

The Defence Strategic Review released on Monday identified uncrewed submarines as a critical capability in a welcome development for the Speartooth's developers, C2 Robotics.

The review's demands for more innovation, a greater appetite for procurement risk and more rapid development timelines are also a win for the company, which believes the drone is close to being ready for operational deployment.

C2 Robotics founder and chief technology office Tom Loveard said the Speartooth had recently been put through extensive testing with the navy and was "progressing really quickly" as a capability.

"We have just completed ... significant trials where we've operated fully autonomously in longer navigation runs. It's definitely a real thing and we're progressing towards production now very quickly," he said.

Named after a rare river shark found in northern Australia and Papua New Guinea, the Speartooth is designed to be expendable so it can be used for "one-way" missions, if necessary.

Dr Loveard declined to reveal a per unit cost but it's believed tens of thousands of the autonomous subs could be bought for the price of one nuclear-powered submarine.

"Five or 10 of these systems isn't going to make a big difference to the operational picture but if we have really large numbers of these – hundreds if not thousands of them – they're going to make a big difference, in my view," Dr Loveard said.

The underwater drone has been funded for \$4.6m by the navy's undersea warfare innovation branch. The funding is far less than that provided to US tech billionaire Palmer Luckey, whose Anduril company has secured \$77m from Defence to build three 30m "Ghost Shark" prototype drones for the navy.

Dr Loveard said the Speartooth was a much smaller vessel than the Ghost Shark, and likely to undertake different sorts of missions.

He declined to comment on what those missions might be, citing operational security.

Similar systems are being designed, however, for an array of lethal and non-lethal tasks, including underwater intelligence collection, sea floor mapping, sea mine deployment, and attacks on enemy ships and submarines.

"We can put them in harm's way; we can do things with them that you would never ever want to do with a manned vessel," Dr Loveard said.

The vessel has a high level of autonomy because radio communications don't work underwater.

"Once it goes below the surface, it's in control of all of its navigation," Dr Loveard said.

Defence Industry Minister Pat Conroy said underwater drones "will increase our navy's capacity to protect our maritime interests".

"Partnerships between Defence and industry are vital to turning Australian innovation into world-leading sovereign capability, strengthening our local defence industry as well as our national security," he said.

Defence said it was working on a number of autonomous underwater systems, including with C2 Robotics.

"These types of initiatives are being pursued through experimentation and trials, such as the Autonomous Warrior series of activities recently held in Jervis Bay, NSW," a Defence spokesman said.

Anyway that got me pondering a Question I was asked back when the Frigate tender was out and about **WHAT IN A SKIMMER SCARES A SUBMARINER?** The answer then was: not much, except that a submarine could be pretty well assured of coming second in a collision with one. And that takes me back to a chat with JJ Cupples and James Harrup when I first tried to put a couple of gliders on the GSL when the SLACE was in the place - JJ came in late and quickly asked what happens if I hit one - reply - it comes second and he said do it. SO - that prompted me to ask myself 'If they come second if you hit one, What in a gang of AUV, USV, UUV could scare a submariner?' and then what else could I do with them to collect material for ACINT, ASW OPS, and just general skulduggery. And seeing C2 Robotics raised the issue once again, AT WHAT COST versus what we do and don't do now.... So being retired (very busy doing knock all -it's hard work I tell you) that might take me a day or two to start knocking up - and roll in the EEDCL which immediately

sprung to mind and then the EEDCL took me straight to loitering munition and loitering munitions to me to fast reliable supply ha.. This is going to be fun.

AUSTRALIANS SHOWED FRANCE HOW TO DISMANTLE A SUBMARINE CONTRACT SO THE FRENCH SHOW THE POMS HOW TO DISMANTLE AN SSBN/SNLE -WE ALL HELP EACH OTHER HA

From Rex Patrick's Twitter

The

[@RoyalNavy](#)

has not dismantled a single decommissioned nuclear powered submarine. It seems our British [#AUKUS](#) partner could learn a lot from the French (although the Brits taking lessons from the French would have Admiral of the White, Horatio Nelson KB, turning in his grave).

