



winning projects

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My internship is with Williams International (WI), a world renowned turbine engine designer. This internship has given me many opportunities to demonstrate my abilities and provide experience in finding solutions to real world problems. I've worked on numerous project for WI that have challenged my abilities. Here is an example of one that stands out.

WI has a forklift attachment used to grab and rotate barrels. We call it the barrel dumper. The barrel dumper has a very large handheld pendant used to control its movements. During operation, the pendant cable would get caught on nearby objects and sometimes the pendant would fall, many times breaking switches or disconnecting wires requiring a maintenance technician to repair it. A more robust solution was needed. I was asked to implement a wireless solution, thereby eliminating the pendant and the attached cord.

I found a wireless demonstration board from Lynx Technologies. The compatible transmitters were inexpensive at less than \$20 each. I was able to design the relay board used to simulate the switches in the pendant. The relay board, shown in the picture, accepts signals from the Lynx development board, applies some user defined logic, and closes the appropriate relays. The control logic is stored on an inexpensive programmable logic chip. What makes this solution exciting is the relay board can be used for any small scale logic needed and it's small enough to fit in a 4x6x2 box. It uses very little power allowing it run from batteries for an extended period of time. The solution was very successful and I am currently assembling another device for our other barrel dumper.