

## Pacific Helmets – Drop Testing

In-house Testing Systems for Safety Helmets Speeds up Product Development Cycle



### Background

Wanganui based Pacific Helmets is owned by CEO David Bennett and his wife Marion, who have owned the company since 1982. Initially the factory was built to manufacture motorcycle helmets for the Australasian market. By the mid 1980s Pacific Helmets had won the tender to produce fire helmets for the NZ Fire Service and now the product range is almost entirely focused on safety helmets for emergency services around the world. The company has a full quality assurance programme which is certified to ISO 9001.

Over the last 20 years, the company has built up a distribution network in approximately 50 countries, and in excess of 90% of its production is exported.

Pacific Helmets employs up to 80 staff and this year expects to manufacture around 70,000 helmets of all types, rising in the next two years to possibly 100,000 units.

### The Challenge

Pacific Helmets required assistance with developing a drop testing system for their helmets so they could complete batch testing in New Zealand before sending them overseas to clients. Previously helmets were sent to the UK for testing.

The existing computerised testing set up was installed about four years ago, and had crashed. Even when it was fully functional, the system didn't fully meet the needs of the company and was not user friendly in its operation.



Figure 1: An example of a Pacific Helmets product tested in the new facility

The company commissioned Nightside to put together a new computer based package for monitoring and drop testing their full range of helmets. The helmets need to meet up to four different international standards, and the testing was also required for Pacific Helmets' own internal R & D

### The Solution

Nightside used National Instruments and LabView technology to create a system that accurately records and displays the impact of drop testing on each helmet. The system captures the data, which is displayed in graph form and also produces a print out that shows a Pass or a Fail for each of the four international standards that have to be met by the helmets the company manufactures.

According to engineering manager Glen Spink, the system is extremely easy to use, with simple drop-down menus to navigate through the different standards and types of tests being done.

"After just one minute of instruction, our managing director was able to sit down and run a test using the new system," he commented. "With our old system, the

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staff running the testing were closeted away in their own little world that no-one else could run or understand."

## Results

As a direct result of the new system fully meeting all expectations, Pacific Helmets is now investing further in creating a stand alone test laboratory that will be a significant improvement on the previous situation, where all testing for research and development purposes was being sent to a lab in the United Kingdom, costing many pounds per test, and taking up to two months before results came back. Now all testing can be done on the premises, enabling the product development cycle to be dramatically shortened.

Because of the successful outcome of this project, Pacific Helmets is now working with Nightside on other product testing projects.

Glen says that the benefits of working with Nightside include the fact that the company has delivered exactly what was asked for, the performance of the system has been flawless, and Nightside's staff have the ability to design systems that take into account the varying levels of Pacific Helmets' test expertise.

"Everything is very easy to use, even for people like myself who are not highly computer literate. We recently needed to make a modification to the system and Nightside were able to talk me through the required changes over the phone – it was done in an hour."

Glen commented that he would recommend Nightside to any other customers without hesitation.

"It's almost an anomaly to find a company that delivers so well on exactly what we required – it shouldn't be that way, but too often we pay thousands of dollars to experts who fail to deliver. Nightside have given us exactly what we needed, drawing on their experience with similar set ups and it has worked flawlessly from day one."



Figure 2: Peter Brown with the NI CompactDAQ used for the project

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