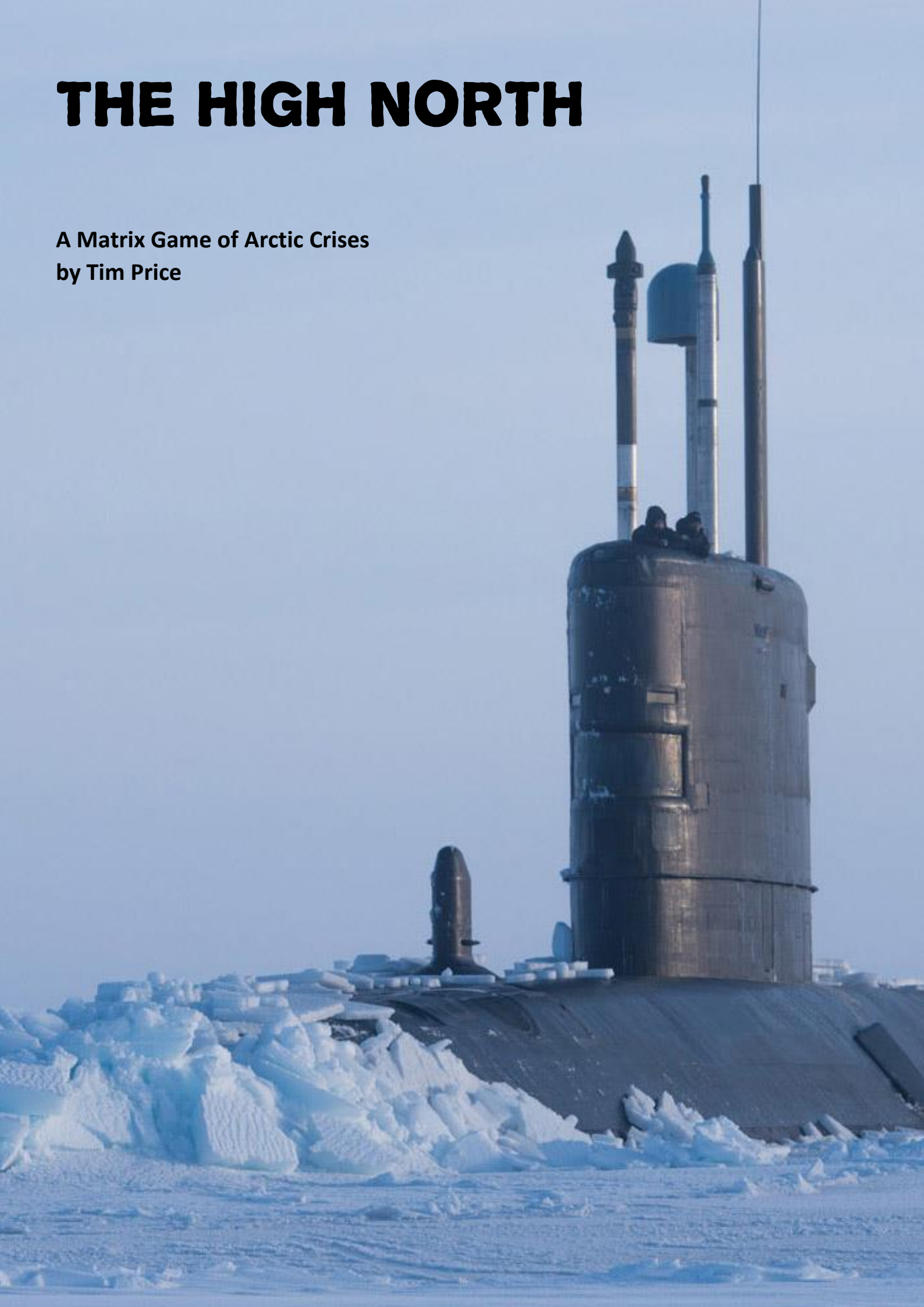
THE HIGH NORTH

A Matrix Game of Arctic Crises
by Tim Price



Background[1]

Climate change is the principal driver of change in the Arctic, with increasing temperatures and precipitation. As Arctic and Antarctic sea ice retreats, many areas that are currently inaccessible could become open to commercial exploitation, particularly of oil and gas. It is possible that some countries – depending on their internal politics – may seek to project power in the Arctic if they consider their interests in the region to be under threat.

Climate change

Alterations in the climate are the drivers behind many of the changes expected to take place in the Arctic over the coming decades. In the Arctic, significant warming will almost certainly occur throughout the region, and is likely to be greater than the anywhere else in the world.

Sea levels will probably continue to rise and precipitation is likely to increase, particularly in winter. Sea ice is likely to reduce, increasing access for shipping. Due to rising temperatures, the permafrost is likely to melt. This could cause subsidence, infrastructure damage and release methane – all adding to global greenhouse gas emissions and exacerbating global warming and its effects possibly to catastrophic levels. The incidence of severe storms is also likely to increase.

Transit routes

Over the next few decades there is likely to be a sustained reduction in both the extent and thickness of summer sea ice, and regular ice-free summers may occur by 2045. The Arctic navigation season could be extended and new shipping routes have the potential to be opened up. This could save significant time when transporting goods from the Far East to Europe and Northern America. If countries are to fully exploit hydrocarbon reserves and shipping routes in the Arctic, they will need to invest substantially in icebreaking capacity. As the volume of maritime traffic increases, there is likely to be an associated growth in the environmental risks faced by the Arctic region – and regulating the passage of vessels is likely to pose a significant challenge. The number and magnitude of human disasters requiring search and rescue services is also likely to rise.

Resources

Global demand for energy is expected to more than double by 2045, with coal and hydrocarbons likely to continue to play a major role in the global energy mix. The Arctic currently produces around 10% of the world's oil and 25% of its gas, with approximately 80% of these resources coming from Russian territory. It has been estimated that the Arctic contains up to 13% of the world's undiscovered oil and 30% of its gas reserves, which are likely to become increasingly attractive as existing reserves are depleted.

Oil and gas exploration is likely to be concentrated in Russia and northern Norway, with other new reserves possible off the seaboards of Greenland, Alaska and the Canadian north. Developing both existing and new oil and gas fields will almost certainly be complex, requiring advances in technology and demanding high standards of engineering and quality control. The Arctic will probably remain particularly vulnerable to oil spills – as a consequence of both the slow recovery of cold ecosystems and the difficulties facing clean-up processes in remote and cold areas where ice is present. It is possible that a major environmental disaster may halt economic exploitation of the region until expensive safeguards have been implemented.

Mining of minerals in the Arctic is likely to continue to be a major source of economic development and may expand significantly as sea routes to deep water ports are opened up for bulk carrier access. Deposits of coal, diamonds, ickel, copper, gold, silver, manganese, chromium and titanium are particularly likely to be exploited at an increased level, bringing both money and people into several parts of the region. Although Russia and Canada are likely to possess the largest reserves of these resources, mineral wealth is widely distributed through the Arctic, and there are many areas, including Greenland, with great potential for new discoveries and further exploitation.

[1] Source: https://www.gov.uk/government/publications/global-strategic-trends-out-to-2045

However, although exploration and extraction conditions are likely to improve in some areas as the ice retreats, these changing conditions are likely to add new challenges. Melting permafrost, in particular, could impede developing sustainable infrastructure on land. New technology is likely to be needed to exploit mineral extraction potential in many areas affected by melting permafrost, particularly in Russia.

Agri- and aqua-culture, and forestry

Fishing is already an important source of employment in the region, with several countries, notably Iceland, Russia and Norway, investing in large fishing fleets. Major commercial fish stocks such as cod, herring and pollock are likely to be exploited increasingly easily as sea ice cover reduces, and the areas populated by these fish stocks are likely to increase further in size as the seas warm. For other species of fish, such as salmon and trout, the outlook is less positive, and climate change may significantly reduce these fish stocks. The opening up of the Arctic Ocean, and the possible northwards migration of fish stocks, may – when combined with growing demand for protein in world food markets – encourage large numbers of EU and Asian fishing fleets to move into the region, especially in areas not within countries' exclusive economic zones. By 2045, it is likely that fish stocks in the Arctic will be under severe pressure, potentially causing tensions between Arctic Rim countries, the EU and other fishing countries.

Climate change is already stimulating significant changes to Arctic ecosystems and, as a result, to Arctic agriculture and forestry. The warmer climate is highly likely to extend the growing season and may encourage crop diversification at higher latitudes. Timber productivity is likely to improve, with planted forests in the Arctic likely to expand to the north, despite a likely increase in forest fires and tree-killing pests. Numbers of caribou and reindeer in the region could also rise, although they may be more affected by insect infestations. Diminishing cattle and sheep habitats in southern Europe may create markets for reindeer and caribou products, improving the economic situation of Nordic farmers.

Governance

The Arctic region, comprising four million people, eight countries and over 30 indigenous groups, is largely under-populated and is characterised by sparse communication and infrastructure links. Out to 2045, there are likely to be significant increases in using, and extracting, the region's resources and developing its transport links. This is already beginning to render its governance arrangements of deep significance and could lead to increased tensions within the countries and peoples of the region. International governance, regional groupings and non-state actors are all likely to play important roles within the Arctic.

By 2045, it is unlikely that there will be any appetite for a formal UN agreement setting a legally binding governance framework for the Arctic region (as exists in Antarctica). The delineation of countries' exclusive economic zones and continental shelf boundaries under the UN Convention on the Law of the Sea (UNCLOS) process will probably establish the ownership of economic rights in the vast majority of the Arctic Ocean, and it is unlikely that Arctic countries would attempt to overturn these decisions by force.

The influence of the indigenous peoples is also likely to be limited and dispersed, focussed on exerting pressure on multinational corporations and authorities within their countries to secure better economic conditions. Indigenous people are also likely to continue to exert influence through their position at the decision-making table of the Arctic Council. The EU is, however, likely to become more involved in the Arctic as it is likely to expand to incorporate Arctic countries and as larger non-Arctic EU members, such as Germany and the UK, become more dependent on the region's energy resources and fish stocks.

Russia

Russia will almost certainly be the dominant – but unpredictable – state actor in the Arctic by virtue of its economic, political and military strength in the region, as well as its location and size. Russia is likely to have sovereignty over the region's major fossil fuel reserves, fish stocks and mineral deposits, and climate change could afford it the possibility of expanding its agricultural sector in the region. Russia is also likely to have significant influence over the Northern Sea Route as it becomes more viable to commercial traffic as summer ice retreats. Russia's Arctic region is currently the source of 20% of its GDP, 60% of its oil and 90% of its gas, and the country's leadership will probably continue to view it as a strategic interest. Russia is likely to continue to maintain significant military capabilities in

the Arctic to protect its nuclear forces and secure its economic assets, as well as providing a basis for its search and rescue responsibilities. There may be more frequent demonstrations of military strength in the air and at sea, possibly to distract from domestic socio-political issues.

