



Osprey Flight Solutions

A new age for aviation risk management

30 March 2022

Russia-Ukraine Situation Update



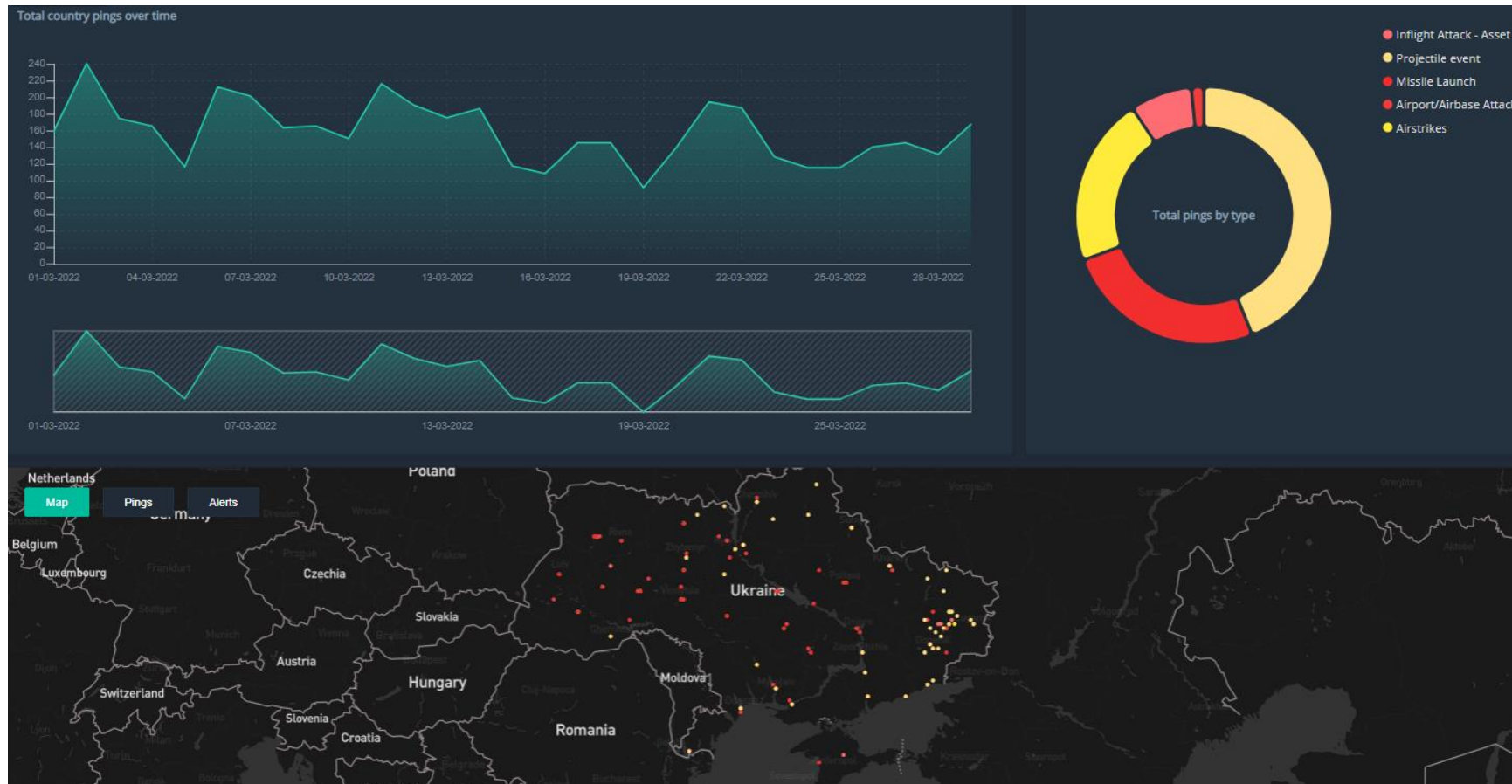
Welcome

Matthew Borie, Chief Intelligence Officer

- Since c.0300 UTC on 24 February, Russian military cross-border strikes into Ukraine – *with approximately 1,500 cruise and ballistic missiles* - have been reported targeting main urban centres outside of Donetsk & Luhansk, to include Kyiv, Kharkiv, Dnipro, Lviv, Ivano-Frankivsk, Lutsk, Odessa, Kherson, Zaporizhzhia and Mariupol - *Airports, airbases and/or military installations with aviation infrastructure in many of these Ukrainian cities have reportedly been targeted*
- Separately, Russian military forces are pressing an invasion along several avenues of approach into Ukraine - *including from the south via Crimea axis (where most takeover of territory has occurred), east via Donbass axis*, northeast via Kharkiv axis, north-central via Kyiv axis and northwest via Belarus axis
- Key Development: *On 29 March, Russia stated the primary aim of the “Special Military Operation” is to “liberate” the Donbass (Donetsk & Luhansk)*
- Russian naval activity has also been reported in the Black Sea and Sea of Azov since 24 February while *Russian cruise missiles have been launched from the Caspian Sea into Ukraine on multiple occasions during March*
- Ukraine military drone or ballistic missile strikes have targeted Russian military bases in Belgorod, Taganrog & Millerovo – Russian air defences have reportedly shot down a limited number of Ukrainian ballistic missiles over Belgorod & Rostov

Russia-Ukraine Situation Update

Osprey:Explore – Rocket & missile strikes, attacks on airports/airbases & air asset shoot-downs in Ukraine in March





Russia-Ukraine Situation Update

Osprey:Explore – Missile launches during the Ukraine conflict



