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# NOW OR NEVER:

# THE GLOBAL FORECASTER 2020 STRATEGIC DEFENCE REVIEW- APPENDICES

HISTORY DECODED TO INFORM THE FUTURE

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# TABLE OF APPENDICES

A full list of the below appendices that are designed to expand on all aspects of this Global Forecaster Strategic Review 2020.

# APPENDIX I: GLOBAL FORECASTER WAR THEORY

All of the concepts of Global Forecaster articles on warfare are all written within the context of my theories on Human warfare.

**The Timing of Wars**

Human systems only fight over one thing; resources. Although that underlying driver will often be cloaked by other rationales. Thus the phase of the commodity cycle is critical as to when wars occur. .The K Wave Commodity Cycle

**The Path to war**

Wars do not just happen. Instead, there is a structured path that escalates polarisation that manifests long before a war breaks out, warning of the impending escalation of risk. Polarisation The Road To War

**The Nature of wars**

Wars are not all equal or the same in nature. Thus the location of the combatants on The Five Stages of the Empire curve defines the very nature and duration of the conflict, once war breaks out. The Theory Of Warfare

# APPENDIX II: WHEN DETERRANCE FAILS

## PART 1 THIRD TIME UNLUCKY?

As the memory of both World Wars gradually fades, today we tend to only remember our victories in WW1 and WW2. We should not forget how those wars started or how unprepared we were to fight them.

In WW1, while the Royal Navy was ready for the task in almost every way, Britain had neglected a critical component of its national defence; the regular army. At the outset the British Expeditionary Force in France deployed only seven divisions, compared with the 70 it finished with in 1918. As a result, Britain lost hundreds of thousands of soldiers while learning harsh lessons in building a large continental army. These lessons took almost four years before the desperate struggle turned in our favour at the Battle of Amiens in August 1918.

In 1940 the political will of Britain to fight was almost zero. It had just suffered a horrendous defeat in the Battle of France and without the iron will of Churchill at the helm; Britain's war would have stopped then and there. Instead, Churchill decided to fight on. However, as it had demonstrated so poignantly in France, the BEF was not positioned to fight a modern, mobile war as their German counterparts of the time were. Meanwhile and unlike WW1 the Royal Navy was barely up to the task, especially in regard to its shortage of convoy escorts. The RAF's Bomber Command were similarly unprepared. The airmen of Bomber Command flew outdated Fairly Battles (light bombers that during the battle for France were almost shot down to a plane). Meanwhile, the Fleet Air Arm was appallingly equipped; its main strike forced comprised of Fairly Swordfish biplanes, machines more suited to WW1.

The only arm that stood ready was the RAF's Fighter Command. This was due to the vision of men like Hugh Dowding and Lord Beaverbrook. However, even the great

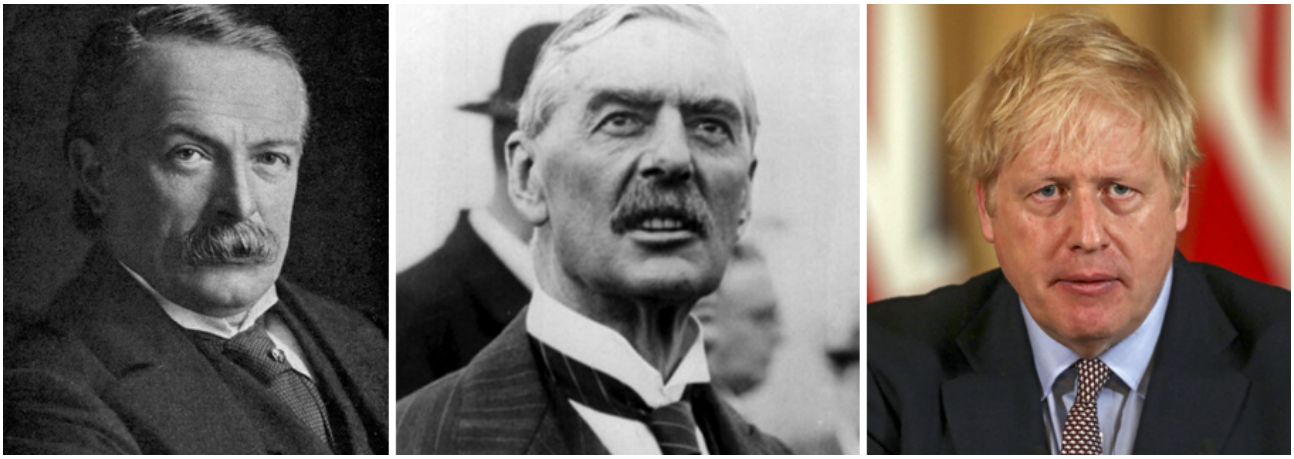
victory of the Battle of Britain relied on the Luftwaffe making the decisive mistake of diverting strategic bombing missions from the crippling attacks on Fighter Command's airfields to the cities. It was the victory of the Battle of Britain, along with the German attack on Russia, that granted Britain the time to rearm and build its war capacity. Even then, it was not until later in 1941 that the war turned in Britain's favour. If we were to ask any politician or leader from the time as to what lessons we could learn from their experience, I am sure the top of the list would be to ensure that the nation would never again be caught so unprepared. Even in the last decade, Britain sent armies into Iraq and Afghanistan without the correct equipment to protect against IEDs. It would be both appropriate and reassuring to see some degree of remorse from past politicians and a determination from our current leadership not to repeat such mistakes.

Today, we face two very serious threats. The first comes from from Russia, an opportunistic enemy that will take advantage of our unpreparedness and capability gaps. The second is China, a power that represents a much greater and more relentless challenger to our nation's values and freedoms as its seeks global hegemony. With the lags in procurement involved in modern weapons, this upcoming defence review will be critical to secure Britain's future. Unlike 1914 and 1939, the swiftness and intensity of modern warfare will mean that we will not have a second chance to rearm once a war starts.

**It is now or never!**

# APPENDIX II: WHEN DETERRANCE FAILS

## PART 2: THE POLITICALLY FORGOTTEN VALUE OF DETERRENCE



War is a blight that has not receded into the history books. We are living in it's shadow today. With the centenary of WW1 and the annual Remembrance Day services, we should engender a culture amongst our leaders that encourages them to examine and better understand why these World Wars started and how they might be avoided in the future so that past lessons can be applied to current situations. Additionally, our leaders should be educated as to how the wars were won, and how close we came to losing both at certain points of each conflict. Most importantly, politicians should understand the capability of modern weapons and how the next war might be fought. However, recognising that such study might be considered superfluous by our current Western leadership, I shall attempt to condense the three key lessons from past British actions:

1. Although Germany started WW1 in a bid for global dominance, the war might well have been averted if Britain had removed the ambiguity over its alliance with France and had clearly stated that it would join the war if Germany attacked France. Additionally, Britain should have backed its words with actions and, even though it was not prepared to match the massive standing armies of France and Germany, it should have made clear plans that if war broke out it would immediately raise an army of continental proportions to influence the war's outcome. Instead, it took two years to put the inexperienced Kitchener's Army in the field against a battle-hardened enemy, with inevitable consequences at the Battle of the Somme, by which time the French armies were exhausted which then prolonged the war. The problem was compounded as the BEF was small (150,000 men) compared to the other continental armies. However, it was highly experienced and could have been described as the most professional army in the world at the time. The high casualties that it endured in the opening stages of the war caused it to lose the core of its experienced soldiers - soldiers that would have been invaluable as the core of the new much-expanded Kitchener's Army. Their absence was to cost the BEF dearly. If there was one man that was responsible for constricting British defence expenditure in the lead up to 1914, it was David Lloyd George. I detail his appalling failures in my book Lions led by Lions.

2. The collective British political denial of Hitler's aggressive intentions in the build-up to 1939 must have only emboldened his actions. The result was that Britain was unprepared for war on the continent and the BEF was ejected from France. In suffering this failure, the BEF left its equipment behind which then made us vulnerable to a potential future German invasion (Operation Sea Lion). It is remarkable how similarly Britain responded to Germany in the build-up to WW2 even after the experience of WW1 when deterrence had failed. The politician who was singularly responsible for failing to deter Hitler was Neville Chamberlin who presided in office from 1937 to 1940 and who would erroneously believe in negotiating with Hitler. To his credit, he at least supported Britain's rearmament program during his years in office. However, he should have ensured it took place at a much faster rate to deter Germany.

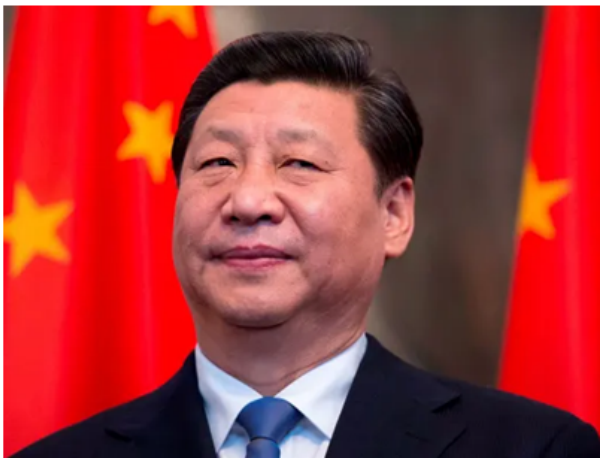
3. The Cold War was very different as deterrence triumphed thanks to Reagan and Thatcher. They ensured that NATO was stronger than ever at a time when the USSR was in economic collapse and might well have been drawn into military adventurism. In this case, the USSR perceived both military capabilities as its adversary. On top of this, historical documents in the Kremlin show that Britain's determination to defend its interests 8000 miles away in the Falklands War came as a surprise. From that point in time capitalist nations were no longer automatically considered by the USSR as weak willed.

In summary, all major wars start with an expansive nation that seeks to challenge for power using military force. If deterrence fails, war follows. Although considered expensive at the time, deterrence is always cheaper than the war itself and its consequences, win or lose. However, it only works if there is a very high chance that an aggressor nation perceives that it will fail if it declares war, due to a combination of military capability and the political will to use force to protect national interests. So, the key to preventing wars does not seem to be to run down one's armed forces, but rather to ensure they are strong, capable and able to deter an enemy from aggression.

The question is will Boris follow the path of Lloyd George and Neville Chamberlain, or that of Margaret Thatcher and his great hero Churchill who understood the power of deterrence and the need for a high level of military spending.

# APPENDIX II: WHEN DETERRANCE FAILS

## PART 3: HOW DO THE PREDATORY PRESIDENTS XI AND PUTIN VIEW BRITAIN?

In my Theory of Warfare, I postulate that expansive predatory nations behave much like predators in the animal kingdom and playground bullies. They prefer to attack the weakest prey to limit potential damage to themselves, which in turn could be life-threatening. So, how would such a power view the West and Britain in the light of our track record in the last two decades?

As America's closest ally, Britain's security record is intertwined with that of America in this risk assessment:

1. America and Britain ultimately failed badly across Iraq by gifting two thirds of the country to Iranian control. Specifically, the British army failed in Basra and withdrew under dubious circumstances. This outcome can only be interpreted as a drastic failure and a failed Pilot War that has since limited Western policies of direct intervention in the Middle East.

2. America and Britain withdrew our forces claiming Afghanistan's army could take over the role of defending the country when they were just not ready. Our premature withdrawal could only be perceived by a potential enemy as weakness and has resulted in a resurgent Taliban that controls large regions of the country.

3. The West, or more accurately America, failed to prevent Iran from gaining a clear path to nuclear weapons as Iran hoodwinked Obama while the agreement was signed. Since then Iran has worked against American interests in the Middle East to make America look weak. Similarly, North Korea became a nuclear power despite America's declared intention to prevent it from doing so. Since then it has been a Chinese puppet and a thorn in the side of American regional policy. Americas failure to stop North Korea should be viewed as another failed Pilot War.

4. On March 10th 2016 Obama stated that chemical "red line" would not be crossed with impunity by Assad in Syria. When it was, there was no clear

and definitive action by the US. This failure subsequently encouraged and emboldened Putin's aggression in the Ukraine and again made America look weak.

5. The UK's self-destruction of its defence capability, the emasculation of the RN and the reduction in the size of our military capability has had a considerable impact that extends far outside the UK as the bridge that links Europe to America.

6. Europe's collective refusal to take responsibility for its defence by keeping its expenditure low below the 2% minimum commitment of members and relying on the American shield linked to NATO.

7. America and Britain have failed to prevent mass cyber espionage and the flow of intellectual property (IP) to China and Russia over the past decade. This represents erosion of decades of capital expenditure and our military technological edge.

8. The struggle with Islamic fundamentalism since 9/11 has created armed forces in the West that are optimised for asymmetric warfare against an unsophisticated enemy, rather than total open warfare against an industrialised enemy. This has created a widespread and dangerous perception that conventional warfare is outdated even as Russia and China have been expanding their conventional capabilities focussed on leveraging America's weak spots.

9. The lack of Western political will to ensure that military action is effective (e.g. in Iraq, Afghanistan and Libya) coupled with the failure of the populations of the West to make defence a key policy and be prepared to make economic sacrifices. Libya is yet another example of military intervention without the follow-through commitment to a viable long-term reconstruction plan.

10. In the UK the shrinkage of the Foreign Office has reduced our capability to effectively project soft power and to understand other cultures without which our ability to anticipate and understand evolving threats has been severely limited.

11. The Russian response in Ukraine and seizure of the Crimea that could not be prevented by the West demonstrated the limits of American, European and NATO power.

12. The Russians have been openly surveying transatlantic communication cables using submarines and the ship *Yantar*, equipped with cable cutting equipment. These activities have been observed in the Atlantic, North Sea and Asia. The goal seems to be to search for secret military and civilian communications, fibre optic lines and check for weak points that are hardest to repair once they have been cut. They could also be following Western Cold War successes of tapping into these lines of communication.

13. Russia's recent military deployment into Syria placed Putin's armed forces in the centre of the chess board, especially when in future higher oil prices force the US back into the Middle East.

14. China's island expansion policy that is continuing despite US protests, something that has now become recognised as expansionary across the globe, should awaken Britain's concerns as to China's aspirations and the threat they represent. The progress that China is making with its expansionary strategy is making America and the USN look impotent.

15. When Putin used the Novichok nerve agent in Salisbury, he violated every Cold War protocol around weapons of mass destruction. Britain under May did almost nothing in retaliation apart from a spot of cyber revenge. As such, Britain is more exposed than it has been since 1939 to be perceived as weak and vulnerable to attack.

Viewed in the context of this long string of failures, European and especially British politicians have repeatedly shown they have little commitment to military action and the inevitable setbacks associated with casualties. An aggressive and expansive nation would naturally surmise that the West was in decline and that time will only weaken its position. With such an outlook, aggression and military investment would undoubtedly look like a justifiable route to greater global influence and power.

In summary, failed Pilot Wars in Iraq and Afghanistan have sent clear signals of vulnerability. Western weakness is encouraging global aggression from expansive systems such as Russia and China. Sadly, until the US, Britain and Europe wake up, we are sleepwalking into the next major war just as we did in the 1930's. Currently there is every risk that we will be the future losers as the lead time for modern weapons is now so long that we will have to fight with what we have. With America grappling to contain China in the Pacific, the hard reality is that Britain, France, and NATO may well be left to fend off Putin's Russia.

In short, deterrence is failing as we speak. The bullies are running rampant in the playground and are only becoming relatively stronger and more confident in their ability to project their will by force.

For Britain to stand tall in the face of such naked aggression and intimidation she must take a leading role in reasserting the power of deterrence. The UK must increase its defence spending significantly and urgently in the 2020 review.

# APPENDIX III: THE SUN ZU'S ART OF WAR APPLIED TO THE CHINESE CHALLENGE TO AMERICA

## PART 1 - THE CHINESE PERSPECTIVE

The world we live in is being changed beyond recognition by the increasingly rapid growth of China. In this process of transformation, the Chinese have an important advantage over the West. While they have a complete grasp of Western cultural values on account of the last two centuries of global dominance by the Super Western Christian Empire (SWCE), the converse is not true: the West is trailing woefully behind in knowledge of its rival. The West, blinded by its ideal of the primacy of democracy and the Capitalist model, fails to recognise that China's culture, arguably the oldest and most sophisticated in the world, has its own primacy in terms of its appreciation and application of strategy. Of particular and chilling import for the West, given China's recent rise as a challenger on a global scale, is its historical and philosophical understanding of the art of war

The Art of War, a book of the sixth century BC written by the great Chinese military tactician Sun Tzu, is a masterpiece of strategic thinking. It remains as valid and eminently useful today, in both its analytical and predictive capacities, as when the general himself fought his battles. Any book concerning itself with geopolitics is by definition a book on strategy. The Art of War is designed to encourage the most effective thought processes when considering a situation from a strategic point of view. It is invaluable in understanding thought processes in China, which, as has been said, are very different from those in the West, but, more importantly, it also offers great insight into the new geopolitics of our day. Its many maxims illustrate this point.

1. **You see the opportunity for victory; you don't create it.** The Art of War, 4: 1.9–10

Opportunities can only be taken advantage of when they materialise; they cannot be contrived. This point underscores the importance of conserving energy until the right opportunity is recognised, then using maximum resources to ensure that it is fully exploited. In many ways, this concept runs counter to Western ways of thinking, which tend to the view that opportunities can be manufactured by sheer force of will, against the flow of events in larger scale. China's progress from regionalisation to the cusp of empire has taken place in the vacuum created by the decline of the US. Before this time, the country was unable to impact or affect the empire cycle of the US, and challenging the US too early would have been disastrous for the People's Republic. All it could do was ready itself and patiently wait for the opportunity to present itself.

2. **You must know the battleground. You must know the time of battle. You can then travel a thousand miles and still win the battle.** The Art of War, 6: 6.1–3

Awareness and understanding are paramount: to be able to act effectively, we must have complete knowledge of where we find ourselves. In this respect, by fully comprehending the six geopolitical drivers that I discussed in PRESENT, we can understand the world as it evolves in a new direction and thereby identify well in advance those points at which conflict is most likely to erupt.

3. **We say: know the enemy and know yourself. Your victory will be painless. Know the weather and the field. Your victory will be complete.** The Art of War, 10: 5.14–18

The key to remaining strong in today's world is to realistically appraise it in all its aspects. In this respect, self-knowledge is as important as knowledge of one's enemies. The US attitude has been coloured by the hubris of empire and the psychology of decline, and as a result the country is at an acute disadvantage compared with the relative clear sightedness of China.

