** Aircraft Powerplant Maintenance Technology Occupations**

**Labor Market Information Report**

**City College of San Francisco**

Prepared by the San Francisco Bay Center of Excellence

for Labor Market Research

January 2019

# Recommendation

Based on all available data, there appears to be an undersupply of Aircraft Powerplant Maintenance Technology workers compared to the demand for this cluster of occupations in the Bay region and in the Mid-Peninsula sub-region (San Francisco and San Mateo Counties). The gap is about 233 students annually in the Bay region and 147 students annually in the Mid-Peninsula Sub-Region.

This report also provides student outcomes data on employment and earnings for programs on TOP 0950.20 – Aviation Powerplant Mechanics in the state and region. It is recommended that these data be reviewed to better understand how outcomes for students taking courses on this TOP code compare to potentially similar programs at colleges in the state and region, as well as to outcomes across all CTE programs at City College of San Francisco and in the region.

# Introduction

This report profiles Aircraft Powerplant Maintenance Technology Occupations in the 12 county Bay region and in the Mid-Peninsula sub-region for the review of an existing program at City College of San Francisco.

|  |
| --- |
| * **Aircraft Mechanics and Service Technicians (SOC 49-3011):** Diagnose, adjust, repair, or overhaul aircraft engines and assemblies, such as hydraulic and pneumatic systems. Includes helicopter and aircraft engine specialists. Excludes “Avionics Technician" (49-2091). |
| *Entry-Level Educational Requirement: Postsecondary nondegree award* |
| *Training Requirement: None* |
| *Percentage of Community College Award Holders or Some Postsecondary Coursework: 62%* |

# Occupational Demand

**Table 1. Employment Outlook for Aircraft Powerplant Maintenance Technology Occupations in Bay Region**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Occupation | 2017 Jobs | 2022 Jobs | 5-Yr Change | 5-Yr % Change | 5-Yr Open-ings | Annual Open-ings | 10% Hourly Wage | Median Hourly Wage |
| Aircraft Mechanics and Service Technicians | 3,886 | 3,963 | 77 | 2% | 334 | 291 | $23.97 | $34.33 |

*Source: EMSI 2018.4*

**Bay Region** includes Alameda, Contra Costa, Marin, Monterey, Napa, San Benito, San Francisco, San Mateo, Santa Clara, Santa Cruz, Solano and Sonoma Counties

**Table 2. Employment Outlook for Aircraft Powerplant Maintenance Technology Occupations in Mid-Peninsula Sub-Region**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Occupation | 2017 Jobs | 2022 Jobs | 5-Yr Change | 5-Yr % Change | 5-Yr Open-ings | Annual Open-ings | 10% Hourly Wage | Median Hourly Wage |
| Aircraft Mechanics and Service Technicians | 2,364 | 2,352 | (12) | (1%) | 194 | 173 | $26.49 | $34.69 |

*Source: EMSI 2018.4*

**Mid-Peninsula Sub-Region** includes San Francisco and San Mateo Counties

### Job Postings in Bay Region and Mid-Peninsula Sub-Region

**Table 3. Number of Job Postings by Occupation for latest 12 months (Jan 2018 - Dec 2018)**

| Occupation | Bay Region | Mid-Peninsula |
| --- | --- | --- |
| Aircraft Mechanics and Service Technicians | 300 | 76 |

*Source: Burning Glass*

**Table 4. Top Job Titles for Aircraft Powerplant Maintenance Technology Occupations for latest 12 months (Jan 2018 - Dec 2018)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Common Title | Bay | Mid-Peninsula | Common Title | Bay | Mid-Peninsula |
| A & P Mechanic | 65 | 11 | Inspection Services | 3 |  |
| Maintenance Technician | 47 | 13 | 15U Ch - Helicoptor Repairer | 2 |  |
| Aircraft Mechanic | 39 | 3 | Aircraft Technician | 2 | 1 |
| Service Expert | 32 | 17 | Customer A And P Technician | 2 |  |
| Mechanic | 27 | 6 | Customer A And P Technician, Information And Technology Industry | 2 | 1 |
| Service Expert Night | 8 | 4 | Helicopter Repairer | 2 | 1 |
| Line Aircraft Technician | 7 | 1 | Lead Aircraft Technician | 2 |  |
| Aircraft Repairer | 5 | 3 | Mobile A And P Technician | 2 |  |
| Pharmacy Technician | 4 |  | Service Expert - Hill | 2 |  |
| Service Expert - Express | 4 | 3 | Service Expert - Sport | 2 | 2 |
| Service Expert - Ultra | 4 | 3 | Service Expert - Van | 2 |  |
| A And P Technician | 3 |  | Service Expert Night - Alemany Sport | 2 |  |
| Aircraft Equipment Repairer | 3 |  | Service Expert Night - Rheem Blvd Sport | 2 | 2 |
| Developer | 3 |  | Aircraft Powertrain Repairer | 1 |  |