Missile launches: Russian cruise missile and ballistic missile launches steadily trending downward, though they have been more precise in past week (i.e. hitting Lviv, Lutsk, Rivne and Dnipro effectively within past 7 days – despite fewer missiles used)

Russia-Ukraine Situation Update

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



Rocket / artillery barrages (unguided munitions): Use of these weapons has been most steady during conflict but will likely increase further as Russia presses in Donbass, continues Kharkiv shelling and amid Mariupol siege



Russia-Ukraine Situation Update

Osprey:Explore – Airstrikes during the Ukraine conflict



Airstrikes: Russian Air Force performance during the conflict has been inconsistent from day to day though airstrike totals are stabilising in past week



Russia-Ukraine Situation Update

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



Attacks on aerial targets: High number of aircraft, drones and missiles were shot at or shot down in first 2 weeks, now declining in totals due to attrition and changes to tactics

Russia-Ukraine Situation Update

Osprey Data in The Economist – March 2022



The Economist

Russia-Ukraine Situation Update

Key Developments:

- *Verified losses of Ukrainian military air assets: 12 aircraft, 2 helicopters & 12 drones*
- *Verified losses of Russian military air assets: 17 aircraft, 35 helicopters & 18 drones*
- *Verified losses of Ukrainian armed forces air-defence assets: 51 systems*
- *Verified losses of Russian armed forces air-defence assets: 86 systems*
- *Analyst Comment: Russia is not assessed to have achieved air superiority over Ukrainian airspace. While degraded, Ukrainian military air & air-defence operations remain ongoing. Ukraine is assessed to be conducting approximately 10 jet air sorties per day as the airspace remains contested with Russia. Russia is assessed to be conducting approximately 200 air sorties per day, though a notable portion are likely occurring over Russian airspace and not Ukraine due to the persistent threat posed by Ukrainian air defences at all altitudes.*



