when we started out except when I would wave to the right a certain way, he would go right rudder. I would put up one finger and that meant five degrees, two meant ten and three meant fifteen. I got him over in a lull. Then when I would make a fist he would stop, and another wave fore and aft meant steady as you go, keep her going in this direction. By using these signals we were able to keep our position on the *Enterprise* which was maneuvering violently without any signals of course. We were able to keep close and keep her well enough so that we covered her and shot down several planes right over her.¹⁵

Commander Stryker also developed these hand signals to save the ship from aerial bombardment. Stryker took the conn (responsibility for the steering of the ship) during battle and during threats. During the Battle of Eastern Solomons the ship ran fast to keep up with the *Enterprise*, which it protected. A wave of Japanese bombers came overhead. Robert Celustka remembered the ship turning hard to port one moment and hard to starboard the next. He recalled, "Boy, would that ship lean." There were eight to ten near misses within a distance of twenty to forty yards from the ship. Celustka credited Commander Stryker with saving the ship: "It was all due to the fact of throwing the rudder over and just saving our necks!"¹⁶

Celustka, who worked in the plotting room below the conn, recalled his emotion during the Battle of Eastern Solomons:

¹⁵ Stryker Oral History, 7.

¹⁶ Celustka Oral History, 6-7.

Well, here I am down in the plotting and the ship would go over one way and then the other way. I did not know whether we were hit or sinking or what the hell. It was quite a feeling! You could feel the blast and you could hear the damned thing. It was only ten or twenty yards away [bomb blasts]. I did not know whether we were being torpedoed or blown out of the water with bombs, or what the hell. But, it was quite a feeling! After that it got to be pretty routine, and certainly we went many hours and days without getting tangled up. Then we would suddenly go through this drill again with another air attack or submarine threat or whatever have you.¹⁷

Larry Resen recalled the bandits (enemy airplanes) on the radar screen. He said that the system was still elementary but gave the crew a heads up. There were null areas on the radarscope and the radar lost the planes once in while. He stated the battle was quick, only about nine minutes. He recalled a Japanese plane coming down the side of the ship and a twenty-millimeter gunner shooting the airplane down.¹⁸ Lawrence Robillard also recalled seeing the Japanese plane. He said, "... you could see his features and everything."¹⁹

William Rogers, a turret officer, explained how the battleship's transitional role changed when the fast battleships began shore bombardment. When Rogers came on board the ship there were no high capacity shells stored in the magazine room, only armor piercing. Battleships designed to fight other battleships needed armor piercing shells. However, as the era passed and battlewagons such as the *North Carolina* conducted ever more bombardment missions, the battleships started carrying high capacity shells – shells that carried more explosives than armor piercing shells.

¹⁷ Ibid., 7.

¹⁸ Resen Oral History, 8.

¹⁹ Lawrence J. Robillard, interviewed by Don Lennon, 25 June 1975, collection number OH 24, transcript, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 4.

They put high capacity shells on one deck in the magazine and armor piercing shells on another level. The navy color-coded the shells so there was no mix up when loading.²⁰

The bombardment of the Kwajalein Atoll – the islands of Roi, Namur and adjacent islands – occurred on the 29 and 30 January 1944. Leading up to the bombardment, the *North Carolina* was in the Gilbert Island area. This was the initial move into the Mandate Islands. The battleship acted as a shield to prevent the Japanese from reinforcing the Kwajaleins. This was the first time that fighters operated at night and the United States lost the famous pilot, Butch O'Hare. The *North Carolina* moved down the chain of islands to begin the bombardment phase adjacent to the Kwajalein Atoll, beginning with Nauru. The primary targets for the battleship were the shipping facilities, because the Japanese used the island to ship out nitrate.²¹

The official Action Report 9 February 1944 asserted that the mission had three objectives. The report stated: "Carry out slow and intermittent bombardment of airfield at Roi during the late afternoon of the 29th and the night of the 29th and 30th to keep airfield inoperative, prevent reconstruction during the night, and generally to harass the enemy."²²

²⁰ William Rodgers, interviewed by Kim Sincox, 19 April 1991, collection number OH 24, transcript, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 1-4.

²¹ Richard Walker, interviewed by Don Lennon, 22 November 1985, collection number OH 24, transcript, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 7.

Kwajalein Atoll is a 100-mile long atoll. The Japanese had installations at either end. On one end was an airstrip and the other consisted of revetments with storage facilities and living quarters. The Japanese stored torpedo warheads and bombs there. During this bombardment, the *North Carolina* requested aerial photographs of the islands for the first time, because the ship had no accurate charts. Photoreconnaissance revealed all the targets on the island, and maps became available for the director operators in January 1944, so they knew the location of enemy targets. Walker considered the operation a total success.²³

The bombardment commenced late in the afternoon of 29 January 1944. During the course of the bombardment, the *North Carolina* sank a merchant ship. The battleship destroyed the airport and revetments. When the *North Carolina* shelled the revetments laden with explosives, a secondary explosion let out a tremendous blast. The bombardment continued day and night. The men on the ship grew tired because the bombardment lasted for two days and two nights.²⁴ John Kirkpatrick commented that the exhaustion lasted with him until the end of the war.²⁵

Admiral Stryker discussed the merchant ship that the *North Carolina* sank in the lagoon during the bombardment. After the battleship sank the ship, they boarded

²² "Action Report - Bombardment of Roi, Namur and Adjacent Islands Kwajalein Atoll on 29 and 30 January 1944," 9 February 1944, collection number 292.3.c, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 2.

²³ Walker Oral History, 7-8.

²⁴ Ibid., 8-10.

²⁵ Kirkpatrick Oral History, 1-2.

it the next day and found "Japanese charts of depths and channels of every lagoon in the Pacific, which saved us months and months of surveying and hydrographic work."²⁶ Admiral Spruance planned the operation months before and the day before the operation, he asked about the order, but no one knew of it. He wrote a new order the night before from memory. Stryker commented: "I think we did an awful lot of good, because we blew up a lot of ammunition dumps and kept them (enemy) off balance for the night."²⁷

Night bombardments kept the Japanese soldiers awake before the impending invasion. Larry Resen recalled seeing Marines just before the invasion of Guadalcanal and expressed his perspective. He commented:

We were converging on the invasion force and we got very close. The two groups got together and then parted company. We got fairly close and could see the troops lining the rails. You could see that their feelings were that at least they were going to have some backup support that it was not all going to be just the ground support or the close in support they were going to get. Again, nobody knew really what was to come since it was the first of these invasions.²⁸

When on long hours of duty, there was little food or sleep. The men ate sandwiches made in the kitchen distributed to them at their stations. When nature called, men could access the admiral's quarters, but most of the time men kept buckets nearby.²⁹

²⁶ Stryker Oral History, 28.

²⁷ Ibid., 27-28.

²⁸ Resen Oral History, 6.

²⁹ Ibid., 2.

Henry Okuski, a seaman working in the engine room, came out to look at the bombarded islands and recalled that a lot of them resembled flat rock. Nothing was there; some of the places looked dreadful.³⁰

The following month, Commander Stryker sent out a memorandum concerning minor repairs. The bombardment of islands caused problems on the ship such as: "Missing nuts, bolts screws and nameplates. Loose pipe and cable clamps. Broken or missing fittings, hooks, locks, and fastenings. Split seams in non-watertight bulkheads, ventilation ducts and lockers. Sprung, warped, loose or rattling doors."³¹ Stryker stressed that these items seemed insignificant at the time, but in the event of an attack they could become deadly. He stated in a memorandum: "The loose plate is a missile hazard which may end up in someone's skin . . . A section of loose pipe may collapse with resultant flooding and reduction of watertight integrity."³² Overall, the shells that served to bombard caused damage to the ship. Constant upkeep of the ship required vigilance among the crewmembers.

Admiral Stryker stressed a main point that the battleships accomplished during the war.

The great value of that ship [*North Carolina*] and all other battleships in the war. When they fitted them out and stocked them, they had enough hardware, they had enough supplies to take care of two countries around here. So when we got out there, the first time we went to Noumea, they had mobile

³⁰ Henry Okuski, interviewed by Don Lennon, 5 October 1992, collection number OH 24, transcript, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 5.

³¹ Joe W. Stryker Papers, "Minor Repair Items," 24 February 1944, collection number 292.2.c, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 1.

³² Ibid.

hospitals, MOB 3 and MOB 5. I would go out if I was in the vicinity and call on the commanding officer and see how they were getting along. Every time they would say that they were all settled and that they had all their supplies in but that they didn't have any blankets. How could they run a hospital without blankets? All I had to do was ask how many they wanted, and they would ask for two hundred of them. I would write an order saying, "Send two hundred blankets to MOB 5." And they had them. Also at Noumea there was a commanding officer of a mobile construction battalion outfit who came on board and asked for me. He said that they had to build a tank farm that they had the steel plating and everything; but they didn't have any welding rod. He asked if we could help. We gave him enough welding rod to put up the whole tank farm. Somebody over estimated a hell of a lot what they needed on those ships [battleships]. In nearly every category, we were able to help. I remember one time we gave some organization a couple of hundred bales of rags they needed. One of main jobs - and I've written an article on this that I think they called it. "The Battleship as a Supply Ship" - was that we could just about do everything for destroyers. They would come alongside with a broken part, and we could send it down to the machine shop and have it fixed before they got underway. One time a classmate of mine came alongside in a destroyer, and saw all that nice big plank desk over there. He got me on the phone, and he said, "Hey Joe, I've got a man on board who claims he has got ten days leave coming to him. He took a look at your ship, and he wonders if he can come over and go on leave for ten days." [Destroyers were well known to "bob" in the sea] We had a great ice cream capacity, and for a while we would push it off on the destroyers. I'll always remember one time we asked this destroyer if he wanted some ice cream and he said, "No we've got plenty. Would you care for some?" We carried movies around for movie exchange. We would give a new one to every ship that came up alongside for anything. So when people talk about our main job as protecting carriers, I often used to think that mobile supply was part of our job, and that's what kept us going out there. We could receive things at sea, and we would never have to go back into port. I don't know what our limiting factor was. I guess it was just exhaustion.³³

³³ Stryker Oral History, 37-38.

CHAPTER FIVE

NARROW ESCAPES

Ben Blee recounted the torpedo attack on Task Force 17 by the Japanese submarine I-19. Blee was on the heavy cruiser *Pensacola* at the time. On 15 September 1942, in the South Pacific near the vicinity of the Solomon Islands, the *North Carolina* was in the task force protecting the carrier *Hornet*. Late in the morning, around lunch, Captain Blee noticed the *Wasp* was on fire; great billows of smoke churned up from her. There was no warning of the impending attack. Blee recalled seeing the bow of the destroyer *O'Brien* being blown off. It now occurred to him that he was witnessing a torpedo attack. A few seconds later, he saw a torpedo wake heading for the *North Carolina*. He tried to get a message off to the battleship, but it was too late and the next thing Blee witnessed was a great cloud of grayish smoke envelope the *North Carolina*.¹ Captain Harry Miller stated that the *North Carolina* was not the intended target of the torpedo attack.² Command relayed that the formation proceed out of the area at high speed and Blee saw the *North Carolina* stay in formation. The task force commander radioed over, "Can you make twenty-three knots?" Captain Fort replied, "I'm making twenty-seven now."³

¹ Ben Blee, interviewed by Don Lennon, 22 November 1985, collection number OH 24, transcript, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 10-11

² Miller Oral History, 12.

³ Timothy O'Brien, interviewed by Don Lennon, 22 November 1985, collection number OH 24, transcript, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 1.

Blee saw a list in the *North Carolina* but transferring ballast corrected it after five minutes. "The fact that they [*North Carolina*] did that and she maintained her position in the formation is a tribute not only to how well she was built to take damage but how well trained and effective her crew was."⁴

Robert Celustka recounted the formation of a task force to prevent against submarine threats. He recalled that there should have been a destroyer every thirty degrees or twelve destroyers all around the task force. The day the *North Carolina* suffered a torpedo hit, the task force operated with between five to seven destroyers. The formation corresponded to a bent arc with the carrier in the center and the battlewagon maintaining station on the carrier. The destroyers cruised at a distance of 7,500 yards from the center. Cruisers traveled 2,500 yards from the center.⁵

The official War Damage Report No. 61 offered a clear perspective of the events that occurred on 15 September 1942. The *North Carolina* operated with Task Force 17 off the Solomon Islands, protecting the aircraft carrier *Hornet* and accompanying Task Force 18. The report related that at 1218, a *Wasp* plane fifteen miles to the west of the force shot down an enemy seaplane. The task forces conducted flight operations. At 1444, the *Wasp* was on fire. At 1430, the *North Carolina* started to swing in her course, following the *Hornet*. Next, a flash report, TBS (talk between ships) broadcast to the *North Carolina* warned "torpedo passed astern headed for you." An order for "right full rudder, emergency flank speed" was

⁴ Blee Oral History, 12.

⁵ Celustka Oral History, 7.

given. At 1542 while turning starboard, the *North Carolina* took a hit from a submarine's torpedo. The torpedo exploded alongside turret one, frame forty-six, on the port side just two feet below the edge of the armor belt. Operational speed increased to twenty-five knots from nineteen knots. No one saw the torpedo before it hit the ship. General Quarters immediately sounded after the torpedo hit. The ship listed to port, about five and a half degrees, and trimmed by the head. In six minutes, the Damage Control Section removed the list and trim. A heavy oil slick trailed the ship.⁶ Larry Resen commented that he never thought the ship would sink, but the ship was listing.⁷

Resen recalled that the *North Carolina* was moving so fast to leave the area that it made him feel comfortable.⁸ Harold Smith recalled that they used to call us the thirteen-knot fleet, because the fleet cruised at that speed. As the admiral used to say, "We want to conserve fuel."⁹ After that day, the fleet got up to eighteen knots.¹⁰

The *North Carolina* left Task Force 17 and headed for Tonga-Tabu. Five men disappeared and officials presumed they died. At Tonga-Tabu, the repair ship *Vestal* conducted initial repairs on the *North Carolina*. The torpedo (Type 92, carried a

⁶ "USS *North Carolina* (BB-55) Torpedo Damage," 25 February 1949, collection number 292.3.b, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 4.

⁷ Resen Oral History, 13.

⁸ Ibid.

⁹ Smith Oral History, 10.

¹⁰ Ibid. Ships had to slow down during refueling operations. Thus, it is logical that the fleet cruised at a slower speed to conserve fuel because the threat of torpedo attack increased when fueling.

warhead with 660 pounds of explosives) blasted a hole thirty-two feet wide by eighteen feet deep.¹¹ The *North Carolina* then proceeded to Pearl Harbor Navy Yard for permanent repairs. This was the second narrow escape for the *North Carolina* after the Eastern Solomons where bombers attacked.¹²

Everybody who was on board the ship at the time of the torpedo attack recalled the event. Robert Celustka remembered where he was on the ship at that particular moment and what occurred next. He stated that the damage control team was fast in counter flooding the list. Everyone responded just the way they had been trained to do and did it effectively.¹³ Richard Downing credited having fifteen to twenty men in that area of attack checking for soundness when the torpedo hit. They were right there, a damage control party.¹⁴ The official report stated, "The damage was sustained by the *North Carolina* without marked reduction of her fighting ability and was ably handled by the ship."¹⁵

Michael Horton remembered the attack and saw the *Wasp* hit by a torpedo.¹⁶ In addition, Willie Jones recalled the *Wasp* sinking and the sight disturbed him.¹⁷

¹¹ Friedman, *U.S. Battleships*, 279.

¹² "Torpedo Damage," 5, 7.

¹³ Celustka Oral History, 14.

¹⁴ Downing Oral History, 16-17.

¹⁵ "Torpedo Damage," 39.

¹⁶ Michael L. Horton, interviewed by Don Lennon, 25 June 1975, collection number OH 24, transcript, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 7-8.

Horton worked a five-inch turret on the port side where the torpedo struck. When the captain made a port turn the ship rolled and he thought the ship would broach (flip over). Everybody got very "big-eyed."¹⁸ Joseph Iacono said he was not afraid during the war until the day the *North Carolina* received a torpedo hit.¹⁹

Max Jenkins, who worked in turret one as a trainer and claimed it was the best air raid shelter on the ship, recalled the torpedo attack.

When the torpedo hit all he heard was a ping, not even a loud sound. I got a little oil on my face and that was it. They sounded general quarters and the lights were out in the turret and a seventeen year old [him] has got to go down in the gun turret and with the lights and doesn't know where and even the gun turret officer's voice was cracking because he was all young at the time and he didn't know if it was going to blow up or not. That was a hard thing to do and to go down in that turret and with battle lanterns and not knowing what was going on.²⁰

Other interesting events occurred later in the war, as remembered by the crew.

On 15 October 1944, a Japanese plane almost struck the *North Carolina*. Everett Beavers watched the event unfold as an American aircraft carrier took bomb strikes from a Japanese plane.

The *Franklin* had launched an air group for some op and the group was returning. The *North Carolina* picked up a bogey early in the morning. Beaver picked up a contact on the air search radar, probably 30-35 miles out. Reported it then put a plot on it. After a short period, you determine its course and speed. We had no friendly craft in the area. Reported this to the flag, which

¹⁷ Willie N. Jones, interviewed by Don Lennon, 25 June 1975, collection number OH 24, transcript, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 5.

¹⁸ Horton Oral History, 7-8.

¹⁹ Joseph E. Iacono, interviewed by Don Lennon, 25 June 1975, collection number OH 24, transcript, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 1.

²⁰ Jenkins Oral History, 3.

was on one of the carriers then. No one else in the task group could pick up the bogey. We had a very good signal and we tracked it in until one of the picket destroyers had a visual sighting and reported that they had it. It was identified as Japanese, when that happened air defense sounded aboard the ship, which means that everybody concerned with anti-aircraft went to battle stations. My battle station was surface plotter. Therefore, I did not have anything to do during air defense so I went out on the signal bridge, which CIC [combat information center] is there. I saw the plane coming and everybody was firing at the lone aircraft, so were we, the single plane. She somehow slipped through all the enemy aircraft fire and the *Franklin* was approx. 1000 yards of our port bow. The aircraft dropped a bomb on the floor between flight deck and the aft flight deck. The *Franklin* started exploding and burning because she was preparing aircraft. We had to make a short turn to the starboard to keep from going through a bunch of men that were in the water. The Japanese continued on the edge of formation and one of the CAP [combat air patrol] aircraft from the *Franklin* shot the plane down. No one could understand why we really were not prepared for it. I guess because one lone ship picking up one bogey and no one else having it, they [the task force] think that you might be picking up some static or something on your radar²¹

Beaver explained that after the attack on the *Franklin*, the plane turned to port and headed straight for the *North Carolina*.

