A new kid is coming into town and it may far surpass the firepower we ever knew from the age of battleships. The Office of Naval Research (ONR) unveiled its electromagnetic railgun for the first time at the Naval Future Force Science & Technology EXPO in February. With the ability to launch a hyper-velocity projectile (HVP) up to Mach 6 in less than a second, it’s a doozy.

With Chief of Naval Operations (CNO) Adm. Jonathan Greenert set as the event’s keynote speaker on Feb. 4, the EXPO promised to be a window into the future of the U.S. Navy, showcasing the latest advances in power projection and force protection.

“This year’s Expo will showcase the naval portfolio of innovative breakthrough technologies that are shaping our warfighting tactics today and changing the way our Sailors and Marines will operate in the future,” said Chief of Naval Research (CNR) Rear Adm. Mat Winter. “The Electromagnetic Railgun is among several disruptive capabilities that the Naval Research Enterprise is championing to ensure a dominant, capable and relevant naval force for the future.”

Experts from ONR, Naval Sea Systems Command and BAE Systems, Inc., will be on hand at the display and in breakout sessions to address the technical developments of the weapon.

The Railgun program continues to move swiftly toward scheduled at-sea testing in 2016. Its revolutionary technology relies on electricity instead of traditional chemical propellants, with magnetic fields created by high electrical currents launching projectiles at distances over 100 nautical miles—and at speeds that exceed Mach 6, or six times the speed of sound.

That velocity allows the weapon’s projectiles to rely on kinetic energy for maximum effect, and reduces the amount of high explosives needed to be carried on ships. It also minimizes the dangers of unexploded ordnance remaining on the battlefield.

“The Electromagnetic Railgun brings significant technological advances to our Sailors and Marines,” said Roger Ellis, program manager at ONR. “As the system moves forward along its planned schedule from the laboratory launcher, we’ve achieved breakthroughs in compact power and gun design, and will test the next phase of prototype at both sea- and land-based sites in 2016 and 2017.”

The railgun is a true next-gen weapon system and a major improvement over existing chemical-based pro-
pellants. How does it work? First, the pulsed-power system stores electricity generated by the ship for several seconds. An electrical pulse accelerates a sliding metal conductor between two rails, launching a 28-pound HVP up to 5,600 mph.

The HVPs go from 0 to Mach 6 in less than a second, traveling 100+ nautical miles. For some perspective, the SR-71 Blackbird only reaches Mach 3. Meanwhile, the Mk 45 naval gun mount can only shoot conventional ammunition 13 nautical miles.

Still not impressed? According to the ONR’s exhibit at the Naval Future Force EXPO, the kinetic energy in a 30 mega-joule railgun projectile launch is the equivalent of an M1 Abrams tank travelling at 72 mph or a family sedan traveling at 410 mph! The railgun generates 32 mega-joules of energy.

And according to Roger Ellis, Program Manager for the railgun INP, more than 3 million amps of current flow through the device.

BAE’s prototype on the show floor was about 10 meters long, and it looked every inch the terror it’ll be to someone on the receiving end.

Initially, the Navy will use the railgun for precise naval surface fire support or land strikes, ship defense, and surface warfare. And while it’ll be a caustic nightmare for America’s enemies, the railgun’s kinetic-energy warhead will reduce the hazards associated with toting shipboard explosives. As for that vaunted rapid-fire capability — it’ll launch the HVPs at a rate of 10 per minute.

“The Electromagnetic Railgun brings significant technological advances to our Sailors and Marines,” said Roger Ellis. “As the system moves forward along its planned schedule from the laboratory launcher, we’ve achieved breakthroughs in compact power and gun design, and will test the next phase of prototype at both sea- and land-based sites in 2016 and 2017.”

The railgun will advance to at-sea testing in 2016, before transitioning to an acquisition program and full-scale deployment to the fleet.
Teak - The Deck of Choice for Men Of War

Teak is a yellowish brown timber with good grain and texture. Teak, though easily worked, it can cause severe blunting on edged tools because of the presence of silica in the wood. Teak is often an effective material for the construction of both indoor and outdoor furniture. Teak's high oil content, high tensile strength and tight grain makes it particularly suitable for outdoor furniture applications. Over time teak can mature to a silvery-grey finish, especially when exposed to sunlight. It is used in the manufacture of outdoor furniture, boat decks, and other articles where weather resistance is desired. It is also used for cutting boards, indoor flooring, and countertops and as a veneer for indoor furnishings. Teak is used extensively in India to make doors and window frames, furniture, and columns and beams in old type houses. It is very resistant to termite attacks. Mature teak fetches a very good price. It is grown extensively by forest departments of different states in forest areas.

Teak has been used as a boatbuilding material for
over 2000 years (it was found in an archaeological dig in Berenike a port on the Indian Roman trade). In addition to relatively high strength, teak is also highly resistant to rot, fungi and mildew. In addition, teak has a relatively low shrinkage ratio, which makes it excellent for applications where it undergoes periodic changes in moisture, such as a ship’s deck. Teak has the unusual properties of being both an excellent structural timber for framing, planking, etc., while at the same time being easily worked, unlike some other similar woods such as purpleheart, and finished to a high degree. For this reason, it is also prized for the trim work on boat interiors. Due to the oily nature of the wood, care must be taken to properly prepare the wood before gluing.

When used on boats, teak is also very flexible in the finishes that may be applied. One option is to use no finish at all, in which case the wood will naturally weather to a pleasing silver-grey. The wood may also be oiled with a finishing agent such as linseed or tung oil. This results in a pleasant, somewhat bland finish. Finally, teak may also be varnished for a deep, lustrous glow.

