

# JOB DESCRIPTION: Airport Engineer

## **Introduction**

The airport is one of the most vital elements in our air transportation system. A well equipped airport provides a variety of facilities for the aircraft and for crews and passengers. These include runways and taxiways, which may be lighted for day and night use, a terminal building with lounge areas for passengers, ramp areas and hangars for aircraft storage, maintenance shops for aircraft and avionics, automobile parking lots, and possibly restaurants and shops



In the United States, there are about 13,000 airports and 4,000 heliports (landing sites for helicopters). About 5,000 of these landing facilities are used by the public. It may surprise you to learn that only about 650 airports are served by airlines; most of the Nation's airports are used by general aviation pilots and their aircraft. The atmosphere at these airports is usually a lot less hectic and pressured than the environment at a major airport facility.

Some airports are owned by municipalities, states, counties, and cities. Others are operated as privately, owned businesses.

## **Position Description**

Airport engineers analyze survey reports, maps, blueprints and other data. Engineers collect and test soil samples to determine the strength of soil used for a foundation. They use mathematical models to compute various requirements, including load, stress factors and other structural requirements. Engineers review government standards and ensure that construction is compliant with building codes, city ordinances and other government regulations.

The engineer plans, prepares and/or supervises planning studies for improvements, redevelopment and expansion of the airport, public parking facilities, airport roadway systems, ground transportation systems, surveillance systems, checks on plans submitted by architects and contractors, oversees construction, and handles real estate and zoning problems. Responsibilities may also include coordination of engineering activities with Federal, State and local agencies.

Airport engineers apply the theories and techniques of airport engineering as follows: study and advise on airport planning and design, including estimates of traffic, site evaluation and selection, the preparation of master plans, pavement designs and detailed engineering documents and cost estimates; study and advise on airport construction, including the evaluation of contract bids, the evaluation of materials and general work supervision to ensure conformity with plans and specifications; and study and advise on airport operations, including the establishment of preventive maintenance programs for drainage systems, pavements, visual aids and buildings, the inspection of facilities and the implementation of corrective measures as necessary.

The engineer also may direct the maintenance of runways, taxiways, hangars, terminal buildings, and grounds.

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**Education:**

Professional Engineer PE License. Airport engineers must complete an Accreditation Board for Engineering and Technology (ABET) approved bachelor's degree program in civil, mechanical or structural engineering. A 4-year program includes both general education requirements, as well as courses in steel structure analysis, geotechnical engineering and fluid mechanics. Students may also take CAD (computer-aided design) courses and use advanced designing principles to create, analyze and review models.

**Typical Requirements and/or Experience:**

Thorough knowledge of the principles and practices of civil and airport engineering and management. Experience and/or knowledge of design, construction, operation and maintenance of airport facilities including terminals, hangars, airfield lighting, water systems, sewerage, airport roadway systems, ground transportation, traffic control systems, fueling systems, runways and taxiways. Thorough knowledge of airline operating procedures, aircraft operating characteristics, terminal building operation and passenger flow characteristics, airport vehicular access and parking operations. A knowledge of Federal, State and local regulations effecting airport operations; Knowledge and recent experience with FAA regulations, requirements, practices, design criteria and advisory circulars. Airport engineers may also schedule delivery of materials, analyze costs, and provide technical advice in solution of constructions problems. Applicants should also be able to demonstrable airport project experience.

**Links to Specific Airport Engineer Job Information click below:**

<http://www.avjobs.com/careers/detail.asp?RecID=43>

**Links to more Information click below:**

[Airport Layout Planning](#)

[Airport Topo Surveying c-2](#)

[Tier Standard for civil eng](#)

[http://www.faa.gov/about/office\\_org/headquarters\\_offices/ato/service\\_units/systemops/fs/alaskan/alaska/fai/arpt\\_photo/](http://www.faa.gov/about/office_org/headquarters_offices/ato/service_units/systemops/fs/alaskan/alaska/fai/arpt_photo/)

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