



# Open Source Update: January 2024

**Intelligence & Analysis Division  
Open Source Update**

**January 2024**

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This open source periodical is designed to provide an overview of relevant, publicly available information on threat and hazard events and analysis of potential impacts to the interests of the United States, both at home and abroad. This product is not intended to be a comprehensive overview of all threat and hazard news and inclusion in this product does not constitute a confirmation of credibility nor precedence by RMC.

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## Threats

### Air Force Disciplines 15 Over Alleged Leak of Classified Documents – Insider Threat

#### Summary

*Jack Teixeira, a U.S. Air Force Airman First Class, was arrested in June 2023 on six (6) counts of unlawfully disclosing classified national defense information. Teixeira enlisted in the Air National Guard in 2019 and acquired a Top Secret security clearance in 2021. Open source reports show that Teixeira used Discord to share classified information about the Ukraine-Russia war. Discord is a social media platform for hosting real-time video, text, and voice chat. The service offers servers organized into topic-based channels. Some of the photographs he shared contained both Secret and Top Secret classification markings.*

*After an investigation, 15 members of the Air National Guard ranking from E-5 to O-6 were disciplined for their lack of oversight regarding Teixeira. That number includes the commander of the 102<sup>nd</sup> Intelligence Wing (where Teixeira was assigned), who was relieved of his command of the unit. The investigation was unable to prove that leadership was fully aware of the initial leak, but some ranking servicemembers in Teixeira's chain of command demonstrated a lack of interest after becoming aware of Teixeira's suspicious activities. Teixeira reportedly sought access to classified information without a valid need to know and unlawfully took pictures and screenshots of classified information. Even as he continued, no colleagues reported Teixeira to the proper authorities. However, open source reports indicate that direct orders were previously given to Teixeira to refrain from taking notes on intelligence unrelated to his task at hand. Teixeira pled not guilty to six (6) counts of willful retention and transmission of national defense information. As of January 2024, he is currently awaiting trial. While the U.S. Department of Defense (DoD) has yet to officially disclose Teixeira's motives, he appears to have posted the information to win online arguments and/or to gain clout among other users in the Discord channel.*

#### Analyst Comment

*However frivolous Teixeira's motivations, his actions still had the capacity to undermine national security. Insider threats come in all forms, including those that may unwittingly mishandle classified information or misuse it for personal or malicious reasons. Incidents of this nature must be addressed as soon as possible to minimize damage. DoD officials later stated that if someone had officially and properly reported Teixeira, the leak of classified information could have been stopped sooner and the damage mitigated.*

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## Taiwan Reports More Chinese Weather Balloon Incursions –

*Foreign Intelligence Entities (FIE)*

### Summary

*On 17 December 2023, two (2) Chinese weather balloons were spotted over the Taiwan Strait. The balloons remained in the area north of the island nation. This is the second time Taipei has reported Chinese weather balloons in the area. The first occurred on 07 December 2023, when a balloon crossed the Strait along with 12 Chinese fighter jets. The two (2) most recent balloons crossed the median line in the Strait, which was drawn by the U.S. in 1954 to further separate Taiwan and China amidst friction between Taipei and Beijing. The increased warplane flights and weather balloons crossing the median are intended to provoke Taipei and test the response of the armed forces of Taiwan, which are significantly smaller than those of China.*

### Analyst Comment

*A number of incidents involving suspicious Chinese weather balloons were reported in 2023. Using weather balloons for intelligence collection is a well-known tactic, but it became a global issue in February 2023, when the U.S. shot down a suspected Chinese surveillance balloon near Myrtle Beach, SC after it transited across the country (including near a number of sensitive military bases). Beijing typically asserts that these rogue balloons are civilian or meteorological in nature, or that they have drifted off course. In contrast, U.S. elected officials and voices in the U.S. Intelligence Community usually assert that the balloons are being utilized for surveillance purposes. The two (2) balloons over the Taiwan Strait arrived a month prior to the island nation's presidential election, to be held on 13 January 2024, during which Taipei will look for efforts by Beijing to influence the outcome. Beijing likely hopes to support candidates that will benefit China and its longstanding efforts at reunification.*

