

Professional Experience*PRINCIPAL*

Airport Development Group, May, 2001 to Present

ASSOCIATE PRINCIPAL

Airport Development Group, June 1998 to May, 2001

PROJECT MANAGER

Airport Development Group, April 1996 to June 1998

PROJECT ENGINEER

Airport Development Group, October, 1995 to April, 1996

AIRPORT ENGINEER

Airport Development Group, May 1992 to October, 1995

ELECTRICAL ENGINEER

US Air Force, September 1987 to May, 1992

Education

Bachelor of Science - Electrical Engineering - Colorado State University, 1987

Post Graduate Study in Electrical Engineering - Colorado State University

Professional Affiliations

Illuminating Engineering Society, Aviation Committee

Institute for Electrical and Electronic Engineers, Power Systems

Registrations

Professional Engineer, 1994; Alabama, Colorado, Kansas, Mississippi, Nebraska,

Professional Summary

Mr. Hartshorn provides all aspects of electrical design and construction engineering at ADG. His responsibilities include development of electrical calculations to determine connected load and energy usage, preparation of airfield lighting, automated weather observing system, runway surface sensor system and NAVAID layouts, lighting plans for aircraft and vehicle parking areas, and other specialty work such as automatic gates. Mr. Hartshorn is also responsible for procurement of airport specific equipment such as aircraft rescue and fire fighting vehicles and their auxiliary equipment; airport vacuum and towed sweepers; snow removal equipment including displacement plows, rotary plows, high-speed brooms, sander/deicers trucks; and other equipment.

Mr. Hartshorn works with ADG engineering technicians to develop a comprehensive set of plans and specifications for the project. He ensures proper coordination between specification and drawing as well as compliance with FAA siting criteria, national standards, and local requirements. During this period, he continually looks for alternative methods and materials that can be used to help keep project costs down while improving the overall quality. Mr. Hartshorn normally provides on-site construction inspection on a part-time basis, which is typical of federally funded airfield lighting projects. He complements this by maintaining extensive telephone contact with both airport and contractor personnel to ensure the project is completed on time and under budget.

Featured Projects*Airfield Lighting, Visual Aids, and Equipment, Wendover Airfield, Utah*

Projects include installation of all new airfield lighting systems, replacement of the airport beacon, construction and expansion of the airfield lighting vault, Installation of all new airfield visual aids and signs, construction of perimeter fence and access gates, construction of an equipment storage building, and acquisition of an Index B ARFF truck and an airport regenerative air sweeper.

Replace Airfield Lighting, Rock Springs – Sweetwater County Airport, Wyoming

In four consecutive projects, the entire airfield lighting system, including the power and control systems, was replaced. The work featured new taxiway and crosswind lighting using precast light bases and plowed duct, replacement of the main runway lighting system reusing the in-place duct and light bases, new visual aids, reconfiguration of the airfield lighting vault and a new backup generator system for the terminal building and airfield.

Replace Airfield Lighting, Stennis International Airport, Mississippi

This work culminated with the complete replacement of edge lights, signs, visual aids, and AWOS subsequent to Hurricane Katrina. Previous projects had replaced much of the lighting systems and installed airfield lighting on light bases with cables in direct burial conduit, as well as provided an airfield lighting backup power system. Base mounting allowed rapid replacement of lighting systems.

Featured Projects*Airfield Lighting Upgrade, Lawrence Municipal Airport, Kansas*

This work was completed during total rehabilitation/reconstruction of the airfield pavements. As the work progressed, the existing direct burial cable, stake mount runway and taxiway lighting systems were replaced with lights on bases and cable in conduit. Conduits were plowed in, to eliminate trenches and reduce operational impact. Similarly, light bases were precast, allowing quick install and reducing construction traffic. Three new PAPI systems, REILs, and supplemental wind cones were also installed. Finally, the airfield lighting power and control systems were relocated to a new, centrally located lighting vault.

Relocate ILS, MALSR, ASOS, and PAPI, Lawrence Municipal Airport, Kansas

As part of a runway extension project, itself part of a complete airfield reconstruction, FAA-owned ILS components were relocated using AIP funds. The project achieved substantial cost savings over historic pricing.

Apron Flood Lighting, Various Airports

Designed apron and parking lot lighting systems with multi-level lighting for high and low activity periods, glare protection, and maximum light reach across aprons. Designs emphasized reliability and simplicity, reducing service calls and extending lifetimes.

Perimeter Fence and Gates Various Airports

Designed perimeter and security fences for landside-airside separation and wildlife protection. Designed stand alone and master controlled access gates using wired and wireless control systems and both cantilever and vertical pivot gates.

Air Traffic Control Tower Siting Studies, Various Airports

Prepare shadow diagrams, line of sight studies, minimum viewing angle calculations, and comparative analysis of multiple potential ATCT locations on airports. Prepare cost estimates, site scoring, and narrative reports. Coordinate analysis of FAA and NWS owned equipment impacts, including AWOS/ASOS, ILS (missed approach and surface penetrations), and radars

Airport Buildings, Various Airports

Designed electrical and communication systems for a variety of airport structures, from T-hangars to large executive hangars with thousands of square feet of office space.

Backup Power Systems, Various Airports

Designed airfield lighting backup power systems for several airports. Projects included standalone airfield generators and generators integrated to the terminal building, apron floodlighting, and auto parking areas. Projects included exterior units and interior systems both in new and existing facilities.

Relocate ASOS, Various Airports, Federal ASOS equipment relocation work associated with runway extensions and relocations. Coordination with FAA and NOAA/NWS personnel. Cost of projects was approximately half of historic pricing.