The United States of America

The US, while seeking to ensure that its economic and security interests are protected, is unlikely to see the Arctic as a primary theatre of American activity. However, there may be tension with Russia over disputed areas of the Chukchi Sea, and US control of fishing within the Bering Sea may be challenged by Russian, Chinese, Korean and Japanese interests if the region continues to be a significant source of fish and sea mammals.

Other Arctic countries and populations

Norway will almost certainly continue to rely on NATO as the guarantor of its security, though it is likely to seek further bilateral agreements with EU countries to reinforce its position. More advanced than the other countries in setting out a vision for the region, it is likely to retain the lead in Arctic regional development. A newly independent Greenland may seek to join the EU and NATO, and could become the subject of intense interest from countries such as China. Out to 2045, Iceland may also seek EU membership as well as more substantive engagement with other NATO members.

The indigenous populations of the Arctic are likely to see their lifestyles threatened, their numbers declining, and their influence waning. Their unique lifestyle and patterns of subsistence are likely to have disappeared by 2045, and the need to assimilate and to gain new skills to compete with skilled migrants from the south is likely to be both an opportunity and a risk. The indigenous population within the Arctic is likely to decline slowly, and may undergo some degree of urbanisation as its members move in search of healthcare and employment opportunities for their young people. It is unlikely that the regional peoples will be able to counteract the power and influence of their largely sub-Arctic based governments and their influence will probably remain largely peripheral (except Greenland's large Inuit population). Tension and low-level violence between migrants and indigenous people is possible.

Multinational corporations

Many of the inhabited areas of the Arctic will probably continue, in practice, to be managed by multinational corporations and populated solely or predominantly by their workers. Russian-based conglomerates are likely to

remain semi-state controlled. They are unlikely to operate to levels of corporate governance expected in the West and are likely to be less inclined to comply with international regulations. Environmental pressure groups and non-governmental organisations, such as the World Wildlife Fund and Greenpeace, could play an increasing role in influencing the activity of western countries and corporations in the Arctic region.

The High North matrix Game

It is against these strategic trends that "The High North" Matrix game is set.

The facilitator has some choice as to exactly when the game takes place, and as to what elements of social, political and military developments outlined above have come about. It could be "next year", "next decade" or "2045", depending on what you want to get out of the game. In many cases, it can be instructive to have an initial round of Matrix Arguments in which to establish those; for example, China may wish to have Greenland declare independence from Denmark and free to negotiate advantageous trade agreements and basing facilities.

My personal preference is to set the game within the next 10 years, assuming broadly the same geo-political context, but allowing for one turn of Matrix Arguments to ascertain which changes the Actors would wish to have occurred.

The Matrix Game Construction Kit

The ultimate matrix game design kit

In a "matrix game" there are few pre-set rules limiting what players can do. Instead, each is free to undertake any plausible action during their turn. The chances of success or failure, as well as the effects of the action, are largely determined through structured argument and discussion. This process allows for imaginative game dynamics that are lively and open-ended, and yet also grounded in reality.

Matrix games are particularly well-suited for complex conflicts and issues involving multiple actors and stake-holders, varying interests and agendas, and a broad range of (diplomatic/political, military, social, and economic) dimensions. The game system crowdsources ideas and insight from participants, thereby fostering greater analytical insight.

First developed by Chris Engle, matrix games have been played by hobbyists for years. They have also been used as serious games for training at the US Army War College, National Defense University, the Central Intelligence Agency, and elsewhere; for defence planning, capability assessment, and acquisitions in Australia, Canada, the UK, and US; for security planning for the Vancouver Olympics; as a research and analytical support tool at the UK Foreign Office; and as an educational method in various universities. They are particularly well-suited for multi-sided conflicts or other issues that involve a broad range of capabilities and interaction.

MaGCK contains everything that is required to play two different matrix games, or to design your own matrix games addressing almost any aspect of modern conflict:

- A core set of matrix game rules.
- Player briefings and supplementary rules for ISIS CRISIS, a matrix game that explores the rise and decline of the so-called “Islamic State” insurgency in Iraq. Two scenarios are included: "The Caliphate Reborn?" (set in September 2014) and "Road to Mosul” (starting January 2016).
- Player briefings, map tiles, and supplementary rules for A RECKONING OF VULTURES, a game that explores coup plotting and political skullduggery in a fictional dictatorship.
- 255 large blank game tokens in eight colours, together with over 700 stickers depicting various unit types, other assets, capabilities, and effects. The stickers are used to customize the game tokens, offering enormous flexibility for matrix game designers.
- 80 smaller discs in the same colours as above, which can be used to indicate damage, supplies and resources, political influence, or other characteristics.
- 10 two-sided tracking mats, with various scales (+/-3, 1-3, 1-10, days, months, and so forth)
- Assorted dice.

In addition, purchasers of MaGCK gain access to templates so they can print additional stickers using readily-available sticker sheets and any laser printer—thus making it possible to produce an unlimited number of games and scenarios. See: https://www.thegamecrafter.com/games/magck-matrix-game-construction-kit

Abbreviated Matrix Game Rules

How to Play a Matrix Game

In a Matrix Game, actions are resolved by a structured sequence of logical "arguments". Each player takes turns to make an argument, with successful arguments advancing the game, and the player's position. There are a number of ways you can do this, depending on the size of the game and the purpose (each has their own strengths and weaknesses), but the one recommended for this game is:

The "Pros and Cons" System

In this system, each argument is broken down into:

- The active Players states: Something That Happens and a Number of Reasons Why it Might Happen (Pros).
- The other Players state: A Number of Reasons Why it Might NOT Happen (if they can think of any) (Cons).

The game needs a Facilitator to adjudicate on the arguments, but if you have a limited number of players, you can take it in turns to be the Facilitator – this works out much better than you might imagine and helps reinforce the idea that your role in the game might be in conflict with others, but you are all working together to generate a credible narrative.

The advantage of this system is that you formalise the Pros and Cons of an argument and the role of the Facilitator becomes that of ensuring that the Pros and Cons carry equal weight - perhaps making compelling reasons worth two Pros and two or three weaker reasons against only worth one Con. You need to ensure you don't end up with a laundry list of trivial reasons, or the player re-stating a reason already accepted in a slightly different way in a desperate attempt to gain points.

One very useful benefit of the "Pros and Cons" system is that it provides reasons for failure should the dice roll not succeed. You can also more easily run the game with very knowledgeable players.

Notes about arguments

The important thing to remember in a Matrix game is that arguments can be made about anything that is relevant to the scenario. You can argue about your own troops or about the enemy, the existence of people, places, things or events, the weather, plague, disease or public opinion. The actions and consequences of arguments are reflected in the placement of the generic counters on a map (examples are enclosed below), forming narrative markers for the game; or by writing the results on a whiteboard or flipchart so the players can keep track of what is going on.

Some things can seem a little odd to new players – "how can he argue about my troops?" – It is true, he can't give them orders, but he could argue that their morale and motivation are low because they haven't been paid in months. The only criteria for judgement is the likelihood of the event taking place. With a bit of imagination, common sense and rational thinking, it is possible to present persuasive arguments as to what should happen in any scenario - from traditional military campaigns to the strange world of defence procurement.

A common error in Matrix games is for a player to argue about another player being influenced by something or them agreeing to a course of action. The player is present and can simply be asked – so that a little time between turns to allow the players to negotiate with each other (in secret if necessary) makes for a better game. It might be that a player wants to argue that all parties come to negotiations – in which case let them state their case, then ask the other players if they want to come along. If they agree then the argument is an automatic success. Arguments are for measurable actions – if the players want to negotiate with each other, they can do that in between turns.

Sometimes players get carried away with their arguments and try to do several different things. This isn't allowed in a Matrix game – you only get to do one action a turn because part of the insight comes from deciding what the highest priority is. The action itself could be large (like a general mobilisation of the Militia), but it must be a single action, so mobilising the Militia and providing the Police with heavy weapons would be two separate actions – which one do you want to do first?

If two arguments are in direct opposition ("This happens" - "No it doesn't") they represent a Logical Inconsistency since they cannot both be true. The earlier argument has already happened, so it is impossible for it not to have happened. The later player may argue that the event is reversed, but this tends to make for a poor narrative in the game and should be discouraged.

Reasonable Assumptions and Established Facts

It is important that the Facilitator understands the difference between "reasonable assumptions" in the game, such as the proposition that well trained and equipped Special Forces soldiers are going to be much more effective in combat than untrained protestors; and "established facts" which are facts that have been specifically mentioned in the game briefings or have become established during play as the result of successful arguments.

The former can be deployed as supporting reasons (Pros and Cons), but the latter need to have been argued successfully in order for them to be included. Many inexperienced players will make vast all-encompassing arguments full of assumptions that are not reasonable. For example: It is not a reasonable assumption that an unarmed Protestor counter could fight off trained Police. It is reasonable to assume that the Police are trained, armed, equipped and quite capable of dealing with a group of protestors (after all, that is their job). It would be necessary to argue for large number of Protestors, argue that they had weapons of some sort or argue that they were especially devoted or fanatical about their cause, for them to have a reasonable chance of beating the Police.

Of course, you might argue that your Protesters undergo special training, get access to firearms, or are simply fired up with enthusiasm by the powerful and impassioned speech from their leader, so they get a bonus. In this case, you should mark the counter with a +1 or something similar (depending on the strength of the argument) to show their improved status.

Game Length and Turn Length

The game should last a minimum of 6 turns as it is essential that sufficient turns are allowed to develop the narrative and force the players to have to live with the consequences of their actions from earlier in the game. Each turn represents a deliberately vague period defined by the game Facilitator and the arguments are the "headline events" that took place in the period.

End of Turn "Consequence Management"

At the end of each game turn (a cycle of player arguments) the Facilitator should go over those successful and failed arguments that have generate new "established facts" in the game. They should also review situations that are on-going, such as the generation of refugees from fighting or the arrival of new recruits to a popular cause. If these have not been countered during the turn by a successful argument, the Facilitator should make them continue until someone does make an argument to stop them.

It might also be that some of the arguments, when considered as a whole, will have additional or even unintended consequences that are reasonable to expect to arise. It is therefore worth taking time to consider the consequences of the players' arguments beyond their immediate results. Invite the players to consider the events of the turn, suggest possible consequences and then agree on the most likely that should be taken forward to the next turn.

