

The Air Iron Curtain of the 21st Century: the Ukraine of the Air

A Cortina de Ferro Aérea do Século XXI: as Ucrânias do Ar

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Abstract

“Ukraine” means borderland and the concept of border encompasses the notion of lines that determine the land, sea and air spaces of sovereignty and responsibility of all Nation-States. As so, we can argue that aerial *ukraines* are defined by the so-called Flight Information Regions (FIR). The Nation-States or the groups of Nation-States should guarantee the safety and assistance of aircraft operating in their respective FIR. However, they can also close them for national security reasons, especially in cases of war, or use them as political and geopolitical tools, to obtain advantages over other Nation-States, namely their opponents. By studying the main events regarding aviation’s history like the first international flight and the events occurred since the 2004 presidential elections in Ukraine and the political decisions regarding sanctions, this article addresses the effects of the Ukrainian war on the Eurasian aviation, discussing, among other themes, the geographical, geopolitical, social, and economic implications. After three decades of globalization, it was perhaps inconceivable to return to a world of closed skies. However, that reality is back and even if it isn’t transversal to the entire world, the political weight of the rise of an aerial iron curtain of the 21st century is undeniable.

Keywords: aviation; borders; Flight Information Regions; Russia; sanctions and Ukraine.

Resumo

A palavra “Ucrânia” significa fronteira e o conceito de fronteira engloba a noção de linhas que determinam os espaços terrestres, marítimos e aéreos de soberania e responsabilidade dos Estados. Podemos argumentar, então, que as *ucrânias* aéreas são definidas pelas chamadas *Flight Information Regions* (FIR). Os Estados ou os grupos de Estados devem garantir a segurança e assistência das aeronaves que operam nas respetivas FIR. No entanto, os Estados também podem fechá-las por razões de segurança nacional, sobretudo em caso de guerra, ou utilizá-las como instrumentos políticos e geopolíticos, para obter vantagens sobre outros Estados, nomeadamente os seus adversários. Ao analisar os principais acontecimentos da história da aviação como o

primeiro voo internacional; os acontecimentos ocorridos desde as eleições presidenciais de 2004 na Ucrânia e as decisões políticas em matéria de sanções, este artigo aborda os efeitos da guerra na Ucrânia na aviação euroasiática, discutindo, entre outras abordagens, as suas implicações geográficas, geopolíticas e económicas. Após três décadas de globalização talvez fosse inconcebível retornar a um mundo de céus fechados. No entanto, essa realidade voltou e mesmo que não seja transversal a todo o mundo, o peso político da ascensão de uma cortina de ferro aérea no século XXI é inegável.

Palavras-chave: aviação; *Flight Information Regions*; fronteiras; Rússia; sanções e Ucrânia.

Introduction

On 24 February 2022, after months of massing military equipment near the border, Russian troops invaded Ukraine, violating its sovereignty and territorial integrity, flouting international law and triggering a war, the effects of which are beginning to be felt. The political implications of this war include the sanctions imposed by the West on Russia and the natural Russian response to them. These include those imposed on Western and Russian aviation, which, we argue, most affect air travel between Western Europe and East Asia and between Russia and the Rest of the World. The negative effects of this war on aviation are related, among other reasons, to the very geography of planet Earth, to Russia's territorial and aerial size, and to the geopolitical implications inherent in the rise of the new aerial Iron Curtain between the West and Moscow, which could regress the world to a partial Cold War context.

Thus, this article has the general purpose of discussing the effects of the current war in Ukraine on civil aviation between Western Europe and East Asia, marking the end of a period of about 30 years marked by globalisation and international cooperation in aviation and the return to an era of airspace protectionism, motivated not only by defence and national security issues, but also by political reasons arising from sanctions imposed in a hybrid war context.

This discussion is pertinent as it addresses recent events that will mark, in the long run, world history, politics and geopolitics. We consider analysing the problem through the main perspectives of Vertical Geopolitics, i.e. bottom-up (Williams, 2013), or top-down (Graham, 2004). In this type of theoretical framework we are invited to put aside two-dimensional geopolitical analysis tools such as planispheres and embrace three-dimensional tools such as globes, which, we argue, bring us closer to a more reliable representation of the Earth and the phenomena that occur on it. Curiously, during the writing of this article we did not find any terrestrial planispheres or globes with FIRs, and this may reflect the general disregard, on the part of geographical and geopolitical studies, of boundaries other than terrestrial ones. Apparently, we tend to analyse geographical and geopolitical phenomena from a God's eye view, but we end up explaining the phenomena in two-dimensional instruments, running the risk of producing reductive works that deprive us of a full understanding of the phenomena. According to Budd (2009) and Williams (2011), the geography of air transport remains an under-researched topic. "Such a dearth of research in this area is unfortunate, because the Vertical Geopolitics of military airspace addresses how states project power into space." (Debbage, 2014, p. 26). In conclusion, this discussion is pertinent because it will perhaps act as a complement to other geographical and geopolitical studies on the current war in Ukraine that may not contemplate the vertical dimension.

