

Overrated...

Aircraft carriers

Jeremy Black says the Royal Navy's two new flagships may be too unwieldy and vulnerable, while "anti-weapons" are much better value for money

"To sink it would be every submariner's dream." The lunchtime remark of a former First Sea Lord about the Royal Navy's new aircraft carrier HMS *Queen Elizabeth* captured its acute vulnerability. Separately, an annual lunchtime discussion of former Ministry of Defence senior figures moved on from considering whether the carriers are wrecking the naval budget to assessing whether they are wrecking the defence budget. In 2010, the incoming coalition government reviewed the carrier project and decided to cancel it, only to find that Gordon Brown had put in costly cancellation clauses to preserve jobs at Rosyth. Britain's two carriers (the second, HMS *Prince of Wales*, is still under construction) can embark up to 60 aircraft each—far too large for our needs and budget. Britain cannot afford more than a handful of F35s or the frigates to protect the carriers.

But surely, with the *Abraham Lincoln* leading a task force into the Gulf in a display of American power, this is not the time to decry carriers? Surely they offer a way to project strength without the incubus of bases on land? Have they not a background of successful attack, whether at Taranto (1940) or Pearl Harbor (1941)? Should we not be trying to emulate the Chinese?

Carriers are a legacy military system, an upgraded product of the technological and organisational innovations of the First World War. They were effective in the Second but less so than generally appreciated. In part, this was because they could not carry aircraft comparable in range or payload to those from land bases, whether in bombing Japan, where Saipan became the key base, or operating against submarines (the Azores likewise). Nor were they effective at night or in bad weather, or easy to protect against submarines, while they were also vulnerable to surface bombardment and air attack. Their rate of loss in that war raises the question of the wartime viability of the much smaller modern carrier fleets

Protection is even more an issue now, despite claims that the British carriers have been future-proofed until 2060, claims that would be farcical were it not that lives depended on them. The development and deployment by China of anti-ship missiles able to challenge American carriers, notably intermediate-range ballistic missiles fitted with a manoeuvring, terminally-guided head containing an anti-ship seeker, poses a major problem, not least as missiles can be despatched in swarms. Russian anti-ship technology is also an issue, and even if the

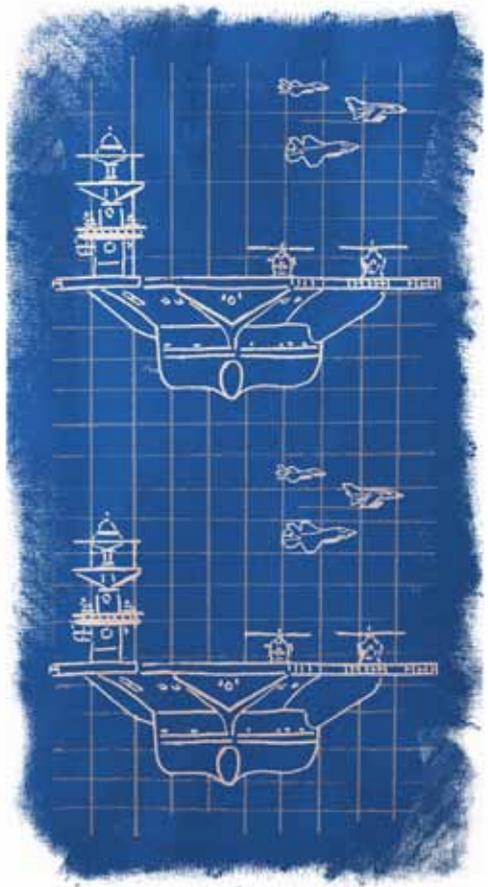
Russians may well find it difficult to use some of their actual or projected weaponry, their anti-ship missiles are already formidable. Moreover, such weaponry will be sold and used in alliance diplomacy. Thus, Iran, North Korea and other joys will acquire it. The adaptation of drones for the maritime and submarine environment, and the development of "smarter" mines raise questions irrespective of such traditional but updated anti-ship technologies as the submarine. With the advance of drone technology and cyber warfare, large aircraft carriers are going the way of the battleships after the Second World War. The battleships appeared largely redundant in the face of air power; now also with carriers and missile capabilities in both attack and defence.

The need to invent a goal in order to justify the technology, a common fault with what passes for strategy, is well demonstrated by the scrabbling round on behalf of the British carriers. The egregious Gavin Williamson appeared to be willing to risk war with China for their sake; reason enough to dismiss him. Williamson's varied remarks also suggested a limited understanding of the necessary relationship between domestic circumstances and foreign policy and the related prioritisation of goals that are crucial to strategy.

Lastly, there is the question of opportunity commitments and costs. Carriers are particularly expensive to equip and maintain. And as France, India and Russia have all recently discovered, problems with maintenance can lead to appreciable periods in which they are unable to operate. This raises the point of their purpose unless there are a number of them. Indeed, that is the theory behind Britain having two and co-operating with France. Of course, that magnifies the target.

