



Osprey Flight Solutions

A new age for aviation risk management

1 July 2022

Russia-Ukraine Situation Update



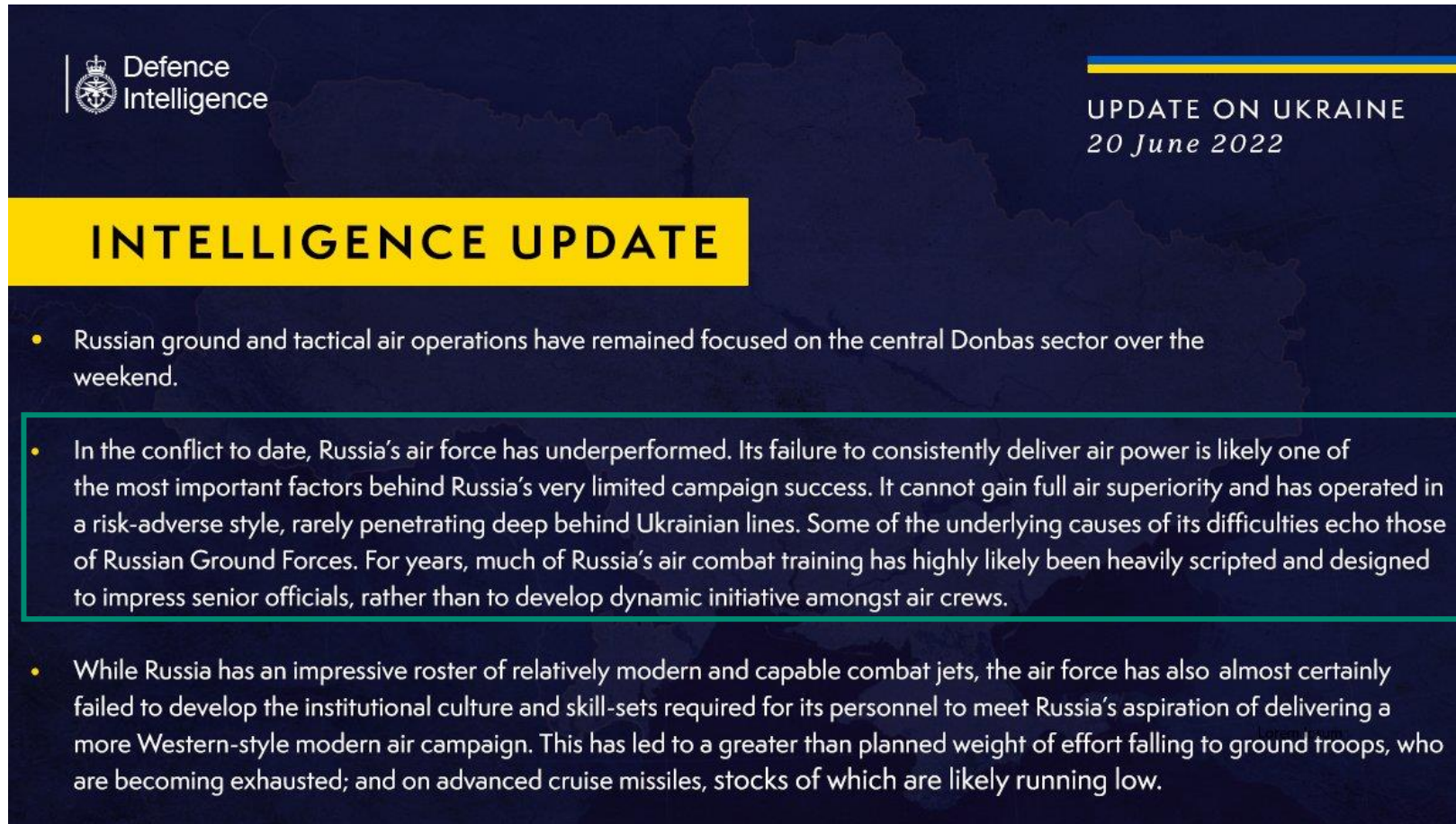
Executive Summary

Matthew Borie
Chief Intelligence Officer
Osprey Flight Solutions

- Since 24 February, Russian cross-border strikes from its territory and via Belarus into Ukraine have been reported, **with approximately 3,500 cruise and ballistic missiles as well as guided rocket artillery** targeting main urban centres outside of Donetsk and Luhansk, including Kyiv, Kharkiv, Dnipro, Lviv, Ivano-Frankivsk, Lutsk, Odessa, Kherson, Zaporizhzhia and Mariupol. **Airports, airbases and/or military installations with aviation infrastructure in many cities have been targeted.**
- On 29 March, Russia stated the primary aim of the “Special Military Operation” is to “liberate” the Donbass (Donetsk and Luhansk), and Russian forces withdrew from areas north of Kyiv. However, Mariupol was taken by Russian forces by late May. **The vast majority of the fighting in the south spans from Mykolaiv near Crimea through to Sea of Azov areas and into the Donbass, though Russian military operations in the Kharkiv region are ongoing.**
- Russian naval activity has also been reported in the Black Sea and Sea of Azov since 24 February, and Russian cruise missiles have been launched from both areas as well as from the northern Caspian Sea into Ukraine on multiple occasions. The Russian Navy Black Sea Fleet flagship *Moskva* was severely damaged in a Ukrainian military cruise missile strike off the coast of Odessa on 14 April. **Reporting from late June indicates Russian military forces have withdrawn from Snake Island and Ukrainian missile strikes against Russian oil/gas rigs in the Black Sea off the Crimean coast have occurred.**
- Ukrainian military drone & ballistic missile strikes have targeted Russian military logistics bases in Kursk, Bryansk, Belgorod, Taganrog and Millerovo. Russian air defences have reportedly shot down a limited number of Ukrainian ballistic missiles & drones over Belgorod, Bryansk, Kursk, Voronezh & Rostov oblasts.