Teak is also used extensively in boat decks, as it is extremely durable and requires very little maintenance. The teak tends to wear in to the softer ‘summer’ growth bands first, forming a natural ‘non-slip’ surface. Any sanding is therefore only damaging. Use of modern cleaning compounds, oils or preservatives will shorten the life of the teak, as it contains natural teak-oil a very small distance below the white surface. Wooden boat experts will only wash the teak with salt water, and re-caulk when needed. This cleans the deck, and prevents it from drying out and the wood shrinking. The salt helps it absorb and retain moisture, and prevents any mildew and algal growth. People with poor knowledge often over-maintain the teak, and drastically shorten its life.

In Battleships and Cruisers teak was used for several reasons:

- Heat Insulation: In the days prior to air conditioning, ships (especially those on tropical station) could become very hot. The wooden deck provided a layer of insulation against the sun's heat. The few cruisers lacking wooden decks were considered unsuitable for tropical service because they would become unbearably hot.

- Appearance & Tradition: A well-maintained wooden deck presented the “proper” naval appearance; this was of particular interest in ships intended for “showing the flag” in foreign ports. Also, it was
traditional to have a wooden deck, and there was no particular reason to change.
• Blast: It easily absorbed blast pressures from the large guns.
• Antiseptic: The oils in the wood were less likely to spread infection from splinters.
• Make-Work: Large warships had very large crews, but many sailors only had tasks when the ship was in combat; at other times they would be idle hands. Maintenance of a wooden deck provided a means to keep crews busy during otherwise idle times.

The US Navy cleaned its teak decks using a holystone. A holystone is actually soft sandstone, a sedimentary rock formed by the consolidation and compaction of sand and held together by a natural cement, such as silica. Holystone is all one word in the USN and you really don’t want to be the one doing it. When you holystone teak you use liberal amounts of sea water. (It’s only done in peace time. During WWII the decks were often painted deck gray, (dark blue,) to camouflage the ship from air attacks. After holystoning, the teak becomes sort of ashen white.

The teak decking used on the US battleships is 2” thick which is an old dimension from when a 2 X 4” measurement. All other boards were measured the same. In the USN the teak is bolted to the steel decking and the nut and washer are recessed into the teak and a teak plug inserted over the nut. The gaps between the planks were caulked with tar. The natural oils in the teak make it pretty weather resistant and it is also a very good insulator against heat. Footing is good on teak and is used extensively on sail boats for that reason.

Teak has and retains for a very long time a very nice aroma and this makes it a prime wood on cruise ships as well as cruise ship decks. Thus the high usage of teak makes it come with a high price as well in today’s world. Even though teak has natural oils a ship at sea has much salt water which the teak does soak up and this swells the teak and keeps it tight fitting. Left in the sun and little water the teak will shrink and become loose.

The USN applied the teak directly to the steel decks and the oils in the teak keep the steel from rusting. In areas such as the bridge a teak mesh is usually put together with about 1 inch spacing. It is in sections and is installed so there is about a space below it for sea water to run off. The sections can be lifted to clean underneath. The gang planks and landings are also made this way. The testament to teak’s lasting qualities is that only in 2012, when Iowa became a part of the Pacific Battleship Center, did the original deck (1943) need to be replaced. After 70 years even teak will rot away.

Another way teak was used on older battleships was as a part of the ship’s side armor. The steel armor was frequently backed by several inches of teak. This was certainly true of many of the British ships of the WWI era. This reinforces teak’s ability to absorb some force. And because teak has antibiotic properties, teak splinters do not tend to become infected, whereas wood form oil poor woods, such as oak, do. In the diagrams of the JNS Kirishima the side armor was backed by 2 inches of teak. Since the Kirishima was built to a British design, it is most probable that teak backing for the armor was used on other ships built during the same period.
The Fire Controlman rating was established in 1941. It was split off of the gunner’s mate rating. Fire controlman were highly skilled sailors responsible for the operation of various forms of range finding gear, and solving ballistic calculations to control the firing of the ship’s guns. These skills were originally employed primarily for naval gunfire support, and surface combat, but today fire controlman also play an extensive role in air warfare as well.

The fire controlman rating was later renamed “fire control technician” (FT), with specific sub-designators for gunnery (FTG), missiles (FTM) and submarines (FTU). Later the FTU designation was split into two specific sub-designations for torpedoes (FTG) and ballistic missiles (FTB).

In 1985 the name of this naval rating has changed back to fire controlman (FC). This allowed for the separation of the submarine rate FT from surface rate FC. FC was the original name of the rate through WWII when optic devices called theodolites were used. After WWII, when the duties changed to more technical things like radar and computers, the name was changed to fire control technician (FT). The FT name is now used exclusively for fire control personnel on submarines. The rating insignia is an coincidence or stereoscopic rangefinder, with two lightning bolts (called “sparks”) signifying the technical side. Until 1985 it had always been just the rangefinder without the lightning bolts.

FCs maintain the control systems used in aiming and firing weapons on all equipped ships, including complex computers, electronics, electrical, and hydraulic equipment is required to ensure the accuracy of guided missile and surface gunfire control systems. FCs are responsible for the operation, routine care, and repair of this equipment, which includes radars, computers, weapons-direction equipment, target-designation systems, gyroscopes, and rangefinders.

Today’s fire controlmen provide system employment recommendations; perform organizational and intermediate maintenance on digital computer equipment, subsystems, and systems; operate and maintain combat and weapons direction systems, surface-to-air and surface-to-surface missile systems, and gun fire control systems at the organizational and intermediate level; inspect, test, align, and repair micro/
minicomputers and associated peripheral equipment, data conversion units, data display equipment, data link terminal equipment, print devices, and system related equipment; make analysis for detailed systems, computer programs, electronics, and electronic casualty control; and operate associated built-in and external test equipment; load, initialize, and run preprogrammed diagnostic, performance and testing routines for digital computer equipment, digital sub-systems, digital systems, and overall combat systems.

FCs attend ATT (Apprentice Technical Training) and “A”-School at Naval Station Great Lakes; this course is roughly eight months long followed then by a “C”-school, based on one of the systems described below, which varies in length from 4 months to 8 months.

