

Regional Security and Modernisation Efforts

Comparative Analysis of the V4 Air Forces¹

Laura NYILAS,²  János CSENGERI³ 

The study explores the air forces of the Visegrád Group within the broader framework of regional security studies, focusing on their modernisation efforts and strategic importance in Central and Eastern Europe. Emphasising the interplay between national defence priorities and collective NATO goals, the study examines defence spending, procurement trends and operational capabilities. The research seeks to assess how the modernisation of the V4 air forces contributes to regional stability and to what extent disparities in readiness and capabilities influence collective security. Using a comparative analysis based on the Military Balance + and SIPRI databases, the study evaluates current force structures and procurement trajectories. The findings reveal significant differences in modernisation levels, with Poland leading in both scale and diversity, while Slovakia faces pronounced capability gaps. The study argues that air power serves as a vital element in maintaining regional stability, particularly considering escalating geopolitical tensions, including the ongoing Russia–Ukraine conflict. It also underscores the need for enhanced coordination among the V4 countries to address shared security challenges and strengthen their collective defence posture. This analysis contributes to the discourse on regional security, highlighting the critical role of air force modernisation in fostering resilience and ensuring stability in Central and Eastern Europe.

Keywords: regional security, air force modernisation, Visegrád Group, NATO defence cooperation, Central and Eastern Europe

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² Ludovika University of Public Service, Doctoral School of Military Sciences, e-mail: nyilaslaura98@gmail.com

³ Ludovika University of Public Service, Faculty of Military Sciences and Officer Training, e-mail: csengeri.janos@uni-nke.hu

Introduction

Until recently, the study of security within international relations was dominated by state- and system-level approaches, such as realism and neorealism.⁴ The effect of the realist dominance has been that security interests have typically been interpreted from the perspective of “elite” positions, i.e. “top-down” to “mainstream” approaches. However, the last decade has also seen an emphasis on research that argues that security is a more complex phenomenon, expressed at multiple levels.⁵ More recent research in the field of security (politics) emphasises that security is constructed from other sources, in addition to and outside the state and the international system. Such sources include the individual (human security), the social group (identity and social security) and the region (regional security).⁶

In recent years, the latter, i.e. the region itself as a unit for examining security, has received particular attention.⁷ The region is of particular importance because it implies a level of expression of security needs that is below the international but above the state level. Thus, the study of the region as a unique reference point with its own specificities about security helps to complement the realist tradition of international security studies. Regional security complexes are also crucial for understanding how regional security problems relate to global challenges. David A. Lake and Patrick M. Morgan, in their book *Regional Orders. Building Security in a New World*, argue that these regional orders are not merely regional phenomena, but have global consequences and, where appropriate, shape the strategies and behaviour of states outside the region.⁸

It is important to talk about regional security in 2025 because it remains a critical issue that affects the stability of countries and the security and well-being of their citizens. Recent developments, such as rising geopolitical tensions, in particular the ongoing Russia–Ukraine war, have further underlined the importance of regional security cooperation. Therefore, rising nationalism and geopolitical tensions have underlined the importance of building trust and cooperation between regional actors.⁹

In this context, discussions on regional security have been and will be particularly important in 2024 and 2025, as they can help to identify and propose solutions to emerging security challenges, improve resilience to threats, and promote regional cooperation and integration. Discussions on regional security can also contribute to the understanding of global security by informing the interrelationship between global and regional politics and by making the institution of multilateral cooperation more effective.¹⁰

In this respect, it is arguably important to look at the Central and Eastern European region in 2025. This is why the Visegrád Group is examined in this study. This group of countries, consisting of Hungary, the Czech Republic, Poland and Slovakia, continues to

⁴ BOOTH 2007; SNYDER 2004; MEARSHEIMER 2001.

⁵ TICKNER 1992; BUZAN et al. 1998; WYN 1999; AXWORTHY 2001; WIBBEN 2004; BOOTH 2005.

⁶ LAKE–MORGAN 1997; HENTZ–BØÅS 2003.

⁷ WILSON–SHERWOOD 2000.

⁸ LAKE–MORGAN 1997.

⁹ RADA 2019.

¹⁰ FLEMES 2010; NYE 2017.

play an important role in shaping regional and European policy, which can be interpreted as a kind of preliminary research hypothesis. The V4 countries are located at the intersection of a number of international (global) strategic and economic interests, which makes them key actors in regional and global politics. Their geographic location, as well as their shared history and cultural links, provide unique insights into regional dynamics and the challenges they face together. Moreover, the V4's relationship with neighbouring countries such as Ukraine and Russia is critical to understanding regional stability and security. As tensions in these regions remain heightened, the role of the V4 in promoting dialogue and cooperation, where appropriate, can help prevent further escalation and contribute to a more peaceful and stable Europe. While idealistic, this regional goal remains relevant – not least for ensuring Hungary's security.

In the Central and Eastern European region, the Visegrád Group is one of the oldest regional groupings, established by the Member Countries in 1991 in the wake of the Cold War and the political realities of the liberation from Soviet interests.¹¹ The group has undergone many changes since then, and world political events also have had a major impact on the countries.