1.1. *Vertical Geopolitics: the Z Coordinate and the Vertical Dimension*

According to the Dictionary of Human Geography (Rogers, Castree and Kitchin, 2013), the term “Vertical Geopolitics” was coined by British geographer Stephen Graham after he studied the Iraq War and the actions conducted by Israel in the Palestinian territories. Graham noticed the importance of air power in warfare and that the use of bunkers, tunnels and other underground structures was becoming a defensive reaction to enemy air supremacy.

Vertical Geopolitics thus comprises the notion of volume, which in turn can be interpreted as having a geographical connotation, insofar as it underlies the idea of three-dimensional space. In other words, the volume includes three dimensions, which from a geographical point of view can be understood by the set of coordinates x , y and z .

By exploring the geography of national airspaces defined by FIRs and their instrumentalisation in contexts of war and/or globalisation, we are adding the z -coordinate, i.e. the vertical dimension, which is essential for understanding the current war in Ukraine. To summarise, this article falls within the branch of Vertical Geopolitics, which in turn expands Geopolitics and Geography as sciences.

1.2. *The Geography and Geopolitics Factor*

Geography still exerts its influence on power, politics and the human and social development of peoples. The power of geography can make them prisoners of themselves, or give them the freedom and ability to achieve their goals (Marshall, 2017, 2021). Although the shortening of time-distances/cost of physical and/or mental spaces, something that has only been possible thanks to globalisation driven by technological and digital innovation and development, has diminished the perception of the influential role of geography on power, politics and people’s everyday lives, geography continues to shape the options available to political leaders and peoples, as well as their decisions.

Air transport exists to facilitate the efficient movement of people and goods between various locations and involves the interaction of physical and human environments (Budd, 2014). Thus, because of its inherent “geographical nature” (Vowles, 2006, p. 18), its social, economic, political, cultural and environmental dimensions, and because Geography “has long addressed the nature and organisation of human movement in spaces” (Zook & Brunn, 2006, p. 472), aviation offers geographers and other social scientists a platform for the development of a new approach to aviation. 472), aviation offers geographers and other social scientists an engaging platform from which to explore an infinite variety of physical, social, geopolitical, environmental, economic and cultural phenomena (Budd, 2014 and Debbage, 2014). As Willis Lee wrote in one of the first publications on the geography of flight: “the aeroplane opens a new world to the geographer” (1920, p. 310).

In addition to the above, aircraft themselves have the ability to fly over natural and cultural barriers, so aviation is not only about the movement of passengers and goods between geographies, but it is also about geopolitics, regulation and power (Debbage, 2014 apud Butler, 2001; Shaw and Sidway, 2010).

In conclusion, the air borders of the States directly and indirectly involved in the current war in Ukraine will be addressed as geographical and geopolitical factors that define the airspaces of sovereignty, responsibility and international co-operation and that, by encompassing the land

surface, condition and shape the choices and decisions of political leaders and people.

1.3. *The Globalisation Factor*

The manifestation of the phenomenon of globalisation takes many forms. The almost continuous growth (except during the COVID-19 pandemic) of the aviation industry over the last three decades in particular (International Civil Aviation Organisation - ICAO, 2019) can be interpreted as an example of this.

Like other global communication and mobility networks, air travel “links the global and the local in complex, unpredictable and often unexpected ways”. (Goetz & Budd, 2014, p. 1).

However, the COVID-19 pandemic forced the grounding of several aircraft, due to the cancellation of several routes, something that in practice resulted in the paralysis of activities directly and indirectly associated with aviation and, to some extent, the partial and temporary suspension of globalisation, the increase in distances and the consequent increase in the influential role of Geography in the decisions of political leaders and people. Once the most critical phase of the pandemic and its effects on aviation were over, thousands of planes again crossed the airspaces and borders defined by the FIRs, which are also factors in the manifestation of globalisation.

