

Honeywell International Inc.
Honeywell Aerospace
11100 N. Oracle Road
Tucson, AZ 85737-9588
520-469-1000

7 August, 2012

Human Resources or Hiring Manager

Dear Sir or Madam:

This letter is a recommendation of Patrick William Joyce for the job he is applying for.

My experience with Patrick was during his senior design project as a Bachelor of Science in Mechanical Engineering student at the University of Arizona. This was during the fall semester of 2011 and the spring semester of 2012.

During the senior design project, I gave the team a set of design requirements to build a new-concept thrust recovery outflow valve for use on aircraft cabin pressure control systems. The valve exhausts air at sonic speeds during operation and creating thrust force with a simpler single bi-fold door design than previous valves. The problem statement was to maintain these features while designing for no acoustic tonal noise, providing sealing around the movable valve door hinge, and still achieving adequate thrust recovery. I provided a conceptual idea for this as a starting point.

Patrick's team conceived, designed, analyzed, fabricated, and ultimately tested this thrust recovery valve successfully. The team took my concept and studied it, but came up with an entirely different design that improved upon my concept in every way. They solved several problems with torque, sealing, and valve sonic flow nozzle design while working within certain constraints such as maximum weight and drive torque. The team won the "Best Aerospace Design" award at the final Design Day competition.

Patrick served multiple roles within the team as the project progressed. His primary role was as the primary mechanical designer. In this role he was creative and very fast, leaning on his past experiences with 3-dimensional design tools. Further, he performed machining on most of the parts, including programming the computer aided operations. Patrick always had a "can do" attitude and was a lot of fun to work with because of his creativity and willingness to listen and try out new ideas.

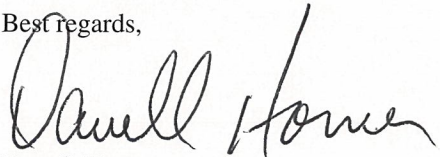
During this process, the team was on schedule, under budget, and satisfied all of the University of Arizona's and Honeywell requirements.

In my role at Honeywell, I have sponsored a multitude of senior design projects, and have never been more satisfied with any team's efforts throughout the requirements definition, development, and test process. Patrick was key to the team's success and was very much appreciated by myself and Honeywell.

Please consider Patrick as a viable candidate for the subject job.

If you have any questions that I can answer, please call me and we can discuss this further.

Best regards,



Darrell Horner
Chief Engineer
Cabin Pressure Control Systems
Honeywell Aerospace