4. **You must be creative in your planning. You must adapt to your opportunities and weaknesses. You can use a variety of approaches and still have a consistent result.** The Art of War, 8: 2.1–4

China has sought a range of soft and hard strategies with which to challenge the US, each one gently probing for weaknesses that can be exploited over time to further China's expansion and extend the contraction of US power.

5. **The trees in the forest move. Expect that the enemy is coming. The tall grasses obstruct your view. Be suspicious**. The Art of War, 9: 4.7–10

6. **You must make use of war. Do not trust that the enemy isn't coming. Trust your readiness to meet him. Do not trust that the enemy won't attack.** The Art of War, 8: 4.1–5

7. **You must use surprise for a successful invasion. Surprise is as infinite as the weather and land. Surprise is as inexhaustible as the flow of a river**. The Art of War, 5: 2.4–7

Never in history has an economic power with an expanding trading system failed to militarise its power, and then proceed to use it. These passages from Sun Tzu's text, old as they are, can be read as a clear warning to the West of Chinese intentions.

8. **You need all five types of spies. No one must discover your methods. You will then be able to put together true pictures.** The Art of War 13: 2.7–10

As I shall discuss below, the 'copy and assimilate' process so necessary to China's recent phase of technological catch-up with the West has been driven by extensive espionage, particularly in the area of cyberspace

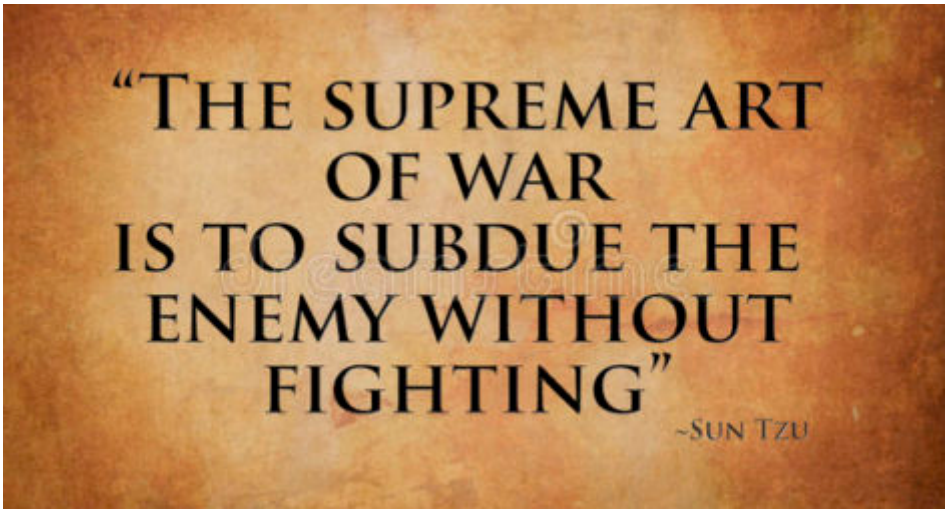
9. **If you are too weak to fight, you must find more men. In this situation, you must not act aggressively. You must unite your forces, expect the enemy, recruit men and wait. You must be cautious about making plans and adjust to the enemy.** The Art of War, 9: 6.1–5

This fact must make a wise leader cautious. A good general is on guard. Your philosophy must be to keep the nation peaceful and the army intact. The Art of War, 12: 4.18–20

This is an extract from *Breaking the Code of History* - The Book Of The Future Published in 2009

# APPENDIX III: THE SUN ZU'S ART OF WAR APPLIED TO THE CHINESE CHALLENGE TO AMERICA

## PART 2 THE AMERICAN PERSPECTIVE




This maxim specifically applies to America's strategy that should be focussed on deterring China from aggression and a potential WW3 through the critical commodity cycle peak of 2025 to 2027. Key maxims that should define American strategy going forward are. As it declines, the US must protect its resources, cherishing and saving them for use only when and where they can make a decisive difference to its geopolitical standing.

1. You must ask: which government has the right philosophy? Which commander has the skill? Which season and place has the advantage? Which method of command works? In which group of forces lies strength? Which officers and men have the training? Which rewards and punishments make sense? This tells when you will win and when you will lose. The Art of War, 1: 2.3–11

Western beliefs about how people should be governed, particularly that democracy is the most evolved political system, fails to recognise that at a time of constricting resources, a centralised government, such as that in China, might actually be the most appropriate system.

2. You will find a place where you can win. You cannot first signal your intentions. The Art of War, 1: 4.17

Again, the critical strike must only be launched when the outcome is absolutely certain; patiently waiting out one's time is key. The Chinese are masters of this discipline.

3. If you exhaust your wealth, you will quickly hollow out your military. The Art of War, 2: 3–5

The US's financial overextension and debt structure mean that it will now struggle to support its massive military complex, only tilting the shift in power further to the East.

4. Politicians create problems for the military in two different ways. Ignorant of the army's inability to advance, they order an advance. Ignorant of the army's inability to withdraw, they order a withdrawal. We call this tying up the army. Politicians don't understand the army's business. Still, they think they can run an army. This confuses the army's officers. The Art of War, 3: 4.5–11

The politicisation of the West's armed forces, particularly in the US, has greatly interfered with the way its generals fight wars. The US military has been weakened as a result. China is not likely to fall into such a trap.

5. You can fight a war for a long time or you can make your nation strong. You cannot do both. The Art of War, 2: 1.25–26

6. Small forces are not powerful. However, large forces cannot catch them. The Art of War, 3: 3.19–20

As we have seen, the US's wars in Iraq and particularly Afghanistan have had a dramatically weakening effect on it.

7. Use a cup of the enemy's food. It is worth twenty of your own. Win a bushel of the enemy's feed. The Art of War, 2: 4.2–5

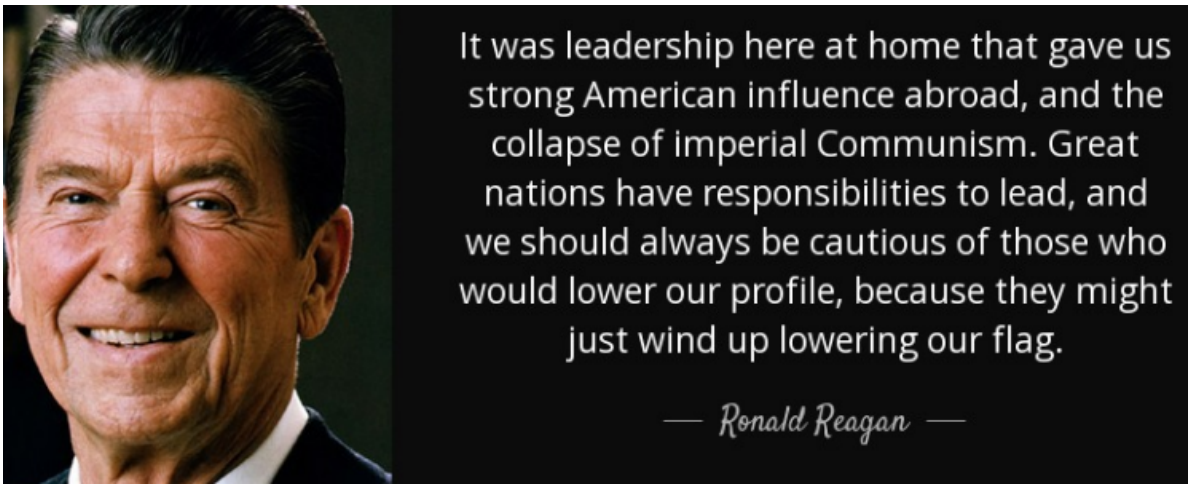
8. Fight for the enemy's supply wagons. Capture his supplies by using overwhelming force. Reward the first who capture them. Then change their banners and flags. Mix them in with your own to increase your supply line. Keep your soldiers strong by providing for them. This is what it means to beat the enemy while you grow more powerful. The Art of War, 2: 4.8–14

Such strategic considerations underlie China's centralised resource strategy, while the growing scarcity of resources and paucity of advance planning in the West will only strengthen China's hand in the coming decade.

As I have shown throughout BTCH, since the 1990s the Chinese leadership has demonstrated a high level of strategic thinking that can be said to exemplify the maxims quoted. Assiduous application of these principles (and others found in Sun Tzu's work) has greatly advanced China's strategic position far in excess of its leaders' initial expectations. The West is only now waking up to the threat it faces but to combat China effectively it will have to kick start its strategic thinking process into a higher gear. The lessons from Sun Tzu provide an excellent starting point to do so and at the same time better understand Chinese Strategic thinking.

# APPENDIX III: THE SUN ZU'S ART OF WAR APPLIED TO THE CHINESE CHALLENGE TO AMERICA

## PART 3; CONFLICT MANAGEMENT, DETERRENCE AND THE CONSCIOUSNESS OF A DECLINING EMPIRE.




According to Sun Tzu, the prevention of conflict is essential to a sound military strategy: war itself is a last resort, high cost choice. This perspective is particularly critical for older nations and empires with limited national energy, such as America, that must deploy maximum resources to prevent conflict. One sound protective measure is to establish strong diplomatic and intelligence corps that is not preoccupied with only one aspect of geopolitics. In other words, they are beholden to a single overarching doctrine without their vision being narrowed by the dictates of government and unable to see the big picture in its entirety. Sound diplomacy and intelligence watch for, anticipate and adapt to new threats. They keep leadership properly informed early in the polarisation process and are primed to develop appropriate coping strategies.

The Cold War was a profound lesson in the power of effective strategic military deterrence. However, using the Five Stages of Empire model, both Russia and America were in their mature/overextending phases. As such, they were restrained by relatively lower national energy levels and the memory of World War One and World War Two fresh in the minds of both leaderships. However, China is in an expansive and highly aggressive phase of it's cycle and as such America's level of relative deterrence must be similar to those it attained under Regan at the end of the Cold War. Anything less will risk China throwing the dice of war. Having noted this, America does possess one significant advantage; the potential consciousness of an old empire at the end of the Super western Christian Empire's life cycle. The construction of effective containment alliances and wisdom of leadership, if manifested, could be a powerful Western tool to enhance deterrence and contain Chinese ambitions. Key to this is remembering that deterrence is an intention that

must be manifested from the top down so that an aggressor is under no illusion as to the price they will pay for aggressive action. Minor crisis and pilot wars are tests of this intention. The best way to avoid a major war is to win a minor one decisively.

Should a pilot war or, heaven forbid, a major war become unavoidable, the wisest response would be to employ all national resources to the end of ensuring a swift closure to the conflict with minimum casualties? This sounds simple, but is rarely executed; it requires political intent and intelligent planning coupled with political and military agreement. Above all, as exemplified by the great Ronald Regan who was responsible for ending the Cold War peacefully through active deterrence and rapprochement, this must be accomplished with clear, decisive and bold leadership.

One can only hope America finds such a leader again before it is too late.

# APPENDIX IV: UK FUTURE WEAPONS DEVELOPMENT

## PART 1 THE BREXIT DEFENCE REVIEW - THE ROYAL NAVY FIRST

Since the Spanish Armada, the Royal Navy has been Britain's first line of defence and offence. Today is no different, and yet the RN has been run down by two decades of defence cuts to within an inch of its effective life. Simultaneously, there is currently a revolution in naval affairs taking place in the expanding navies of the world that represents a significant rising threat to Britain's national security. So, the question has to be asked; is the Royal Navy ready to enable the aspirations and imperatives of a new Global Britain? Alarmingly the answer is a resounding no. Although it possesses a sound framework with many of the best in class weapon platforms, it has numerous shortfalls in many supporting aspects such as its weapons. Additionally, it is currently just too small a force to protect our nation's maritime and littoral interests by projecting power abroad that will enable Global Britain to maximise its growth. In addition to these challenges, naval warfare is undergoing the biggest revolution driven by the rise of Germany since the 1900-1914 period. Today the drivers of a new arms race are a belligerent Russia and the rising Chinese aspiration and manifestation to become the next great global Sea Power.

Vital to an expansion of the Royal Navy is the development of a greater awareness of the senior service within the population as our first line of defence. This would involve more television programs and newspaper articles and most importantly in an increase of awareness within the Political class to champion its cause.

The immediate imperative is to ensure that the Royal Navy makes the most of its current ships and maximises their effectiveness and deployment. That includes the re-powering of the Type 45 destroyers and to ensure the RN has enough qualified personnel to man its ships, as well as enough spares and weapons so that it is able

to deter a major conflict. In designing the future force structure, it is important to define the role of the RN over the next decade.

1. The defence of Britain's island shore
2. The control of all adjacent waters extending across the North Atlantic and down into the South Atlantic
3. The ability to project submarine power into the Russian Nuclear bastions of the North
4. The ability to maintain the global sea lanes
5. The ability to project maritime landing forces

Our review will look at:

1. Network and systems defence
2. Maritime Air Defence
3. Sub sea defence
4. Offensive capabilities.
5. Amphibious capabilities

**1.0 Network and Systems Defence.**

The complexity of naval warfare has increased exponentially with the integration of complex information networks to manage the full spectrum of sophisticated sensors required to control the battlefield space. In addition, the command and control systems required to operate and target modern missiles adds another layer of complexity. Whilst increasing the effectiveness of weapons platforms, such networks come with great dependency, such that if disabled a whole battle fleet would swiftly become both useless and vulnerable. In the Cold War, the risks came from the detonation of high altitude nuclear weapons optimise to produce an electromagnetic pulse that would fry all unhardened electronics within range. However, under the unspoken code of nuclear weapons use at the time, this would have resulted in an almost immediate nuclear response and escalation. Today however the use of chemical weapons in Syria and the UK has blurred the cold war all-out response to the use of weapons of mass destruction, and it is possible to conceive an EMP nuclear weapon that could be used in isolation to disable a battle fleet. Thus all systems need to be hardened against EMPs and also be able to withstand the conventional enemy electronic countermeasures designed to interfere with electronic networks. This, of course, includes protection against a cyber incursion into a fleet Command, control, and communications (C3) networks. This is a hidden battle space of secret technology, whose only presence on warships are new Ariel suits, and yet it is a critical war-winning capability.

## 2.0 Maritime Air Defence

## 2.1 Anti Ship Missiles

The first stage of effective air defence is to not be seen at all by the enemy. Hence stealth is a critical component of defence. The USN Zumwalts are 18,000-tonne ships with the radar cross section of a small vessel even at short range. Although RN ships have been designed with stealth in mind, they still have a long way to go to reach these levels. However Active Cancellation technology of both radar and sonar detection is a key development area.

The second stage of effective air defence is to deploy powerful radar systems to provide early warning of an incoming attack. Today the RN benefits from its two new carriers and T45, T23 and T26 escort ships from some exceptionally capable new radars. The high-resolution Artisan 3D (Type 997) radar has a range of over 100 nm. Whilst the carrier's and T45s (Type 1046) S1850M long-range air search radar can detect aircraft out to 200 nm. The large size of the QEC allows the ray domes to be mounted high above the waterline, extending the range at which sea-skimmers can be detected. This observed horizon is further enhanced by the addition of the first active line of defence in the form of the F-35B lightning, flown from the carriers. Which carry exceptional sensors that can be networked with other aircraft to monitor large areas, feeding data back to the carriers and their escorts shortening response times to incoming threats. A potential weakness, however, is the un-refuelled combat radius of the F-35B (which without drop tanks that compromise stealth and handling) at approximately 500 nm. A further addition to the sensor net is provided by the Search water radars of Crowsnest helicopters which have an approximate maximum range of 150 nm and that has the range to operate up to 450 nm away from its carriers with sorties on station lasting up to 4.5 hrs. As the range of anti-ship missiles increases, the combat radius and endurance of the limited number of aircraft on the carrier that can be deployed against potential launch platforms become critical to ensure an effective outer sensor perimeter is maintained.

The genesis of this RN anti-air advantage was that having fought through the Falklands war, the RN learned the vulnerability of modern warships to sea-skimming Exocets. After significant casualties and a very narrow victory against a courageous air force of limited capability the Royal Navy, after decades of failing to recognise how vulnerable their ships were to air attack, finally resolved to never be in such a position again. The result was the design of the world-class air defence destroyer known as the Type 45, armed with the PAAMs and SEA Viper system. These impressive ships are so capable that the USN carrier groups, already defended by their own very capable AGIS equipped destroyers and cruisers; prefer to sail into harm's way alongside a Type 45.

The recent introduction of the new sea captor to the current type 23s and future type 26s and 31s has further upgraded the RN anti-air capabilities. This missile has a much greater and longer range than the old point defence Sea wolf system and thus has introduced a secondary area defence capability to the longer-range cover provided by the six Type 45s. Both the Sea Viper and Sea Ceptor systems are optimise to cope with saturation attacks both having active seeker heads that are updated with target information during their flight path. Both systems are capable of shooting down current generation sea-skimming missiles. Notably, western designers have been developing more stealthy and sophisticated missiles whilst Russia and China seek greater speed. Whichever side can combine both will have an unstoppable weapon. However, before that point is reached, the impending deployment of hypersonic sea-skimming and high altitude attack systems in development in Russia and China will push even the RNs current air defence systems to their limits, especially when facing saturation attacks. The Russian scramjet-powered Zircon anti-ship missile under test has an estimated speed of 6000mph (Mach 8) which will make it a tough target to stop, reducing response times by a factor of 8 over the old Exocet missiles.

The only solution will be to extend a multi-layered defence further away from the carrier groups out to beyond 500 nm.

1. Outer layer 500 nm radius ; F35s (only after the in-air refuelling gap is closed) and drone battery ships (described below) that extend the engagement range giving more time to respond as the outer layer of defence at 500Nm.

2. Mid layer; 250 nm Type 45s and drone battery ships (to yet be designed)

3. Inner layer 50 nm Type ABM 45s type 23s and 26s and drone battery ships

4. Point defence Type 45s, 23s/26s and Carriers point defence

Of course, to achieve this RN will need more ships and new and modified designs, which we will outline below. The other major problem is saturation attacks and the limited number of missiles currently carried on RN ships. At present, each type 45 only carries 48 sea Viper Missiles in its vertical launch silos and Type 23 and 26s, only has a similar number of Sea Ceptors which would not last more than a few minutes if fired in rapid sequence, if facing a saturation attack. Thus RN warships have to carry much larger missile batteries which can be reloaded at sea. Thus the missile capacity increase needs to be enlarged by a factor of five to have any chance of sustainable defence with cells that are reloadable at sea. This should be further enhanced by the concept of distributable lethality where all ships of the fleet can carry Sea Ceptor and CWIS for self-defence, but in addition, the larger support ships should carry other air and surface missiles that can be launched and controlled by escorting warships. Our proposal for stealthy drone battery ships would add to this distributed lethality, by placing them on the outer edges of defence screens where they could launch soon after missile detection, cutting down the intercept time compared with missiles launched from the centre of a carrier group. This would allow time for a second and even a third interception in the case of evasion of the attacking missile.