FIRs are the airspaces under the responsibility of States. States, even if they are not signatories to the Convention on International Civil Aviation, must recognise the sovereignty and integrity of other States' FIRs and ensure the safety of aircraft and persons flying over their own airspace, for example by providing the necessary assistance in the event of an emergency (ICAO, 1944).

In conclusion, regardless of the international context, the influential role of geography and geopolitics on globalisation is also felt in the troposphere, namely through the air borders defined by the FIRs, which can be closed in specific cases such as armed conflicts, thus preventing civilian aircraft from being intercepted by the crossfire of belligerents, something that happened in July 2014 when a Malaysia Airlines passenger plane was shot down by rebels, armed conflicts, thus preventing civilian aircraft from being intercepted by the crossfire of belligerents, something that happened in July 2014, when a Malaysia Airlines passenger plane was shot down by pro-Russian separatist rebels in eastern Ukraine, in the Donbass region (BBC news, 2020).

2. Materials and Methods

This paper has drawn on a wide range of bibliographical sources, news items and analytical tools, which we now describe.

For the theoretical framework and in order to formulate the previous discussion, we used Vertical Geopolitics (Graham, 2004) and its God's eye view, but explaining, whenever possible, the phenomena analysed in three-dimensional instruments. We also used the bibliography of Goetz and Budd (2014), which brings together a very complete set of contributions on “The Geographies of Air Transport” and several authors, of which we highlight Keith Debbage, approaching aviation through historical, geographical and geopolitical perspectives, among others. We also used the bibliography of Tim Marshall (2017, 2021) in order to introduce the geographical characteristics of States as conditioning factors of their political options and decisions and trying to add the air borders defined by the FIRs to the range of geographical constraints presented by Marshall.

In addition to the theoretical framework and the previous discussion, the bibliography of

Goetz and Budd (2014) was essential for the development of a part of the “3. Results”, namely for the origin and evolution of aviation and the regulation of international airspace. In the second part of the “3. Results” we turn to the main source of information for this article: news sources related to the current war in Ukraine and the events that preceded it. Thus, the temporal spectrum of the news goes from the end of 2004, when presidential elections were held in Ukraine, until May 2022, and concerns newspapers and magazines of the Western press.

Finally, and occasionally throughout the article, we draw on documents from international organisations such as the United Nations (UN), ICAO, the European Union (EU), the Organisation for Security and Cooperation in Europe/Office for Democratic Institutions and Human Rights (OSCE/ODIHR) to complete the analysis on issues as diverse as the Convention on International Civil Aviation, the final reports of the EU and OSCE/ODIHR Election Observation Missions (EOMs) in Ukraine, and UN Resolution ES-11/1 condemning Russian aggression against Ukraine.

3. Results

3.1. Aviation

3.1.1. The Origin of Aviation and International Aviation: the Question of Defence and National Security

We go back to 17 December 1903, to the sandy hills of Kill Devil Hills in North Carolina in the United States of America (USA). We do so because that is the temporal and spatial origin of the modern era of aviation (Budd, 2014). That morning, Orville Wright flew for 12 seconds, covering about 36 metres before landing successfully. Although man had flown before in hot air balloons, Wright’s flight that became inscribed as:

“The first time in history that a machine, carrying a man, rose by its own power into the air in full flight, sailed forward without reduction of speed, and finally landed on a point as high as that from which it started” (Wright, 1913, p. 12).

The news spread around the world, prompting other aviators to try to repeat the feat. On 25 July 1909, Louis Blériot became the first to successfully fly across the English Channel, paving the way for international aviation. However, “amidst the public’s excitement at this achievement, the flight raised challenging questions about the right of one state’s aircraft to access another’s airspace” (Budd, 2014, p. 11 and see Debbage, 2014).

The problem of defence and national security did not arise as long as the aviators remained in their countries. But the notion of international aviation, made a reality by Blériot’s flight, jeopardised the territorial integrity of states (Budd, 2014).

This resulted in one of the longest-running debates in aviation policy, as each state sought to yield as little as possible and control as much as possible, while maintaining control over its borders for reasons of defence and national security (Budd, 2014 and see Petzinger, 1995). From this moment on, the definitive regulation of airspace became urgent and necessary.