FCs typically operate weapon systems on-board surface combatant ships. They are trained in the repair, maintenance, operation and employment of weapons such as the Tomahawk Missile System, the Close-In Weapons System, the 5”/54 caliber Mark 45 gun weapon system and its associated MK86 or MK160 Gun Fire Control System, the MK92 Gun Fire Control System (on Frigates) the Sea Sparrow missile system, and the Harpoon Missile Systems. These include their associated computer and sensor packages. Their job is somewhat unique in that they are trained to troubleshoot and repair their systems, as well as operate them. These responsibilities are typically split up between different ratings for various types of electronic equipment.

In essence, they “pull the trigger”, to defend the ship from tactical threats, or to make an offensive strike against a hostile target.

Another area of responsibility for FCs is the Aegis weapon system, which includes one of the most powerful air-search radars, deployed at sea, in the world, theSPY-1, as well the MK99 Fire Control System, used for terminal guidance of Standard Missiles, and the Aegis Computer Suite.
You Remember These?

Navy slang has changed a lot over the years. Below are some of the terminologies and slangs we used during World War II. Some are still relevant today, while some are fondly remembered.

Aft - towards the stern
Ahead - go forward
Airedale - aviation crew (see below)
Athwart - astride
Athwartship - across the beam, sideways
Auxiliary - assisting
Avast - stop what you are doing
Aye, aye - I understand, I will comply
Bandit - radar contact confirmed as enemy
Barge – admiral's boat; unpowered cargo carrier
Beam - sides
Bells - sound marking the half hour (8-bells, end of watch period)
Below - under a deck
Bilge - space below lowest deck.
Black Gang - engine room crew (they used to shovel coal)
Bluejacket - sailor, below rank of Chief
Boat - vessel that can be carried by a ship.
Boatswain - deck crew
Bogy - unknown radar contact
Boot - a recruit
Bow - front of ship
Brass - officers
Bridge - command room
Brig - jail
Bulkhead - wall
Bunk - bed
Cabin - quarters of Captain or Admiral
Capstan - turning barrel to aid hosting weights or anchor.
Chain locker - compartment to hold anchor chain and store cables.
Chains - platform where leadsman stands to take soundings.

Chit - piece of paper authorizing or receipt.
Chow - food
Christen - launch from shipyard (much remains to be installed.)
Commission - accepted for naval service, either a ship or officer.
CIC - combat information center
Colors - the American flag or flag ceremony
Compartment - a room
Complement - crew
Conn - navigation post
Cover - hat
Coxswain - 3rd class boatswains mate, small boat helmsman.
Craft - vessel not designed for open seas; boat carried by a ship, as in landing craft.
Cruising speed - speed economic with fuel
Cruise - a deployment period or period of enlistment.
Davits - cranes to raise/lower small boats.
Deck - floor
Deep six - throw overboard
Dip - lower flag 1/2 way and raise again in salute.
Director - Device for controlling gunfire
Ditty bag - container for toilet articles.
Dog - lock
Dog Watch - dinnertime, two hour watch: first 1600-1800, second 1800-2000
Draft - depth in the water; detail of men.
Fantail - rear surface
Field day - clean up ship
Forecastle/Foc'sle - forward raised deck of a ship.
Forward - towards the bow
Flag Officer - admiral
Flagship - ship with the senior officer and his staff aboard.
Flank speed - faster than standard.
Freeboard - height of deck above the water line.
Galley - kitchen
Gangway - ramp for boarding ship; get out of the way
General Quarters - battle stations
Gig - captain's boat; demerit or minor punishment.
Gung ho - highly motivated.
Gunhouse - rotatable enclosure for guns
Gunwale - top edge of hull
Handy billy - portable, gas powered, water pump.
Hash marks - service stripes
Hatch / hatchway - doorway or opening
Head - toilet
Hedge Hog - anti-submarine mortar battery
Helm - position of steering command.
Highline - transfer by lines between two ships.
Holiday -- non-working day; missed opportunity to do work
I.C. - interior communications
Jury rig - makeshift device.
Kedunks - snack items, including Pogy Bait.
Knot - nautical mile per hour, 1.15 mph, 1/6 greater than statute mile.
Ladder - stairway
Leave - authorized vacation
Lee - direction away from wind.
Left arm rate - engineering machinery and hull specialist, typically below decks.
Locker - chest or storeroom
Liberty - time away from station, as a weekend
Line - rope
Line Officer - officer in line of command, not staff.
List - tilt sideways.
Lucky bag - lost and found
Magazine - storage for ammunition
Mast - disciplinary hearing before the captain
Master at Arms - ship's policeman
Mess - dining
Midships - middle of ship
Midshipman - student officer
Mustang - officer who came from the enlisted ranks
Muster - assembly
Nautical mile - is 1/6 greater than statute (land) mile.
On report - notation of inadequacy
OOD - Officer of the Deck, man in charge.
Out - end of transmission (“over” is implied, not stated.).
Over - end of statement
Overhead - ceiling
Over the hill - absent without authorization
Painter - line attached to small boat.
Party - group of sailors.
Passageway - corridor
Peacoat - heavy wool, navy, sailor's jacket.
Petty Officer - noncommissioned officer
Piece - rifle
Pig boat - prewar, P-class submarine.
Picket - observation ship stationed away from main body.
Pip - object on radar.
Pipe - hole between decks.
Pipe - boatswains call
Plank owner - initial crew
Pogy Bate - candy
Pointer - man who moves guns up and down.
Police - clean up
Poop Deck - after raised deck of a ship.
Port - left side of a ship
Porthole - ship's round window
PX - post exchange (general store)
Rack - bed
Rack out - go to sleep
Rank - officer grades
Rate - enlisted grades
Ratings - occupation
Report - attend to higher authority
Right arm rate - deck and operations specialist.
Roger - I understand (on radio)
Rudder - panel at stern used to steer ship
Quarter - direction between stern and beam.
Quarterdeck - deck space for honors
Quarters - living space, place where people gather to receive orders for the day.
Sack - mattress liner, bunk.
Sack out - go to sleep
Screw - propeller
Scullery - dish washing area
Scuppers - water discharge holes in sides of ship.
Scuttlebutt - drinking fountain; rumors.
Scuttle - access hole; intentionally sink a ship by opening sea valves.
Sea bag - canvas sack for clothes and things
Sea cabin - captain's sleeping room near bridge.
See Bees - construction battalion
Secure - stop, lock up, put away
Shakedown - test and training cruise
Shavetail - made an officer in an accelerated/emergency program
Ship - larger vessel able to cross the ocean (carries boats)
Shore up - prop up
SP / Shore Patrol - aid to local police
Sick bay - hospital
Skivvies - underwear
Smoking Lamp - indicator that smoking is allowed
SNAFU - situation normal, all fouled up.
Sound off - complain; shout
Sound powered phones - these did not require electricity.
Splinter shield - thinly protective shield around gun station.
Squared away - in good order
Stanchion - post separating decks
Starboard - right side of ship
Stateside - to the United States
Stewards - officer servants
Striker - one learning a rating
Stern - back end of ship
Swab - mop
Swabbie - sailor
Talker - seaman who relayed information (by sound powered phones)
TBS - Talk between ships, short range radio
Tender - repair and support ship
Topside - on deck; upstairs
Trade school - naval academy
Train - auxiliary ships accompanying a fleet.
Trainer - one who moves guns left and right.
Trim - levelness of ship
Turn to - begin work
Turret - armored gunhouse.
Wardroom - officer's quarters and mess
Watch - a work shift, 4 hours
Wheel - steering wheel that turns rudder
White hat - sailor
Wilco - I will comply. Only used by the officer in charge. (I understand (roger) is understood and not stated.)
Word - confirmed information
Yeoman - clerk
An account of the return voyage of USS Iowa from Morocco to the United States with President Franklin Delano Roosevelt as passenger.