Russia-Ukraine Situation Update

UK Defence Intelligence Update – 20 June



The graphic features a dark blue background with a faint map of Ukraine. In the top left corner is the Defence Intelligence logo, which includes a crown and a shield. In the top right corner, the text 'UPDATE ON UKRAINE' is written in white, with '20 June 2022' below it. A yellow horizontal bar across the middle contains the text 'INTELLIGENCE UPDATE' in bold white letters. Below this bar is a list of three bullet points. The second bullet point is enclosed in a red rectangular border.

Defence Intelligence

UPDATE ON UKRAINE
20 June 2022

INTELLIGENCE UPDATE

- Russian ground and tactical air operations have remained focused on the central Donbas sector over the weekend.
- In the conflict to date, Russia's air force has underperformed. Its failure to consistently deliver air power is likely one of the most important factors behind Russia's very limited campaign success. It cannot gain full air superiority and has operated in a risk-adverse style, rarely penetrating deep behind Ukrainian lines. Some of the underlying causes of its difficulties echo those of Russian Ground Forces. For years, much of Russia's air combat training has highly likely been heavily scripted and designed to impress senior officials, rather than to develop dynamic initiative amongst air crews.
- While Russia has an impressive roster of relatively modern and capable combat jets, the air force has also almost certainly failed to develop the institutional culture and skill-sets required for its personnel to meet Russia's aspiration of delivering a more Western-style modern air campaign. This has led to a greater than planned weight of effort falling to ground troops, who are becoming exhausted; and on advanced cruise missiles, stocks of which are likely running low.