*While the practice of sending aircraft into Taiwan's Air Defense Identification Zone is a well-known Chinese tactic, the use of weather balloons is a more recent trend. These tactics, in turn, may continue to push Taiwan towards of posture of increased military readiness in anticipation of escalating provocations. This heightened state of readiness could serve as a potential pretense Beijing seeks to justify kinetic action in support of reunification. However, it is more likely that the use of these balloons serves as a psychological intimidation tactic. Additionally, due to the balloons' lack of maneuverability, they pose a potential hazard to aviation.*

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## IT Workers Defraud Businesses to Fund North Korean Weapons Program – Cyber

### Summary

*On 17 October 2023, the United States seized 17 website domains used by North Korean information technology (IT) workers to defraud American and foreign businesses, evade sanctions, and fund the Democratic People’s Republic of Korea’s (DPRK; or North Korea) weapons program. According to court documents, thousands of IT workers were dispatched by North Korea to live abroad, mainly in China and Russia, to deceive businesses into hiring them as freelance IT workers. The workers pretended they were working in the U.S. by paying Americans to use their home Wi-Fi connections, among other strategies. They also used pseudonymous email, social media, payment platforms, and online job site accounts, as well as false websites and proxy computers. The IT workers generated millions of dollars annually to fund North Korea’s weapons of mass destruction programs. Furthermore, the U.S. Department of Justice (DOJ) indicated that the IT workers infiltrated networks and exfiltrated information and, in some cases, preserved access for future hacking and extortion.*

### Analyst Comment

*This example highlights the ongoing disruption of criminal schemes supporting North Korea’s nuclear and ballistic initiatives. In 2021, the DOJ charged three (3) North Korean programmers and military intelligence operatives for cyberattacks to steal and extort more than \$1.3 billion from financial institutions and private companies. Furthermore, some experts indicate that state-sponsored North Korean hackers stole an estimated \$630 million to \$1 billion by hacking networks involved in cyber finance. The U.S. and the Republic of Korea (ROK; or South Korea) have alerted freelance work and payment service platforms about the scheme.*

*Open source reporting suggests that North Korea will likely continue to advance its weapon testing activities in 2024. Shortly after a mid-December 2023 missile test, North Korean leader Kim Jong Un advocated bolstering war readiness. Some experts believe that Kim seeks to strengthen his nuclear arsenal as leverage in diplomacy with the U.S., particularly after the upcoming November 2024 presidential election. Furthermore, the ROK has indicated that North Korea will likely engage in military provocations and cyberattacks ahead of South Korean parliamentary elections in April 2024.*

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## Chinese Cyber Intrusions Detected in Critical Infrastructure –

Cyber

### Summary

*Volt Typhoon, a Chinese state-sponsored hacking group, has long been known for their role in espionage and intelligence gathering. The group has recently infiltrated U.S. critical infrastructure networks, ostensibly to position themselves for future operations. Examples of this type of infiltration include a Hawaiian water utility, the Texas electrical grid, government networks in Guam, and gas and oil pipeline networks elsewhere in the U.S. Although these are not military targets, they would be critical to any future large-scale DoD operations. These efforts coincide with rising tensions in the Pacific area of operations and appear to be an attempt to develop capabilities to disrupt or destroy critical infrastructure in the U.S. in the event of an armed conflict.*

*Hackers are using targets of opportunity, gaining access, and stockpiling strategic vulnerabilities. In a technique known as “living off the land,” hackers are using devices such as home computers and routers to steal employee credentials. These credentials and devices are used to build tunnels into American critical infrastructure while posing as legitimate users within the network. Hackers carry out reconnaissance within networks and seek opportunities to infiltrate further upstream into more critical companies or industrial control systems (ICS).*

## Analyst Comment

*These cybersecurity threats are an example of Chinese policy regarding military-civil fusion. The Chinese Communist Party (CCP) has goals of making the People's Liberation Army (PLA) the most technologically advanced military in the world. The CCP is using a whole-of-society approach, including political, military, and civil means to acquire research, intellectual property, and technological advancements to further party goals. These cybersecurity threats also highlight the changing landscape of the modern battlefield. Future conflict will include the cyber landscape of the military, government, and civilian networks.*