3.1.2. Airspace Regulation: from Paris to Chicago

One of the first attempts to regulate airspace occurred in 1900, when the French government proposed the formulation of a code governing international air navigation after German balloons flew over French territory without authorisation (Millichap, 2000). At first, debates around

airspace regulation focussed on the vertical extension of state sovereignty (Dierikx and Bouwens, 1997), but the claim to such space, unlike land and maritime claims, was a new concept, so consensus was not immediately achieved (Butler, 2001). More advanced aviation countries such as the US and the United Kingdom (UK) wanted unrestricted airspace, while others were opposed (Budd, 2014). The incompatibility of geopolitical positions led to disagreement and caused attempts to bring international air services under unified control, discussed in 1910 during the Paris International Air Navigation Conference, to be unsuccessful (Veale, 1945).

In 1911, the British government passed the British Aerial Navigation Act, which declared that the entire air territory of the empire was sovereign and therefore inviolable (Butler, 2001). Thus, the dawn of international aviation would be marked by dichotomies: aviation was publicised as an instrument of peace and international cooperation, while at the same time states adopted protectionist measures of their airspace; the commercial, but also military, potential of aviation was soon recognised (Budd, 2014).

In the aftermath of World War I and after a decade under the threat of German Zeppelins (Butler, 2001), European states realised that national air security was an imperative. Thus, in 1919, the Paris Convention established that states had sovereign rights over the airspace above their territory, making aviation a national resource protected by the state for the benefit and interest of national welfare.

After World War II, the Convention on International Civil Aviation was held in Chicago to “establish a coherent legal framework for the international airline industry” (Debbage, 2014, p. 26). According to Debbage (2014), the key airspace freedoms that underpin current air travel arrangements and influence the contemporary geography of aviation were first defined in Chicago.

In short, the two protocols have helped shape the concepts of airspace and air sovereignty. States have a dual interest in, on the one hand, developing the international aviation industry and, on the other hand, ensuring control of their air borders. As a result, a dense structure of political, economic and regulatory institutions has developed that fundamentally shape international aviation (Duval, 2008; Duval and Macilree, 2011).

3.1.3. The Evolution of Air Transport

Aviation has come a long way in its development since 1903. Technological and digital innovations, improved aircraft performance, regulatory reforms, partial liberalisation of western airspace (Debbage, 2014) allowed new business models and new airlines to emerge, lowering travel prices and increasing passenger numbers, especially in the period following World War II (Budd, 2014). After the Cold War, the growth of the aviation industry was even greater, as the world entered a new phase of international co-operation in international aviation. Since then, new, faster, more comfortable and more efficient aircraft have appeared; new airports have been built and existing ones have been expanded to receive an increasing number of aircraft; new state-owned airlines such as Qatar Airways, Etihad Airways, and low-cost airlines such as Ryanair, or easyJet have emerged, taking advantage of an increasingly liberalised international airspace and an international environment that enhances the creation of new air services (Goetz & Budd, 2014).

In the 21st century world in which drones can strike any target anywhere in the world, “geographers need to be actively engaged to understand how these military spaces are controlled and manipulated” (Debbage, 2014, p. 26). In 2010, Alison Williams (p. 57) suggested that we were

entering a period of crisis in terms of air sovereignty and “witnessing the chronic decline of the sanctity of air sovereignty as security and securitisation strategies, enacted with greater regularity by more powerful states, allow them to violate...sovereign airspace...with continued impunity.”

As a result, there is “a pressing need to uncover and illuminate the critical geographies of the aerial view and the politics of verticality, especially when that view is used to target people, infrastructure and technologies” (Adey, Whitehead & Williams, 2011, p. 183).

3.2. From the Current War in Ukraine

3.2.1. Conflict Review

The current war in Ukraine started in 2014. However, understanding this conflict takes us back to 2004.

Presidential elections were held in October of that year. The candidate Viktor Yanukovich won and was elected. However, the final reports of some EOMs, which had been invited by the Ukrainian government to observe the electoral process, reported widespread fraud (EU, 2005 and OSCE/ODIHR, 2004). In response, Yanukovich’s political opponent Viktor Yushchenko organised a demonstration in Kyiv, which would later become known as the Orange Revolution (ICNC, 2022). This demonstration led to new elections in December 2004. This time Yushchenko won the elections, but he would be president of a country where part of the population wanted to strengthen ties with Russia, rather than the EU, as he had intended. In fact, the new president’s openness to the EU led Russia to cut off, albeit briefly, natural gas supplies to Ukraine in 2006 (Lusa in Público, 2006).

