

THE End OF Surface Warships

By THOMAS E. SHRADER

For centuries, battleships ruled the seas. Whoever had the biggest, baddest battleships with the most powerful cannons controlled valuable shipping lines and thus dominated much of the world. This was true throughout the centuries of the sailing ship, the brief era of the steamship, and finally the epoch of the diesel-powered ship.

Then came the invention of the aircraft in 1903. Military leaders soon grasped the wartime implications of aircraft, using them extensively to support ground operations during World War I. In the 1920s, some began to see the potential of airpower in naval operations. General Billy Mitchell, U.S. Army Air Corps, believed that aircraft would one day supersede battleships. He testified before Congress that “1,000 bombardment airplanes

can be built and operated for about the price of one battleship.”

During World War II, aircraft (launched from either the ground or carriers) showed their unquestionable superiority to battleships on several occasions. In December 1941, Japanese planes sank five U.S. battleships in a matter of minutes at Pearl Harbor. A few days later, other Japanese planes sank the British battleship *Prince of Wales*. And in 1945, U.S. aircraft sank the largest battleship ever constructed, the *Yamato* of the Empire of Japan.

Just as manned aircraft suddenly rendered once-mighty battleships obsolete, we are now on the cusp of a new era in which all surface warfare ships will become obsolete. It has not happened yet, but the handwriting is clearly on the wall. Soon they will become indefensible. Why? Because ships are expen-

USS *Missouri* Memorial moored at Battleship Row in Pearl Harbor

U.S. Navy (Mark Logico)



sive and manned, while missiles are cheap and unmanned. Also, satellites are rapidly making every inch of the Earth viewable with the click of a mouse. In the near future, there will be literally nowhere to hide. Let's look at these factors individually.

Ships: Expensive and Manned

Ships are expensive, and they take years to build. Consider the current *Gerald R. Ford*-class supercarrier under construction. A brief Wikipedia search turns up the following factoids: It is going to cost somewhere around \$9 billion and take 5 years to construct. Once launched, at any given time it will have around 100 aircraft on board. At a conservative estimate of \$50 million per aircraft, that makes the carrier worth another \$5 billion. More important than the equipment is the manpower. It will take about 3,000 Sailors and pilots to man the ship and the planes. So, adding it all up, we will have an asset worth about \$14 billion floating around in the middle of the ocean with thousands of American lives on board.

Or let's consider one of the *Tarawa*-class amphibious assault ships used to bring Marines ashore. Each one costs around \$2 billion and can carry 30 helicopters. In the future, they will carry the F-35 Lightning jets that can be modified for vertical takeoff. Each ship carries almost 2,000 Marines and a crew of about 1,000 Sailors and officers. So here again we see a multibillion-dollar platform out at sea with thousands of American Servicemembers aboard. Either of the above would clearly be a juicy target for an enemy nation or a terrorist organization.

Missiles: Cheap and Unmanned

Now let's take a glance at the cost of missiles. Searching the Internet, one can find a variety of antiship and ballistic missiles available in the \$1-million-each neighborhood. More primitive ones are much cheaper. Using \$1 million as a round figure means that we could buy 2,000 missiles for \$2 billion. So compared to the cost of a ship, we could purchase *thousands* of missiles. It is safe to assume that countries that are world powers could afford all they want.

Just as a historical vignette, consider the following. During its short war (only a few weeks) with Israel in 2006, Hizballah

launched over 4,000 rockets. Granted, these rockets were short-range and inaccurate. But the point remains clear. If a tiny non-state actor can afford to lob missiles by the

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thousands, how many thousands more can a nation-state afford? The answer is: lots.

Along with being cheap, another key point is that missiles are unmanned—so we do not have to spend years training someone how to fly them. And we need not worry about pilots being killed or captured. If a few dozen or a hundred of them miss the target and plunge into the ocean, it is not a problem.

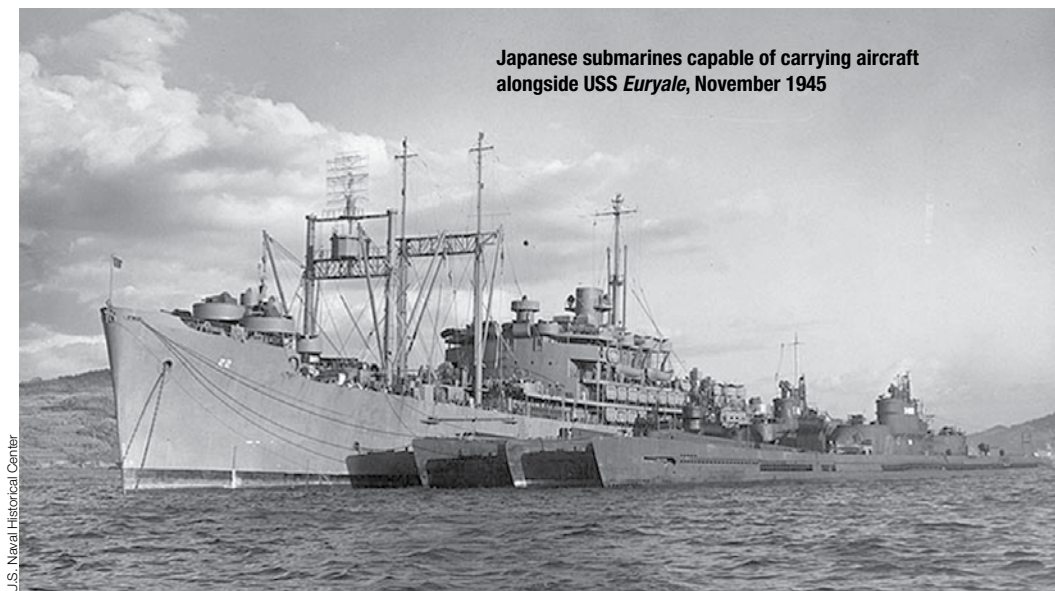
Adding up these factors, what other conclusion can we arrive at than that missiles