*In previous conflicts, disrupting logistics required long-range bombers, missiles, or risky espionage operations. Today, a cyberattack can produce similar results without the potential loss of assets and personnel. Cyberattacks on ports, railways, and other shipping networks can cripple military logistics. Disrupting electricity, water, and communications on installations would degrade combat readiness. Cyberattacks on refineries as well as oil and gas distribution networks can limit the fuel supply for transportation assets. Civilians will also experience the disruption of utilities and communications, along with the supply chain that provides essential goods and services. A whole-of-government approach, supported by civilian businesses protecting their networks, is required to defend against ongoing cyber threats to critical infrastructure and the ICS architecture that supports it.*

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## Accidental Drone Interference on the Rise at NAS JRB Fort Worth

— Unmanned Aircraft/Unmanned Aerial Systems (UA-UAS)

### Summary

*Naval Air Station Joint Reserve Base (NAS JRB) Fort Worth has reported an increase in encounters with unauthorized drones entering restricted airspace. Reports have risen from approximately 100 a month to upwards of 300, some even going through the area multiple times, pushing incidents up to 700 a month. There is no indication that these incursions are deliberate or malicious. However, planes have had to maneuver twice to avoid a crash. Regardless of intent, the incursions can endanger flights and are hazardous, particularly to single engine aircraft.*



## Analyst Comment

*The area immediately surrounding NAS JRB Fort Worth is restricted. There is a broader zone around the installation in which drones may fly with approval from the FAA. When the airspace is violated, it endangers the multiple daily flights at the installation. The potential also remains for hostile actors to utilize UAS for flight interference or intelligence gathering purposes. Of note, a drone with a camera attached was recovered at NAS JRB Fort Worth in 2018. However, the vast majority of UAS incursions are accidental in nature, occurring when hobbyists unknowingly fly in restricted airspace. Despite the non-malicious nature of these events, they have the potential to cause severe interference and hazards in the same way a malicious actor may deliberately aim to. It is also possible for threat actors to pose as unwitting hobbyists who have flown off course. Education and certification of drone pilots, both commercial and hobbyists, is critical in reducing these events.*

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## U.S. Navy Warships Down Houthi Drones – Unmanned Aircraft-Unmanned Aerial Systems (UA-UAS)

### Summary

*Houthi militants in Yemen are using drones and land attack cruise missiles to attack supply ships bound for Israel as they pass through Red Sea shipping lanes. The Bab-el-Mandeb Strait is only 18 miles wide, putting ships within range of drones and land-attack cruise missiles operated by the Houthis. The USS Carney, a U.S. Navy Arleigh-Burke class guided-missile destroyer, was ordered to operate in the Red Sea after Hamas's October 2023 attack on Israel. Since arriving, the USS Carney has downed dozens of drones and missiles launched by Houthi rebels. From 16-19 December 2023, the USS Carney defended Red Sea shipping lanes against daily mass drone attacks, downing as many as 14 in a single day.*

*The recent attacks have forced shipping companies to reroute vessels around the Cape of Good Hope rather than passing through the Suez Canal and the Red Sea. This increases shipping time by 10 or more days and increases the cost of fuel, maintenance, and crewmembers. In response, the DoD announced Operation Prosperity Guardian, which is a coalition effort to secure Red Sea shipping lanes and includes Bahrain, the United Kingdom, Canada, France, Italy, Norway, the Netherlands, Spain, and the Seychelles.*



The most common one-way attack drones used by the Houthis are the KAS-04 and the Shahed-136. The KAS-04 is produced by Iran's Kimia Part Sivan Company, has a range of 1,700 km., and costs an estimated \$100,000. The Shahed-136 is also Iranian and is a loitering munition or suicide/kamikaze drone capable of swarm attacks with a range of 1,000-2,500 km. Individual drones are estimated to cost about \$20,000. By comparison, the missiles used by the U.S. Navy in response cost between \$1 million and \$4 million each.

### **Analyst Comment**

Although shooting down a \$20,000 drone with a multimillion-dollar missile does not seem cost-effective, the economic damage caused by strikes on merchant vessels and the rerouting of shipping lanes is more substantial. The threat already costs merchant shipping companies millions of dollars to bypass the Red Sea. The DoD has prepared strike options should Washington choose to attack Houthi targets on land. British Defense Secretary Grant Shapps has also indicated a willingness to take direct action should Houthi attacks on shipping continue. As Israel's war against Hamas in Gaza continues, so will strikes by Hezbollah, the Houthis, and other groups with antipathy towards Jerusalem and, in some cases, with backing from Tehran. As the attacks continue, the risk of escalating American involvement in the conflict increases.