New elections were held in 2010. Viktor Yanukovich won the elections, which were declared free and fair by international election observers (Harding, 2010). Three years later, Yanukovich announced that Ukraine would abandon the agreement to strengthen ties with the EU and become an ally of Russia and would opt for a policy of strengthening cooperation and relations with Moscow. This announcement triggered new protests in Kiev (Chapman, 2013), which became known as Euromaidan. As the days passed, the protests intensified and, in February 2014, Yanukovich was forced to leave Ukraine (Taylor, 2014a, 2014b).

After Yanukovich’s removal, a temporary government was installed to prepare for new elections (Coelho, 2014). Simultaneously and in response to the Euromaidan outcome Moscow ordered the deployment of Russian troops without insignia, now known as the little green man, to the Crimean peninsula to protect Russian military installations such as the Sebastopol warm water naval base and Russian-speaking Ukrainians living in the region. In doing so Russia violated international law and the territorial integrity and sovereignty of Ukraine (Reuters in G1, 2014). Meanwhile, the new Ukrainian parliament formulated a bill declaring Ukrainian as the only official language of the country, despite the fact that millions of Ukrainians speak Russian or other languages. It is recalled that at the time the Ukrainian government was still temporary and had not been democratically elected by the Ukrainian people. The Russian-speaking populations of eastern Ukraine disapproved of the bill and demanded the separation of their territories, paving the way for armed conflict between Ukrainians (BBC news, 2014). The bill was passed in 2019 (Polityuk, 2019).

The Russian president’s popularity among the Russian population had been falling since the 2012 presidential elections, the results of which sparked protests in Moscow, St Petersburg and

other Russian cities, but the annexation of Crimea reversed that trend (Ellyatt, 2022). The popular response acted as an indicator for the Russian president who has since embarked on an anti-Western, conservative Christian Orthodox stance and a revival of Russian imperial nationalism, in which the protection of Russians and Russian-speakers in neighbouring countries was the justification (Coalson, 2014). In order to consolidate his popularity, the Russian president supported separatist rebels in the Donbass region, further escalating the conflict.

In mid-2014, the rebels received cutting-edge light weaponry from Russia, including surface-to-air missiles, which the separatists used, eventually shooting down a Malaysia Airlines plane carrying people from Amsterdam to Kuala-Lumpur. The West was forced to intervene in the conflict by imposing economic sanctions on Russia (Borger, Luhn and Norton-Taylor, 2014).

Around 14,000 people lost their lives between 2014 and 2021 as a result of the conflict in eastern Ukraine (Mellen, 2022). In November 2021, satellite images showed Russian troops massing along the border with Ukraine (Reuters, 2021). When questioned by the West, Russia said these were military exercises and denied any invasion intentions (Euronews, 2022). But while denying any intention to invade Ukraine, Russia made its demands known: a guarantee of Ukraine's neutral status; an end to the eastward enlargement of the North Atlantic Treaty Organisation (NATO); and the withdrawal of NATO troops to the countries that were part of the military alliance in 1997 (Roth, 2021). The West rejected the demands. In response, Russia increased the military contingent on the border with Ukraine and began conducting joint military exercises with Belarus (Gardner, 2022).

As events unfolded, leaders of Western countries closed their embassies in Kyiv and asked their citizens to leave Ukraine (DW, 2022).

On 21 February 2022, the war reached a new level. The Russian president declared the independence of the Donetsk and Lugansk People's Republics in the Donbass and ordered the invasion of Ukrainian territory (only the breakaway republics) under the pretext of peacekeeping (Troianovski, Hopkins and Erlanger, 2022). Three days later, the Russian leader ordered the full invasion of Ukraine (Schwartz, Schmitt and Macfarquhar, 2022). Most UN member states condemned the Russian invasion (Resolution ES-11/1); NATO and the US responded by activating the Rapid Reaction Force and deploying additional troops to Eastern Europe, respectively (NATO, 2022). Several countries and international organisations imposed economic, political, sporting and cultural sanctions, while sending humanitarian and military support to Ukraine and inviting the Ukrainian president to address their parliaments. This was a possible response to a regime that has the world's largest nuclear arsenal and has already signalled that it is considering using it (Boffey, 2022). Three months later, Russia's full-scale invasion of Ukraine appeared to be stalling, due in part to fierce Ukrainian resistance, which was able to exploit the logistical weaknesses of the Russian military system.

