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U.S. House of Representatives
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July 16, 2021

SUMMARY OF SUBJECT MATTER

TO: Members, Subcommittee on Aviation
FROM: Staff, Subcommittee on Aviation
RE: Subcommittee Hearing on “Bridging the Gap: Improving Diversity and Inclusion in the U.S. Aviation Workforce”

PURPOSE

The Subcommittee on Aviation will meet on Tuesday, July 20, 2021, at 11:00 a.m. EDT in 2167 Rayburn House Office Building and virtually via Zoom for a hearing titled, “Bridging the Gap: Improving Diversity and Inclusion in the U.S. Aviation Workforce.” The hearing is an opportunity to learn from key stakeholders about the challenges with, and their recommendations for, developing a robust and diverse U.S. aviation workforce. Further, this hearing will examine future workforce needs and current efforts to recruit, retain and enhance the talent pipeline, including requirements under the *FAA Reauthorization Act of 2018*, and other related workforce priorities. The Subcommittee will receive testimony from representatives of the University of Nebraska at Omaha Aviation Institute, the Latino Pilots Association, JetBlue Airways, the Organization of Black Aerospace Professionals, and VIPER Transitions.

I. BACKGROUND

The COVID-19 pandemic had a devastating effect on the U.S. aviation industry. Demand for commercial air travel plummeted last year as coronavirus cases surged, with U.S. airlines carrying 557 million fewer passengers than in 2019.¹ The growth of aviation manufacturing was also hindered by the pandemic; by the end of 2020, the value of aircraft deliveries declined by nearly 15 percent.²

Although still not back to pre-pandemic levels on a consistent basis, air travel appears to be rebounding, as more Americans get vaccinated against the virus and public health restrictions begin

¹ Bureau of Transportation Statistics, *Full Year 2020 and December 2020 U.S. Airline Traffic Data*, (March 2021), available at: <https://www.bts.gov/newsroom/full-year-2020-and-december-2020-us-airline-traffic-data>.

² General Aviation Manufacturers Association, *GAMA Announces 2020 Year-End Aircraft Billing and Shipment Numbers*, (Feb. 2021), available at <https://gama.aero/news-and-events/press-releases/gama-announces-2020-year-end-aircraft-billing-and-shipment-numbers-2/>.

to loosen. Last month, the Transportation Security Administration (TSA) screened an estimated two million passengers in one day for the first time since March 2020.³ Further, the Bureau of Transportation Statistics reported that the major airlines carried 46.6 million passengers in April 2021, compared to 3 million in April 2020.⁴

As the nation works toward long-term economic recovery and proposed infrastructure investment may foster emerging technology and create jobs, Congress must ensure the U.S. aviation industry has a pool of workers that reflects the diversity of the nation, benefits all regions, and has the skills necessary to compete globally.

II. STATE OF THE U.S. AVIATION WORKFORCE

A. Lack of Diversity

The United States is a highly and increasingly diverse and multicultural country. Unfortunately, the U.S. aviation workforce does not reflect the diversity of the nation as a whole and overwhelmingly comprises substantially more men than women. For instance, studies show that women are underrepresented across the aviation industry, with the largest employment gaps seen in technical operations and leadership positions.⁵ Currently, the percentage of female FAA-certificated airframe and powerplant (A&P) mechanics remains low at only 2.4 percent.⁶ As of 2020, just seven percent of all U.S. commercial pilots and only 4.3 percent of all flight engineers were women.⁷ A similar trend can be seen with communities of color in civil aviation. According to the U.S. Bureau of Labor Statistics, 94 percent of all U.S. aircraft pilots and flight engineers are white.⁸ These significant discrepancies suggest that increased outreach to these underrepresented groups could expand the hiring pool and help meet future workforce needs in the U.S. aviation industry.

B. Projected Workforce Needs

Hiring difficulties during times of high growth and low unemployment are not uncommon among industries that depend on a skilled workforce. After tens of thousands of workers elected to leave the airline industry or were furloughed during the COVID-19 pandemic, many employers are working to rehire major portions of their workforce as the industry moves towards recovery.⁹ Even prior to the pandemic, the surging number of retirements among the baby boomer generation was expected to exacerbate the workforce needs.¹⁰ The FAA predicts “an increasing share of the

³ Ian Duncan, *TSA screens 2 million people for first time since coronavirus lockdowns began*, WASHINGTON POST (June 6, 2021), available at <https://www.washingtonpost.com/transportation/2021/06/12/tsa-screens-2-million-people-first-time-since-coronavirus-lockdowns-began/>.