Additionally, under the threat of such saturation assaults as a last resort, it would make sense that the current 4.5-inch gun soon to be replaced by the new 5-inch gun that should have the capability to shoot down missiles at the edge of its range until the long-awaited rail guns come into service. The current inner last-ditch layer of defence is provided by Phalanx CIWS, but again it is notable that there do not seem to be enough of them on any given ship to allow for mechanical failure during an attack from multiple targets approaching from the same quarter. The obvious answer prior to effective lasers being deployed would be to add a bigger version of The Phalanx CIWS with a larger calibre gun upgrade from the 20 mm to 40 or even 50 mm that would extend the range of engagement out from the current 20 mm systems reaching 2.2miles, where even if a missile is hit its kinetic energy could carry it on to damage the target.

These are the hard-kill options for defeating incoming missiles, but in addition, there are soft options such as floating radar decoys and electronic and cyber countermeasures, all of which need time to react and so the further out the detection range the more probable they might be successful. A last-ditch resort is to sacrifice a less critical vessel for a more valuable one, such as was the case in the Atlantic Conveyor in the Falklands, but at a time when fleet sizes are so small such redundancy, as it was in the Atlantic Conveyor case is a loss not easily sustained.

These area denial weapons will all be controlled from space. Thus space has become the high ground of the new battlefield just as I predicted in *Breaking The Code of History*. Thus anti-satellite missiles will become part of the defensive/offensive armoury, which will, in turn, be countered by thousands of redundant microsatellites to ensure space networks are survivable. In time missiles will be mounted on space weapons platforms shortening reaction and travel times, and thus the militarisation of space is inevitable. Thus once as planes made ships vulnerable now space weapons do also.

Carriers started World War Two with a 'basic' AA armament. With the advent of kamikaze attacks, this armament progressed to 'bristling' with AA guns. Today the two RN carriers have only CWIS defence, and yet they carry the long-range S1850M radar on the forward tower that equips the Type 45s, meaning they can track up to 1000 targets well over 250NM away. The super high location of this radar compared to that of those on the type 45s gives it the longest eyes in the fleet. These systems should be upgraded to the ABM version with an air defence range out to 480km. This is supported by the powerful medium-range Artisan radar on top of the aft island, from where it can see objects as far as 200 kilometres away, or as close as 200 meters. Artisan is gradually becoming the standard 'eyes' of the Royal Navy's frigates – fitted to each Type 23 warship as it undergoes a major overhaul, it can track up to 800 potential targets simultaneously (including a tennis ball travelling at Mach 3 fifteen miles away) and cut through radio 'clutter' generated by the equivalent of 10,000 mobile phones. This makes it ideally suited to be paired with the Sea Ceptor system and give each carrier a powerful air defence system of its own. This is critical to the carrier's self-sufficiency after fleet attrition in combat and because simultaneously it increases the number of missiles carried in the fleet and even more so if they can be reloaded at sea from the ship magazines. Additionally, an escort's point defence 'goalkeeping' mission requires the escort to stay in close touch with the carrier and its arcs of fire may be restricted by the carrier or other ships. Lastly, there will be situations where the frigates may need to operate at some distance away from the carrier in order to deploy towed array sonar to listen for submarines, undisturbed by the self-generated noise of the CSG.

The Type 45 can also provide point defence using its shorter range Aster 15 missiles but the number of ships and available missiles is again the problem. The nations' flagship may have upwards of 1,600 souls on board, cost at least £3 billion to construct and carry an air group potentially worth another £2 billion. Shortcuts in the protection of these expensive assets for modest savings do not seem to make sense, especially with the proliferation of ever-faster anti-ship missiles that place surface fleets at risk. Fitting a large number of Sea Ceptor cells to the QEC would not be especially difficult and this omission has everything to do with saving money and nothing to do with tactical wisdom.

## 2.2 Ballistic Anti-ship Missile Defence

The current arms races inspired by rising powers involve revolutions in military affairs that seek to create new weapons and tactics of warfare that will overcome the Hegemonic power. In short, we are seeing the Chinese out-innovate the western powers seeking a decisive advantage. The clearest example of which is the innovative use of land launched ballistic missiles to hit US carriers, and thus deny them access to the south China sea. The first such missile was the Dong Feng 21D anti-ship missile with a 932 mile, or 1500 km range (shown above). The arrival of this missile system immediately meant that USN strike planes with an effective combat radius of 640 nm could be hit on the decks of their carriers without retaliation. The result was carrier strike groups had their operating zones pushed back beyond the 2 dash line.

The Chinese ballistic anti-ship weapons system is reliant on a resilient tracking and targeting system using satellites and stealthy drones that can follow a target and

then direct the missiles warheads onto a moving target. Initially, the CEP (circular error Probability= radius within which 50% of warheads will land) is currently estimated to be large, and hence it was only suitable for large targets like carriers. However, like all technology, we should soon expect the CEP to narrow quickly to allow much smaller warships such as Frigates to be effectively targeted and destroyed. With an estimated cost of $25 m per missile versus $5 Billion per carrier with its planes, it is easy to see many hundreds of missiles being fired simultaneously against a single carrier to overwhelm its defences.

Now imagine the Chinese make four further advanced steps.

1. They extend their resilient tracking and targeting to have global coverage with thousands of miniature tracking satellites with multiple redundancies.

2. They produce many longer-range ballistic missiles as per the current trend with the next in the series the Dong Feng 26 with a 2175 mile range (3500km).

3. They add these missiles to their larger warships to extend their coverage

4. They reduce the CEP so that they can hit frigates and corvettes.

5. They add hypersonic glide warheads to these missiles they will both be highly manoeuvrable and very hard to combat.

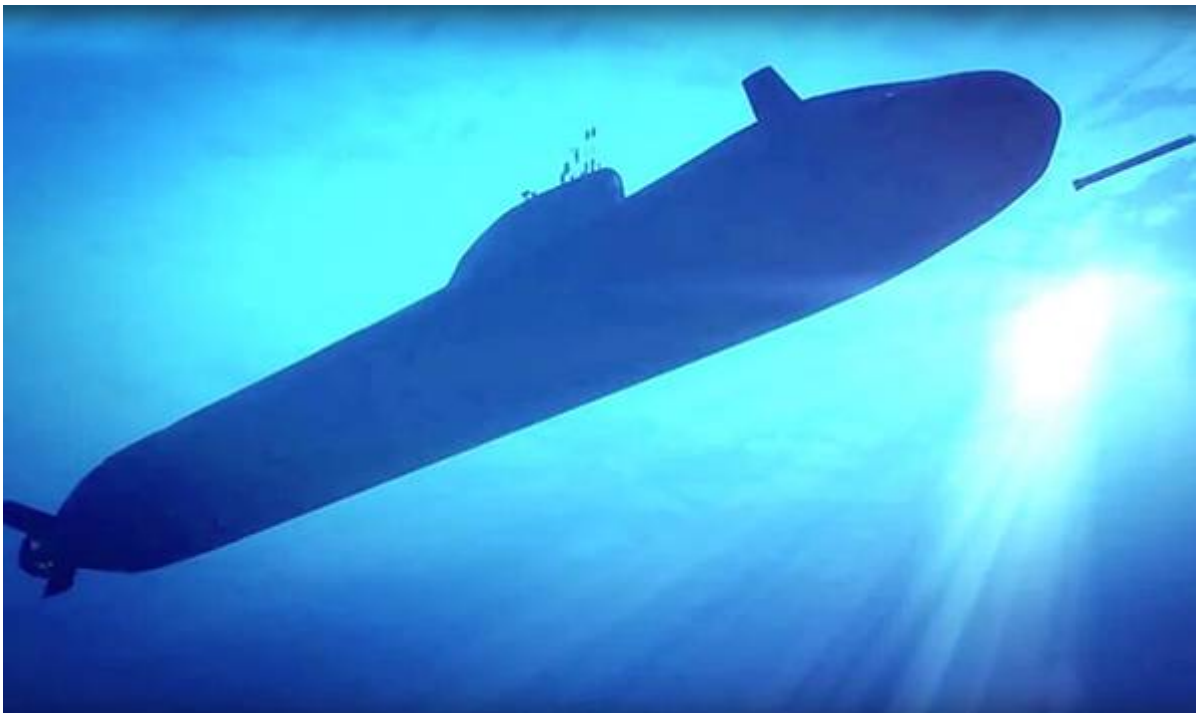
6. In the time it is not hard to envisage ballistic missiles that are fired into space targeting a large area of ocean and from high in space; they are able to find their targets before launching their hypersonic payload independent of sensor networks.

Taking these developments into the near future, the result would be that the PLN could hit any ship in any ocean down to the size of a Corvette and no longer would a ship be safe outside a theatre of operations. Instead, it would be vulnerable in its own ports and coastal waters thousands of miles away from the enemy. To counter this threat the USN has modified some of its destroyers and Cruisers to carry SM3s for terminal ballistic missile interception and SM6s for a mid-course interception. In the case of hypersonic ballistic warheads, mid-course interception would be the high probability option for an interception. Even when laser weapons become available atmospheric conditions would interfere with high altitude interception, such that the only option will be to mount lasers on the fleets F35 Bs operating at 50,000 ft as top cover with their 25 Megawatts lift fan providing the power to the laser enabling it to kill incoming warheads high up in the clear atmosphere where the laser's power is not attenuated. In time carrier groups may require a laser-equipped laser satellite to clear a path through the surveillance networks that control the enemy’s area denials systems.

However today the Royal Navy has no such defence, a glaring vulnerability as the weapons become more numerous and capable. Especially as the Type 45s could be

adapted to the ABM role. If they were to carry and integrate a suitable ABM missile. One is available but it requires Britain to participate in the aster block 1 NT with France and Italy post haste. However such a modification would only be able to intercept at the terminal phase similar to the SM3. Or more preferably for Mark 41 missile silos to be added forward in significant numbers so that SM3 s and the especially capable mid course interceptor SM6 missiles can be carried aboard. The arrival of Ballistic missiles able to hit ships at ultra-long ranges means that Britain will need many more T 45 s than it has currently, twelve more at a minimum and possibly eighteen as every warship and merchant ship will need their protection. These new ships should include a more powerful version of the S1850m passive long-range radar currently being tested that has a greater search radius, capable of detecting ballistic missiles and has a tracking range of 2000 km for ballistic missile defence and 480 km for air defence. Whilst committing to such an order the design should be lengthened to carry up to 500 VLs, greater power generation capability for next-generation energy weapons, enhanced surface stealth and should be soundproofed to ASW standards as discussed below. Simultaneously the development of high-intensity lasers and hopefully rail guns (once the problem with current rail metals has been resolved) for fleet defence has to be a very high development priority. Lastly the addition of quantum entangled radars will provide effective ways to overcome any stealth technology.

**2.3 Sub-Surface warfare.**



In today's navel armouries, submarines are the most potent of surface ship killers, and with recent advances in stealth technology, they have become even deadlier. Anti Submarine Warfare (ASW) during the cold war was a great strength of the RN, but it has been allowed to lose its edge over the past few decades. This is coincident

with Russia building its submarine forces in both capability and numbers to represent a significant threat to British interests.

The best antidote to a submarine is another submarine, and Britain owns along with the America Virginia class the very best hunter Killer submarine in the form of the Astute class, which favours stealth over speed. But numbers are an issue with only seven on order and the last ships late for delivery. If we assume a maximum of 4 may be able to put to sea at once, it would be difficult to ensure there are enough submarines in the right place at the right time. Although once engaged, the submarine usually has the edge over the surface ship, the torpedoes are much shorter range than most sea-skimming missiles. The RN Spearfish has a maximum range of around 30 nautical miles and can manage only around 3-4 times the speed of a typical warship. To be effective, the submarine must detect and locate the ship, penetrate the anti-submarine screen and get relatively close to its target. In reality, there should be twelve in the Astute class to meet the increasing commitments in carrier protection (giving at least two subs per group rather than the current single sub proposed), delousing our nuclear deterrent and hunting enemy subs. In addition, the nuclear boats should once more be supplemented by a fleet of 12 relatively cheap air-independent subs who could operate closer to home to secure the continental shelve and shallow choke points.

Next in the ASW armoury is the new P-8A Poseidon replacements for the cancelled Nimrod maritime patrol aircraft that have a powerful sub-hunting capability and will be welcomed back. They are supplemented by a fleet of highly capable maritime Merlin Mk2 ASW helicopters based around the ships of the fleet. These are able to investigate ships' sonar contacts and prosecute the target with torpedoes. Meanwhile out of the new 13 Type 26 frigates, only eight will be optimise sub hunters. This cost-cutting measure is potentially disastrous as eight hulls are just not enough when facing a resurgent Russian threat. Rather all 13 should be of the sub-hunting variation leaving the Type 31 as the general-purpose frigate. The sub-hunting Type 26 version differs from the general-purpose variant due to its sound insulation measures making it a very quiet ship hard for a sub to locate.

The Type 45 and 26 escorts all have bow-mounted sonars but detection ranges in both passive and active modes are considerably less than that of the towed array, by which time a submarine could be close enough to have achieved a firing position. Unfortunately, despite the quiet electric motors that propel the Type 45, the QEC and the supporting Tide-class RFAs, they all have noisy diesel engines and auxiliary machinery bolted directly to their hulls. Without dampening measures, this radiates noise and vibration into the water which interferes with defensive sonar’s and aides enemy submarines in locating the CSG. With the unit costs of the type 45s and type 26s well over £1bn, it seems crazy to leave them so exposed to noise location for the sake of a relatively small percentage saving. Retrospectively quieting this noise is a major priority for survival.

Meanwhile, although the Type 45 operates active sonar and two ASW helicopters with anti-submarine torpedoes, it does not have any shipboard stingray anti-sub

torpedoes. This is a glaring flaw in weather where a helicopter cannot fly, or in the case of a surprise attack? Additionally one has to ask why the Type 45s do not operate their own 2087 towed array sonar to give them all around combat power. With respect to RN ships killing subs out of attack range both the type 45 and 26 should but do not, carry the American RUM-139 ASROC rocket-propelled torpedo (a stingray replacing the US Mk 46 torpedo) launched from an Mk41 VLS with a range out to 22 Km in seconds.

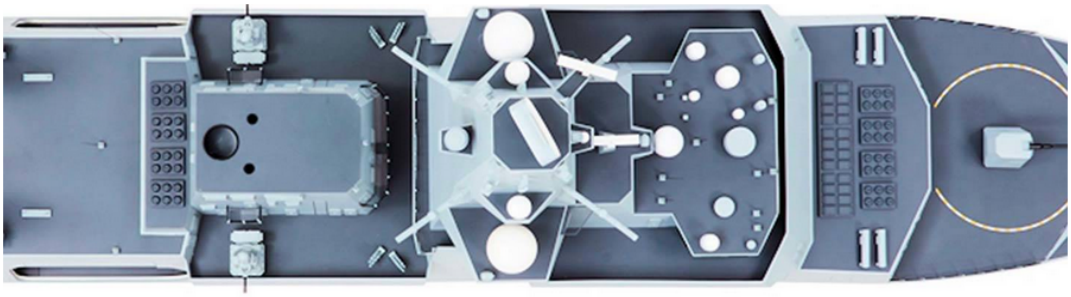
The idea of anti-torpedo torpedoes (ATT), which aim to translate missile defence technology into undersea warfare is a game-changer. This is because submarines, with the exception of Russia's Oscars that fire a barrage of sea-skimming kalibire surface attack missiles, all use torpedoes to kill their targets. To counter them RN ships currently deploy decoy systems. However, the development of an anti-torpedo torpedo in the days of anti-missile technology with an auto-launch system on detection has to be a game-changer and cannot be technically too challenging. Such a new defence system would require submarines to deploy surface to surface missiles at long ranges. The Germans have been testing a system called Sea Spider and the Russians are fielding the Paket-E/NK weapon, a dual-use torpedo that can be fired against submarines and incoming torpedoes. Meanwhile, the RNs soft kill Surface Ship Torpedo Defence (SSTD) system entered into service with the Royal Navy in 2004 should be evolved with urgency into a hard kill system that directs ATTs.

Lastly, the interaction of small 1000 tonne AI-controlled submarines, linked to large manned RN subs, will make subsurface defence and attacks and more complex and lethal in capability.

## 3.0 Offensive capabilities

The USN and RN have neglected a critical component of naval warfare which is their offensive capabilities. Perhaps because control of the seas has been taken for granted and in the past three decades the navy has adapted to land support operations as opposed to sea control. This omission needs to be corrected very swiftly.

Network Systems Defence. The ability to take down enemy networks and systems is a critical offensive capability that needs constant updating. However, it is an area shrouded in secrecy so it is hard to evaluate this capability.

I 

*Overhead view of the Type 26 frigate shows the positioning of the missile silos. There are two 24-cell Sea-Cepto gun and one aft, behind the funnel and above the mission bay.*

Missiles Launchers One of the key problems is the RNs is the divergence from the standardise US Mark 41 into launches for European specific missiles limiting the munitions RN ships can carry. When selecting vertical launch systems, The RN is in a complicated position. Type 45 carries the French Sylver A50 VLS silo for its Sea Viper missiles. It has the space available to retro-fit either larger Sylver 70 cells and/or add an additional 16 Mk 41 cells. The commonality of equipment is always desirable and more economical so this creates a dilemma about whether to invest further in the Sylver system and its more limited munitions options or invest in the ubiquitous American Mk 41 to give these powerful ships an all-around combat capability. The Mk 41 has been continually developed and is the primary weapons system for the majority of the US navy's surface fleet. It is in use by 13 navies with over 12,000 cells fitted to ships worldwide. The largest 'strike-length' cells allow warships to carry a diverse range of missiles and its addition to the Type 26 appears to open up many exciting options for the armament of the new frigate. Indeed as the Sea Ceptor can be quad packed into MK41 Launch cell the question has to be asked as to why the Sea Ceptors have been loaded into their own single cells when they could have been quad loaded into Mark 41 cells with all the flexibility that provides.? Similarly, if the Sea Viper missiles could be loaded into mark 41 cells it would make sense to do so and refit only one cell system into the T45s.

Short-range Anti Ship Missiles The RNs ability to strike small and fast enemy ships is now very good with the sea venom helicopter launched missile, just as that threat seems to be a very secondary one.

