

# LOAD MONITORING FOR SPORTS ARENAS

## OVERVIEW

A community ice rink and ice hockey facility required a screen and scoreboard display. This had to be suspended from a supporting roof structure, which required a safe lifting system, including load cells for correct weight distribution and balance.

## THE APPLICATION

An aluminum structure supporting four LED screen displays was to be permanently suspended over the ice rink from the roof superstructure. Lifting power was provided by four independent 2 ton electric chain hoists. Final suspension was provided by adjustable static rigging hardware pre-installed in the roof beams.

## THE RISK

The aluminum screen structure was suspended by rated lifting points on each corner. Should one hoist not support its equal part of the load, that corner would drop and the structure would tilt, grossly overloading those two opposite suspension points.

## THE SOLUTION

The structure was lifted on four chain hoists. To ensure each hoist was supporting the required share of the load, BroadWeigh load cell shackles were placed between the four lifting hoists and the aluminum structure's lifting points.

The load data from each cell was displayed on a computer screen. Each hoist was energised individually until all four hoists were supporting their correct portion of the weight, as displayed on the computer.

Once the load was suitably balanced, all four hoists lifted the structure and screens to the correct trim height. Then the structure was connected to the permanent rigging hardware with a second set of BroadWeigh load cells.

Adjustments were made to ensure the load was suitably balanced on all four points and it was then lowered onto the permanent suspension points. Once the correct length for each suspension leg was set and the four LED screen displays were in place, the chain hoists and load cells were removed from the permanent suspension hardware.

This procedure and load monitoring equipment provides a safer lifting operation for sports arena display systems, score boards and other suspended equipment. In addition, this solution can be utilised for various other lifting operations involving the balancing of multiple hoists or winches, which is especially useful in load monitoring for sports arenas.

