



PEDESTRIAN WALKWAY

Delivering A Safe, Movable Ferry Bridge
On-Time With Nook Ball Screw Jacks

Isleburn Mackay & Macleod Ltd. designs and fabricates systems and components for large marine-based structures. Recently, the firm won a contract to design and manufacture a movable, covered, pedestrian walkway at the Aberdeen Ferry Terminal in Aberdeen, Scotland. The Northlink Ferry Company operates a daily ferry, which transports passengers and automobiles back and forth between Aberdeen and the Shetland Islands, and needed an adjustable pedestrian bridge that could be raised and lowered to connect with ferries at different tidal levels and provide passengers with a safe, enclosed means for boarding and disembarking ships.

According to Stuart Kydd, Project and Systems Manager at Isleburn Mackay & Macleod, the Aberdeen Ferry Terminal walkway project was particularly challenging because of the dramatic range in ocean tides that are possible at Aberdeen, the heavy loads involved, and more stringent safety requirements. “The tide differential at Aberdeen – the difference between high and low tide – can be as much as 20 feet,” Kydd explains. “The walkway design not only had to address this wide tidal range but also had to support loads of up to 50 tons. Safety regulations governing the design of ferries and terminals have also increased dramatically in recent years. Our design had to be safe, strong, and highly movable.”



(Above) Isleburn Mackay & Macleod completed the preferred design for the Aberdeen Ferry Bridge by using Nook 50-ton ball screw jacks with 26-foot lifting shafts.

Travel Length Over 20 Feet

As the ferry walkway work progressed, Isleburn Mackay & Macleod engineers encountered a problem involving an appropriate system for safely raising and lowering the eight-foot-wide walkway platform across distances of more than 20 feet. “Our client (the terminal architect) had specified the use of machine screw jacks,” Kydd says. “However, with such a heavy load and such long travel lengths, following that approach would have greatly compromised safety.”

The company’s engineers decided to use 50-ton ball screw jacks to raise and lower two of the three sections of the covered walkway but initially could not find a supplier that could produce jacks with such long lifting shafts fast enough to meet the firm’s tight deadlines. The jack used on the final section of the walkway moves a total of 26 feet, and two other jacks that are used on the middle section of the walkway move a total of

- Achieved 26 feet of travel under heavy load.
- Maintained high safety factor in design.
- Overcame pressing time demands.
- Completed project on time and under budget.

Isleburn Mackay & Macleod Ltd. designs and fabricates systems and components for large marine-based structures. The company recently won a contract to design and manufacture a movable, covered walkway at the Aberdeen Ferry Terminal in Aberdeen, Scotland. In completing the project, the firm struggled to find 50-ton ball screw jacks with long lifting shafts.

The company found Nook on the Internet and selected Nook ball screw jacks because of Nook’s ability to produce very long lifting shafts on 50-ton jacks, deliver the jacks on time and within budget, and provide a high level of service. By choosing Nook ball screw jacks, the firm achieved 26 feet of travel under heavy load, maintained a high safety factor, overcame pressing deadlines, and successfully completed the project on time and within budget.

16 feet. Isleburn Mackay & Macleod needed to locate a supplier that could deliver such uniquely configured ball screw jacks in just 14 weeks.

"We initially struggled in our efforts to find a supplier that could produce the jacks within such a short time frame," Kydd recalls. "We had begun contemplating the option of redesigning the walkway with a winch system as the lifting mechanism, an approach that would have been more costly and contrary to the architect's wishes, when we discovered Nook Industries."

Finding A Solution Via The Web

After failing to identify a supplier that could handle the ball screw jack job within the tight time frame specified, engineers began looking outside the UK for a viable supplier. A search for "ball screw jacks" on the Internet led to a link to the Nook Industries web site (www.nookindustries.com).

"We found Nook on the Internet, downloaded their product catalog, and sent an email inquiring about the company's ability to produce the jacks by our delivery date," Kydd recalls. "Nook responded very quickly with a quote and a commitment to meet our delivery date. Nook was also the only vendor we contacted that could handle the long-lifting shafts of 26 feet and deliver the ball screw jacks on time and within our budget."

Isleburn Mackay & Macleod engineers downloaded AutoCAD® files (engineering drawings) of designs for these unique 50-ton ball screw jacks from the Nook Industries web site, imported the drawings into the overall design, and awaited the delivery date.

Fast Delivery Kept Project On Time, Within Budget

Nook Industries met its delivery date and helped Isleburn Mackay & Macleod complete the ferry walkway project on time and within the allotted budget. The adjustable ferry walkway went into operation at the Aberdeen Ferry Terminal in February 2003 and has performed as designed.

"We received the ball screw jacks exactly on the delivery date promised," Kydd notes. "The high level of service and support we received from Nook Industries helped us to complete this project successfully... Now, when we need heavy-duty ball screw jacks with very long lifting shafts, we immediately know where to look."



(Above) Isleburn Mackay & Macleod used the Internet to download engineering drawings of the Nook 50-ton ball jacks they needed to complete the Aberdeen Ferry Bridge.



Isleburn Mackay & Macleod Ltd.

An Isleburn Group subsidiary, Isleburn Mackay & Macleod Ltd. is a leading large-scale design, engineering, fabrication, and manufacturing firm serving the engineering, construction, and oil and gas drilling industries worldwide. In recent years, the company has established a reputation for expertise in designing and fabricating systems and components for large marine-based structures, such as offshore oil platforms, ship and ferry terminals, and sub sea manifolds and pipelines. Based in Scotland, the company has two manufacturing locations (Evanton and Invergordon) and three load-out facilities with deep-water berths of up to 12 meters at LAT and a maximum load capability of 1,000 tons.



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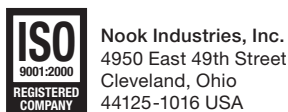
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