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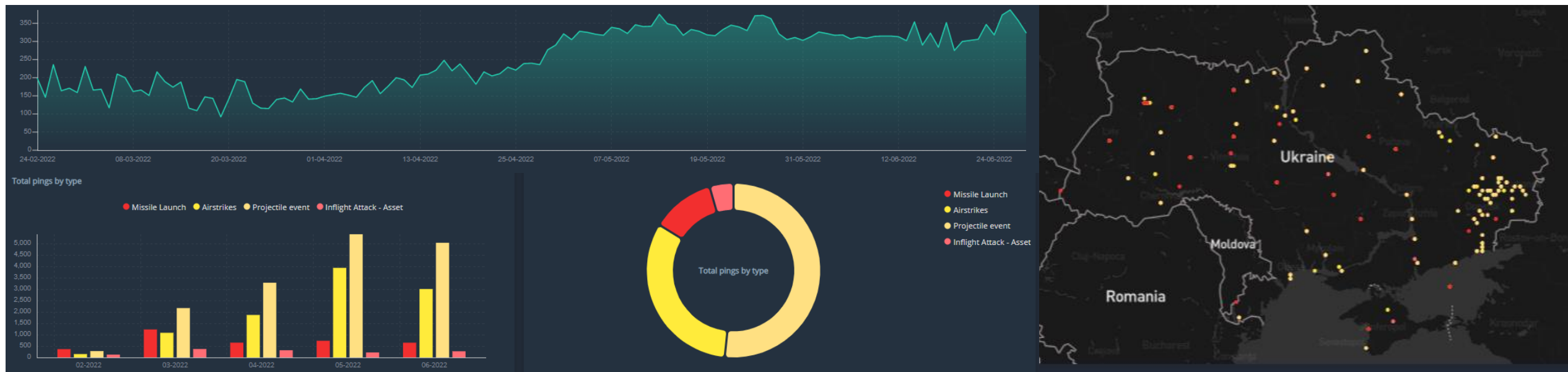
UK Defence Intelligence Update – 30 June





Russia-Ukraine Situation Update

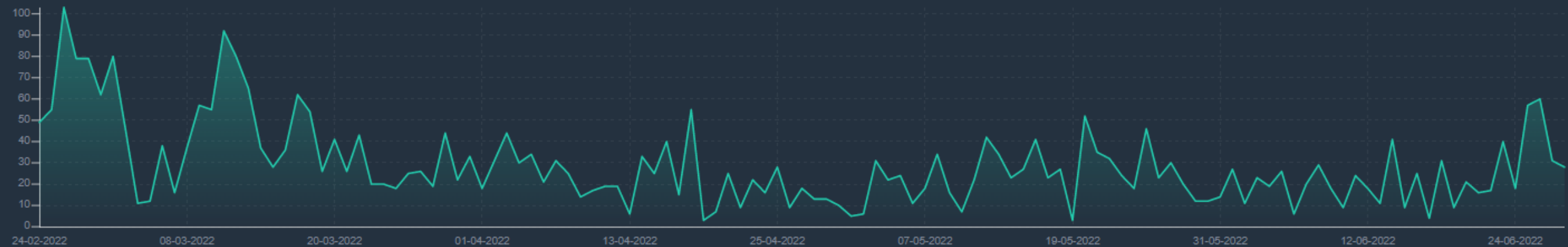
Osprey:Explore - Rocket and missile strikes, attacks on airports/airbases and aerial target engagements in Ukraine since 24 February