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## Iraq Links U.S. Embassy Attacks to Security Services – Terrorism

### Summary

*Following a multi-rocket attack against the U.S. embassy in Baghdad on 07 December 2023, Iraqi officials have commented on links found between perpetrators and the country's security services. However, which security services were involved is unclear. There is an ongoing investigation, and not all perpetrators have been apprehended. Of the 13 individuals that have been arrested, security service members and unaffiliated operatives who provided logistical support are among them.*

*The latter operatives facilitated the perpetrators' movement near the Green Zone where the attacks took place. Baghdad's Green Zone houses the secure U.S. compound. The rocket attacks only caused minor damage. Currently, no group has come forward to claim responsibility. This event has been categorized as a terrorist attack by U.S. Ambassador to Iraq Alina Romanowski and Iraqi Prime Minister Mohammed Shia al-Sudani.*

### Analyst Comment

*This attack on the U.S. embassy can be seen as an act to target diplomatic missions and undermine the stability and security of Iraq. While responsibility has not been claimed, the umbrella group Islamic Resistance in Iraq claimed responsibility for attacks targeting American airbases in Iraq and eastern Syria on the same day. The embassy attack is the first in over a year and has been viewed as an advance against U.S. forces in land claimed by Iraqi Shi'ite Muslims, which includes armed factions with ties to Iran.*

*The armed elements in question have been known to announce their role in attacks. They are also known to be a part of the Popular Mobilization Forces militia, which is categorized as a state security force under the command of Iraq's Prime Minister. Future attacks have been pledged by the group, which is motivated by American support for Israel and the presence of U.S. forces in Iraq. American personnel are tasked with supporting local forces in quelling any efforts by the Islamic State to reassert itself. U.S. military facilities have been attacked at least 84 times since 07 October 2023, resulting in injuries to servicemembers. The U.S. believes that militias backed by Iran are responsible for the attacks and hopes that officials in Baghdad can curtail their efforts.*

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## 14 Arrested for Blocking Travis Air Force Base Gates During Anti-War Protest – *Civil Disturbance*

### Summary

*On the morning of 28 December 2023, approximately 150 protestors gathered outside Travis Air Force Base (AFB) to protest U.S. military assistance to Israel. According to the Fairfield Police Department, 10 protestors from the North Gate of the installation and four (4) from the South Gate entrance were arrested after refusing to comply with commands and blocking the base's entryways. Travis AFB officials indicated that their security forces briefly detained one (1) protestor who crossed onto installation property. Law enforcement temporarily blocked traffic and entry to the installation with barriers until access was restored in the late morning.*

*According to protest organizers, groups at the demonstration included Youth4Palestine-Sacramento, SF Bay Area CODEPINK, the Peace & Justice Center of Nevada County, and Veterans For Peace. While law enforcement and base representatives met with organizers early that morning to ensure servicemembers could access the base, the Fairfield Police Department indicated that the protestors "almost immediately" blocked the installation's gates when the demonstration commenced.*

### Analyst Comment

*The ongoing Israel-Hamas conflict has led to protest activity outside DoD, defense contractors, and federal facilities over the past few months. Some protests have sought to disrupt the movement of supplies and equipment, thereby delaying transportation schedules. On 03 November 2023, protestors blocked the container carrier ship MV Cape Orlando from leaving the Port of Oakland for hours. Some protestors locked themselves to the Cape Orlando and blocked the entrance to where it is moored. Furthermore, three (3) protestors were detained by the U.S. Coast Guard for climbing onto the vessel. A few days later, on 06 November 2023, hundreds of protestors blocked traffic at the Port of Tacoma to prevent the Cape Orlando from moving U.S. military cargo.*

*DoD personnel overseas could also continue to be affected by protest activity. In November 2023, hundreds of people at a pro-Palestinian rally attempted to storm Incirlik Air Base in southern Turkey, which houses U.S. troops. Turkish police reportedly used tear gas and water cannons to disperse the crowds.*

*As the Israel-Hamas conflict continues, DoD personnel should remain aware of and avoid any planned public demonstration that may result in civil disturbance activity from protestors, counter-protestors, and outside agitators, along with malicious actors who may use the gatherings as a pretense to engage in criminal activity.*