In some games, it is worthwhile having an individual (if you have one to spare) who is particularly experienced about the sort of subject that the Matrix Game is focussed on, make "the law of unintended consequences" arguments at the end of a turn. This can help to formalise the process and provide good examples to widen the players' understanding of the consequences of their actions.

Inter-Turn Negotiations

As we have already said, the actual "arguments" of the Matrix Game are about actions that take place in the course of the game. In most cases, the actors represented by the players may well want to engage in face to face negotiation with each other in an effort to strike a deal. Players attempting to make Arguments saying that they want to "influence the Prime Minister" are essentially pointless if the Prime Minister is represented by another player. If they want to strike a deal, then they had better head off to a quiet corner of the room and try a little influence in real life. Of course, if a player wants to make an argument about a position or group not represented by another player, they are welcome to do so in the normal way.

In analytical games, it is important to record the essential elements of these discussions. What was suggested? Was agreement reached and why? If no agreement was reached what were the private and public reasons why the negotiations were unsuccessful? Analysis of these "off-table" negotiations and the reasons the players felt why they were successful or failures can provide important insights.

Secret arguments

There will be some cases where you want to hide from the other players the thing you want to argue about. It could be that you have booby trapped a piece of equipment you think your opponent will use, or that you have swapped the vital blueprints for a set of fake ones in case the safe is broken into. In this case, you simply write down your argument on a piece of paper and present it to the Facilitator announcing to the other players that you are making a secret argument. The Facilitator will make a judgment and you will roll the dice normally, but the other players have no idea what it is about.

You should be careful, however, that the players don't make too many secret arguments. This can ruin the game's atmosphere and reduce the focus, so that the game drags on unnecessarily. They also depend on the judgement of the Facilitator as to their success of failure, rather than being decided on a consensual basis from the participants. They must only be permitted when they refer to quite specific things or events. An argument about gathering information from a spy, in most games, will be quite a generic argument and should be argued openly. Similarly Arguing about the placement of an IED to catch forces moving down a route should be made openly as the results will take effect the same turn. It is only really for secret things you need to establish several turns in advance.

Measures of Success

In many arguments success or failure may not be a simple "Yes" or "No" proposition. There might well be a sliding scale of success or failure in terms of numbers or the quality of the outcome, which is usually represented by the score on the dice. If you needed a 7+ to succeed and rolled a double-six (12), this can indicate an especially notable success. Conversely, a roll of a double-one, it could represent a disastrous failure.

More information

More information and examples of recreational Matrix Games can be found at: http://www.mapsymbs.com/wdmatrix.html.

There has been quite a lot of discussion about Matrix games, including links to example games on the "PAXsims" Blog that are worth reading: https://paxsims.wordpress.com/?s=Matrix+Game

Professor Rex Brynen was also interviewed by the GrogHeads "GrogCast" Podcast, a copy of what he said about Matrix Games is here: http://grogheads.com/?podcast=grogcast-season-2-episode-12 with the discussion about Matrix Games starting at the 31-minute mark.

Conduct of the Game:

The players should be formed into teams around the Actors in the game. They should be provided with the introductory background (above) and their Actor brief; and provided with a short period in which to study the brief. They should then write down a few (3 or 4) short, pithy, objectives they would wish to achieve in the game in accordance with their briefs. One of these should be a longer-term objective, with a reach of at least 10 years in order to ensure that the players address something other than short-term goals and reactions to other player's actions in the game. Play should then commence in the normal way. The final turn should be followed by a discussion of the objectives, and comparison made with the Actor's achievements during the game.

Game Turn Length:

The length represented by a game turn will be variable during the game. My preference is to set the game in about 5 to 10 years in the future, with the first turn as that period, then modify the turn length to deal with the actions and reactions to the changes proposed in Turn 1.

Actors in the Game and Order of Play:

- Russia Political
- Norway
- USA
- Russia Military
- China
- UK

Russia Political[2]

NATO's expansion eastwards in the wake of the Soviet Union's demise is the West's original sin, reflective of an agenda of domination and intimidation rather than peace and stability, much less democracy. It is proof that for Western ideologues the Cold War never ended.

With tensions between the West and Russia being at a post-Cold War low, the former Soviet Baltic republics are looking for greater protection from NATO against the imaginary “Russian threat.”

The leaders of Lithuania, Latvia and Estonia asked President Trump to send more troops and bolster air defences on NATO’s eastern flank to “deter Russia,”. Even though Russia never tires of saying that it has no wish to attack any NATO country, alarmist statements about the imaginary “Russian threat” can regularly be heard coming from Western politicians, particularly in the Baltic countries and Poland.

The Western narrative of the crisis in Ukraine is that it was caused by 'Russian aggression.' This is false. The crisis was caused by the US' and its allies' attempt to pave the way for the further expansion of NATO east, using Ukraine as a cat's paw. The same objective had previously been tried in 2008, using the former Soviet republic of Georgia, led at the time by the hapless Mikheil Saakashvili, like a cat's paw. It led to a brief military conflict, yet clearly, the lessons were not learned; or at least the right lessons were not learned.

Since the demise of the Soviet Union in 1991, ten former Warsaw Pact countries have joined NATO. And just to illustrate that this is no benign peace-loving organization we're describing, since 1991 NATO has spearheaded the break-up and destruction of Yugoslavia, the destruction of Libya, and has been the vanguard of Western imperial power in Afghanistan. Meanwhile, and most recently, NATO troops have engaged in regular military exercises in proximity to Russia's western border, in what can only be considered an unconscionable provocation and barrier to the normalization of relations.

The Russian Federation claims a large extended continental shelf as far as the North Pole based on the Lomonosov Ridge within their Arctic sector. Moscow believes the eastern Lomonosov Ridge is an extension of the Siberian continental shelf. This claim does not cross the Russia-US Arctic sector demarcation line, nor does it extend into the Arctic sector of any other Arctic coastal state.

The Arctic policy of Russia is the domestic and foreign policy of the Russian Federation with respect to the Russian region of the Arctic. The Russian region of the Arctic is defined in the "Russian Arctic Policy" as all Russian possessions located north of the Arctic Circle. (About one-fifth of Russia's landmass is north of the Arctic Circle.) Russia is one of five countries bordering the Arctic Ocean. In 2011, out of 4 million inhabitants of the Arctic, roughly 2 million lived in arctic Russia, making it the largest arctic country by population. However, in recent years Russia's Arctic population has been declining.

The main goals of Russia in its Arctic policy are to utilize its natural resources, protect its ecosystems, use the seas as a transportation system in Russia's interests, and ensure that it remains a zone of peace and cooperation. Russia currently maintains a military presence in the Arctic and has plans to improve it, as well as strengthen the Border Guard/Coast Guard presence there. Using the Arctic for economic gain has been done by Russia for centuries for shipping and fishing. Russia has plans to exploit the large offshore resource deposits in the Arctic. The Northern Sea Route is of particular importance to Russia for transportation, and the Russian Security Council is considering projects for its development. The Security Council also stated a need for increasing investment in Arctic infrastructure.

Russia conducts extensive research in the Arctic region, notably the manned drifting ice stations and the Arktika 2007 expedition, which was the first to reach the seabed at the North Pole. The research is partly aimed to back up Russia's territorial claims, in particular those related to Russia's extended continental shelf in the Arctic Ocean. Russia is building three nuclear icebreakers, including the world’s largest, to bolster its fleet of around 40 breakers, six of which are nuclear. No other country has a nuclear breaker fleet, used to clear channels for military and civilian ships.

[2] Source: Wikipedia and Sputnik

Norway[3]

Norway shares a 195km land border with Russia and a lengthy maritime boundary that stretches north, dissecting the Barents Sea. Oslo claims that close bilateral relations with Moscow have been and continue to be "vital". But recent Norwegian government activity fuelled, in part, by Moscow's annexation of Crimea in 2014, suggests it is asserting itself in its relations with its much larger neighbour.

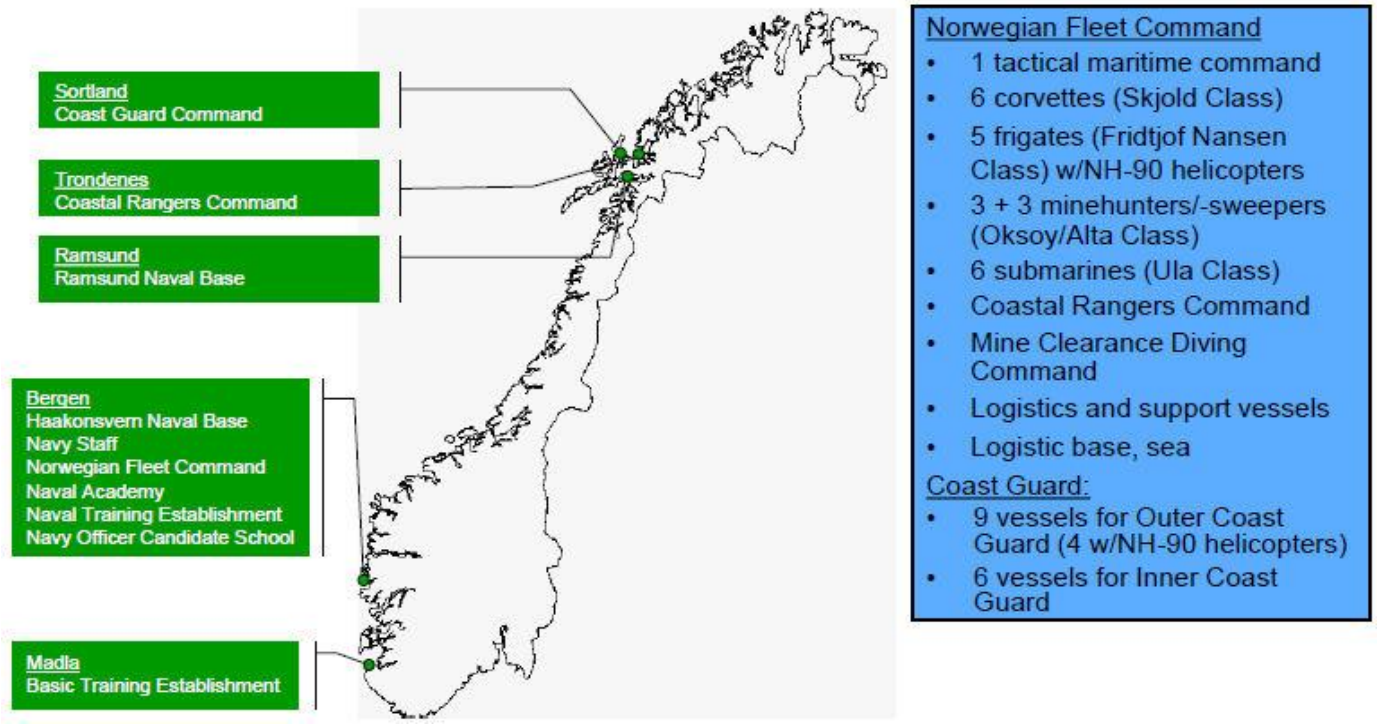
Last year, Norway bought five Poseidon surveillance aircraft at a cost of €1.1 billion to be deployed in regions of the Arctic Sea where Russian submarines have become increasingly active. In October, its outgoing defence minister, Ine Eriksen Soreide, announced a €320 million increase in military spending, much of which is to be focused on the north. "This shows will and ability to defend ourselves in the north, and it is a deterrent," Soreide said.