Russia-Ukraine Situation Update

Osprey:Explore – Missile launches during the Ukraine conflict

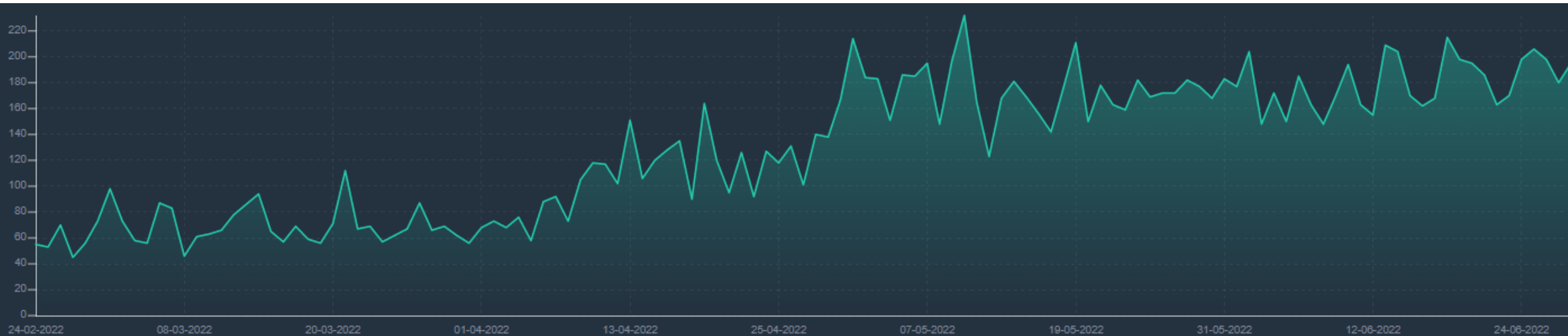


Missile launches: Russian cruise missile and ballistic missile launches have steadily trended downward, though they have been more precise since April with specific targeting of Ukrainian military bases, logistical sites and critical infrastructure. However, such activity has seen an upward trend in the second half of June with missile launches targeting Kyiv, Lviv and other areas deep within the Ukrainian interior.



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Osprey:Explore – Unguided rocket, artillery and mortar barrages during the Ukraine conflict



Rocket/artillery barrages (unguided munitions): Use of these weapons has been steadily increasing during the conflict but has remained at a notably high intensity in June as Russia advances in the Donbass and continues shelling Kharkiv in the northeast and Mykolaiv in the south.



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Osprey:Explore – Airstrikes during the Ukraine conflict

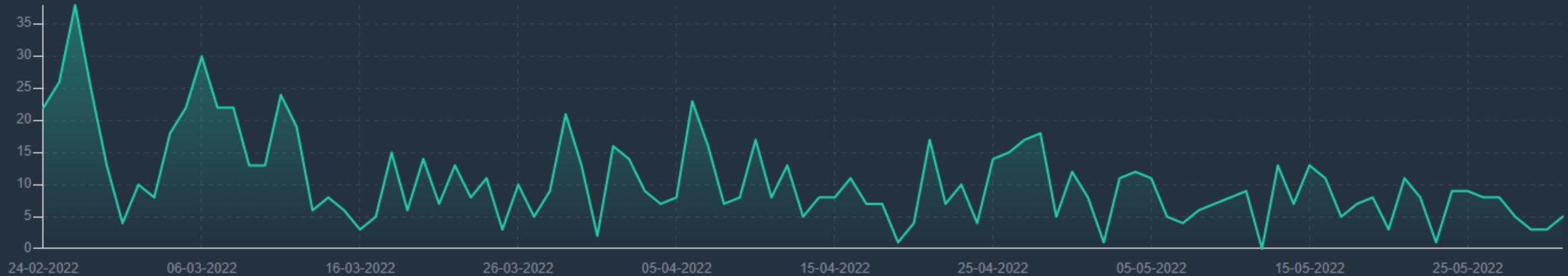


Airstrikes: Russian Air Force performance during the conflict had been inconsistent from day to day in the first month of the conflict; airstrike totals stabilised in May though there has been a downward trend in daily totals in June. Air operations are frequently occurring over the Donbass and southern Ukraine, though as evidenced by the UK Defence Intelligence update from 20 June, the Russian Air Force has underperformed during the conflict.



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Osprey:Explore – Actual or attempted downings of aircraft, helicopters, drones & missiles over Ukraine



Attacks on aerial targets: A high number of aircraft, drones and missiles were shot at or shot down in the first two weeks of the conflict. Totals have declined due to attrition and changes in tactics; however, engagements continue to occur at lower altitudes during air operations over the Donbass, Kharkiv in the northeast and in the south near Mykolaiv/Kherson. As evidenced by the 20 June UK Defence Intelligence update, the Russian Air Force has failed to gain full air superiority during the conflict and has operated in a risk-adverse style, rarely penetrating deep behind Ukrainian military lines due to persistent all-altitude air-defence operations.