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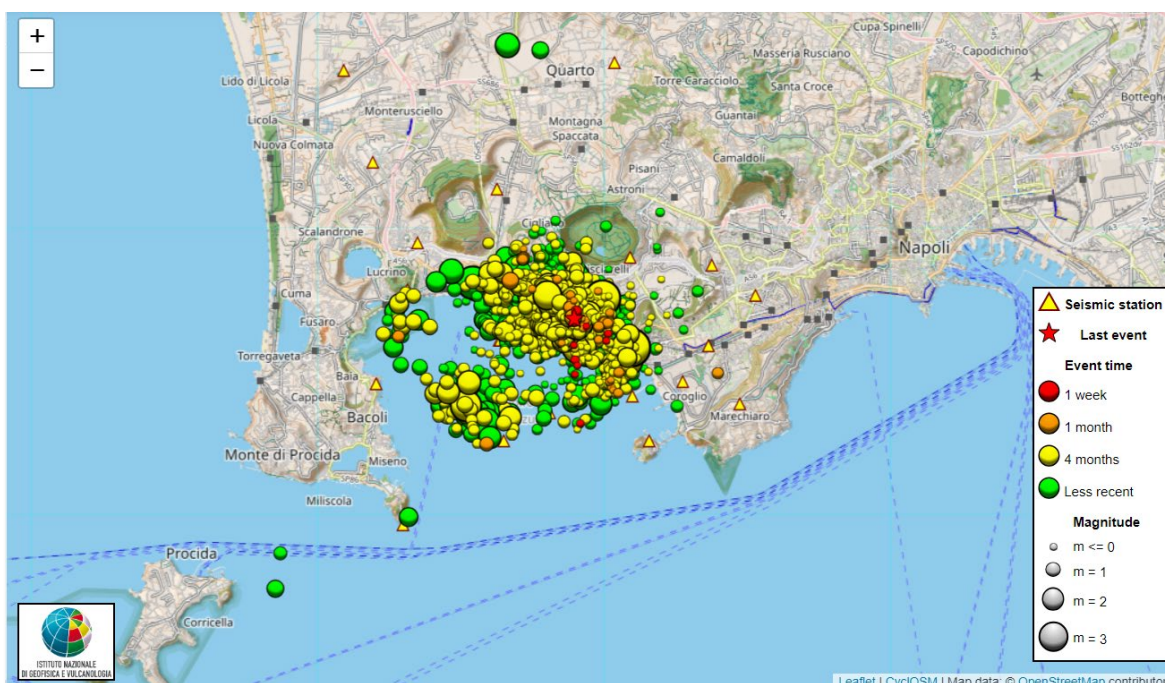
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## Hazards

### Volcanic Activity Near Camp Flegrei Causes Earthquakes – *Natural Hazards (Geological)*

#### Summary

In Pozzuoli, a port town approximately eight (8) miles west of Naples, Italy, government officials have planned for the potential mass evacuation of thousands around the Camp Flegrei volcanic area. A supervolcano caused more than 2,500 earthquakes and tremors from August to early November. As highlighted in the figure below, Italy's National Institute of Geophysics and Volcanology continues to record significant seismic activity in the Phlegraean Fields as of late December 2023.



*Seismic Activity in the Phlegraean Fields; as of 29 December 2023*

On 27 September 2023, the Camp Flegrei volcanic field recorded a 4.2 magnitude earthquake, the strongest in the region in more than 40 years. Scientists raised concerns that a "seismic crisis" could occur for the first time since the early 1980s. According to reports, about 40,000 people were evacuated from Pozzuoli during that incident. Italy's civil protection agency notes that 500,000 individuals reside in the "red zone," the highest risk zone in the vicinity of the seismic region. While experts indicate no imminent concern of eruption, there are fears that shifts caused by the filling or emptying of magma chambers deep underground, known as the "bradyseism," are leading to ground uplift and descent. According to Italy's National Institute of Geophysics and Volcanology, the area around Pozzuoli's port has risen about 11.5 feet since the late 1960s, including more than three (3) feet over the past 10 years. On 12 October 2023, Italy's government approved a plan to analyze the stability of private and public buildings and update evacuation plans by early 2024.