Much of Norway's posturing is a response to a series of Russian power plays. Moscow is in the midst of its biggest push for Arctic dominance since the collapse of the Soviet Union and is an increasingly visible presence in the Barents and Arctic Seas. Since 2013, it has tripled the amount of time its warships spend in Arctic waters. Last May, Russian authorities chose the Barents Sea to host a major naval exercise marking Victory Day, and extensive nuclear war games were conducted across the Arctic last month.

Add to that allegations that Moscow helped refugees illegally cross into Norway from the Arctic border region in 2015-16, and a big-budget Norwegian TV show that depicts Russia as occupying Norway (which drew the ire of the Russian embassy in Oslo), and it's not difficult to see why tensions are high.

But Oslo's attempts to position itself as a dominant force in the Arctic region is not centred on curbing Russia alone. Massive undersea reserves of oil and gas are a major motivation. Occupying the mass of water between Russia, northern Norway and the Arctic Ocean, the Barents Sea is set to become a new ground zero for energy exploration. In April, Norway doubled its oil reserves estimate there to 17.6 billion barrels. Less than two months later, it opened 93 blocks for exploration in the Barents Sea.

And with the state-owned energy giant Statoil more active in the Arctic last summer than ever before, climate activists tried and failed to take out a lawsuit against the Norwegian government for violating the constitution by, they say, "endangering citizens' rights to a healthy environment", and potentially breaching the Paris climate accord.



[3] Source: The Irish Times

USA[4]

There is a threat posed by Russian spy ships and submarines in the North Atlantic. These vessels are conducting reconnaissance of United States naval bases and particularly of the trans-oceanic cables that bind together the US with Europe. Those ships and submarines, more often than not, originate from the Russian Arctic and sail toward the North Atlantic. These military and intelligence probes attest to the continuing salience of the Arctic in Russian military thinking and furnish ample proof of the country's ongoing military build-up there.

President Vladimir Putin alluded to this build-up in his end-of-year review of the Russian military, held on December 22. Specifically, he mentioned six large-scale inspections of 2017 designed to improve the Russian Armed Forces' ability to rapidly strengthen their units in the Arctic (the numerous snap and regular exercises also carried out last year were not addressed). Moreover, Putin indicated that Vostok ("East") 2018, the major exercise for this year, would rehearse the transfer of a large-scale group—its personnel, ground hardware and aviation—over huge distances and practice deploying those forces to new areas (Kremlin.ru, December 22, 2017). Clearly, such a scenario could involve deployments to and from the Arctic, which would not be confined to ground forces.

At his annual December "press conference," held a week earlier, the Russian president highlighted the importance of industrial development, protecting the environment and building up military security—but with no mention of how to reconcile these sometimes-contradictory priorities (Kremlin.ru, December 14, 2017). Nor is it by any means clear if the supporting infrastructure to realize Putin's objectives is being built or even can be.

But that has not deterred the Russian military. At the above-mentioned end-of-year session, where Putin lauded 2017's Arctic build-up successes, Defence Minister Sergei Shoigu filled in some of the details that speak to the extent of Russian's activities in the High North last year. In particular, Shoigu lauded the completion of three new "Arctic Shamrock" (three-wing buildings) integrated military facilities there. These include the construction of a fully functioning airfield on the Franz Josef Archipelago, which is open round the clock (Rossiyskaya Gazeta, December 22, 2017). The infrastructure expansion is likely to continue into 2018, if not beyond.

Meanwhile, the Russian propaganda outlet Sputnik News has claimed Moscow is constructing new laser-armed and nuclear-powered "combat" icebreakers (Sputniknews.com, July 17, 2017). This, combined with other reports of Russia boosting its anti-aircraft and Northern Fleet capabilities in the High North (see EDM, September 21, 2015; November 6, 2015; August 1, 2016; May 25, 2017), is already generating Western pressures for compensatory build-ups. The US Coast Guard, in particular, is advocating for a much higher budget and greater firepower to rival Russia's apparent growing naval presence in the Arctic (The National Interest, July 21, 2017).

In other words, Russia is generating an arms race in this foreboding northern region. And it is doing so even as it is clear that nobody in North Atlantic Treaty Organization (NATO) has ever seriously contemplated the implications of Arctic military scenarios or seizing Russian vital natural resources located in the High North. Indeed, the Arctic military threat is a phantasm of the perfervid imagination of Russia's threat assessors, who invariably gravitate psychologically and materially (because it is in their professional interest to do so) to worst-case scenarios that then drive policy, procurement and the acquisition of resources for their offices (see EDM, March 28, 2014; November 6, 2015; November 16, 2017). This threat inflation and the ensuing diversion of billions in resources to military projects in inhospitable areas like the Arctic (see EDM, August 11, 2015) inevitably come at the expense of Russia's civilian infrastructure, technology, and human capital as well as the health and education of the Russian people. And, as happened under Communism, it is all too likely that when the end comes for the Putin regime, there will be nothing to show for it except unusable and incomplete infrastructure, suitable primarily if not exclusively for military purposes.

This kind of disproportionate threat assessment and distortion pervaded Putin's briefing on December 22, illustrating that it will take more than dialogue to put an end to the "new cold war" between Russia and the West. Ultimately, putting an end to the manufactured paranoia of Russian politics and such inflated and self-serving threat assessments may require a change in the regime itself. And that can only be accomplished from within and over a long time.

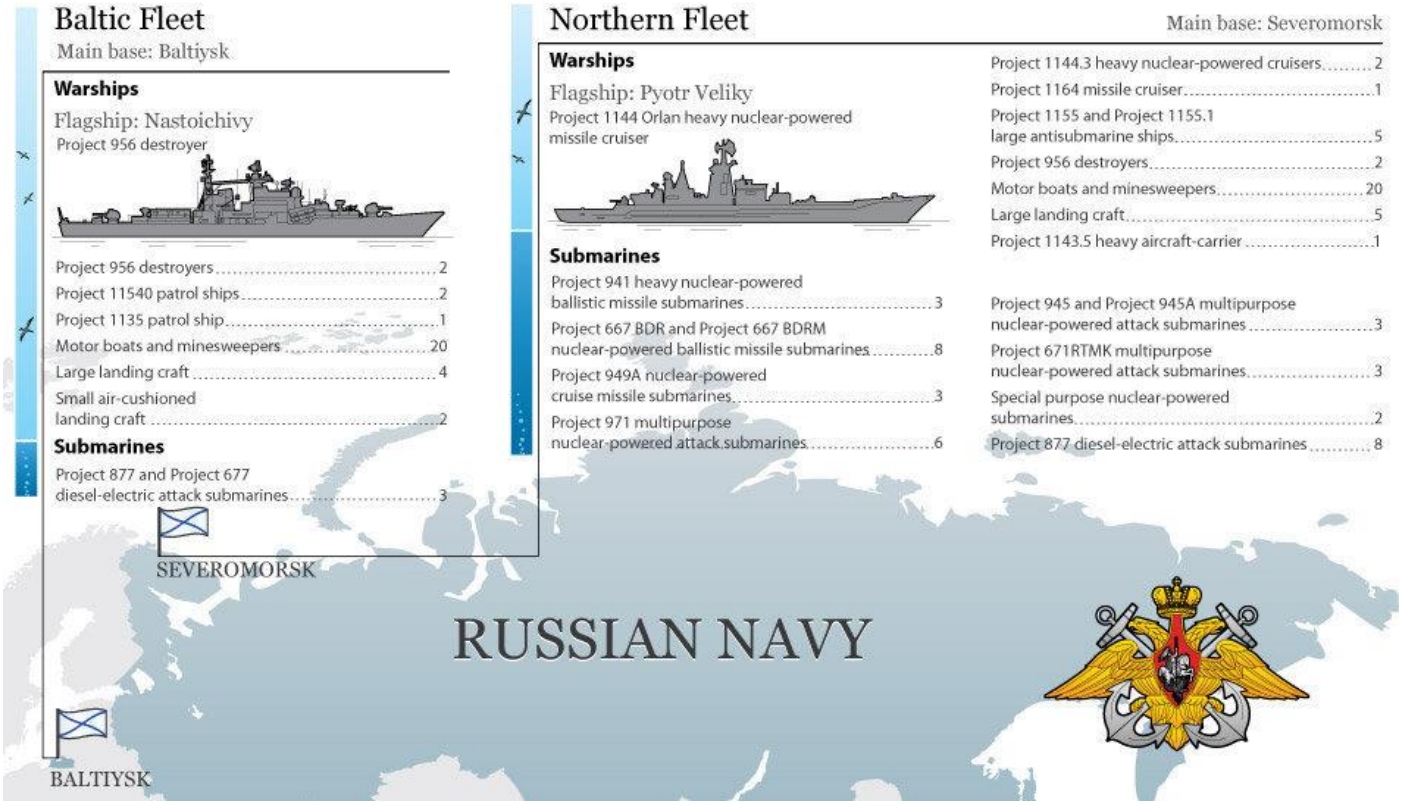
[4] Source: Eurasia Daily Monitor Volume: 15 Issue: 11

Russia Military[5]

Russia's current Arctic policy includes maintaining a military presence in the region. The Russian Northern Fleet, the largest of the four Russian Navy fleets, is headquartered in Severomorsk, in the Kola Gulf on the Barents Sea. The Northern Fleet encompasses two-thirds of Russia's total naval power and has close to 80 operational ships. As of 2013, this included approximately 35 submarines, six missile cruisers, and the flagship Peter the Great, a nuclear-powered guided missile cruiser. In 2012 the Russian Navy resumed naval patrols of the Northern Sea Route, marked by a 2,000-mile patrol of the Russian Arctic by ten ships led by the Petr Velikiy. The Russian Military also reportedly announced in June 2008 that it would increase the operational radius of its Northern Fleet submarines.