Xavier Vavasseur

[@xaviervav](#)

16h

I had the rare chance to see and tour an SSBN being scrapped this week, at the [@navalgroup](#) shipyard in Cherbourg, Normandy



Of course Rex wasn't alone in that view - an example from a Brit in the comments on Xavier's feed -

It would be good if HM Government & [@RoyalNavy](#) could learn from the French process & get rid of some of our old Boats . and another:

I think a write up on the French approach to dismantling nuclear powered submarines and the recycling, timeframes, cost involved would be quite interesting and relevant (given AUKUS). I am guessing something like that exists in French writing already but would be neat in English.

there were more.

And Xavier did a great walk through the boat so I'll make up a slide show -you can go on patrol through his fee if you want an early look.

Nuclear submarine files containing military secrets 'found in Wetherspoons pub toilet'

Files reportedly carried detail about HMS Anson – navy's latest advanced nuclear-powered attack submarine

[Emily Atkinson](#)

21 minutes ago

I'll leave you to guess the wonderful pun in the SMS that informed me of this dit.

Also a pretty good example of the hyperbole that causes us to hold the press in such high esteem.

And I've learnt a new word 'reportle'. So I will be able to beat the clean thought police by use of the term 'reportling' instead of 'BSing'

An investigation has been launched into the reported discovery of [Royal Navy](#) documents marked "official sensitive" in a [Wetherspoons](#) pub toilet.

Official sensitive = information that should be in the public domain but the Westminster style Military is shite scared of facts because they are trained to be indifferent to reality; so they try to hide everything they do from us that have to pay the exorbitant prices for their privilege to live in a cocoon - proof hammers really do cost a lot; we were just sucked in to think they were the legendary USD435 physical ones in the USAF ILS packages! And in this case of found in a dunny 'everything they do' may be the operative phrase.

According to reports the files carried detail about HMS Anson – the latest of the navy's advanced nuclear-powered attack submarines.

The files were allegedly left in the Furness Railway pub in Barrow-in-Furness, with a source telling The Sun they were found on the floor of a toilet cubicle on what was "quite a lively night".

The source said they were discovered alongside a Royal Navy lanyard, adding: "Anyone could have found them."

The navy said they were "generic" documents containing no classified information. [Might have been ANSON's copy of the visit itineraries of RAN and re-tread RAN 'dignitaries' who are using AUKUS as an excuse to get to the UK for the coronation Pi55 up!](#)

In a statement, a Royal Navy spokesman: "These are generic training documents that carry no classified information. [Yep a possible Strine translation leaflet](#)

"However, we take all security matters extremely seriously and will investigate the circumstances of their discovery."

A naval source told the newspaper the papers were part of a reference manual that is readily available on board.

Any personnel working on the vessel would have used the manual, they added.

Former [submarine](#) captain commander Ryan Ramsay said it appeared that someone had taken the documents from the vessel "to study."

"It is good to see their commitment to training, but the pub is probably the wrong place," he told *The Sun*.

The Furness Railway pub is a 20-minute walk from the BAE Systems shipyard – one of the world's largest builders of complex warships and where HMS Anson was built.

The 97m-long (318ft), 7,800 tonnes submarine is the fifth Astute-class attack submarine sailed from BAE Systems.

According to the Ministry of Defence, Astute-class submarines are "the first nuclear-powered submarines to be designed entirely in a three-dimensional, computer-aided environment" and represent the "cutting edge of the UK's military capabilities."

HMS Anson is capable of circumnavigating the globe without resurfacing, the MoD said – able to purify water and air, meaning its range is "only limited by the amount of food on board." [Obviously if the doc was found in the dunny said food hadn't run out yet.](#)

The vessel is now at His Majesty's Naval Base in Clyde, Scotland.