Although the cooperation may not have fulfilled all initial expectations, significant successes were achieved in numerous areas. This raises the question of whether the cooperation has been effective and relevant. Naturally, the answer always depends on our expectations. However, it must be acknowledged that the initial practical goal of the cooperation was realised: all four countries involved joined the EU and NATO, meaning that European and transatlantic integration was successful.

The dynamics of cooperation depend to a large extent on the current government and internal political-ideological orientation of the four countries and their relations with each other, and international events have a strong influence on the issue at stake, in addition to domestic political aspects. While the V4 remains an example of regional cooperation guaranteeing good neighbourly relations, they are today facing serious challenges such as migration, the energy and financial crisis, and the Russian–Ukrainian war.¹²

There are, however, major differences in the military capabilities of the four countries, currently focused solely on air power, so that beyond joint NATO or EU Battlegroup exercises, there is no clear sign of cooperation in this area. In order to explore the deeper dimensions of the air forces of the four Visegrád countries, the study analyses the military capabilities of the four countries and comparatively assesses them in this area (air power/aerial warfare). Therefore, the main aim of the study is to investigate how national air force modernisation among the V4 countries affects regional security and NATO cohesion. Secondary aims include identifying differences in air capabilities, procurement strategies and interoperability potential within the group.

Accordingly, the central research question is: to what extent do the modernisation trajectories of the V4 air forces contribute to strengthening regional security and cohesion within NATO? This question is justified by the observable disparities in defence spending

¹¹ STEPPER 2018.

¹² GYÁRFÁSOVÁ 2018.

and procurement priorities, despite shared threats and alliance commitments, and by the growing importance of air power in the evolving European security environment.

The study examines the four countries of the Visegrád Group in the Central and Eastern European region, focusing on air power and its importance. It primarily covers the period between 2022 and 2024, but where necessary, considers earlier and future developments as well. The empirical analysis is based on open-source data, relying principally on the International Institute for Strategic Studies (Military Balance +) and SIPRI Arms Transfers databases. The research uses comparative analysis to assess the composition, procurement trends and readiness of the V4 air forces.

Several recent studies have examined aspects of regional security and NATO alignment, including the impact of Russian aggression on defence postures and the modernisation of individual national forces. However, few have comparatively assessed the air force dimension of the V4 countries as a regional subsystem. This article aims to fill that gap by providing a structured comparison focused specifically on aerial capabilities, procurement and strategic positioning. In doing so, it contributes to a better understanding of how national defence decisions intersect with alliance-level requirements and regional stability imperatives.

The article proceeds as follows: after methodology and the theoretical framework, it presents a comparative analysis of the air forces of the Czech Republic, Hungary, Poland and Slovakia. This is followed by a discussion of defence spending, procurement patterns and operational capabilities, before concluding with a synthesis of findings and their implications for regional and NATO security.

Theoretical framework

The historical role of the air force in maintaining regional stability in Central and Eastern Europe has significantly increased, particularly regarding strategic operations and modernisation efforts. Air forces have played a key role in shaping military doctrines and enhancing defence capabilities, both of which are crucial for regional security.

The establishment of NATO in 1949 marked a significant commitment to European security, placing the air force at the core of its defensive strategy against the Soviet threat. Air operations were crucial both for deterrence and for potential offensive strategies against adversaries, emphasising the importance of air superiority in regional stability. Thus, the role of the air force has been pivotal in maintaining the stability of the Central and Eastern European region, especially since the end of World War II. To this end, the U.S. Air Force has consistently maintained a military presence in the region, reassuring allies and deterring potential aggressors when necessary, thereby contributing to a stable security environment.¹³

The air forces of Central and Eastern European countries, specifically the Visegrád countries in this context, reflect that institutional concepts rooted in the communist legacy, designed for Soviet/Russian fighter aircraft, remain active to varying degrees

¹³ MARK 2016.

within these defence institutions. The modernisation of Central and Eastern European air forces has been, and continues to be, pursued through the acquisition of fourth-generation multirole fighter aircraft. Upgrading and modernising their air forces with advanced multirole fighter jets to enhance defensive capabilities remains a priority for all four countries. This modernisation is essential for these countries to integrate effectively into NATO's collective defence framework, thereby further stabilising the region.¹⁴

While the air force plays a crucial role in maintaining stability, relying solely on air power is insufficient to address complex security challenges. A more comprehensive approach is required, incorporating ground forces and diplomatic efforts.

The outbreak of full-scale conflict between Russia and Ukraine has led to several incidents involving aerial and missile threats, as well as air defence systems, in the airspace of Central and Eastern European countries. In this context, it is essential to consider the hypothetical claim that some of these incidents were deliberate provocations by Russia against NATO or Ukraine. To effectively counter these challenges, Central and Eastern European countries must enhance their technical capabilities, develop response procedures and strategies, and take necessary military and diplomatic actions.¹⁵

The increased risk of conflicts between states and the renewed focus on the ability to wage large-scale conventional wars within Europe have reignited interest among European states in ground-based air defence systems. Since the end of the Cold War, European armed forces have grown accustomed to operating in permissive air environments. Significant investments in capabilities tailored to counterinsurgency campaigns, such as those in Afghanistan, have led to the atrophy of Europe's ground-based air defence systems. Even during the Cold War, less emphasis was placed on ground-based air defence compared to air forces, based on the assumption that NATO would maintain air superiority over Warsaw Pact forces. However, Europe's relatively limited inventory of air defence systems now faces increasing challenges due to the growing complexity of aerial threats.¹⁶