Russia-Ukraine Situation Update

UK Defence Intelligence – 26 March 2022



UPDATE ON UKRAINE
26 March 2022

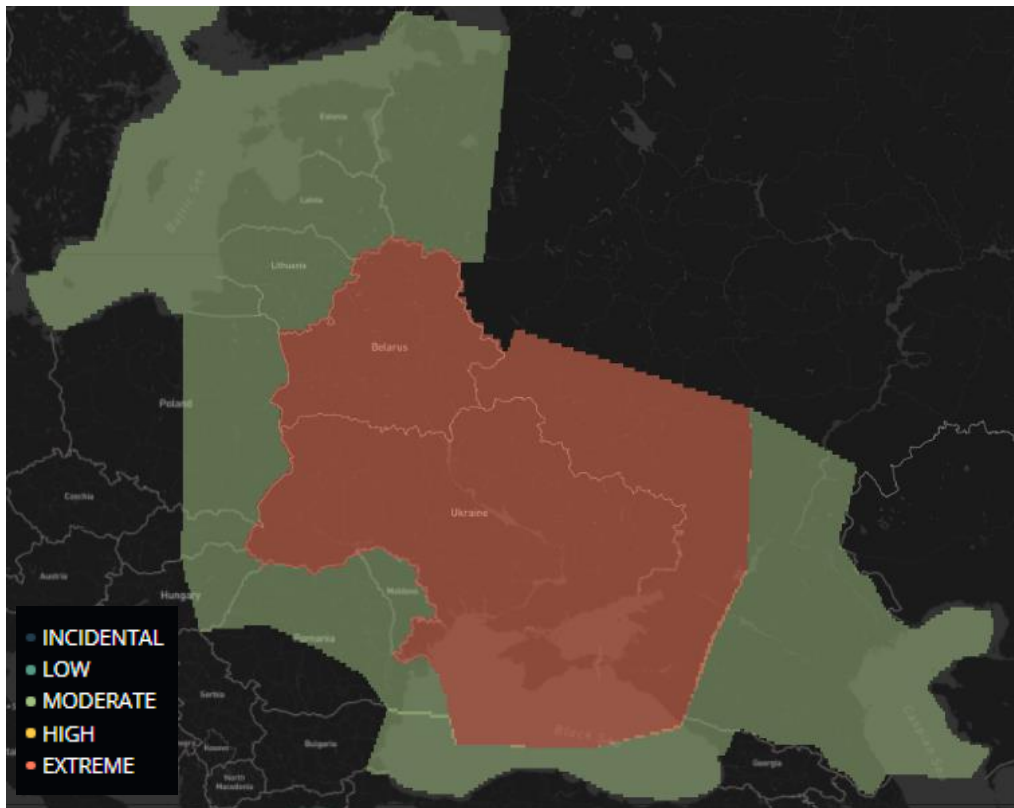
INTELLIGENCE UPDATE

- Russian air and missile forces continue to strike targets across Ukraine including many targets in densely populated civilian areas.
- Russia continues to rely on “stand-off” munitions launched from within Russian airspace, in order to reduce their aircrafts’ exposure to Ukrainian air defence forces.
- US reporting of up to 60% failure rates of these weapons will compound Russia’s problem of increasingly limited stocks forcing them to revert to less sophisticated missiles or accepting more risk to their aircraft.

