

In China's Sights

A new missile threatens the U.S. Navy's biggest warships—and stability in the Pacific

BY MARK THOMPSON



This \$1.1 million Chinese missile is launched from a truck

It could cripple this multibillion-dollar aircraft carrier



THERE ARE FEW THINGS AS AWESOME AS A U.S. aircraft carrier—100,000 tons of nuclear-powered steel towering 20 stories above the waterline and crammed with nearly 70 warplanes ready to do its nation's bidding. A carrier reassures allies while giving pause to global troublemakers. For more than a half-century, these 1,000-ft. flattops and their 5,000-sailor crews have patrolled the seas with impunity. The Navy apparently believes they have a future too: it is building two new ones, at a cost of nearly \$15 billion each, with a third in the pipeline. Admirals like to call a carrier “4½ acres of sovereign American territory.”

But these mighty fighting machines may be losing some of their invincibility, at least in a wide expanse of the Pacific Ocean off the coast of China. Since 2010, Beijing has deployed a new kind of land-based ballistic missile with the potential to change the balance of power in a volatile and vital part of the world. The Dong Feng-21D missile is what Andrew Erickson of the U.S. Naval War College calls a Frankenweapon, a marriage of several existing military technologies that together could transform war. Launched from a truck, it can fly almost 1,000 miles over the ocean, homing in on its target during the final moments of flight before diving into the ship from above.

If China's military commanders were to succeed in disabling or even sinking one of those targets, it would signal a marked loss in American hegemony on the high seas. If effective, such weapons would push U.S. carriers farther from China, cutting the range and utility of their warplanes and reducing the U.S.-provided security that has nurtured East Asia's economic growth and relative stability. The threat has coincided with an unpredictable dispute between China and Japan over a cluster of islands that both countries claim. In the pre-DF-21D era, the U.S. might have quickly sent a carrier or two to the region to bring an effective end to Chinese military maneuvers.

The U.S. debate over the Dong Feng—meaning East Wind in Chinese—is happening quietly but intensely behind closed doors in Washington. Public photographs of the missile don't exist. Dozens of U.S. and Chinese officials declined to discuss the weapon, saying it is too sensitive. Admiral Jonathan Greenert, chief of U.S. naval operations, tells TIME that the Navy

has spent years working “feverishly” on secret ways to defeat the DF-21D, which the Pentagon first acknowledged in 2009. “It’s a good weapon that they’ve developed,” the Navy’s top admiral says, “but there’s nothing that doesn’t have vulnerabilities.” The Navy will use “good risk logic” if tensions rise in the region. “We’re not going to sit ... where we would have ballistic missiles raining down,” Greenert says. That alone might signal a change in the U.S. posture in the Pacific. But to date, Navy officers say, carrier deployments haven’t changed.

THE U.S. MILITARY HAS TREATED THE western Pacific as its private pond since the end of World War II. U.S. warships regularly sailed within three miles of nations like China, which could do little about it—and in many cases didn’t know it was happening. But that has changed in recent decades as satellites, long-range radar and other forms of reconnaissance have made clear to Beijing that the U.S. Navy has been cruising not far off its coastline.

For China, the realization that the U.S. military was peering in its windows from the seas turned into humiliation in 1995 and ’96, when Washington dispatched a pair of carriers to Taiwan to suggest to Beijing that it curb its missile tests in the neighborhood. After a century of defeat at the hands of the West and Japan and being hemmed in by the U.S. since the creation of the Chinese communist state in 1949, China quietly decided to change the game. It is adding three submarines every year to its 50-strong fleet (the U.S. Navy has 72 submarines) and has built 80 surface ships since 2000. But those are large vessels the U.S. Navy believes it can elude. A barrage of incoming DF-21Ds from a fleet of trucks is a different kind of challenge.

Boasting the world’s second largest economy—one projected by some to eclipse the U.S.’s by 2017—China has been investing heavily in its military, now spending about \$200 billion a year. That’s only a third of the Pentagon’s annual bill. But while the U.S. has worldwide military obligations, China is focusing its military’s attention on the western Pacific.

China’s rise troubles its neighbors, some of which have bloody histories with the Middle Kingdom. In recent years, Beijing has vocally repeated long-standing claims to scores of islands, reefs and rocks spanning more than 1,000 miles

China’s Expanding Reach

With an estimated range of more than 900 miles (1,500 km), China’s DF-21D missile is designed to attack ships that come close to China and its neighbors



Sources: Department of Defense; Jamestown Foundation; Andrew Erickson; Henry Hendrix

(1,600 km) in the South China and East China seas, including those it’s tussling over with Japan. China has pushed its ships into parts of the South China Sea claimed by other nations. China has so far been reluctant to engage in multilateral negotiations to settle the claims. Responding to China’s rise, Malaysia and Vietnam have bolstered their own militaries. The Philippines doubled its defense budget in 2011 and in April signed a 10-year pact with the U.S. allowing more American troops on its territory. On July 1, the Japanese government said it wants to reinterpret its U.S.-imposed pacifist constitution to allow its military to come to the aid of an ally under attack.