As a result, enhancing air and missile defence capabilities has once again become a priority on the agenda of NATO and its European partner states. However, significant gaps remain in terms of coverage and capabilities. Among these challenges is the fact that some alliance members, including the Visegrád countries, still operate outdated or even Soviet-era systems.¹⁷

Comparative analysis of the air forces of the Visegrád countries

Air Forces are a significant component of any military, as air capabilities are linked to successful operations that contribute to cooperation with all other branches of the armed forces. Military conflicts in recent decades have demonstrated that the air dimension of

¹⁴ YOUNG 2023.

¹⁵ BORNIO 2024.

¹⁶ TONG 2020.

¹⁷ Business Insider 2021.

contemporary operations remains vital. Security is a fundamental issue, and its funding must therefore be stable.¹⁸

Since 2014 – which is considered a significant milestone due to the annexation of Crimea by Russia – the defence budgets of European countries, including those of the Visegrád Group, have seen a noticeable increase. The defence budgets in the respective countries have grown as follows, calculated at 2015 prices and exchange rates: in Hungary, the budget increased from \$1.035 billion in 2014 to \$3.365 billion in 2024 (estimated), representing a growth of 225%. In the Czech Republic, it rose from \$1.683 billion in 2014 to \$4.567 billion in 2024 (estimated), an increase of 171%. In Slovakia, the budget grew from \$832 million in 2014 to \$2.118 billion in 2024 (estimated), showing a growth of 154%. In Poland, it increased from \$8.557 billion in 2014 to \$26.839 billion in 2024 (estimated), representing an increase of 213%. The ratio of defence spending to GDP also rose in these countries. In Hungary, it went from 0.86% in 2014 to 2.11% in 2024. In the Czech Republic, it increased from 0.94% in 2014 to 2.1% in 2024. In Slovakia, it grew from 0.98% in 2014 to 2.0% in 2024, while in Poland, it rose from 1.88% in 2014 to 4.12% in 2024.¹⁹

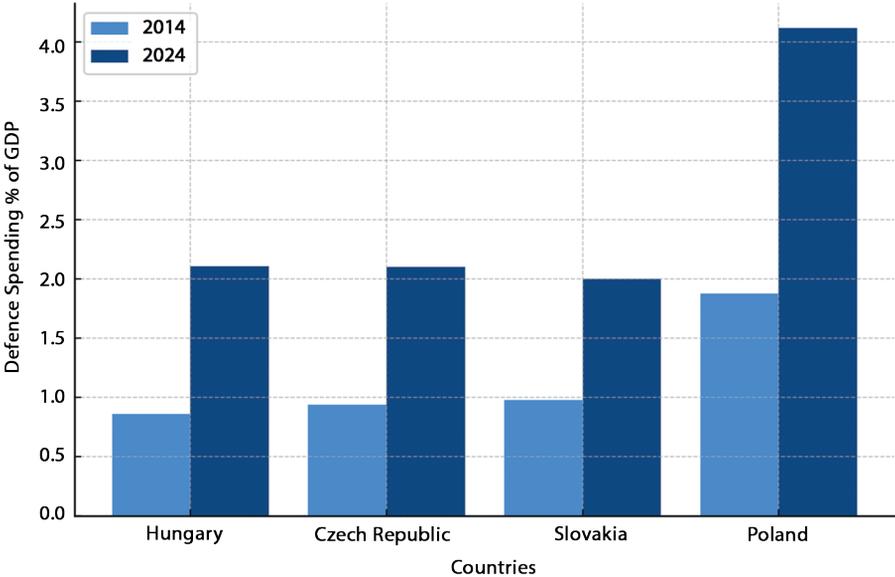


Figure 1: The GDP-proportional defence budgets of the Visegrád countries in comparison between 2014 and 2024

Source: NATO 2024

¹⁸ RAJCHEL-ZAŁĘSKI 2022.

¹⁹ NATO 2024.