By Commander T. J. Casey

The great grey battleship under Captain McCrea’s command followed a northerly course, continuing beyond Dakar, then swung east and south and returned to the vicinity of the strategic French West African capitol to embark the most distinguished passenger in the world.

But to go back a moment. On December 7th, 1943, the Iowa was steaming on her course to Dakar, along the African coast. Two years had passed to the very day when the infamous Japanese attack took place at Pearl Harbor. In one of the newest examples of a rapidly expanding fleet it became plain to all that the American Navy was preparing to repay the Japanese for their treachery. Yet little did the Iowa’s officers and men know just how decisive their ship’s contribution was to be when a day of partial vengeance – at least – would come.

It was the following day, Wednesday, December 8th, when the Iowa came to her Dakar anchorage in Goree Bay, Senegal, French West Africa. All hands, at quarters, beheld a beautiful, low, well-fortified coast, modernistic French architecture and the usual assemblage of war and merchant shipping.

That evening at eight o’clock a French destroyer, the Gazelle, came alongside to starboard. At thirteen minutes after eight, President Roosevelt boarded the Iowa and was quickly escorted to his quarters in the Captain’s cabin. There appeared to be some doubt as to the method of embarking in the Iowa as employed by General Watson and Harry Hopkins. Each maintained the other crawled on all fours across the gangway. At any rate, baggage, secret service men and the entire Presidential staff including Admiral Leahy and Rear Admiral McIntire and Rear Admiral Brown, boarded the Iowa and at nine o’clock the battleship was underway for the United States.

Passage to America was smooth at first, but rough and inclement on the western side of the Atlantic. On a clear moonlit night not far from Bermuda, DESRON 10 was detached and DESDIV 51, the Hall and Halligan and the Macomb, replacing our longest and truest Atlantic escorts, took up their screening stations. Captain Lewis (COMDESRON 10) and his ships disappeared over the horizon in a sheen of moonlight as Captain McCrea silently bade them farewell on his bridge.

The President rarely ventured upon his promenade during the cruise home.

At the noon-day meal in the Wardroom on December 14th, the officers were treated to a captivating address by their luncheon guest, Harry Hopkins. Among other remarks, Mr. Hopkins amially drawled:

“I’m glad to be traveling with you fellows. It’s really swell. Fellow Travelers! That’s what we are. At least I’m supposed to be one. The Chicago Tribune says so, anyway. Well, if Bertie McCormick knew where I’ve just been – talking to ‘Uncle Joe’ – he’d

Harry Hopkins addressing a Senate committee. (Archives)

President Roosevelt and Harry Hopkins. (Archives)
soon have another dose of journalistic apoplexy. Now I'd like to tell you something about our conferences. We met the Chiangs first – in Cairo. I was very interested to meet the Madame. (Laughter) And by the way, that's not hard to take either. (More laughter) You know, I always thought she ran the China show. But that's not so. He does. And right now I'd say he's pretty worried. He's worried about his internal economy – how long it will hold up – and he really fears a terrific inflation after the war. I'd say he wants to be friends with us very much – right now, but especially later on. He's afraid of England and Russia.

The Generalissimo thinks that his army has yet to prove itself; he needs our aviation. The real air fighting in China he admits is being done by Chennault.

As to 'Uncle Joe.' (Laughter) Well, we met up with 'Uncle Joe' in Teheran. I'd like to tell you about the Russian leader. I'd met him once before in Moscow but there was so much pomp and circumstance about it, I guess I really didn't get a good look at him. I got that look in Teheran. The present leader of Soviet Russia is about five feet, six inches tall. He has a thick neck, large hands and is powerfully built. He's a uniformed genius, as you know, but in this war he's proving himself a military genius on top of it. All the time during the conference there, he kept in constant touch, by telephone, with his generals on the battle front. In addition to affairs of state he administers the army and directs it.

