



ADVANCED MANUFACTURING: AIR TRANSPORTATION CAREER PATHWAY

The work of the Talent Pipeline Task Force was inspired by our community's existing assets in the areas of education and workforce. Members consist of a diverse mix of employers, workforce development leaders, chambers of commerce, and postsecondary education and social service providers.

The Talent Pipeline Task Force – with grant support from Lumina Foundation – partnered with the Chicago-based Council on Adult and Experiential Learning (CAEL) to develop career pathways in core occupations and industries of high need in the three targeted sectors. The matching of education supply data and labor market needs were supported by CI:Now, CAEL, and SA2020.

Career pathways are designed from the ground up, with attention to foundational and essential skills at the entry level or in the early stages of the ladder. They also offer multiple entry and exit points, with the intent being that those who seek skills and a job in a pathway can do so while intentionally climbing an explicit career ladder.

Building on these career pathway documents, the Talent Pipeline Task Force recommends the following:

- 1) Embed career information into college advising; and
- 2) Align the messaging of K-12, higher education, workforce and community-based organizations, so that multiple audiences receive the same information about demand occupations and key entry points.

For more information and the full Talent Pipeline Task Force Report, visit www.SA2020.org/reports.

Air Transportation: Engineering Occupations			
Entry Points	Transition Points and Requirements		Wage Range
Bachelor and Above Level (Senior and Above)	<p>Transition Requirements</p> <ul style="list-style-type: none"> • Bachelors Degree • Experience in the field • Specialized Certifications <p style="text-align: center;">Aerospace Engineer</p>		\$90,000-\$100,000
Associate Level (Mid to Senior)	<p>Qualifications</p> <ul style="list-style-type: none"> • Associates Degree • Certificates gained for advancement: Control Systems Technician, Aerospace Technician (ISA certified) <p style="text-align: center;">Aerospace Engineering and Operations Technician</p>		\$60,000-\$70,000
FOUNDATIONAL SKILL SETS			
Basic Math and Science Skills Multi-tasking Equipment Usage/Monitoring	Understanding of Electrical Circuits Highly Organized Quality Control Analysis	Understanding of Aviation Field Time Management Reading Comprehension	Mechanical Skills Attention to Detail Team-Work Skills
ESSENTIAL SKILL SETS			
Punctual and Efficient Adaptable and Flexible Responsible	Drug-Free Able to work with teams Self-Motivated	Well-Groomed Able to communicate clearly Honesty and Integrity	Positive Attitude Conflict Resolution Self-Control

Entry Points	Job Title	Job Description	Education/Training	Wage Ranges
Bachelor and Above Level (Senior and Above)	Aerospace Engineer	Perform engineering duties in designing, constructing, and testing aircraft, missiles, and spacecraft. May conduct basic and applied research to evaluate adaptability of materials and equipment to aircraft design and manufacture. May recommend improvements in testing equipment and techniques.	Bachelors Degree; Associate Value Specialist; Certification in Aerospace Physiology (advanced); Aerospace Fiber Optics Fabricator (advanced)	\$98,000
Associate Level (Mid to Senior)	Aerospace Engineering and Operations Technician	Operate, install, calibrate, and maintain integrated computer/communications systems, consoles, simulators, and other data acquisition, test, and measurement instruments and equipment, which are used to launch, track, position, and evaluate air and space vehicles. May record and interpret test data.	Requires an Associate Degree; Certified Quality Technician; ISA Certified Control Systems Technician; Aerospace Fiber Optics Fabricator (advanced); Certified Aerospace Technician (advanced)	\$63,000

Air Transportation: Maintenance/Mechanic Occupations			
Entry Points	Transition Points and Requirements		Wage Range
Associate Level (Mid to Senior)	Transition Requirements <ul style="list-style-type: none"> • 5-10 Years of Related Experience • NAS-410 Certificate; SNT-TC-1A Certificate 	Non-destructive Testing Specialist	\$50,000-\$60,000
Certificate Level (Entry to Mid)	Transition Requirements <ul style="list-style-type: none"> • 2-3 Years of Related Experience • Aerospace/Craft Assembly cert; • FAA A&P Certificate • AAS Aircraft Maintenance • Avionics Technician; RADAR; Electronics 	Aircraft Structure and Systems Assembler Solar Thermal Assessor Aircraft Interior Technician A&P Mechanic/Avionics Technician	\$40,000-\$55,000
Entry Level/High School Diploma	Qualifications <ul style="list-style-type: none"> • On the Job Training • Technical School Training • Industry Experience 	Structures Mechanic/Sheet Metal Mechanic/Composites Mechanic	\$30,000-\$40,000
FOUNDATIONAL SKILL SETS			
Basic Math and Science Skills Multi-tasking Equipment Usage/Monitoring	Understanding of Electrical Circuits Highly Organized Quality Control Analysis	Understanding of Aviation Field Time Management Reading Comprehension	Mechanical Skills Attention to Detail Team-Work Skills
ESSENTIAL SKILL SETS			
Punctual and Efficient Adaptable and Flexible Responsible	Drug-Free Able to work with teams Self-Motivated	Well-Groomed Able to communicate clearly Honesty and Integrity	Positive Attitude Conflict Resolution Self-Control