Long-range Anti Ship Missiles The RN s ability to strike enemy ships at long range has been neglected because the currently deployed Harpoon is completely out ranged by Russian and Chinese missiles. Making RN ships extremely venerable. The only solution is the swift development and deployment of a new vertical launched heavyweight long-range anti-ship missile before the Anglo-French Perseus hypersonic Missile arrives in a decade's time. The most capable off the shelf system immediately available is the Swedish built Saab RBS15 Mk3, which is subsonic but highly stealthy and hard to defeat with a 160 nm range. The other lesser option is the Norwegian Naval Strike Missile with a 100 nm range and a small 125Kg warhead. At 410 lbs total weight it is the smallest of the options by some margin. Although more accurate, it has about half the hitting power of the Harpoon it might replace. It has

been in service since 2012 and successfully exported to several navies, notably bought by the USN for its Littoral Combat Ships.

Anti Submarine Missiles and Torpedoes. All T45, 26 s, and 31s should carry torpedoes and in time ATT s. In addition to the mark 41 launches, they should all call ASROC anti-submarine Missiles to extend engagement ranges.

F35B launched Anti-ship Missiles The failure to deploy a long-range anti-ship missile also extends to the F35B and the need to restore an important capability the RN lost with the demise of the Sea Harrier and the Sea Eagle missile combination. There are various candidates but as yet none has been fully integrated or tested with the F-35. There is an air-launched version of the Norwegian Naval Strike Missile which is being designed to fit in the internal bays of an F-35A or F35C, but unfortunately, it will not fit into the slightly smaller F35-B weapon bay. Larger munitions can be still be carried on external pylons at the expense of aircraft stealth, which is perhaps less critical if launching a long way from the target. This failure needs almost immediate rectification if the RN is to be able to protect itself and control the seas its sails upon. The range of the RN s F35B s needs to be extended beyond 500 nm with the urgent introduction of in-air refuelling. The US is working on a drone called stingray to solve this issue, however, it is catapult launched which is a solution currently not available on the RN Carriers. Meanwhile, Britain should consider the use of long-range super stealthy aircraft like B2 or a future drone version to act in the role of long-range maritime force projection armed with air-launched long range hypersonic anti-ship missiles.

Anti-ship Ballistic Missile The Chinese have designed a completely new war of controlling the seas by threatening ships with long-range ballistic missile attacks. In time these weapons will control the seas. The question has to be asked will Britain also develop such a capability to keep up with the threats. Included in this future capability will be the ability to bring down the enemy's observation and guidance satellites over an RN fleet.

## 4.0 Amphibious capabilities

The RN has managed to maintain a reasonable sized amphibious capability that represents an important strike capability. However, the introduction of long-range area denial weapons and increased anti-ship capabilities and ranges means that establishing a bridgehead in a contested environment needs a new development of delivery craft such as V22 s and a new class of fast stealthy medium-sized fast landing hovercraft craft with ranges in excess of 300 nm. The US marine corps have a similar problem and as such cooperation would seem the most cost-effective route. This might include the development of the first fully stealth carrier group, as the need for smaller stealthy littoral carriers in high-risk areas to support landing zones to counter the ever-increasing range of surface to surface anti-ship missiles.

## 5.0 Summary of General points on RN Development.

DM DAVID MURRIN
GLOBAL FORECASTER

The Royal Navy urgently needs money and development to be effective in the next decade as the likelihood of a new global conflict increases significantly. In addition to my summary points in A NEW MODEL FOR BRITAIN'S DEFENCE FORCES

1. Ensure the current fleet is fully operative and effectively manned.
2. Stealth technology should be applied to all ships of the fleet; acoustic visual and electronic stealth measures.
3. Build 12-18 upgraded ABM capable Type 45 s equipped with an anti-ballistic missile version of the Sea viper or SM-6 missiles
4. Build a new class of medium-sized stealthy drone battery ships to operate on the outer layers of the fleet's defence
5. Enact policy of distributed lethality through all fleet and auxiliary ships.
6. Build a more powerful CWIS, and increase the number on each ship.
7. Deploy laser and rails gun technologies asap
8. Need to deploy and in-air refuelling capability to extend the range of the F35 B
9. Give the Carriers their own air defence capability, either Aster 15 or Sea Ceptor and upgrades to ABM defence asap.
10. Deploy Sea Ceptor in quad packed Mk41 launchers in the type 26 s and 31 s
11. Modify the Sylvester launcher to Compatibility with Mk41 launchers.
12. Develop long-range surface to surface and air to surface missiles
13. Deploy anti-sub RUM-139 ASROC rocket-propelled torpedo (a stingray replacing the US Mk 46 torpedo
14. Build 5 more astute subs
15. Build 12 air-independent subs/and or-
16. Build a class of 1000 tonne drone subs to supplement operations.
17. Deploy an effective anti-torpedo system fleet-wide.

# APPENDIX IV: UK FUTURE WEAPONS DEVELOPMENT

## PART 2; THE FUTURE OF LAND WARFARE AND THE TANK


As we approach the 2020 Strategic Defence and Security Review, there are wild ideas circulating in the press about vital military capabilities that may be axed. The impairment of the tank in particular would significantly decrease the deterrence capability provided by British armed forces.

Tanks have demonstrated key roles in both the First and Second Iraq War. In the former, tanks dominated the battlefield with thermal sensors that completely outclassed their Russian counterparts. In the latter British Challenger 2's were very

effective in an urban combat role. Additionally, in Afghanistan forces that deployed tanks significantly reduced their casualty rates. Upon examination of these three examples the evidence points to the conclusion that tanks are a vital component in land warfare. Therefore, the idea to scrap Britain's heavy tank divisions and armoured personnel carriers would rank among some of the most horrendous defence blunders since the cancellation of the TSR2. Notably, not a single large army (especially the US, Russia and China) have considered such a move.

Whatever justification is being made, the decision to decrease British tanks is driven by budget cuts rather than security imperatives. Britain should be spending more instead of less on defence. This should be done in a way that feeds jobs and money back into the economy with a revamped and efficient military-industrial complex.


*The US Navy's* Zumwalt *class destroyer demonstrates the sloped design of modern stealth that tanks should be replicating from both the horizontal and vertical perspective*

Returning to the future of future land warfare and Britain's armoured divisions, it is imperative to admit the weapons systems in existence are no doubt at or near the end of their effective life. However, instead of scrapping them we should be looking at what can be done to replace them at a time when revolutions in military affairs are abundant.

I believe it is important to remember that it was Britain who developed the tank in 1915. It was Britain who evolved the design and tactical deployment so that by

August 1918 it had become a war-winning weapon. This is a story I have detailed and explained in my book Lions Led By Lions. This innovative drive did not stem from the established 'old' British Army who still believed cavalry was relevant on the modern battlefield. It came from the energy and vision provided by new officers drawn into the war effort from the civilian world. These were people who solved problems using creativity, not tradition. Today, the British army desperately needs this revolutionary energy it possessed in the First World War to successfully defeat a traditional tank army like the one Putin is now rearming with APC's and T14 Armata tanks.

*Russia's new T14 Tank on display*

Let us take a minute to exercise foresight and imagine what a revolutionary tank may look like in the years ahead. Originally, tanks were known as land battleships and it's ironic that modern naval weaponry once more provides a good guideline to the tanks evolution.

1. **Portable.** The Armarta was designed to be 48 tonnes so that four at a time may be deployed from a heavy lift aircraft. Similar considerations should be applied.

2. **Automated.** The crew should be reduced to a maximum of two, coupled with an auto loaded gun (like the T14). Similarly, all the driving sensor and battlefield systems should be fully automated to the point where the tank can be remotely controlled.

3. **Large Power Source.** In a modern warship, power is at the heart of all the systems from propulsion to weapons. So a hybrid diesel-electric system, with battery storage, would be ideal to drive a new tank. This would also provide the capability of an infrared stealth mode using electric power.

4. **Camouflage/Stealth**. For years, planes and ships have been deploying stealth technology to reduce their battlefield signature. This technology on the battlefield could be a game-changer by creating tanks and AFVs that are invisible to radar and may include the following.

    1. **Optical camouflage** provided by cameras and electric photo camouflage that changes the colours of the tank to match its exact surroundings continuously like an octopus.

    2. **Radar/stealth technology** through ablation and reflection using sloping surfaces, coupled with active cancellation technology.

    3. Infrared. Adapting the tanks' surface to the temperature of its surroundings is a technology still in development, but is one that will no doubt come to fruition.

5. Weapons systems.

    1. **Sensors IR/radar**. The T14 mounts a small phased array radar on its turret with a 100km plus range for air defence. This confers the ability for the new tank to operate its own integrated air defence bubble. Additionally, the radars could be used to locate the firing positions of incoming and transiting fire with an auto engage mode that quickly suppresses it. The same system can be used for point defence of the tank or AFVs.

    2. **Main offensive armament.** Most tanks are armed with 125mm smoothbore guns. The natural upgrade would be a 155mm gun. This could be auto loaded and outranges the competition. This same turret should be designed to be replaced by a future rail gun. If a rail gun turret can be designed to move through a full 90 degrees elevation, it could be designed for use against aircraft and for indirect fire. The latter would reduce the need for artillery and a single design could be used in both roles. If this were to happen, the integration of armoured and artillery units would be a game-changer on the battlefield.

    3. **The secondary armament** of a chain gun, anti-tank and short-range anti-air missiles. These could be replaced/supplemented by a laser when lasers become operational.

    4. **Self-defence.** The Russians have deployed systems that can intercept incoming missiles travelling at 3000m/s, such as Arena and the Afghanit active protection system. This capability is a must have for self-defence.

6. **Design.** Warships like the US Zumwalt destroyers possess incredible stealth properties as a result of sloped designs to reflect radar waves. Similarly, sloped armour increases penetration resistance. The ultimate shape could be a very clean, elongated pyramid with sides that extend over

the tracks which can be collapsed for transportation. Whilst the width of the tank is limited, it could be extended in length if the extra volume is needed to carry the weapons load. This would also make its intrinsic design the basis of the Armoured Personnel Carrier as the Russians did with the T14. This single concept could now replace tanks, heavy artillery and APC's with one common design.

7. **Multi-Role Modules.** Like modern warships that can embark different modules to specialise in different capabilities, the rear section of this new slightly longer tank design could have space for various modules: HQ and troop command, troop carrier, extra ammunition storage for the Artillery optimised role, drone and missile modules. The net effect would be that this new tank design could replace the majority of the multitude of vehicles in operation, and simultaneously increase the army's combat power by a significant quantum, as well as reducing acquisition and maintenance costs.

8. **Systems integration.** The new tanks would be part of an integrated drone force of light scouts as well as light and small armoured fighting vehicles that support the main tank and APC force. Similarly, infantry could be supplemented by swarms of drones that hunt and kill ground targets. The new tanks would need to integrate these systems in a command and control capability which could reduce the logistical train and increase the ratio of fighting units in the army.

9. **EMP hardening.** Given the critical importance of electronics in modern tanks hardening against electromagnetic pulses will be a critical aspect to a defensive capability on the battlefield.

These concepts may sound futuristic, but all the elements are in use or close to deployment today. The revolution in land warfare is upon us and provides Britain with the opportunity to deploy a new and more capable military. If we fail, we will be at a serious disadvantage on the international stage. The Army should be looking to maintain current forces while fast tracking this new model and testing it against the old systems. This new force would be less labour intensive and be air portable by current heavy lift aircraft. A capability which could in future be greatly enhanced by point to point delivery by helium airships before a conflict breaks out, or larger stealthy versions of the V22 Osprey tilt rotor during combat. This could allow deployment within 48 hours to deter potential aggression in Europe.

**Design and production process**

The one large problem in this vision, is the current MOD/Army procurement mechanism, that has proven expensive and untimely. New technologies bring about new solutions and this would be no different.

Right brained innovators from the army and industry should be moulded into a team that uses 3D design technology (similar to that used in warship construction and the UK's America's Cup team) where design and testing are all done within a 3D program. Following this, the designs should be created using new, fully automated production lines that can build not only the new tank, but all its future variants. The ownership of this new company should be in the hands of the British government coupled with a minority holding from the most capable current AFV manufacturer, with technology most suited to this task. Management should be in the hands of the best and proven from industry.

# APPENDIX V: THE RUSSIAN THREAT TO THE UK

## TIME TO WAKE UP TO THE THREAT OF RUSSIAN POWER PART 1- INTENTION AND SUBVERSION


Until only recently, Britain and the West have severely underestimated Putin. NATO nations have been guilty of appalling sloppiness in not adapting their foreign policy to a resurgent Russia. The UK's recent Russia report shows how exposed British society has been to penetration and consequent subversion by Putin's oligarchs.

In addition to the Salisbury nerve agent attack (to which Britain's response was somewhat less than robust) we have witnessed regular and increasingly hostile incursions by Russian naval forces into and around British waters. How has this come to pass? Why has Britain, as well as the West, been so asleep to the rising threat of Putin's Russia?

The reality is the once-fallen empire of the USSR has again become strong. With this strength has come a policy of opportunistic, anti-Western Russian aggression.

Until 2011 Russia's economic recovery was driven by a decade long bull market in commodity production and prices, a wave Putin rode rather effectively. That decade long bull cycle was then replaced by a deflationary counter trend decline which is expected to end in the next six months with oil returning to sub $15 and the industrial metals falling below the 2020 March lows. Thereafter, in mid to late 2021, the uptrend in commodity prices is expected to resume and intensify as the current twenty-five year positive commodity cycle enters its strongest and final rally phase over the next five to seven years. The danger is the next uptrend will fuel and embolden Russia to become more aggressive in its geopolitical aspirations.

However, before this comes to pass Putin must survive a deep economic trough in the coming months. Over the past few years Russia has been hit fourfold: economic mismanagement, Western sanctions, lower oil prices and COVID. These have placed Russia in a precarious economic situation, exemplified by the Russian roubles slide. However, like many emerging nations who are commodity producing economies Russia has the advantage of its revenues being dollar based.

The Question is how will Putin survive the impending pandemic/economic trough in Russia? Indeed, an economic implosion may lead to civil unrest against Putin. Putin may well blame these problems on the Western sanctions. During this period of economic distress, Putin could use an external event to trigger a regional war to distract Russians from the internal economic decline and unite them in a common cause to save himself. This situation must be monitored as a high-risk scenario. The crisis in Belarus, ruled by a similar dictator to himself, must be of significant concern to Putin as it highlights his vulnerability in the current climate.

If Putin survives through to 2021 (the anticipated commodity low point) Russia will once more become stronger economically into 2025 as it benefits from sky rocketing commodity prices. With such an improvement in economic conditions, Russia's national energy could significantly increase. If still led by Putin, Russia may become an even more formidable threat to Britain and the West. If there is any doubt about Putin's anti-Western intentions, his track record should clarify his objectives. During his two decades of rule Putin has proven himself to be a very capable, if not an entirely dictatorial, leader. One that has placed himself and his own interests above that of the people he leads. He has survived because Russia has only ever known extreme hierarchical leadership. He appears to be driven by an ambition to restore the greatness of the old Soviet Empire and to erode the Western democracies although one dos not naturally follow the other!. He has consistently played a

sequence of very smart geopolitical hands with only limited resources. Some examples of his actions are;

**Russia's move into Syria.** This was extremely shrewd and was timed to transpire once America had withdrawn from the Middle East. This withdrawal came from the belief that America's new-found oil production gave the US immunity against Middle Eastern politics. However, America will soon be forced to return due to low oil prices. Meanwhile, Russia now sits in the centre of the geographical 'board' where it will, without a doubt, seek to leverage its position to further advantage. A vital element of this is Russian access to the Syrian naval base of Tartus, a cornerstone of Russia's southern flank.

The key motivation for Russia's annexation of the Crimea was the imperative of maintaining maritime control of the Black Sea and expanding into the Mediterranean.

Putin has positioned himself at the heart of the European/Russian relationship. He has accomplished this via Germanys' dependence on Russian energy supplies. This has effectively silenced Germanys' responses to Russian aggression.

Putin deployed a Novichok nerve agent in Salisbury UK in 2018, violating all the cold war conventions of weapons of mass destruction and effectively got away with it without UK retribution.

Putin has sought to undermine the Western structure. He has utilised cyber attacks coupled with covert manipulation of Western institutions and democratic processes using influence campaigns at every possible opportunity. This can be seen from the Scottish referendum to Brexit and the US elections.

Most importantly, Putin has chosen his targets carefully and as such achieved many of his objectives. He has held on to power in what has been a tough decade for Russian commodity revenues, attesting to his skill and control of the state. Most importantly, during the same period he has watched the West weaken on almost every front. As such Putin must feel emboldened with respect to his foreign policy and the expansion of Russian influence whist recognising that he faces a period of great vulnerability in the months ahead.

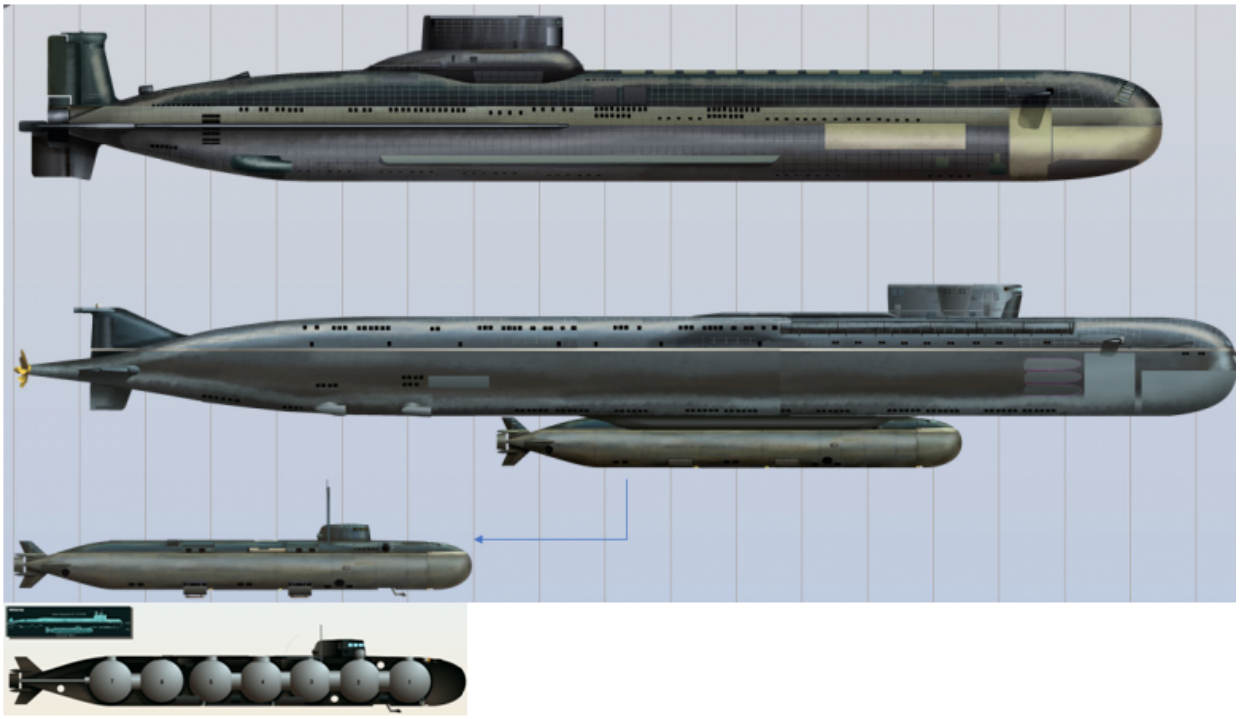
# APPENDIX V: THE RUSSIAN THREAT TO THE UK

## PART 2-THE RESURGENCE OF RUSSIAN NAVAL POWER

If Putin's geopolitical actions have demonstrated his intention, his rebuilding of Russia's military capability only adds further evidence of Russia's threat to Britain and the West. Russia's massive nuclear missile arsenal declares it as one of only two nations (soon be three as China expands its own arsenal) that could destroy humanity.