PRIMER FOR THOSE THINKING OF HIRING US ADMIRALS TO DO THEIR THINKING FOR THEM -they all think much the same so this could be the freebie of the decade:

it's long, but when the going rate seems to be USD5 grand a day plus per diem this is a bargain



By Land and by Sea, Challenges Today and Tomorrow: Interview with Admiral James G. Foggo

12.Feb.2023 9:00 AM . 24 min read

..and I am hoping like hell he didn't say Triton - because that would drag him into a pack that worries. An American Master Chief who was a Northern Ireland born American said to me 40 years ago - the problem with us Americans is we think everybody else wants to be an American, something I have heard again and again over the years. Much the same way we tend to think this brown land is God's country - and we have to factor both those outlooks into what they say and how we interact. Jim's comment was great timing as it meant every interaction, increasing exponentially over the then immediate future, I had with my US allies was conducted in a different mindset and I can't remember not having a good 2 way outcome, even if my masters thought I was being a p---k, in addressing something they didn't want addressed nor sorted. It's exactly the same as understanding how you have to make a HRO stay a HRO when interacting between users and designers etc. But I'd reckon too many Ossies don't try that - and when you are the little guy you really do have to try.

Admiral James G. Foggo, U.S. Navy (ret.), is the Dean of the Center for Maritime Strategy. Admiral Foggo is the former commander of U.S. Naval Forces Europe and Africa, and Allied Joint Force Command, Naples. He Commanded BALTOPS in 2015 and 2016 as well as Exercise Trident Juncture in 2018.

It isn't often that one gets to sit across from an Admiral like you, so allow me to begin by asking, you were born at Mönchengladbach-Rheindahlen at NATO's Northern Army Group. For how many generations has your family been in the service? What was your father's service like?

I grew up in a Commonwealth family. All of my [ancestors] were Scots who emigrated to Canada. And then, at the beginning of the war, World War One in 1914, they went back to fight in Europe, but they returned to Canada, and my father was born there. During World War Two, his father took him to the recruiter and signed him up for the Canadian Forces, and he arrived on the beaches of Normandy, "D plus 45," so 45 days after D-Day. But that didn't mean that it was a cakewalk. He got into firefights with SS Panzergrenadiers almost right away with the 4th Canadian Armored Division. Then for a year and a half, they drove through France, Belgium, the Netherlands, and up into Germany, and then finally demobilized in May of 1945. So a lot of combat, lost a lot of friends. Then he went back to Canada, stayed in the army, and found himself posted to NATO Northern Army Group in 1959. And that's when I was born. I left a year later, went back to Canada, grew up there, and then my dad was posted to Washington DC as a Canadian Army attaché at Fort Belvoir, Virginia. That was in the middle of the Vietnam War—I was eight years old when I came here in '68. I grew up in the American system and then was naturalized as an American. I then went to the US Naval Academy.

Was there an expectation in your family that you would also enlist?

My father was a colonel. Living in the United States was expensive. He, throughout his life, never really was able to save anything. So when it came time for me to go to school, you know, my options were local community college, or try to get loans, or go to a military academy, which essentially [means] you're mortgaging five years of your life to get an education, and that's what I did. I ended up at the Naval Academy, which was probably one of the best decisions I ever made.

I saw that eventually you would go on to serve on submarines. Was that your choice or were you assigned?

I was a chemistry major, and I went to the Naval Academy thinking I could go to medical school and be a navy doctor. They stopped that program for those who were physically qualified to go into the line, meaning sail ships, because that's what you get paid to do. So I figured, well, if I can't get an advanced education through med school, then I'm going to get the best education I can through the Nuclear Power School. I interviewed with Admiral Hyman G. Rickover, and for some strange reason he took me into the program. As a chemistry major, I struggled. I had a GPA of about a 3.4, which I thought was pretty good. It could have been better. But then when I went to Nuclear Power School, it was tough. It was six months of intense science training down in Orlando, Florida, and then a land-based prototype in Saratoga Springs, New York, and then a submarine school. You're in school for a year and a half after you graduate. That's almost like getting a master's degree in nuclear engineering. Then they put you on a boat, and you qualify

as an engineer, then you qualify as an officer of the deck, and then you go back to Naval Reactors and take this brutal exam. At the time I did, it was about an eight-hour exam with oral interviews to become a professional engineer in the Submarine Force, and you're qualified to do any department head job. You can be a weapons officer, a navigator, or an engineer. And then you move on to your department head tour, CO [commanding officer] tour... And my goal was to get to be a CO, and I thought if I made that before the end of 20 years, then I would have satisfied my goals and objectives, and if I departed the Navy, I could get a pension and go do something else. In my case, I didn't stay for 20. I stayed for 40.

