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## My Candidacy For Summer Internship At BNSF Railway

The Whitacre College of Engineering at Texas Tech University held their Fall 2018 Job Fair on September 19. 215 different companies attended the event looking for potential employees. Of those in attendance, many interested me, including L3 Technologies, Bell Helicopter and BNSF Railway. L3 ISR Systems Greenville is a sector of L3 Technologies based out of Greenville, TX. The company primarily works in the maintenance and modernization of aircraft and the development of special mission systems for both commercial and military applications.

L3 Greenville is a leader in complete systems integration, electronic countermeasures, sensor development, signal processing, and aircraft self-protection. It offers various products including Manned Airborne ISR, Viewpoint HD, the RIO SIGINT Software Suite, and the SPYDR Small Manned ISR Platform. Its services include electronics, electrical and mechanical manufacturing, electromagnetic effects testing, an EW flight test range, modeling and simulation and operations analysis, and aircraft paint facilities among various other engineering services. As such, L3 Greenville hires employees with degrees in electrical, mechanical, aerospace, construction, civil engineering. The Sustainment Engineering division, which hires both mechanical and aerospace engineers, especially caught my interest. The division works hands-on with the planes to quickly engineer solutions for any problems that arise. After college, I would like to work in design for defense or military contracting. Thus, I think a co-op position in Sustainment Engineering at L3 would be a fantastic opportunity.

Bell Helicopter also attended the Job Fair. A pioneer in the helicopter industry, Bell made its name creating life-saving aircraft for military and commercial use. From search and rescue missions to business travel, Bell revolutionizes vertical take-off and lift. As such, Bell hires employees with degrees in mechanical, chemical, materials, aviation technology, aerospace, civil, electrical, manufacturing, software, and computer engineering. Their diverse job titles range from Simulation Software Engineers to Fatigue and Fracture Analysis Engineers to Metal Additive Manufacturing Engineers. Bell Helicopter has offices world-wide with major facilities in the United States (Piney Flats, TN, Lafayette, LA, Fort Worth, TX, and Amarillo, TX), Mirabel, Canada, Prague, Czech Republic, and Singapore. Bell offers a variety of opportunities for engineers in the design and development of cutting-edge technologies.

Lastly, BNSF Railway attended the Job Fair as well. One of North America's largest railroads, BNSF, headquartered in Fort Worth, TX, serves three Canadian provinces and the western two-thirds of the United States. Employing 41,000 people, BNSF designs, builds, and operates 32,500 route miles using 8,000 locomotives at an average of 1,400 trains per day. Although personnel with degrees in any engineering discipline are hired, general, mechanical, industrial, civil, and electrical engineers are preferred. These engineers develop efficient ways of freight transportation that use significantly less fuel and produce fewer emissions than a highway alternative. Agriculturally, BNSF hauls enough grain to supply 900 million people with a year's supply of bread in 1.1 million carloads of agricultural commodities (2017 statistics). Commercially, 5.4 million truck trailers or containers, 1.8 million carloads of industrial products and 1.9 million coal shipments were transported via rail instead of road in 2017. In fact, BNSF hauls enough coal to power one out of every twelve American homes. As transporting necessary products and materials to feed, clothe, supply and power communities throughout

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the USA and Canada is a vital part of modern society, BNSF Railway helps the United States remain a world leader in imports and exports. To be a part of such an essential component in our nation's industry would provide valuable experience and understanding of the design, construction, and operation of a large-scale project.

At the Job Fair, I made a point to speak with a BNSF Railway representative about internships. The recruiter relayed valuable information that will help my application stand out. BNSF engineering internships require a certain type of student. Commonly, sophomore and junior Engineering major students are accepted as summer interns. Freshmen are never employed and graduating seniors do not head into the workforce seeking internships over full-time employment. In addition, students without Engineering or Construction Management majors can be accepted, but it is rare due to the differences in coursework and knowledge.

Besides class and major, the other required attribute of students looking for an engineering internship at BNSF is GPA. Interns must have a 2.70 or higher cumulative GPA if majoring in Engineering or Construction Management. If not majoring in an Engineering degree, the intern must have a 3.0 or higher GPA. No specific courses besides those required for an engineering degree are recommended for interns.

Other than academics, leadership experience also stands out to BNSF recruiters. As referenced above, there is a significant advantage for collegiate students pursuing an Engineering degree over other majors. Also, as most engineers at BNSF are in positions of management and authority, any leadership experience is looked highly upon. This experience can be anything ranging from the captain of a sports team to the president of the robotics club.

The final recommendation for applicants of BNSF's summer internships is flexibility. As the company's rails spread across the United States west of the Mississippi River, it is common for interns to be placed away from their hometown. Thus, it reflects well on an applicant and gives them more opportunities if they are willing to relocate for the duration of the internship.

Overall, a well-rounded, ambitious engineering student is the prime candidate for a summer internship at BNSF Railway.