At the heart of Putin's global ambitions is the Russian Navy which, like other navies, is perceived to be the most effective means of projecting global power. During World War One and World War Two, Germany attempted to choke off Britain's Atlantic supply lines in an effort to destroy the war effort. Similarly, during the Cold War the

Soviet Navy focused on submarine operations with the same objective; to strangle Europe. Today, Putin's maritime strategy is no different. The Russian fleet has been expanding in numbers whilst simultaneously evolving its capabilities with new, effective submarines and surface ships coming into service. Both are equipped with long range surface to surface as well as anti-ship missiles, some of which are/will be hypersonic. The deployment of hypersonic anti-ship missiles will shift the balance of power away from Western navies until effective battlefield lasers come into service. The Russians have always been imaginative in their weapons development. A perfect example of this is the modified *Belgorod* submarine. This is an extensively modified Oscar II class (shown in the top image) adapted to become the longest strategic submarine ever built. Classified as a special operations submarine, the *Belgorod* possesses a multitude of capabilities including her manned deep sea 300 foot *Losharik* submarine (otherwise known as Project 10831) to gather intelligence and/or cut communications cables. It is also capable of launching Special Forces teams whilst simultaneously carrying six of the new Status 6 long range nuclear attack drones. However, the one downside to this craft is its relatively high noise signature due to the outdated exposed propellers which consequently makes it susceptible to detection from Western hydrophones.

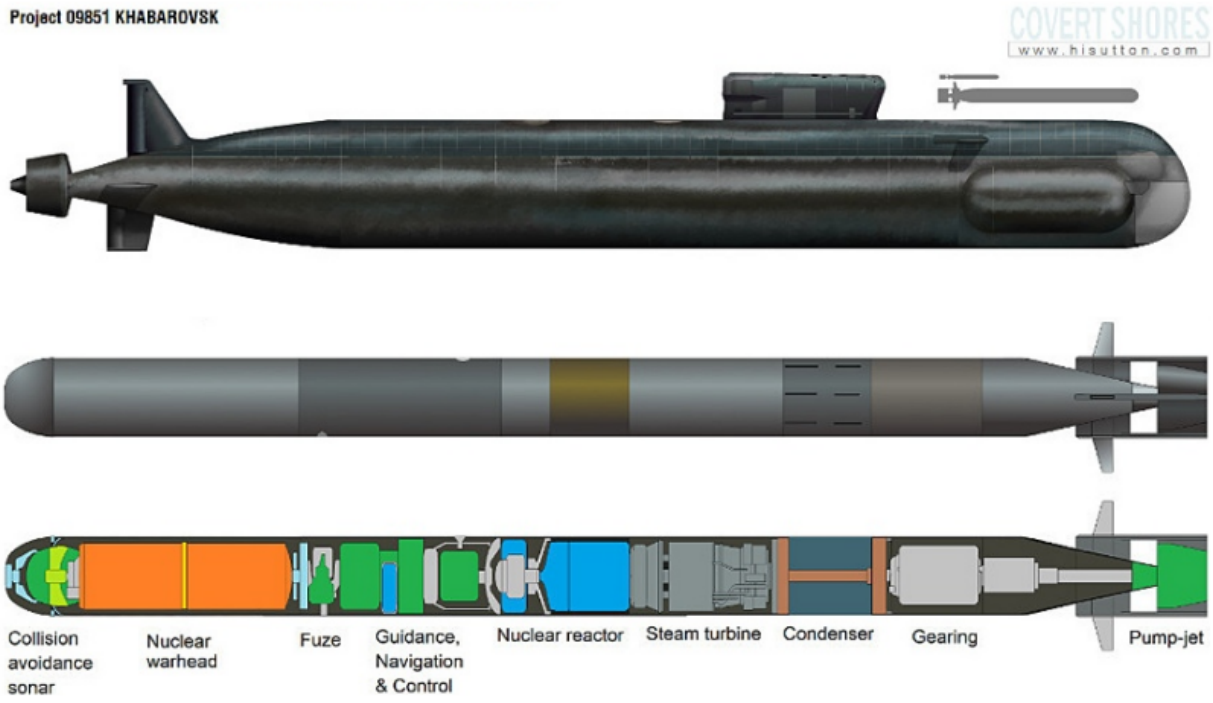


*The above diagrams show the Typhoon class submarine (top), until recently the largest submarine ever built, compared to the newly modified special operations submarine* Belgorod *with its deep diving passenger submersible*

Undersea cables are a vulnerable element of both Britain and Americas National critical infrastructure carrying some 95% of the nations international communications. As such it seems that the *Losharik* which is designed to operate at depths of 1000m,

has been designed to cut or attach intelligence gathering devices to cables as they descend and ascend from the continental shelf around the Atlantic (as it does not have the diving depth to descend to the deep ocean floors). The obvious counter measures required, will be arrays of listening devices along the edge of the continental shelf, coupled with patrols provides by Hunter Killer Subs and large long endurance drones. All of which will require significant investment. Another game changing submarine is the Khabarovsk class currently in production. These are an entirely different animal. They are based on the designs of the new and highly effective Borei class ballistic missile subs. These are the quietest submarines in Russian service. Khabarovsk will be one of four Project 08951 nuclear subs equipped with six Status-6 nuclear powered drones. Aside from being long range, these drones are also designed to evade ballistic missile defences in NATO carrier groups and littoral cities and can be used as a second strike revenge weapon. This new class of strategic nuclear delivery systems will inevitably require new defensive countermeasures along Western coastlines, especially where major cities border the sea. The obvious counter measures will be based on networks of early warning underwater listening devices and capture torpedoes laid on the seabed that can be activated to intercept the incoming Status 6 drones well away from the coast. Additionally, an effective long range coastal detection system would have the advantage of releasing the limited number of nuclear attack submarines Britain possesses for offensive operations. The inclusion of squadrons comprising of small independent conventional subs and drones would only enhance the capability a continental shelf/coastal defence network.

Alongside this expansion of Russia's submarine capabilities, the Russian surface fleet is being supplemented by a growing number of corvettes equipped with long range land attack and anti-ship missiles that out range Western Harpoon missiles. Worryingly, the result of Putin’s military investment program is that the Russian Navy could defeat the Royal Navy all too quickly.




*The above diagram shows the Khabarovsk missile submarine (top) with the 70ft nuclear drone (below)*

The NATO strategy to counter this expansion is the same as it was in the Cold War. They are attempting to bottle up Russian ships and submarines north of the Iceland-UK gap and then send submarines north into the safe basins from which the Russian missile attacks would be launched. Unlike Britain, America has been taking the Russian threat seriously and has reformed its Second Fleet to operate in the North Atlantic as it once did in the Cold War. However, what's missing is the effective presence of the Royal Navy whose ships once played a critical role within NATO by protecting the northern flank and Atlantic approaches. This was once accomplished with a world class Royal Navy possessing extensive anti-submarine capabilities. Only in the past month have NATO been forced to shadow 9 Russia Naval vessels in European waters, who presence was designed to test NATO's response. Notably over the past year there have been two similar forays (including one by submarines) by the Russian Navy, one reinforcing the pattern of threat. We can only hope that the Britain 2020 Defence Review chooses to invest significantly in the expansion of the Royal Navy before it becomes too late to deter increasing levels of Russian aggression.

By applying the analyses from the Five Stages of Empire, America, Europe and Russia should be considered old systems. Resultantly, as an old system but potential enemy Russia should be perceived as opportunistic rather than the innately aggressive and extensively expansive threat posed by China. Most importantly, it is Putin who provides the expansive national energy rather than the collective energy of a population in expansion. This is because Russia suffers from an older, declining population. Additionally, Russian human and industrial resource

bases are certainly not equivalent to the old empire of the USSR without the agglomerated nations of that fallen Empire.

To counter this threat, the West's strategy towards Russia should be one of containment through strength combined with simultaneous political rapprochement, much as France and Britain did at the beginning of the twentieth century. Although appearing unlikely, rapprochement with Russia would be based on the same calculation that Stalin had to make over Germany in World War Two. This rapprochement would have to include the Western acceptance Russian expansion, to a degree, into the old USSR's sphere of influence. The West's goal in this process is to avoid pushing Russia deeper into the arms of China. I believe it is important to note that Russia and China have become far too close for Western comfort over the past few years. Of critical importance was the sharing of Russian jet engine technology with China, a step that portends badly for the long term strength of the alliance. To allow the Russia-Chinese alliance to strengthen further would be a geopolitical disaster of monumental proportions, minimising the effect of the American Pivot to the east with its goal of containing Chinese expansion. Furthermore, I believe a major obstacle to any seduction of Russia back into the Western fold is Putin's belief that Russia's massive nuclear missile shield would protect it against China in the years ahead.

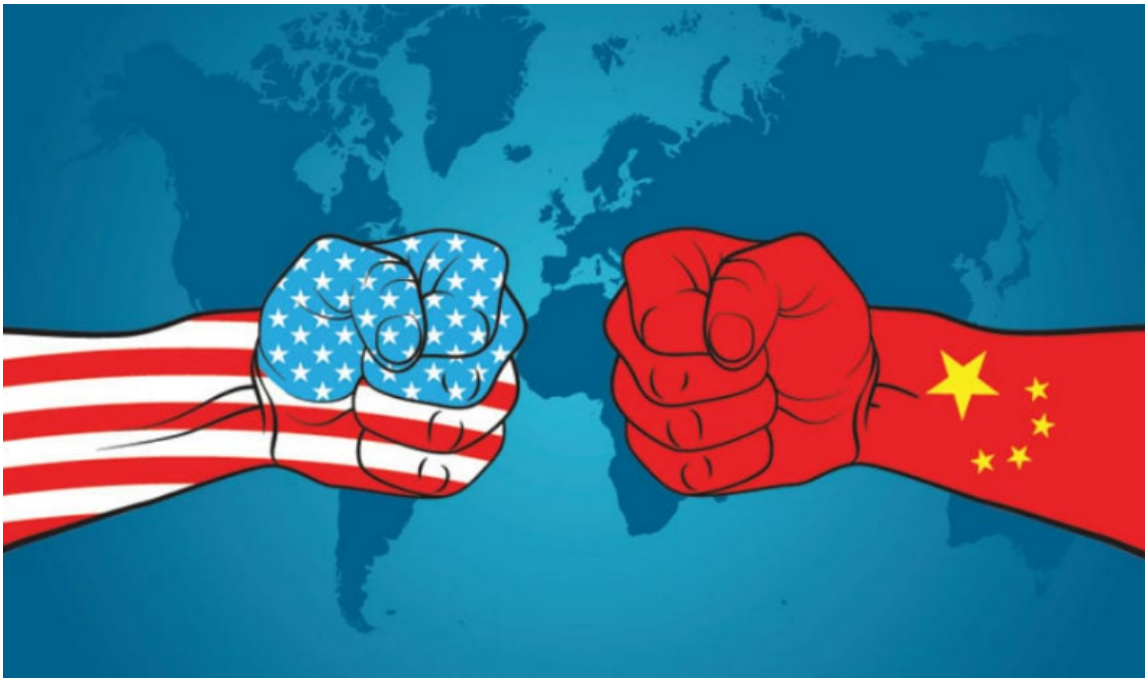
In conclusion, strong political intention supported by military capability focused towards deterring Russian aggression has every chance of working to contain Putin as long as the Western nations commit themselves to expanding their armed forces commensurately with the Russian threat. This rapprochement with Russia should be sought from a position of strength before the next commodity bull market expands the Russian treasury to the point where Russia becomes more aggressive. During any such negotiations Britain and Europe should be at great pains to emphasise their common European heritage, including the sympathy and support Russia offered America after 9/11. Most of all, they should remember the goal is to seduce Russia back into the Western fold in an effort to surround China and denude it of a major ally.

The Russians have chosen the sub sea domain as one of their preferred mediums for imposing their maritime strategy and thus it is critical that Britain recognises and matches this treat. Notably, the only nation of the old Western Christian Empire which is on the rising trajectory of its Empire Cycle is a post-Brexit Britain. As such, the stance it takes towards Russia and its future defence in the 2020 Review could well influence its allies significantly as they may be persuaded to follow Britain's example to contain Russia while turning her into a potential ally. Britain's continued complacency is unthinkable for the negative consequences that will inevitably follow. The conclusion is clear; it is time to make defence and the British industrial military complex a major spending priority.

DAVID MURRIN
GLOBAL FORECASTER

# APPENDIX VI: THE CHINESE THREAT

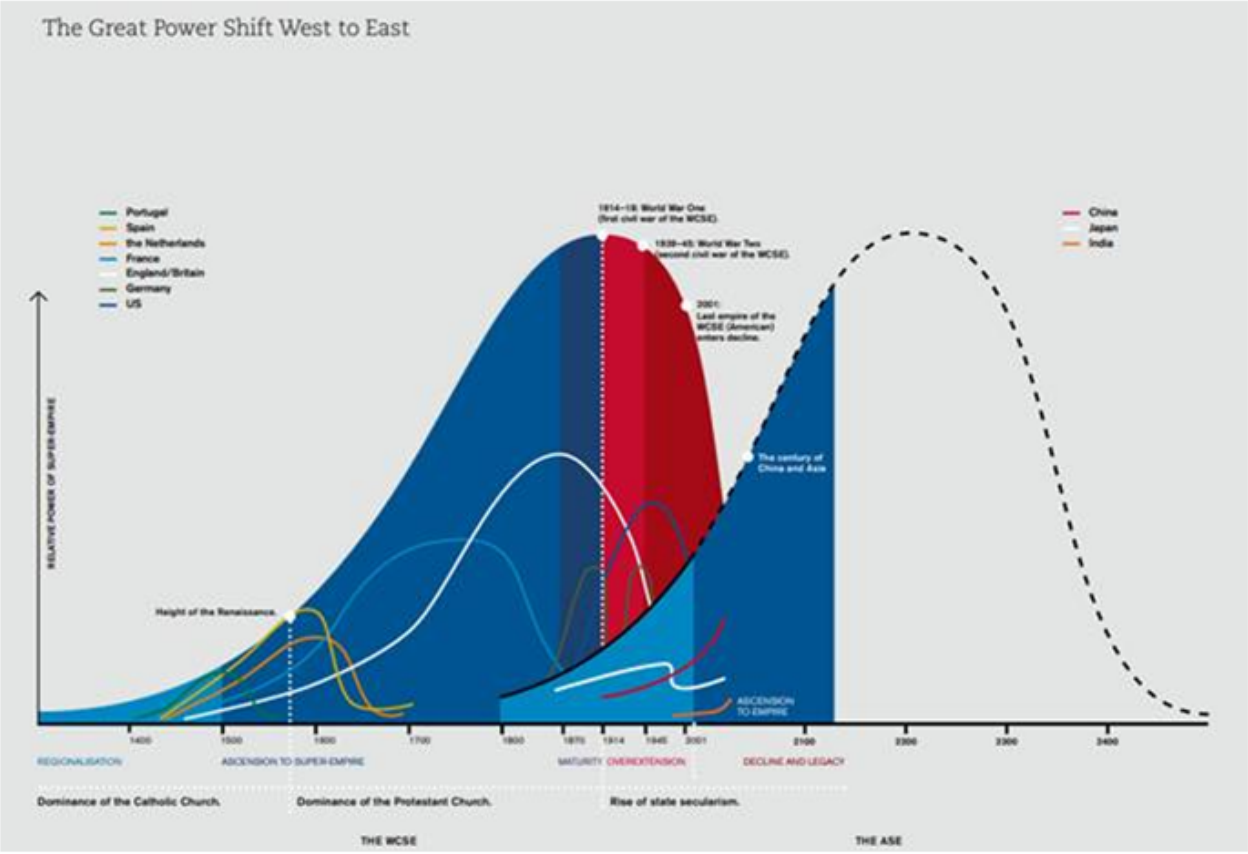
## PART1;THE GREAT POWER SHIFT FROM WEST TO EAST

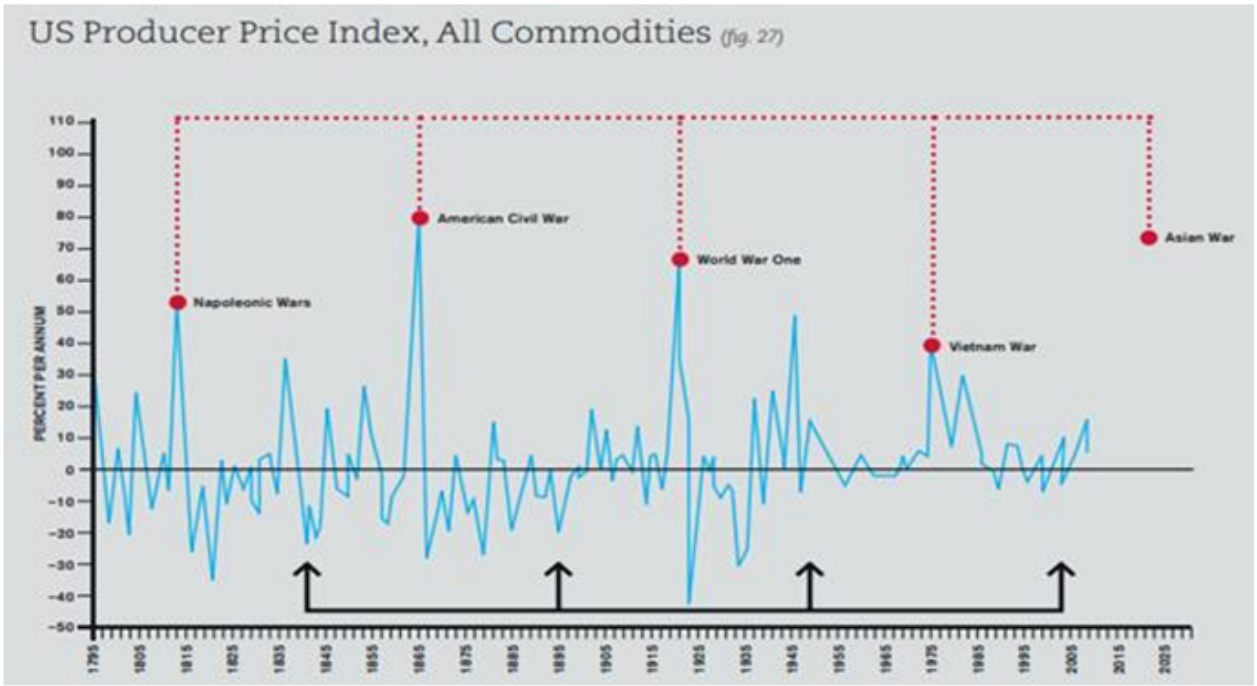


My book Breaking the Code of History published in 2009, highlighted that America was the last empire in a long series comprising what I called, the Super Western Christian Empire (SWCE), dating back to the 1400s, starting with the Portuguese. Based on my Five Phases of Empire model, I determined that America was the last of the SWCE empires and that from 2001; it had entered a state of decline, the last of the five stages of an Empire. Meanwhile in the East, China is the second comer to the Super Asian Empire and had been moving up the Five Stages of Empire curve, since the Boxer Revolution in 1902. By 1996, China had entered the second stage of expansion and as American power shrunk, China moved into the vacuum at an increasing rate.