*Source: Burning Glass*

# Industry Concentration

**Table 5. Industries hiring Aircraft Powerplant Maintenance Technology Workers in Bay Region**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Industry – 6 Digit NAICS (No. American Industry Classification) Codes | Jobs in Industry (2017) | Jobs in Industry (2022) | % Change (2017-22) | % in Industry (2017) |
| Scheduled Passenger Air Transportation (481111) | 1,251 | 1,134 | (13%) | 29.8% |
| Other Airport Operations (488119) | 759 | 776 | 18% | 20.4% |
| Federal Government, Military (901200) | 744 | 739 | (2%) | 19.4% |
| Federal Government, Civilian, Excluding Postal Service (901199) | 200 | 200 | 0% | 5.2% |
| Other Support Activities for Air Transportation (488190) | 180 | 186 | 31% | 4.9% |
| Guided Missile and Space Vehicle Manufacturing (336414) | 69 | 69 | 3% | 1.8% |
| Couriers and Express Delivery Services (492110) | 57 | 58 | 2% | 1.5% |
| Temporary Help Services (561320) | 57 | 57 | 9% | 1.5% |
| Ambulance Services (621910) | 48 | 48 | 17% | 1.3% |
| Nonscheduled Chartered Passenger Air Transportation (481211) | 33 | 40 | 12% | 1.0% |

*Source: EMSI 2018.4*

**Table 6. Top Employers Posting Aircraft Powerplant Maintenance Technology Occupations in Bay Region and Mid-Peninsula Sub-Region (Jan 2018 - Dec 2018)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Employer | Bay | Employer | Bay | Employer | Mid-Peninsula |
| 24 Hour Fitness | 57 | Air Medical Group Holdings | 3 | 24 Hour Fitness | 31 |
| US Air Force | 20 | Compass Air Service | 3 | US Army | 5 |
| Delta Air Lines | 18 | Signature Flight Support | 3 | United Parcel Service Incorporated | 5 |
| US Army | 9 | Sound Solutions | 3 | Air Medical Group Holdings | 3 |
| Compass Airlines | 8 | Thales | 3 | Signature Flight Support | 3 |
| Alaska Airlines | 7 | Army National Guard | 2 | Cjs Incorporated | 2 |
| Bombardier | 7 | Cjs Incorporated | 2 | Delta Air Lines | 2 |
| Panasonic | 6 | Hawaiian Airlines | 2 | Hawaiian Airlines | 2 |
| US Department of Defense | 6 | Kitty Hawk | 2 | Siemens | 2 |
| Air National Guard | 5 | Pacific Gas and Electric Company | 2 | Alaska Airlines | 1 |
| Akima Management Services | 5 | Reach Air Medical Service | 2 | Allegiant Travel | 1 |
| United Parcel Service Incorporated | 5 | Reach Medical Holdings | 2 | Attitude Aviation | 1 |
| Aerotek | 4 | Siemens | 2 | Beechcraft Corporation | 1 |
| Menzies Aviation | 4 | 24 Hour Fitness Sutter Montgomery | 1 | Bombardier | 1 |
| Menzies Aviation Plc | 4 | AAR | 1 | Chevron | 1 |
| Nana Regional Corporation | 4 | Aas | 1 | Csra | 1 |
| US Government | 4 | Air Transportation Startup | 1 | DNV GL | 1 |

*Source: Burning Glass*

# Educational Supply

There are three community colleges in the Bay Region issuing 58 awards annually on TOP 0950.20 – Aviation Powerplant Mechanics. City College of San Francisco is the only college in the Mid-Peninsula Sub-Region issuing 26 awards annually on this TOP code.

**Table 7. Awards on TOP 0950.20 – Aviation Powerplant Mechanics in the Bay Region**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| College | Sub-Region | Headcount | Associates | Certificates | Total |
| Alameda | East Bay | 64 |  | 1 | 20 |
| Gavilan | Silicon Valley | 17 |  |  | 12 |
| San Francisco | Mid-Peninsula | 72 |  | 4 | 26 |
| Solano | North Bay | n/a |  | 1 | 0 |
| **Total Bay Region** | | **153** | **0** | **6** | **58** |
| **Total Mid-Peninsula Sub-Region** | | **72** | **0** | **4** | **26** |

# *Source: IPEDS, Data Mart and Launchboard*

NOTE: Headcount of students who took one or more courses is for 2016-17. The annual average for awards is 2014-17 unless there are only awards in 2016-17. The annual average for other postsecondary is for 2013-16.

# Gap Analysis

Based on the data included in this report, there is a large labor market gap in the Bay region with 291 annual openings for Aircraft Powerplant Maintenance Technology occupations and 58 annual awards for an annual undersupply of 233. In the Mid-Peninsula Sub-Region, there is also a gap with 173 annual openings and 26 annual awards for an annual undersupply of 147.

