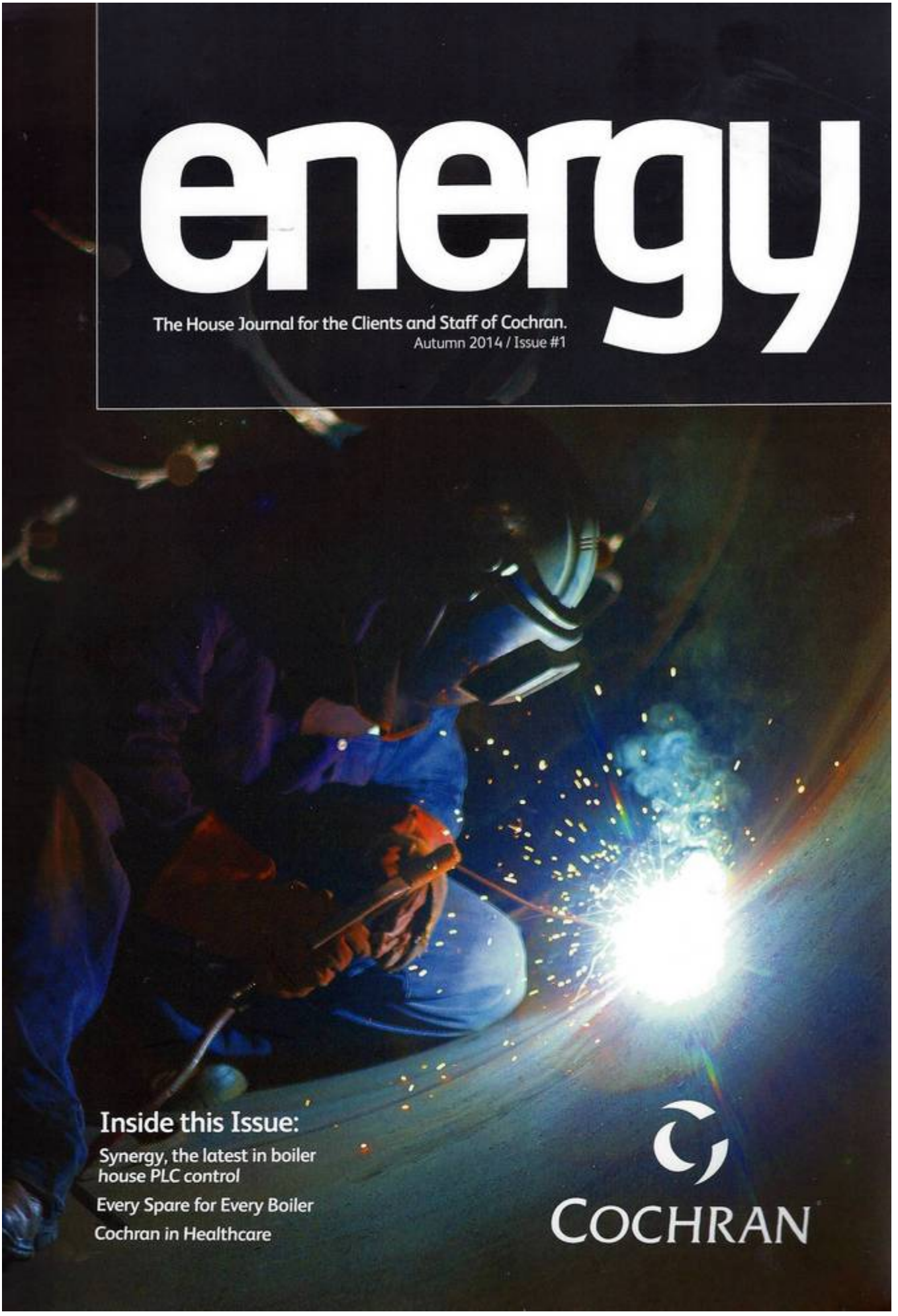
energy

The House Journal for the Clients and Staff of Cochran.