Key Developments:

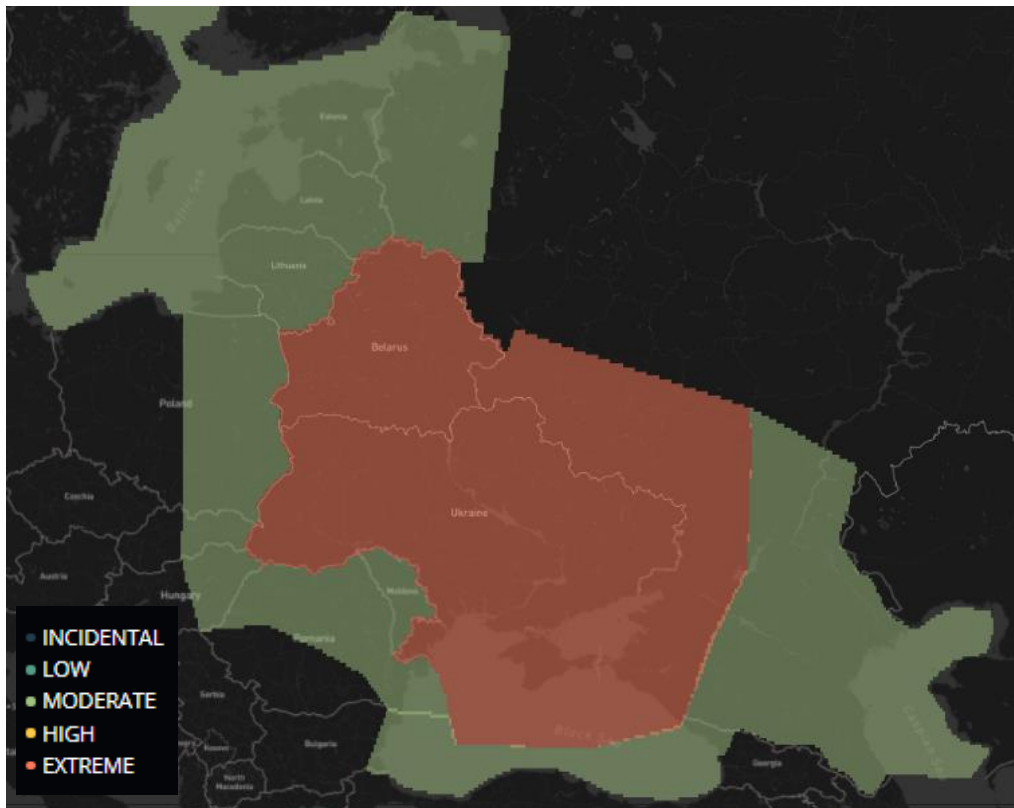
- Verified losses of Ukrainian military air assets: 29 aircraft, 11 helicopters & 33 drones
- Verified losses of Russian military air assets: 35 aircraft, 48 helicopters & 91 drones
- Verified losses of Ukrainian armed forces air-defence assets: 107 components
- Verified losses of Russian armed forces air-defence assets: 224 components
- **Analyst Comment:** Russia is not assessed to have achieved air superiority over Ukrainian airspace. While degraded, Ukrainian military air and air-defence operations remain ongoing. Ukraine is assessed to be conducting approximately 20 jet air sorties per day as the airspace remains contested. Russia is assessed to be conducting approximately 200-250 air sorties per day, though a notable portion are likely occurring in Russian airspace and not over Ukraine due to the persistent threat posed by Ukrainian air defences at all altitudes.