The first nuclear icebreaker, the Lenin, began operating in the Northern Sea Route in July 1960. A total of ten nuclear-powered civilian vessels, including nine icebreakers, have been built in Russia. Three of these have been decommissioned, including the Lenin. Besides its six nuclear icebreakers, Russia also has 19 diesel polar icebreakers. Its nuclear icebreaker fleet includes the 50 Years of Victory, the largest nuclear icebreaker in the world. There are currently plans to build six more icebreakers, as well as plans to build a $33 billion year-round Arctic port. On September 28, 2011, President Medvedev lifted the ban on the privatization of the nuclear icebreaker fleet with decree No. 1256. This repeal will allow Atomflot, the state company that owns the fleet, to be at least partially owned by private investors. The government is expected to retain a controlling share in the company.

Russia says that it has military units specifically trained for Arctic combat. On October 4, 2010, Russian Navy Commander Admiral Vladimir Vysotsky was quoted as saying: "We are observing the penetration of a host of states which . . . are advancing their interests very intensively, in every possible way, in particular China," and that Russia would "not give up a single inch" in the Arctic. Russian Defense Minister Anatoly Serdyukov announced plans on July 16, 2011, for the creation of two brigades that would be stationed in the Arctic. Russia's Arctic policy statement, approved by President Medvedev on September 18, 2008, called for the establishment of improved military forces in the Arctic to "ensure military security" in that region, as well as the strengthening of existing border guards in the area.



[5] Source: Wikipedia

China[6]

China has issued a White Paper, focussing its Arctic attention in four areas:

First, China will participate in the development of Arctic shipping routes which are composed of the Northeast Passage, Northwest Passage, and the Central Passage. Noting that the Arctic shipping routes are likely to become important transport routes for international trade as a result of global warming, China plans to build a Polar Silk Road by developing the Arctic shipping routes. To that end, China will encourage its enterprises to participate in the infrastructure construction for these routes and conduct commercial trial voyages.

Second, China aims to participate in the exploration for and exploitation of oil, gas, mineral and other non-living resources in the Arctic. The Arctic region boasts an abundance of geothermal, wind, and other clean energy resources and China will work with the Arctic States to strengthen clean energy cooperation.

Third, China will start to utilize fisheries and other living resources and participate in conservation, since the Arctic has the potential to become a new fishing ground in the future.

Fourth, China will develop Arctic tourism as an emerging industry. China will support and encourage its enterprises to cooperate with Arctic States in developing tourism in the region.

However, there is another part of the Arctic that has also become a focal point of Beijing's evolving Arctic diplomacy, namely Greenland. As the massive ice sheet on the island continues to erode, along with surrounding sea ice, Greenland's emerging economic potential has caught the attention of many countries, but China has been distinct with its economic diplomacy in Greenland, which has not only included emerging mining opportunities, but also in the areas of infrastructure planning, tourism, and scientific cooperation.

Greenland is part of the Kingdom of Denmark, and the centrepiece for Danish interests in the Arctic. In 2009 the island achieved "self-rule," meaning that most governmental portfolios are under Greenlandic jurisdiction save for defence and foreign affairs. China's Greenlandic engagement has sparked concerns in Copenhagen and may factor into the looming question of whether Greenland opts for full independence in the coming years.

Chinese firms have sought to invest in Greenland's emerging mineral wealth, which is becoming more readily accessible due to climate change. The most visible example is the rare earth elements, uranium, and zinc mining under development at Kvanefjeld by Australian firm Greenland Minerals and Energy, in cooperation with China's Shenghe Resources. In Greenland's far north, a zinc mine is planned at Citronen Fjord which would be overseen by Perth-based Ironbark, which signed a memorandum of understanding with China Nonferrous Metal to assist with that project's development. As well, General Nice, a Hong Kong-based company, currently holds the rights to a potential iron mine at Isua in western Greenland. The same company ran afoul of the Danish government when it attempted to purchase an abandoned U.S.-built naval facility at Grønnedal, only to be blocked by Copenhagen. According to reports revealed in April 2017, there were concerns the sale might offend the United States, which still operates a military base at Thule in northern Greenland.

There has been a growing demand in China for adventure and ecotourism, with the Arctic becoming more popular as alternative destinations, and opportunities have appeared for Chinese firms seeking to develop Greenland's nascent tourism industry.

Chinese firms are being considered for the expansion of three airports in Greenland, which could accommodate expanded tourist traffic, a development which is reportedly worrying Danish authorities. Beijing is also seeking to construct a scientific research base in Greenland, with these plans being outlined by Chinese researchers at the October 2017 Arctic Circle conference in Reykjavík. The exact location of the facilities has yet to be determined, (likely in western or northern Greenland), but if the project does go forward, it would be China's second such station in the Arctic. Beijing opened its Yellow River station on Svalbard in 2004, and there is also a joint Sino-Icelandic facility for the study of auroras under construction in northern Iceland.

[6] Source: thediplomat.com

UK[7]

The UK has been cautious in forming and enacting an Arctic strategy thus far. In many ways, this is unsurprising given that it is not an Arctic state, and thus its regional role is secondary to the 8 states in the High North. However, the UK does have a number of national interests in the region, and the Arctic will present increasing opportunities and challenges in the coming decades. The UK forms the closest landfall south of the Arctic and is its closest neighbour, its northernmost point just 400km south of the Arctic Circle. Global interest in the Arctic is increasing, and failure to engage in the region fully could endanger the UK's regional interests. In order to avoid being outmanoeuvred by less capable states, the United Kingdom must build upon the 2013 'Adapting To Change' strategy and increase its focus and engagement in the region.

The deterioration of Western-Russian relations, following Crimea's annexation and exacerbated by events in Syria, has led to changing security conceptions in the Arctic. In reality, there has long been concern that Russia under Putin may attempt to play an expansionist role in the region, going back as far as 2007, when explorer Arthur Chilingarov planted a Russian flag beneath the North pole. After recent Russian aggression, the Arctic is frequently viewed by commentators as a frontier. Enthusiasm for a permanent NATO role within the region has increased in some quarters, and this would directly impact the United Kingdom as a member of the alliance, giving the UK a clear stake in regional security developments.

5 of the 8 Arctic states are also members of the NATO military alliance, while Sweden and Finland are increasingly moving to collaborate with the organisation. Distrust of Russia is understandable, given their military activities in other theatres, and the lack of transparency regarding Russian military build-up and drill in the Arctic. Russian actions have concerned allies, and with good reason. Russia has unparalleled military strength in the Arctic with 2/3rd of its Naval force based in the Kola Peninsula. Russia has shown its military strength in the Arctic in a number of major military operations, including part of its Vostok exercise, the largest post-Soviet drill at the time.

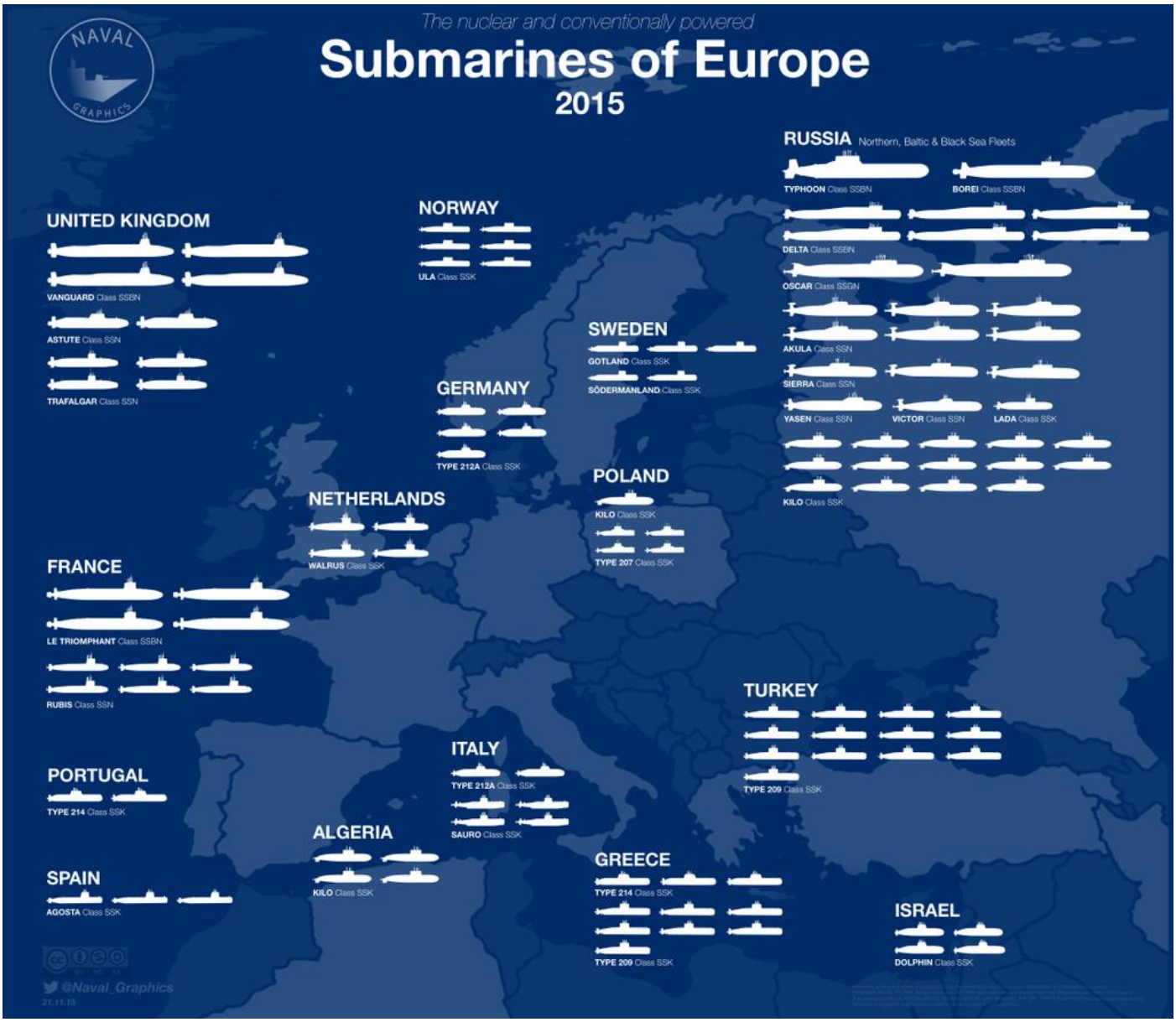
An emboldened Russia has, from 2014, increasingly tested the United Kingdom's defence response times. Russian submarine activity in the Arctic is naturally a concern for security planners as through these waters they can access UK maritime territory. Tracking Russian submarine activity around UK waters has been a challenge for the United Kingdom, following the retirement of the Nimrod MR2 plane. This was apparent in 2015, when off Scotland's waters, the UK required the assistance from a French plane and other NATO allies to search for suspicious activity. This capability gap has recently been recognised and addressed as part of the 2015 SDSR. Following the review, 9 P-8 Poseidon planes were ordered.