I thought surely she was going to crash into us on the signal bridge. As a matter of fact, everybody started moving up beside the ship. So close that you could literally see the pilot, it went right down beside us. It felt like you could throw a rock at him almost.²²

Another perspective of the same incident explained what happened to the *Franklin*. Ralph Sheffer, a fighter director and radar officer, verified Everett Beaver's perception of events. He added that the Japanese used to play tricks like dropping tin

²¹ Everett Beaver, interviewed by Don Lennon, 20 June 1988, collection number OH 24, transcript, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 1-2.

²² Ibid., 2.

foil to confuse the radar operators. Sheffer stated that hundreds of men lost their lives to the freak accident and that was an awful thing.²³

Beaver related another close call – friendly fire.

I had just started at the CIC [combat information center] and was going to go on the signal bridge. The division officer then, who was a Lieutenant Commander Kurin, asked me to stay. I was surface plotter and I didn't realize that they needed me, but I stayed because he ordered me to. Most everybody on the signal bridge got hit that morning. My buddy walked out right in front of me and I was a step behind him. He got out before he was pulled back and I did not. He was seriously wounded. You often wonder but never mention what would have happened otherwise.²⁴

Ben Blee commented that three men died and forty-four men were wounded when the *Helena* fired a five-inch shell on the *North Carolina*.²⁵

Charlie Gilbert told of a narrow escape by a fellow Marine on board the ship. The *North Carolina's* radar revealed a great deal of air activity that came one night. The captain slowed the ship down so the wake would not be so large – there were snoopers (enemy planes) about. All of a sudden, a twenty-millimeter gun began to fire. Then another twenty-millimeter joined in. Later, the Marine named Morgan reported that he had to open up because he could see the face of the pilot, the enemy airplane was that close. The riddled aircraft crashed because of the extraordinary effort in seeing a plane that came out of nowhere. Gilbert considered Morgan a hero because he disobeyed a direct order not to fire without permission. In addition,

²³ Ralph Sheffer, interviewed by Don Lennon, 20 April 1977, collection number OH 24, transcript, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 10.

²⁴ Beaver Oral History, 5.

²⁵ Blee Oral History, 20.

Gilbert believed it was a gut reaction because the training of the men was superb.²⁶

Ollie Goad recalled the same story and stated that the Marine was a good shot.²⁷

Another friendly fire incident occurred when the *South Dakota* fired on the *North Carolina*. Charles Gilbert recalled the *South Dakota* firing at an aircraft when a twenty-millimeter round fell from its trajectory into the tub of a forty-millimeter on board the *North Carolina*. One fellow jumped in the air, nine feet according to Gilbert. Another fellow was grabbing one foot. The shrapnel from the round burst and cut his foot up pretty bad. The twenty-millimeter round held a small amount of TNT in the shell and exploded upon impact.²⁸

Beaver recalled one last incident involving radar, a relatively new system that still had many bugs to work out. As a result, radar picked up many things. His training taught him to weed out the contacts that were not ordinary. With experience, an operator started to realize or see tiny little things on the radar screen. Sometimes they would be friendly aircraft. The returning aircraft sometimes forgot to turn on their IFF (identification friend or foe) beacon after a bombing run and the crew of the *North Carolina* proceeded to air defense in the middle of the night and open fire on them.²⁹

²⁶ Charlie Gilbert, interviewed by Don Lennon, 24 June 1976, collection number OH 24, transcript, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 7.

²⁷ Ollie C. Goad, interviewed by Don Lennon, 22 November 1985, collection number OH 24, transcript, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 2.

²⁸ Gilbert Oral History, 2.

²⁹ Beaver Oral History, 2, 8.

One friendly fire accident occurred when the *North Carolina* shot practice rounds from its five-inch guns during a drill. They were testing the radar range and they simulated an attack on the task force. The *North Carolina* fired on the *Kidd*, an American destroyer, but was supposed to shoot well astern of her with a star shell. Unfortunately, the man in the secondary gun turret hit the automatic lever; the gun went into tracking mode and, when it fired, hit the *Kidd* in the wardroom. It went right through the steel wall and set the room on fire. The damage was not extensive and no one was injured, but the *Kidd*'s crew were "mad as hell."³⁰

To soothe the *Kidd*'s feelings, Commander Stryker ordered the *North Carolina*'s chefs to prepare a cake. The bakers made a cake in the shape of a heart and put purple icing on top to resemble a Purple Heart medal. When the *Kidd* steamed nearby the next day, the *North Carolina* sent over the cake with fifty pounds of ice cream. The *Kidd*'s crew enjoyed the desert and got a kick out of the cake.³¹

Ben Blee also recounted the typhoon that struck Task Force 38 in the Philippine Sea on 17 December 1944. The *North Carolina* endured the storm with minor damage, but Blee remembered other ships in the force that were not so fortunate, especially the destroyers. They were low on fuel when the storm struck and had not yet balanced their ships out with seawater. This made the destroyers very unstable and three capsized and sank at the height of the very dangerous and

³⁰ Blee Oral History, 3.

³¹ Ibid., 4.

powerful storm. The seas resembled mountains as the ship traversed through them.³² Robert Palomaris recounted the bow of the ship being fifteen feet underwater. He also saw water rip a steel ready box off the deck of the ship.³³ When viewing the storm through the radarscope, Blee said that the eye was fifteen miles in diameter. Aircraft carriers lost men to the storm because the aircraft on board broke loose from their moorings and flew around killing men and starting fires.³⁴

Stan Shefveland also recalled the typhoon of 1944. He described that the ship rolled so far over that he thought the ship would flip. He thought the ship was like a cork bobbing in the water. Shefveland recounted the waves being sixty feet tall and when the ship hit a wave, it made a large "bang." Steering was almost impossible and the ship groaned and made cracking noises from the stress of the storm. The storm lasted between twenty-four and forty-eight hours. All he ate were sandwiches and he said he clipped himself in at night to keep from rolling out of the bed.³⁵

Most crewmembers vividly recalled the sounds of war, or the guns firing on the ship. Most remembered the distinctive sounds of the guns on board the ship. A repetitive action always occurred when an enemy plane came in sight. First, the five-inch guns would open up. Then if the plane passed through that barrage, the forty-

³² Blee Oral History, 24-25.

³³ Robert Palomaris, interviewed by Don Lennon, 8 April 1991, collection number OH 24, transcript, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 17, 19.

³⁴ Blee Oral History, 24.

³⁵ Stan Shefveland, interviewed by Don Lennon, 20 June 1988, collection number OH 24, transcript, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 1-4.

millimeter guns started firing. If the plane still came, then the twenty-millimeters commenced firing. All the men knew to start praying when the twenties went off, because the plane was close. After that, the guns were quiet, the plane either flew off or crashed.³⁶

Thomas Brasfield recounted that there were precautionary measures taken in the main turrets if a ship became visible during an air attack. He explained that all preparations to use the sixteen-inch guns were in place. The shell and powder rooms were ready; everything was in a readiness state in case they had to use the guns, but nothing beyond that. The shells remained on the lower deck, but shell and powder could be loaded in a matter of seconds if need be.³⁷

One humorous statement provided by Edward Cope related an air attack on the task force. The planes were flying around and the *North Carolina* was not firing. "Mr. Ward, our gunnery officer was standing just forward of the pilot house when Captain Thomas asked, 'Goddamnit Mr. Ward, why aren't we firing?' Mr. Ward replied, 'We have no target sir.' Captain Thomas then said, 'Well, fire anyway, goddamnit, scare them.'"³⁸

During air attacks, Michael Horton recalled an annoying event in the five-inch gun mount where he worked.

³⁶ Palomaris Oral History, 5.

³⁷ Thomas W. Brasfield, interviewed by Don Lennon, 22 November 1985, collection number OH 24, transcript, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 5.

³⁸ Edward F. Cope, interviewed by Don Lennon, 22 November 1985, collection number OH 24, transcript, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 1.

The only thing that was tight in the mounts was when, it was wasn't so bad when you just fired five inchers. But when you hear the forties break loose, then you start to train straight up, this is a bad scene. Then your twenties start rattling, then you can look at the other guys, they all shook except one guy. We had one guy named Burrell. This guy was about I'd say 48 or 49 years old. He had pictures of him. I think he was from Rome, GA. He was a sight-center, so he sat directly facing us. This guy had a hitch in the Navy in the 1930s somewhere way back. After Pearl Harbor, he joined and they assigned him to the ship. His function was the sight-center, and once he matched up his points, he could put it in automatic and then turn around and he had nothing else to do. It was all automatic, but he had to match up the sights up real quick then drop it into automatic. The only thing I remember about Burrell was that he was never afraid. He was a minister. He had a picture. He showed me a picture of him carrying the word through Georgia on a bicycle. So, this guy was a real believer. He carried a Bible with him all the time. So, when we would get into these fire fights, you know, when planes came in, this guy would have the most serene smile in the world. It would bug us you know. We weren't mad at him, but when we would get through, he would say, "I watched you boys, and you were real afraid. All of you were afraid, and if you were right with Jesus, you wouldn't have to worry about it." And we thought, gee, maybe we could get him transferred or something. It was tight with him in there. I really believe that if a plane came through the mount, this guy would still be smiling. He just wasn't afraid; he had that strong a belief. But he used to turn us off, sitting there smiling.³⁹

One important job, contributing to the stealth of the battleship, was the smoke watch. To keep the ship hidden from Japanese eyes, the sailors watched the color of smoke leaving the stack. The ship maintained clean smoke through a lookout in the tower. The lookout gave constant reports to the engine room on the color of the smoke coming from the stack. If there was a change in the color, a seaman relayed the change to the staff and they cleaned the burners.⁴⁰ Henry Okuski held smoke watch duty and said it was a "ring side seat."⁴¹

³⁹ Horton Oral History, 8-9.

The smoke lookout also gave information to the staff about air attacks. When working in the bowels of the ship, the men never saw what happened on the outside. The man on lookout gave play-by-play information to the men in the engine room so they had a heads up on the battles the ship encountered. The men called information passed around "scuttlebutt."⁴² Charlie Rosell worked in the engine room. He recalled smoke watch and said, "... we had one up there in battle stations. He would keep us posted on what was going on as best he could."⁴³

On a sad note, there was one accidental, self-inflicted casualty on board the *North Carolina*. Charles Gilbert recounted the incident. There was a seaman cleaning down the aircraft on the fantail. He wiped down the propeller blade of the aircraft and when he turned the blade, there was a loud "crack." Gilbert heard the noise and saw the man flop to the deck. "He moved it [the propeller] and the thirty-caliber gun fired through the nose and got him right between the eyes." Gilbert says that someone left the gun safety off and it fired because the gun was synchronized with the propeller. There was an investigation into the incidence, but he cannot recount what happened.⁴⁴

⁴⁰ Theron Nichols, interviewed by Don Lennon, 7 April 1991, collection number OH 24, transcript, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 8.

⁴¹ Okuski Oral History, 4.

⁴² Ibid.

⁴³ Rosell Oral History, 8.

⁴⁴ Gilbert Oral History, 1.

CHAPTER SIX

DISCIPLINE AND MORALE

Morale on the *North Carolina* was high throughout the war in Pacific. All of the men on board the ship knew that other men in the war had it much worse than they did. In addition, the sailors also knew that there were unhappy crews on other ships. The food on the ship was good, by all accounts, and people were generally nice to one another.¹ Thomas McAlone recounted that when men had grievances they settled them by gloves in a boxing match.² Walter Babcock remembered that 90 percent of the men on the ship were of the same age (young, in their teens or early twenties) so that helped.³

One important person that helped to keep the morale up on the ship was Commander Stryker. Stryker recalled that it was not too hard to keep morale up because everyone practically stayed with the ship throughout the war.

When in west Pacific we had to go to general quarters every morning and every night for at least an hour. I decided that we would have all our drills during those periods while people were there, and the rest of the time we could take off. My idea was that whenever we got into a war zone, we should never have a man do anything that wasn't absolutely necessary. We had to keep the ship up. We had to paint. We had to do a few things, but we did not have the time or I would not allow on that ship what I called "horse shit" drills. Those things just to kill time.⁴

¹ Belford Oral History, 23-24, 33.

² Thomas McAlone, interviewed by Ben Blee, 5 October 1992, collection number OH 24, transcript, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 3.

³ Babcock Oral History, 4-5.

⁴ Stryker Oral History, 9.

The crew appreciated this. Stryker continued:

The captain never knew what the hell was going on. I never allowed the captains to know too much. When I got a new captain on that ship, I would go up and talk to him in his cabin and with a twinkle in my eye I would say, "Now captain, we've got a pretty good ship going. If you will kind of let us alone and let us run this ship the way we have been, I will guarantee in six months that I will graduate you number one in your class for flag rank. Any change you want to make, you tell me and I'll make it, but we don't need too many."⁵

The captains left Stryker alone and he ran the ship without much interference.

The captain didn't have any reason to make any changes. A few of them wanted to make a few changes and we made them. I always assumed that he was there to look over the higher strategy of the operations and to look forward to the next operation and see where we were going to be. He was responsible. He had the weight on his shoulders, but I could do it.⁶

Commander Stryker did have to lay down the law occasionally. In a memorandum to the crew, he wrote orders for seaman to write letters home because the navy kept getting inquiries from parents not knowing if their children were still alive. The memorandum read:

Lack of consideration by many of the men in failure to write to parents and close relatives for long periods of time is causing needless work for the Navy Department in handling correspondence from the inquiring parents or relatives. This correspondence is passed on to this ship, causing additional needless work in making investigations and answering these letters.

The government and the Navy have both made it as easy as possible to carry on normal correspondence. Parents and other close relatives have a right to occasionally hear from men on board this ship when we are in forward areas.

⁵ Ibid., 10.

⁶ Ibid., 11.

Disciplinary action will be taken in all cases where inquiries are received on board as to the reasons letters have not been received by parents and close relatives, and where a good reason is not given for such action.⁷

Jay Skipper, an assistant supply officer, said the key to a happy ship was to keep it supplied with toilet tissue. He commented that the ship was wonderful.⁸

When the crew did receive liberty, it was usually on a deserted island. The rest and relaxation period usually consisted of "shangri-la" (paradise on Earth), beer, hotdogs, and baseball.⁹ Herbert Sisco recalled these events too.¹⁰ Dick Evans recalled taking CO₂ fire extinguishers to cool down the beer because they were warm.

Although there were ports of call in the United States, they came early in the war and less frequently.¹¹ Jackson Belford remembered softball games while the ship was in Casco Bay, Maine, for recreation played amongst the crew, for example, the marines against the signal gang.¹² Charlie Gilbert recalled having tug-of-war on the fantail of the ship to relieve boredom.¹³

⁷ Joe W. Stryker Papers, "Correspondence," 5 May 1944, collection number 292.2.c, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 1.

⁸ Jay Skipper, interviewed by Don Lennon, 26 June 1976, collection number OH 24, transcript, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 3.

⁹ Babcock Oral History, 4.

¹⁰ Herbert Sisco, interview by Don Lennon, 25 June 1975, collection number OH 24, transcript, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 6.

¹¹ Evans Oral History, 3.

¹² Belford Oral History, 11.

¹³ Gilbert Oral History, 4.

Other crewmembers passed time in other ways. Henry Okuski remembered playing cards and listening to records. He also recalled watching movies in the mess hall. When liberty occurred on an island, men received two cans of beer. If they did not drink alcohol, they could have soda instead.¹⁴ Robert Palomaris remembered listening to Tokyo Rose on the radio and Herbert Sisco recalled the recreational swimming around the ship, protected by torpedo nets.¹⁵

On one island, called Havana Harbor, where the men made port-of-call, Charlie Gilbert said men had a good time there. He explained that there was a warehouse on the island storing beer. There were huts on the island and each hut was entitled to a gunnysack of beer per day. There were men on duty and off duty on the island smashed (drunk) all the time.¹⁶

On board the ship, there were occurrences of men making their own alcohol. Dick Evans remembered making "torpedo juice." That was alcohol, procured in some way or fashion, strained through a loaf of bread. After it fermented and produced the grain alcohol, sailors mixed it with grapefruit juice.¹⁷ Dan Schroll also recalled the process of making homemade alcohol.¹⁸ Others made alcohol with other ingredients, called it "apple jack or cherry juice" and drank it in their coffee.¹⁹

¹⁴ Okuski Oral History, 11.

¹⁵ Palomaris Oral History, 8, 12.

¹⁶ Gilbert Oral History, 4.

¹⁷ Evans Oral History, 4.

Admiral Stryker added that there was never a problem on the ship involving alcohol.

I've heard since that there were a few little centers of liquor that were on board the ship, but I never saw a man under the influence, either in port or under way. We had our beer on board. I never did, but I've heard since I've been down here that there were a couple of places where they used to get together once in a while and have a little party. As long as it didn't bother the rest of the ship, and I never heard about it, it didn't bother me.²⁰

Everett Beaver believed that boredom was a major problem on the ship. He recalled that he welcomed action: "It was much better. Then you felt like this would shorten the time until you could get back home."²¹ To help rectify this were chores performed daily, except when operations took precedence. Beaver recounted that the relationship with crewmembers was very important. Jackson Belford also related something similar.

There was pride in that ship. It was unfathomable. There is no way to measure it. I think that is really what it was all about. Whether everybody else feels this, I don't know. I think that is really the love for this thing, this monster [large ship], this beautiful ship is really what it was all about.²²

Most men felt the same as Jackson Belford, but as Doug Blancheri recalled, the leadership within the ship made it happen.²³

¹⁸ Dan Schroll, interviewed by Ben Blee, 25 June 1975, collection number OH 24, transcript, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 5.

¹⁹ Rosell Oral History, 15.

²⁰ Stryker Oral History, 34.

²¹ Beaver Oral History, 5, 11.

²² Belford Oral History, 47.

²³ Blancheri Oral History, 4.