He and the President took to each other beautifully. For one thing, both are plain spoken men. Stalin doesn't beat around the bush. He doesn't know anything about diplomatic language.

We got plenty of that at Casablanca. Churchill is a master at this game. But Stalin doesn't hedge or mince words. He came right out with what he expected us to give him. He knows what he wants from us and he laid all the cards on the table.

It certainly was refreshing to me. I have accompanied the President to three conferences like this, but this time I can honestly say I heard more plain talk than all the others had to offer put together.

What he wants after the war – and some small nations aren't going to like it a bit – is to set up certain 'strong points' – that's what he called them – in Europe, controlled, land, sea, and in the air by Russia and England and us. I'd say he's willing to trust us more than he is England.

Yes, we got along swell with 'Uncle Joe.' And do those Russians eat! Caviar and champagne every night! And believe me, 'Uncle Joe' can really put it away. I tried to keep up with him. But the last of that Russian champagne I had to take in a prone position.” (Laughter)

Following these remarks by Mr. Hopkins, the Surgeon General of the Navy and the President's physician Admiral McIntire discussed the latest developments in naval medical research prompted by the exigencies of this war. Commander Casey, the toastmaster, closed the luncheon by saying “I'm sure I speak for the Wardroom Mess, when I say that all of us are certainly happy to have you as 'fellow travelers.'”

The following noon the Wardroom officers invited the genial military aide of the President to luncheon. General Watson, referring to his method of boarding the Iowa, stated that he had walked the gangway but found the going a little rough. But it wasn't as bad as he thought he would intimate it was to Harry Hop-
kins. He thought he would scare him by shouting back to the Gazelle that Mr. Hopkins had better crawl aboard. “The poor critter didn’t know I was pulling his leg; he believed me and came on this here ship on all fours.” When the laughter subsided, the General concluded by saying, “I guess I just took Harry for a crawl.”

The remaining days of this “historic voyage,” as Admiral King characterized it, were spent quietly as the watches relieved each other, performed their duties and the great battleship plowed through the very rough seas to the cold weather of Virginia. Admiral Leahy, the President’s Chief of Staff and former Ambassador to France, spoke quietly at a wardroom luncheon of the United Nations’ problem with present day France. He indicated that Petain played the collaborationist’s game strictly because he was forced to – in French interests. That France would welcome an invasion the Admiral had no doubts.

On December 16th, about five o’clock in the morning, the Iowa entered Norfolk’s swept channel and proceeded directly up a freezing Chesapeake Bay to anchor inside the mouth of the Potomac River.

The Presidential Yacht was waiting. All hands assembled on the main deck aft. A great moment for Iowa was at hand as Captain McCrea escorted the smiling and affable figure of the President of the United States to the platform. Commander Casey ordered, “Attention” and reported to the Captain that all hands were up and aft.

The Captain simply said:

“Officers and men of the ship’s company. Iowa has been singularly honored in being selected for the task just ended. We are further honored this afternoon in that our Commander in Chief has consented to make a few remarks to the ship’s company. It is a very high honor and privilege for me to present to you our Commander in Chief, the President”

The Captain turned and handed the microphone to the famous figure in the black sea cape. Mr. Roosevelt was hatless. Against his ruddy tan, his flowing hair tossed startlingly white in the wind. He looked around and spoke:

“Captain McCrea, officers and men of the Iowa. I had wanted to say a few words to you on the trip east, but I couldn’t do it properly because so many of you were mere, miserable Pollywogs. Now I understand that I can talk to you as the Chief Shellback of them all. I have had a wonderful cruise on the Iowa – one I shall never forget. I think that all my Staff have behaved themselves pretty well, with one or two lapses. When we came aboard from that little French destroyer, I was horrified to note that Major General Watson and Mr. Hopkins came over the rail on all fours. However, landlubbers like that do have lapses. Outside of that, all the Army and Navy and civilians have been wonderfully taken care of, and I am impressed with two facts – the first is, that you have a lot of happy visitors, fellow shipmates. Secondly, from all I’ve seen and all I’ve heard, the Iowa is a happy ship, and, having served with the Navy for many years, I know and you know, what that means. It is a part and parcel of what we are trying to do, to make every ship happy and efficient.

One of the reasons I went abroad, as you know, was to try by conversation with other nations, to see that this war that we are all engaged in shall not happen again. We have an idea – all of us, I think – that hereafter we have got to eliminate from the human race nations like Germany and Japan; eliminate them from the possibility of ruining the lives of a whole lot of other nations, and in these talks in North Africa, Egypt and Persia, with the Chinese, the Russians, Turks and others, we made real progress. Obviously it will be necessary when we win the war to make the possibility of a future upsetting of our civilization an impossible thing. I won’t say forever. None of us can look that far ahead. But I do say that as long as any Americans and others who are alive today are still alive. That objective is worth fighting for. It’s a part of democracy which

Roosevelt addressing the Iowa crew. 1943 (USN)
exists in most of the world. In upper Teheran, where the Prime Minister, Marshal Stalin and I met, in one sense it followed that as heads of governments we were representing between two thirds and three quarters of the entire population of the world. We all had the same fundamental aims – stopping what has been going on in these past four years, and that is why I believe from the viewpoint of the people – just plain people – this trip has been worthwhile.

We are all engaged in a common struggle. We are making real progress. Take what has happened in the past two years. From Pearl Harbor, from being on the defensive – very definitely so – two years ago, from being in the process of building things up to a greater strength a year ago, to where we are today when we have the initiative in every part of the world. The other fellows may not be on the run backwards yet, that will be the next stage, and then all of us in the service of the country will have a better chance to go home – even if we have to come home to very cold weather like this. I think that after what you’ve seen of Bahia and Freetown and Dakar that you will agree with me, that in the long run, year in and year out, this American climate is better than any other.