Which of the three areas did you choose?

I was a navigator, Navigation Operations Officer on USS *Mariano G. Vallejo*. It was a great boat. It was 30 years old, but it was the number one boat in the squadron. It got the Battle Efficiency "E" and it was a ballistic missile submarine. So I learned: how does the Navy perform nuclear deterrence with our intercontinental ballistic missiles? Fascinating.

What's the longest time you spent submerged?

75 days. Over Christmas.

How long was your longest tour away from family?

Typically, we deploy for six months. Sometimes that was extended, so not more than six and a half months.

Now, before I move onto my further questions, and I apologize for my total laymanship with this one, allow me to ask: books and movies always show submarines in moments of great tension, even when they sail in times of relative peace. Do you encounter tense moments like that? Where there is a risk of escalation?

It's not just a risk of escalation. The submarine force is a risky business. You have a tube that's, in my case, a 688 Los Angeles class submarine, named USS *Oklahoma City*, the tube is 360 feet long, 35 feet wide, and it has a sail that sticks 25 feet above the tube. Inside the tube are 140 men—and now women because we brought women into the submarine force after I was a CO—and in those 360 feet, there are lethal weapons, Tomahawk cruise missiles, torpedoes, mines that can carry a harpoon cruise missile.

There are 2000-pound hydraulics and air systems. Under pressure, there is a nuclear propulsion plant with a uranium pile that's in a primary and a secondary containment, and it gets really, really hot, because you're boiling water to turn a steam turbine to turn a shaft which is massive. There are hydraulic lube oil systems that get very, very hot and are under pressure. And if any one of these things leaks or pops, you've got high pressure, really hot liquids. In some cases, if you had a reactor problem, you would have contaminated liquids or spray coming into what we call the "people tank."

The other thing is when you go down to test depth, and I'm not authorized to tell you how deep that is, the pressure of the ocean is significant, and if you had a failure of the hull, or failure of a main seawater valve, then that water comes in faster than you could pump it out. So you've got to be on your toes and keeping track of all valves, all systems, at all times. If anybody doesn't do their job of those 140 people, that's the weakest link in the chain, that can kill you and kill the ship. When you go out to sea, it's a very risky environment.

[This is] the reason [why] Admiral Rickover was so fastidious about requirements and redundant systems and training and the human brain, not a computer, but a human mind, keeping track of everything that happens on board that ship with a view towards safety. [At the same time] the main purpose of the submarine is lethality: to kill the enemy, sink enemy ships, win wars. So there's a balance there that has to be struck, and the way you do it is you recruit the best people, you train them in the best facilities, and you give them the best equipment, and that's what he did. So yeah, it's a challenging environment. It's not for everybody. If you don't want to be in a tube with 140 guys for six months, it ain't for you.

I'd be happy to sign you up.

Thank you. And if, fortunately, we are not at war and we haven't been at war for, depending on how you would define it, some amount of time, how do you maintain training amongst men to be prepared for war?

So you don't think we've been at war?

No, I do think we've been at war.

I think we've been in war since 1946.

I fully agree with that.

The Cold War.

Yes, but if we haven't sunk a ship in some time, I'm not sure when the last time was that a submarine sank a ship, are you able to keep wartime-level of training across all tubes?

The whole point of having submarines, whether they're ballistic or attack submarines, is deterrence. So in the case of a ballistic missile submarine with a nuclear warhead, the idea is you keep Vladimir Putin from launching a tactical short range nuke in Ukraine, because he knows that if he does it, it's total war with the United States. And then we will flatten Russia, with intercontinental ballistic missiles. No doubt about it. That's why we put so much effort and money into the nuclear deterrence program, the triad [of] bombers, submarines, and missiles. But the most relevant and the most stealthy, and the most reliable portion of that triad is the submarine. We're building a new one called the Columbia. It's a very expensive boat: the first one is going to be \$16 billion. And we're going to have 12 that replace the Tritons.