Twenty years later, China is now the equal of America, in all but military power. The entropy tsunami caused by the pandemic will only accelerate the relative power shift as America is diminished, in a multitude of ways through the pandemic and its failed leadership, be it Trump until December or Biden as the next president. Consequently, our global world has now split into a bifurcated world. Whilst we battle against the pandemic caused by China, President Xi is planning his military acceleration and to move up a gear in his arms race with America. Every nation on earth will have to take a side. But, because of the pandemic, only a few will side with China. Thus, the pandemic has accelerated China's challenge to American power. It has been emboldened to make its military challenge in circa 2027, when the commodity prices have rebounded with a vengeance in the final phase of the K cycle which will then act as a potential catalyst to WW3.

DAVID MURRIN
GLOBAL FORECASTER



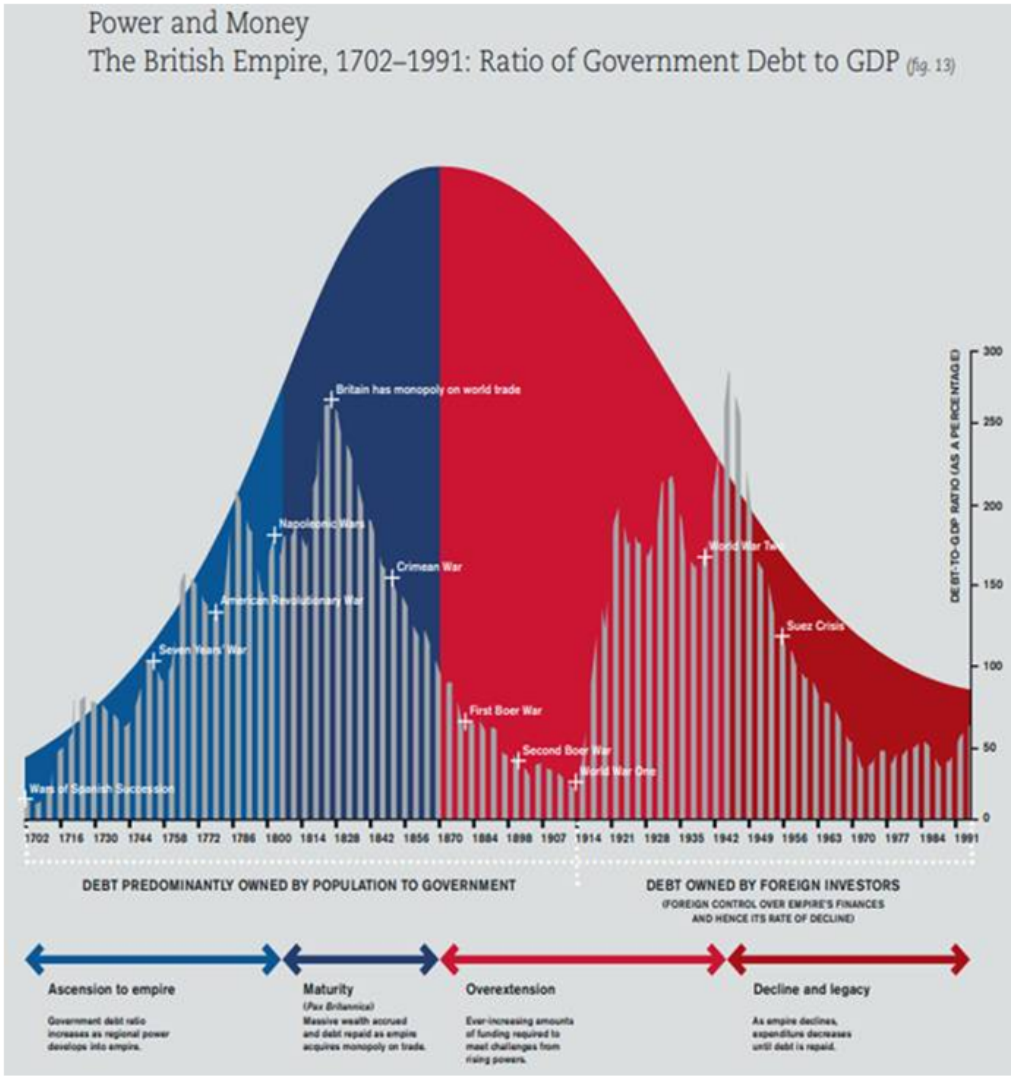




**Lessons from the Decline of the British Empire**

HISTORY DECODED TO INFORM THE FUTURE

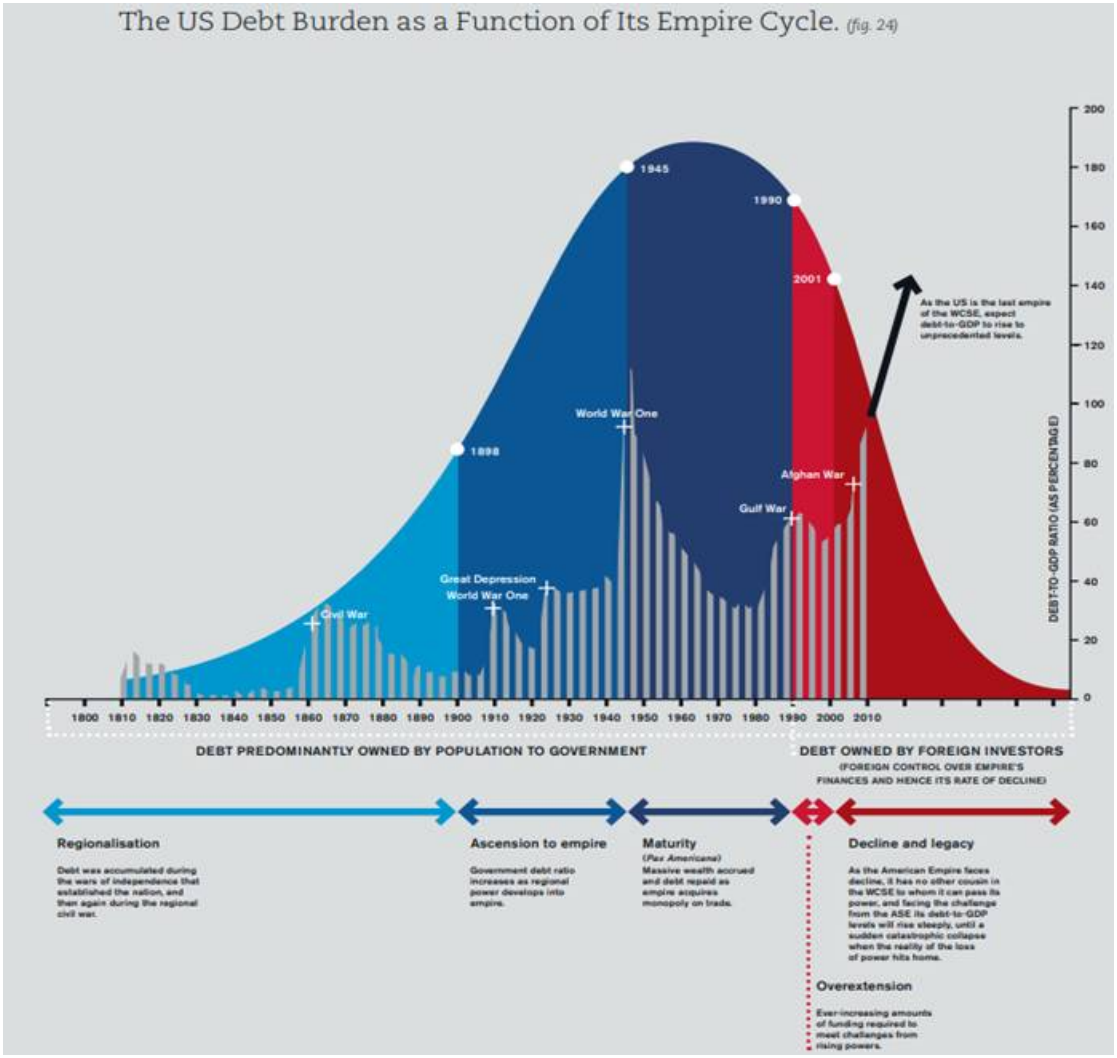
During the Five Phases of the British Empire, the debt ratios showed a double mountain pattern. The first was a healthy investment into the infrastructure of the Empire that ultimately gave Britain its monopoly. From this position it paid back its domestic debt. This is most analogous to China today.

From the second mountain came the need to leverage, to stay competitive and the money came from borrowings from the Empire and beyond, including Britain's greatest competitor and cousin America. If that sounds familiar, it is because that is America today. When Britain finally lost its Empire status during the Suez Crisis, it was America that accepted the baton of leadership. As the values were so similar, Britain gave way peacefully and the world did not change. Britain was allowed to go into retirement and in decades to come restart its cycle.




**The Decline Of The American Empire**

*Breaking the Code of History* was written in 2005 and published in 2009. I predicted that because America did not have a friendly cousin to pass the baton of power to with the SWCE, it would be forced to borrow to maintain its falling Empire and that it would do so until it financially imploded. Indeed, since the chart above US debt has increased by 250% before the pandemic (as shown below).

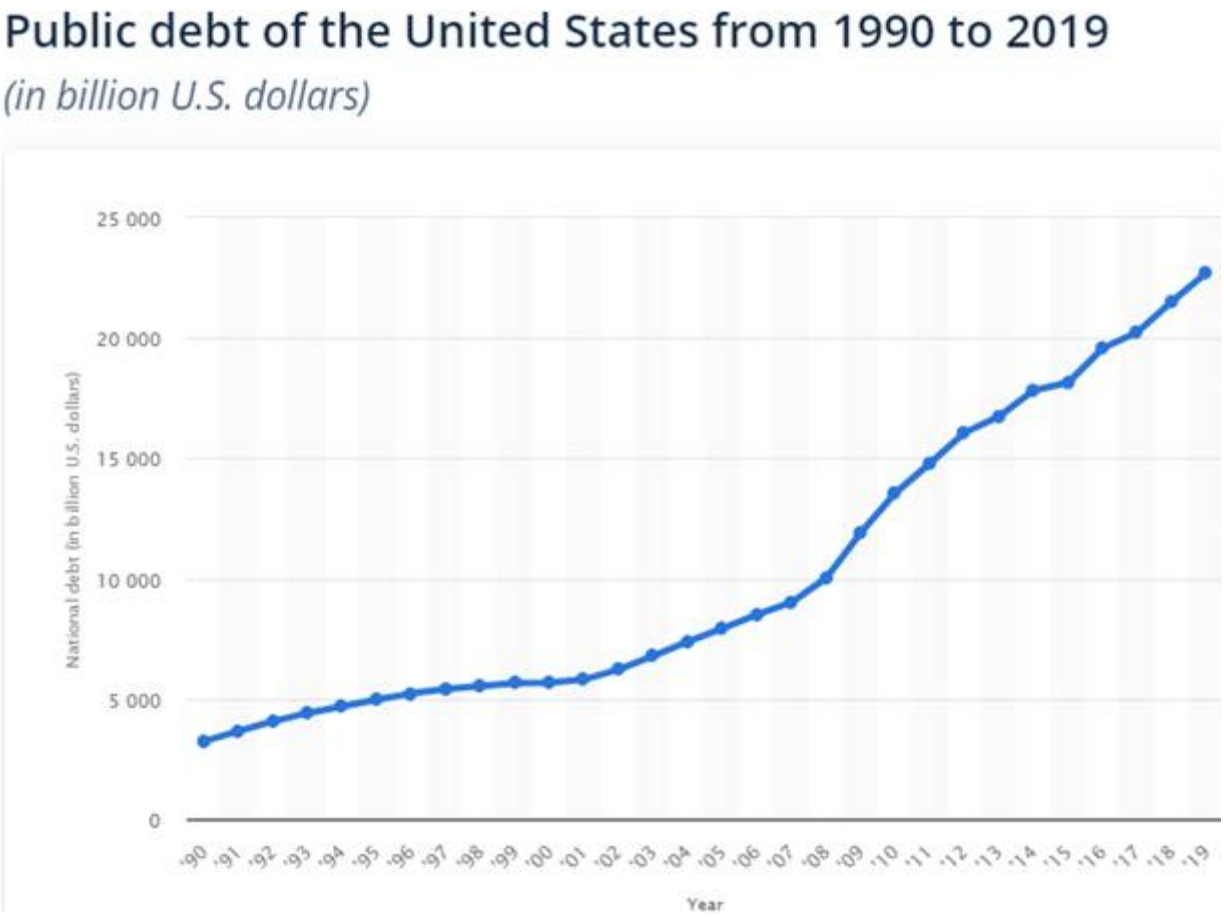



With borrowing associated with the support package through the pandemic, coupled with a collapse in national earning, the US debt is set to increase exponentially from here until a foreign power calls time. In the case of Britain, it was America during the Suez Crisis. Today, it will inevitably be China, during this pandemic crisis, seeking to gain the upper hand as the polarisation levels rise between the two sides.

There is an additional perspective. Empires always fall from the inside, until weak enough to be attacked from the outside. America's decline started in 2001, as marked by 9/11 and the underlying collapse of the tech bubble. That was Shock One. The financial crash of 2007 to 2009 was Shock Two. The remedy for these was

to increase the national borrowings to leverage diminishing annual GDP levels. This was a strategy that took us to Feb 2020 and a stock market bubble that did not reflect the real level of America's economic weakness. The pandemic is Shock Three. Systems inevitably suffer deeply on the third shock and the risk is extremely high that the financial system of America as we have known it, collapses under the stress. This includes a debt default. This is commensurate with America losing its Empire status.

Image




Although the FED has learnt from 2008/2009 and intervened early with everything it has got, it will not be enough. Thus, as the stock markets fall in Phase 3 the FED will look increasingly impotent and will lose control of the situation.

**<u>Trump Will Not Get Re-elected</u>**

In our opinion, the Wuhan Virus has removed any chance of Trump's re-election. We have maintained that whoever wins the Democratic nomination, will be the next President of America. Using our Five Phase Life Cycle, our analysis shows in the last phase of decline, an Empire's wealth distribution party achieves dominance.

Within that framework, Trump's election was an anomaly. It was a reaction to Obama's rapid eight-year power give-away. His promise of making America great again has not been achieved in reality, making him vulnerable. As a narcissist, his power to project his view of the world, with absolute belief, onto voters is his greatest political tool. However, reality has a strong probability of catching up and busting the delusional bubbles of Empires and their leaders. Therefore, we expect a reversal back to the Democratic Party. Trump's popularity will decline as time goes on. However the lack of suitability of Biden as an old man to be President in such challenging times, further demonstrates where America is on its cycle as during decline capable leadership never rises to power.

**The Demise of the EU**

The EU has sheltered under American power since WW2. Thus as America falls, so will the EU fracture from its current form, under pressure from the Virus. Italy and Spain lead the way into financial collapse. The contagion will spread to France and then the other EU nations. Then it will be every nation for themselves. The levels of co-dependency will worsen the economic plight of each nation, as they are left to fend for themselves. Meanwhile, Britain will be viewed as a safe haven.

**Time Frame?**

I often explain that geological forces that drive plate tectonics take decades to build up, but are released in only a relatively short time. After which the landscape is changed forever. Geopolitical forces are very similar. Today the Virus has catalysed and accelerated the great power shift from West to East, so by the year end, all of the above trends will be clear to everyone.

# APPENDIX VI: THE CHINESE THREAT

# PART 2;THE US-SINO ARMS RACE; SPACE AND CONTROL OF THE HIGH GROUND

Many battles in history, have taught us that controlling the high ground has always been strategically advantageous. At the start of WW1 planes and zeppelins were used for observation and resonance. By 1918, tactical air power had come of age and proved vital in turning back the Kaiser's last offensives. Meanwhile, the first strategic bombing attacks were carried out on major cities during this conflict. By the start of WW2, control of the air proved critical for success on the ground and at sea. Indeed, the first great German reversal came at the Battle of Britain. By 1945, strategic bombing, combined with atom bombs, ultimately decided the fate of the war. As the Cold War ended, the role of space became clear in disrupting the concept of mutually assured destruction. With the Star Wars initiative, space proved it could be the ultimate arbiter of any major conflict.

When viewing such a progression, it is natural that space has become the next key battlefield as we move towards a potential WW3 with China. On top of all modern communications passing through space, it is critical for effective and continuous reconnaissance. Just as importantly, all ballistic missiles must pass through space. As a result, such missiles are vulnerable to weapons positioned in space to intercept them. If America could dominate this area, combined with the current total domination of the subsurface domain, they will be in a strong position to deter Chinese aggression.

Until recently, space operations fell under the command of the US Air Force. However, in a milestone that recognises the growing importance of space as the vital

area in modern warfare, the US recently created the 18,000 strong, US Space Force. It has joined the force structure of the US Army, Navy, Marine Corps, Air force and Coast guard. This new organisation will inevitably grow in manpower and especially in budget as it seeks to control the high ground during the accelerating US-Sino arms race.