Ben Blee commented that there were temporary periods without combat, where the ship retired to supply. One such area was Ulithi lagoon, where men took supplies of ammunition, food, and fuel on board the ship. In the supply zone, the officers let down their guard and had elegant dinners in the wardroom. There was a piano player and a five-man band that played at dinner. It reminded Blee of a nightclub. He said in retrospect: "Above all it reminded us that in spite of the fact that we [Americans] were engaged in a very tough and brutal war, we were still gentleman, accustomed to live like civilized human beings."²⁴

There were other forms of enjoyment, such as the casual jabbing of humor between northerners and southerners. Michael Horton recalled that half of the crew was from the North and half of the crew was from the South. They used to pick on each other about the Civil War. Horton got into an argument with a fellow from the North and checked a book out from the library to prove his point. He did win the argument but recalled the person tossing the book over the side after he read it. It cost Horton seven dollars and fifty cents to win his argument.²⁵

Some crewmembers acquired pets and kept them on board the ship. Max Jenkins recalled a seaman who had a dog named LuLu. He says first division bought the dog in Waikiki, Hawaii.²⁶

²⁴ Blee Oral History, 21.

²⁵ Horton Oral History, 9-10

²⁶ Jenkins Oral History, 8-10.

On the special holidays, such as Thanksgiving and Christmas, the crewmembers recalled that the men tried to replicate home as much as possible. There would be a turkey served, there were pies, and smoking after dinner with cigars and cigarettes passed around.²⁷ Donald Rogers remembered ice cream at these special occasions.²⁸

The real fun came when men received liberty in the States. There were ports of call for repairs in Pearl Harbor, Hawaii, and Bremerton, Washington. Drinking and chasing women occurred on these liberties. Charlie Rosell recalled one liberty at Gitmo (Guantanamo, Cuba). He said that the men went to a bar on the base.

We used to go up to what they called the tin roof. It was up on a hill, I guess about a mile from the pier. We used to go up and drink that hot tooie beer and there was that one eyed Indian, and when he was looking at you with two eyes, it was time to go back to the ship.²⁹

On the ship, Donald Rogers remembered passing time through different activities. One activity that the crew participated in was calisthenics. He recalled watching movies out of the combat area and having deserts, ice cream from the "gidunk" (mechanical cow) and eating "pogey bait" (candy bars). He also recalled the constant training when not in battle, and destroyer refueling. Additionally, the

²⁷ McAlone Oral History, 3.

²⁸ Donald C. Rogers, interview by Kim Sincox, 7 April 1991, collection number OH 24, transcript, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 12.

²⁹ Rosell Oral History, 2.

battleship supplied the destroyers with ammunition and stores. That was where the battleship exchanged movies with the destroyers.³⁰

Charlie Rosell recalled that there were games played on board, not permitted by the master-at-arms. One such game played was craps or the rolling of dice for money.³¹ Harold Smith said he saw one person win \$1,800 dollars on one roll of the dice.³² William Schack remembered playing poker. Schack said he played with the big players one time and lost some money, but learned his lesson and never played again.³³

During the war men still had their sense of humor. Ralph Sheffer was on a destroyer that took a torpedo and was on leave on an island, waiting to report to another ship. He was the SOP (senior officer present) at the time. Sheffer recounted:

I had a jeep up there as the officer in charge. One day one of my fellow officers, a fellow named John Schiller, who had been my roommate at Cornell and who prior to the war was an assistant district attorney in his home town of Wilmington, NC. John had a habit of fantasizing during the daytime. He would dream up stories, and I used to be very amused as his roommate to listen to these fantasies. He would always think that something really happened, or he would say it in such a way that you really believed him for a while. He asked me if he could borrow the jeep - while we were just finishing up getting the men back and my feeling low as hell. He borrowed the jeep and went into Noumea, which was four or five miles down. It was the Capital of New Caledonia. He came back to the tent about two or three o'clock in the morning, singing, roaring drunk. I listened to him singing and he was singing, "I'm going home, I'm going home, I'm going home." I listened to him while

³⁰ Rogers Oral History, 11, 14.

³¹ Rosell Oral History, 15.

³² Smith Oral History, 17.

³³ William A Schack, interview by Ben Blee, 5 October 1992, collection number OH 24, transcript, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 6.

he was crawling into his cot, and I asked him what he meant about going home. He said that he had met an officer down at the officer's club who was the reassignment officer of the South Pacific, and he told him that he would send him home. I asked him what he said about me, but he fell asleep. It was in the dark. I waited until he woke up the next morning, and I said, "John, you said last night that you were going home." He said, "Yea, I am. I met the man who is going to reassign me." I said, "Didn't you say anything about me?" He said that he had really forgotten to say anything. I made up my mind that I wasn't going to let him out of my sight until I had found that same guy. About a week later, he asked me if he could borrow the jeep again, and I told him that I was going down to Noumea too and that I would drop him off wherever he wanted to go. I got into the jeep with him, and we drove down to Noumea. He told me to stop at some point, and he got out and walked away. I drove that darned jeep around the corner, and I saw him going into a large Quonset hut. I zipped a block or so down to that Quonset hut, and sure enough, there was a little sign that said "Reassignment Officer, COMSUBPAC." I said, "My God, he's really doing it." I walked into that Quonset hut, and there were a couple of yeoman and three or four desks with sailors behind typing. Towards the rear, there was an office with a screen door. I walked up to the side of it, and stood by the side of the door to see if I could overhear what the conversation was. There was talk going on in there for a few moments. A door opened and came out a lieutenant commander with his arm around John, and I heard him say, "All right John, we'll send you to *North Carolina*." As soon as he got out, he came back and he walked into his office. He sat down at his desk. I whipped off my hat and put it under my arm, I walked in there, and I stood there at attention. He was writing something, and he looked up and said, "Yes." I saluted and said, "Sir, I'm Ensign Sheffer." He said, "Yes, What can I do for you?" I said, "I'm a survivor of the *Gwinn*." He said, "Oh, we just had one of your shipmates in here." I said, "Yes, I know." He said, "Well, what can I do for you?" I said that I would like to have the same thing Schiller had. He looked down at his papers, shuffled them around for a moment, and said, "Fine, we'll send you to *North Carolina*." I said, "Yes sir, but my home is New York. I don't want to go to *North Carolina*." He said, "What do you mean, New York? I'm talking about the USS *North Carolina*, the battleship. Do you want it or don't you?" It was just like lightning had struck me. I said to him, "Does it roll?" Because when I was on the *Gwinn*, I was terribly seasick. I had dropped over thirty pounds in those thirty days from being seasick and rolling back and forth. He said it didn't roll very much and asked why. I told him that I got very seasick. He said, "Take it or leave it. Do you want the *North Carolina*?" I told him that I would take it, and that is how I came to the *North Carolina*. I spent 32

months aboard.³⁴

The overall conditions on the *North Carolina* were good. Paul Wenck commented:

As far as the living conditions on board this ship, I believe you couldn't ask for anything cleaner and better. The crews were in fine shape to do the work. They got along good. I never saw any personal physical fights between anybody. Our division always was cooperative, nobody fought after food, we had good food. If a guy had a gripe, he caused it himself I more than believe. He had misery within himself.³⁵

The crew helped to improve operations on board the ship. One good example of innovation involved the refueling of destroyers. Every time the *North Carolina* or a destroyer needed something, it occurred underway. This procedure prevented a surprise attack by an enemy submarine. Going by the book, this operation took awhile. Commander Stryker wanted to cut the time down, so he discussed it with an enlisted seaman. They kept a few lines permanently rigged so when a destroyer came along side they would not have to wait for signal flags. Every time a destroyer came alongside of the *North Carolina*, the men knew exactly what to do and the operation went smoothly. Admiral Stryker said: "I know we were congratulated several times by finishing our fueling so much faster than the other ships; and it was all that suggestion I got from the enlisted men."³⁶

³⁴ Sheffer Oral History, 2-7.

³⁵ Paul C. Wenck, interview by Don Lennon, 25 June 1975, collection number OH 24, transcript, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 6.

³⁶ Stryker Oral History, 29-30.

Admiral Stryker commented on the uniforms that the crewmembers had to wear. He recalled that they did not have any problems; they all wore uniforms at sea. The crewmembers never had to wear their white uniforms because of the camouflage paint on the ship.³⁷

Stryker recalled one particular incident about trouble with uniform appearances. One day he inspected the boiler division on the fantail.

I don't know whether they were trying to get my goat or not; but the night before, every man in that division had pierced his left ear and put a copper wire ring in it. I went back and saw them. Some of them were still bleeding. I did not even mention it. I did not say a damned thing. I let them wear them. We went ashore, I believe in Fiji, shortly after that the sailors from other ships would see this guy with a ring in his ear and make some crack about it. These guys were big enough they could knock them right off the street.³⁸

³⁷ Ibid., 31.

³⁸ Ibid., 31-32.

CONCLUSION

The decision to build the *North Carolina* brought new challenges to the United States Navy, both for the crew and the fleet. The development of the first new "fast" battleship class presented new requirements such as organizational books. The last updated book was for the *Colorado* class, built sixteen years before. Another important training requirement dealt with the latest weapons and fire control systems. In addition, new technological advances (radar, integrated radar fire control systems, and the proximity fuse) introduced during the war required new demands of the crew. Lastly, the new roles of carrier escort and shore bombardment for the battlewagon forced the crew to use their ingenuity. Commanders provided the foundation on which a successful outcome depended and their leadership established and maintained high morale when the changes occurred.

The commissioning of the *North Carolina* on 9 April 1941 introduced the crew to a set of new problems, getting the battlewagon organized. The ship acquired top personnel from the navy. Robert Celustka recalled,

Well, first of all when I joined the ship, it was a well known fact that this ship was a special breed of cat and being a very special ship, so called, had the pick of the navy assigned to her . . . But each one, no matter who, for instance, the gunnery officer was the top gunnery officer in the navy or his career had been devoted to this . . . It ricocheted all the way down through senior officers and the head of departments particularly.¹

¹ Celustka Oral History, 3.

These officers trained the crew and as Celustka reiterated, "From the very beginning when I joined that ship, there was a spirit in that ship. It went right from the top to the bottom. Everything was, 'Nothing is impossible.'"²

The crew constantly trained for war while the ship underwent sea trials and trained extensively for a year before going to Pearl Harbor. The ship had a severe vibration problem caused by the propeller configuration and the engineers had to solve this dilemma before the ship could enter into combat. When the ship received a satisfactory rating and arrived in Pearl Harbor Celustka recalled, "... After Pearl, there was no question in my mind that the ship was ready because we had such a gunnery reputation. It was just unbelievable. We had drilled and trained and were honed to an edge that you wouldn't believe."³ The training paid off at the Battle of Eastern Solomons. Harold Smith, who served in Sky-2, remembered the events. He said:

It was funny because we were well trained. My heart was going a mile a minute until the first gun went off. Everything just clicked in place. I was the JP operator and there communicating between air defense and the director officer. It just came normal. Nothing panicked about it. It was just a normal situation.⁴

Another aspect of running the ship was being able to adapt to the revolutionary advances in technology.

² Ibid., 5.

³ Ibid., 6.

⁴ Smith Oral History, 8.

There were three technological advances during the war which the ship adapted to: radar (1941), integrated radar fire control (1942), and the proximity fuse (1943). The navy installed the battleship's first radar in 1941. It was an early prototype. A.G. Ward commented that, "When we launched the *North Carolina*, we had a great big old bed spring antenna that was on top of the thing. Of course that didn't last to long. They couldn't pick up anything; a bunch of lines was about all."⁵ In September 1942, after the torpedo attack on the *North Carolina*, the ship headed to Pearl Harbor for repairs and received an upgraded radar system that included radar fire control for both the main and secondary guns.⁶ John Kirkpatrick stated, "... When we would conduct our firing in connection with the older ships, the difference was terrific. We would hit targets almost on our first salvo, but the targets were rather primitive, simple drones and the like."⁷ A.G. Ward commented on the use of radar on board the ship. He said, "Radar made a big difference too, because you could detect the oncoming Japanese raids a long time before they ever got there so you could be ready for them."⁸ The last technological revolution the crew dealt with was the proximity fuse (VT fuse).

In 1943, the Bureau of Ordnance introduced the five-inch proximity fuse to naval ships in the Pacific. Naval gunnery officers on the battleship distrusted the

⁵ Ward Oral History, 3.

⁶ Ibid., 9.

⁷ Ibid., 7.

⁸ Ibid., 9

new weapon, but made an effort to test it. The officers on board the ship used a combination of anti-aircraft common (AAC) along with the proximity fused projectiles for the secondary batteries. John Kirkpatrick stated that they used two AAC rounds with one proximity shell when the ship came under air attack.⁹ The official navy record stated that, "Subsequent improvements to the devices ran the advantage ratio up to 4 to 1. This simply meant that 1 gun firing VT-fused ammunition was as valuable as 3 or 4 guns supplied with time fused projectiles."¹⁰ After the attack on Pearl Harbor, the navy underwent a paradigm shift.

Early in the Pacific war, the navy placed the main responsibility on aircraft carriers with the defensive - offensive strategy. This is evident at the Battle of Coral Sea in May 1942 and Midway in June 1942. The unique circumstances led the attacking forces from both sides to launch their aircraft without the ships ever sighting each other. The new lines of battleships were coming out of production early in the war, beginning with the *North Carolina* class. Naval planners faced the dilemma of incorporating the battlewagon into a task force and how to utilize their capabilities. The Battle of Eastern Solomons served as a model for future operations where the battleships would perform as carrier screens throughout the war. When amphibious operations commenced on Guadalcanal in August 1942, the U.S. Navy employed naval gunfire support for the first time in the Pacific.

⁹ Ibid., 7.

¹⁰ Rowland and Boyd, *U.S. Navy Bureau of Ordnance*, 286-287.

The navy then extensively applied naval gunfire support during the Second World War in the Pacific. The first modern application of naval gunfire support occurred during the First World War at Gallipoli. After the landings on Guadalcanal the navy gradually developed effective naval gunfire support. Naval planners learned to utilize the massive guns on the battleships firing salvos of high capacity shells. Previously, aircraft from carriers supported amphibious landings, but they had limited time and ammunition. Battleships could remain longer and fire heavier projectiles, thus "softening up" the Japanese before troops embarked on the islands. The *North Carolina* participated in nine bombardment operations during the course of the war.

Crewmembers fondly recalled the excellent leadership on board the battleship. From the commissioning to the end of the war, leadership proved pivotal in training, combat, and morale. The training began under Captain Oscar Badger who laid the foundation and instilled the crew with a purpose. The crew's training was superior in all aspects and absolutely critical during periods of intensity such as the Battle of Eastern Solomons and the torpedo attack. The men operated flawlessly and instinctively. Lester Tucker remembered how he learned to distinguish leadership on the battleship. He recalled,

It stems right from the top. A Captain that instills or his officers or his petty officers that takes upon their shoulders the personal installation into the individual of correctness, and the understanding of some of the man's problem so that he feels that he is a personality instead of a number or a uniform. You can't cut it off at any certain place; it has to come down to the individual."

" Lester B. Tucker, interviewed by Don Lennon, 25 June 1975, collection number OH 24, transcript, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 10.

The crewmembers reminisced about the high morale during the war. Morale was high due to the leadership of the officers and spirit of the crew. John Kirkpatrick summed up the ship's crewmembers:

There was enough depth of people with this personality on the ship that I don't believe that any one person was especially essential – that could either hurt it or help it. I think that it had a kind of basic strength that went on down to the seaman second class. We had naturally a bunch that we sure as hell could get along without. By the time we were together a year, I think that you had a kind of basic structure of strength of personality. I think captains, commanders, and gunnery officers could come and go, and there was this intertwined strength that is hard to build up . . . but in the ship's company, it got pretty well established. It certainly takes a long time to get it perfected; but it got started out on the right track.¹²

Robert Celustka remembered his feelings while serving on the *North Carolina*. He declared:

It was just great to be able to do this. Everybody was fired up. You couldn't believe it. It was such a spirit. I've never seen it since in aircraft squadrons which I later went to. You had it within the small group, but this thing was so monstrous personnel wise.¹³

By most accounts, the *North Carolina* was a happy ship and morale remained high throughout the war. Ben Blee affirmed that the *North Carolina* was "an unusually, taut, well-disciplined ship, but at the same time, a happy ship."¹⁴

Many crewmembers of the *North Carolina* recalled different viewpoints during the war. Larry Resen recounted the day of 7 December 1941. The *North Carolina* was in the Brooklyn Naval Yard being fitted out and Resen's family lived in New Jersey.

¹² Walker Oral History, 15-16.

¹³ Celustka Oral History, 5.

¹⁴ Blee Oral History, 1.

Resen invited his mother to a movie in New York City, but before he left, they heard something over the radio concerning Pearl Harbor and the Japanese. He recalled the report as being "garbled." Next, he remembered:

The movie ended and we got out and there was something electric in the air. People were walking faster and people would look at me, I was in uniform, like they were glad I was there. Some people came up and told me that I should go back to my ship. And sure enough some shore patrol came up and told me that I would have to go back to my ship . . . I was walking down toward the ship, and all of a sudden there were two bayonets on the ends of rifles challenging me. What it amounted to was that we went on a war footing in literally a matter of minutes.¹⁵

Resen recounted the next day when he heard President Roosevelt give the "Day of Infamy" speech over the loud speaker.¹⁶

When the *North Carolina* entered Pearl Harbor in July 1942, another vivid event struck the crew. Willie Jones remembered the scene of mangled ships.¹⁷

Harold Smith stated:

I will never forget going into Pearl Harbor, everybody standing out on the docks cheering and waving. You would have thought we won the war for them and we had just come back out of the States. That was quite an impression. I will never forget it. The *Arizona* was still smoking a little at the time. All of the other ships were around there.¹⁸

Near the end of the war, the United States dropped two atomic bombs on Japan at Hiroshima (6 August 1945) and Nagasaki (9 August 1945). This precipitated the Japanese surrender on 14 August 1945. The *North Carolina's* crewmembers kept

¹⁵ Ibid., 2-3.

¹⁶ Ibid., 3.

¹⁷ Jones Oral History, 2.

¹⁸ Smith Oral History, 7.

abreast of the events and recalled their emotions. Ollie Goad stated that when the crew heard the news of the surrender, they were happy. He goes on to say that he just wanted to get back home to a normal life.¹⁹ Paul Wieser wrote a letter on 5 September 1945 describing the *North Carolina's* entrance into Tokyo Bay. In the harbor, Wieser describes the scene.

