Introduction

The rivalry between the United States (US) and China at sea has never been more heated. This year, the Pentagon will have five aircraft carriers near China—50 per cent of its total carrier fleet in the region. Known colloquially as 'floating cities', aircraft carriers are potent warships that can be stationed at sea for years, hosting dozens of warplanes. They range in use from atomic bomb deployment to comprehensive air force strikes, making them the largest and most powerful weapons in any superpower's arsenal. The US has been able to use its aircraft carriers to great effect in every conflict since World War II. Now, the Pentagon turns this potent weapon on China, knowing full well that it is the only country to contest its global military dominance and the decaying global order. However, China is fully prepared to counter the Pentagon's aircraft carrier strategy. The US has 11 aircraft carriers in service, the initial ten were manufactured to be of the same scale, with a shared focus on achieving similar military goals. The ten classes of aircraft carriers include the following: Nimitz, Eisenhower, Carl Vinson, Theodore Roosevelt, Abraham Lincoln, George Washington, John C. Stennis, Harry S. Truman, Ronald Reagan, and George H.W. Bush. The 11th and most recent is Gerald R. Ford, which is the largest naval ship in the world. It is one of the aircraft carriers generally termed 'supercarriers'. 'Supercarrier' simply refers to the largest and most powerful types of aircraft carriers, with attainments of over 65,000 tons. Most of the US Navy's aircraft carriers, including the Nimitz-class, are supercarriers by virtue of their size and technological advances. Gerald R. Ford is certainly the largest and most capable supercarrier in fleet service today, though other large aircraft carriers technically qualify by definition. All the above-mentioned US aircraft carriers are nuclear-powered, allowing them to stay at sea for extended periods without the need to return to base. Each of the older 10 carriers can accommodate at least 60 aircrafts and helicopters, with a crew as large as 5,200 people. Despite being the largest naval ship, the Gerald R. Ford requires fewer crew members around 4,500. In addition to the 11 supercarriers, including the USS Gerald R. Ford and the USS Nimitz, two more are being built by the US Navy: the John F. Kennedy and the USS Enterprise. The Gerald R. Ford and the Nimitz represent the largest and most advanced naval vessels in operation. A few years from now, the US Navy will operate 14 aircraft carriers, including four supercarriers, a force that no other nation can rival.

China's Strategy: Targeting US Supercarriers with Advanced Missiles

China now operates three aircraft carriers, but they are insignificant when compared to the formidable fleet of supercarriers the US has at its disposal. In response, <u>China</u> has developed a two-legged strategy: preventing US aircraft carriers from approaching Chinese waters by way of targeting and destroying them before they can do so, and secondly, the building of new and more advanced aircraft carriers in order to strengthen China's naval power. The first strategy encompasses long-reaching complement missiles and torpedoes developed especially for targeting the US carriers. Of these, the <u>DF-26</u> and <u>DF-21D</u> ground-launched missiles appear as critical assets—both lethal enough to be called 'carrier killers'. With its 4,000 km range, the DF-26 is well-suited to conduct anti-access/area denial operations against the US' carriers. It is capable of carrying conventional as well as nuclear warheads of up to 4,000 pounds. Since the

DF-21D range is over 2,100 km with 600 kg payload, this missile is deployed on the artificially constructed islands of China in the South China Sea, most notably the Paracel and Spratly Islands. In addition to the DF-21Ds, China has moved a host of military assets into the South China Sea, ranging from surface warships and submarines to coastal defense systems such as the HQ-9 SR missile. There is indeed a strong prop to these legitimates: such anti-access capabilities as advanced air surveillance and radar equipment, backed by weapons-laden military airfields. Together, these assets greatly expand China's military footprint in the region.