⁴ BTS, *U.S. Airlines April 2021 Passengers Increased 9% from March 2021 (Preliminary)*, (June 2021), Available at <https://www.bts.gov/newsroom/us-airlines-april-2021-passengers-increased-9-march-2021-preliminary>.

⁵ Rebecca Lutte, *Women in Aviation: A Workforce Report* (May 2019), available at https://www.researchgate.net/publication/333855943_Women_in_Aviation_A_Workforce_Report.

⁶ Gov't Accountability Office, GAO-20-206, *Aviation Maintenance: Additional Coordination and Data Could Advance FAA Efforts to Promote a Robust, Diverse Workforce* p.28 (2020).

⁷ Current Statistics of Women in Aviation Careers in U.S., Women in Aviation International, available at <https://www.wai.org/resources/waistats>.

⁸ U.S. Bureau of Labor Statistics, *Employed persons by detailed occupation, sex, race, and Hispanic or Latino ethnicity*, (Jan. 2021), available at <https://www.bls.gov/cps/cpsaat11.htm>.

⁹ Kate Duffy, *Major US airlines are going on a hiring spree after slashing tens of thousands of jobs*, BUSINESS INSIDER (June 2021), available at <https://www.businessinsider.com/covid-pandemic-airlines-hiring-cut-thousands-jobs-travel-labor-shortage-2021-6>.

¹⁰ Laura Schneider, *How Retiring Baby Boomers Affect the Job Market*, THE BALANCE CAREERS, (Nov. 29, 2019), available at <https://www.thebalancecareers.com/retiring-boomers-affect-job-market-2071932>.

industry's technical workforce is moving toward retirement."¹¹ The Aviation Technician Education Council estimates that while 30 percent of the current workforce is at or near retirement age, new workers comprise only two percent of the workforce annually.¹² To meet the demand for new, skilled aviation workers, employers will need to expand the talent pool from which they traditionally hire or train potential workers. One way to expand this candidate pool is to recruit workers from historically underrepresented groups in the aviation industry.

III. KEY CHALLENGES AFFECTING THE DIVERSITY OF THE U.S. AVIATION WORKFORCE

A. Outreach and Bridging the "Glamour Gap"

One barrier to access for underrepresented communities to the aviation and aerospace fields is the lack of exposure to the industry, particularly among younger age groups. Continued outreach to these groups across U.S. aviation and aerospace can help to further develop this critical workforce.¹³ A recent report studying women in aviation emphasized the need for additional outreach to promote careers as airline "pilots, maintenance technicians, aerospace engineers, dispatchers, cybersecurity experts, airport managers, air traffic controllers, and a continued focus on the need for women in aviation leadership positions."¹⁴

Additionally, waning interest among younger generations to enter the aviation field, colloquially known as the "Glamour Gap," contributes to the industry's workforce shortage.¹⁵ For instance, enrollment at FAA-certificated aircraft maintenance technician (AMT) schools has decreased by 2 percent in recent years and AMT school programs are currently only operating at 50 percent capacity.¹⁶ Several employers and stakeholders point to the declining number of "shop" classes in high school and the perception that well-paying professions can be obtained only through four-year institutions as leading causes of the growing disinterest among young people in seeking jobs in the aviation maintenance and manufacturing fields.¹⁷

B. The "Skills Gap"

Many employers in the aviation industry express concern over a potential labor shortage, due to an inadequate supply of qualified workers. For instance, according to a 2014 GAO report on the availability of aviation maintenance and engineering professionals, nearly 70 percent of employers interviewed by the GAO expressed some level of difficulty hiring workers with the desired experience levels.¹⁸ Further, a 2018 industry report projected that the skills gap may leave an

¹¹ Looking Forward: The Future of America's Aviation Maintenance and Manufacturing Workforce: Hearing Before the Subcomm. on Aviation, 116 Cong. (Feb. 2020) (Statement of Catherine Lang), available at <https://www.transportation.gov/testimony/looking-forward-future-america%E2%80%99s-aviation-maintenance-and-manufacturing-workforce>.