So there's nuclear deterrence, then there's conventional deterrence. [Faced with] an attack submarine, the reason for an attack submarine is again to sink the enemy's shipping, and to keep the Chinese from invading Taiwan, or Guam, which is a US territory, you want them to think twice. You want them to say, "the Americans are at peak proficiency in that if we send our fleet to Taiwan, send our fleet to take over an island in the South China Sea that doesn't belong to China, today is not the day." That's deterrence.

Throughout the entire Cold War until the collapse of the Soviet Union in 1991, we were in a war at sea. I call it the Third Battle of the Atlantic. And then we tried to reset with the Russians. It didn't work. And today we're in the Fourth Battle of the Atlantic. It's a war that the American people do not see in the undersea domain that goes on every day. It's not a shooting war. Neither was the Cold War, right? Not a shot was fired. But with a cost imposing strategy, we brought the Soviet Union to its knees and [it] disintegrated. It's the same thing happening today. And because the other side is afraid to act, we deter them from shooting. But "integrated deterrence," which is the new policy, the national defense strategy, and this administration didn't keep Putin from invading Ukraine. We failed there, and there's a shooting war going on in Ukraine. So I don't buy the premise that we're not at war. We've been at war for a long time. Unfortunately, the American people don't see that.

Before I transition to Ukraine, when would you say this Fourth Battle of the Atlantic began?

The Russians started to resurge after '91 in about the [early] 2000s. If you look at their actions, when they started to regain their economy, they started to put money back into their armed forces, and particularly into their navy, and particularly into their submarine force. When I was at the North Pole back in 2001, you know, that picture up there [behind you] is me near the North Pole in 1985, I went back in 2001, in command of my own boat, the difference in 16 years was less ice. The first picture is smack dab in the middle of the Cold War, and so full on with the Soviet Union and the Warsaw Pact against the US and NATO. 16 years later, less ice, and when you went up topside, and you looked down in the Azure blue waters of the Arctic, you saw plastic, so more pollution. We have a climate change problem. We have an environmental problem. And the Russians were back. They were operating again. So at about that point 2000-2010, they started to resurge, they went into Crimea, with the illegal annexation of Crimea in '14. Game on again, you know. When I say the Fourth Battle of the Atlantic, I'm not just talking about the Atlantic Ocean. I'm talking about all the creeks and tributaries that feed into the Atlantic Ocean: the Arctic Ocean, the Baltic Sea, the Mediterranean Sea, and the Black Sea. Look what's happening in the Black Sea. We've essentially ceded that sea space to the Russians. We don't have a lot of NATO ships in there right now. Again, kind of an extension of my thesis, that we're in a quasi-war with the Russians right now. And the Chinese.

Would you characterize that as a separate war? Or would you characterize it as one in which the Russians and the Chinese are in a way allied against us?

The Russians and the Chinese are "frenemies." You've heard that expression? They have banded together because they have one common thread, the United States of America, because we're the hegemonic power. But our power is declining because of the civil unrest in the country and the divisiveness in the country, which when I became an American didn't exist. I've watched the country since I became an American in 1977, and it's disturbing to me to see how we have split apart. That weakens us.

So, Russia and China have this marriage of convenience right now, but I wouldn't say that it's an alliance. If you saw what happened in Uzbekistan recently, Xi poured cold water on Putin and basically told him, sue for a ceasefire, and Xi is getting a lot of pressure, not just from us but from everybody, on collaboration with the Russians. He hasn't given them any lethal aid; he's given them non-lethal aid in the form of buying their gas and buying their grain, which they steal from Ukraine. So, he's skirted economic sanctions to help the Russian economy stay afloat amidst this crushing set of global sanctions that have been levied upon the Russians. Sooner or later, it's going to destroy the economy of Russia. If the Chinese were such great friends, which they publicly make out that they are in these press conferences with the Russians, then the Chinese would be giving them weapons. The only people giving them weapons are the Iranians and the North Koreans, and when you can only count on the Iranians and the North Koreans as your

friends, you've got a problem. The United States at least has lots of friends. The last administration didn't help by dissing NATO, but the Biden administration has tried to correct that, and they've done a pretty good job.

Speaking of NATO, how would you say NATO has and will continue to evolve in the wake of war in Ukraine?