In passing through the straits that guard the entrance to the Emperor's Capitol, we passed the Yokosuka Naval Base and saw the damage, or rather, a part of the damage that was inflicted in the final days of the conflict. The nip battlewagon, *Nagato*, had been towed away from the dock and is in the middle of the stream. Its superstructure had been riddled with rockets and bombs. Its shape so grossly different when viewed and compared to the U.S. battleships that are at anchor here now.²⁰

Wieser continues his letter to describe the city of Tokyo and how he felt at the time.

He stated:

It is noon now, and the smoke, fog, and haze is burning away. The cool weather is so welcome after several weeks patrolling the waters just south of Kyushu in the heat. The sun has warmed things a little but still the coolness is such a welcome relief. Tokyo is beginning to emerge from its hiding and the damage from the B-29 sorties is rather noticeable. The path from San Francisco to Tokyo has been a long one, but not an impossible one . . . Nevertheless you can understand my enthusiasm and desire to return home. I am an American through and through, and the place for Americans is America, take me there.²¹

At the end of the war, a majority of the ship's personnel went home to restart their lives. The *North Carolina* served three years in the Pacific and the men longed for nothing more than to be on solid ground in the places they grew up. Some men

¹⁹ Goad Oral History, 12-13.

²⁰ Paul Wieser Papers, "Tokyo Bay Letter," 5 September 1945, collection number 292.2.e, East Carolina Manuscript Collection, East Carolina University, Greenville, NC, 1.

²¹ Ibid.

stayed in the navy to rise through the ranks to becoming leading professionals in the U.S. Navy. Some men used the skills they acquired in the navy to further their own lives in the private sector. Overall, everyone was thankful that the war ended and that they could begin to live their own normal lives again.

Today, the *North Carolina* berths in Wilmington, North Carolina. In 1947, the U.S. Navy mothballed the ship in Bayonne, New Jersey. On 1 June 1960, the navy struck the ship from its list of ships. The people of the state of North Carolina raised \$330,000 to move the ship to its final resting place as a war memorial in 1961. Today, visitors can tour the ship and glimpse the past. They can see what it was like when the young men served on the ship. Veterans still hold reunions on the ship and relive past memories as if it was yesterday. In recognition, the generation that served in the Second World War is passing quickly, but the *North Carolina* remains a steadfast beacon of their resolve.

Overall, the battleship fought valiantly throughout the war and was the most decorated battleship in the navy. She earned twelve battle stars out of thirteen during the Second World War, downed twenty-four Japanese aircraft, participated in nine shore bombardments, and sank one merchant ship.²²

In summary, the keys to the success of the *North Carolina* were excellent leadership by its senior officers, good training and high morale among the crew, and advanced technology used for the first time.

²² Blee, *Battleship North Carolina*, 90.

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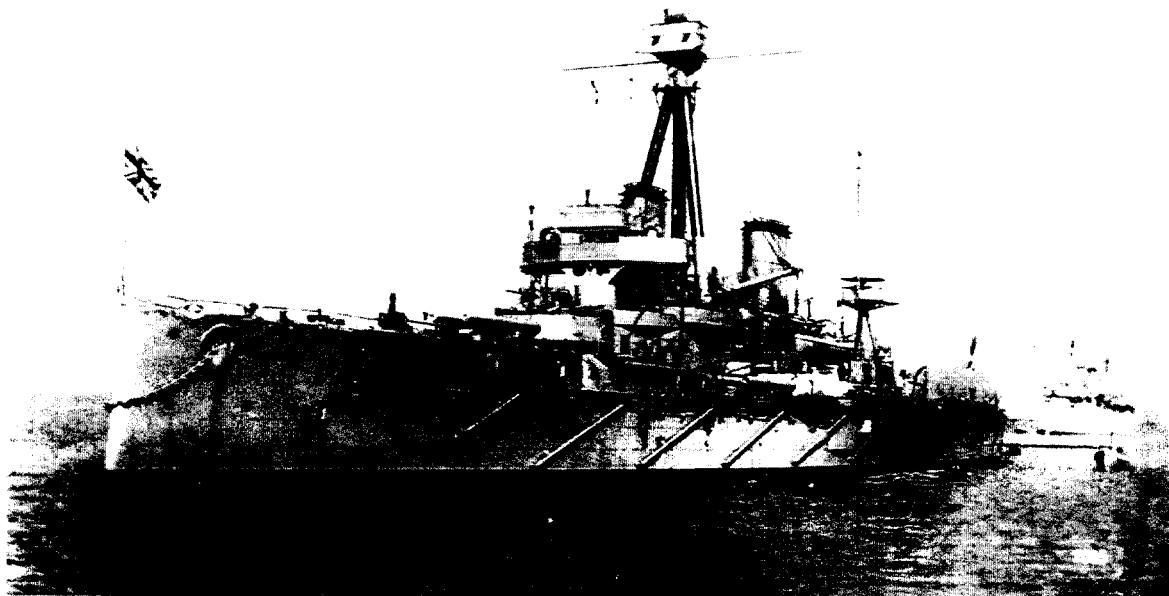
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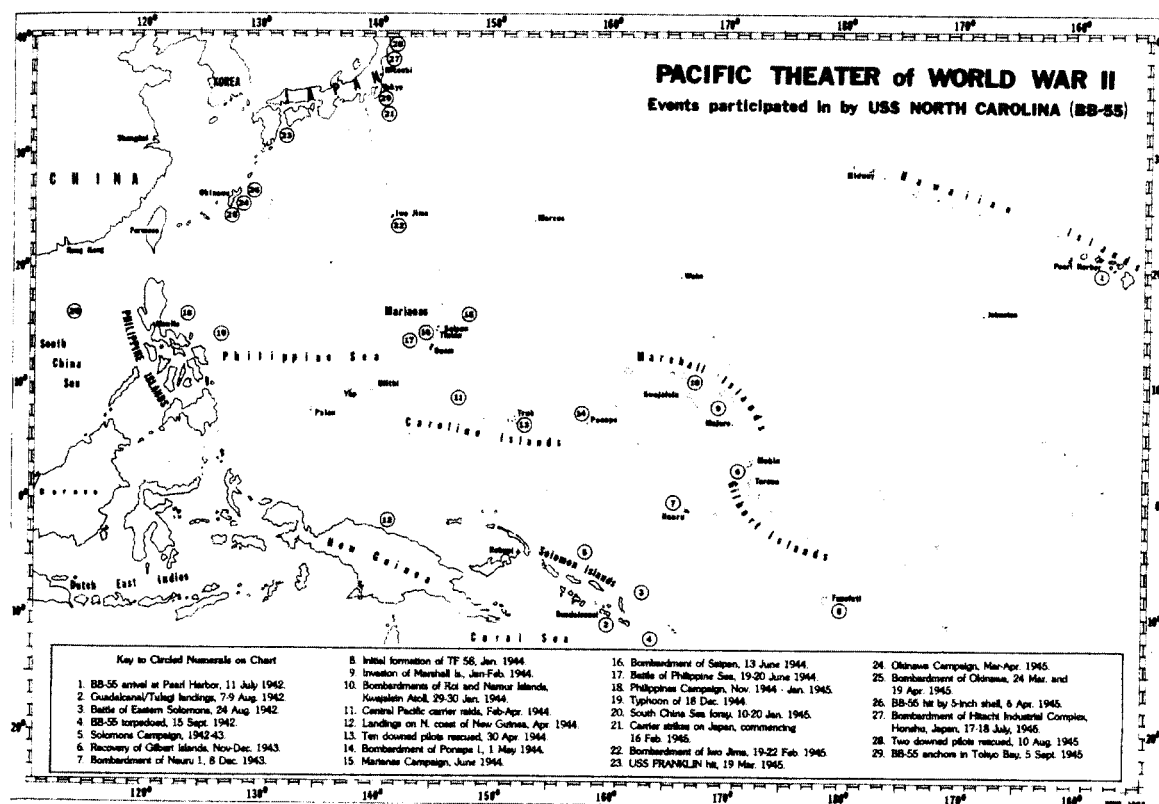
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Annapolis: Naval Institute Press, 1998.

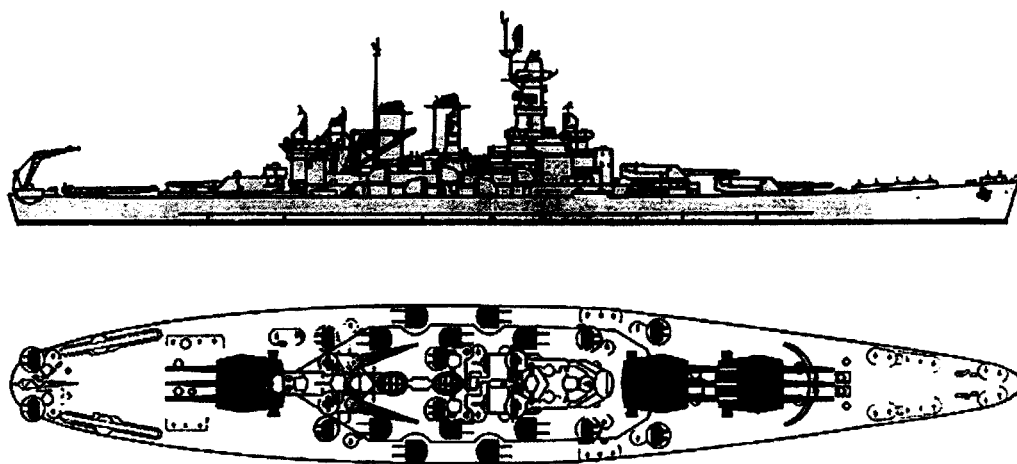
APPENDIX A: DIAGRAMS, MAPS, AND PHOTOGRAPHS



HMS Dreadnought in 1906. This ship marked the true beginning of the modern battleship.
U.S. Navy Historical Center Photograph # NH 61007.



Map of the Pacific and the track of the North Carolina during the Second World War.
Blee, *Battleship North Carolina*, p.42.



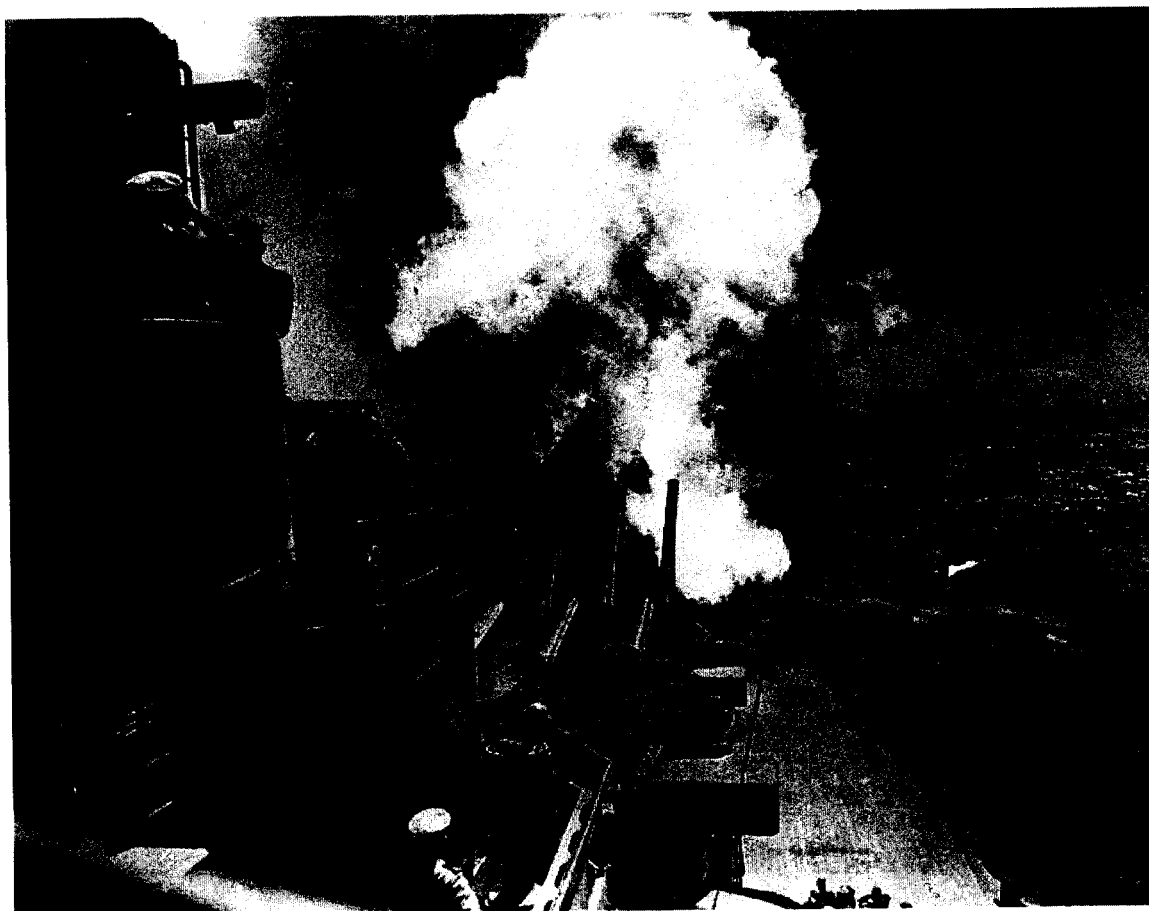
Outboard profile and plan drawings of the *North Carolina*.
U.S. Navy Historical Center Photograph # NH 68516.



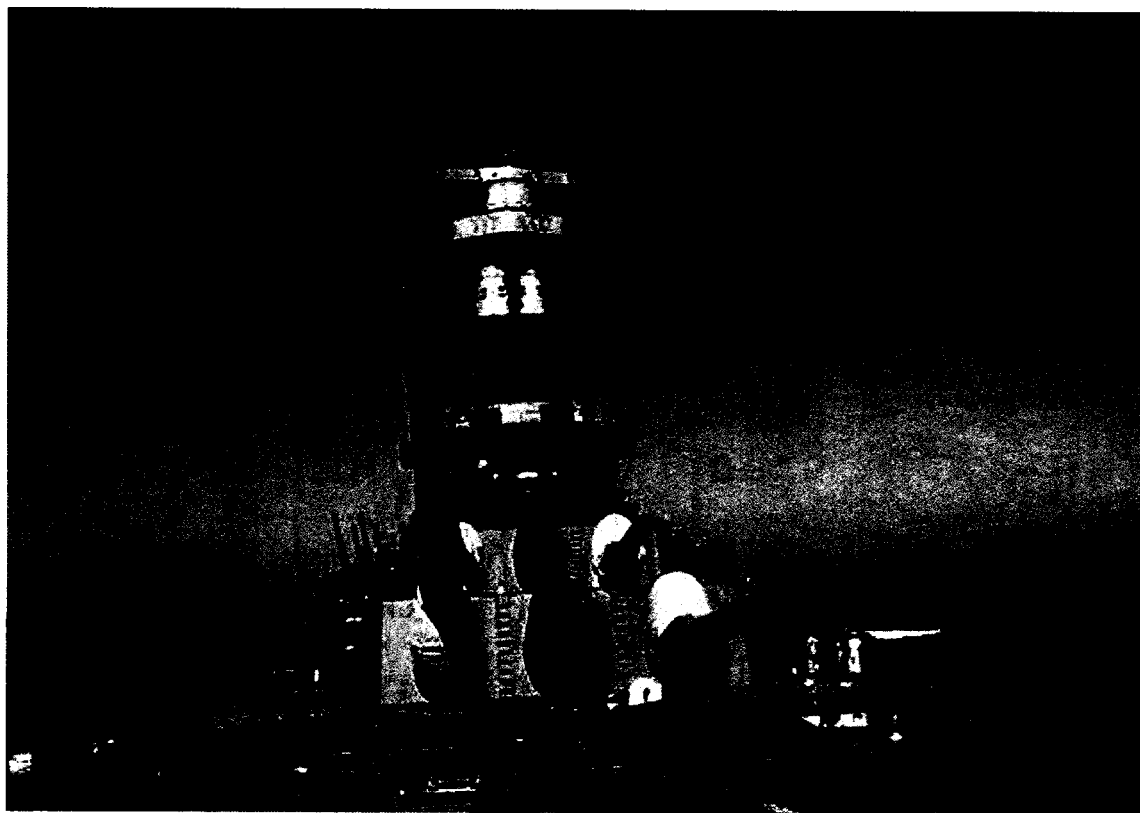
The North Carolina launched, June 1940.
U.S. Navy Historical Center Photograph # NH44899.



The *North Carolina* test firing her sixteen-inch guns, June 1941.
National Archives Photograph # 80-G-K-13511.



The North Carolina test firing turret one, mid-1941.
U.S. Navy Historical Center Photograph # NH 91509.



Looking aft, turrets one and two, May 1941.
National Archives Photograph # 80-G-K-13971.

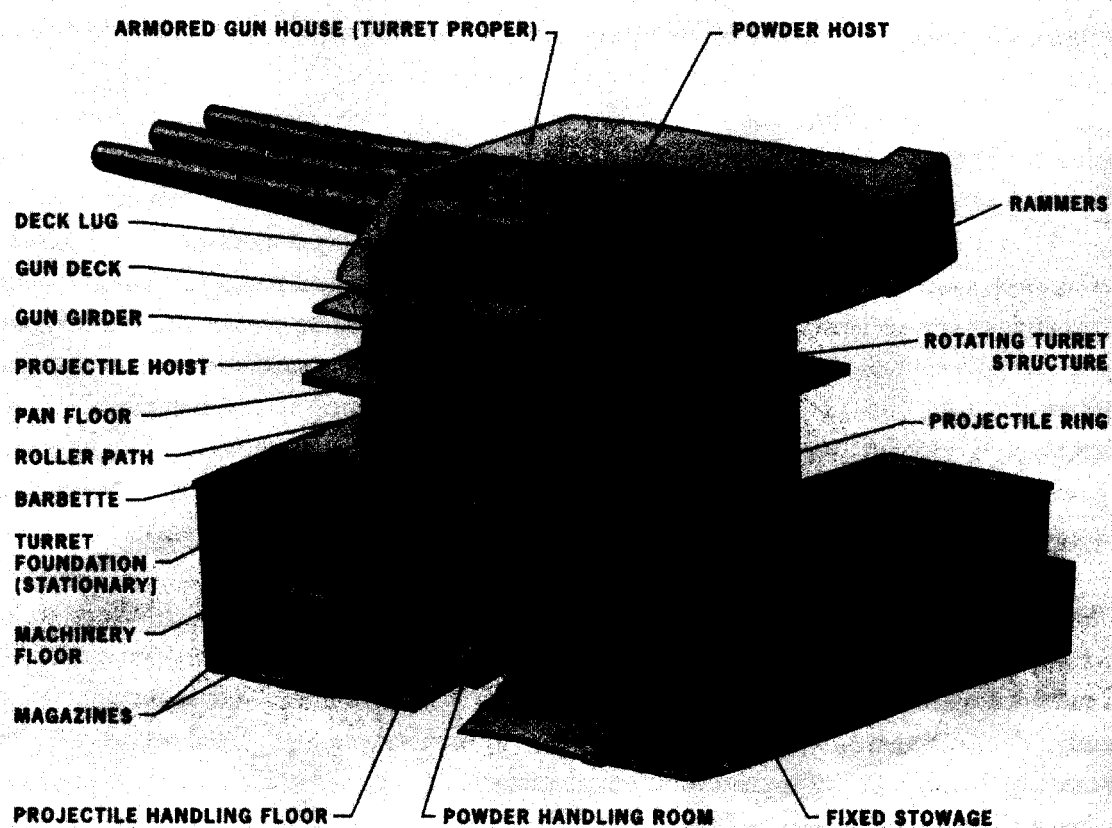


Diagram of a main turret on board the *North Carolina*.
 Diagram courtesy of the Battleship *North Carolina* Collection, Wilmington, NC.