Beijing has increased tension by asserting claims to often uninhabited areas—sometimes dispatching patrol boats to them—despite competing claims from Japan, the Philippines, South Korea, Taiwan and Vietnam. In November, China declared an air-defense identification zone over islands controlled by Japan but claimed by both nations. (The U.S. flew a pair of B-52s through it without notifying Beijing, declaring China’s air-defense zone invalid.)

“I am concerned by the aggressive

growth of the Chinese military, their lack of transparency and a pattern of increasingly assertive behavior in the region,” Admiral Harry Harris, commander of the U.S. Pacific Fleet, told an Australian audience in April. Harris’ job makes him a key guarantor of President Obama’s pivot to the Pacific, designed to highlight growing U.S. interest in the region. But a shrinking U.S. military makes Harris’ job harder, especially following China’s recent announcement that it is boosting defense spending by 12.2% this year.

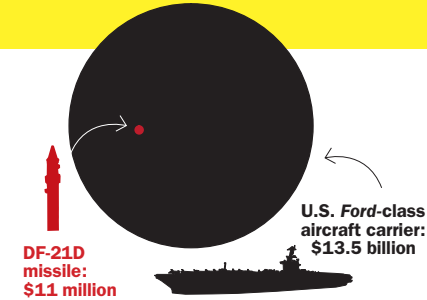
The Stakes

THE WATERS OFF CHINA’S EASTERN COAST have become one of the world’s key economic arteries: a third of all global commerce, including \$1.4 trillion annually in two-way trade with the U.S., is with Asia. Beijing’s goal is to keep foreign pressure off that coast to ensure the flow of the resources—especially oil—that it needs to keep its economy humming, its 1.3 billion citizens content and its communist rulers in power. “China sees itself as a global player,” James Clapper, the top U.S. intelligence officer, recently told Congress. “They’ve been quite aggressive about asserting what they believe is their manifest destiny, if

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Asymmetric Warfare

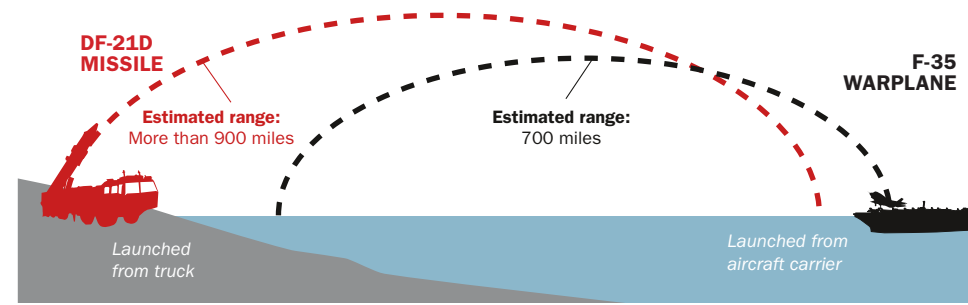
One Chinese source estimates the cost of a DF-21D and its launcher at \$5 million to \$10.5 million. Even at \$11 million apiece, China could produce 1,227 DF-21D systems for the cost of a single U.S. Ford-class aircraft carrier



The U.S.’s future carriers will be \$13.5 billion Ford-class vessels outfitted with \$160 million F-35 fighters. The F-35 is the costliest weapon system in history

Costly Underreach

China’s new missiles could make it impossible for warplanes on U.S. aircraft carriers to reach their targets without midair refueling or costly standoff weapons that can be fired a long way from targets



you will, in that part of the world. It does create potential flash points.”

At times, U.S. and allied officials say, China behaves almost as if it wants to start a fight. In 2001 a Chinese J-8 fighter flew into a U.S. Navy EP-3 spy plane off the Chinese coast, killing the Chinese pilot and forcing the damaged EP-3 to land at a Chinese airfield, where the 24-member crew was held for 11 days. In 2011 the Chinese conducted a test flight of its long-secret J-20 stealth fighter while then defense chief Robert Gates was in Beijing seeking to improve relations. China announced that air-defense zone last year just before Vice President Joe Biden arrived on an official visit. The same day Biden was in Beijing, the cruiser U.S.S. *Cowpens* almost collided with a Chinese warship that cut across its bow in the South China Sea.