And now I have to leave you for the USS Potomac. When I came on deck quite a while ago and saw her about half a mile away, I looked and decided how she had shrunk since I had been aboard the Iowa.

And so, goodbye for a while. I hope that I will have another cruise on this ship. Meanwhile, good luck, and remember I am with you in spirit, each and every one of you.”

The President and his party immediately disembarked. The tiny Potomac, proceeding aft, rounded our stern and headed, starboard side, up-river. All hands followed her course at Attention until the Presidential Yacht appeared to be a mere speck bobbing in the distance.

The nest morning, December 17th, the Iowa, having steamed down the Chesapeake Bay, anchored in Hampton Roads. Once more, the Chamberlain was besieged, once more ice clinked in many glasses, and once more the lines formed to the left, right and center in the lobby’s “Telephone Row.”

December 18th found the battleship moored to a pier at Norfolk’s Naval Operating Base. On December 20th she proceeded up the Elizabeth River to the Portsmouth Navy Yard. Deep, blue camouflage was painted on her sides and across her superstructure and she went into dry dock. Commander T. J. Casey was detached as Executive Officer and has been succeeded by Commander G. A. Leahey, Jr., the ship’s former First Lieutenant.

Christmas dinner was gay and festive, following a “false alarm” air raid in the Fifth Naval District. Leave and liberty were granted during this stay. On New Year’s Day, The Iowa returned to her anchorage in Hampton Roads. Adjacent was her sister ship, USS New Jersey. BATDIV 7 awaited orders from Admiral O. M. Hustvedt whose flag was then flying in the Iowa.

On January 2nd, 1944, the two most powerful battleships in the world left the United States to fulfill their destinies in the war of the Pacific.
When USS Iowa was commissioned, most people wondered at the grand technology she carried, from computers to radar and all her radio gear. But few people remember that she had a number of low tech items which were available for her use. One of those was large, round and stuck on platforms amidships with a clear view for 180 degrees. It was a device first used in the mid 1800's yet still being used in naval warfare. It was the searchlight.

A searchlight (or spotlight) is an apparatus that combines an extremely luminous source, such as a carbon arc lamp, with a mirrored parabolic reflector to project a powerful beam of light of approximately parallel rays in a particular direction, usually constructed so that it can be swiveled about.

Carbon arc searchlights have been illuminating battlefields ever since they were reinvented over 150 years ago. Captain Brittes of the French Army experimented with them in 1851, and primitive searchlight warfare was tried by the Russians in the Crimean War (1853-1856) at Sevastopol. The French fleet also experimented with a searchlight at the siege of Kinburn, during the Baltic campaign; and General Menabrea used one, which shot out a beam of light 1,500 meters, in a campaign against the king of Naples in 1861. Three sets of early pattern searchlights were later used on the British march to Magdala, in the Abyssinian war of 1868. They cost the considerable sum of three hundred and fifty pounds each, and cast their beams a mile and a half away.

Shortly thereafter, searchlights were employed in the Franco-Prussian war, in the defense of Paris. Searchlight stations employing carbon arc lights were installed in various forts circling the city, and each was maintained by four electricians with equipment gathered from instrument makers, telegraph offices, and laboratories. Electric batteries (Bunsen cells) powered most of the searchlights.

By 1872, the value of the carbon arc searchlight for coastal defense was realized. In a short note on “Electricity as a Coast Guard,” John C. Draper, M.D., in his Year-Book or Nature and Popular Science for 1872, reported: “In a series of experiments at Sheerness, in England, on the production of the electric light from revolving magnets, an engine of four horse-power produced such a volume of light as to clearly illuminate ships and boats at a distance of two miles, rendering it impossible for any ordinary object to approach within that distance of the light without the detection of its presence.”

The Royal Navy used searchlights in 1882 to prevent Egyptian forces from staffing artillery batteries.
at Alexandria. Later that same year, the French and British forces landed troops under searchlights.

By 1907 the value of searchlights had become widely recognized. One recent use was to assist attacks by torpedo boats by dazzling gun crews on the ships being attacked. Other uses included detecting enemy ships at greater distances, as signaling devices, and to assist landing parties. Searchlights were also used by battleships and other capital vessels to locate attacking torpedo boats and were installed on many coastal artillery batteries for aiding night combat. They saw use in the Russo-Japanese War from 1904–05.

The Sandy Hook proving ground, off the coast of New Jersey until 1919, may have seen a large carbon arc searchlight like this one at one time. “A BIG SEARCHLIGHT—To be Mounted at Sandy Hook for Army Experiments” is the title of an interesting article published by The New York Times on December 31, 1893. The piece reads as follows:

“Before of the biggest electric searchlights in the world is to be mounted at Sandy Hook. Gen. Flagier, the army Chief of Ordinance, will purchase a monster light for experimental purposes. The apparatus desired, including the light proper, the dynamo, the steam engine and boiler, will cost between $6,000 and $10,000.

“Gen. Flagier believes that the searchlight will be very useful in the coast-defense forts at the large ports, and it is with the view of ascertaining utility of these lights that the present apparatus is to be bought and experiments conducted at Sandy Hook proving ground. The system comprises the light proper, with mirror about 60 inches in diameter, furnished with a horizontal arc lamp. The mechanism must be capable of giving the light a rotation in a horizontal and vertical plane, and a governor must be provided to permit of electrically training the apparatus from a distance. The dynamo must produce an intensity of light of about 200,000,000 candle power, while the energy consumed in the lamp must not exceed 150 amperes by 60 volts. The makers of the light must keep it in operation for eight successive nights at Sandy Hook before it is accepted by the Government, and must instruct the force of operators who are chosen by the Ordinance Office.”