*The new Logo For The space command*

Inevitably, the weapons envisioned by Regan's Star Wars program, will come of age in the years ahead. One likely development will be constellations of nuclear-powered/chemical laser battle stations, that both protect the homeland from attack and also project power into other regions. Equipped with lasers and mirror defensive shields, they could be lethal to both enemy satellites and also ballistic warheads, as they travel through space (in space there is little matter to impede the laser's energy). This could create an anti-missile shield that completely changes the balance of power granted by the doctrine of Mutually Assured Destruction (MAD). A concept that worked in the Cold War, based on an an excess number of ballistic missiles with nuclear warheads, that would always get through to retaliate, even after a first strike. However, Russia's and China's attempts to develop hypersonic low-level missiles will still be a serious concern and threat, as they would nullify the advantages of anti ballistic missiles and a space-based laser shield. However, in warfare, to every threat, there is a counter-response, and even low-level hypersonic missiles could soon be intercepted by, faster more agile anti-missiles, lasers, and rail guns e.g. laser weapons in space and mounted on F35-Bs. These could safeguard

American power by providing top cover to carrier groups that are currently threatened by ballistic anti-ship missiles (like the Chinese DF-21).

Meanwhile, it is critical that the UK effectively builds a space command that is capable of rapid and independent launch to maintain communications and reconnaissance capabilities. Additionally, the future miniaturisation of satellite capabilities will reduce platform vulnerability by increasing redundancy, when some of a constellation is destroyed in a war. So again the key battle next will be launch capability. Thus the growth of private space companies, such a Space X, will continue to accelerate as Space Command requires more payloads to be delivered into space as this arms race accelerates.

Looking back at the accuracy of Global Forecaster predictions, made over a decade ago. The importance of space was noted in *Breaking The Code of History*; Book Of The Present; Chapter Eight: Global Military Balance; and offer it below for context.

**Space Power**

Throughout history, maintaining the highest ground has always been strategically advantageous. Thus, it was natural that space would become the next battlefield. High-altitude rockets made their debut in 1944 through the German invention of the V2, which was used to deliver one-tonne explosive warheads on London, silently and without countermeasures. Britain, the US and Russia rushed to acquire this technology as Germany was overrun, and their captured scientists were soon put to work on each side of the Iron Curtain in the ensuing space race.

The Russians were first in orbit with the launch of Sputnik-1, but it was American innovation that led the field in manned orbital missions and reaching the moon. This civilian technology was quickly translated by both sides into warhead-carrying missiles that were first powered by unstable liquid fuels, and later solid, stable propellants that allowed them to stand in missile silos ready to launch at a moment's notice. It was the Americans who built warheads that could hit targets with the greatest accuracy, initially from land-launched missiles and later, in a quantum leap, from submarine-launched missiles. Thousands of these missiles were built, consistent with the concept of MAD.

President Ronald Reagan proposed the Strategic Defence Initiative or, as it became commonly known, the Star Wars programme, in March 1983. The goal was to use advanced space technology to create a robust defence of the US homeland against a massed missile attack, thus breaking the MAD doctrine forever. The modern public remember the programme as an elaborate dream, but it did have one immediate consequence, which was to force an economically weakening USSR into a new technological arms race against the growing economic power of the US, accelerating the collapse of the Communist Bloc. The challenges were huge, but the technology that was initiated subsequently spread throughout the US military, and is largely responsible for its current relative advantage. Two decades later, some of the 'Star

Wars' concepts have been deployed in a limited capacity as a missile shield over the US

Although its defensive capacity currently only provides the US with limited protection from a few missiles, perhaps launched from a rogue state like Iran or North Korea, this is the first stage of a race to build a larger shield that only the US is running at present. As a result, it is possible to imagine that some time in the next two decades; it could become invulnerable to missile attack. This would be the first time since the peak of the British Empire when a nation could claim such security. As such, it is little wonder that the Russians and the Chinese view this development with great concern, and are dedicated to preventing this outcome

It should be said that, in the hands of the wrong country, such weapons could be disastrous. However, in the hands of a balanced benevolent state, such immunity from attack, coupled with the ability to attack with impunity, might be the one mechanism that prevents the world from launching into a future global conflict. In the context of the Five Stages of Empire model, such invulnerability would be potentially disastrous for world peace if owned by an empire in the phase of expansion, but a very different and more positive proposition for an empire such as the US, which is in the declining phase of empire – provided that it does not seek to expand its power

Today, space is a vital medium for sustaining both our modern society and our military infrastructure. The defence of vital satellites must be on the development agenda of all of these nations.

# APPENDIX VII: THE LESSON FROM MARTIME HEDEMONY

## PART 1; LESSONS FROM THE HISTORY OF MARITIME HEGEMONIC CHALLENGE

### The Age of Sail

In the ancient Mediterranean world, sea battles were decided by the size of the fleets, ramming, boarding and fire. Design innovations were incremental whilst tactical decisions and combat skills paramount. The Roman Empire was defined by it control of the Mediterranean, and its ability to allow trade to operate freely between the various elements of the empire that bordered the sea. A thousand years later the Western Christian Super Empire started to be defined by a sequence of nations who aspired to control the world's oceans, and become the maritime hegemonic powers of their time.

This process started with the Portuguese, was followed by the Spanish who extracted gold and silver from far away Latin American empires and used the oceans to transport their treasure home. Then the Dutch followed next. Interestingly it was England who as the aspiring maritime hegemony, and who adopted the cannon as a ship killer, and designed small agile warships to optimise their use. In so doing they created a weapon that allowed them to plunder and ultimately defeat that Spanish Armada. This was the moment in History when England became a maritime force to be reckoned with. Next alongside England rose the Dutch and French who all sought dominance. During that period, ship design evolved iteratively. Warships became larger and the armament more numerous and powerful. English ship design was not

as good as the French design by a relatively small margin, but the introduction of copper bottoms to the Royal Navy in 1760 and its effect upon sustained speed was a significant leap forward and had been deployed fleet wide successfully by 1780. This allowed RN ships to stay at sea for years and still maintain their speed, a critical capability with respect to blockading French warships in their ports for years during the Napoleonic wars. England's commitment to naval innovation set the pattern for rising powers to be more creative in the development and deployment of new game changing weapons at sea. This includes the harnessing of the early industrial revolution to increase the rate of ships building at Portsmouth dockyard. We will see this pattern repeated through history.

By the end of the seven years war which concluded in 1763, Britain had mastery of the world's Ocean. If there was any doubt this was the case, it was expunged in 1805 at the battle of Trafalgar when Nelson crushed the larger combined French and Spanish Fleets. For 109 years afterwards Pax Britannica followed as Britain became the first global maritime hegemonic power. It was so powerful that it adhered to the two power standard, and was capable of beating the combined fleets of any two lesser nations. This was a world were sea power was defined by sail power. The Royal Navy's power was defined by its ship design, the topography of a nation and its access to the seas along with the prevailing winds, the number of warships produced by its shipyards that had been revolutionized by the industrial revolution and the highly skilled crews that manned them. But most importantly I believe was the generational right-brained leadership which created and operated the meritocracy of the Royal Navy.

## The Industrial Age and the First German Challenge to The Royal Navy

By the turn of the century in 1900, the world had changed immeasurably following a series of industrial revolutions. Britain and its Empire had two economic challengers sailing onto the horizon. The first was America whose GDP was matching the GDP of the whole British Empire, and who having relieved Spain of all its pacific colonises in the war of 1898, now had pacific aspirations requiring sea lane control. To provide a strategic framework for their anticipated challenge to the Pax Britannica, they turned to the works of Alfred Thayer Mahan, a commander in the USN. Meanwhile, in 1896 the Kaiser having seen his grandmothers Spithead Review of the enormous Royal Navy, which was so big it could take on and defeat the next two largest navies in the world, had decided that Germany would build a fleet to challenge Britain, and the German Navy also became a student of Mahan's work.

However, at that time, Britain's lead was so great that it would have been decades before America and especially Germany could build a pre-dreadnought fleet to take on the Royal Navy. But all that changed with the onset of a new revolution in naval affairs, which almost changed the balance of power. Because in 1906 in Portsmouth

the RN launched the all big gun, steam turbine-powered HMS Dreadnought, whose firepower invalidated decades of naval investment in pre-dreadnoughts. In a flash, the naval arms race has started from a zero point and Germany grasped her opportunity with both hands. Over the next five years, both sides built bigger and bigger super dreadnoughts at a staggering pace. However whilst Britain only maintained a small army, Germany was simultaneously building the largest, most powerful army in Europe and thus by the start of 1914 it was clear that Britain had effectively won the navel dreadnought battle by building more ships (29 to 17 super dreadnoughts). The German, high command recognised the domination of the seas through a superior super dreadnought fleet was not realistic within the time frames set by the accelerating rate of the Russian armies modernization and armament. An unenviable position that would have forced Germany to have to fight both a powerful Russia and French Armies simultaneously. In addition, the increasing price of commodities was polarising Germany to become more aggressive in its aspirations.

At a time when naval warfare was going through a full spectrum revolution, with not only super dreadnoughts with all their associated technology. But in parallel the development of seaplane carriers, zeppelins operating in the maritime reconnaissance role and most importantly of all, the arrival of the submarine as its primary weapon, with its the torpedoes. It was thus to Submarines and torpedo-carrying destroyers that the Germany Navy turned their priority, in the hope that destroyers would be able to sink Battleships (which was almost the case at the battle of Jutland) and that submarines would be able to close the Trade routes to strangle Britain(and by 1917 they almost did). This is the first clear example of a challenging hegemonic power that recognised that its time window was running out to make its challenge as it could not create the superiority in what was viewed as the dominant weapons system of the day. So quite logically they turned to asymmetric weapons that could be produced rapidly. However, although they came very close they failed to defeat Britain at sea and it was Germany whose trade routes were constricted to the point where the war became unsustainable, as sea power crushed land power. In the period between the Spanish American Spanish war in 1898 at the end of the war in 1918, championed by the President Theodore Roosevelt, the USN Navy expanded at a staggering rate, such that by 1921 and the Washington treaty the USN had the same number of capital ships as the Royal Navy. This combined with control of the Panama Canal and numerous operating bases overseas put an end to Pax Britannica. Notably America given her industrial power and time (as it was isolated and secure) had built a fleet of similar size and structure to the Royal Navy and had not needed to seek asymmetric advantage. It is interesting to ask the consider that, that if Germany had not challenged the Britain maritime dominance, then it would have been inevitable that America would have done so, as prior to WW1 it was constructed assuming that it enemy would be Britain.

## The Second German Challenge to The Royal Navy

As Germany recovered its expansive ambitions under Hitler in the mid-thirties the army and air force received priority attention due to Hitler's army background. When in 1939 he recognised the need for a powerful navy to beat the RN Hitler conceived the Z Plan to be completed by 1948, which envisaged the construction of a navy to

force the RN from the oceans with four carriers and ten battleships supported by numerous cruisers and destroyers with only a small force of destroyers. Interestingly this conflicted with the four-year plan initiated in 1936 put the whole of the German economy onto a war production mode such that by 1940 it would have been bankrupt if it had not declares war and acquired new riches through conquest. Perhaps at that stage, Hitler did not think that Britain would declare war in support of Poland and that he could have conquered the whole of Europe and had time to build a navy to challenge Britain. However, Britain entered the war immediately and the RN with it. Once more time had run out which forced Germany back onto the asymmetric focus of building Submarines that became known as U Boats with the purpose of isolating Britain from its maritime supply routes. Once more on two occasions Germany almost achieved her objectives, but in the end, innovation accelerated shipbuilding and convoys saved the day. It is interesting to note the Pride of the RN pre-1939 was HMS Hood, as a beautiful battle cruiser whose design dated back to the very same battle cruisers that had fared so disastrously at the battle of Jutland. When she met the impressive German flagship Bismarck and sadly fared no better than her ancestors to plunging fire. Thus it is ironic that Britain as the incumbent maritime hegemonic power glorified a battleship that had won the previous war at the battle of Jutland, and not the potentially far more potent new aircraft carriers in its fleet. A lesson that may well echo true in today's world but this time it may well be the carrier that is being glorified. Interestingly having developed the first aircraft carriers, by the start of the war in 1939 the RN had 7 fleet carriers in service. However the development of the aviation assets aboard was far behind the RAF planes reducing their effectiveness. None the less in 1940 the Royal Navy pioneered the ascendancy of naval aviation over big gun battleships by attacking the Italian fleet at the Battle of Taranto with 21 obsolete biplane Fairy Swordfish planes nick named string bag, that were equipped with torpedoes. For the price of two planes they managed to cripple three Battleships. It was the success of this attack that gave the Japanese the idea to pre-emptively strike Pearl Harbour a year later. However the RN seemed to have not fully digested the venerability of their battle ships, when three days after Pearl Harbour the most modern RN battleship HMS Prince of Wales and the HMS Repulse, were sent along the coast of Malaysian to repel an invasion, without air cover. They were attacked by Japanese land based plane and both were both sunk in short order. Hence forth the carrier reigned supreme in the pacific theatre of war.

## Japan Challenge to The US and Royal Navy

As an island culture, the sea had always been vital to Japan, but as it expanded post-1868 following the Meiji Restoration it feel under the wing of the royal navy who helped build it navy into a modern fighting machine, such that its defeated the Russian in 1905 at the battle of Tsushima, confirming the Japanese as a regional power. So much so the RN withdrew its ships from the region, to focus on Germany whilst its ally Japan policed the seas in the region. By 1930 Japan's expansion had continued apace and results in the invasion of Manchuria. Meanwhile, the Japanese navy had continued to expand. Whilst the old school within the navy sought to build battleships, as in their mind they represented the challenges to the established old powers. The ultimate product was the two greatest battleships ever built, the Yamato

and Musashi equipped with 18-inch guns that out ranged any other battleship ever built. But in the end, they had a minimal effect on the war except the took away resources from building at least four more carriers that could have tipped the balance in Japan's favour early in the war. Simultaneously there was a new school led by the great admiral Yamamoto who envisioned carriers as the ideal arm to challenge the RN and USN for control of the Pacific. By Pearl Harbour, the Japanese navy was the third most powerful in the world behind the US and RN. But most importantly it had built and trained the largest most capable carrier force in the world that almost allowed it to beat the RN and USN. Indeed if it were not for the two pacific based American carriers being out of Pearl Harbour and on exercise when the attack came, and some bad judgment and luck at Midway Japan's challenge might well have been successful. Once more the challenging Hegemonic maritime power had adopted asymmetric and new weapons to tip the conventional balance in its favour and almost won. Ironically in order to win the war the USN and RN both built over three times as many carriers as the Japanese, and in the process established the carrier as the new dominant weapon of hegemonic

**The Cold war and the USSRs challenge to the USN and RN**

As a land power, the construction of a Soviet navy to challenge the US Navy head to head was never going to happen. Especially as carrier operations were so intricate and complex in the age of jet fighters. Wisely Russia put its store in new submarines designed to isolate Europe for America, and in time as long anti-ship missiles came of age, they adopted saturation attacks aimed to kill carriers as their primary weapon. However, by the end of the cold war USN anti-missile technology was both effective and deployed across the fleet such that the threat had all but been negated. Thus the carrier remained the queen of the seas.

**Chinas Hegemonic challenge to the USN**

Over the past two decades, China like Germany beforehand has sought to build a navy that can meet the USN head to head. Initially with a regional focus out to the two dash line, and later with a global blue water focus. At the forefront of that objective has been the building of six carriers of sequentially increasing size and complexity along with accompanying new maritime fighters. However, this is a long hard development path even for China. As the technology is complex and America's lead is significant. The USN's lead has been cemented with the arrival of the F35 B, which will turn the nine USN assault ships into medium-size carriers- effectively enlarging the US Fleet to 20 strike(11) and assault carriers(9). With this in mind, the Chinese recently announced that they were slowing down their carrier program, as like the Germans before the two world wars, the Chinese have realised that a head to head struggle will ensure defeat. Instead they should be expected to use their carrier fleet to create regional, rather than a blue water force concentration, perhaps around landing zones.

So with such a change in direction, learning from history and the German and Japanese challenges, we should expect the PLN to focus on the asymmetric

weapons that could still give them control of the world's oceans. In terms of the time frame that the PLN has to manifests its ambitions for hegemonic control, I believe that it is in the next decade for three reasons.

- Chinese demographic decline coupled with 56% male to female ratios.
- The Rise of India behind China(much like the rise of Russian in the lead up to 1914)
- The expected commodity peak into 2027

So what asymmetric options are open to the PLN?

Firstly they might consider submarines, especially having built a large fleet already. But in truth, their technology is far behind that of the Americas, although localized numbers would give them a potential advantage around shallow choke points. Stealthy AI-controlled Drones and automated attack systems built in large numbers are definitely a potential avenue of asymmetry. But most significantly their new ballistic missile ship killing technology that is relatively cheap and that could with advances in range and the addition of hypersonic warheads have the ability to kill even small corvettes at ultimate ranges of 7500 miles could be the game changer the PLN is seeking. If these weapons are built in great numbers and become hyper-accurate then they could deny the world's ocean to any other power. These systems combined with long-range air and ship-launched missiles fired in swarm attacks could add greatly to the potential of the PLN, in p become the next maritime hegemonic power. This is a potential asymmetric threat to which at present the USN will become increasingly vulnerable until anti-ballistic and anti hypersonic weapons become widespread across the fleet. This will most probably take the form of lasers on ships, and F35B s flying high above the fleet and clouds to create a reliable top cover. If such long-range anti-ship ballistic missiles do come of age, then not just carriers but also merchantmen will have to be protected in convoys and like in previous wars, escorts ship in the form air warfare destroyers will be hard-pressed unless they are deployed in larger numbers than the present. There is one other revolution that is progressing incredibly rapidly and which could have far-reaching impacts on the military balance. That is quantum technologies. There are three distinct areas

1. Quantum computing is an area that is led by America but is a private rather than military innovation. Its advent represents a computing revolution on multiple levels. Not just in terms of processing speed, but also in terms of the way it solves problems such as new material design. This would allow in a matter of year the designing of a metal that is able to withstand the heat of the multiple launches of a rail gun. This technology could also in time be the key to creation of synthetic conscious life.

2. Quantum communications. The technology to send secure communications, such that if the signal is interfered with it the message is destroyed, and thus safe reception means the signal is intact. An area led by the Chinese and already been tested.

3. Quantum sensing. The area is potentially the most impactful on the military power balance. Entangled radars that can see stealthy targets and hypersensitive galvanometers that can detect submarines passively whilst submerged are but a few applications that could be game-changing.