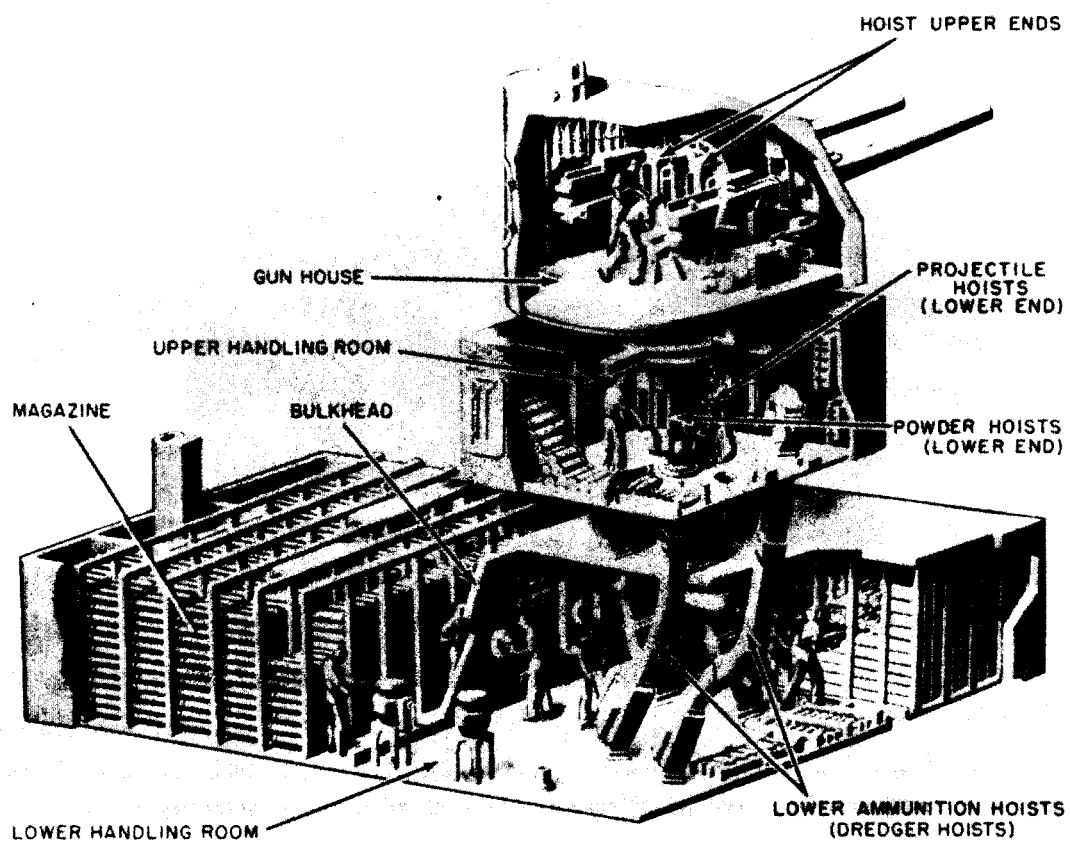
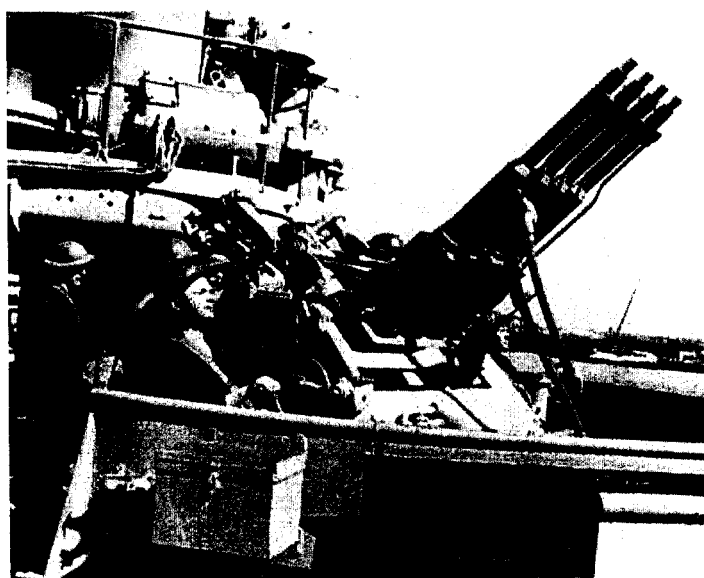


Diagram of a secondary gun turret on board the *North Carolina*.
 Blee, *Battleship North Carolina*, p.20.



Photograph of the 1.1 quad mounted anti-aircraft gun, later replaced by the 40 millimeter.
The 1.1 guns were plagued by problems, such as overheating due to faulty ejection and recoil systems.
Photograph courtesy of the Battleship *North Carolina* Collection, Wilmington, NC.

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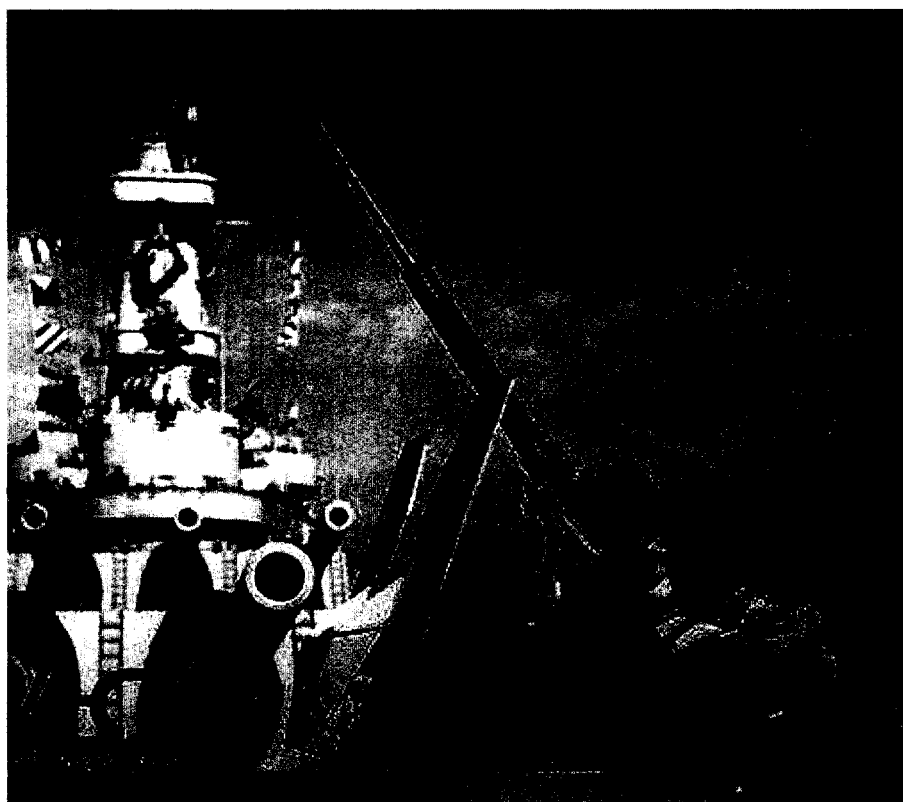
Photograph of 50 caliber anti-aircraft machine guns on the fantail, later replaced by the 20 millimeter. The navy's standard close support anti-aircraft weapon, proved ineffective against Japanese aircraft. Shoker, U.S.S. *North Carolina*, p.18.



Diagram of the 40 millimeter Bofors that replaced the 1.1 guns.
Diagram courtesy of the Battleship *North Carolina* Collection, Wilmington, NC.



20 millimeter crews during an air raid.
Note the African-Americans on the right. They served as mess attendants outside of combat stations.
Photograph courtesy of the Battleship *North Carolina* Collection, Wilmington, NC.

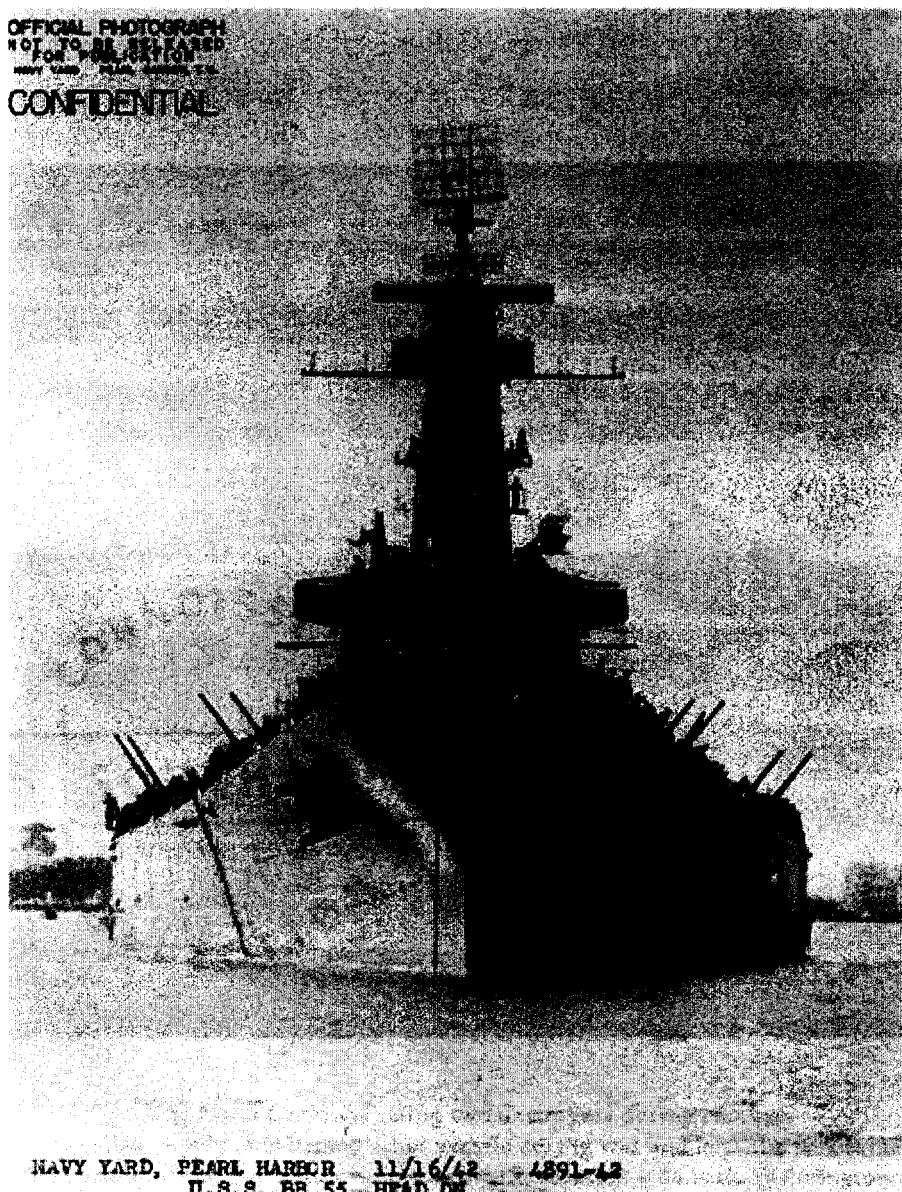


Photograph of a 20mm on board the *Iowa*, 1943.
These guns proved to be successful anti-aircraft weapons.
U.S. Navy Historical Center Photograph # K-16469.



The North Carolina off the east coast of America, April 1942.
U.S. Navy Historical Center Photograph # NH 80988.

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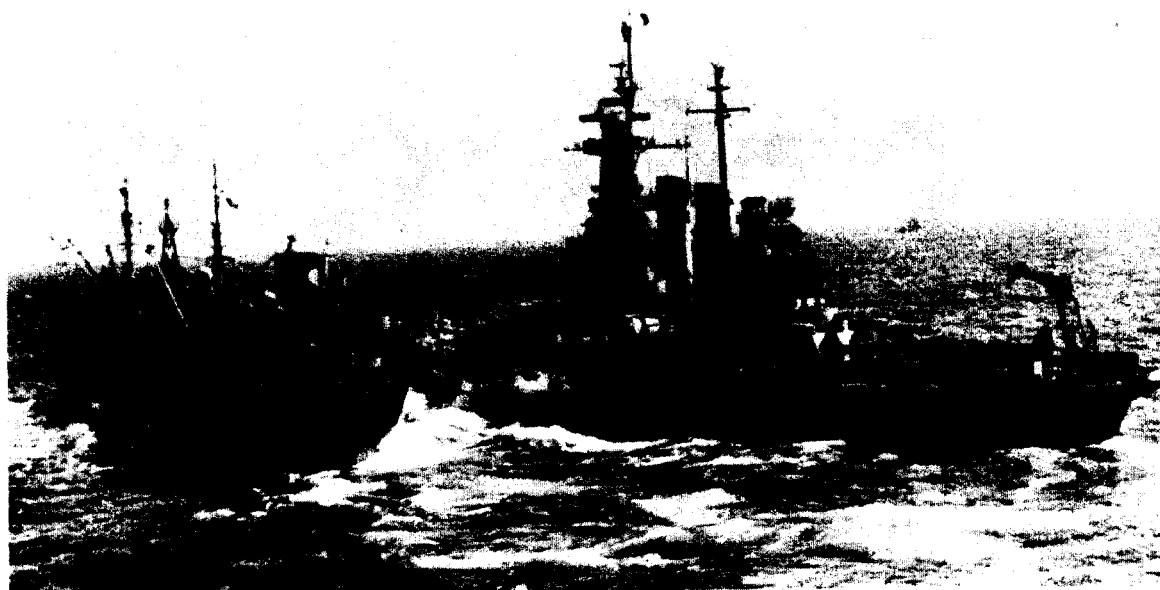


NAVY YARD, PEARL HARBOR 11/16/42 4891-42
U.S.S. BB 55 HEAD ON.

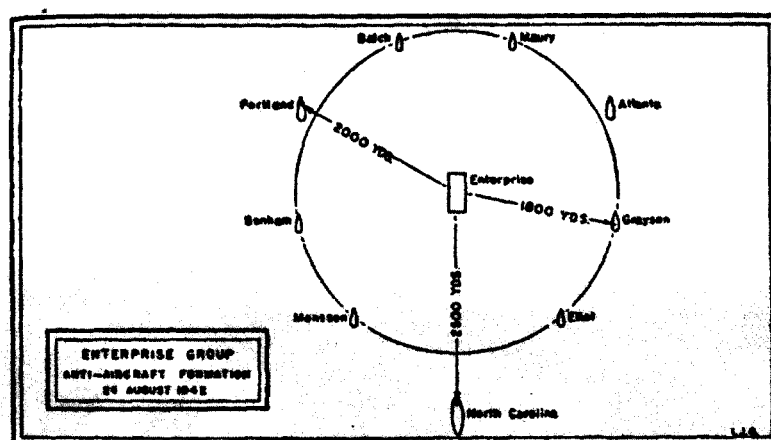
Bow view the *North Carolina* in Pearl Harbor, November 1942.
Photograph courtesy of the Battleship *North Carolina* Collection, Wilmington, NC.



The *North Carolina* fueling two destroyers during combat.
The role of combat supply ship helped other vessels during war and kept the task force moving.
Photo courtesy of the Battleship *North Carolina* Collection # 80.12.16, Wilmington, NC.



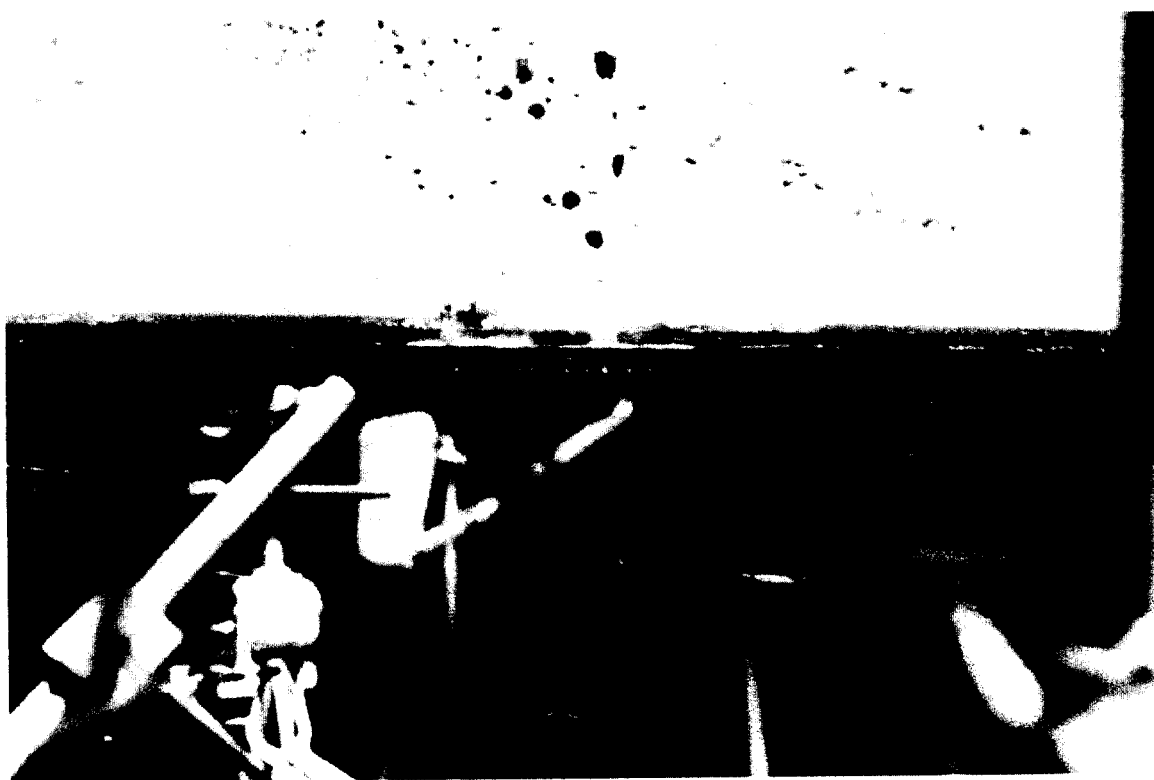
The *North Carolina* being refueled by an oil tanker.
Photograph courtesy of the Battleship *North Carolina* Collection, Wilmington, NC.