In The Story of General Electric, John Winthrop Hammond reported on another breakthrough in searchlight technology. In fact, it was the largest American searchlight ever built. He wrote: “In 1902–03, General Electric built searchlights with lenses thirty-six, forty-eight, and sixty inches in diameter. Most of these were ordered by the Army and the Navy, which were engaged in extensive maneuvers...”
to test the coast defenses on Long Island Sound and Casco Bay. The naval craft were attempting, theoretically, to get past the coastal fortifications by night. Searchlights were set to work to hunt down the “enemy.” The first 60-inch light was placed in Fort Wright, on Long Island Sound, and a battery of 36-inch lights was set out in other forts around New London. Unwaveringly the powerful beams ‘protected’ New York from the attack. Not a vessel escaped detection.”

“One 80-inch monster was built by General Electric in 1904 and sent to the St. Louis Exposition—the only one of its size ever built. The handling of this great projector was a construction job in itself. A stationary steam engine, rigged to a block and tackle, was required to swing it up the side of a building to its resting place. It was not the sort of thing that anyone would expect to get lost—yet that is what happened. General Electric never knew what became of it after the exposition ended. A rumor drifted in some years later that the big light was sold to the Russian government when the Russo-Japanese war opened, and that it joined in the defense of Port Arthur on the coast of Siberia.”

World War I soon followed, and the need for searchlights became apparent, to spot the enemy on land, at sea, and in the sky. It may sound fantastic but, “The first pitched battle has recently been fought between ships of the sea and of the air, resulting in the annihilation of a British submarine by a Zeppelin bomb,” stated an article titled “A Submarine Sunk by a Zeppelin,” in the June 12, 1915, issue of Scientific American. “A submarine flotilla’s numerous high angle guns are not so much smaller than those of a battleship,” added the writer, “yet the target offered by the single submarine is so hopelessly tiny that the Zeppelin’s escape after sinking one of her foes with a bomb appears nothing short of marvelous, if we recall the difficulty of dropping bombs with precision and the accuracy of high angle fire so far experienced.”

Searchlights were also used in the First World War to create “artificial moonlight” to enhance opportunities for night attacks, a practice which continued in the Second World War. “Artificial moonlight” was invented by the historian and tank warfare theorist, General J. F. C. Fuller. The term “artificial moonlight” was used to distinguish illumination provided by searchlights from that provided by normal moonlight, which was referred to as “movement light” in night-time manoeuvres.

Searchlights were used extensively in defense against nighttime bomber raids during the Second World War. Controlled by sound locators and radars, searchlights could track bombers, indicating targets to anti-aircraft guns and night fighters and dazzling crews.

Searchlights were occasionally used tactically in ground battles. One famous occasion was the Soviets’ use of searchlights during the Battle of Berlin in April 1945. 143 searchlights were directed at the German defense force across the Neisse River, with the aim of temporarily blinding them during a Soviet offensive. However, the morning fog diffused the light and silhouetted the attacking Soviet forces, making them clearly visible to the Germans. The Soviets suffered heavy losses as a result and were forced to delay their invasion of the city.
Second World War-era searchlights include models manufactured by General Electric and by the Sperry Corporation. These were mostly 60 inch (152.4 cm) diameter with rhodium plated parabolic mirror, reflecting a carbon arc discharge. Peak output was 800,000,000 candela. It was powered by a 15 kW generator and had an effective beam visibility of 28 to 35 miles (45 to 56 km) in clear low humidity.

Aboard the Iowa, the searchlights could be used in several ways. First, with shutters along the front of light, it could be used for long range signaling. Second, it could still be used for dazzling an incoming target, hindering any attack or aiding the ship’s gunners. The searchlights could also be slaved to the ship’s fire control system to illuminate targets. Lastly, they could be used for search and rescue in the evening hours.

By the end of World War II, the use for the searchlights had ended and they were eventually removed from the ships.

Today, searchlights are used in advertising, fairs, festivals and other public events. Their use was once common for movie premieres; the waving searchlight beams can still be seen as a design element in the logo of the 20th Century Fox movie studio, the Fox television network, and their corporate parent 21st Century Fox. The world’s most powerful searchlight today beams from the top of the pyramid-shaped Luxor Hotel in Las Vegas. The beam concentrates about 13,650,000 lumens from 39 7 kW xenon lamps into its beam of about 9,129,000,000 candela. The brightness emanating from the Luxor lamp room is about twice that which emanates from an equal area of the sun’s surface (about 95,000,000 cd/ft² versus 45,000,000 cd/ft²).
Medal of Honor

Rear Admiral Eugene Bennett Fluckey

Rear Admiral Eugene Bennett Fluckey, nicknamed “Lucky Fluckey”, was a United States Navy submarine commander who received the Medal of Honor and four Navy Crosses for his service during World War II.

Fluckey was born in Washington, D.C. on October 5, 1913. He attended Western High School in Washington and Mercersburg Academy in Mercersburg, Pennsylvania. He was a member of the Boy Scouts and earned the Eagle Scout award. He prepared for the Naval Academy at Columbian Preparatory School, Washington. He was appointed to the United States Naval Academy in 1931, he was graduated and commissioned Ensign in June, 1935.

Fluckey’s initial assignments were aboard the battleship USS Nevada (BB-36) and in May, 1936 was transferred to the destroyer USS McCormick (DD-223). In June 1938 he reported for instruction at the Submarine School, New London, Connecticut and upon completion, he served on USS S-42 (SS-153) and in December, 1938, he was assigned to and completed five war patrols on USS Bonita (SS-165). Detached from Bonita in August, 1942, he returned to Annapolis for graduate instruction in naval engineering.

In November, 1943, he attended the Prospective Commanding Officer’s School at the Submarine Base New London, then reported to Commander Submarine Force, Pacific Fleet. After one war patrol as the prospective commanding officer of the USS Barb (SS-220), (her seventh), he assumed command of the submarine on April 27, 1944. Fluckey established himself as one of the greatest submarine skippers, credited with the most tonnage sunk by a U.S. skipper during World War II: 17 ships including a carrier, cruiser, and frigate.