Russia-Ukraine Situation Update

Key Developments: Regulatory, Risk & Operational

Russia-Ukraine Situation Update



Osprey Airspace Risk Areas

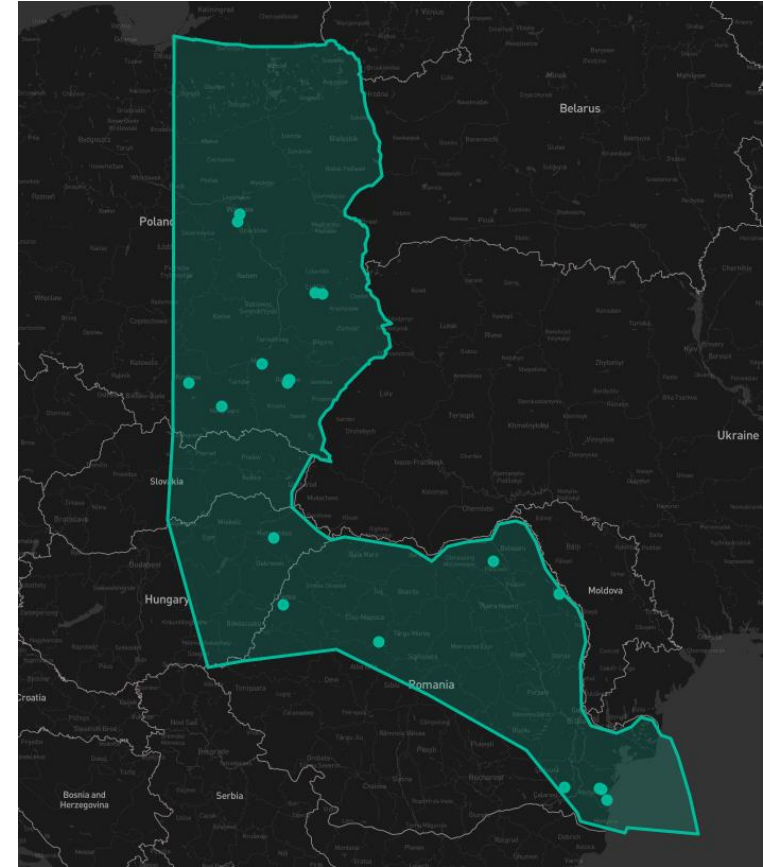
Osprey scoring for the relevant airspace risk areas outlined below:

- Ukraine - Donetsk & Luhansk: **EXTREME** at all altitudes
- Ukraine (non-Donbass): **EXTREME** at all altitudes (up from HIGH on 23 Feb)
- FIR Simferopol (UKFV): **EXTREME** at all altitudes (up from HIGH on 23 Feb)
- Russian Border: **EXTREME** at all altitudes (up from HIGH on 23 Feb)
- Belarus: **EXTREME** at all altitudes (up from HIGH on 23 Feb)
- Moldova: **MODERATE** at all altitudes (down from EXTREME on 24 Mar)
- South Black Sea, Southern Russia & North Caspian Sea: **MODERATE** at all altitudes (new on 25 Mar)
- Eastern Europe Border Areas & Baltic Sea: **MODERATE** at all altitudes (new on 25 Mar)

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Expansion of Osprey airspace risk areas

- **Baltic Sea:** Increased NATO and Russian military air activity as well as global positioning system (GPS)/global navigation satellite system (GNSS) jamming and electromagnetic interference (EMI)
- **Eastern Europe Border Areas:** Increased NATO air activity and air-defence system deployments coupled with spillover by drones from Russia-Ukraine conflict
- **Southern Black Sea:** Increased NATO and Russian military air activity as well as presence of GPS/GNSS jamming and EMI
- **Northern Caspian Sea:** Russian military air and naval activity, including cruise missile launches into Ukraine without prior notices issued



Eastern Europe Border Areas



Russia-Ukraine Situation Update

Regulatory Information

- ✦ **Ukraine** has closed its airspace until at least 14 July. **Moldova** has reopened part of its airspace, but areas primarily along the Ukrainian border remain closed until at least 7 August.
- ✦ **Belarus** continues to extend the restriction for a portion of its southern airspace; **Russia** continues to extend the closure of much of its southwest airspace as well as numerous ATS route segments.
- ✦ **Poland, Slovakia, Hungary and Romania** have all issued NOTAMs regarding flight planning restrictions and Ukraine-related military activity in their airspace, primarily near their borders with Ukraine and Moldova. **Germany** has issued a NOTAM warning of reroutings and delays in its airspace due to Ukraine-related military activity.
- ✦ Major regulatory bodies – including **EASA, the UK, the US, Canada, France & Germany** – have issued/extended conflict zone notices for airspace in Ukraine and, in some cases, Russia, Belarus and Moldova, most with ‘buffer zones’ around Ukrainian airspace ranging up to 200NM.
- ✦ The **EU, the US, the UK, Canada**, almost all non-EU European nations and British Overseas Territories have banned Russian-linked aviation entities from using their airspace; Russia has reciprocated in almost all cases. Canada added Belarusian-linked flights to its ban on 16 March; most European nations have banned Belarusian flights since the May 2021 Ryanair forced landing incident.
- ✦ Eurocontrol-compiled NOTAMs related to Russia-Ukraine: <https://www.public.nm.eurocontrol.int/PUBPORTAL/gateway/spec/>
- ✦ For more details of these notices, please access Osprey:Open via the following link: <https://www.ospreyfs.net/login>