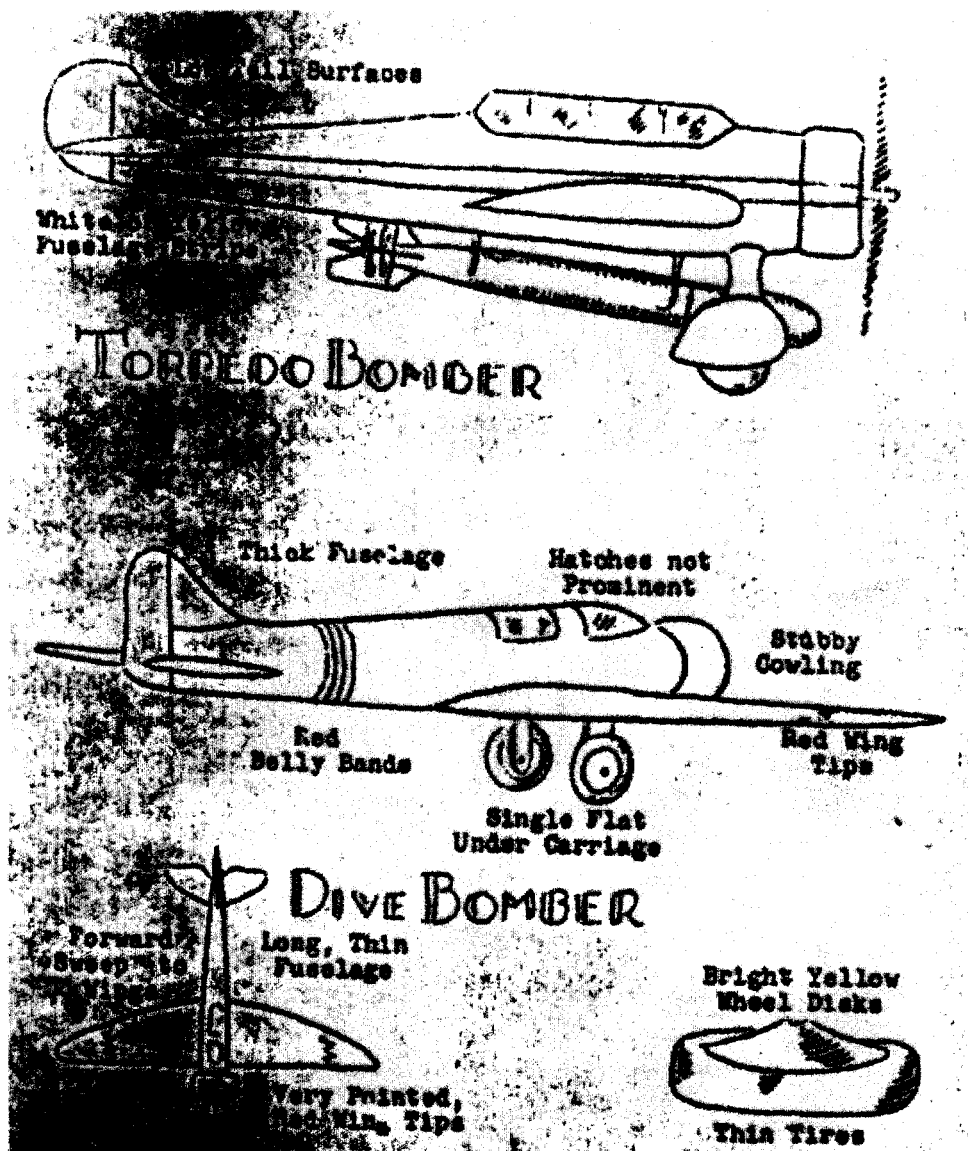
Drawing of cruising formation of Task Force 16 at time of attack

The ships log records the following: 2130 CONLON, GEORGE EDWARD, 224-07-85, AMM 3/C USN was buried at sea Lat. 09°-40S Long. 164°-02.3E having been killed in action during enemy air attack this date.

Diagram of the task force at the Battle of Eastern Solomons.
Diagram courtesy of the Battleship North Carolina Collection, Wilmington, NC.



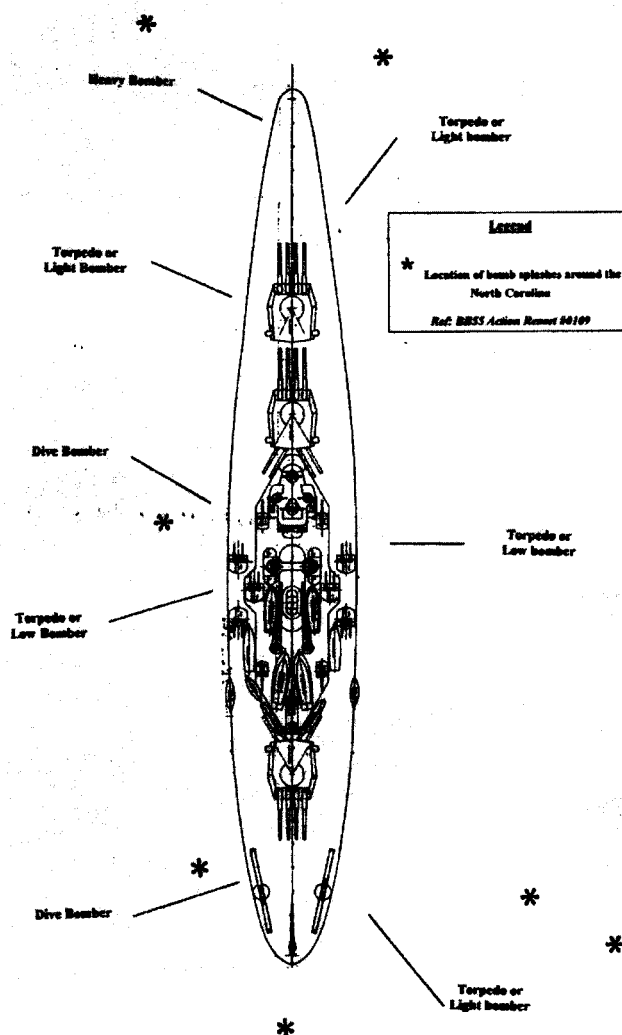
An anti-aircraft barrage at the Battle of Eastern Solomons.
The aircraft carrier *Enterprise* is visible in the background.
Blee, *Battleship North Carolina*, p.45.



Two types of Japanese aircraft in the Battle of Eastern Solomons.

These are recognition drawings to help U.S. Navy personnel.

Collection # 292.3.a, East Carolina Manuscript Collection, East Carolina University, Greenville, NC.



The Japanese attacked from various angles and with different types of aircraft. The Sun was low in the sky and was mostly on port and starboard quarter.

Diagram of the attacking aircraft at the Battle of Eastern Solomons.
 Diagram courtesy of the Battleship North Carolina Collection, Wilmington, NC.

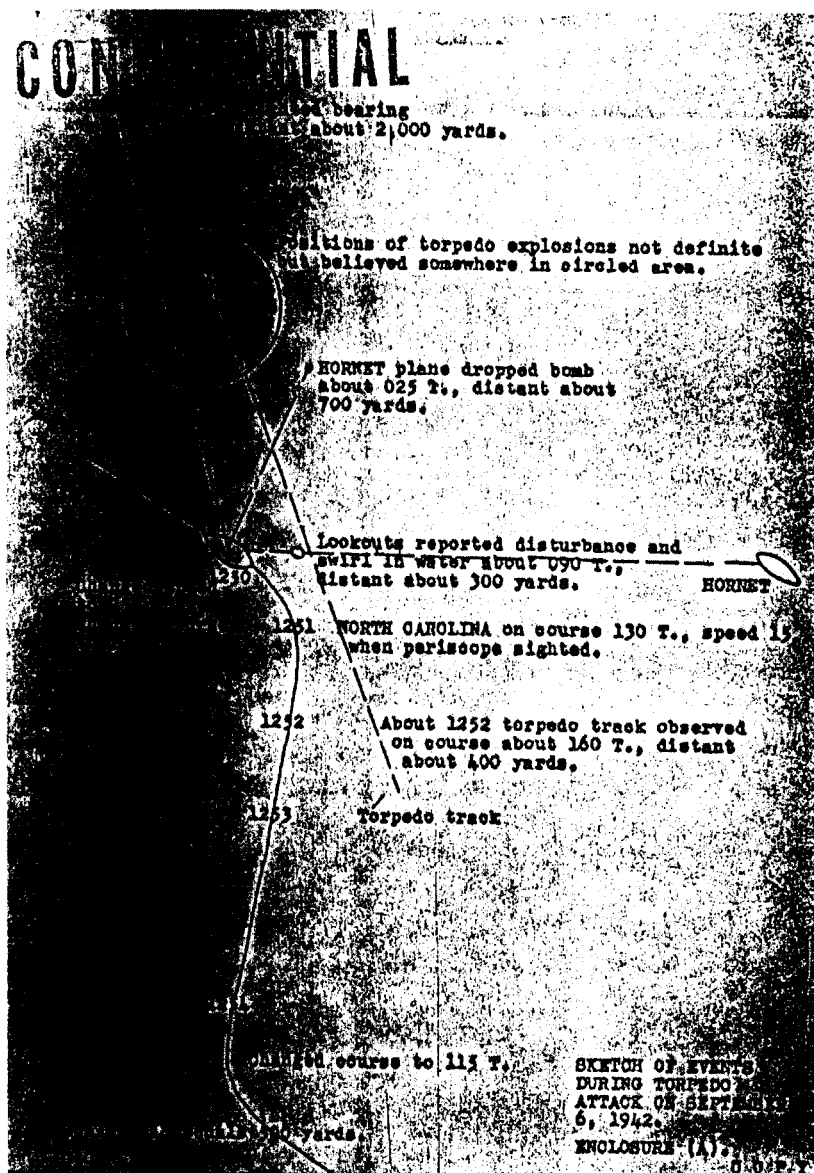
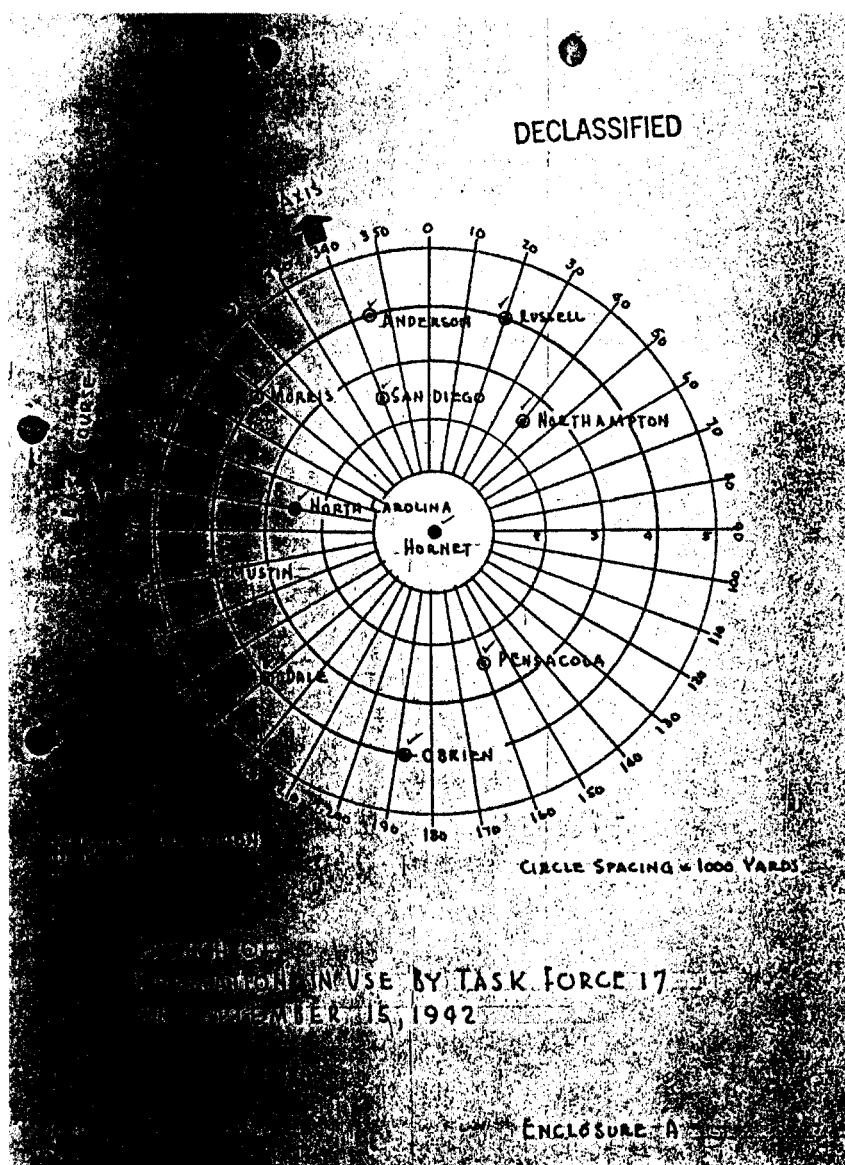
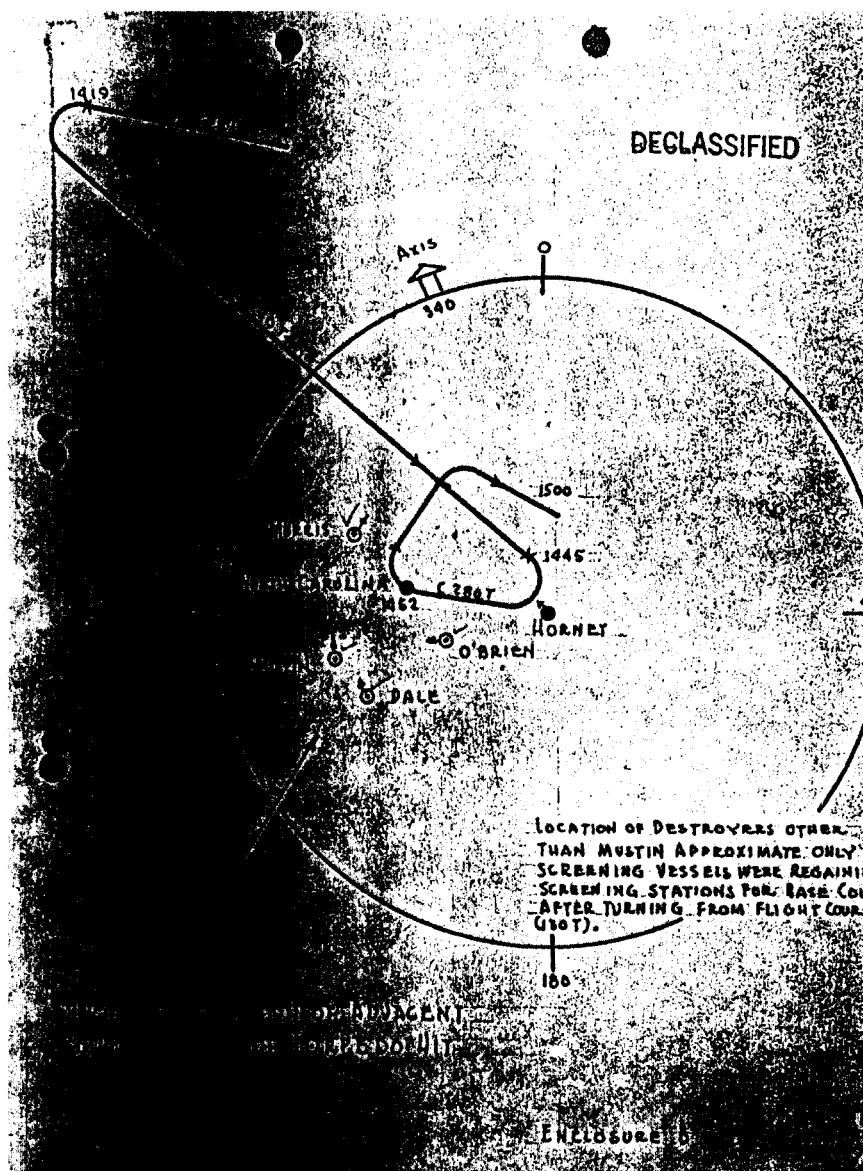


Diagram of the North Carolina's track during a torpedo attack on 6 September 1942.
Collection # 292.3.a, East Carolina Manuscript Collection, East Carolina University, Greenville, NC.



Formation of ships in the task force on 15 September 1942.

Three ships were torpedoed on this day: the *North Carolina*, carrier *Wasp*, and destroyer *O'Brien*.
Collection # 292.3.a, East Carolina Manuscript Collection, East Carolina University, Greenville, NC.



The track of the *North Carolina* on 15 September 1942.
Collection # 292.3.a, East Carolina Manuscript Collection, East Carolina University, Greenville, NC.



Photograph of the carrier *Wasp* on fire and torpedo striking the destroyer *O'Brien*.
Photograph courtesy of the Battleship *North Carolina* Collection, Wilmington, NC.



