May 30, 2025

Mr. Stephen Astle, Director
Defense Industrial Base Division
Office of Strategic Industries and Economic Security
Department of Commerce
Bureau of Industry and Security

Sent via https://www.regulations.gov only

Re: Docket No. 250509-0082; XRIN 0694-XC127; Notice of Request for Public Comments on Section 232 National Security Investigation of Imports of Commercial Aircraft and Jet Engines and Parts for Commercial Aircraft and Jet Engines

Dear Mr. Astle,

On behalf of Vertical Aviation International (VAI), I thank the Bureau of Industry and Security (BIS) for the opportunity to provide comments related to the Notice of Request for Public Comments on Section 232 National Security Investigation of Imports of Commercial Aircraft and Jet Engines and Parts for Commercial Aircraft and Jet Engines (for purposes of this comment letter, the "Request").

VAI is the trade association for the civil vertical aviation industry, representing more than 1,000 aviation businesses and 15,000 aviation professionals in 75 nations – including 758 manufacturer and supplier members. VAI is dedicated to fueling the growth of the vertical aviation industry through connection, education, advocacy, and safety so that communities around the world are strengthened by the power of vertical flight. VAI is unique among aviation associations in that our members reflect all sectors of the vertical aviation industry, including operators of unmanned aircraft systems (UAS), next-generation vertical-takeoff-and-landing (VTOL) aircraft (often called AAM aircraft), and helicopters, as well as the full range of companies that support and supply the industry, including manufacturers and education and training, maintenance, and other service providers.

VAI represents the segment of the aviation industry most relevant to this Request – vertical aviation manufacturers, suppliers, and operators. VAI is truly the association that represents the full scope of the vertical aviation industry. As such, VAI values the opportunity to provide context and responses to some of the questions posed in the Request, including a general overview of the vertical lift market and its unique needs.

Increased Demand for Vertical Lift Aircraft

Vertical lift aircraft demand is expected to rise in 2025, due in part to increased oil and gas production initiatives, natural emergencies such as wildfires and floods, growing training demands to meet a heightened operational workload, and the emergence of new vertical lift technology like VTOL aircraft and Unmanned Aircraft (UA)[1]. In the first quarter of 2025 alone, compared to the same quarter in 2024, piston helicopter shipments increased 1.9% (54 units) and turbine helicopter shipments increased 1.5% (133 units), with a total value of those deliveries in Q1 2025 at $770 million.[2] We expect these increases to continue well beyond Q1 of 2025.

Oil and Gas Production

An increase in vertical lift aircraft and parts for maintenance is expected as offshore oil and gas drilling initiatives expand.

The current Administration has indicated[3] that it seeks to expand offshore oil and gas drilling to boost fossil fuel production in the United States. This expansion would be nearly impossible without the assistance of vertical lift aircraft.

In the United States alone, there are currently between 200-300 helicopters (the largest single country share in the world)[4] dedicated to transportation and support roles within the oil and gas industry. These helicopters provide crew transport, cargo delivery, emergency response, and inspection & surveillance critical to the maintenance and support for the 566[5] oil rigs currently positioned in the waters around the United States. That works out to 1.8-2.83 helicopters per oil rig, a number which would need to significantly increase to meaningfully scaleoffshore oil and gas drilling.

Essential Service to the American public

Vertical lift aircraft, particularly helicopters, play an irreplaceable role in serving the American public across a wide range of missions. Critical missions include search and rescue, medical evacuations, firefighting, law enforcement, post-disaster access and

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[1] **Rotortrade**. *Global Helicopter Market Report 2024–2025*. 10 Mar. 2025, www.rotortrade.com.
[2] **General Aviation Manufacturers Association.** *General Aviation Aircraft Shipment Report: First Quarter 2025*. 22 May 2025, https://gama.aero/wp-content/uploads/2025ShipmentReportQ1.pdf.
[3] **Reuters.** "Trump Administration Kicks Off Plan for Expanded Offshore Drilling." *Reuters*, 18 Apr. 2025, https://www.reuters.com/sustainability/climate-energy/trump-administration-kicks-off-plan-expanded-offshore-drilling-2025-04-18/.
[4] **LCI Analytics.** "Land of the Free, Home of the Brave: USA Offshore Rotorcraft Snapshot." *LCI Analytics*, 4 Apr. 2024, https://www.lci-analytics.com/insight/land-of-the-free-home-of-the-brave-usa-offshore-rotorcraft-snapshot/.
[5] **Baker Hughes.** *Rig Count Overview & Summary Count*. Baker Hughes, https://rigcount.bakerhughes.com/. Accessed 28 May 2025.

evacuations, critical infrastructure inspection & repair, homeland security, news & traffic monitoring, construction & heavy lifting, and forest management.