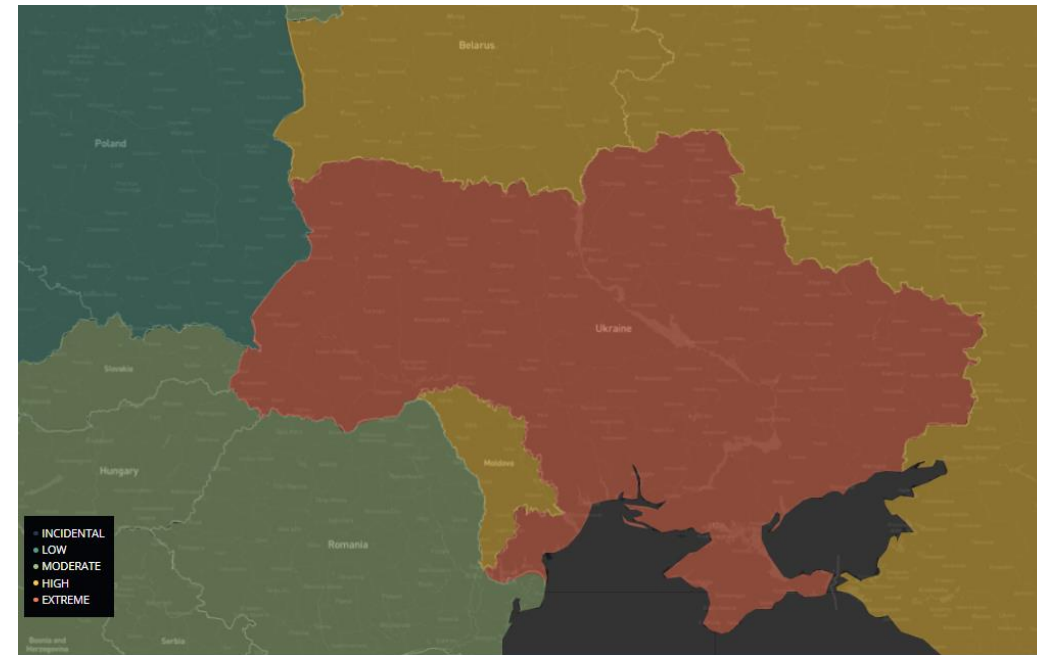
Russia-Ukraine Situation Update

Regional Impacts of the Conflict

Russia-Ukraine Situation Update

Key Geopolitical Developments – Ukraine:

- ✦ Over the past three months, Ukrainian and Russian officials have met for several rounds of talks; however, **no breakthrough regarding a ceasefire agreement is expected in the near term**, and humanitarian corridors have been largely ineffective.
- ✦ The EU plans to finance the purchase and delivery of weapons to Ukraine – the first time it has done this. **Several NATO countries – on an individual basis and not at the direction of the alliance - continue to provide military armaments to Ukraine:**
 - ✦ Individual NATO member states have provided fighter jet components, combat helicopters and military-grade drones
 - ✦ Slovakia provided S-300 high-altitude conventional SAM systems
 - ✦ MANPADS and other air-defence systems have been provided by alliance members, with the US planning NSAMS high-altitude conventional SAM system delivery
 - ✦ Both the US & UK have provided anti-ship missiles, which have been used in the Black Sea against Russian assets
 - ✦ Russia stated it will take measures to defend against weapons shipments to Ukraine, in particular any provision of high-altitude air-defence systems and/or aircraft