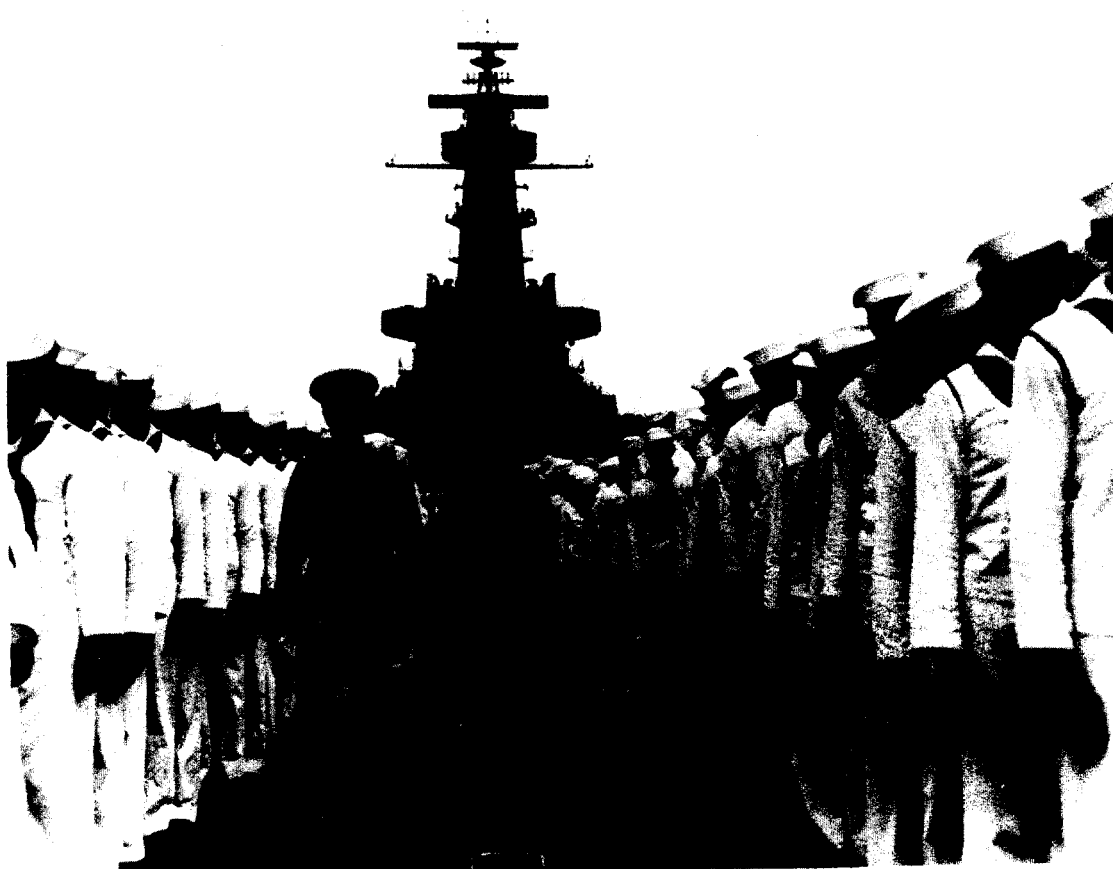
Photograph of the hole in the *North Carolina* caused by a Japanese torpedo on 15 September 1942.
Blee, *Battleship North Carolina*, p.55.



Island liberty on Ulithi Atoll.
Blee, *Battleship North Carolina*, p.60.



A torpedo net surrounds the *North Carolina*.
Men were given liberty to swim inside the net and it protected them from shark attacks.
Photograph courtesy of the Battleship *North Carolina* Collection, Wilmington, NC.



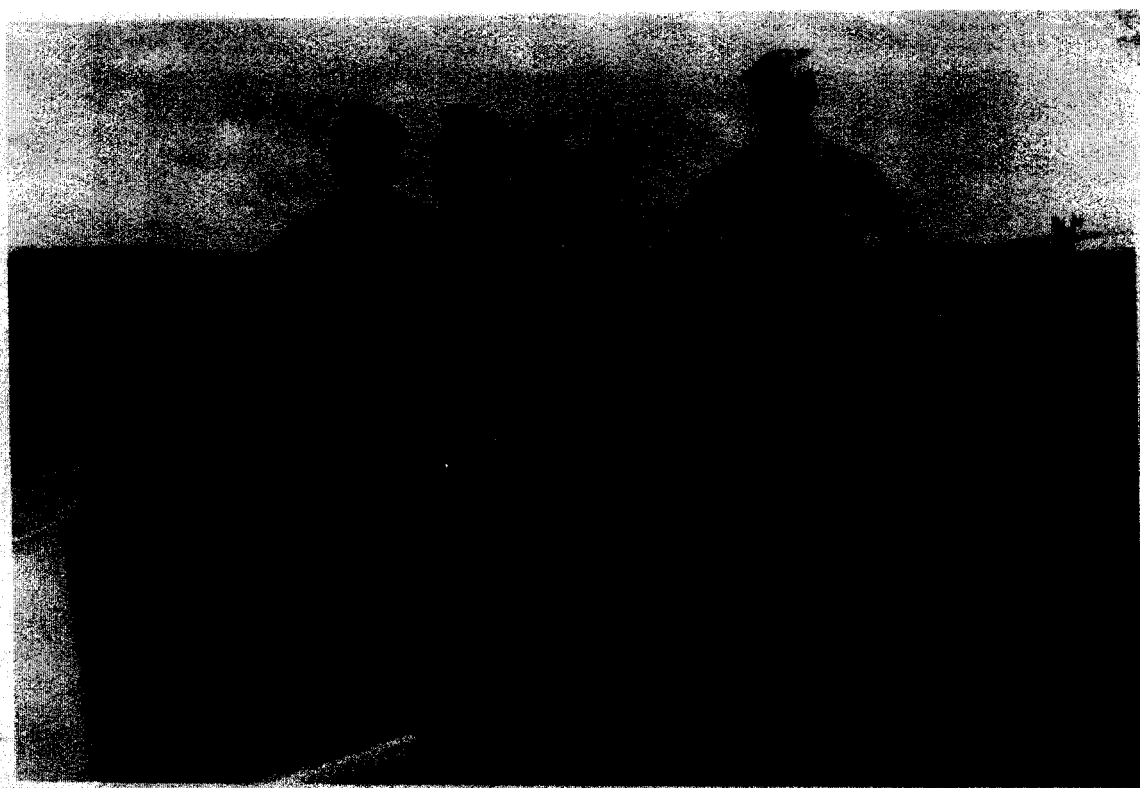
Captain Wilder D. Baker prepares to relieve Captain George H. Fort, December 1942.
National Archives Photograph # 80-G-47836.



The *North Carolina* underway near Hawaii, March 1943.
U.S. Navy Historical Center Photograph # 80-G-276619.



The *North Carolina* is escorting the carrier *Monterey*, December 1943.
The battleship is in Measure 32 camouflage paint scheme.
National Archives Photograph # 80-G-366920.



Sailors on the *North Carolina* in dungarees.
Note the color of the hats worn by the men on the left.
Their uniforms matched the color of the ship's camouflage deck.
Photograph courtesy of the Battleship *North Carolina* Collection, Wilmington, NC.



Men on board the *North Carolina* watching a salvo being fired.
Photograph courtesy of the Battleship *North Carolina* Collection, Wilmington, NC.



Turrets one and two firing a salvo.

In the upper left hand corner is a shell.

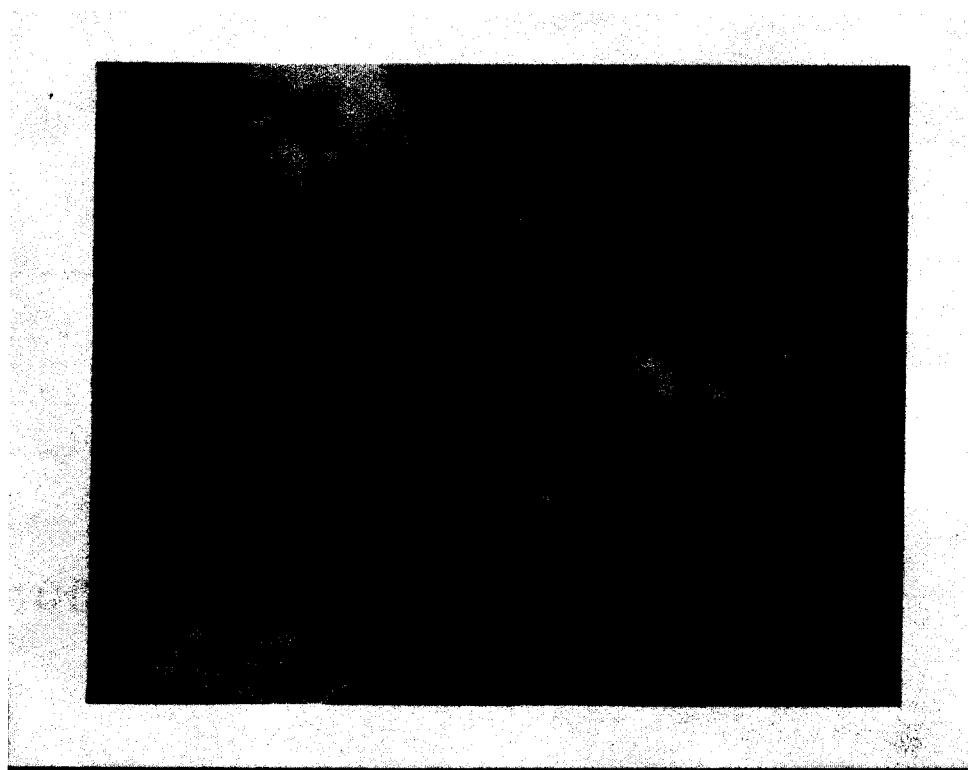
Photograph courtesy of the Battleship *North Carolina* Collection, Wilmington, NC.



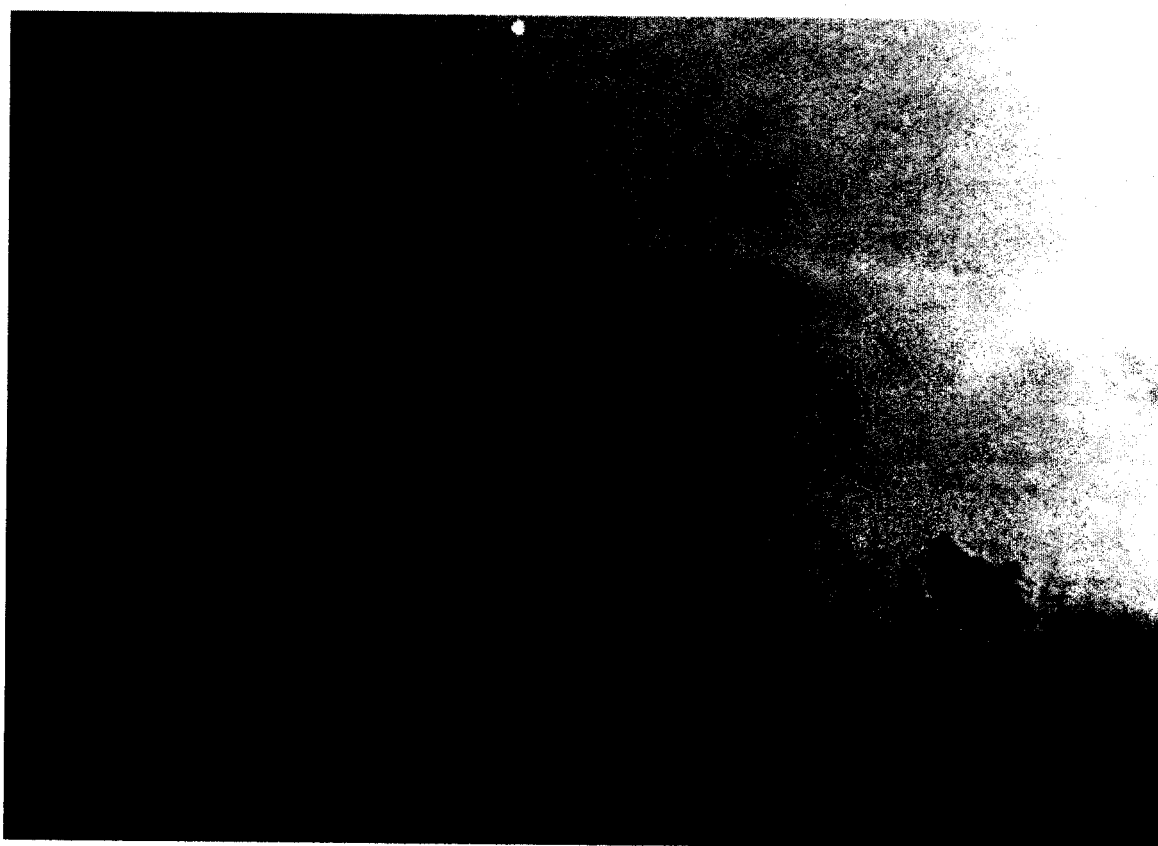
Turret officer looking through periscope.
Photograph courtesy of the Battleship *North Carolina* Collection, Wilmington, NC.



The Vought O2SU-3 Kingfisher aircraft docking on a sled off the ship.
The Kingfishers played important roles for the battlewagon, such as spotting gunfire.
Photograph courtesy of the Battleship *North Carolina* Collection, Wilmington, NC.



Battleships fire their salvos during the bombardment of the Kwajalein Atoll, January 1944.
Photograph courtesy of the Battleship *North Carolina* Collection, Wilmington, NC.



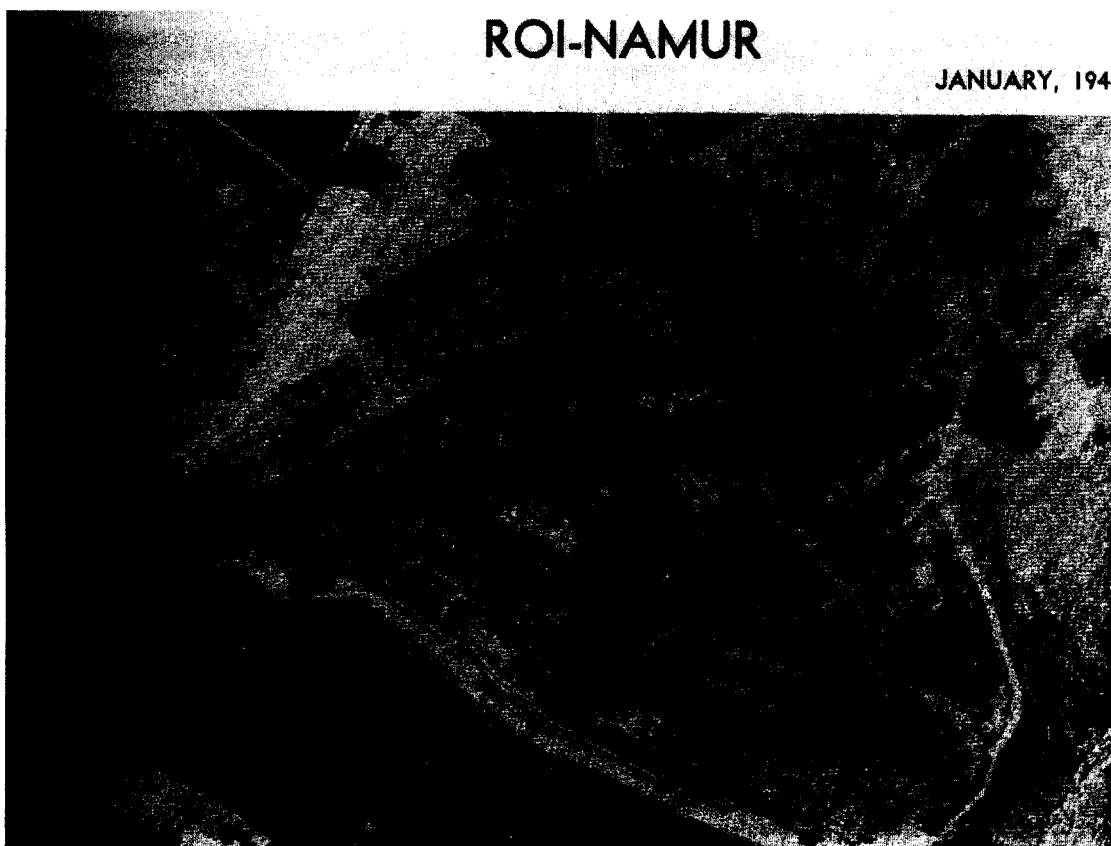
Smoke rising from the Kwajalein Atoll caused by bombardment, January 1944.
Photograph courtesy of the Battleship *North Carolina* Collection, Wilmington, NC.



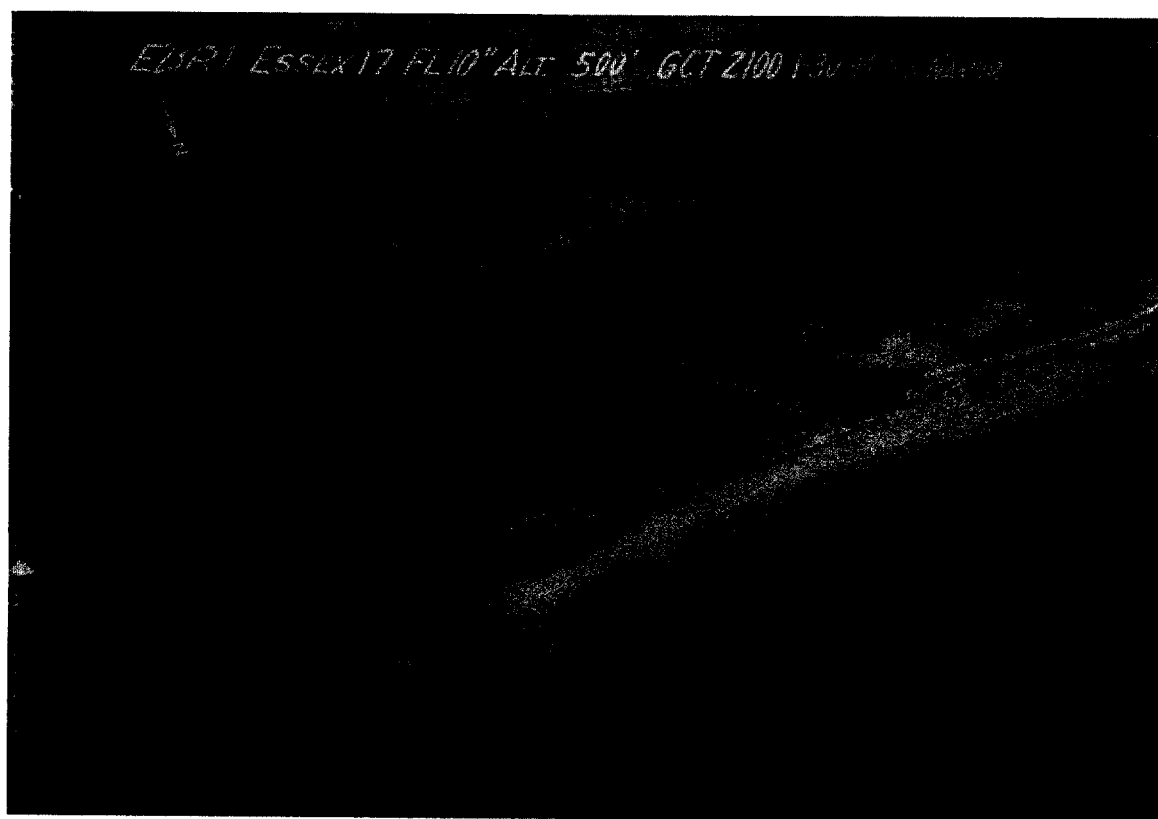
The effects of bombardment shown in this aerial view, January 1944.
Photograph courtesy of the Battleship *North Carolina* Collection, Wilmington, NC.