Americans saw first-hand the criticality of helicopter response during last year's Hurricane Helene which devastated parts of North Carolina – many areas were completely inaccessible by road. Over 50[6] helicopters were deployed by the National Guard and approximately 100[7] helicopters were contributed by private volunteers and organizations. These helicopters were critical in conducting search and rescue missions, delivering medical supplies, and reaching areas that were otherwise completely decimated.

A similar call to service was seen with the catastrophic Palisades and Eaton fires in the Los Angeles, California area last year. At the peak of operations, 60 helicopters[8] were deployed to fight these fires – all vital in mitigating the impact of these fires and saving countless lives, homes, and businesses.

Expansion of our existing firefighting capabilities has also been highlighted by this Administration as a priority, driving policies and legislative initiatives that create a unified and enhanced response system designed to "…protect American families from wildfire coast to coast, year-round.[9]"

In 2024 alone, the U.S. Federal government contracted 986 helicopters for wildfire response, including both large-capacity aircraft (Type 1) capable of delivering substantial water or retardant payloads and large crew transport and medium/light helicopters (Type 2) utilized for small crew transport, reconnaissance and tactical water drops.[10]

The ability of vertical lift aircraft and related supply chains for saving Americans during natural disasters is well documented. It is critical to ensure a vibrant, healthy vertical aviation industry exists in America so we can continue to protect Americans during times

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[6] **North Carolina Department of Public Safety**. "Rescue Teams Continue to Locate Survivors as Communications Improve and More Military Assets Join Storm Response Efforts." *NC DPS*, 6 Oct. 2024, https://www.ncdps.gov/news/press-releases/2024/10/06/rescue-teams-continue-locate-survivors-communications-improve-and-more-military-assets-join-storm.

[7] Williams, Ashley R., and Brad Lendon. "Private Helicopter Pilots Band Together to Help Hundreds of Hurricane Victims." *Aviation Across America*, 7 Oct. 2024, https://aviationacrossamerica.org/news/2024/10/07/private-helicopter-pilots-band-together-to-help-hundreds-of-hurricane-victims/.

[8] As of Monday, More Than 15,000 Personnel Were Battling Wildfires in Southern California." *California Liveuamap*, 14 Jan. 2025, https://california.liveuamap.com/en/2025/14-january-as-of-monday-more-than-15000-personnel-were-battling-wildfires.

[9] **Trump, Donald J.** "Draft Executive Order Signals Major Changes for U.S. Wildland Firefighting Operations." *Vertical Aviation International*, Apr. 2025, https://verticalavi.org/vai-daily/draft-executive-order-signals-major-changes-for-us-wildland-firefighting-operations/.

[10] **National Interagency Coordination Center.** *2024 National Interagency Standards for Resource Mobilization*. U.S. Department of the Interior, 1 Mar. 2024, https://www.nifc.gov/sites/default/files/NICC/3-Logistics/Reference%20Documents/Mob%20Guide/2024%20NATIONAL%20INTERAGENCY%20STANDARDS%20for%20RESOURCE%20MOBILIZATION.pdf.

of catastrophic weather-related emergencies and other disasters. Further, as our aging fleet of aircraft retire[11], we will need to replace these retired aircraft with newer and more technologically advanced aircraft.

Maintaining the Workforce

With increased operational demand comes an increased need for workforce development and an increased need for aircraft in which to train. Training continues to be a key driver to manufacturing and supplier demand in the vertical lift industry, as a projected helicopter pilot shortage of about 21,000 pilots in the United States (61,000 globally) is anticipated through 2038[12]. This reasonably translates to hundreds of aircraft needed to fill the training demands, including the parts required to keep these aircraft in working condition.

A Brave New World

Emerging technology, notably Vertical Takeoff and Landing (VTOL), Unmanned Aircraft Systems (UAS), and aircraft with advanced propulsion systems, autonomous capabilities, or fly-by-wire systems, are positioned to greatly influence the global aviation industry over the next decade, including demand for both aircraft and parts.

Conservative estimates indicate that this emerging industry is set to grow to US$20.8 billion over the next decade[13].

Although many of these supply chains are still being developed for scaled manufacturing, these emerging technologies share supply chain complexities with the rest of the vertical lift industry. Major components such as batteries, avionics, composite materials, and specialized electronics come from a mix of U.S-based and international suppliers.

The U.S. has launched various programs to foster U.S.-based production capabilities for emerging technologies, but despite these efforts to localize, the market will continue to rely on international suppliers, particularly on single-source materials and products such as battery materials (lithium, cobalt), rare earth elements, and specialized semiconductors.