The UK has a strong incentive to increase engagement with Arctic states and the Arctic region. Climate change, Arctic security dilemmas and opportunities for UK research and investment will and should pull the government to plan more thoroughly the UK's policy in relation to the region. The United Kingdom is an expert within certain fields of research, and its engagement within the region is valuable in recording and mitigating the impact of climate change. Given that the UK will continue to respect the rights of the Arctic states to set the agenda, and their sovereignty over resources, it is likely that increased engagement on regional issues will be well received.

[7] Source: http://polarconnection.org

The Far North Game Map:

Submarines[8]:



[8] Source: theaviationist.com

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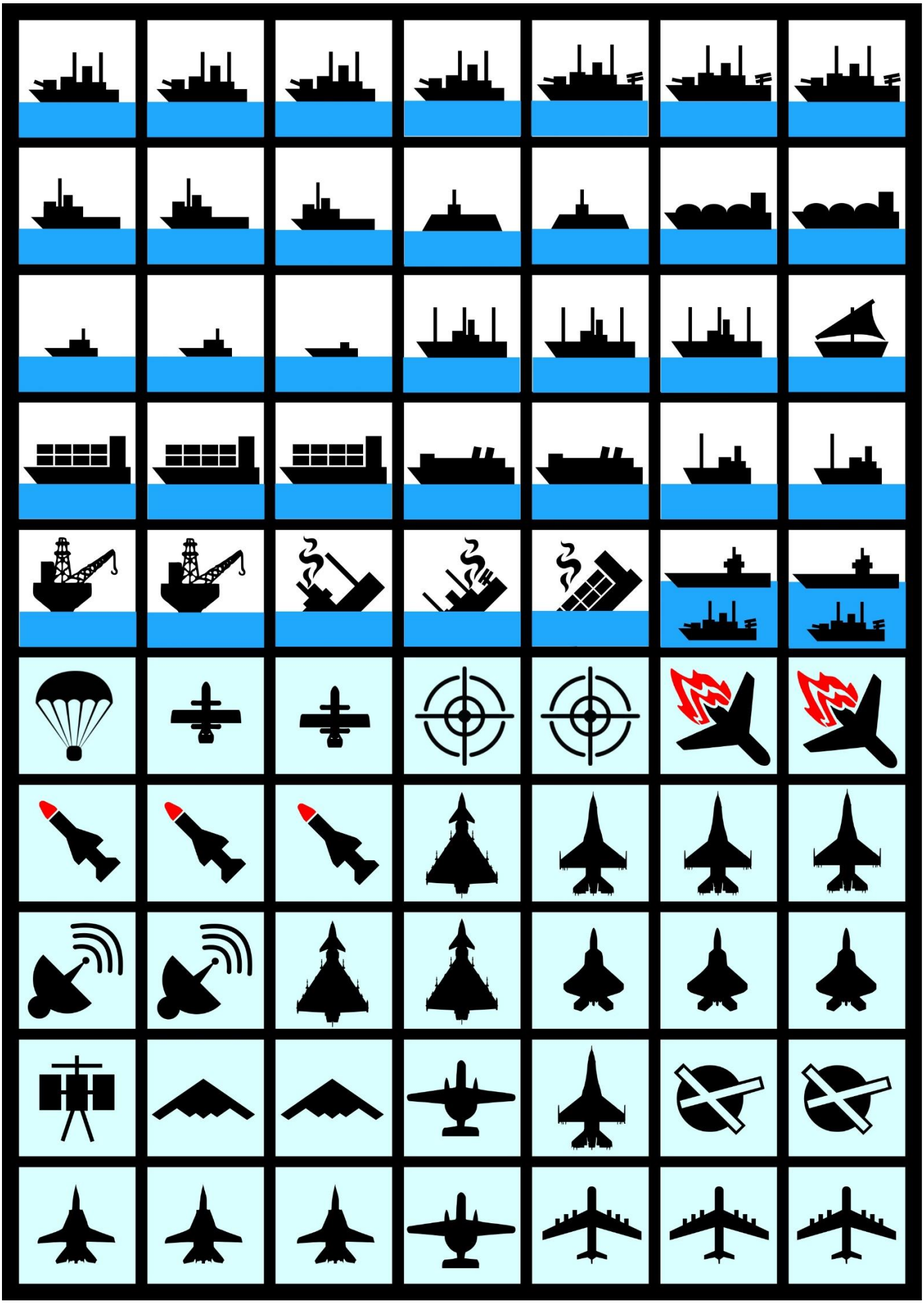

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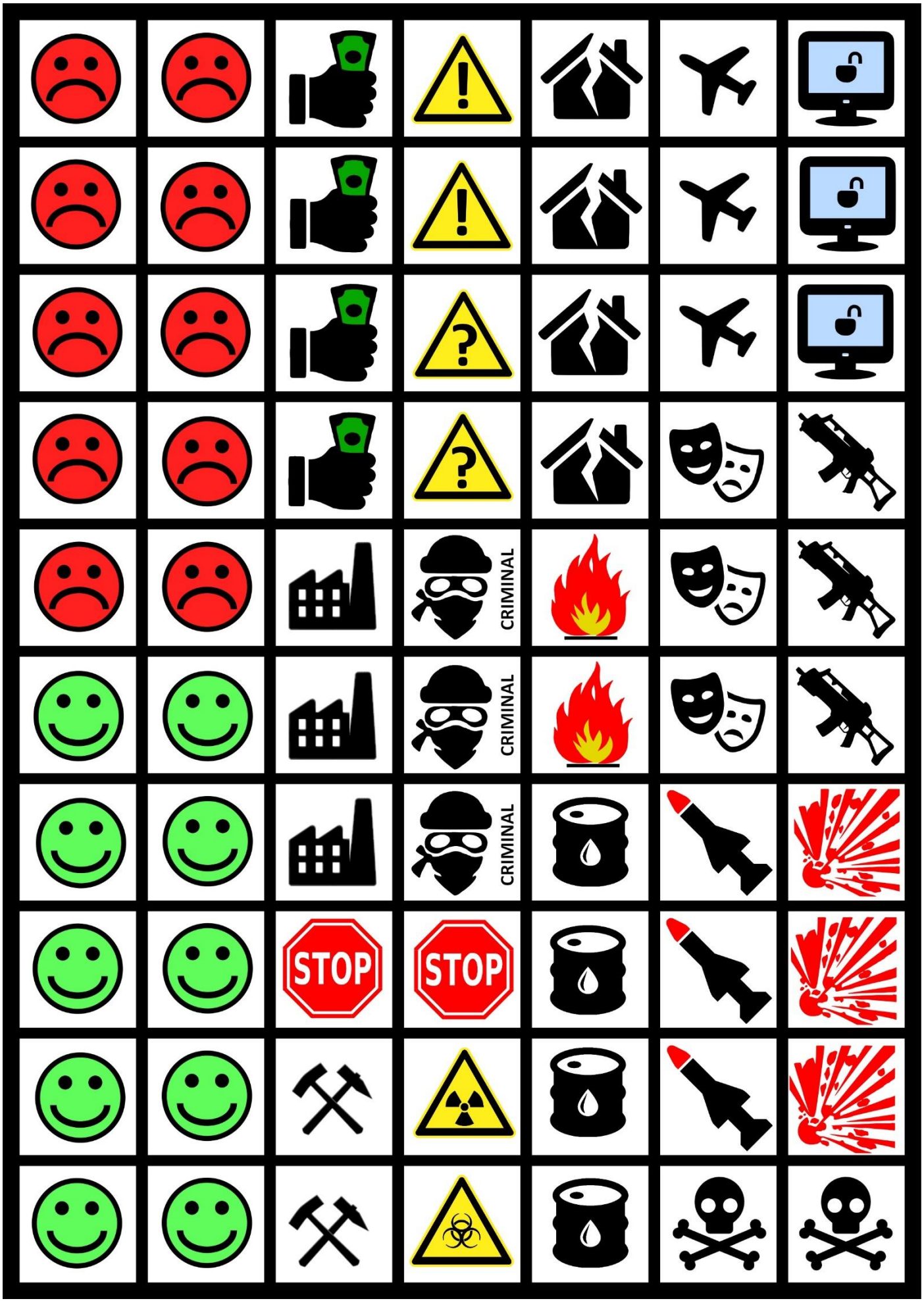

