

**CLASS SPECIFICATION**

6/10/10

AVIONICS SPECIALIST, CODE 3565

Summary of Duties: An Avionics Specialist is responsible for the installation, calibration, and repair of electronic systems used on aircraft. Duties may include routine electronic maintenance (wiring), new installation and completion projects (R&D), troubleshooting or localizing and diagnosing causes of equipment malfunction, replacement of faulty components, tracing circuitry as well as aligning and adjusting repaired equipment.

Distinguishing Features: Although both classes perform similar functions, an Avionics Specialist is distinguished from a Communications Electrician by the type of equipment involved and the experience required to perform the work operating within the standards of FAA regulations. Avionics Specialists support the design, installation, and maintenance of common avionics systems such as two way radio communications, navigational equipment and instrumentation, autopilot systems, integrated flight systems, flight management systems, video systems (camera, recording, and microwave downlink), and other necessary instrumentation required for flight while Communication Electricians perform skilled work in the installation, construction, repair, maintenance, and modification of a wide variety of ground based communications systems. Avionics Specialists are required to possess a Federal Communications Commission (FCC) General Radiotelephone license while Communications Electricians are not.

Under direct supervision, performs the installation, calibration, and repair of these electronic systems used on aircraft; assignments are structured to provide developmental experience.

Examples of Duties:

- Set up and operate ground support and test equipment to perform functional flight tests of electrical and electronic systems;
- Test and troubleshoot instruments, components, and assemblies, using circuit testers, oscilloscopes, wattmeters, spectrum analyzers and voltmeters;
- Coordinate work with that of mechanics, pilots, engineers, technicians, and other aircraft maintenance personnel;
- Interpret flight test data in order to diagnose malfunctions and systemic performance problems;
- Install electrical and electronic components, assemblies, and systems in aircraft, using hand tools, power tools, and/or soldering irons;
- Adjust, repair, or replace malfunctioning components or assemblies, using hand tools and/or soldering irons;
- Connect components to assemblies such as radio systems, instruments, inverters, and camera systems, using hand tools and soldering irons;

- Assemble components such as switches, electrical controls, and junction boxes, using hand tools and soldering irons;
- Fabricate parts and test aids as required;
- Design and modifications of systems; schematics entry; system testing and repairing; software loading and testing; design and construct test fixtures; understanding of PC's and servers; and assists in the building of prototypes;
- May analyze problems down to the component level on electronic boards
- Recommends system and service improvements;
- Modify obsolete avionics equipment to conform to new standards;
- Conduct operating tests (may include in-flight tests and evaluations);
- Keep work records and makes reports;
- Make schematic drawings of circuit installations and corrects drawings as required;
- Drive an automobile or light truck in performing the work and may drive all-terrain vehicles and snow vehicles into remote areas;
- Work with other avionics or communication crews, technicians from other jurisdictions, contractors, vendors and employees from other City departments; and
- May occasionally be assigned to other duties for training purposes or to meet technological changes or unexpected emergencies.

Qualifications:**Knowledge of:**

- Electricity and electronics;
- Electrical/electronic diagrams and schematic interpretation;
- Pneumatic (Pitot-Static), mechanical (rigging, sheet metal) and electro-mechanical systems (servos, solenoids, motors)
- Arithmetic, algebra, geometry, calculus, statistics, and their applications;
- Circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming;
- Principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction;
- Practical application of engineering science and technology. This includes applying principles, techniques, procedures, and equipment to the design and production of various goods and services;
- Raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture and distribution of goods; and
- Business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.

The ability to:

- Troubleshoot electronics from rudimentary circuits to wideband radios and Integrated Avionics Suites;
- Do detailed work with hands;

- Determine the kind of tools and equipment needed to do a job;
- Combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events);
- Repair machines or systems using the needed tools;
- Work independently among several tasks;
- Keep records of daily activities;
- Read and interpret AutoCAD or similar electrical schematics and diagrams;
- Deal tactfully and effectively with officials and the public;
- Keep records and make reports; and
- Prepare diagrams and sketches.

Minimum Requirements:

1. Four years of full-time paid experience in the installation, calibration, and repair of electronic systems used on aircraft including two-way radio communications, navigational equipment and instrumentation, autopilot systems, integrated flight systems, flight management systems, video systems (camera, recording, and microwave down-link), and other necessary Instrumentation required for flight; **or**
2. Two years of full-time paid experience of the type specified in Requirement #1, **and**:
 - a.) Completion of a certificate program or associate degree program in electronics technology, telecommunications, or computer science at a recognized college or trade school; **or**
 - b.) Successful completion of a U.S. military electronics technical course of 24 weeks or longer within the last 10 years.
3. A valid FCC General Radiotelephone license is required.

License: A valid California driver's license is required.

Physical Requirements:

The ability to make precisely coordinated movements of the fingers of one or both hands to grasp, manipulate, or assemble very small objects.

Strength to perform lifting up to 25 pounds and occasionally over 50 pounds; hand and finger dexterity with both hands; and good eyesight and hearing.

Persons with disabilities may be able to perform the essential duties of this class with reasonable accommodation. Reasonable accommodation will be evaluated on an individual basis and depends in part, on the specific requirements for the job, the limitations related to the disability and the ability of the hiring department to reasonably accommodate the limitations.

As provided in Civil Service Commission Rule 2.6 and Section 4.55 of the Administrative Code, this specification is descriptive, explanatory and not restrictive. It is not intended to declare what all of the duties and responsibilities of any position shall be.