Russia-Ukraine Situation Update

Key Developments: Regulatory, Risk & Operational

Russia-Ukraine Situation Update



Osprey Airspace Risk Areas

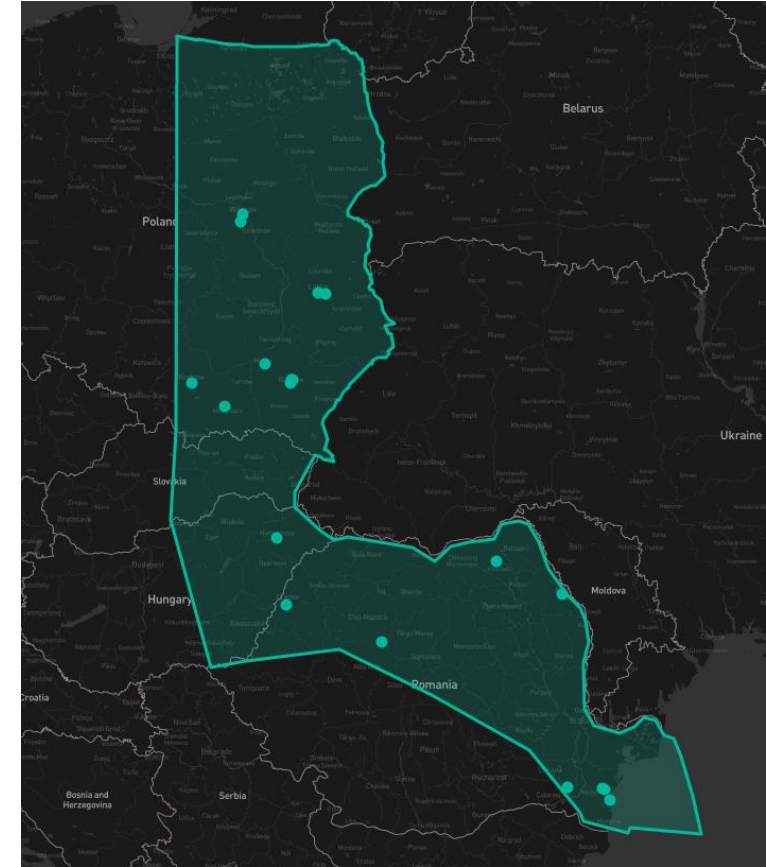
Osprey scoring for the relevant Airspace Risk Areas outlined below:

- 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)

Russia-Ukraine Situation Update

Expansion of Osprey airspace risk areas:

- **Baltic Sea:** Increased NATO & Russian military air activity as well as presence of GPS/GNSS jamming & EMI
- **Eastern Europe Border Areas:** Increased NATO air activity & air-defence system deployments coupled with spillover by drones from Russia-Ukraine conflict
- **Southern Black Sea:** Increased NATO & Russian military air activity as well as presence of GPS/GNSS jamming & EMI
- **Northern Caspian Sea:** Russian military air & 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, currently until 25 April (UKBV A0586/22). Moldova's airspace remains closed until 25 April, except for a portion from the Romanian border allowing flights to use Chisinau Airport (LUUU A0064/22, AIP SUP 004/2022).
- ✦ Belarus has extended the restriction for its southern airspace until 24 April (UMMV O0255/22); Russia has closed much of its SW airspace as well as numerous ATS route segments, currently through 7 April (URRV/UUWV/URFV U0393/22, U0394/22).
- ✦ Poland, Slovakia, Hungary & 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 an updated NOTAM warning of reroutings and delays in its airspace due to Ukraine-related military activity (EDGG/EDWW/EDMM B0267/22).
- ✦ Major regulatory bodies – including EASA, the UK, the US, Canada, France & Germany – have issued conflict zone notices for airspace in Ukraine and neighbouring countries, most with 'buffer zones' around Ukrainian airspace ranging up to 200NM. EASA's CZIB was updated on 24 March to reflect the reopening of a portion of Moldovan airspace; and Canada's NOTAM was amended on 29 March to widen their prohibition to the entirety of the Minsk, Chisinau and Rostov FIRs.
- ✦ 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 incident.
- ✦ For more details of these notices, please access Osprey:Open via the following link: <https://www.ospreyfs.net/login>
- ✦ Eurocontrol compiled NOTAMs related to Russia-Ukraine: <https://www.public.nm.eurocontrol.int/PUBPORTAL/gateway/spec/>