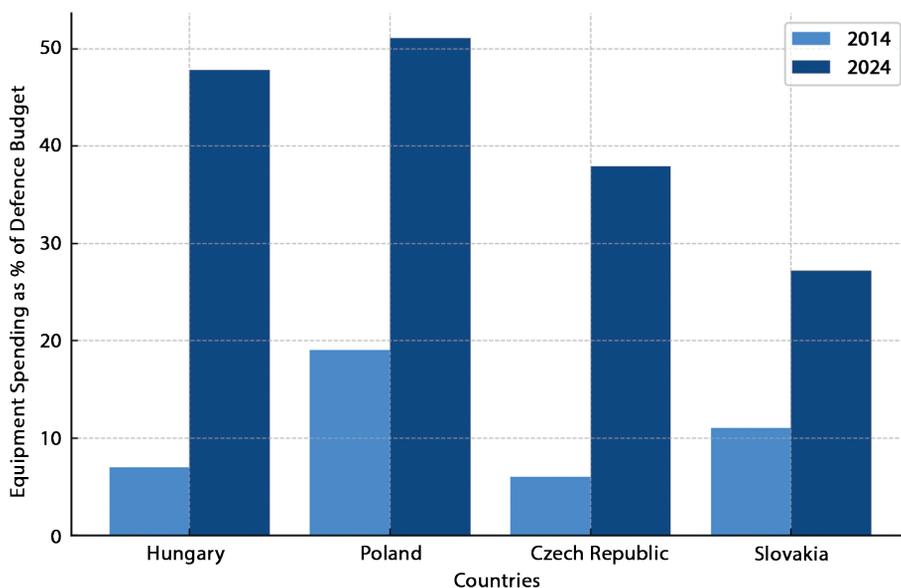


Figure 2: The proportion of defence expenditures allocated to equipment procurement by the Visegrád countries in 2014 and 2024

Source: NATO 2024

NATO has two important recommendations (expectations) for its member states: to allocate at least 2% of their GDP (Figure 1) to defence spending and to dedicate a minimum of 20% of the defence budget to equipment (Figure 2). While none of the examined countries met these criteria in 2014, by 2024, Hungary, Poland, Slovakia and the Czech Republic all surpassed NATO’s recommended minimum of 20% for equipment spending. Hungary and Poland were particularly notable, achieving ratios above and almost 50%, the Czech Republic with 37.9% and the Slovak Republic is also well above the recommendation by its share of 27.2%.

The Czech Republic published its latest security strategy in 2023. In this document, NATO and EU membership are identified as critically important for the country’s security, while Russia and the deteriorating international security environment are highlighted as the main threats to their nation. It also addresses issues related to cyber and information operations, as well as the challenges posed by China to the international order. Among the priorities for military modernisation are infantry fighting vehicles, self-propelled artillery, utility helicopters, transport aircraft, short-range air defence systems and uncrewed aerial vehicles (UAVs), among others. Additionally, Prague announced in 2023 its decision to acquire F-35 Lightning II aircraft²⁰ to replace its leased Gripen fleet. The defence-

²⁰ McNEIL 2024.

industrial base also includes development and manufacturing capabilities, particularly in small arms, vehicles, and training and light attack aircraft.²¹

Hungary published its National Security Strategy²² in April 2020 and its National Military Strategy²³ in June 2021. These documents reflect a deteriorating security environment characterised by great power competition. The 2021 Military Strategy emphasises the role of the air force and the importance of its development. Enhancing the air force enables improvements in the air defence, strike, aerial refuelling, reconnaissance and electronic warfare capabilities of tactical aircraft, as well as their deployable and ground support functions. Additionally, the strategy highlights the development of three airbases, as well as air defence and air command and control capabilities. These developments contribute to the air force's ability to perform air policing and air defence tasks to maintain the sovereignty of Hungarian and allied airspace, integrated into NATO's air command and control system. They also enhance the capacity to provide support for the operations of ground forces.

For the Republic of Poland, territorial defence and NATO membership are central pillars of the country's defence policy. The primary objective of the 2017–2032 defence concept is to prepare the armed forces to deter Russian aggression. Russia is characterised as a direct threat to Poland and the stability of the international order, a view that was further heightened by Russia's invasion of Ukraine in February 2022. Defending the Belarusian border has also become a key task for the Polish armed forces. Poland is one of the main European supporters of Ukraine, providing significant defence equipment, including armoured vehicles and anti-tank systems. Warsaw has increased defence spending to support modernisation projects. The technical modernisation plan for the period 2021–2035 was published in October 2019, extending the planning horizon from ten to fifteen years.²⁴ Among the modernisation efforts is the acquisition of the F-35A fighter aircraft, which is set to arrive in Poland in 2026.²⁵

As a NATO and EU Member State, Slovakia works closely with the Visegrád Group. Bratislava has signed an agreement to enable closer integration of air policing and air defence capabilities to stabilise security. In 2022, Slovakia signed a defence cooperation agreement with the United States, and under the Foreign Military Financing programme, resources were allocated to help the country replace some of the military equipment sent to Ukraine since the Russian invasion.²⁶ In addition to these efforts, Slovakia is also modernising both its air and ground forces.²⁷

²¹ Ministry of Foreign Affairs of the Czech Republic 2023.

²² Government Resolution 1163/2020 (IV. 21.).

²³ Government Resolution 1393/2021 (VI. 24.).

²⁴ Ministry of National Defence of the Republic of Poland 2024.

²⁵ ADAMOWSKI 2024.

²⁶ Ministry of Defence of the Slovak Republic 2024.

²⁷ SMISEK 2023.