¹² Brianne Eby and Paul Lewis, *Aviation Workforce Challenges in the United States and the United Kingdom*, Eno Center on Transportation (March 2019) p. 23 available at www.enotrans.org/wp-content/uploads/2019/03/3.26-US-UK-Aviation-Workforce_final.pdf.

¹³ See *supra* note 5.

¹⁴ *Id.*

¹⁵ Jim Frenner, *Aerospace Skills Gap: Workforce Declines, As Talent Needs Increase*, AREA DEVELOPMENT, available at <https://www.areadevelopment.com/Aerospace/q3-2015-auto-aero-site-guide/Aerospace-Skills-Gap-Workforce-Declines-Needs-Increase-45711.shtml>.

¹⁶ Eno Center, *supra* note 18 at 23.

¹⁷ See *supra* note 13.

¹⁸ GAO-14-237 at 23.

estimated 2.4 million manufacturing positions unfilled between 2018 and 2028, with a potential economic impact of \$2.5 trillion.¹⁹

This “skills gap” stems from several causes; one of which is the lack of skilled workers in positions requiring more than a high school diploma but less than a four-year college degree. A 2016 industry survey found that 39 percent of aerospace companies predicted an “extreme” impact on their business growth caused by the science, technology, engineering, and math (STEM) workforce shortage.²⁰ For instance, in 2019 a U.S. aviation maintenance and repair company pointed to this workforce challenge as the primary reason the company had nearly 400 openings at its five U.S. facilities and two Canadian facilities.²¹

C. Bias

Another barrier to aviation careers for underrepresented communities are unconscious biases which often permeate the training and hiring processes. Last year, an Embry-Riddle Aeronautical University study found that participating “consumers and other pilots favored white males in all conditions, while females and minorities were viewed less favorably.”²² The study also noted that such biases could deprive the aviation industry of the best job candidates.²³ Additionally, a 2018 report concluded that “documented biases have the ability to influence the attitudes toward women entering aviation and the overall training process” and can create “a feeling of unwelcome for newcomers who don’t fit the stereotypical ‘pilot’ mold.”²⁴ At a recent industry conference, panelists agreed that companies should have dedicated plans to expand workforce diversity to help “move beyond the common perception of the industry as one favoring older, and predominantly white, males.”²⁵

Without effective strategies to address these underlying workforce challenges, the aviation industry’s economic growth and technological advances could be hampered in the future.

IV. KEY INITIATIVES SUPPORTING THE U.S. AVIATION WORKFORCE

A. Congressional Mandates and Initiatives

The *FAA Reauthorization Act of 2018* included several provisions targeted toward recruiting more young people and women to pursue careers in the aviation industry.

Youth Access to American Jobs in Aviation Task Force. Section 602 of the act directed the FAA to establish the Youth Access to American Jobs in Aviation Task Force. The task

¹⁹ Deloitte, *2018 Manufacturing Skills Gap Study*, available at <https://www2.deloitte.com/us/en/pages/manufacturing/articles/future-of-manufacturing-skills-gap-study.html>.

²⁰ Aerospace Industries Association, *What Every Candidate Should Know About the Aerospace Workforce and STEM*, (2016), available at https://www.aia-aerospace.org/wp-content/uploads/2016/06/AIA_Campaign_Papers_Workforce.pdf.

²¹ Rob Mark, *AAR White Paper Focuses on Maintenance Technician Shortage*, (Feb. 2019) FLYING MAG. available at <https://www.flyingmag.com/aar-maintenance-technician-shortage/>.

²² Nadine K. Ragbir, et al., *An examination of consumer bias against female and minority commercial pilots*, TECHNOLOGY IN SOCIETY (Feb. 2021).

²³ *Id.*

²⁴ Hart, William, *Isolation and Onboarding: Gender Bias in Aviation Training Documents* (2018). *Technical Communication Capstone Course*, Minnesota State University, Mankato.