Well, NATO has been revived here with the war in Ukraine, and frankly the war saved NATO, because it was on the downslope. The allies were all bickering, Trump was hammering them for 2% of their GDP into their military industrial complex, and it wasn't happening. There was a divergence [in] the traditional bridge between the United States of America and the NATO alliance that's been repaired. It happens every time there's a threat, right? I mean, Joe Nye would say, the economy can be stimulated by war, and the military industrial complex can be stimulated by threat.

If there's a threat out there, then you're going to pour more money into defense, like [after] 9/11. A trillion-dollar War on Terror which ended up with the withdrawal from Afghanistan, which was a debacle, and the pending withdrawal from Iraq. So we got 20 years of our boots and our heads in the sand, meanwhile, Russia and China started building things like hypersonic missiles that we don't have, capabilities we don't have, now we're playing catch up. I don't disagree with the Biden Administration for pulling out of Afghanistan, but they didn't execute it properly. It was a debacle, and [it was] embarrassing to the United States, and [it] makes us look weak to our adversaries, which is why they take risks. That's why Putin wanted Ukraine and didn't think we'd do anything, and he was surprised, and so was Xi. So I think Xi's watching this very carefully and thinking about, "what happens if I go on to Taiwan? Same thing going to happen to me? Am I going to be crushed by global economic sanctions? Are the Americans going to feed weapons to the Taiwanese that defeat my systems as they come across the streets?" I think he's thinking pretty hard about that.

Do you think there'll be any structural changes to how the NATO alliance works? Or is it only revived and sort of re-founded each time there's a threat?

Yeah, I think there [are] structural changes going on right now. Poland is asking for a permanent presence, and so are other countries in the Eastern Bloc. There's Romania: we have a multinational corp there. In fact, the Romanian chief of defense is coming in next week [as compared to the time of this interview] to talk about that with us at a private roundtable. So you're going to see a more permanent presence. Where we tried to withdraw in the peace dividend in between the Third and Fourth Battle of the Atlantic, we're now pushing more people over and establishing more permanence on the European continent. And that's going to be around for a long time because Russia is not going to stop meddling. I don't think Russia is going to go away, so we're going to have to maintain that connectivity with the NATO alliance.

When you put more people on the ground, you need more headquarters, more command and control. And I think we've learned a lesson from this campaign, just as the Russians said, and that is, logistics is the sixth domain of warfare. If you don't have logistics, you will fail on the battlefield. That means we've got to boost our infrastructure and our supply chain, and that means ordinance because we're throwing a lot of ordinance at the problem. That means we've got to spin up our industrial base and start producing more Javelin missiles to take the place of the ones that shot down the Russian aircraft and tanks. It's the Stingers. It's going to be a long time before we pull back to the pre-Ukrainian War levels that we had in NATO. So yeah, I think a lot of structural changes are taking place, and as far as the alliance is concerned, we're going to add two new allies, Sweden and Finland. I never thought I'd see that in my lifetime. Another gift from Putin. That's a big change. And then there will be more that want to come on board: Moldova, Ukraine is asking for membership. Will Georgia turn the corner and ask for membership? Will NATO give them membership? Those are all questions that you'll have to answer in your studies. I don't know the answer.

Now that several Scandinavian countries have requested membership, and Switzerland froze Russian assets at the beginning of the invasion, do you think the concept of neutrality has disappeared? Or needs to be redefined if traditionally neutral countries no longer seem so neutral?

I personally think that neutrality at any time in history is hogwash. You're always on somebody else's side. And Swiss neutrality is a matter of convenience. Who knows who invests in a Swiss bank account, right? That was the joke when I was growing up, "Ah I'm going to take all my money and put it in a Swiss bank account on Sunday and retire and go live off it!" Well, there [are] probably a lot of autocrats and oligarchs who pumped a lot of money into [their] economy, which is why they're such a rich country. And does that not imply that they're taking sides? Have there been some restrictions? Sure. And perhaps they've sacrificed some of their traditional advertised neutrality, but I don't think neutrality ever really existed.

Would you say that Sweden had more of a neutrality, not having accepted assets in banks the way the Swiss did?