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[11] Note that the global helicopter fleet is estimated to be nearing its lifecycle, with an average age of over 40 years. **Rotortrade**. *Global Helicopter Market Report 2024–2025*. 10 Mar. 2025, www.rotortrade.com.
[12] **Boeing.** *Pilot & Technician Outlook 2019–2038*. Boeing, 2019, https://www.boeing.com/content/dam/boeing/boeingdotcom/commercial/market/pilot-technician-services/assets/downloads/2019_pto_infographic.pdf.
[13] **Drone Industry Insights.** *Advanced Air Mobility Report 2023–2035*. Drone Industry Insights, 2023, https://droneii.com/product/advanced-air-mobility-report.

Increased demand for maintenance & parts

As referenced throughout, an increase in the number of in-service aircraft will require a more robust system and supply chain for maintenance, repair and overhaul (also known as "MRO") and parts. MRO and parts markets are poised for significant growth, driven namely by aging fleets, an increased utilization of aircraft, and technological advancements.

The global helicopter MRO services market size was valued at USD$38.82 billion in 2023, with expected growth up to USD$54.1 billion by 2032. North America dominated the MRO services market with a market share of 30.09% in 2023[14].

Domestic production and criticality of foreign supply chains

The United States has developed a strong domestic helicopter and engine manufacturing base – led by Robinson Helicopter Corporation, Sikorsky (a Lockheed Martin company), Bell Textron, MD Helicopters, Enstrom, GE Aerospace (engines), Honeywell Aerospace (engines), and others. The U.S. boasts the largest small/medium helicopter manufacturer in the world and also possesses strong manufacturing capabilities for large helicopters. Despite strong domestic capabilities, global supply chains are essential, particularly for composites and materials, electric and hybrid propulsion, rotor / transmission systems, airframe parts and avionics, engines, and gearboxes.

Currently, there is no U.S. manufacturer or group of manufacturers who could meet the full scope of the U.S. and global helicopter market's current or future demands.

Trade policy to protect national security

To protect the vertical lift industry and to ensure increased demand is met through U.S. production, additional measures by industry and the government could be taken. These measures could include:

1. Infrastructure development, including investment into new or upgraded manufacturing facilities to support increased production demands;
2. Workforce development programs to ensure a skilled labor force is available to support the industry's needs;

[14] **Fortune Business Insights.** *Helicopter MRO Services Market Size, Share, Industry Analysis, By Helicopter Type (Light Weight [Up to 3,000kg], Medium Weight [3,000kg to 8,000kg], and Heavy Weight [Above 8,000kg]), By MRO Service Type (Line Maintenance and Base Maintenance), By End User (Defense & Homeland Security and Civil & Commercial), and Regional Forecast, 2024–2032*. Fortune Business Insights, 12 May 2025, https://www.fortunebusinessinsights.com/helicopter-mro-services-market-104078.

3. Allocating funds for research and development to innovate and produce advanced components domestically; and
4. Streamline the regulatory process to expedite certification and approval timelines.

To support MRO and parts markets, productive measures could include:

1. Incentivize MRO facility upgrades, new equipment and tooling through tax credits or depreciation incentives;
2. Workforce training and development, including expansion of aviation technician training programs and streamlined certification processes for skilled technicians; and
3. Support the establishment of domestic critical supply chain programs.

The aviation supply chain involves tens of thousands of suppliers from all over the globe which provide parts, platforms, and systems that require safety approval for use and installation, all of which may not be easily replaced or substituted. Given this reality, it is essential that both government and industry work together to minimize cost and availability disruptions in the aviation supply chain, which in many cases cannot be easily or quickly addressed. We believe such dialogue and analysis will benefit the competitiveness of the U.S. aviation manufacturing and maintenance sectors and will be critical as the industry continues to improve safety, innovate and contribute positively to the U.S. balance of trade.

Conclusion

The vertical lift industry currently is and will continue to be a gem in the crown of the American economic system. The industry is critical to public safety and contributes greatly to the higher quality of life enjoyed by Americans. While solutions exist to reduce reliance on global supply chains, this reduction could not be done overnight and the industry could be irreparably damaged by increased barriers to operation and insurmountable financial burdens that could come from the imposition of excessive tariffs on aircraft or parts.

Again, VAI appreciates the opportunity to share insights, concerns, and suggestions as part of this Request. We ask that you consider VAI a thought partner in the mission to ensure national security as it relates to the vertical lift industry. VAI is positioned and ready to lead in the collaborative efforts between government and industry to further this mission.

If there are any questions or further opportunities to collaborate, I can be reached at amberh@verticalavi.org.

Thank you for your attention to this issue.

With kindest regards,

Amber Harrison

Amber Harrison
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Vertical Aviation International