Table 1: Active total military and air force personnel of the Visegrád Group

	Active military personnel (person)	Air Force (person)
Republic of Poland	164,100	18,850
Hungary	32,150	5,750
The Czech Republic	26,600	5,850
The Slovak Republic	12,800	4,550

Source: The International Institute for Strategic Studies 2024

Within the Visegrád Group, when considering only the active military personnel, the Polish Air Force stands out (see in Table 2). In addition to its personnel, the Polish Air Force operates 180 fixed-wing and 73 rotary-wing aircraft. However, some of its equipment has become outdated, including the MiG-29 fighter jets and Su-22 attack aircraft. Poland’s F-16 fleet is also aging. For this reason, Poland has taken significant steps toward modernisation, notably by purchasing 12 FA-50 fighter jets from South Korea.²⁸

Table 2: Aircraft inventory of the Visegrád countries

Country	Fixed wing aircraft	Rotary wing aircraft	Uncrewed aircraft systems
Republic of Poland	180	73*	24
	Fighter (FTR): 14	Utility: 8	Combat ISR: 24
	Fighter/Ground Attack (FGA): 74	Transport: 65	
	Airborne Early Warning and Control (AEW&C): 2		
	Transport (TPT): 51		
	Trainer (TRG): 40		
Hungary**	26	43	—
	Fighter/Ground Attack (FGA): 14	Attack: 8	
	Transport (TPT): 4	Utility: 25	
	Trainer (TRG): 8	Transport: 10	
The Czech Republic	52	52	—***
	Fighter/Ground Attack (FGA): 14	Attack: 14	
	Attack (ATK): 16	Utility: 5	
	Transport (TPT): 14	Transport: 33	
	Trainer (TRG): 8		

²⁸ OLECH 2024.

Country	Fixed wing aircraft	Rotary wing aircraft	Uncrewed aircraft systems
The Slovak Republic	15	18	–
	Fighter/Ground Attack (FGA): 2	Utility: 13	
	Transport (TPT): 5	Transport: 5	
	Trainer (TRG): 8		

* Poland’s Army possesses an additional 120 helicopters: attack 16, utility 67, transport 37.

** Hungary has received some aircraft since the last update of the Military Balance 2024 database: 1 piece of Embraer KC-390 transport and air-to-air refuelling aircraft (1 more on order); 2 pieces of Airbus Helicopters H225M medium utility helicopter (6 more on order).

*** The Czech Republic’s Army possesses an unknown number of UAVs (ScanEagle).

Source: The International Institute for Strategic Studies 2024

The Polish Air Force has invested in other areas as well, such as maritime patrol and airborne early warning and control (AEW&C) systems, which are crucial for border surveillance and enhancing air defence. In addition, Poland’s significant transport capacity (51 transport aircraft, including medium and light aircraft) and large rotary-wing fleet (65 transport helicopters, 8 multi-role helicopters and a significant number – 120 – attack, transport and utility helicopters at the Army) provide flexibility in both military and humanitarian operations. Furthermore, the country possesses a fleet of tactical intelligence, surveillance and reconnaissance (ISR) drones (the Turkish Bayraktar TB2), which align with modern warfare, meaning that both reconnaissance and combat operations increasingly rely on uncrewed systems.

Considering the size of its air force and its geopolitical location, Poland plays a critically important role in NATO’s collective defence, especially given its geographical proximity to Russia and the growing significance of the Baltic region. However, reliance on aging Soviet-era equipment presents a challenge, which Poland is addressing through gradual modernisation. According to Poland’s defence plans for 2032, these acquisitions should be based on even more rigorous data analysis than currently used, and proposed purchases should be verified through exercises and simulations, according to Poland’s defence forecast.²⁹

Based on the following table (Table 3), it is apparent that Poland, in addition to its existing significant air combat capabilities, has made substantial procurement related to its air force, with a considerable volume of orders placed. The country is purchasing additional fixed-wing and rotary-wing aircraft, uncrewed aerial systems, enhancing its air defence, and acquiring a significant quantity of munitions (missiles and bombs) necessary for its aircraft and air defence systems. The significant increase in the share of the defence budget allocated for procurement, as previously presented, is clearly reflected in these purchases.

The Hungarian Air Force shows significant differences in size and capability compared to the Polish Air Force, similarly to the Czech and Slovak Air Forces. The air force of Hungary is much closer in size and tactical assets to that of the Czech Republic, with

²⁹ Ministry of National Defence of the Republic of Poland 2024.

active air force personnel of 5,750 and a fleet consisting of 43 rotary-wing and 26 fixed-wing aircraft. According to the database of the International Institute for Strategic Studies (Military Balance +), similarly to the Czech Republic, Hungary has 14 Gripen fighter aircraft, which may soon be expanded to 18 according to the Hungarian Government³⁰ providing modern and adequate protection for the country and NATO allied countries' airspace. The Gripen aircraft sufficiently meet Hungary's defence needs, offering advanced flight and combat capabilities. Furthermore, Hungary's fleet of 14 JAS-39 C/D Gripens currently participates in air defence alongside Slovenia, Slovakia and Croatia, as well as in the Baltic Air Policing mission on a rotational basis.³¹

Hungary's air transport capacity is more limited, with only 5 transport aircraft, but it is supported by 25 utility and 10 transport helicopters, which ensure flexibility in various tasks. Similarly to Poland, Hungary has also started modernising its air force in line with NATO requirements, though its air force remains relatively modest in size overall.