American officials and military planners say China’s goals are to weaken the ties that bind the U.S. to its traditional Asian allies and to undermine the doctrines of free trade and democracy that the U.S. and its allies introduced to the region after WW II. “Our historic dominance that most of us during our careers have enjoyed is diminishing,” Admiral Sam Locklear, the chief of U.S. Pacific

Command, told the annual gathering of the Surface Navy Association not far from the Pentagon earlier this year. He’s not surprised. “If I was them and I had the visibility to the global technology and I had the cash and I had the people and I had the resources, I’d do the same thing.”

One crucial tool in preventing that disruption has been the aircraft carrier. The vessel has been the heart of the U.S. fleet since World War II. Five of the Navy’s 10 carriers call the Pacific home. None have been lost since the Japanese sank the *Hornet* in 1942. But they are in danger of becoming like the battleships they replaced—big, slow, costly and vulnerable. Some analysts suggest the new *Gerald R. Ford* class of carriers aren’t really much of an upgrade. A new Ford-class carrier costs nearly twice as much as the *Nimitz*-class carrier it replaces but will be able to launch only 33% more planes a day, according to a 2013 analysis by then Navy Captain Henry Hendrix. He calculates that during a decade of war in Afghanistan and Iraq, each carrier aircraft launched an average of 16 weapons. Average cost per bomb dropped: \$7.5 million. That’s nearly four times the price of a Tomahawk cruise missile.

The beauty of the Dong Feng is that it

doesn’t have to sink U.S. carriers to render them ineffective; it merely has to scare them away from the Chinese coastline. The DF-21D could keep carriers beyond the fleet’s F-18 warplanes’ unrefueled range as well as the yet-to-be-bought F-35 attack bombers’. The math of deterrence is on the Chinese side. Experts believe that for the price of one carrier, the Chinese can build more than 1,200 DF-21D missiles.

The Missile

SO WHAT HAS TAKEN THE WORLD’S MILITARIZED nations so long to produce a potential ship killer like this? First, both the U.S. and Russia are barred from developing such weapons under the 1987 Intermediate Nuclear Forces arms treaty, which prohibits missiles with ranges of 300 to 3,400 miles (480 to 5,470 km). China has never signed such an agreement. But just as critical, developing a maneuverable warhead capable of hitting a vessel moving at 30 knots has proved extremely difficult from an engineering perspective.

The U.S. Navy says it believes China has harnessed “the space-based intelligence, surveillance and reconnaissance, command and control structure and ground-processing capabilities” needed to make the missile work. Since roughly 2010, Beijing has deployed DF-21Ds with its Second Artillery Corps, whose doctrine is to overwhelm an adversary with multiple warheads. DF-21D warheads could be filled with hundreds of minibombs, designed to disable a carrier by peppering its aircraft and radars, or bigger bombs designed to strike a mortal blow.

Pentagon officials say the DF-21D is operational after what one admiral calls “extensive testing.” But it has yet to be launched, as far as is known, against an ocean target. (It was successfully tested last year against a stationary carrier silhouette painted on the Gobi Desert floor in western China.)

A lot could go wrong with a weapon whose battle-worthiness has yet to be tested. The DF-21D must detect, identify, locate and track a target as it moves; it must draw information from sensors and send that information to control systems and to the missile to make midcourse adjustments. But no one in the Pentagon is banking on the DF-21D’s malfunctioning. Precendent suggests that China can surmount such challenges: in 2007 it used a DF-21

variant to destroy an obsolete weather satellite that was orbiting the planet. The missile hit the satellite at 18,000 m.p.h. (29,000 km/h).

The Showdown

TROUBLE WOULD MOST LIKELY COME—deliberately or through miscalculation—in the East China Sea over what Japan calls the Senkaku Islands. In China they're known as the Diaoyu. The stakes, in terms of geography, could hardly be smaller. The Senkaku consist of five uninhabited islets and three barren reefs, but they're surrounded by waters teeming with fish and believed to be rich in natural gas and oil.

The Chinese claim that Japan seized the islands from them in 1895, and they're basing that claim on ancient texts and maps suggesting that the islands were China's. Japan disputes that and says the islands were unclaimed by any nation when it took them over. Some U.S. Navy officers believe China is preparing "to conduct a short, sharp war to destroy Japanese forces in the East China Sea, following with what can only be expected a seizure of the Senkakus," Captain James Fanell, the Pacific Fleet's top intelligence officer, told a Navy gathering in San Diego in February. (His superiors play down his concerns.)