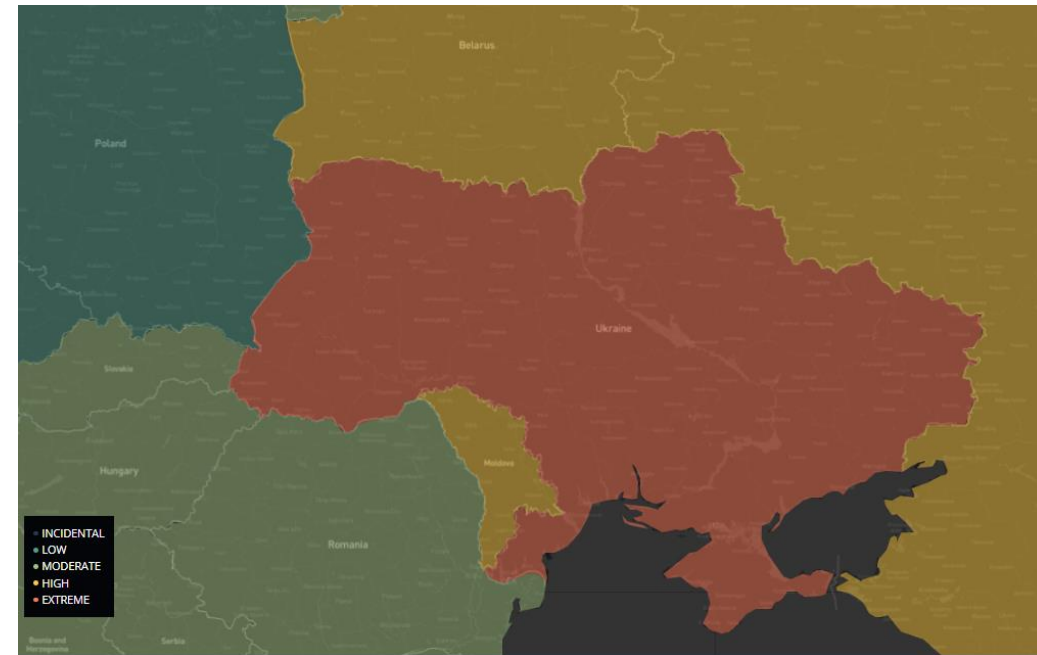
Russia-Ukraine Situation Update

Assessment, Indicators & Takeaways

Russia-Ukraine Situation Update

Key Geopolitical Developments:

- *27 February – 29 March: Ukrainian & Russian officials have met for several rounds of talks; no breakthrough towards a ceasefire agreement expected in the near term & humanitarian corridors have been largely ineffective*
- 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
 - *Provision of MANPADS & possible transfer of high-altitude air-defence systems*
- NATO first-ever activation of the Response Force within the alliance
- Multinational battlegroup for air defence in Slovakia, with both Germany and the Netherlands deploying Patriot air-defence systems
- *US deployment of Patriot air-defence systems to Poland, UK Sky Sabre to be deployed to Poland as well as NATO Baltic Sea/Black Sea air-policing missions ongoing*
- *Russia has stated that 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

Osprey Assessment

*The 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 - are expected to persist through mid April.** 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 intends to kinetically target legal civil aviation flights, Osprey assesses there is an increasing potential for miscalculation and/or misidentification.

***Rerouting of civil aviation over additional portions of Belarus's FIR Minsk (UMMV) as well as Russia's FIR Moscow (UUVV), FIR Samara (UWWW) and/or FIR Rostov (URRV) along with the eastern portions of Moldovan, German, Polish, Hungarian, Slovakian and/or 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.** While Ukraine has closed its airspace, leading civil aviation governing bodies may issue further notices to their operators in addition to those detailed above regarding Ukrainian and neighbouring airspace.*

Russia-Ukraine Situation Update

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 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 restricting airspace as well
- ✈️ *Both Russia & NATO are conducting increased levels of military air patrols over the Black Sea & Baltic Sea*
- ✈️ *GPS jamming & other forms of EMI remain present in the region, including the Black Sea & Baltic Sea*
- ✈️ *Possible short-notice issuance of regulatory NOTAMs, circulars, publications, restrictions and/or bulletins*
- ✈️ Potential change in insurance coverage and/or access to such services for flights related to Ukraine conflict



Osprey Flight Solutions

A new age for aviation risk management

30 March 2022

Russia-Ukraine Situation Update