²⁵ National Business Aviation Association, *Expanding Workforce Diversity Requires Moving Beyond Personal Biases*, (July 2020), <https://nbaa.org/about/diversity-equity-inclusion-dei/expanding-workforce-diversity-requires-moving-beyond-personal-biases>.

force is responsible for providing recommendations and strategies to the FAA that will facilitate and encourage high school students to enroll in high school career and technical courses that would prepare them for an aviation career or enroll in a course of study related to an aviation career, including aviation manufacturing, engineering, and maintenance.²⁶ In July 2020, the U.S. Department of Transportation (DOT) announced 20 appointees to the task force, representing “a diverse range of backgrounds and expertise in aviation and education.”²⁷ Dr. Sharon DeVivo, President of Vaughn College of Aeronautics and Technology, serves as chair of the task force.²⁸

Women in Aviation Advisory Board. Section 612 of the act directed the FAA to create the Women in Aviation Advisory Board, which is tasked with “promoting organizations and programs that are providing education, training, mentorship, outreach and recruitment of women in the aviation industry.”²⁹ In May 2020, the DOT announced the appointment of 30 members to the advisory board.³⁰ Former U.S. Air Force Secretary Heather Wilson serves as chair of the board.

Aviation Workforce Development Grants. Section 625 of the act directed the DOT to establish two grant programs to “support the education and recruitment of aviation maintenance technical workers and the development of the aviation maintenance workforce” and “to support the education of future aircraft pilots and the development of the aircraft pilot workforce.”³¹ The first-of-its-kind programs are both authorized at \$5 million annually through fiscal year 2023. The programs—delegated to the FAA—will provide grants for educational programs, scholarships, apprenticeships and other outreach initiatives to expand educational opportunities in the field of aviation maintenance and to prepare the next generation of aircraft pilots, aerospace engineers, or unmanned aircraft systems operators.³²

Unmanned Aircraft Systems Collegiate Training Initiative (UAS-CTI). Sections 631 and 632 of the act directed the FAA to establish a collegiate training initiative program relating to UAS by partnering with institutions of higher education to prepare students for careers in the UAS sector.³³ Additionally, the law directed the FAA to designate a consortia of public, two-year institutions of higher education as Community and Technical College Centers of Excellence in Small UAS Technology Training.³⁴ To comply with these requirements, the FAA launched the UAS Collegiate Training Initiative (UAS-CTI) program in April 2020. Under the program, “participating institutions will engage with the FAA, each other, general industry, local governments, law enforcement, and regional economic development entities to address labor force needs” to help provide students with the “skills needed to pursue a successful career in a UAS-related field.”³⁵ More

²⁶ P.L.115-254, § 602 (2018).

²⁷ DOT, U.S. *Transportation Secretary Elaine L. Chao Makes Appointments to Youth Access to American Jobs in Aviation Task Force*, (July 2020), <https://www.transportation.gov/briefing-room/us-transportation-secretary-elaine-l-chao-makes-appointments-youth-access-american-0>.

²⁸ Dr. DeVivo testified at the Subcommittee’s hearing titled “Looking Forward: The Future of America’s Aviation Maintenance and Manufacturing Workforce” (February 2020) <https://transportation.house.gov/imo/media/doc/Testimony%20-%20Devivo.pdf>

²⁹ P.L.115-254, § 612 (2018).

³⁰ DOT, U.S. *Transportation Secretary Elaine L. Chao Appoints Industry Leaders to Women in Aviation Advisory Board*, (May 2020),

<https://www.transportation.gov/briefing-room/us-transportation-secretary-elaine-l-chao-appoints-industry-leaders-women-aviation>.

³¹ P.L.115-254, § 625 (2018).

³² *Id.*

³³ P.L.115-254, § 631, 632 (2018).

