

PRESENTATION TO THE
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SUBJECT: Air Force, Depot Infrastructure Optimization

STATEMENT OF:

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Introduction

Chairman Garamendi, Ranking Member Lamborn, and distinguished members of the subcommittee, thank you for having us here today to provide testimony on U.S. Air Force depot infrastructure optimization. Additionally, thank you for your support of the United States military and our organic industrial base.

Our nation faces a complex set of current and future security challenges requiring that we think and act differently and with urgency. The Chief of Staff of the Air Force has articulated what is at stake with his *Accelerate Change or Lose* guidance. It states “*unless we make significant changes to the Air Force’s programmed force, we will not meet the pacing threat of China in 2030. Unless something changes, we will not be able to accomplish the Air Force’s core missions in the future operating environment.*” A growing body of evidence from adversary assessments, recent war-games, exercises, studies, reports, and other analysis underpins this assessment.

The Air Force must change, because our environment is changing and our competitors are closing in. For too long, we have mitigated short-term risk at the expense of long-term risk, and we must correct this imbalance.

Current Capacity and Capability

As the Air Force continues to accelerate delivery of capabilities to the warfighter, we must apply the same level of urgency to investment in the organic industrial base and sustainment enterprise to ensure we are ready to deter and defeat potential adversaries.

Aircraft currently in the Air Force inventory are becoming significantly more expensive to sustain as they age, and our fleet is the most aged of all. The average age of the Air Force fleet is 29 years, while the U.S. Navy is 14.4 years and the U.S. Army is 15.3 years. In comparison to our allies, the average age of the Royal Australian Air Force (RAAF) is 8.9 years and the Royal Air Force (United Kingdom) is 16.5 years. Weapons System Sustainment (WSS) costs have increased 130 percent over the last 20 years, even with a 15 percent decrease in total aircraft inventory (TAI).

Despite an aging fleet, our exceptional workforce continues to develop innovative ways to sustain legacy weapons systems using emerging technologies and 21st Century processes. Even with creative problem-solving, our sustainment challenges are exacerbated by aging infrastructure, a dwindling supply and manufacturing base, and challenges recruiting highly skilled technicians and Science-Technology-Engineering-Math (STEM) workforce to support mission demands. As we shift toward fleets that include fifth-generation and beyond capabilities, it is imperative that Air Force Complexes (also known as depots), along with the rest of DoD's organic industrial base, optimize opportunities to stay ahead of current and future mission requirements.

Air Force Sustainment Center

The mission of the Air Force Sustainment Center (AFSC) is to sustain weapon system readiness to generate airpower for America. The center provides war-winning expeditionary capabilities to the warfighter through world-class depot maintenance, supply chain management, and installation support. The AFSC provides critical sustainment for the Air Force's most sophisticated weapons systems and software.

The Air Force's three Air Logistics Complexes (ALCs) provide depot-level maintenance, engineering support, and software development to numerous weapon systems. In Fiscal Year 2021 the AFSC delivered 602 aircraft, 316 engines, 141,353 parts, and 611 software bundles to the warfighter. The ALCs "ensure a ready and controlled source of technical competence and resources necessary to ensure effective and timely response to a mobilization, national defense contingency situations and other emergency requirements," as required by 10 USC §2464, *Core Logistics Capabilities*. As recognized leaders in their core competencies, our depots strive to continually refine and improve industrial processes and adopt best business practices to improve execution of those core competencies.

The Oklahoma City Air Logistics Complex (OC-ALC) at Tinker AFB in Oklahoma City, Oklahoma, specializes in depot level repair of bombers (B-1B, B-52), tankers (KC-135, KC-46), the E-3 Sentry, and associated software systems. It will also be home to the future B-21 Raider workload. OC-ALC is also the Air Force's Center of Industrial and Technical Excellence for Engines. As our legacy aircraft are experiencing alarming growth of unplanned maintenance as a

result of unexpected major structural repairs and other modifications in order to maintain mission readiness for the warfighter, OC-ALC is exploring options for new hangar projects which can be configured to accommodate aircraft of many different sizes. This enables Tinker to provide modern and agile facilities to accommodate the B-1, B-52, and future B-21 aircraft. This type of facilities optimization will result in reduced costs and improved production processes.