# Student Outcomes

**Table 8. Four Employment Outcomes Metrics for Students Who Took Courses on TOP 0950.20 – Aviation Powerplant Mechanics**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 2015-16 | Bay  (All CTE Programs) | City College of San Francisco (All CTE Programs) | State (0950.20) | Bay (0950.20) | Mid-Peninsula (0950.20) | City College of San Francisco (0950.20) |
| % Employed Four Quarters After Exit | 74% | 72% | 73% | 77% | 80% | 80% |
| Median Quarterly Earnings Two Quarters After Exit | $10,550 | $27,271 | $15,180 | $16,608 | $24,419 | $24,419 |
| Median % Change in Earnings | 46% | 31% | 93% | 66% | 57% | 57% |
| % of Students Earning a Living Wage | 63% | 65% | 57% | 56% | 59% | 59% |

*Source: Launchboard Pipeline (version available on 1/16/19)*

# Skills, Certifications and Education

**Table 9. Top Skills for Aircraft Powerplant Maintenance Technology Occupations in Bay Region (Jan 2018 - Dec 2018)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Skill | Postings | Skill | Postings | Skill | Postings |
| Repair | 201 | Cleaning | 19 | Performance Analysis | 12 |
| Aircraft Maintenance | 104 | Quality Assurance and Control | 19 | Performance Appraisals | 12 |
| Customer Service | 83 | Data Entry | 18 | Taking Messages | 12 |
| Hand Tools | 60 | Schematic Diagrams | 18 | Copying | 11 |
| CPR | 58 | Technical Writing / Editing | 18 | General Aviation | 11 |
| Sales | 57 | Predictive / Preventative Maintenance | 17 | Heavy Lifting | 11 |
| Power Tools | 48 | Machinery | 16 | Airframe and Powerplant | 10 |
| Membership Sales | 46 | Electrical Systems | 15 | Engineering Drawings | 10 |
| Avionics | 43 | Technical Assistance | 15 | Record Keeping | 10 |
| Lifting Ability | 37 | Aerospace Industry Knowledge | 13 | Customer Contact | 9 |
| Test Equipment | 36 | Aviation Regulations | 13 | Equipment Assembly | 9 |
| Plumbing | 22 | Personal Protective Equipment | 13 | Technical Orders | 9 |
| Scheduling | 22 | Appointment Setting | 12 | Wiring | 9 |
| Federal Aviation Regulations | 21 | Automated External Defibrillator | 12 | 5S Methodology | 8 |
| Basic Tools | 19 | Fuel Systems | 12 | Federal Aviation Administration Regulations | 8 |

*Source: Burning Glass*

**Table 10. Certifications for Aircraft Powerplant Maintenance Technology Occupations in the Bay Region (Jan 2018 - Dec 2018)**

Note: 49% of records have been excluded because they do not include a certification. As a result, the chart below may not be representative of the full sample.

|  |  |  |  |
| --- | --- | --- | --- |
| Certification | Postings | Certification | Postings |
| Driver's License | 113 | CA License | 1 |
| Airframe and Powerplant (A and P) Certification | 93 | Certified Pharmacy Technician | 1 |
| Security Clearance | 24 | First Aid Cpr Aed | 1 |
| Business License | 3 | IT Infrastructure Library (ITIL) Certification | 1 |
| General Radiotelephone Operator License | 2 | Wastewater Treatment Certification | 1 |
| Automotive Service Excellence (ASE) Certification | 1 | Wastewater Treatment Plant Operator | 1 |
| Driver's License | 113 | CA License | 1 |

*Source: Burning Glass*

**Table 11. Education Requirements for Aircraft Powerplant Maintenance Technology Occupations in Bay Region**

Note: 48% of records have been excluded because they do not include a degree level. As a result, the chart below may not be representative of the full sample.

|  |  |
| --- | --- |
| Education (minimum advertised) | Latest 12 Mos. Postings |
| High school or vocational training | 151 (97%) |
| Associate Degree | 4 (3%) |
| Bachelor’s Degree or Higher | 0 (0%) |

*Source: Burning Glass*

# Methodology

Occupations for this report were identified by use of skills listed in O\*Net descriptions and job descriptions in Burning Glass. Labor demand data is sourced from Economic Modeling Specialists International (EMSI) occupation data and Burning Glass job postings data. Educational supply and student outcomes data is retrieved from multiple sources, including CTE Launchboard and CCCCO Data Mart.

# Sources

O\*Net Online

Labor Insight/Jobs (Burning Glass)

Economic Modeling Specialists International (EMSI)

CTE LaunchBoard [www.calpassplus.org/Launchboard/](http://www.calpassplus.org/Launchboard/)

Statewide CTE Outcomes Survey

Employment Development Department Unemployment Insurance Dataset

Living Insight Center for Community Economic Development

Chancellor’s Office MIS system

# Contacts

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