³⁴ *Id.*

³⁵ FAA, *More Schools Join the Collegiate Training Initiative*, (Sept. 2020), <https://www.faa.gov/news/updates/?newsId=95838>.

than 70 schools from across the country have been selected by the FAA to participate in the UAS-CII program.³⁶

Student Outreach Report. Section 601 of the act directed the FAA to submit a report to Congress describing the agency’s outreach efforts to elementary and secondary students interested in STEM careers in order to prepare them for aviation- and aeronautical-related careers and mitigate the anticipated shortage of pilots and other aviation professionals.³⁷ The FAA completed the report and submitted it to Congress in September 2019.³⁸ In the report, the FAA highlighted a 20 percent increase in the number of outreach representatives and a 50 percent increase in the number of its outreach events.³⁹

FAA Cybersecurity Workforce Report. Section 549 of the act required the National Academy of Sciences to study the FAA’s cybersecurity workforce and develop recommendations to “increase the size, quality, and diversity of such workforce, including cybersecurity researchers and specialists.”⁴⁰ Released in June 2021, the report found that “an effective cybersecurity workforce will need to be diverse across several axes” and should, among other strategies, increase engagement with underrepresented minorities, women, and encourage applicants from a range of geographic locations.⁴¹

FAA Technical Workforce Report. Section 569 of the act directed the FAA to submit a report to Congress describing the progress made toward implementing the agency’s action plan to attract, develop, and retain a talented workforce in the areas of systems engineering, architecture, systems integration, digital communications, and cybersecurity.⁴² The FAA completed the report and submitted it to Congress in October 2020.⁴³ Among its recommendations, the report called on the FAA to focus on recruiting youth to build the agency’s pipeline of technical talent, including high school and middle school students.⁴⁴ In addition, the report highlighted the expansion of the agency’s Minority Serving Institutions (MSI) Intern Program. For FY2020, the FAA hosted 110 MSI summer interns, 30 of whom majored in computer science, cybersecurity, or engineering.⁴⁵

B. FAA Programs and Initiatives

FAA Office of Aviation and Space Education. The FAA’s STEM Aviation and Space Education (AVSED) program was created in 1961 to expose students to aviation and aerospace careers, help recruit new workers into these fields, and promote STEM education to students at all levels.⁴⁶ Through the program, the agency works collaboratively with government and private sector entities to promote aviation-related STEM skills and grow the pipeline of students interested in

³⁶ See: *Engaging with Academia: How the FAA is Helping Prepare Tomorrow’s UAS Workforce*, (April 2021), <https://medium.com/faa/engaging-with-academia-661aaa3551cb>.

³⁷ P.L.115-254, § 601 (2018).

³⁸ FAA, *Section 601 Youth in Aviation Student Outreach Report*, https://www.faa.gov/about/plans_reports/congress/media/Section_601_Youth_in_Aviation_Student_Outreach_Report.pdf.

³⁹ *Id.* at p.2.

⁴⁰ P.L.115-254, § 549 (2018).

⁴¹ National Academies of Science, Engineering, and Medicine, *Looking Ahead at the Cybersecurity Workforce at the Federal Aviation Administration*, Pg. 2. (June 2021), <https://www.nap.edu/resource/26105/FAA%20Cybersecurity.pdf>

⁴² P.L.115-254, § 569 (2018).

⁴³ FAA, *Section 569 Report on Attracting, Developing, Training, and Retaining FAA’s Technical Workforce*, available at https://www.faa.gov/about/plans_reports/congress/media/Report_Congress_FAA_Technical_Workforce_Sec569.pdf

⁴⁴ *Id.* at p. 6-7.

⁴⁵ *Id.* at p. 10.

⁴⁶ FAA. *About STEM AVSED*, (Oct. 2019), <https://www.faa.gov/education/about/>.

working in these fields.⁴⁷ AVSED has produced promotional materials, such as brochures and DVDs, that it shares with college recruiters and guidance counselors, distributes at career fairs, and publicizes virtual learning opportunities. The program also focuses on student populations in underserved communities, through its Adopt-a-School and Girls in Aviation initiatives, to help achieve a more diverse workforce.⁴⁸ For the past two years, AVSED has run the FAA Airport Design Challenge, during which teams of elementary, middle, and high schoolers participate in a five week program on airport design while building a virtual airport model in Microsoft Minecraft.⁴⁹ AVSED is also involved in initiatives such as the Real World Design Challenge, a high school engineering competition, and the Build a Plane program, which provides schools with actual aircraft to be used as teaching tools.⁵⁰