Table 3: Recent and expected procurements of the Polish Air Force

Recipient	Supplier	Designation	Description	Weapon category	Order year	Number ordered	Delivery years
Poland	United Kingdom	AW-101-111	ASW helicopter	Aircraft	2019	4	2023
Poland	United States	F-35A	FGA aircraft	Aircraft	2020	32	Not yet completed
Poland	United States	C-130H Hercules	Transport aircraft	Aircraft	2021	5	Not yet completed
Poland	United States	S-70L Black Hawk	Transport helicopter	Aircraft	2021	4	Not yet completed
Poland	Türkiye	Bayraktar TB2	Armed UAV	Aircraft	2021	24	Not yet completed
Poland	Italy	M-346 Master	Trainer/ combat aircraft	Aircraft	2021?	4	2022
Poland	United Kingdom	CAMM	SAM	Missiles	2022?	750?	Not yet completed
Poland	United States	AH-64E Apache	Combat helicopter	Aircraft	2022?	96?	Not yet completed
Poland	South Korea	FA-50 Block 20	FGA aircraft	Aircraft	2022	36	Not yet completed
Poland	United States	MQ-9 UAV	UAV	Aircraft	2022	2?	Not yet completed
Poland	United Kingdom	Brimstone	ASM	Missiles	2022?	130?	Not yet completed
Poland	South Korea	FA-50	FGA aircraft	Aircraft	2022	12	2023

³⁰ Government of Hungary 2024.

³¹ BARANYAI 2024.

Recipient	Supplier	Designation	Description	Weapon category	Order year	Number ordered	Delivery years
Poland	United States	Javelin ATM	Anti-tank missile	Missiles	2023	500?	Not yet completed
Poland	United States	AH-64E Apache	Combat helicopter	Aircraft	2023	8	Not yet completed
Poland	Sweden	Saab 340AEW	AEW&C aircraft	Aircraft	2023	2	Not yet completed
Poland	United States	MQ-9 UAV	UAV	Aircraft	2023?		Not yet completed
Poland	United States	Patriot-3 LTAMDS SAMS	SAM system	Air defence systems	2023	12	Not yet completed
Poland	United Kingdom	CAMM-ER	SAM	Missiles	2023	1,000?	Not yet completed
Poland	United States	MIM-104 PAC-3 MSE	ABM missile	Missiles	2023	644?	Not yet completed
Poland	Italy	AW-101	Transport helicopter	Aircraft	2023?	22?	Not yet completed
Poland	United States	AGM-114 Hellfire II	Anti-tank missile/ASM	Missiles	2023	800?	Not yet completed
Poland	United States	AGM-179 JAGM	Anti-tank missile/ASM	Missiles	2023	460?	Not yet completed
Poland	United States	AGM-114 Hellfire II	Anti-tank missile/ASM	Missiles	2023	1,844?	Not yet completed
Poland	United States	S-70L Black Hawk	Transport helicopter	Aircraft	2023?	32?	Not yet completed
Poland	United Kingdom	CAMM-MR	SAM	Missiles	2023	300?	Not yet completed

Source: SIPRI 2025

In case of Hungary (Table 4), a significant procurement of multi-role helicopters is observed, along with the development and introduction of airlift and air-to-air refuelling capabilities, purchase of air defence systems and ammunition procurement. While the purchase of uncrewed aerial systems is not on the list, loitering munition appear among the incoming items. Although there have been discussions about expanding the Gripen fleet for some time, no orders have been placed yet. However, the arrival of next-generation jet trainer aircraft (L-39NG) is considered a significant expansion, marking progress both in training and in light air support and reconnaissance capabilities.

The Czech Republic, similarly to Hungary, possesses a relatively balanced air force with an active personnel of 5,850 and a fleet comprising 52 fixed-wing aircraft and 52 helicopters. The country modernised its tactical aircraft inventory with 14 Gripen jets, which provide a capable and versatile defence platform for protecting the nation’s airspace.

In terms of transport capabilities, the Czech Republic operates a fleet of 14 transport aircraft, enabling support for both military and humanitarian operations. The rotary-wing component includes 14 attack helicopters and altogether 38 transport and utility helicopters, offering flexibility for various missions. The Czech Republic has also invested in ground-based air defence equipment, further enhancing the country’s security guarantees.

Table 4: Recent and expected procurements of the Hungarian Air Force

Recipient	Supplier	Designation	Description	Weapon category	Order year	Number ordered	Delivery years
Hungary	Germany	EC-145	Light helicopter	Aircraft	2018	20	2021
Hungary	France	H-725 Caracal	Transport helicopter	Aircraft	2018	16	Not yet completed
Hungary	Brazil	C-390	Transport aircraft	Aircraft	2020	2	Not yet completed
Hungary	Norway	NASAMS-2	SAM system	Air defence systems	2020	7?	Not yet completed
Hungary	United States	AIM-120C AMRAAM	BVRAAM	Missiles	2020	180?	Not yet completed
Hungary	Czech Republic	L-39NG	Trainer/combat aircraft	Aircraft	2022	12	Not yet completed
Hungary	United States	AMRAAM-ER	SAM	Missiles	2022?	60?	Not yet completed
Hungary	Israel	Hero-30	Loitering munition	Missiles	2023		Not yet completed

Source: SIPRI 2025

Significant procurements, capability development and expansion can also be observed in the Czech Republic based on the above data (Table 5). A large number of aircraft, air defence systems, and munitions are being acquired. Notably, the extensive procurement of 5th-generation tactical aircraft (F-35A) and the introduction of air command and control capabilities stand out. The number of F-35A aircraft ordered is only one squadron fewer than Poland’s, marking a significant “leap forward” as few countries of similar size possess such a modern and substantial fleet. The Russian–Ukrainian conflict has highlighted the utility of man-portable air defence systems (MANPADS), leading to an expansion of the 2018 order in 2023.