Sweden and Finland have always been independent minded nations that didn't want to throw their lot in with NATO, so they didn't exacerbate the Russians. Prior to the 24th of February, there were a lot of policies that were intended not to push Putin to invade Ukraine. He did anyway. Sweden and Finland saw that and said, "so what would stop him from crossing the border into Finland?" It's a 1400-mile border. "What would stop him from conducting submarine operations in our fjords?" Which they've accused him of

in the past. "Conducting a cyber war on Sweden? And if he does, are we going to try to defend by ourselves? Are we going to have the benefit of an Article Five, attack on one is an attack on all if you're a NATO member?" So things changed, and it's not a surprise to me, although I did not predict that in 2022, we'd have a full blown war going on, on the European continent.

I read, in an [article published on the Center for Maritime Strategy's website](#), that ideally, we may need 15 carriers in peacetime deployed across the world now. Now, if we have 11 or 12 right now and 15 would be the ideal, technologically, are we prepared for a more escalated world chessboard?

No. The industrial base is not capable of producing 15 carriers right now. We've got two under construction at Huntington Ingalls in Newport News, Virginia—that's the only yard in the United States that can make a carrier. There are other places that can build amphibious ships, but [building a] super carrier like the Ford of the Nimitz has got to be done on the dry docks down there. The *John F. Kennedy* will be out of drydock in about a year. It has the nukes on board. So the propulsion system is on board and the nukes are monitoring it. They're finishing up the decks and the hall and the mechanical and the electrical. The next one that comes along is the *Enterprise*, CVN 80, and the one after that will be CVN 81, which is the USS "*Dorie*" Miller. We'll have 12 carriers at the peak, and the Nimitz class will start to be decommissioned, and then we'll determine whether we build any more. But we're at industrial capacity right now, so we would have to build new yards and new shipbuilders.

We have something like seven to nine shipbuilding yards right now. We can produce about nine ships a year. That's down from triple that number during the Cold War. During World War Two, if you listen to [one of] my previous podcast[s], one I did with Professor Paul Kennedy at Yale, we were producing during World War Two one aircraft carrier per month for the Pacific campaign. Nimitz [had] one aircraft carrier effectively operating in the Pacific prior to 1942, and then we ramped up in '43 because if we hadn't we'd have lost the war—the margins were that thin.

We're at that kind of crossroads now. We started preparing for World War Two in 1938. Things didn't look good, and we really started to put money into the industrial base. We have this thing called the Shipyard Infrastructure Optimization Program (SIOP) and it was supposed to be \$26 billion to help refurbish and modernize our dry docks. I think the estimates were low balled and that number should be inflated to something like \$44 billion. We started recovering some of that infrastructure up in Maine at Bath Iron Works and Portsmouth Naval Shipyard. We've got a lot of work to do down in Norfolk, at Norfolk Naval Shipyard. These are the public yards that are owned by the government and run by the government. Norfolk Naval Shipyards, dry docks, in some cases, were built by slave labor during the Confederate times, so they need to be recapitalized and shored up and there's a lot of money that has to go into that. That money is trickling in, but not fast enough to deter a Chinese invasion of Taiwan by 2027, which some pundits say could happen. I'm not sure.

Should investments then be intensified beginning today?

Absolutely. And yesterday.

Do you see any chance of this happening?

No, because SIOP's been out there; it's been discussed for a couple of years. We're moving way too slowly on this. The nation has lots of other problems. I agree that there are other infrastructure problems like the highways and byways. President Biden talks about this, and I couldn't agree more with him, so we've got about a trillion dollars plus, going into infrastructure, [and even that] not soon enough. I mean, you drive around here, you hit the potholes. My sister-in-law lives in Pennsylvania: there are about seven major bridges that have been out for years in Pennsylvania, because they can't afford to go out and fix them.

Our infrastructure dates from the early 1900s to the war. This country's highway system, its train system, were built in anticipation of going to war. Lots of the highways can be used as runways. The rail system was supposed to facilitate transport of material across the country, not just for feeding people but also for getting beans and bullets out to the coast and to the troops. And we haven't recapitalized that in decades, so now it's time. So that's a bill.