Autumn 2014 / Issue #1



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COCHRAN

135 Illustrious Years of Engineering History

IT WAS VISIONARY BRITISH ENTREPRENEURIALISM that saw the formation of Cochran, breaking new ground during the golden age of Victorian engineering excellence. The firm's founders were key innovators - prime movers who made waves in a time when Great Britain was the industrial powerhouse of the world.

Unafraid to challenge convention, their work was nothing less than pioneering, first in the building of ships, and then, most crucially in the construction of industrial boilers. Their legacy lives on in all that Cochran does, as the Company and reputation for quality and reliability that they created continues to evolve through innovation, just as it did from its earliest days.

Formation of the Company

It was in 1878 that James Taylor Cochran and partner Edward Crompton established the Cochran & Co engineering works, at Birkenhead on Merseyside. History has proven that forging an alliance with Crompton was the cleverest move Cochran could have made for his fledgling firm. It was the innovative Crompton who actually invented what was to become the globally famous Cochran boiler, turning the world of boiler design on its head in the process.

The key feature of his new design was the introduction of horizontal fire-tubes into a vertical cylindrical shell by means of flanged tube plates, a design first showcased at the 1878 Royal Agricultural Show in Bristol, during the Company's inaugural year. The new design combined all the compactness of a vertical unit with the improved efficiency of a tubular boiler. Unlike many static boilers of the time, the firebox was integral and, with the chimney simply bolting to the side, the unit formed a complete package, giving the user all the advantages of easily portable steam power.

Cochran's new boiler quickly earned its reputation for reliability and, by the early 1900s, almost every steamship afloat had a Cochran boiler fitted as an auxiliary to their main boiler. Indeed, such was the boiler's vast impact on the market that, by 1881, no fewer than four other firms were manufacturing them under licence.

A Golden Era

It was a golden era for Cochran; the boiler building business was booming, while engine and shipbuilding prospered too. In addition to breaking new ground in boilers, the firm remained innovators in shipbuilding. Perhaps the most famous Cochran maritime innovation was 'Resurgam', the world's first powered submarine.