ROI-NAMUR

JANUARY, 1944



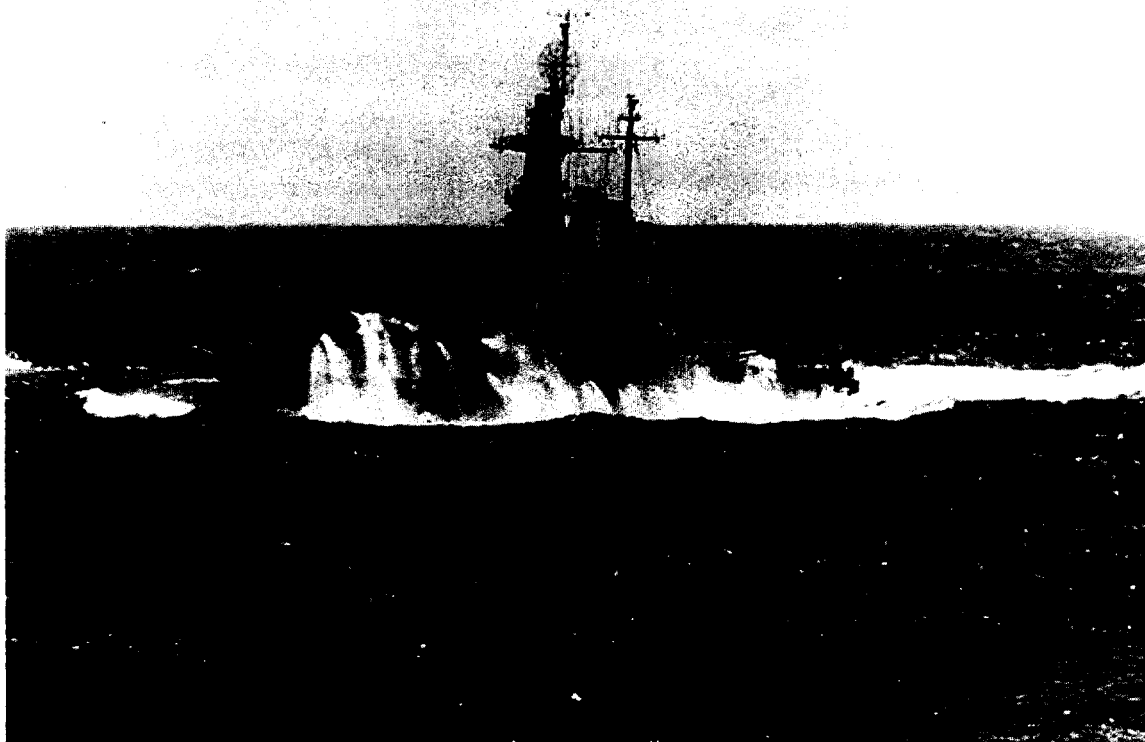
Another aerial view of Roi-Namur airfield, January 1944.
Photograph courtesy of the Battleship *North Carolina* Collection, Wilmington, NC.



The after effects of the bombardment on Roi-Namur airfield, January 1944.
Photograph courtesy of the Battleship *North Carolina* Collection, Wilmington, NC.



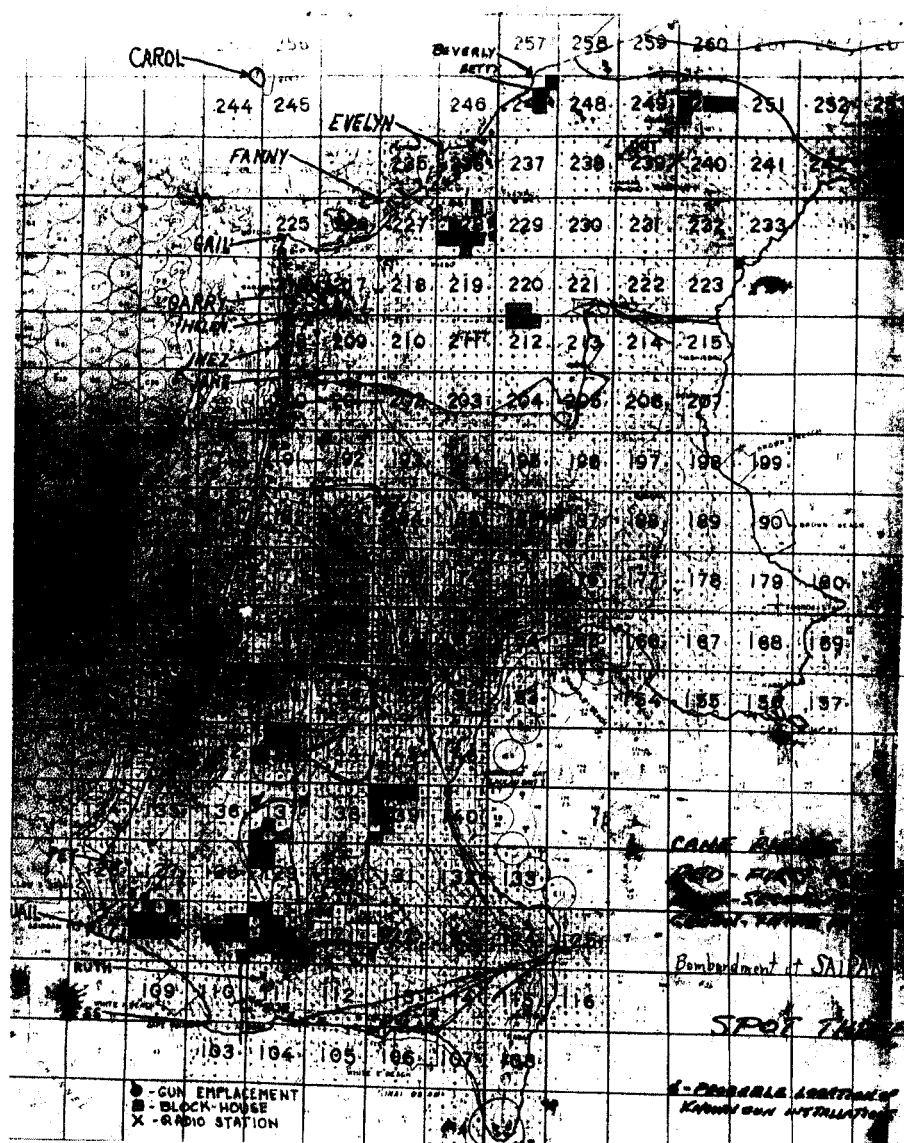
Men on deck with an Essex class carrier in the background, 1944.
Photograph courtesy of the Battleship *North Carolina* Collection, Wilmington, NC.



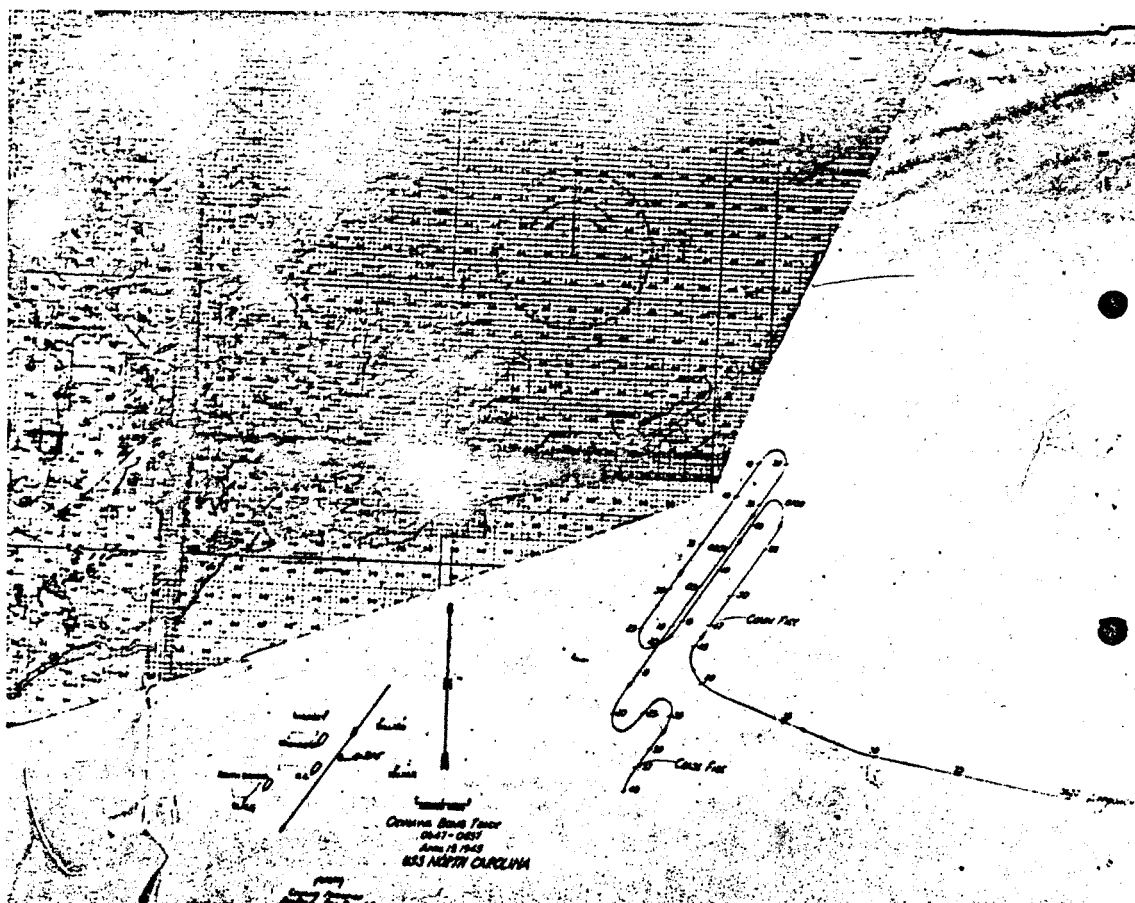
The *North Carolina* in heavy seas off the Philippines, December 1944.
Also, note the upgrade in radar. The antenna is now parabolic.
U.S. Navy Historical Center Photograph # 80-G-301356.



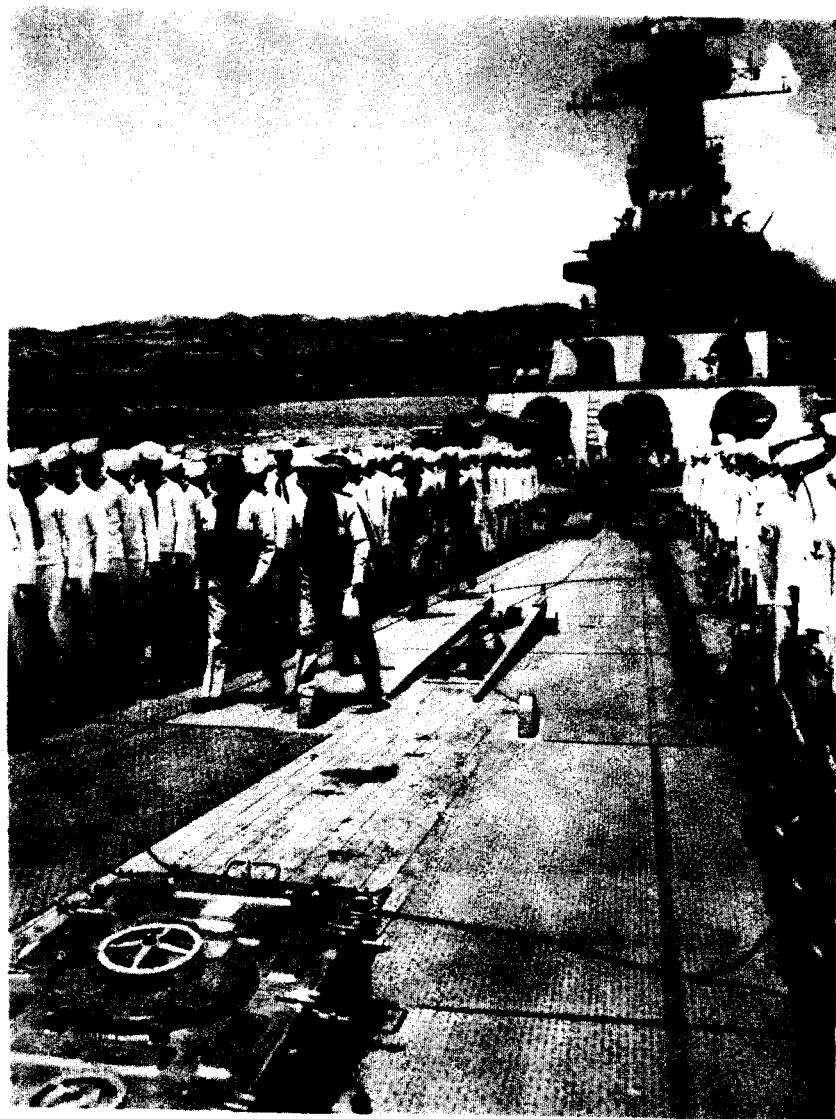
The *North Carolina* firing a salvo during the bombardment of Okinawa, March 1945.
Note the six projectiles in the upper left hand corner.
National Archives Photograph # 80-G-313009.



A bombardment map of Saipan, June 1944.
 Collection # 292.2.g, East Carolina Manuscript Collection, East Carolina University, Greenville, NC.



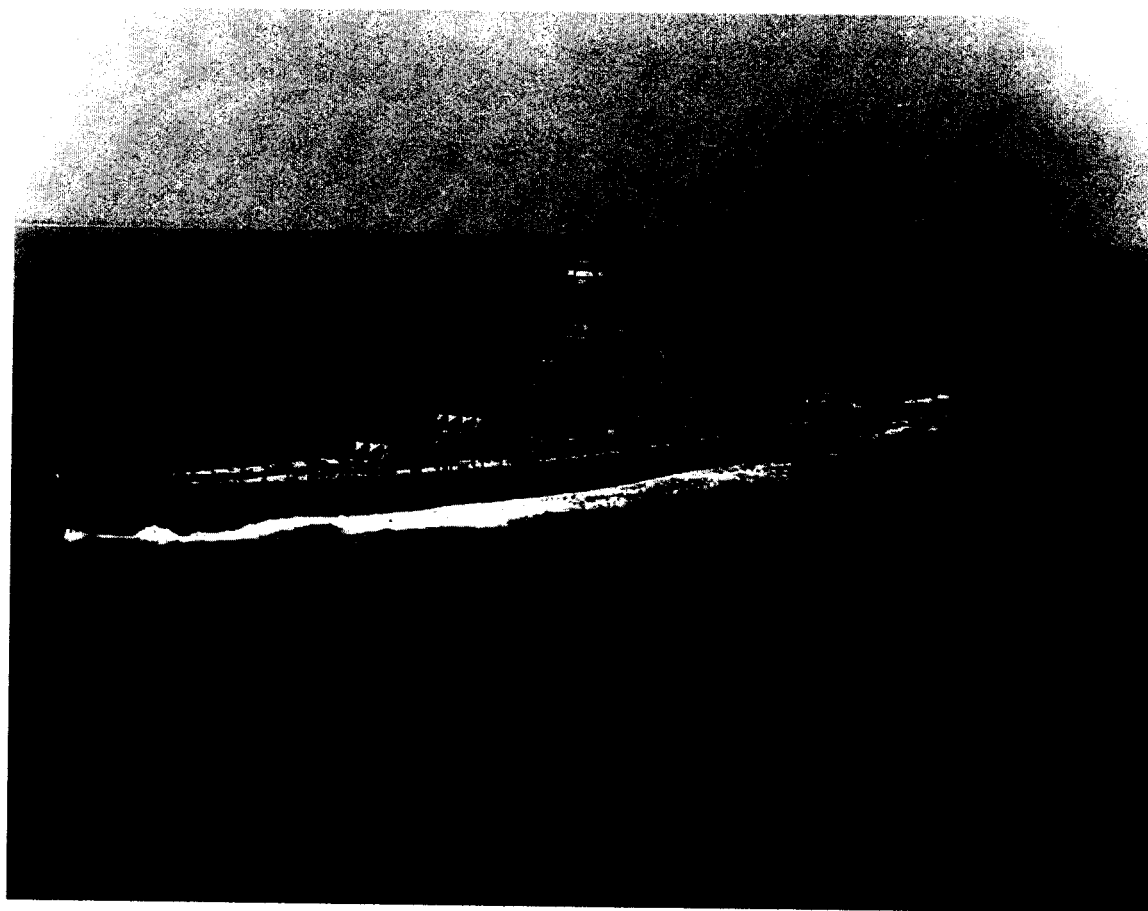
The battlewagon's track during the bombardment of Okinawa, March 1945.
Collection # 292.3.g, East Carolina Manuscript Collection, East Carolina University, Greenville, NC.



Captain B. Hall Hanlon reviews the crew before relieving Captain Oswald S. Colclough, June 1945.
Photograph courtesy of Battleship *North Carolina* Collection # 90.14.30, Wilmington, NC.



A kamikaze crashes off the side of the *North Carolina* after being shot down, 1945.
Blee, *Battleship North Carolina*, p.85.



The North Carolina after the Second World War, June 1946.
U.S. Navy Historical Center Photograph # NH 97267.