In one of the stranger incidents in the war, Fluckey sent a landing party ashore to set demolition charges on a coastal railway line, destroying a 16-car train. This was the sole landing by U.S. military forces on the Japanese home islands during World War II.

Fluckey ordered that this landing party be composed of crewmen from every division on his submarine and asked for as many former Boy Scouts as possible, knowing they would have the skills to find their way in unfamiliar territory. The selected crewmen were Paul Saunders, William Hatfield, Francis Sever, Lawrence Newland, Edward Klinglesmith, James Richard, John Markuson, and William Walker. Hatfield wired the explosive charge, using a microswitch under the rails to trigger the explosion.

Fluckey was awarded the Navy Cross four times for extraordinary heroism during the eighth, ninth, tenth, and twelfth war patrols of Barb. During his famous eleventh patrol, he continued to revolutionize submarine warfare, inventing the night convoy attack from astern by joining the flank escort line. He attacked two convoys at anchor 26 miles inside the 20
fathom curve on the China coast, totaling more than 30 ships. With two frigates pursuing, Barb set a then-world speed record for a submarine of 23.5 knots using 150% overload. For his conspicuous gallantry and intrepidity, Fluckey received the Medal of Honor. Barb received the Presidential Unit Citation for the eighth through eleventh patrols and the Navy Unit Commendation for the twelfth patrol.

His book, Thunder Below! (1992), depicts the exploits of his beloved Barb. “Though the tally shows more shells, bombs, and depth charges fired at Barb, no one received the Purple Heart and Barb came back alive, eager, and ready to fight again.”

In August, 1945, Fluckey was ordered to Groton, Connecticut, to fit out the USS Dogfish (SS-350) and to be that submarine's Commanding Officer, upon her completion. After the Dogfish's launching, however, he was transferred to the Office of the Secretary of the Navy to work directly for James V. Forrestal on plans for the unification of the Armed Forces. From there he went to the War Plans Division. In December, 1945, he was selected by Fleet Admiral Chester W. Nimitz, the incoming Chief of Naval Operations, as his personal aide.

On June 9, 1947, he returned to submarines, assuming command of USS Halfbeak (SS-352), the second submarine to be converted to a GUPPY-type high-speed attack submarine with a snorkel.

In June 1949, he was ordered to the staff of the commander of the Submarine Force U.S. Atlantic Fleet to set up the Submarine Naval Reserve Force. A year later, he became the flag secretary to Admiral James Fife, Jr.. From October 1, 1950, until July 1953, he served as the US Naval Attaché and Naval Attaché for Air to Portugal. The Portuguese government, for his distinguished service, decorated him with the Medalha de Mérito Militar, noting that this was the first time this decoration was awarded to a naval attaché of any other nation.

In September 1953, he took command of the submarine tender USS Sperry (AS-12).

Fluckey commanded Submarine Flotilla Seven (now Submarine Group 7) from October 14, 1955, to January 14, 1956. He then returned to the Naval Academy to become the chairman of the Electrical Engineering Department.

His selection for the rank of Rear Admiral was approved by President Dwight D. Eisenhower in July 1960 and in October he reported as Commander, Amphibious Group 4.

In November, 1961, he became the president of the Naval Board of Inspection and Survey, Washington, D.C.

He was ComSubPac (Commander Submarine Force, Pacific Fleet), from June 1964 to June 1966. In July 1966, he became the Director of Naval Intelligence. Two years later, he became Chief of the Military Assistance Advisory Group, Portugal.

Fluckey retired from active duty as a Rear Admiral in 1972. His wife, Marjorie, died in 1979, after 42 years of marriage. He later ran an orphanage with his second wife, Margaret, in Portugal for a number of years.

He died at Anne Arundel Medical Center in Annapolis, Maryland, on June 28, 2007. He is buried at the United States Naval Academy Cemetery.

Fluckey is one of only nine known Eagle Scouts who also received the Medal of Honor; the others are Aquilla J. Dyess, Robert Edward Femoyer, Mitchell Paige, Thomas R. Norris, Arlo L. Olson, Ben L. Salomon, Leo K. Thorsness and Jay Zeamer, Jr.
Medal of Honor Citation:

For conspicuous gallantry and intrepidity at the risk of his life above and beyond the call of duty as commanding officer of the U.S.S. Barb during her 11th war patrol along the east coast of China from 19 December 1944 to 15 February 1945. After sinking a large enemy ammunition ship and damaging additional tonnage during a running 2-hour night battle on 8 January, Comdr. Fluckey, in an exceptional feat of brilliant deduction and bold tracking on 25 January, located a concentration of more than 30 enemy ships in the lower reaches of Nankuan Chiang (Mamkwan Harbor). Fully aware that a safe retirement would necessitate an hour’s run at full speed through the uncharted, mined, and rock-obstructed waters, he bravely ordered, “Battle station — torpedoes!” In a daring penetration of the heavy enemy screen, and riding in 5 fathoms of water, he launched the Barb’s last forward torpedoes at 3,000 yard range. Quickly bringing the ship’s stern tubes to bear, he turned loose 4 more torpedoes into the enemy, obtaining 8 direct hits on 6 of the main targets to explode a large ammunition ship and cause inestimable damage by the resultant flying shells and other pyrotechnics. Clearing the treacherous area at high speed, he brought the Barb through to safety and 4 days later sank a large Japanese freighter to complete a record of heroic combat achievement, reflecting the highest credit upon Comdr. Fluckey, his gallant officers and men, and the U.S. Naval Service.
Letter from the Editor

Special thanks to Bob Richards who shared his slides for the newsletter. I hope you all are enjoying the stories from former shipmates and a little history thrown in as well.

Future articles include information about the ship, and more Medal of Honor recipients.

If you have anything you would like to share with our shipmates and friends, please send it in. It may take some time to get it in the newsletter, but we’ll get it in for all to see.

Send your works to:
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