## Analyst Comment

*Naval Support Activity (NSA) Naples' mission includes supporting U.S. Naval Forces Europe-Africa, the U.S. Sixth Fleet, NATO, and Combatant Commander's strategic priorities by providing customer-focused air and port operations, force protection, emergency services, logistical and administrative support, and quality of life products and services to the fleet, joint, and allied forces. The installation supports over 55 tenant commands and about 8,500 personnel.*

*Earthquakes triggered by volcanic activity could impact DoD personnel and assets in the region surrounding Camp Flegrei, including at NSA Naples. Ground uplift and descent from the geophysical activity could cause structural damage, communications challenges, and transportation delays. Furthermore, an evacuation of Pozzuoli residents could affect the living arrangements of NSA Naples personnel and the movement of essential goods in the surrounding area. Authorities have raised concerns regarding a full-scale evacuation due to the area's small roads and often clogged traffic.*

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## Heat Fueled Extreme Weather Around the World in 2023 – *Natural Hazards (Meteorological)*

### Summary

*The year 2023 was among the hottest years on record. Elevated temperatures in 2023 led to outcomes from health warnings to wildfires. Extreme weather increased in severity, oceans became warmer, heatwaves lasted longer, and wildfires burned out of control. June, July, August, and November all experienced the highest temperatures ever recorded for those months in prior years. Scientists believe that the extreme temperatures of 2023 may be a warning of even hotter temperatures in the future.*



Storms created record-breaking rainfall in 2023 due to warmer air holding more moisture. Otis, which was projected to make landfall as a tropical storm, was propelled to a Category 5 hurricane in just 24 hours and was one of the fastest intensifying storms on record. Temperatures in Arizona also set the record for most consecutive days with a temperature of 110°F or higher at 31 days from 30 June to 30 July. According to the Arizona Burn Center in Phoenix, asphalt and concrete temperatures sometimes reached up to 180 degrees Fahrenheit. Open source reports show that extreme heat is the most prominent weather-related cause of death in the U.S., outnumbering hurricanes at a rate of eight (8) to one (1).

Extreme heat has also led to wildfires not only in North America, but also Canada. In June 2023, wildfires in Canada released significant smoke that eventually reached the skies of some cities in other parts of North America. The wildfires burned across more than 45 million acres and reportedly released more than 400 million metric tons of carbon which is almost triple the amount from 2014.

### **Analyst Comment**

While extreme heat events are getting hotter, they are also becoming more common and occurring for longer durations. In the 1960s, the average number of heat waves per year was two (2). By the 2010s, that number had increased to six (6). This proportionally increases the heat-related hazards that affect DoD installations, their assets, and personnel. Extreme heat can cause heat strokes, heat exhaustion, and death in otherwise healthy servicemembers, while also triggering underlying health problems. Additionally, extreme heat can also affect critical infrastructure that is vital for day-to-day operations, as it damages electrical wires, power grids, and air conditioners when they work to draw more energy. As the climate changes, DoD leadership will be forced to respond to an ongoing and unavoidable series of elevated hazards and risks.

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## **Solar Flares Cause Radio Blackouts** – *Natural Hazards (Space Weather)*

### **Summary**

On 14 December 2023, the Sun released a solar flare that was among the strongest in history. Scientists from the National Oceanic and Atmospheric Administration (NOAA) concluded that the X-class solar flare was the largest of the current Solar Cycle 25 and the largest since September 2017. The X2.8 class solar flare caused radio blackouts over some parts of the Americas.

Solar flares are classified into three (3) categories. C-class flares are the weakest, M-class flares are in the middle, and X-class flares are the strongest, with the capability to affect Earth in significant ways. When powerful solar flares like the recent X2.8 are released from the Sun, they often release coronal mass ejections (CME), which are huge bursts of solar plasma shot into space at high speeds. When these CMEs are directed at earth, they can lead to disruptions and can also supercharge the auroras.

On 31 December 2023, an even more powerful solar flare, an X5, caused yet another radio blackout in some parts of the Pacific Ocean. The flare led to a polar cap absorption event, which caused radio blackouts in the North and South Poles, both of which were affected for four (4) days after the event.

### **Analyst Comment**

While Earth's atmosphere protects from the harmful radiation of solar flares, they still cause disruptions in other ways. Powerful solar flares can disrupt navigational systems, power grids, and other critical infrastructure, in addition to the aforementioned radio blackouts that affect communications systems. Solar flares and other space weather can have negative effects on DoD assets. Radio communications are still ubiquitous onboard DoD installations and in both maritime and aerial communications. DoD installations supporting aviation operations require the use of multiple communication and navigation systems. While solar flares may not always have a direct effect on DoD personnel, the indirect impacts can include disrupting logistics and the delivery of other essential services onboard installations.