FAA Aviation Workforce Steering Committee. The FAA’s Aviation Workforce Steering Committee (Steering Committee) was established in February 2019 to determine agency goals for addressing aviation workforce challenges, exploring options [for resolving those challenges], and facilitating cross agency strategic coordination.⁵¹ The Steering Committee’s charter emphasizes providing diverse populations with clear pathways into aviation careers to expand the talent pool from which both government and industry may recruit.⁵² While the Steering Committee considers all aviation professions, its immediate challenge is to focus on the shortage of pilots and technicians.⁵³ Looking ahead, the Steering Committee plans “a special focus on diversity and inclusion and attracting women, minorities and persons with disabilities to the aviation and aerospace professions [which] helps ensure the government and the industry can recruit from a broader and more inclusive talent pool in the future.”⁵⁴

FAA Office of Civil Rights National Outreach Program for Diversity and Inclusion. The FAA Office of Civil Rights’ National Outreach Program for Diversity and Inclusion includes several initiatives to ensure equal access to resources and programs that may foster future Federal employment and advancement opportunities.⁵⁵ For instance, through the Hispanic Education Program, the FAA partners with high schools, post-secondary academic institutions and other key stakeholders to increase recruitment, hiring, training to “address the under-representation of Hispanics/Latinos in the Federal government.”⁵⁶ Additionally, the People with Disabilities Program works to actively recruit, promote, retain, and advance people with disabilities withing the agency.⁵⁷

C. Other Government Initiatives

In addition to FAA-led efforts, there are several other government programs seeking to address the mounting need for aviation workers and improve diversity across the sector.

⁴⁷ GAO-14-237 at 1.

⁴⁸ DOT, *Budget Estimates Fiscal Year 2022: Federal Aviation Administration* (2021), <https://www.transportation.gov/sites/dot.gov/files/2021-05/FAA-FY-2022-Congressional-Justification.pdf>.

⁴⁹ FAA, *Airport Design Challenge*, https://www.faa.gov/education/virtual_learning/airport_design/.

⁵⁰ GAO-14-237 at 30.

⁵¹ FAA, *Section 601 Youth in Aviation Student Outreach Report*. Pg. 15.

https://www.faa.gov/about/plans_reports/congress/media/Section_601_Youth_in_Aviation_Student_Outreach_Report.pdf

⁵² GAO-20-206 at 19.

⁵³ *Id.*

⁵⁴ FAA, *Section 601 Youth in Aviation Student Outreach Report* at 17.

⁵⁵ FAA, *Office of Civil Rights – National Outreach Program for Diversity and Inclusion*, (Aug. 2020), https://www.faa.gov/about/office_org/headquarters_offices/acr/outreach/.

⁵⁶ FAA, *National Outreach Program for Diversity and Inclusion: Hispanic Employment Program*, (Sept. 2020), https://www.faa.gov/about/office_org/headquarters_offices/acr/outreach/hep/.

⁵⁷ FAA, *National Outreach Program for Diversity and Inclusion: People with Disabilities Program*, (Aug. 2020), https://www.faa.gov/about/office_org/headquarters_offices/acr/outreach/pwd/.

Department of Transportation (DOT). Since 2009, the DOT’s Women & Girls In Transportation Initiative (WITI) has encouraged young women from colleges and universities across the country to pursue careers in the transportation and STEM fields. Through the department’s Small Business Transportation Resource Centers, the initiative aims “to increase the participation of women in the transportation industry and prepare young women to become future leaders by creating ladders of opportunity and small business’ economic competitiveness through careers, internships, strategic partnerships and education.”⁵⁸

Department of Labor (DOL). DOL also has programs directed towards diversifying the aviation workforce. The department’s 2017 Diversity and Inclusion Strategic Plan highlighted the department’s aim to “secure a high-performing workforce drawn from all segments of American society” and promote “diversity and inclusion as a key strategic priority, through continued leadership commitment, accountability, and total workforce engagement”, among other goals.⁵⁹ The DOL’s Registered Apprenticeship Program awards grants to provide employer-driven training opportunities that combine on-the-job learning with related classroom instruction.⁶⁰ For instance, from 2014 through 2018, DOL awarded nearly \$3.8 million in grants and contracts to promote these apprenticeships for aviation maintenance workers.⁶¹ Further, the DOL’s Workforce Recruitment Program for College Students with Disabilities works to connect college students and recent graduates, including veterans, with disabilities to career opportunities in in-demand sectors.⁶²

Department of Education (ED). Further, over the course of the last decade, the Department of Education has also pursued several initiatives to promote aviation education and careers. For example, in October 2017, ED awarded more than \$4 million in new grants, through the High School Career and Technical Education (CTE) Teacher Pathway Initiative, to address the shortage of CTE programs.⁶³ The ED has also announced \$17.3 million for college internships, research projects, and other opportunities to connect STEM students, including Historically Black Colleges and Universities (HBCUs) and other MSIs, with the resources from the department’s National Laboratories.⁶⁴ Across the aerospace industry, there is growing interest in and support for greater access to scholarships and student loan assistance for those attending technical colleges.