Today, satellites have changed all this. We can sit at our desks, type in an address, and have Google Earth show us the current view. Soon every inch of the Earth's oceans

will be visible by satellite. It will be a simple matter to find the exact grid coordinates of any ship anywhere in the world, punch the data into a missile silo, and launch a barrage of missiles to the precise location of the ship or fleet.

Countermeasures Won't Work

The simple truth is that countermeasures will work, but only for a while. The Navy has sophisticated countermeasures that include the Aegis antiballistic missile system,



Japanese submarines capable of carrying aircraft alongside USS *Euryale*, November 1945

can be purchased (or manufactured) in such vast quantities that a barrage of them could destroy any ship on the high seas, no matter how big or how technologically advanced.

Satellites Change Everything

Some may say: "But missiles have been around for decades. If this danger is so great, why hasn't this already happened?"

One reason is simple. As big as aircraft carriers are, they still can be hard to find out in the oceans. During World War II, for instance, the range of a Hellcat fighter jet was about 1,000 miles. This meant the carrier group had reconnaissance capability out to about 500 miles in any direction.

radar, and final protective lines of fire. These are all good systems, and effective at engaging individual incoming missiles. The problem is that they can be overwhelmed or confused by a massive barrage of incoming rounds. And even when they do work as planned, they only work while they have ammunition.

In other words, the Achilles' heel of every ship-borne system is that it is only effective as long as it has rounds to fire, which take up room on a ship and demand a lot of fuel to haul. So the farther we go from home base, the more expensive resupply becomes and the longer it takes. On the other hand, a land-based missile system can keep firing rounds indefinitely. In other words, all any

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Crew members man rails as USS *Iowa* returns to port after 3-month deployment



U.S. Navy (Jeff Hi ton)

nation has to do to destroy one of our most valuable military assets—our capital ships—is to keep firing missiles (no matter how cheap or inferior they are) until the ship runs out of the rounds needed to defend itself.

The Solution?

The solution is submarines. The unique advantage of submarines is, of course, that we cannot see them. No matter how many satellites are in the sky, they cannot see below the ocean's surface. Nuclear-powered submarines can stay

all any nation has to do to destroy one of our most valuable military assets—our capital ships—is to keep firing missiles

submerged for months on end. We need to exploit this capability and develop whole new classes of submarines, such as aircraft carriers, troop carriers, and cargo submarines.

Some of these suggestions may sound far-fetched. But during World War II, Japan actually built and deployed submarines with aircraft on board that were on their way across the Pacific to blow up the Panama Canal when the war ended. If it was possible to build such a submarine 60 years ago, why can we not do something similar or even better today?

Regarding assault ships, why can we not build submarines as troop carriers, then have them surface so Marines can deploy the last few hundred yards by inflatable raft or other small boats?

Cargo submarines could also be designed that open up for loading containerized shipping units or tactical vehicles. This cargo could be offloaded at piers using cranes, similar to how many surface ships are now loaded. Such submarines could be the only resupply line for heavy equipment if an enemy country or terrorist organization has eliminated our surface warships and is focusing now on our military cargo ships.

Technology changes warfare. It makes once-supreme systems outdated and ineffective. Just as steel battleships made wooden battleships suddenly seem archaic, and just as airplanes in their turn made the steel battleships obsolete almost overnight, we are now at the point in history where cheap, easily produced missiles will be able to home in on and overwhelm any surface combat ship, no matter how big or how advanced.

At this point, some may ask, "What business does an Army officer have writing about a Navy issue?" Sometimes being an outsider can be an advantage. Could a surface warfare officer really recommend the elimina-

tion of the entire surface fleet? Is that likely? Or would he be looked upon as a traitor by his fellow officers? Alternatively, if a submariner made the same suggestion, could it not be perceived as someone just trying to enhance his own rice bowl?

Being a complete outsider to the Navy, this Army officer can speak freely with no other objective than enhancing national security. Also, the Army has a vested interest in the safety and success of the Service. How else are we going to get our equipment to foreign shores? We might be able to fly our personnel in, but tanks, Strykers, mine-resistant ambush protected vehicles, and heavy expanded mobility tactical trucks generally depend on sea transport.

It takes years to engineer and build the ships we already know how to build, as evidenced by the current carrier under construction. So to engineer and build whole new fleets that we have never attempted before will be an enormous challenge. Hence, we have no time to lose, and should get started immediately designing, building, testing, and fielding the submarines outlined above. We must quickly operationalize the reality that surface ships are at great risk and that submarines may be our only viable way to achieve force projection in the future. **JFQ**