"We don't take a position on final sovereignty determinations with respect to Senkakus, but historically they have been administered by Japan, and we do not believe that they should be subject to change unilaterally," Obama said during an April visit to Tokyo, adding that the U.S. commitment to Japan's control of the islands is "absolute." China denounced Obama's position as a Cold War relic that Foreign Ministry spokesman Qin Gang said "should not be used to damage China's sovereignty and legitimate interest."

China knows it could never defeat the U.S. military in a prolonged conflict. But any move by Beijing to seize the Senkaku—perhaps targeting a U.S. carrier in the process—would raise the question of whether the U.S. would go to war with a nuclear-armed nation over 1,700 acres (690 hectares) of uninhabited rocks whose ownership is uncertain.

Logic on both sides is likely to maintain the uneasy status quo. But in the event of hostilities, the Navy is betting that it would be able to detect, track and destroy an incoming DF-21D during the

estimated 12 minutes the missile would take to reach a carrier 1,000 miles away. Or it could even thwart the missile's launch. The best way to do that is to attack the kill chain that guides the DF-21D to its target. "You want to break as many links as possible," Greenert told reporters in 2012. "You want to spoof them, preclude detection, jam them, shoot them down if possible, get them in termination, confuse it." But that may require the U.S. to attack Chinese targets—largely on Chinese soil—before the Second Artillery is ordered to fire the missiles.

Timed just right, a pre-emptive U.S. attack could break the command and communications chain required to successfully launch a DF-21D. At least that is what an unclassified summary of a classified Pentagon battle concept paper argued when it was released last May. If the U.S. deemed cyber- or other nonexplosive attacks insufficient, it might opt to target the DF-21D's mobile missile launchers. But as the U.S. military learned in the 1991 Persian Gulf War, finding and destroying such targets isn't easy (Scud-killing flights: 2,493, confirmed Scuds killed: 0).

China might be deterred from seizing the Senkaku by the impact an attack might have on global commerce and its own economy. China holds \$1.3 trillion of the U.S. government's \$17 trillion debt. "The Chinese would never be stupid enough to kill 5,000 Americans on their doorstep," says Thomas P.M. Barnett, a former Pentagon official and now chief analyst at the Washington-based consultancy Wikistrat. "That is such an uncontrollable dynamic." But over the past six decades, China has been three times as likely to go to war when it was clearly weaker than its foe than when it was stronger, according to an analysis by Taylor Fravel, a military

'It's a good weapon that they've developed, but there's nothing that doesn't have vulnerabilities.'

—ADMIRAL JONATHAN GREENERT, CHIEF OF U.S. NAVAL OPERATIONS

scholar at the Massachusetts Institute of Technology.

Secretary of State John Kerry told China's leaders during a visit to Beijing earlier this month that "there's no U.S. strategy to try to push back against or be in conflict with China." But Beijing spurned a U.S. request to restart a working group to iron out cyberspace challenges facing the world's two biggest economies.

The Response

MEANWHILE, A GROWING CHORUS—including some in uniform—argues that the carriers are 20th century platforms and that dispatching such big and slow vessels anywhere near China is risking too much if tensions rise. "The carrier club is a lot like the old battleship club," says retired Navy captain Bernard Cole, who spent 30 years in the Pacific and now teaches Sino-American relations and maritime strategy at the Pentagon's National Defense University. "It's a huge, entrenched interest group—and not just inside the Navy but industry and Congress too."

Critics of current Navy plans say the service should have a larger fleet of smaller ships and accelerate the development of longer-range drones for those smaller, nimbler vessels—which would be "less concentrated and less conspicuous than today's easy targets for the Chinese kill chain," David Gompert, a former deputy director of national intelligence, says.

As the debate continues, the U.S. Navy is going to be mapping out the projected range of the DF-21D and deciding whether to send warships within range or to stay back and risk looking weak. "China appears to be intent on fielding a system that directly threatens U.S. carriers," Naval War College expert Erickson says. "The game and its governing rules are changing, whether Washington likes it or not."

It's a dangerous game when one major power sees another gaining and perhaps eclipsing it. Graham Allison, a national-security strategist at Harvard, recently noted that this led to war in 11 of 15 such instances over the past 500 years. He calls it the Thucydides Trap, in honor of the Greek historian. "What made war inevitable was the growth of Athenian power," Thucydides wrote in his history of the Peloponnesian War more than 2,000 years ago. "And the fear it caused in Sparta."

—WITH REPORTING BY HANNAH BEECH/BEIJING AND KIRK SPITZER/TOKYO ■