Department of Defense (DOD). The U.S. Air Force’s Junior Reserve Officers’ Training Corps (JROTC) Flight Academy also works to attract younger students to aviation and improve diversity in the field.⁶⁵ In 2018-2019, over 200 cadets graduated from the academy, of which 41 percent of new pilots are from underrepresented groups and 18 percent are women.⁶⁶ The DOD also administers the Credentialing Opportunities On-Line (COOL) program, which creates a pathway for service members to earn industry recognized professional certifications and licenses.⁶⁷

⁵⁸ DOT, *USDOT’s Women & Girls in Transportation Initiative (WITI)*, (Sept. 2019), <https://www.transportation.gov/osdbu/women-and-girls>.

⁵⁹ DOL, *Commitment to a Diverse Workforce*, <https://www.dol.gov/general/jobs/commitment-to-a-diverse-workforce>.

⁶⁰ *Id.*

⁶¹ GAO-20-206 at 16.

⁶² DOL, *Workforce Recruitment Program*, <https://www.dol.gov/agencies/odep/program-areas/employers/workforce-recruitment-program>.

⁶³ High School Career and Technical Education (CTE) Teacher Pathway Initiative, *PCRN: High School CTE Teacher Pathway*, <https://cte.ed.gov/initiatives/high-school-cte-teacher-pathway>.

⁶⁴ See: DOE *Awards \$17.3 Million for Student and Faculty Research Opportunities and to Foster Workforce Diversity*, (May 2021), <https://www.energy.gov/articles/doe-awards-173-million-student-and-faculty-research-opportunities-and-foster-workforce>.

⁶⁵ FAA, *Pilot Shortage: Crisis and Opportunities* (June 2021),

[https://www.faa.gov/regulations_policies/rulemaking/committees/documents/media/Updated June YIATF Meeting Packet.pdf](https://www.faa.gov/regulations_policies/rulemaking/committees/documents/media/Updated%20June%20YIATF%20Meeting%20Packet.pdf).

⁶⁶ *Id.*

⁶⁷ GAO-20-206 at 15.

The program provided more than \$5 million toward aviation maintenance-related credentials from 2015 through 2018 for more than 2,500 service members.⁶⁸

D. Industry Initiatives

Many aviation companies and aerospace trade groups are establishing their own training programs and outreach initiatives to further develop and maintain their workforce. Below are just a few examples of industry-led initiatives and partnerships.

- In April 2021, United Airlines announced plans to train 5,000 new pilots by 2030, at least half of whom will be women and people from underrepresented communities.⁶⁹ The airline also pledged \$1.2 million in scholarships to help address financial barriers to the airline pilot career path for students.⁷⁰
- Since 2019, the Aeronautics Industry Association (AIA) has organized a nationwide rocketry contest, with nearly 5,000 middle and high school students participating annually.⁷¹ To date, this initiative has funded \$120,000 in grants to schools in low-income communities and connected more than 80,000 students with rocketry and aerospace career mentors.⁷² The trade group also plans to provide \$50,000 in grants to schools in underserved communities next year through this initiative.⁷³
- To hire 2,000 mechanics over the next decade, Delta Air Lines is providing \$350,000 in grants to nine aviation high schools around the country to help expand its workforce.⁷⁴
- Last August, AAR, a Chicago-based aviation maintenance and repair company, partnered with the Corporation for Skilled Workforce to create a program at schools located near its repair stations to demonstrate how students can learn skills leading to multiple career paths at the company.⁷⁵ The learned skills developed within the program can then be used to pursue an A&P mechanic certificate.⁷⁶ Through this initiative, the company aims to diversify the aviation maintenance technician workforce and reduce future labor shortages.⁷⁷

⁶⁸ *Id.*

⁶⁹ Bob D'Angelo, *United Airlines sets new diversity goal for pilot training*, KIRO 7 News Seattle. (April 2021), available at <https://www.kiro7.com/news/trending/united-airlines-sets-new-diversity-goal-pilot-training/6EPFPMWTE5GZDBYPLPJZC4NGCI/>.