Slovakia’s air force can be considered the smallest among the four Visegrád countries, with an active air force personnel of just 4,400 and a fleet consisting of 15 fixed-wing aircraft and 18 helicopters, according to the latest data of the International Institute for Strategic Studies (Military Balance +). Like the other Visegrád countries, Slovakia has also begun modernising its air force with the procurement of F-16s intended to replace

its aging Soviet-era fighter jets.³² However, Slovakia currently operates only two such (F-16) fighters, which number is modest both subregionally and regionally. Slovakia’s air transport capabilities are also limited, with only five transport aircraft (two medium and three light), constraining its airlift capacity.

Based on the data, Slovakia’s current air defence cannot be considered adequate by international standards, and the country does not operate an integrated air defence system. This leaves Slovakia vulnerable during a period when the risk of air attacks is increasing.³³ Despite the limitations in its fleet and the relatively small active air force, Slovakia has sought to improve its rotary-wing capabilities with a fleet of 13 utility helicopters. However, the overall size of the Slovak Air Force remains limited, making it essential for the country to rely on NATO allies to strengthen its defence capabilities. In terms of its capabilities, Slovakia can no longer be considered a prominent international actor in the field of air defence. The Slovak Ministry of Defence has recognised this, partly due to the ongoing conflict in Ukraine, and has begun preparing plans for the procurement of modern air defence systems. Air defence is a vital and irreplaceable element of national security, but the process of building a modern and stronger Slovak air defence is still in its early stages. Air defence is critical for protecting the country’s critical infrastructure and safeguarding manoeuvring ground forces, as confirmed by the conflict in Ukraine. This includes the development of unmanned aerial vehicles and new technologies in this domain.³⁴

Table 5: Recent and expected procurements of the Czech Air Force

Recipient	Supplier	Designation	Description	Weapon category	Order year	Number ordered	Delivery years
Czech Republic	Sweden	RBS-70	Portable SAM	Missiles	2018?	80?	2023
Czech Republic	Spain	C-295	Transport aircraft	Aircraft	2019	2	2021
Czech Republic	United States	UH-1Y	Helicopter	Aircraft	2019	8	Not yet completed
Czech Republic	United States	AH-1Z Viper	Combat helicopter	Aircraft	2019	4	2023
Czech Republic	Israel	Python-5	BVRAAM	Missiles	2020?	200?	Not yet completed
Czech Republic	Israel	SPYDER-MR	SAM system	Air defence systems	2021	4	Not yet completed
Czech Republic	Israel	I-Derby	BVRAAM/SAM	Missiles	2021	200?	Not yet completed
Czech Republic	United States	AGM-114 Hellfire II	Anti-tank missile/ASM	Missiles	2021?	14?	2023
Czech Republic	United States	AH-1Z Viper	Combat helicopter	Aircraft	2022	6	Not yet completed

³² Reuters 2024.

³³ HARDMAN 2024.

³⁴ DÓKA 2023.

Recipient	Supplier	Designation	Description	Weapon category	Order year	Number ordered	Delivery years
Czech Republic	United States	UH-1Y	Helicopter	Aircraft	2022	2	Not yet completed
Czech Republic	Israel	Heron UAV	UAV	Aircraft	2022?	3	Not yet completed
Czech Republic	Brazil	C-390	Transport aircraft	Aircraft	2023?	2	Not yet completed
Czech Republic	United States	F-35A	FGA aircraft	Aircraft	2023?	24	Not yet completed
Czech Republic	Sweden	RBS-70-3	Portable SAM	Missiles	2023	135	Not yet completed
Czech Republic	Israel	I-Derby-ER	BVRAAM	Missiles	2023	48	Not yet completed

Source: SIPRI 2025

Slovakia's procurements (Table 6) are the most modest among the four countries, with a clear focus on air defence. The ordered 4.5-generation fighter jets are considered relatively advanced, and the weapons to be acquired alongside them are intended to ensure the protection of the country's airspace. Additionally, the list includes surface-based air defence systems, and similarly to the Czech acquisitions – likely drawn from lessons of the Russia–Ukraine war – MANPAD systems are also being procured alongside “gun-based” air defence systems.

The armaments of the air forces listed above show that the Visegrád countries possess varying capabilities and levels of modernisation within the Central and Eastern European region. Poland stands out as having the largest and most diverse air force among the four countries, but a portion of its equipment is aging, necessitating ongoing modernisation efforts. Even in 2016, during the NATO Summit in Warsaw, deterrence and collective defence were given renewed emphasis, with Poland receiving special attention as a geostrategically prioritised location on the axis of NATO operations' sustainability in the region.³⁵

In contrast, Slovakia has the smallest and least capable air force for providing adequate protection for its own territory and the region. However, it has begun procuring modern F-16 fighter jets to enhance its defensive capabilities. The Czech Republic and Hungary share similar attributes in terms of active military personnel and the size and capabilities of their fleets, relying on modern Gripen fighters acquired through recent procurements, and they maintain balanced air force structures. While all four countries have initiated modernisation efforts for their fleets to meet NATO standards and strengthen regional security – thereby ensuring stability for their countries and the region as a whole – they still face challenges related to their reliance on aging Soviet-era equipment.