For Britain, investment in manned flight has led to a failure to devote sufficient attention to developing sea-based unmanned aircraft. Drones have limitations, but they do not require as large a carrier as manned aircraft, and thus their carrier offers a smaller target.

Moreover, expenditure on carriers leaves too little money for maintaining and building other warships, providing the flexibility offered by a flow of vessels entering service. Such a number offers the necessary geographical presence as well as a multiple capability, both of which are endangered by a focus on a small number of carriers. The high cost of new warships can ensure a pronounced level of volatility in procurement—even more of a reason to get it right.



ILLUSTRATIONS BY ELLIE FOREMAN-PECK

...underrated

Anti-tank weaponry

“Anti-weapons” are rarely appreciated by the public. Tank, aircraft and ship crew may be the heroes of screen and fiction, but that role is rarely extended to those who man anti-tank and anti-aircraft guns, and who lay mines. Instead, the focus is on resistance by similar weapons: other tanks, aircraft and warships. They are indeed important, but this leads to an underrating of anti-weapons and the related doctrine, procurement, training, tactics, experience and command skills. Anti-weaponry helps define the possibilities presented by existing weapons. They are crucial at the level of tactics. Tactical factors affect operational possibilities and thus strategic options.

Objectively, the role of anti-weapons is abundantly clear. This was the case in the past, whether German 88mm guns in the Second World War or Sagger missiles deployed by the Egyptians in the Yom Kippur War of 1973. In the First World War, tanks—highly conspicuous targets—proved vulnerable to mines, artillery pieces firing low-velocity shells, and machine-guns firing armour-piercing bullets. The Allied breakthrough in 1918 owed more to the successful use of artillery-infantry coordination than to tanks. Anti-tank capability exceeded that of its armoured target in the 1920s, and in 1930 George Patton observed that effective anti-tank weapons had reduced tanks’ effectiveness.

In the Second World War, the response of all powers was to increase tank armour, as with the Soviet JS2 and the German Panther and Tiger tanks. This led to more powerful anti-tank guns, both static and self-propelled. In addition, infantry were equipped with hand-held anti-tank weapons. A major advantage was their relative cheapness in comparison to a tank. Thus, Germany produced more than 23,000 PAK 40 anti-tank guns and 6.7 million Panzerfaust anti-tank rockets.

Moreover, mines were responsible for between 20 and 30 per cent of wartime tank casualties. The capabilities of anti-tank weaponry ensured that combined-arms formations were more effective than those focused solely on tanks, as the overcoming of anti-tank guns required infantry support.

As with other legacy systems, the upgrading of tanks has helped to push up their cost, with the result that tank strength is lower than in the Cold War. That means that the loss of each tank is more problematic and also that there is a growing mismatch between the number available and the scale of the target. Thinking in terms of conflict

between tanks sidesteps this point, but the mismatch is increasingly relevant given the nature of warfare. Even if destruction can be avoided, damage remains a central problem. The cost of replacing damaged tank tracks is formidable, let alone that of dealing with engine problems.

The limitations of tanks remain those that have existed from the outset, notably problems with reliability and vulnerability. Despite their cross-country capabilities, tracked vehicles tend to be less easy to operate and maintain than their wheeled counterparts, and to require more maintenance and fuel.

Armour is useful for protecting infantry against those opposing them in the urban environment, as was seen in facing the insurrection in Iraq. At the same time, the vulnerability of tanks has been displayed over the last 20 years in Lebanon, Syria and Yemen, and by the Kurds when resisting attack by Iraqi tanks. Modern American, Israeli, Russian and Turkish tanks have all fallen victim. Thus, in Yemen, the Houthis employed anti-tank missiles to destroy Abrams tanks used by Saudi Arabia, while in 2017 French-provided Milan anti-tank missiles were likewise employed by the Kurds. Losses are to be expected, and there have been considerable advances in reactive armour and electronic counter-measures against anti-tank weaponry. However, there are also significant advances in anti-tank weaponry, both kinetic and electronic. The growing sophistication of armour electronic systems and of cyber-attacks means that tank operations are likely to be part of cyber warfare in future. And the protection cost imposed even by relatively simple anti-tank weaponry is formidable.

The degree of vulnerability to anti-tank weaponry will encourage a search for an alternative to the tank, not least less expensive, miniaturised, unmanned mobile weapons. They will be exposed to electronic attack, but do not suffer from the complex logistical burdens posed by supporting modern tanks, notably in providing fuel. Resupplying their needs not only is a formidable burden involving much manpower, but also needs dumps that require protection.

None of this suits the image of powerful tanks surging forward to deal out destruction. In The National World War Two Museum in New Orleans, the cinema seats literally shake when the German tanks advance in the re-creation of the battle of the Kasserine Pass in 1943. It is a marvellous coup de theatre—but, of course, the Germans lost in Tunisia. Mighty-looking weapons are not necessarily the bringers of doom.