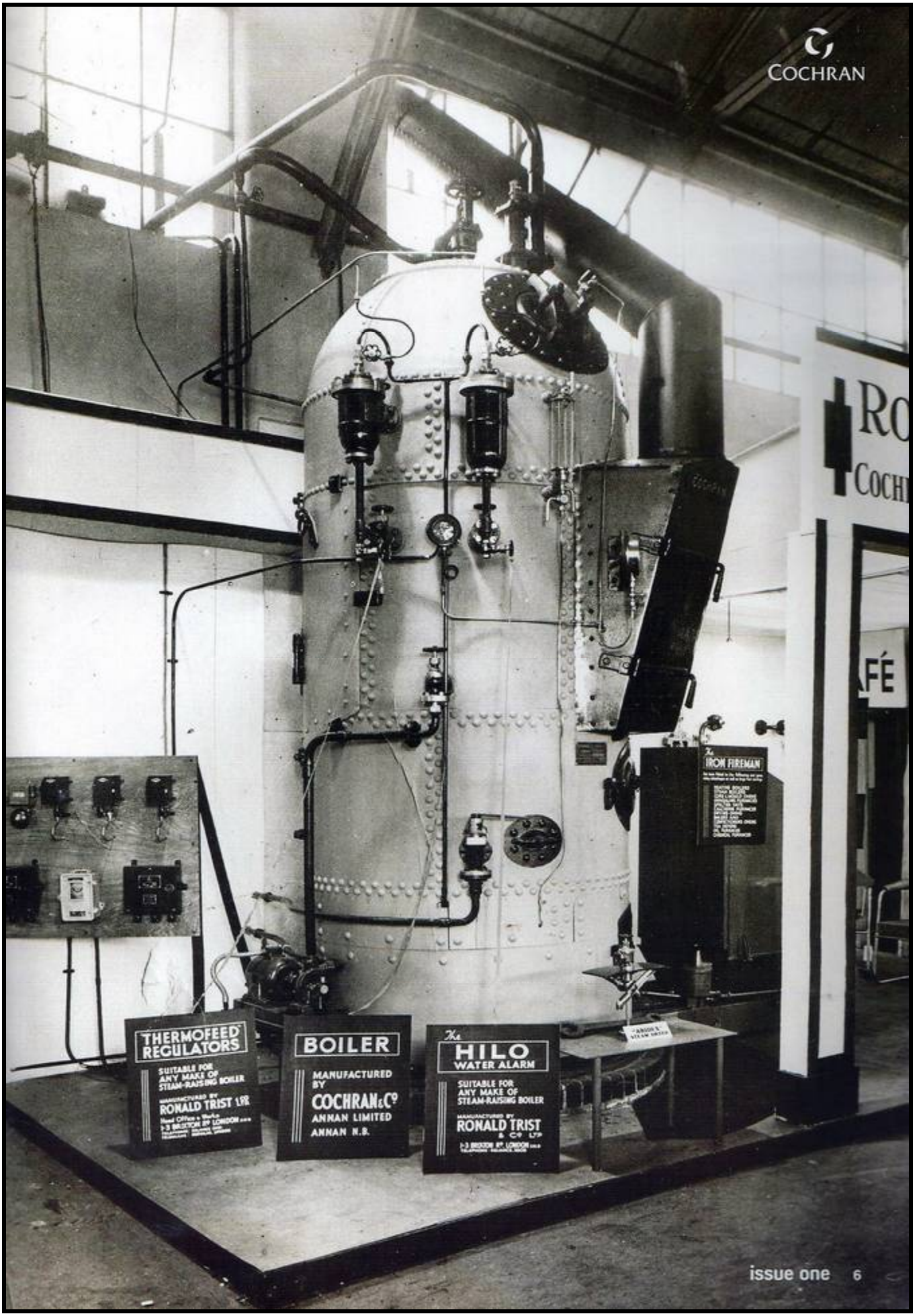
With growing repeat orders and ever-increasing demand - particularly for the Cochran Donkey boiler - Cochran found it was becoming more and more difficult to work from its Birkenhead base. The cramped conditions of the Mersey basin prompted Cochran and Crompton to make their historic decision to search for a new site - one that could meet the demands of their expanding workload.

The Move North

A new 52 acre location was identified at Newbie, at the mouth of the River Annan, just downstream of the Dumfriesshire town of the same name on the north side of the Solway Firth. With plenty of room to expand and slipways suitable for the small ships that the Company constructed, the switch to South West Scotland was an ideal choice.

A new company, 'Cochran & Co, Annan Limited', was registered in 1898 and the little town of Annan has been home to world-class boilermaking ever since.

Initially, the shipbuilding and boiler businesses continued side by side, with more than 20 vessels launched from the Newbie slipways. Whilst most of them were destined for the new markets opening up in Africa and South America, the Company still built ships for the demanding domestic market. This included the 700 tonne twin-screw luggage steamer Seacombe, which was put to work on the River Mersey close to Cochran's original Birkenhead home.


COCHRAN
THERMOFEED REGULATORS
SUITABLE FOR ANY MAKE OF STEAM-RAISING BOILER
RONALD TRIST
BOILER
MANUFACTURED BY
COCHRAN & Co
ANNAN LIMITED
ANNAN N.B.
The HILO WATER ALARM
SUITABLE FOR ANY MAKE OF STEAM-RAISING BOILER
RONALD TRIST
IRON FIREMAN

Engineering History

With the boiler business proving the most lucrative, Executives decided to cease shipbuilding in 1901. However, the Newbie slipway that had been vital for launching ships, proved perfect for floating out the massive products that engineers would go on to build.

The Old Guard Depart

In 1902 both Cochran and Crompton retired after 24 years of engineering innovation and success. A reorganisation of the business followed in 1904. The next 20 years of sustained expansion was led by Harry Llewelyn Davis as Chairman and Managing Director. His board members were John Hart Bellusher and Charles Edward Crompton, a nephew of Cochran's famous boiler designer.