The third Chinese significant anti-carrier weapon is the DF-17 hypersonic missile, which can travel above 2,400 km mounted with nuclear warheads. The DF-17 features hypersonic capabilities and travels five times faster than sound, remaining highly elusive and hard to intercept. Soon after being launched, it gets separate from the rocket system, further enhancing its capability to avoid being detected. Other than these, there are also YJ-12 supersonic cruise missiles that are launched from land, sea, and air. The ship-launched YJ-12 is paired with the YJ-12A, launched from air with the help of the Xian H-6 long-range bomber, while the YJ-12B is launched from the surface using the base of its launcher. Once fired, while traveling a distance of 400–500 km, course alternations make it too elusive for detection and interception. The Chinese submarine fleet is also focused on a direct threat against the US aircraft carriers, most notably the Shang-II class nuclear submarines, equipped with YJ-82 anti-ship missiles and YU-6 wire-guided torpedoes. Moreover, China developed one weapon combined with a missile and torpedo, a supersonic projectile that flies like a missile at 10,000 meters and at 2.5 times the speed of sound. These weapons are a significant addition to China's arsenal against the dominance of the US military. Not only that, China is also training military personnel to operate these advanced systems. In 2023, Chinese forces ran a computer simulation of a drill where they practiced destroying the US supercarrier Gerald R. Ford.

The Tactical Edge

The greatest defence of the US naval power lies in the extraordinary difficulty of locating its 11 aircraft carriers in these vast, open seas. Such huge military ships are next to impossible to trace from land, sea, or air since they are never at a fixed position and keep moving to avoid detection. Indeed, their movements can be continuously traced only from space. China has tried to counter this by deploying numerous satellites equipped with artificial intelligence expressly to track these carriers. 'Smart satellites' could continue the monitoring of the US carriers, making sure that the positions of these vessels are noted at all times by Chinese military, even as they navigate the open oceans. Even if human detection proves impossible, encrypted data from Chinese satellites could still enable them to potentially pinpoint the locations of the US aircraft carriers. Besides having its operations adequately fortified, the US carrier system is considered to be very massive and heavily guarded, to say the least. Furthermore, the US carrier system is equipped with nuclear missiles. A carrier, besides, never works independently. There is a whole strike group behind each one, consisting of 10-15 ships along with all the submarines. All the naval carriers, warships, and submarines are fitted out with full missile defence systems. These operate on a multi-layer basis. If a hostile missile were to get through one layer, it would be engaged by the next. To ensure that no attacking missile is able to reach its target, each layer is provided with advanced anti-missile projectiles. Shipbased fighter jets, the early warning systems, and electronic warfare jets all combine to ward off such attacks. This makes them virtually unassailable or unsinkable. Dealing with a carrier, the only thing you can do is deploy another carrier. Realising this basic point, China is not just working on developing its missile capabilities but also its aircraft carrier force. Presently, it is known that China has three aircraft carriers, which include Liaoning, Shandong, and Fujian. While the first two are capable of carrying around 50 fighter jets and helicopters, Fujian can accommodate at least 60 aircraft on its flight deck, enhancing its operational capabilities significantly. Fujian is, hence, the most technologically developed mobile airbase in the Chinese Navy. Launched in 2022, it successfully completed sea trials in May 2024; its formal handing over to the Chinese Navy may happen next year. However, China is not just trying to increase the number of its carriers but is also aiming to enhance the quality of its carriers. A significant difference in the Chinese and the US Navy is the engines of the carriers. The current <u>Chinese aircraft carrier</u> engines are primarily fired by oil or diesel, so they need to be docked most of the time for refueling. Contrary to this, the US carriers are nuclear-powered. Moreover, Chinese ships do not have storage fuel, and in-flight fighter jet repairs are not conducted which makes it impossible to operate them in the ocean.

China's swift military expansion has positioned the People's Liberation Army Navy (PLAN) to <u>potentially surpass</u> the US Navy. It is always <u>uncertain</u> to draw conclusions about long-term performance based on historical data, particularly when using open-source information on an organisation as secretive as the PLAN. There is one thing that seems certain, in the forthcoming decades there is little likelihood that <u>China</u> will field a navy <u>superior</u> to that of the US.

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