Osprey Country Risk Areas

Russia-Ukraine Situation Update

Key Geopolitical Developments – Regional:

- NATO activated the Response Force within the alliance for the first time & will build up quick reaction force posture
- NATO considering the membership of Finland & Sweden
- A NATO multinational battlegroup for air defence was set up in Slovakia, with US, Germany and the Netherlands deploying Patriot air-defence systems
- US deployed Patriot air-defence systems to Poland, and the UK Sky Sabre will also be deployed to Poland as well
- NATO Baltic Sea & Black Sea air-policing missions remain ongoing along with increased air operations over Eastern Flank member states in the alliance



Russia-Ukraine Situation Update

Assessment, Indicators & Takeaways



Russia-Ukraine Situation Update

Osprey Assessment

Strikes are occurring in the wake of the Russian president stating on 24 February that Russia's armed forces had initiated a "special military operation" against Ukraine to "protect the Donbass" and to "demilitarize" Ukraine. **Osprey assesses that significant Russian military operations - likely including the use of cruise and ballistic missiles targeting Ukrainian armed forces bases and critical infrastructure sites in Ukraine, including airports/airbases - will persist through July.** Ukraine may continue to conduct a limited number of drone, missile and/or rocket launches into Russian territory, though such attacks are likely to occur within 160km (100 miles) of the border.

Increased military air and multi-type/variant missile (air-defence, cruise and/or ballistic) operations by the Russian and Ukrainian armed forces have the potential to cause airspace congestion and would impact the safety of civil aviation flights. **The significant increase in the amount of air and missile operations in southwest Russia, Ukraine and the Black Sea are expected to disrupt availability of airports/airbases along with access to airspace in these areas indefinitely.**

While there are no indications that Russia or Ukraine intend to kinetically target legal civil aviation flights, Osprey assesses there is an increasing potential for miscalculation and/or misidentification. **While Ukraine has closed its airspace, leading civil aviation governing bodies may issue further notices to operators in addition to those already in place regarding Ukrainian and neighbouring airspace.**

Rerouting of civil aviation over additional portions of Belarus's FIR Minsk (UMMV) as well as Russia's FIR Moscow (UUWV), FIR Samara (UWWW) and FIR Rostov (URRV) along with the eastern portions of Moldovan, German, Polish, Hungarian, Slovakian and Romanian airspace is a significant concern going forward, either by further regulatory action and/or changes in insurance coverage. More restrictive measures could be enacted at short notice by these countries as well as other leading civil aviation governing bodies, including additional partial restrictions of airspace in the above FIRs or additional airspace areas over the Czech Republic or Croatia, for example.



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Key Indicators of Escalation

- Intensification of Russian strikes on main urban centres, military sites and critical infrastructure in Ukraine
- Significant Russian movement of forces deep into Ukrainian territory and control of main urban centres
- Additional deployment of further Russian military forces to Belarus or the areas bordering Ukraine
- Widespread telecommunications disruption and/or cyber attacks crippling critical infrastructure functionality

Key Indicators of De-escalation

- Russian willingness to engage in ceasefire negotiations
- Russian strikes being confined to a specific geographic area
- Russian troop movements confined to a specific avenue of approach
- Russia-NATO council engagements on deconfliction



Russia-Ukraine Situation Update

Key Takeaways

- ✈️ Ukraine is an active conflict zone and the airspace is closed. Neighbouring states are also restricting airspace
- ✈️ Both Russia and NATO are conducting increased levels of military air patrols over the Black Sea and Baltic Sea
- ✈️ GPS jamming and other forms of EMI continue to occur in the region, including over the Black Sea and Baltic Sea
- ✈️ Regulatory NOTAMs, circulars, publications, restrictions and/or bulletins continue to be issued at short notice
- ✈️ Potential changes to insurance coverage and/or access to such services for flights related to Ukraine conflict



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