The Ogden Air Logistics Complex (OO-ALC) at Hill AFB in Ogden, Utah specializes in depot level maintenance for fighter aircraft (F-35, F-22, F-16, and A-10), trainers (T-38), other weapons systems (e.g., Minuteman III Intercontinental Ballistic Missile), and associated software systems. This complex is also the Air Force's Landing Gear Center for Industrial and Technical Excellence, repairing landing gear for not only the Air Force but also for other DoD customers. Ogden faces significant growth in aircraft workload through the 20-year period maintaining the venerable legacy F-16 and A-10 fleets and on-boarding the F-35, T-7, as well as associated software. Modernizing the current ICBM is a national security priority, and Ogden is also tasked with supporting the Air Force's future Ground Based Strategic Deterrent (GBSD) critical mission. To begin posturing itself to meet future requirements, Ogden is working with the F-35 Joint Program Executive Office to build 12 new and optimized maintenance docks.

The Warner Robins Air Logistics Complex (WR-ALC) at Robins AFB in Warner Robins, Georgia specializes in maintenance of cargo aircraft (C-130, C-5, and C-17), fighter aircraft (F-15), surveillance aircraft (RQ-4 Global Hawk), aviation electronics, and associated software systems. WR-ALC is the Air Force's Center of Industrial and Technical Excellence for Avionics. The Air Force has also spearheaded DoD technology insertion of robotics at WR-ALC in direct support of F-15s, C-130s, C-17s, C-5s, JSTARS, and RQ-4 programmed depot maintenance (PDM) workload as well as joint projects with other DoD services. To date, over 30 robotic systems have been integrated into the depot commodities processes to include thermal spray repair, de-paint, C-130 Propeller Grinding and Inspection, and others.

The AFSC Software Enterprise is an organic team of over 4,800 multi-disciplined professionals, primarily engineers and computer scientists, with in-depth experience in systems and software engineering. The enterprise is comprised of the three Software Engineering Groups (SWEGs) located at the three ALCs. The SWEGs provide full-spectrum, organic software

engineering services to the Program Offices. The three ALCs are designated as the only USAF Centers of Industrial and Technical Excellence for software. These capabilities will be increasingly critical in the development of software-intensive weapon systems such as Next Generation Air Dominance, B-21, and GBSD.

Organic Industrial Base Plan

As we shift toward fleets that include fifth generation and beyond capabilities, it is imperative Air Force depots optimize opportunities to stay ahead of future missions. In 2019, the Air Force developed a 20-year strategic plan to revitalize the Air Force's Organic Industrial Base (OIB) infrastructure to accommodate new weapon systems as well as to improve readiness at an affordable cost in the 21st century and beyond. In 2020, AFSC refined the plan, better articulating projects, implementation strategies, and funding requirements to improve support for Air Force weapon system readiness and modernization at the ALCs. This also ensures we maintain compliance with statutory mandates for Core Logistics Requirements (10 USC §2464) and limitations on contractor performance of depot maintenance (10 USC §2466).

The OIB plan identifies current readiness challenges, outlines future projected requirements, and assesses potential investment alternatives for their abilities to support AFSC's long-term effectiveness in terms of cost, performance, risk, and readiness. The plan also detailed four essential dimensions for investment: 1) depot equipment and technology, 2) digital depot (infrastructure and industrial software), 3) facilities for overhaul and final assembly, and 4) repair/manufacturing nodes and hidden infrastructure (utilities and transportation grid). Investments in each of the four dimensions is critical to the Air Force's ability to support weapons systems and retain industrial capabilities keeping us ahead of our peers and near-peers.

The plan incorporates a three-pronged corporate funding strategy ("Keep Up, Catch Up, and Leap Ahead"). First, our "Keep Up" initiative leverages Working Capital Funds to comply with the 10 USC § 2476 requirement for a six percent minimum capital investment in our depots. This allows the Air Force to re-capitalize depots in the near-term, preserving current capabilities, equipment and facilities. Our goal is to maximize the effectiveness of our six percent capital investment program plan, and since 2009 the Air Force has exceeded the six percent minimum requirement. Through a combination of our Working Capital Funds, Military Construction

(MILCON), and Procurement Appropriations, the Air Force invested \$2.48 billion in depot infrastructure and equipment between FY17 and FY21. Second, our “Catch Up” initiative integrates multiple stakeholders to prioritize MILCON projects and depot activations with existing Air Force depot missions, shared across platforms, and scaled to evolving workloads. This will help the depots to optimize future capacity and capabilities to meet readiness goals. Lastly, our “Leap Ahead” initiative will leverage corporate funding opportunities in Air Force budget cycles to ensure execution of depot infrastructure optimization planning, in order to achieve the full optimization of organic depot capabilities.