³⁵ RAJCHEL–ZALĘSKI 2022.

Table 6: Recent and expected procurements of the Slovak Air Force

Recipient	Supplier	Designation	Description	Weapon category	Order year	Number ordered	Delivery years
Slovakia	United States	AIM-9X	BVRAAM	Missiles	2018	98	Not yet completed
Slovakia	United States	F-16V Viper	FGA aircraft	Aircraft	2018	14	Not yet completed
Slovakia	United States	AIM-120C AMRAAM	BVRAAM	Missiles	2018	30	Not yet completed
Slovakia	Israel	Barak-MX Land	SAM system	Air defence systems	2023?	1	Not yet completed
Slovakia	Poland	Piorun	Portable SAM	Missiles	2023?	180?	Not yet completed
Slovakia	Germany	Skyshield 35	AA gun system	Air defence systems	2023	2	2023

Source: SIPRI 2025

Conclusions

The study focused on the four countries of the Visegrád Group within the Central and Eastern European region, emphasising the air force and its importance. In recent years, the Visegrád countries have warranted significant attention from a security perspective for several reasons. This period represents a critical time for the EU, NATO and the Visegrád countries, as they face unprecedented and simultaneous external challenges in the field of security.

During this period, significant developments occurred in the security cooperation of the Visegrád Group, including increased defence spending and enhanced collaboration with NATO. Additionally, the V4 countries experienced notable changes in their relations with neighbouring states, including Ukraine and Russia. These relationships are critical to regional security, and shifts in these dynamics have had, and continue to have, a substantial impact on the security and stability of the V4 countries.

Partly due to Russia's full-scale invasion of Ukraine, NATO's defence spending surged in 2024, with 19 of the alliance's 32 member states achieving double-digit increases in their military budgets. According to the latest NATO military expenditure data, 23 member states will meet or exceed the 2% GDP target for defence spending this year, compared to just seven in 2022 and three in 2014.³⁶ The increased expenditures are clearly evident in the four Visegrád countries mentioned in the study, as they remain committed to modernising their fleets. They aim to replace aging Soviet-era fighter jets with new, more advanced tactical aircraft to ensure more effective air defence – an effort that is especially crucial during the current wartime period. This is particularly significant in the Central and Eastern European region, where three of the four V4 countries share borders with Ukraine.

³⁶ FIX-KAPP 2024.

In case of Hungary, the defence budget increased by 269.58%, Poland increased by 289.47%, while the Czech Republic and Slovakia increased their expenditure by 93.85% and 153.2%, respectively. These figures reflect the commitment of the Visegrád countries to strengthen their national security.

NATO's expectations of spending 2% of GDP on defence and at least 20% of the defence budget on equipment were benchmarks for all four countries. While none of the Visegrád countries met these targets in 2014, they almost all did by 2023. Poland and Hungary stand out for the significant resources they have devoted to modernisation, particularly in terms of procurement to NATO standards.

Poland has the largest and most diverse air force, with 194 fixed-wing and 214 rotary-wing aircraft and 24 unmanned systems. In a modernisation drive, Poland has started to acquire F-35 fighter jets and modern helicopters, while gradually replacing old Soviet-made equipment. Poland's size and geopolitical position make it a key player in the defence of NATO's eastern flank, particularly because of its proximity to Russia.

Hungary has a more modest air force, with 34 fixed-wing and 35 rotary-wing aircraft. The modernisation of Gripen fighters and utility and attack helicopters will ensure the country's defence and enable NATO integration. Although the transport capacity is limited – only 12 aircraft are available – the modernisation of the Hungarian Air Force is ongoing and aims at the effective protection of national and allied airspace.

The Czech Air Force consists of 52 fixed-wing and 44 rotary-wing aircraft. The country has recently begun procurement of the F-35 fighter aircraft, which represent a significant step forward in modernisation. The Czech Republic is strongly focusing on the development of air defence systems and plays an important role in support of NATO operations, especially in transport and air support missions.

Slovakia has the smallest air force of the four countries, with only 15 fixed-wing and 18 rotary-wing aircraft. Although the country has started to replace obsolete Soviet fighters with modern F-16s, its air capacity remains modest. The need to improve Slovakia's air defence was made clear by the conflict in Ukraine, but the necessary procurement and development is still in the early stages.

Although there is no active air defence cooperation between the Visegrád countries, current security threats are perceived in a similar way. One of the ways to guarantee security in the region is to modernise air defences, which play a crucial role in maintaining stability. The development of the air forces of the Visegrád countries is a decisive factor for security in Central and Eastern Europe, not only at national level, but also at regional and allied level. There is also a unique security complex in Central and Eastern Europe that is separate from the wider European security framework. This complex was characterised by specific dynamics and interactions between the states of the region, influenced by historical, political and social factors.³⁷

³⁷ ALEXANDRESCU 2022.

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