**The lesson from the history of Maritime  Hegemonic challenge**

The prime lesson is very simple, that whilst the incomberent hegemonic power invests in the weapon system that allowed it to rise to power, the challenging hegemonic power that is constrained in its expansion by certain variables, will never have the time or resources to create head to head superiority. Instead they will always adopt newer more innovative weapons that could overturn the balance of power.  Undoubtedly, in today's world China's naval innovation is the greatest source of potential threat to Pax America.

# APPENDIX VII: THE LESSONS FROM MARTIME HEDEMONY

## PART 2; GLOBAL HEGEMONY REQUIRES SHIPBUILDING TO CREATE A DOMINANT NAVY


In Part 1, Global Hegemony Requires Shipbuilding To Create a Dominant Navy I raised the alarm that global navel hegemony is dependent on shipbuilding capability and that China has overtaken America by a significant margin. However, the significance of this shift has been outlined in a report by the National Defence Industrial Association (NDIA) in America.

The US currently builds some 10 warships per year. In an emergency, this could be doubled to 20 per year, with a full industrial mobilisation. This includes major repairs from combat damage. Thus, in a naval war in the Western Pacific, if the Chinese could sink more than 10 ships per year, the US Navy would contract. The key weapons that the US navy fears the most, are the ballistic anti-ship missiles, the DF-21 and DF-26 (with a range of 3000KM Plus), of which there are many hundreds. It is estimated that a barrage of 50 missiles could saturate the defensive screen and kill a single US carrier. Then there are the mass of long-range anti-ship, sea-skimming missiles, deployed from on ships and first island chain bases, that will soon to be upgraded to hypersonic weapons, posing a very significant threat. Lastly, there are the 70 PLN submarines, where although the majority are conventionally powered, when lying dead in the water they are extremely hard to detect. As the USS Kitty Hawk found out when one surfaced in 2006, well within strike range only five miles away from the carrier group. Thus it is safe to say, that the USN would, without doubt, suffer losses in the opening stages of an engagement that would exceed its shipbuilding capability. Although the US mothball fleet could, to some degree, fill the losses, the longer the struggle, the worse a position the US Navy would find itself.

Whilst the US Navy would no doubt inflict a severe toll on the PLN, the Chinese shipbuilding capability is based on over 50 yards, compared to 14 in America today. This has major implications for a sustained conflict that would favour the PLN. With today's high-intensity weapons, an attritional war is unlikely. Rather we would more likely see a short but highly intense conflict, followed by a period of recovery that with differential build rates could shift the balance of power in the PLN favour.

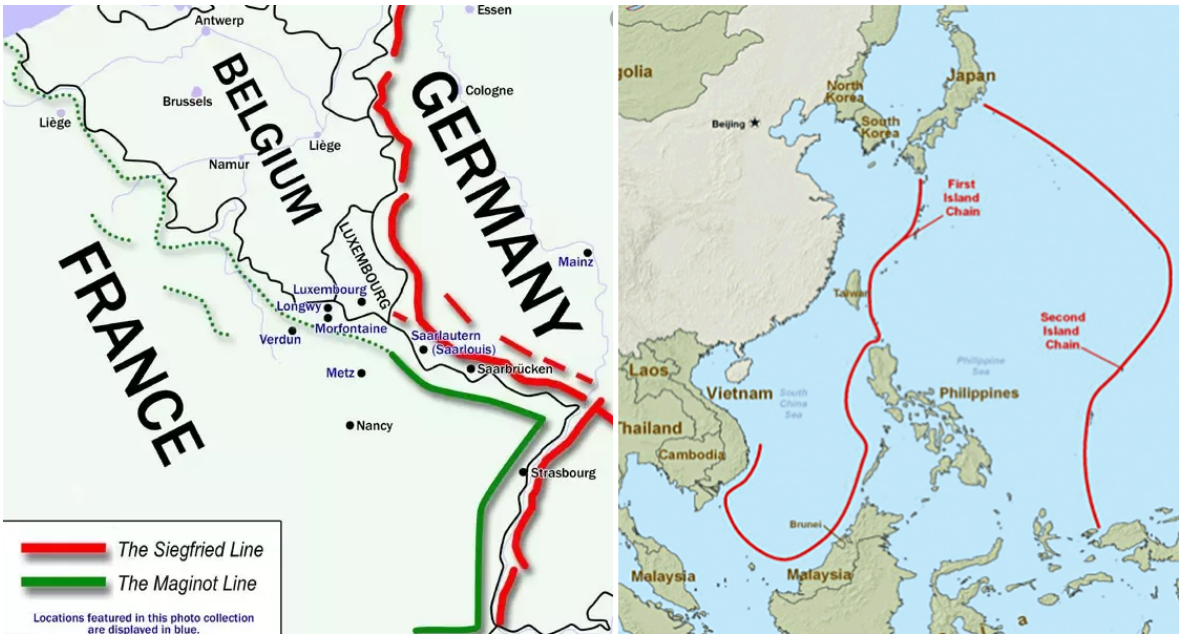
However, more immediately, as the arms race takes off in the weeks and months ahead, the Chinese will seek to out build America. Today, both fleets roughly number 300 ships, but the PLNs average ship size is much lower, a characteristic that better distributes lethality across platforms, rather than concentrates it. The US ships carry some 12,000 missiles, compared to the PLN with 5,200 missiles. In the next seven years, it is not difficult to see the PLN expanding by 50% to 450 ships.

Of course, the allies of America: Japan, South Korea, Europe, Australia and India, all have shipbuilding capability that could be engaged in a ship building race, to balance the equation, especially if a strong alliance existed to contain Chinese aggression. Meanwhile, in this rapidly evolving world the British strategic defence review of the Royal Navy, needs to recognise that it is completely outmoded, much like the story of HMS Hood pre 1939. It lacks numbers and has no anti-ballistic capability, which means it cannot operate independently of the USN, when facing China. Whilst its so-called strike carriers are in reality very large escort carriers, because the F35B, does not have the range to attack land targets, without the carriers coming into harm's way, from new long-range surface to surface missiles.

With the regional balance of power shifting in favour of the PLN, at least out to and beyond the first island chain, it explains why Xi has been so confident in his aggressive expansive behaviours over the past months. The only conclusion to be made based on the current trends is that unless the West steps up to the challenge and matches, Xi's arms race and counters his expansive actions we are on a clear road to a very grave regional if not global conflict this decade.

# APPENDIX VIII: THE LESSONS FROM THE CHEELENGE OF NAZI GERMANY TO CHINA

## PART 1;THE STRATEGIC AND GEOPOLITICAL PARALLELS BETWEEN CHINA'S FIRST ISLAND CHAIN AND HITLER'S SIEGFRIED LINE




In today's rapidly shifting geopolitical landscape, lessons drawn from history are more vital than ever. In my new book, The Road to Wars, I discuss the algorithmic expansion of an aggressive and aspirational hegemony. I utilise both past and present to better understand and predict Chinese intentions and actions. Having done so, I can honestly say history really does repeat itself. Once Hitler reoccupied the Rhineland and constructed the Siegfried Line he became much more overt and aggressive his expansion. Similarly, with the bulwark of the First Island Chain firmly in place, Xi has become equally as aggressive and overt in his ambitions.

### The Significance of the Siegfried Line To Hitler's Expansion Strategy

Hitler's Third Reich was an excellent example of algorithmic expansion from a military state. As Bismarck noted, Germany was forged in the fire with the Austro-Prussian War of 1866, the Franco-Prussian War of 1870 and World War One. Having failed the first time, Germany's second great challenge for power commenced in 1936 with the re-occupation of the Rhineland. This act violated both the Treaty of Versailles and the Locarno Treaties. Debatably, it was the critical moment when Hitler realised France and Britain would not act against him, despite these countries possessing vastly superior military capabilities. The geopolitical

implications were that once the Siegfried Line was constructed to protect the western flank of the Rhineland, France could not link up with its allies (Italy, Czechoslovakia and Poland) to contain Germany. This was a clear signal to Hitler, that France, as well as the continent of Europe, could be Germany's for the taking.

Image


*The tank traps of the Siegfried Line*

So, why did France and Britain fail to act? Why did France and Britain allow themselves to become so vulnerable? The main reason was that both were in decline. Following World War One and the Wall Street Crash, they were economically exhausted. To compound this France was gripped in a financial crisis as the franc struggled to be linked to the gold standard. This highlighted French economic and industrial weakness. This mindset is of great relevance to the current Wuhan pandemic, its economic impact and that mindset potentially disabling a decisive American response.

Emboldened by the Rhineland reoccupation, Germany began to support Franco in the Spanish Civil War from July 1936. Again, France and Britain did nothing. Encouraged by the lack of opposition, Hitler annexed Austria in 1938. Thoroughly emboldened after this event, Hitler aimed his sights on the Sudetenland in Czechoslovakia where a minority of Germans lived. Ultimately, Britain and France

acquiesced and agreed to the annexation of the Sudetenland in an effort to appease Hitler. Chamberlain came home to echo the deluded words “Peace for our time”. Only a year later World War Two began.

The lesson is very clear. Unless an expansive, aggressive totalitarian state is deterred from the outset it becomes emboldened and strengthened with each acquisition. In essence, the fear of war starting on behalf of the established hegemony precipitates the very outcome they seek to avoid. Deterrence backed by military capability and a strong political intention to act is the only historic measure that has proven effective in preventing wars.

**China’s Siegfried Line - The Island Chain Strategy**

Let us roll the clock forward to the present and China’s aggressive hegemonic aspirations. First and foremost China, like Germany, has been forged in fire over the 20th century. It began with the Boxer revolution of 1902 and rolled into the Civil War of 1927-1950, the Korean War of 1950-1953, the Taiwan Straits Crisis of 1954-1958, the Tibetan uprising of 1959, the Burma Border Wars of 1960-1961, the Sino-Indian War of 1962, The Sino-Vietnam War of 1979-1991 and the Third Taiwan Straits Crisis in 1996.

However, the most notable similarity between German and Chinese expansion is the implementation of the Island Chain Strategy. Like Germany, China is blatantly violating an international agreement on the placement of military forces. The building of a chain of military bases constructed from coral atolls have effectively annexed everything within its arc. In Germany's case, the Rhineland was both a block to France and a key resource to build up the industrial-military complex. Similarly, the Chinese Island Chain Strategy is a mechanism to gain control of the access to the world's oceans. At the same time it pushes the US Navy back to a distance that protects the Chinese mainland. It also increases China's natural resource base and places the productive power of the Far East within Chinese control. This resource base includes Taiwan, South Korea, and Japan. For China, this represents the first vital step to becoming the next global maritime hegemony. Sadly, like with Germany, the West has done little to stop the expansion.


*A First Island Chain on Mischief Island*

**The Chinese strategy in regard to the first, second and third island chains are as follows;**

The First Island Chain begins at the Kuril Islands and finishes towards Borneo and the northern Philippines. The key part of the first chain is Taiwan, occupying a strategic position in its centre. Controlling Taiwan can effectively cut off the strategic choke point between the East and South China seas. It also provides a convenient channel to the Second Island Chain, as well as to the rest of the Pacific. Because the island chain is built from a series of landmasses, it is also called the "unsinkable aircraft carrier". This is especially prevalent in the case of Taiwan.

The Island Chain Strategy holds strong echoes of Japan's strategy to control the region against the US Navy in 1941. The PLN and PLA view the First Island Chain as the area it must secure to deny access to US aircraft and aircraft carrier groups. The doctrine aims to seal off the Yellow Sea, the South China Sea and East China Sea inside an arc running from the Aleutians in the north to Borneo in the south, buffering the Chinese mainland from attack.

The Second Island Chain refers to the island chain formed by the Bonin Islands and Volcano islands of Japan, in addition to the Mariana Islands which are United States territories. If secured, it will act as a second strategic defence line against the United States. If this is accomplished, it will push the US Navy carrier and strike groups far enough away to become impotent against the Chinese mainland.

The Third Island Chain is the final part of the strategy. It begins at the Aleutian islands and finishes up in Oceania. The key part of the Third Island Chain would be the Hawaiian Islands of the United States. This would then constrict US power and place it back on the defensive, providing a launch pad from which the Western seaboard could be invaded.

China's construction of atoll bases (with dubious legality) is of a similar magnitude to Germany's reoccupation of the Rhineland. In essence, it inhibits America's ability to support its allies within its boundary of the First and Second Island Chains. This is just like the French being unable to support their Eastern allies after 1936 due to the annexation of the Rhineland. Xi, just like Hitler, will be emboldened by Western inaction and continue to make aggressive moves. If we are to avoid war and a repetition of history, America must redouble its commitment to deterring Chinese expansion and aggression in the Pacific region. If that fails, it needs to act decisively to reverse any Chinese invasion.

One thing is for certain. China will only narrow the military capability gap between itself and America with every passing month unless America takes drastic steps to increase its military capability and size.

**US Chinese Polarisation is accelerating**

Just as the polarisation between Germany, Britain and France increased post 1936, history is replaying the same tune with China.

As we highlighted in The Acceleration of US-China Polarisation, the polarisation between America and China is both alarming and inevitable. New examples are splattered across our headlines every day. America is fully engaged in the process of reactionary secondary polarisation. Examples of this include Trump blocking future US investment in China, the US forcing Britain not to use Huawei 5G technology and Pompeo encouraging Israel to limit military technology exports and trade to China. Pompeo has also correctly stated publicly that China is a danger to the free world. This is all transpiring as we predicted with lawmakers in America preparing to make China pay for its actions around the spread of the Wuhan Virus. In the Senate, Republican Linsey Graham has introduced the COVID-19 Accountability Act which paves the wave for sanctions, asset freezes and travel restrictions against China. Ultimately, I suspect this will include Chinese treasury holdings.

The key point is that the US-Chinese polarisation level is currently at a stage where we are migrating to full economic bifurcation. With this progression, the risks of a proxy conflict are increasing significantly. Let's hope that American political intention and military capability is sufficient to act as a better deterrence than the French hubris of the 1930's.

# APPENDIX VIII: THE LESSONS FROM NAZI GERMANY TO CHINA

## PART 2 LESSONS FROM HITLERS 4 YEAR PLAN APPLIED TO CHINA TODAY


**The Past - Hitler's 4 Year Plan**

Looking at several situations across history, it is fascinating to imagine how events would have changed if a given faction had understood the true intentions of another. Perhaps this would have led to different courses of action which may well have prevented multiple conflicts. One prime example of this is the lead up to World War Two from 1936 onwards. This was a critical time in Hitler's' expansionary plans where the demilitarised Rhineland was reoccupied, something I explore in further detail in Lessons From French Failures in 1936 Applied-To China Today. From that point onwards Hitler determined that France and Britain, the major continental powers that he believed would oppose him, were weak and would fall Germany expansion. Arguably, this was directly as a result of their lack of opposition to Hitler's expansion into the Rhineland. Following this mindset Hitler commissioned the Four Year Plan. This simultaneously accelerated Germany's rearmament and prepared the country for self-sufficiency to prevent economic strangulation at the hands of a foreign navy.

The Four Year Plan greatly helped revitalize the German economy and significantly reduced the 30% mass unemployment. Germany also took advantage of low interest rates by borrowing large sums to fund it's national expansion. Initially it was led by Hjalmar Schacht, president of the central bank under Hitler who became finance minister in 1936. Schacht was replaced in 1937 by Hermann Goering. Under Goering, imports were slashed. Wages and prices were controlled and enforced under a penalty of being sent to a concentration camp. While state intervention led to full employment, real wages dropped by roughly 25%. Government financing became the predominant investment process and private securities fell by over half from 1933-1934 to 10% in 1935-1938. Thus, Germany's economy had been transformed into a state-controlled war economy where the main output was

weaponry. Therein lay the catch; unless they then used their output (weapons) to fuel further expansion, Germany would have gone bust. This is something that happened to the USSR in 1990.

After examining this evidence, I believe that from the moment Hitler committed Germany to the Four Year Plan war was inevitable as the alternative was a financial crash.

If Chamberlin had known there was such a critical economic imperative, there is little doubt that his concept of "Peace in our time" could ever have existed. Instead, Britain may well have accelerated her war preparations along with France. Following this course of action, the result could have been an intimidated and deterred Germany.

**The Present - Chinas Five Year Plan**

Looking at China today, it has similar expansionist energy related to the Second Phase of it's Empire Cycle. Like Germany in the post-1929 Wall Street Crash, it is also in a similar state of economic contraction. Having noted this, I do not expect a regime change as the CCP is firmly in control. The pandemic has accelerated the shift from a manufacturing, export driven economy to one that will become more self-contained in parallel to the Third Reich. I believe the obvious consumption gap will be compensated for by a Chinese Five Year Plan that will utilise surplus manufacturing to fuel an arms race and prepare for a global war by 2025.

As part of this process I expect to see the Yuan appreciate considerably as a reflection of the relative power of China versus America. America will be happy to weaken its currency to stimulate exports and manufacturing as it fills the void left by China. As this occurs the Chinese will be happy to increase their currency's buying power to acquire raw materials for their economy. Internally, I would expect the CCP to do all it can to reinflate the housing bubble as it is the main source of value for households in China (real estate represents 75% of household wealth in China compared to 28% in the US). This means China will seek to integrate its state owned companies with its innovative private sector to maximise economic growth. However, without external investment China will ultimately become a militarised, state-controlled economy just as the Third Reich once did.

If there is one lesson history teaches about states in their Second Phase of expansion (as China now is) it is that the greater the internal economic pressures, the higher the probability of aggressive expansionary behaviour to solve the problem. Japan in 1931 is an excellent example. Like Germany, the depression in Japan was so severe that the country went bust. It was forced to abandon the gold standard and float its currency which consequently depreciated so that Japanese buying power dried up. The terrible economic conditions and large wealth gaps led to fighting between the left and the right. By 1932 this had resulted in a massive upsurge in right wing nationalism and militarism to forcefully restore order and bring back economic stability. This only reinforced the path that propelled Japanese

expansion in 1931 with the invasion of Manchuria to acquire both natural and human resources.

The lessons from history are very clear where China is concerned. It has initiated it's own Five Year Plan that, like Nazi Germany's, will then force it to use its newly acquired military power to expand and pay back the investment. With such internal dynamics in play, Western politicians must understand that the only way to deter what is now an almost inevitable World War Three is to match China in the current arms race and deter aggression. While this is being accomplished, China's natural resource chains must be constricted as soon as possible to limit growth before it possesses the military capability to protect them.

If Chamberlin were alive today, what would he advise Western leaders to do? Follow the same path of appeasement that led to war?