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## **Mold Found Throughout Military Bases** – *Natural Hazards (Biological)*

### **Summary**

In early December 2023, a video was posted from shower facilities at Camp Geiger, part of the School of Infantry-East onboard Camp Lejeune. Photographs and videos showed large, dark splotches of mold growth in the showers. Following the release of the video, the building was closed. Per a Marine Corps spokesperson, a faulty air conditioner may have contributed to the growth. While testing of the mold and cleaning of the facilities is underway, the event highlights the health and safety concerns that may arise onboard DoD installations.

## Analyst Comment

*In August 2022, nearly 1,200 Soldiers in Fort Bragg, North Carolina were relocated from a 50-year-old barracks that had become unlivable, in part because of high moisture levels that enabled mold growth. This finding triggered a service-wide inspection in which the Army found mold in 2,100 buildings. A report released in September 2023 from the Government Accountability Office documented conditions that could undermine readiness and morale throughout the U.S. Armed Forces: mold, dysfunctional plumbing, and a lack of adequate climate control. This report was based on servicemember housing satisfaction data and barracks visits at 10 installations. Of those visited, servicemembers at five (5) of the 10 installations reported regular water issues, while four (4) installations reported broken or malfunctioning fire safety infrastructure. All 10 reported mold infestations and “broken, malfunctioning, or non-existent heating, ventilation, and air conditioning systems.” Further physical security issues were noted in the report. The associated physical and mental health impacts of these conditions are of significant concern for the readiness of personnel serving on DoD installations throughout the country.*

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## PFAS Contamination Found in Washington State Wells – *Accidental Hazards (Human or Technologically Caused)*

### Summary

*Recently, hundreds of drinking water wells located near DoD installations in Washington State have reported contamination by per- and polyfluoroalkyl substances (PFAS). PFAS are classified as “forever chemicals” due to their longevity, pervasiveness, and the slow rate at which they break down. 10 of Washington State’s DoD installations, which are located near the Salish Sea, have confirmed the release of PFAS. The DoD has now detected PFAS presence in over 800 private drinking wells. This number equates to around half of all wells that the DoD has tested in the timeframe of the last two (2) years. In these contaminated wells, a majority had a quantity of PFAS that are above levels the Environmental Protection Agency (EPA) states impact human health.*

*As these chemicals are being detected near aquifers, the DoD is working to implement an effective cleanup process that identifies human health and environmental risks. As part of this effort, the DoD is looking to implement the final drinking water standard proposed by the EPA. This standard explains compliance measures that must be ensured concerning elements found in drinking water. To better comply with these standards, it has become a requirement this year for all Washington public water systems to conduct PFAS tests. The communities near airports and DoD bases have been identified as those with the highest risk of exposure.*

## **Analyst Comment**

*The primary way in which PFAS have been dispersed is through firefighting foam used onboard DoD installations. The hazards surrounding the use of the foam have been well-documented in open source media. DoD installations that used the foam in the past continue to experience contaminated water supplies. There is an ongoing class action lawsuit against the foam's manufacturer. PFAS can cause significant long-term impacts on the human body, including interference with hormones, disruption of the immune system, increased blood pressure, increased risk of cancer, and negative impacts on the reproductive system. With these health risks in mind, PFAS continue to be reported in wells near Washington State DoD bases. Purely by living near an installation, civilians are experiencing the same hazards as DoD personnel.*

*The National Defense Authorization Act (NDAA) passed in December 2019 required the DoD to cease purchases of PFAS firefighting foams by 01 October 2023. PFAS foam use is to be terminated completely by 01 October 2024. The NDAA also puts an end to training exercises that use PFAS foam. There are currently no plans for PFAS mentioned in the NDAA for FY 2024. Many fire departments are currently searching for alternatives. However, the problem of contaminated water supplies both onboard and adjacent to DoD installations will continue to present health risks to personnel and civilians.*

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## V-22 Osprey Variants Grounded After Fatal Mishap – *Accidental Hazards (Human or Technologically Caused)*