Our secondary school education is Weak with a capital W. The United States has fallen in statistics, in math and science, with the rest of the world. The Chinese are on top, we're down really low. So we've got a lot of work to do there. We need to put money into schools, we need to pay teachers more, we need to recapitalize some of our schools. You're at one of the best colleges in the world, right? Always top ranked. Not all Americans have the opportunity to do what you're doing, and the majority of Americans couldn't pass the entrance requirements to get into Harvard because they don't have the secondary school bona fides and the opportunities that it takes to pass an SAT with a sufficient score to compete. They're cut out right away. The reason for that is not so much the DNA of the individual, it's how the individual was educated or trained, and our secondary school system in this country is abominable.

The other issue in Africa is corruption and the nexus between illicit trafficking and terrorism. Illicit trafficking takes place in three broad categories: trafficking in narcotics, trafficking in illegal weapons, and trafficking in the worst commodity, and that's human lives. And it destroys human lives. It takes people's savings and pushes them up to open areas in North Africa, particularly Libya, where there is no rule of law, and then sticks them in a little rubber boat and sends them across the Mediterranean, and a certain percentage of them drown. And they have nothing.

The only way for that to happen is the nexus between illicit trafficking and terrorism. It's an exchange of money at checkpoints that are down there in the Sahel so that the traffickers can pay for safe passage through terrorist cells because it's ungovernable space. There's no rule of law. Until we restore governance, it's not going to get any better. The French were trying to do that in Mali. Mali fell apart after Libya because part of the militias that were in Libya fighting for Gaddafi, the Tuaregs, didn't have any place to go. So they went to Mali, and they made war down there.

Mali was a beautiful place and it fell apart. Former French colonial rule, the French felt responsible, they went down there, and Macron said, "we're going to save the day." French got killed, lost a lot of soldiers. Every time a Frenchman was killed in Mali, we had a ceremony in my headquarters in Naples, it was very solemn. French would come up, they would form up in their dress uniforms, they'd sing the Marseillaise, and they'd go away, and they praised the individual that died.

I believed in the cause, it was right and proper what they were trying to do, and it cost the United States very little money to support them. When we took away that support, they decided they couldn't stay because they couldn't do it on their own. So Mali could become another narco state, terrorist state, with state-sponsored terrorism like Iran, and we are ignorant to that in the United States. By 2050, the UN says Africa will have two and a half billion people. One in four citizens of the world will be African. They will dwarf China, India. What are we doing to make friends? Not enough. What are the Russians doing? Blood Diamonds, Wagner Group, and Libya. What are the Chinese doing? They're in every country on the continent, including those off the continent in Cabo Verde. They're establishing Confucius Centers for cultural exchange and language training. They're building airports, seaports, soccer stadiums. They're ingratiating themselves, and they're using law and debt warfare. You can't pay the interest on the debt, what do they do? They take control of the port just like they did in Sri Lanka. \$8.1 billion in debt. The Sri Lankans say "we can't pay." The Chinese say, "you have to pay." Sri Lankans say, "we can't." "Okay, fine. You've got to give us the port for 99 years." "Okay, forgive our debt." "No, no, no, we'll give you 3.1 billion, you still owe us 5 billion."

So the Sri Lankans are on the hook for eternity. They can't get out of it. What happens when the Chinese take control of that port? The gates to that port go shut for American shipping, which means we lose another forward operating base. What happened in the Solomons just two months ago? The Chinese went in. The Chinese struck a deal with the government of the Solomon Islands, which had always been pro-US after World War Two because we saved them from Imperial Japan, the Chinese took control of the A-pods and S-pods, the airports and the seaports. We tried to put a hospital ship in there, they said no. We tried to put a Coast Guard Cutter in there, they said no. They finally relented on the hospital ship because it was for humanitarian aid, but the Coast Guard Cutter for refueling? No. No to the US. Do you think the Solomons did that on their own? No way. The Chinese forced them to do it because they've taken over. So, if that's what we want in Africa, we've just facilitated it by not supporting the French in Mali.

Erdos spoke with Foggo on November 4, 2022. This interview has been lightly edited for length and clarity.