3.2.2. "Infantry Wins Battles, Logistics Wins Wars" (General Pershing, n.d.)

A key part of logistics systems, whether military or civilian, is aviation. However, the Russian armed forces do not generally use aviation to carry out their military logistics operations, opting instead to transport troops and equipment by rail and road (Ferris, 2022). Russia's vast railway network and the state's monopoly over Russian locomotives facilitate this option. However, land-based means of transport are more vulnerable to military attack and, if destroyed by

Ukrainian forces, would halt and slow the Russian offensive. Knowing this, the Ukrainian army destroyed the railway access points located on the border, forcing the Russian army to resort to road transport (Latschan, 2022), less capable of transporting large quantities of goods and troops across the battlefield. Once on the road, tanks, lorries and other military vehicles would need fuel to advance. Knowing this, Ukrainian forces began attacking tanker trucks and supply vehicles (Lendon, 2022), destroying bridges and blocking strategic roads, and removing toponymic signs (Bella, 2022).

Aviation is the most suitable means of logistical transport to move troops and equipment quickly and accurately on the battlefield, as its mobility makes it less vulnerable to attack and because it has a superior quantity/speed ratio, even though the volume capacity transported is relatively smaller compared to maritime, rail and even road means. In short, an air supply line could guarantee the necessary logistical support, regardless of the conditions on the ground. Thus, in the first hours of the invasion, the foreign force carried out air strikes with the aim of paralysing the Ukrainian military infrastructure and gaining air superiority. Hostomel airport was one of the targets (Reuters, 2022). Once conquered, it would allow the creation of an air bridge, essential for the landing of troops, who would then storm Kiev. Recognising the strategic importance of the airport, the Ukrainian rapid reaction force acted and reclaimed the airport (BBC news, 2022).

In short, Ukrainian forces were able to contain the advance of the Russian army by firstly recognising the importance of logistics in warfare and Russia's vulnerability in this regard, and secondly by carrying out surgical strikes on Russian strategic and tactical logistical support infrastructure.

3.2.3. The Importance of Airspace Control in a War Context

Despite its initial relative success, Ukraine knows that a long-term war, especially in the air, means losing its air superiority. Russia has the numbers to sustain heavy losses, while Ukraine does not. That is why the Ukrainian president has been incessantly asking Nato to impose a no-fly zone over Ukraine's FIR (Quinn, 2022), something that is unlikely. On the one hand, this would inevitably lead to confrontation between nuclear powers and an uncontrolled escalation of the war (Liboreiro, 2022; Strohmeyer, Reid and Hwang, 2022). On the other hand, the practical effects of such a declaration would be non-existent, as Russia conducts most of its air strikes from locations under its jurisdiction such as the Caspian Sea (Bloomberg, 2022). Either a confrontation between Russian and NATO fighters in the Ukrainian IRF or the shooting down of S-400 Triumph missile systems stationed on Russian soil by NATO forces would result in irreversible implications and a worrying escalation of the war. For now, the only option left to Ukraine is to continue to resist with all the resources at its disposal until it achieves some kind of comparative advantage that it can utilise during negotiations.

3.3. *The Effect(s) of War*

The war in Ukraine will result in serious consequences that will be felt around the world. Despite the more serious consequences, including the escalation of the conflict into a nuclear war or the global food crisis, in this article we choose to explore the impacts of the war on aviation between Western Europe and East Asia, resulting from the sanctions imposed on Russian avia-

tion and Russia's response to these sanctions, materialised by the closure/interdiction of the IRFs.

Following the outbreak of the war, the EU, Norway, Iceland, the UK, Canada, the US and Japan made it known that, as part of their sanctions package, all Russian airlines were barred from flying over their airspaces, indefinitely. In retaliation, Russia did the same (Rojanasakul and Wu, 2022). Instantly, a series of policy decisions and cascading implications brought the era of global aviation co-operation to a near-complete halt. We argue, therefore, that a new iron curtain has been erected between the West and Moscow, this time at the level of air borders and the aviation industry, which risks extinguishing an era of unprecedented mobility that partly drove globalisation.

3.3.1. Russia: Geographical Colossus on Land and in the Air

Russia is huge. At 17,000 square kilometres, it is the largest country in the world. Its territorial extension means that its FIR is also immense. It is one of the most valuable and strategic airspaces in the world.