The Air Force OIB provides a critical capability, and we are continuing to make investments in modernizing and optimizing these capabilities within current budget, constraints, priorities and realities.

Modern Technologies

The Air Force strives for excellence through technology insertion to improve networking capabilities and to demonstrate our commitment to modernize our organic industrial base infrastructure to accommodate next generation weapon systems. New technologies required to modernize Air Force depots include augmented reality, virtual reality, automated non-destructive inspection, digital plant logistics, digital work environments, and digital engineering and manufacturing. With the use of up-to-date equipment and new technologies, depots can continuously improve productivity, and the Air Force depots will be better equipped to support legacy and future mission requirements. To support a successful OIB optimization program emerging digital technologies (e.g., smart factories, data analytics, robotics, artificial intelligence) are needed to improve efficiency to achieve results on par with industry standards and reduce and eliminate waste. Significant investment would be required in robotics, lasers, advanced manufacturing (e.g., polymer and metal three-dimensional printing and scanning), cold spray booths, and reverse-engineering capabilities.

To realize large productivity leaps, the depots must continually adopt new technologies and significantly expand the use of digital-enabled equipment and infrastructure. Fully networked industrial processes will allow personnel to monitor status and performance of

equipment simultaneously. An optimal network capability is required to effectively operate as a digital enterprise, maintain a secure network, and ensure long-term viability of the depots.

Digital engineering is an enabler for our Air Force. Information technology (IT) improvements outlined in the OIB plan are based on the Air Force digital campaign objectives, the digital strategy, and industry best practices with the objective of building a connected, resilient environment to facilitate maximum effectiveness of people and processes. The Air Force will take maximum advantage of initiatives such as 5G wireless technology, cloud storage, and movement from desktop computers to lightweight, faster devices, to virtualize the work and workforce.

We are developing ways to leverage 21st Century concepts, new technologies, and workforce. For example, the Air Force's Rapid Sustainment Office was established to build partnerships across emerging, non-traditional, and high-tech industries, as well as to mature and transition new technologies into the depots. We are also investing in new technologies, IT infrastructure, and process improvements, creating secure and intelligent depots. Advancements in areas such as robotics, additive manufacturing, automation, sensors with computing capabilities, and advanced repair capabilities are what will move the ALCs into the future and ensure a strong organic depot base. Stable and predictable budgets are essential to maintain and modernize critical logistics and sustainment capabilities.

Sustainment Workforce

People are the Air Force's most valuable resource, and we are making every effort to strengthen and enhance our total workforce to ensure it has the tools necessary to excel. Airmen (military, civilian, and contractors) are foundational to everything we do. Our ability to meet warfighter needs hinges on attracting, developing, and retaining world-class Airmen. We continue to do this through assessing our talent requirements while modernizing our recruitment and retention strategies. As part of the hiring strategies, we are using direct hiring authority (DHA) and expedited hiring authority (EHA) as tools to reduce hiring timelines. We appreciate your active role in obtaining these critical authorities. The ability to hire critical skill sets to sustain our Air Force is a strategic concern for our sustainment enterprise. We devote significant resources to recruiting efforts to develop and deliver enterprise-wide human capital strategies.

The use of DHA and EHA for the depots and associated support has allowed us to better compete with industry to secure top talent. We rely heavily on these hiring tools—87 percent of all external hires for AFSC positions are hired through DHA. The depots rely on a very large labor force of highly skilled technicians and mechanics who work in our depots and supply chain management. The AFSC works very closely with vocational training centers and academia which surround our Air Logistics Complexes (depots). We must foster a diverse and inclusive culture that produces equitable results and supports talent management. By developing and supporting our Airmen we empower them to execute the mission.

Conclusion

Thank you again for the opportunity to testify before this subcommittee. The dialogue we have today will help us design, build, operate, and sustain a force capable of fighting and winning now and in the future.