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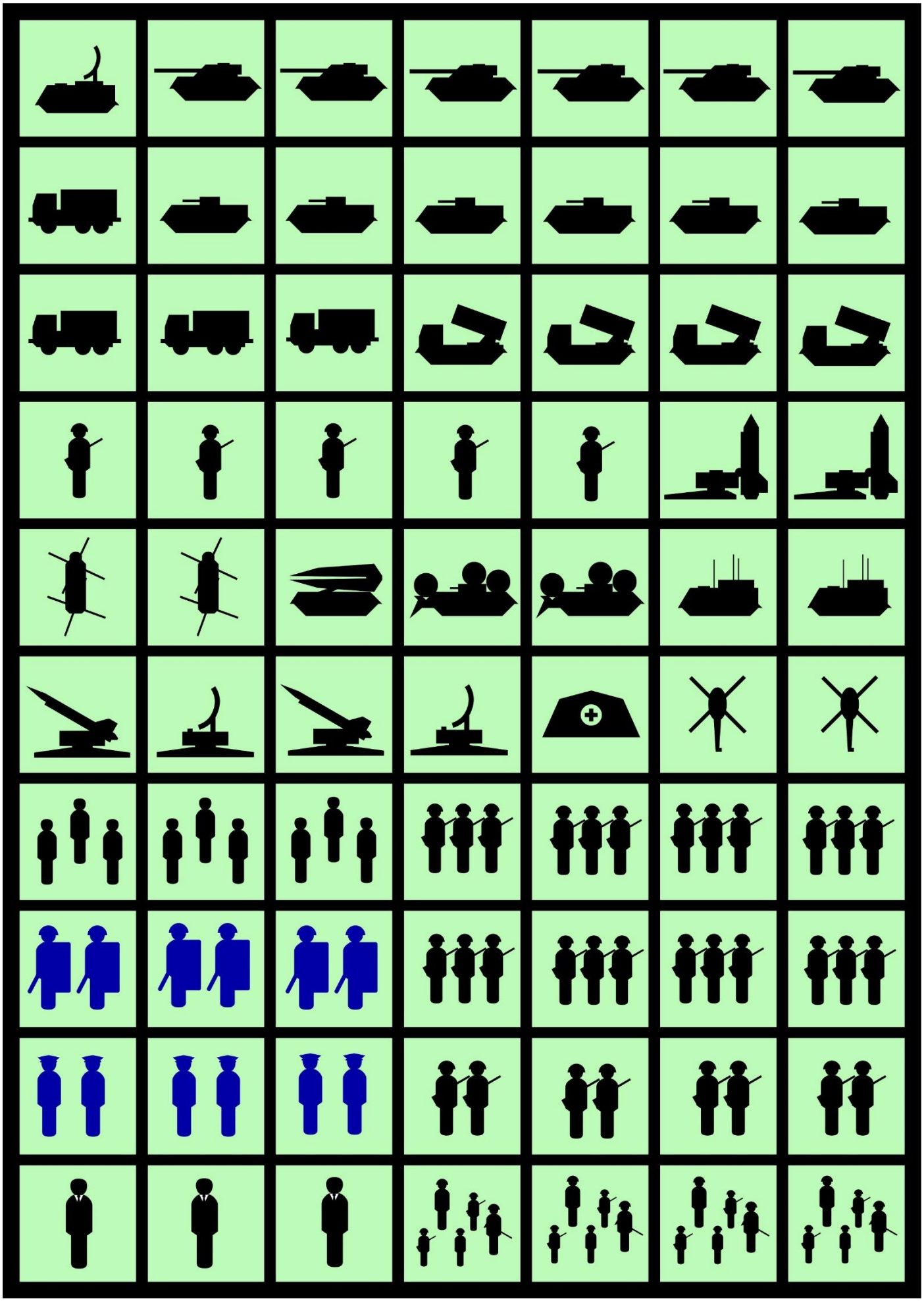


Russian Advanced Weapon Systems

S-400 Triumf Air Defence System (SA21-GROWLER)

Mobile surface-to-air missile system

Designer Almaz/Antei Concern of Air Defence (PVO Kontsern)
Manufacturer Fakel Machine-Building Design Bureau
Unit cost $400 million per fire unit consisting of 8 launchers, 112 missiles, command and support vehicles
Number built 152+ (in 2015, there were 152 launchers deployed in 19 divisions)

Operational range: 400 km (40N6 missile), 250 km (48N6 missile), 120 km (9M96E2 missile), 40 km (9M96E missile).

Iskander Missile System (SS26-STONE)

Short-range ballistic missile

Manufacturer Votkinsk Plant State Production Association (Votkinsk) - missiles
Production Association Barricades (Volgograd) - ground equipment
KBM (Kolomna) - developer of the system

Warhead 480–700 kg (1,060–1,540 lb) HE fragmentation, sub munition, penetration, fuel-air explosive, EMP.

Operational range: 400–500 km for Iskander-M

Guidance system: Inertial guidance, optical DSMAC (Iskander-M), TERCOM (Iskander-K), use of GPS / GLONASS in addition to the inertial guidance system

Accuracy 5–7 m (Iskander-M)

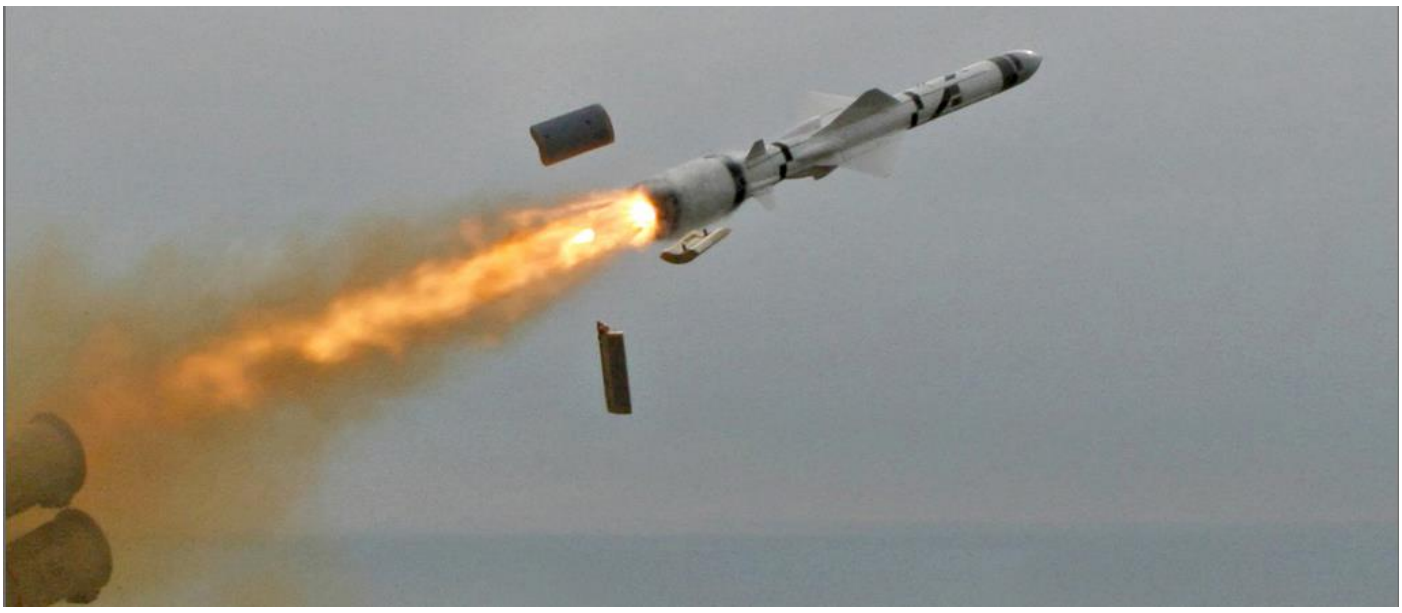
Russian Advanced Weapon Systems

K-300P Bastion-P Anti-Shipping Missile System (SS-C-5 STOOGE)

Mobile anti-ship missile system

Manufacturer:	NPO Mashinostroenia
Warhead:	250 kg semi-armour piercing HE
Operational range:	350 km against sea targets, 450 km against stationary ground targets
Flight ceiling	14,000 m
Flight altitude	5 m
Guidance system:	Active-passive radar seeker head

P-800 Oniks (Yakhont) anti-ship cruise missile (range 600km) (SS-N-26 STROBILE)



Russian Advanced Weapon Systems

Buyan-M class Corvette

Littoral Stealth Missile Corvette

Builders:	Almaz Shipyard, St. Petersburg.
Speed:	28 knots
Range:	2,300 nmi at 12 knots
Armament:	1 × 100 mm A-190
	2 × 30 mm AK-630M2
	2 × 4 UKSK VLS cells with Kalibr-NK system (range 2,500km (Land target) or 350km (Sea target)
	2 × 4 Komar
	1 × DP-65 anti-saboteur grenade launcher
	2 × 14.5 mm KPV type
	3 × 7.62 mm PKM type

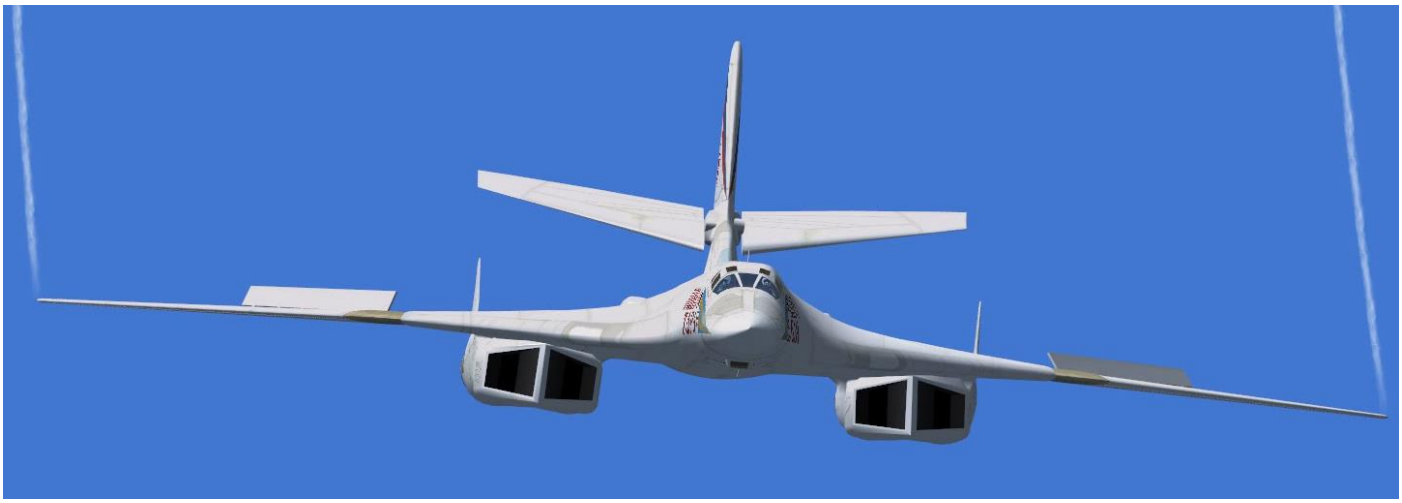
3M-54 Klub (Kalibr) anti-ship / land attack cruise missile (SS-N-27 SIZZLER)

Russian Advanced Weapon Systems

Sukhoi PAK FA 5th Generation Stealth Fighter

Role	Stealth Air superiority fighter
Design group	Sukhoi
Built by	KnAAPO, NAPO
Introduction	2018 (planned)
Status	Final flight testing/pre-production
Number built	8 flyable prototypes