⁷⁰ *Id.*

⁷¹ Aerospace Industries Association, *Diversity, Equity & Inclusion*, available at <https://www.aia-aerospace.org/diversity-equity-inclusion/>.

⁷² *Id.*

⁷³ *Id.*

⁷⁴ Leslie Josephs, *College of \$70,000 a year? Aviation Industry scrambles for mechanics as retirements loom*, CNBC. (Sept. 2018), available at <https://www.cnbc.com/2018/09/03/airlines-search-for-young-mechanics-as-retirement-wave-looms.html>.

⁷⁵ Lindsay Bjerregaard, *AAR Plans For Expected Ramp-Up In Workforce Demand*, AVIATION WEEK. (Aug. 2020), available at <https://aviationweek.com/mro/workforce-training/aar-plans-expected-ramp-workforce-demand>.

⁷⁶ Rob Mark, *AAR White Paper Focuses on Maintenance Technician Shortage*, FLYING MAG. (Feb. 2019) available at <https://www.flyingmag.com/aar-maintenance-technician-shortage/>.

⁷⁷ See *AAR Partners With Corporation for Skilled Workforce and Lumina Foundation to Reduce Labor Shortage and Increase Diversity in the Aviation Industry*, AVIATION PROS (Aug. 2020), available at <https://www.aviationpros.com/aircraft/maintenance-providers/mro/press-release/21151640/aar-corp-aar-partners-with-corporation-for-skilled-workforce-and-lumina-foundation-to-reduce-labor-shortage-and-increase-diversity-in-the-aviation-industry>.

- Since its inception in 2018, the Leadership in Flight Training (LIFT) Academy in Indianapolis has worked to broaden diversity within the cockpit and maintenance hangars.⁷⁸ Earlier this month, the Leadership in Flight Training (LIFT) Academy in Indianapolis announced it will send its graduates to Cape Air to help broaden diversity and provide the airline with a talented pool of aviators to operate its daily passenger flights throughout the Midwest, Montana, Caribbean, and the Northeast.⁷⁹ The LIFT Academy, through its parent company Lynx Aviation, also invested in Hyannis Air Service to broaden its workforce development initiatives.⁸⁰
- In 2017, the United Negro College Fund (UNCF) partnered with Alaska Airlines through their LIFT Miles program, to allow guests to contribute airline miles alongside the company to ensure travel does not hold young people back from pursuing their dreams of education.⁸¹ To date, Alaska and its guests have contributed more than 13.4 million Alaska Airlines miles to fly students to HBCUs for college tours, career development events, and other UNCF programs.⁸² With this renewed commitment, Alaska will donate one million miles annually to support students attending HBCUs.⁸³ In addition, Alaska has also established a scholarship through the UNCF to help students overcome the financial obstacles of getting a college education.⁸⁴

⁷⁸ Business Wire, *LIFT Academy Enters a Strategic Workforce Development Relationship with Cape Air, Providing an Aviation Career Pathway and Airline Flow Program*, (July 1, 2021), available at <https://www.businesswire.com/news/home/20210701005862/en/LIFT-Academy-Enters-a-Strategic-Workforce-Development-Relationship-with-Cape-Air-Providing-an-Aviation-Career-Pathway-and-Airline-Flow-Program>

⁷⁹ *Id.*

⁸⁰ *Id.*

⁸¹ Aaron Allen, *Alaska Airlines Renews Commitment To Education And Diversity With Unveiling Of UNCF Inspired Aircraft*, THE SEATTLE MEDIUM (April 2021), available at <https://seattlemedium.com/alaska-airlines-renews-commitment-to-education-and-diversity-with-unveiling-of-uncf-inspired-aircraft/>.

⁸² *Id.*

⁸³ *Id.*

⁸⁴ *Id.*

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