Before the war, Russia benefited from its vast open airspace. Flying to the Far East via Siberia saved airlines time and money, and therefore passengers. Knowing this, Russia imposed high taxes on European airlines. Russia knows that control of Siberian airspace gives it advantage and power, which is why it is not a signatory to the ICAO Transit Agreement (1944), so it can choose which airlines can fly over its territory. Russia has already used its airspace for its own benefit and as a geopolitical weapon: in 2014, it threatened to close its airspace to EU airlines in response to the sanctions then in place (Gander, 2014); in 2017, it threatened to close its airspace to Dutch airlines because of the reduction in the number of slots allocated to the Russian state airline at Schiphol airport (Sterling, 2017); in 2018, it threatened to close its airspace to US airlines in response to US military action in Syria (Wadhams, 2018).

Before the sanctions, the Russian norm implied the following: only one state-owned airline, per European country, could fly over Russia; Air France was the only French airline with permission and flight rights over Siberia; *Lufthansa* was the only German airline with permission; Iberia was the Spanish example.... However, there were exceptions such as British Airways and Virgin Atlantic which are based in London, but both flew over Siberia.

Before the development and growth of low-cost airlines, the reality described in the previous paragraph was not a substantial problem, because few European countries had more than one intercontinental airline. However, nowadays low-cost airlines have taken a prominent position in the aviation industry, even competing with large national airlines on long-haul routes.

Under Russia's system of overflight permits, state-owned airlines have a monopoly on routes between Western Europe and the Far East. SAS, for example, which operates in Norway, Denmark and Sweden and has routes to destinations such as Tokyo, Beijing and Shanghai, is the only Scandinavian airline that has overflight rights in Siberia, while the *low-cost Norwegian* does not (CTC, 2018). This is why flights between Western Europe and East Asia remain expensive. The Russian system stifles the competitive market, harming the consumer.

3.3.2. The New Air Routes

In the context of war, Russia's geographical position on the globe represents, as in the Cold War period, a colossal barrier to the flow of aircraft from Western countries, especially as regards

flights between Western Europe and the Far East. For example, before the war *Air France* operated a route between Paris and Tokyo that crossed a large part of Russian airspace. However, it now has to take a new, more expensive route that adds two and a half hours to the journey, using more fuel and polluting more.

Other examples include Lufthansa's route between Frankfurt and Beijing, FinAir's between Helsinki and Bangkok, and Japan Airlines' between Tokyo and London, which previously used to head west through Siberia but now goes in the opposite direction, towards Alaska and the strategic city of Anchorage, flying over the Arctic, Greenland before arriving in London, adding another three hours to the journey (Figure 1, next page).

3.3.3. Going. And Return? Europe-Asia Vs. Asia-Europe

In a different condition are Asian airlines (except Japanese), which can still cross Russia's FIR. From an economic point of view, Western airlines are at a disadvantage compared to Asian ones. Russian airlines are also being affected: *Airflot* has cancelled all flights to Europe and with several airspaces blocked, their routes have had to be changed to avoid Western airspace. For example, to connect the capital Moscow with Kaliningrad, the Russian enclave in Europe, Airflot aircraft have to concentrate in St Petersburg and then follow a narrow air corridor that allows them to reach Kaliningrad via the Baltic Sea.



Figure 1: Extended flight times as Russian airspace closes (Anadolu Agency , 2022).

4. Discussion

Among the various points raised in this article, it is important to emphasise the vulnerability of the Russian military at the logistical level, something that was perhaps only known to the top ranks of the US military, but which has now become evident to the average citizen. The changes in air routes between Western Europe and Asia and between Japan and Europe resulting from the

closure/interdiction of the IRFs following the imposition of sanctions on Russia and the Russian response to them should also be highlighted.

The economic effects on the European citizen of the closure of the air hubs will not be as obvious or drastic as one might think. Yes, ticket prices and air pollution may increase slightly in the future as a result of an extra two or three hours of travelling time. However, this new reality has political effects. The imposition of an aerial iron curtain in the middle of the 21st century has, above all, symbolic weight and political weight.

In short, all the restrictions combined mean that Russia's relative distances from the West, and between it and East Asia, have increased, also increasing the influential role of geography on people. 24 February 2022 marks the end of a period of peace, stability and sustainability among world powers, which has allowed for efficiency and standardisation of aviation and mobility and convenience for the traveller. It appears that the three decades of open and accessible airways are over. When or if we will return to this reality is still an open question.

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