Cochran's compact vertical unit became firmly established as 'the boiler of choice' on cargo vessels, generating high pressure steam to power deck-mounted lifting gear. With a vast export market, orders flooded in from every part of the world, but Cochran design engineers remained constantly busy developing the innovations that kept the Company firmly in its place at the forefront of the market.

War Looms

As war loomed in 1913, the Company embarked on special oil-firing trials to ensure optimum technical performance for the emerging fuel of choice in raising steam. Every other fuel type was also monitored, with furnaces adapted to burn almost any fuel, including coal, coke, wood and wood waste gas, as well as the sugar cane refuse known as 'bagasse'.

During the four years of World War I Cochran production was controlled by the British Admiralty. New developments were put on hold as the nation fought for survival. Tried and tested units were sent out for a wide range of important wartime uses. However, new products soon followed in the post war years.

Cochran moved into pressure vessel manufacturing in 1928 as demand for Steam Accumulators grew. The largest vessels of that time - 'Ruth Accumulators' - were 75 feet long, more than 11 feet in diameter, weighing in excess of 100 tonnes. They were capable of working at an impressive 250 psi. The Company went on to forge a place as one of the country's leading fabricators in the accumulator field, producing vessels for the petrochem, concrete and papermaking industries until 1970, when Executives decided to re-focus the business once again on industrial boiler production.

Focused Back on Boilers

Technological advances in the field enabled Cochran to make the most of new opportunities, particularly those brought by the invention of the famous Sinuflo Tube. This design, pioneered by Cochran massively improved the efficiency of the boilers by increasing the heat transfer along the tubes' whole length.

Sinuflo technology spawned the creation of the Cochran Economic boiler. Launched in 1940, it boasted an induced draught fan, large combustion chamber and exceptional internal accessibility - ushering in yet another step-change in boiler design.

Cochran remained at the fore throughout the post-war emergence of demands for improved boiler efficiency, compactness and automatic operation. This new, modern era of industrial boiler design led to the creation of the Cochran Series Two vertical boiler, which went on to be built and installed in large numbers by the Company. Launched in 1959, it featured a thermal efficiency in excess of 80%. In addition to delivering greater output and providing automatic operation, it was capable of being fired on both liquid and solid fuels.

In the 1960s a new range of horizontal packaged boilers were developed; led by the Chieftain range which were fitted with matched Cochran Combustion Equipment, which has gone on to become a groundbreaking classic of industrial steam and hot water generation.

The Chieftain was initially introduced to produce steam, but high pressure hot water versions were soon added. Rapidly proving to be an industry leader, the range was strengthened in the following years by the Clansman, Thermax and Multipac designs, products which have been hugely successful.

A New Era

Although the principles of boiler design remain true to Crompton's original concept, recent years have seen the development and evolution of the Cochran range to improve efficency and environmental performance.

Today, boilers leaving the factory are fitted with the latest Cochran combustion equipment - specially designed to minimise emissions of greenhouse gasses, and are operated using the latest micro processor and PLC controls, coupled with touchscreen interfaces.

Most modern Cochran Boilers are also now fitted with efficiency boosting economisers. These make use of the heat going up the chimney to pre-heat the boiler feed water, enabling the Cochran range to deliver efficiency in excess of 95% - levels that Crompton could never have dreamt achievable.

The Cochran range of green products now also includes biomass boilers and a bespoke range of heat recovery boilers that generate steam from the waste heat generated by turbines, engines and other processes - dramatically increasing the overall efficiency of systems.

A Bright Future

Today, some 135 years after its formation, Cochran remains at the forefront of boiler design and production, with new engineering advances regularly boosting the world beating status of the Company's products.

Through various different ownerships, Cochran remains in a steadfastly strong position. True to the ethos on which it was founded, the firm's reputation for unbeatable reliability and engineering excellence remains, cementing the name 'Cochran' as a byword for the best of British the world over. James Taylor Cochran and Edward Crompton would be proud.