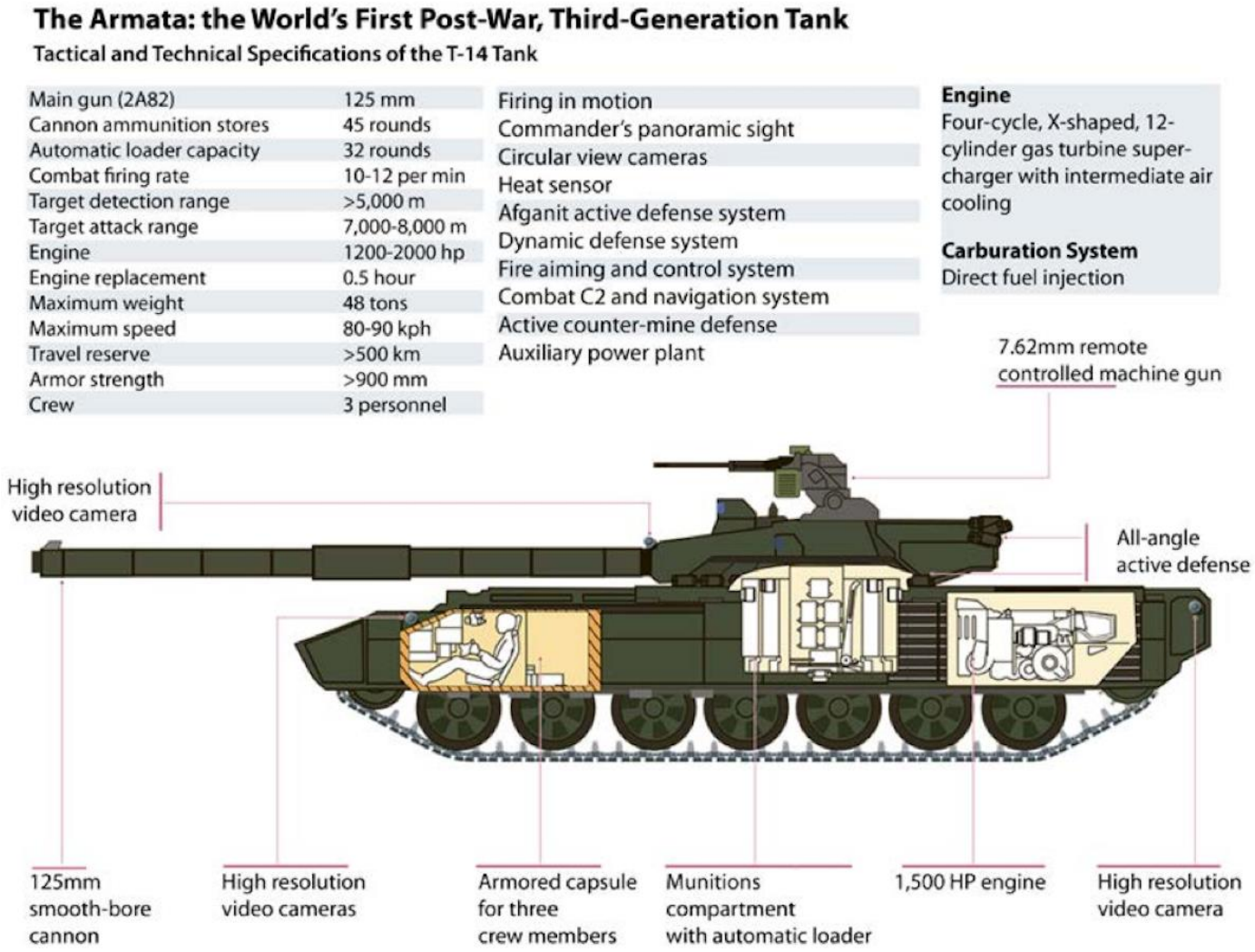
Tupolev Tu-160 "White Swan" supersonic heavy Strategic Bomber (BLACKJACK)



Role	Supersonic strategic bomber
Design group	Tupolev
Built by	Kazan Aircraft Production Association
Introduction	30 December 2005 (IOC in 1987)
Status	In service
Number built	27 serial & 8 prototype
Armament	Two internal bays for 40,000 kg (88,185 lb) of ordnance including two internal rotary launchers each holding 6× Raduga Kh-55SM/101/102/555 (3,000Km range) cruise missiles (primary armament) or 12× AS-16 Kickback (300Km range) short-range nuclear missiles.

Russian Advanced Weapon Systems

The T-14 Armata is a Russian main battle tank based on the Armata Universal Combat Platform. It is the first series-produced next generation tank. The Russian Army plans to acquire 2,300 T-14s in the period 2015–2020.



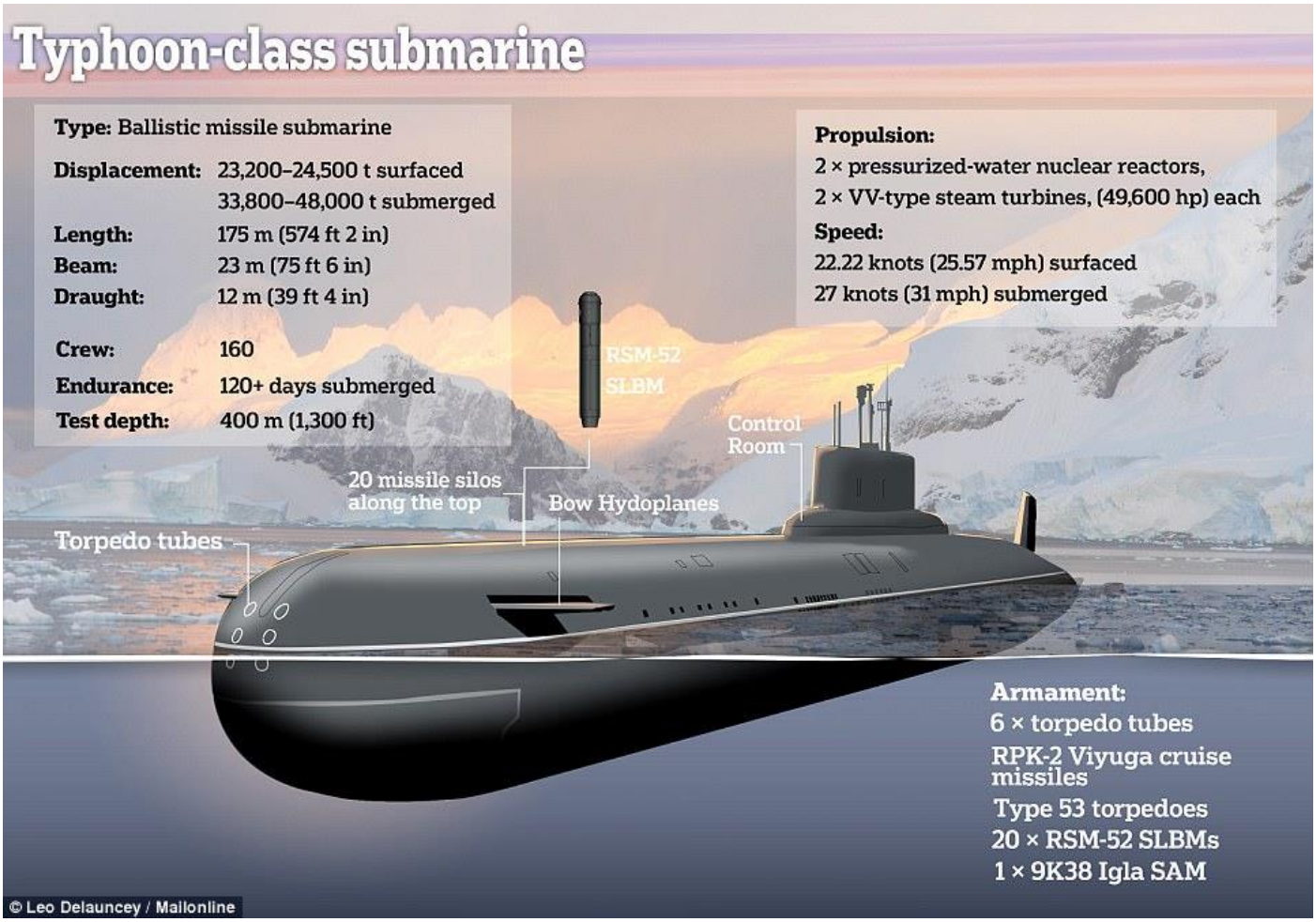
The T-14 Armata is a new and advanced main battle tank, as well as the first next generation tank to enter serial production. British intelligence views the unmanned turret as providing many advantages. It has been described as a major concern for Western armies. However, western observers question the economics of Russia's modern tanks like the T-90 and T-14 to be available in significant numbers.

Although the T-14 is touted as an entirely Russian-made next-generation tank, some components may not be entirely domestically made. Cybersecurity analysts have stated that Russian industries have had difficulty producing critical components of night-vision systems which are standard on the tank, and have attempted to buy them from Western or Chinese suppliers in the past. This means components of the T-14 could have originated outside of Russia, and may be more difficult to obtain or produce due to sanctions against Russia for its involvement in Crimea and eastern Ukraine.

Russia claims the tank's main armament is twenty years ahead of comparable Western tank guns and renders existing NATO anti-tank weaponry obsolete. In response to the Armata, German Rheinmetall AG has developed a new 130mm L/51 tank gun, claiming it provides a 50% increased armour penetration over the 120mm L/55 in service with the Bundeswehr today. Additionally, Germany and France have joined efforts to develop an unspecified "main ground combat system" (MGCS) to compete with the technological advances of the Armata and replace both the Leclerc and Leopard 2 MBTs around 2030.

Typhoon Class Submarine

The Project 941 or Akula, Russian "Акула" ("Shark") class submarine (NATO reporting name: Typhoon) is a type of nuclear-powered ballistic missile submarine deployed by the Soviet Navy in the 1980s. With a submerged displacement of 48,000 tonnes, the Typhoons are the largest class of submarine ever built, large enough to accommodate decent living facilities for the crew when submerged for months on end. The Russian Navy cancelled its Typhoon modernization program in March 2012, stating that modernizing one Typhoon would be as expensive as building two new Borei-class submarines. With the announcement that Russia has eliminated the last SS-N-20 Sturgeon SLBMs in September 2012, the remaining Typhoons have reached the end of service.



Borei Class Submarine

The Borei-class submarine is the new class of nuclear-powered ballistic missile submarine produced by Russia and operated by the Russian Navy. The class is intended to replace the Delta III, Delta IV and Typhoon classes now in Russian Navy service. The class is named after Boreas, the North wind and has 16 SLBMs.

Despite being a replacement for many types of submarines, the Borei-class submarines are much smaller than those of the Typhoon class in both volume and crew (107 people as opposed to 160 for the Typhoons). The goal of this downsizing is to reduce the cost to build and maintain the submarines.