### Summary

*All V-22 Osprey variants have been grounded by the DoD and the Japanese Self-Defense Forces following a 29 November 2023 mishap off the coast of Japan that resulted in the death of eight (8) servicemembers. The Osprey was on a training flight from MCAS Iwakuni to Kadena Airbase on Okinawa. Reports indicate that the pilots requested an emergency landing on the small Island of Yakushima prior to the crash. Witness statements indicate that the Osprey caught fire and flipped before crashing into the ocean. Wreckage of the Osprey (including the voice and data recorder) has been recovered. The investigation of what caused the mishap is ongoing. Preliminary reports indicate a potential materiel failure.*

*The Osprey is a vertical takeoff and landing (VTOL) tiltrotor aircraft. This allows it to fly like a fixed wing aircraft while taking off and landing like a helicopter. This provides significant advantages in speed and range while maintaining the ability to operate on small, unprepared landing zones. As a result of its multi-mission capability, the Marine Corps, Navy, and Air Force have purchased approximately 400 V-22 Osprey variants.*

### Analyst Comment

*Over the last 33 years, the V-22 Osprey has received negative press for multiple prominent mishaps, 10 of which have resulted in 57 deaths. However, the Osprey has a better flight record than other aircraft. The Osprey has a lower crash death rate per 100,000 flight hours than other U.S. Navy and Marine Corps aircraft such as the AV-8B Harrier, F/A 18 Super Hornet, F-35B Lightning II, and the CH-53E Super Stallion. In its first 33 years of service, the UH-60 Blackhawk helicopter was involved in over 180 military and civilian deaths due to non-combat mishaps, which is more than the V-22 Osprey. Part of the reason for the perception that the V-22 Osprey is unsafe is due to the nature of its operation and mission. Fixed wing aircraft often have more altitude and some ability to glide or otherwise control the aircraft in an emergency. Pilots of fighter aircraft have the option to eject, reducing the number of deaths. Helicopter crews can autorotate, resulting in a “hard landing.” Although the Osprey can fly like a fixed wing aircraft, it has no glide capability, operates low to the ground, and has no option for ejection. When operating like a helicopter, the Osprey lacks the ability to auto rotate. If either engine has a failure, the resulting imbalance creates an uncontrollable situation. The lack of options for Osprey pilots in an emergency and the number of crew and passengers on board increases the number of fatalities in an incident compared to other airframes.*

*Regardless of reputation, no other airframe can move as many troops as far and as fast as the Osprey into close combat. It replaced the CH-46 cargo helicopter of the USMC and the C-2 Cargo plane of the Navy. It is used by the Marine Corps, Navy, Air Force and Special Operations Command. The grounding of the Osprey leaves the DoD with a temporary capability gap. Like many other military aircraft, it has and will continue to go through upgrades and design changes throughout its service life.*

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## On the Radar

- *An “atmospheric river” event is poised to bring heavy rains to the U.S. West Coast in late January and early February. Heavy rains, high winds, and snow are possible as a result. Per the National Oceanic and Atmospheric Administration, atmospheric rivers are relatively long, narrow regions in the atmosphere (like rivers in the sky) that transport most of the water vapor outside of the tropics. A number of DoD installations are located in areas expected to be impacted by the severe weather (to include California and Washington State). Impacts are also expected further inland, to include in Nevada, Colorado, Arizona, and New Mexico (all of which also host DoD installations). Furthermore, it should be noted that heavy precipitation can lead to associated hazards such as mudslides.*
- *The Philippines, strategically located only 400 km from Taiwan, is among several U.S. allies in the Indo-Pacific region that are wary of Chinese aggression in the South China Sea. The partnership between the U.S. and Philippine militaries is growing because of the increased tension in the region. Naval Base Camilo Osias is preparing for rehabilitation of the airstrip, a new pier, and more infrastructure to house personnel. The projects are being funded by the U.S. under the Enhanced Defense Cooperation Agreement which now covers nine (9) sites across the Philippines. The agreement does not establish permanent U.S. bases but does significantly improve U.S. military presence and readiness should a conflict begin in Taiwan or the South China Sea.*
- *As of late, technology has been rapidly advancing not only in the U.S., but also in other parts of the world. Artificial intelligence (AI) is becoming ubiquitous, but it offers both benefits and drawbacks. AI may be useful for research purposes, but it also offers cyber criminals a powerful weapon. As it becomes more accessible, the number of amateur, would-be hackers will likely increase. Even novice users could pose a threat to both public and private networks, particularly within the DoD and among its contractors.*