Entry Points	Job Title	Job Description	Education/Training	Wage Ranges
Associate Level (Mid to Senior)	Non-destructive Testing Specialist	Test the safety of aircraft structures using x-ray, ultrasound, fiber optic or related equipment	May require an Associate or Bachelors Degree; vocational training and the following certificates: NAS-410SNT-TC-1A	\$58,000
Certificate Level (Entry to Mid)	Aircraft Structure, Surfaces, Rigging, and Systems Assembler Aircraft Mechanic	Assemble, fit, fasten, and install parts of airplanes, space vehicles, or missiles, such as tails, wings, fuselage, bulkheads, stabilizers, landing gear, rigging and control equipment, or heating and ventilating systems.	High school diploma; Moderate-term OTJ training; specialized training specific to product line Aerospace/Aircraft Assembly Maintenance Certification	\$40,000
	Aircraft Interior Technician/Structures Mechanic	Inspect, remove, and install aircraft interior pieces, including doors, bulkheads, and lavatories. Work may focus on multiple or one airplane feature, such as upholstery or cabinets.	High school diploma or GED, plus relevant experience, specialized certificates	\$55,000
	A&P Mechanic/Avionics Technician	Install, inspect, test, adjust, or repair avionics equipment, such as radar, radio, navigation, and missile control systems in aircraft or space vehicles. Must be able to understand and apply electronic shop theory, practices, and procedures. May require military aircraft experience and flight line experience, as well as the ability to understand complex drawings.	Post-secondary vocational training; some occupations may require a license upon passing an examination/training; Avionics Electronics Technician; RADAR Electronics Technician (advanced); Aircraft Electronics Technician (advanced); Certified Aerospace Technician (advanced)	\$53,000
Entry Level/High School Diploma	Repairman	Remove, replace or repair various aircraft components. Must have working knowledge of all aspects of composite repair, composition and characteristics of metals, fiberglass, kevlar, carbon fibers, resins and adhesives. Hot Bond knowledge required.	High school diploma or equivalent. FAA A&P Certificate/AAS	\$35,000

Air Transportation: Flight Support Occupations			
Entry Points	Transition Points and Requirements		Wage Range
Bachelor and Above Level (Senior and Above)	Transition Requirements <ul style="list-style-type: none"> Bachelors Degree, plus minimum 3 years experience Air Transportation (ATP) cert; FAA Airmen cert; FAA Medical cert; Airframe & Power Plant Certificate 	Airline Pilots, Copilots, and Flight Engineer Air Traffic Control Operator	\$60,000-\$120,000
Associate Level (Mid to Senior)	Transition Requirements <ul style="list-style-type: none"> 2-3 years of related experience 	Structures Manager Airfield Operations Specialists	\$40,000-\$50,000
Certificate Level (Entry to Mid)	Transition Requirements <ul style="list-style-type: none"> On the Job Training Aircraft/Avionics Electronics (AET); Commercial Pilot certification 	Commercial Pilot Air Traffic Control Equipment Repairers	\$50,000-\$75,000
Entry Level/High School Diploma	Qualifications <ul style="list-style-type: none"> High school diploma or equivalent On the Job Training 	Aircraft Cargo Handling Supervisors	\$40,000-\$50,000
FOUNDATIONAL SKILL SETS			
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Entry Points	Job Title	Job Description	Education/Training	Wage Ranges
Bachelor and Above Level (Senior and Above)	Airline Pilots, Copilots, and Flight Engineer	Pilot and navigate the flight of fixed-wing, multi-engine aircraft, usually on scheduled air carrier routes, for the transport of passengers and cargo. Requires Federal Air Transport Pilot certificate and rating for specific aircraft type used. Includes regional, National, and international pilots and flight instructors of airline pilots.	Bachelor's Degree plus work experience Airline Transport Pilot (ATP) certificate	\$120,000
	Air Traffic Control Operator	Control air traffic on and within vicinity of airport and movement of air traffic between altitude sectors and control centers according to established procedures and policies. Authorize, regulate, and control commercial airline flights according to government of company regulations to expedite and ensure flight safety.	Three years of progressively responsible work experience, or a Bachelor's degree, or a combination of post-secondary education and work experience; FAA Airmen Certification FAA Medical Certification	\$100,000 +
	Structures Manager	Plan and map out aircraft structures, repair strategies, and deploy adequate resources for repairs on each aircraft to ensure check-span and budget compliance. May need to manage and lead subordinates to ensure the timely and proper completion and documentation of all structures work.	Bachelors Degree; FAA Airframe & Power Pant Certificate preferred	\$63,000
Associate Level (Mid to Senior)	Airfield Operations Specialist	Ensure the safe takeoff and landing of commercial and military aircraft. Duties include coordination between air-traffic control and maintenance personnel; dispatching; using airfield landing and navigational aids; implementing airfield safety procedures; monitoring and maintaining flight records; and applying knowledge of weather information.	Associates degree; relevant work experience; Airport Certified Employee-Communications, Security	\$49,000
Certificate Level (Entry to Mid)	Commercial Pilot	Pilot and navigate the flight of fixed-wing aircraft on nonscheduled air carrier routes, or helicopters. Requires Commercial Pilot certificate. Includes charter pilots with similar certification, and air ambulance and air tour pilots.	High school diploma or equivalent; may require some vocational training, or possibly an associates or bachelors degree (for advancement) Commercial Pilot Certification; Air Pilot Terminology Certification	\$73,000

	Air Traffic Control Equipment Repairer	Responsible for the maintenance and installation of air traffic control communications, navigation aids, and landing systems.	High school diploma or GED, plus additional FAA training gained through position Aircraft Electronics Technician (AET); Avionics Electronics Technician; Certified Computer Service Technician; Internet and Computing Core Certification	\$50,000
Entry Level/High School Diploma	Aircraft Cargo Handling Supervisors	Supervise and coordinate the activities of the ground crew in loading, unloading, securing, and staging of aircraft cargo or baggage. May determine the quality and orientation of cargo and compute aircraft center of gravity. May accompany aircraft as member of flight crew and monitor and handle cargo in flight, and assist and brief passengers on safety and emergency procedures.	High school diploma or equivalent Certified Cargo Security Professional (CCSP); Air Cargo Professional	\$42,000