

# Case study

## Computer modelling to assist police

### THE CHALLENGE

As part of specialist officer recruitment tests, particularly Close Protection Officer roles, the Police Service of Northern Ireland (PSNI) need to assess the physical strength of potential candidates when performing a range of job-related physical tasks.

To optimise their recruitment tests, and improve the high standards of care they already provide for their officers, the PSNI needed to understand the likely levels of force which these officers are likely to experience in their specialist roles. Frazer-Nash was therefore tasked to provide this analysis.

### OUR SOLUTION

We conducted a series of detailed dynamic analyses, spanning the range of scenarios in which a specialist officer is expected to exert pushing or pulling forces.

We conducted this analysis using our bespoke "DYNAMAN" human modelling software to accurately represent the 'push' and 'pull' force which a police officer needed to apply (Fig 1). This highly developed software has in the past been used to simulate the human effects of explosion modelling. From these tests, a maximum expected force level was calculated which in turn, could be programmed into the PSNI's force testing machine as a test standard.

### BENEFITS

Our advanced computer modelling capabilities have enabled the PSNI to test the human response, without putting actual people through a trial. This enables accurate and consistent measurements to be collated, without enduring the risk, cost or time associated with real life trials.

John Henderson, Director of Physical and Health Education at the Police Service of Northern Ireland, commented: "Physical strength is a key attribute in the recruitment and training of Close Protection officers. However, the means by which prospective staff are tested, and ensuring that this happens in a safe and fair way to all applicants as possible, is equally important.

Frazer-Nash' modelling capabilities have allowed the PSNI to further refine our recruitment processes and guarantees that we meet our duty of care to prospective employees".

### Client

Police Service of Northern Ireland (PSNI)

### Business need

To understand the physical strength required of police officers.

### Why Frazer-Nash?

Our bespoke human modelling capabilities are used to accurately and realistically simulate how the human body interacts with a range of external forces. It has been successfully applied to a diverse range of scenarios, including escalator safety and explosion modelling.

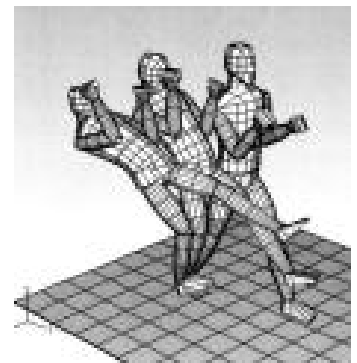


Figure 1: DYNAMAN human modelling software

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