



# energy

The House Journal for the Clients and Staff of Cochran.  
Winter 2020 / Issue #8



COCHRAN

## 50 years a Cochran man

James Lynn has marked an amazing FIFTY years' service with Cochran; that's a remarkable achievement for any employee! James is a great ambassador for Cochran, flying the flag with great pride and passion for all that we do.

Management Team members, David Young, David Weild, Allan Shaw, John Riddell and Stuart Pickerill, recently held presentation for James at an appropriate social distance.

James' career at Cochran began way back in August 1970 as an apprentice. His first year was spent learning the standard engineering disciplines, before moving into a specialist trade as a Plater.

In those days they were still laboriously marking up tube plates for drilling by hand - no plug'n'play CNC machines at that time!

James remembers that in the 70s Cochran were actually still manufacturing the vertical boilers for which they became famous in Victorian times 'welded not riveted!'

Back then almost everything was manufactured on site; we even had our own foundry and two huge presses. The boiler shops were dark and extremely noisy; with Caulkers chiselling away and the riveting guns it must have been absolutely deafening!

Most of the internal movement in and around the factory was on rail lines that extended out, not only to our own River Annan slipway, but all the way to the main rail track; with boilers still being hauled by our old shunter 'Blinking Bess'.

Congratulations go out to James from everyone at Cochran for reaching this fantastic landmark!



# Welcome

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New Online  
BOAS Training!

In this, the understandably belated eighth issue of Cochran's company magazine, 'Energy' we've got some great articles on our role in supporting the healthcare frontline against COVID-19, a feature on our excellent product support services, we also spotlight quality assurance at Cochran, and give you news on our range of restriction-complaint training courses; including our new online BOAS format.

With the life changing events created by the global pandemic that is COVID -19 we bring you a belated and digital only version of Energy magazine. In these times of uncertainty we are pleased to be able to bring you positive news of stability, longevity, youth and development: Not only in our products, but in Cochran's people and processes too.

In this issue, we focus on the young, up-and-coming employees within Cochran, with three excellent new craft apprentices joining us in 2020. The continuous development of our design and drafting team is reflected in two office apprentices completing their training.

### Quality, Health and Safety

During 2020 we were very pleased to achieve ISO 45001 accreditation. Headed up by our Health and Safety Manager, Robert Morton, the cross-company team ensured we had the processes and practices in place to measure up to the exacting requirements of LRQA's inspectors. ISO 9001, ISO 45001 form the bedrock of Quality Assurance and Health & Safety practices across every function within Cochran Group... And not just in the factory, but within our site teams too.

Our highly qualified Quality Assurance team bring a wealth of knowledge and experience to bear in ensuring every Cochran product is delivered to the highest standard. In this issue we shine the spotlight on the crucial inspection and testing work undertaken by our Quality Team. Built around a core of four highly experienced people, they play a pivotal role in maintaining compliance and ensuring that every boiler measures up to Cochran's famous quality standards.

### Cochran on the Front Line

After such a tumultuous year, it's only right that we touch on COVID-19, Cochran and the healthcare sector. Over the years we have supplied over 500 boiler units into hospitals and other medical facilities; not just in the UK, but globally. Cochran's David Weild highlights the healthcare projects that have been key area of our activities for many years.

### Greener Energy

The acceleration of towards a 'zero carbon economy' is very much to the fore. The implementation of MCPD legislation is a tough statutory driver for our industry to further reduce its carbon footprint. In response we launched the ST28 steam boiler range. Building on 50 years of 'best in class' heritage, it is a cutting-edge development of the famous Wee Chieftain. An amazing 95% efficient throughout its firing range, and extended to now deliver up to 6,000kg of steam per hour, every unit in the range delivers even lower CO<sub>2</sub> and NO<sub>x</sub> emissions than the tough new MCPD regulations demand.

A crucial factor in the ST28's impressive performance is the use of our new Ultrinox burners. Building on 20 years of Equinox burner this next generation combustion equipment delivers performance that is ready for the coming 20 years.

Today digital combustion control is hardly a 'new' technology, but it is the seamless integration of the boiler, burner and ancillary equipment that ties every element of equipment together. As world-renowned designers and manufacturers of boiler and burner plant and boilerhouse management technology we are uniquely placed to achieve this holy grail of energy management. Synergy delivers maximum efficiency and useability in the ultimate in energy management technology.

### Training goes online

Finally, we focus on Cochran's well-respected boiler operator training. The ability to demonstrate your boiler operators are 'competent' is as important as ever in these times of social distancing. Following months of careful preparation we are now offering closely supervised online training courses to keep your staff safe and your training plans up-to-date. Cochran's comprehensive range of training, includes a number of fully accredited courses. Delivered by experienced trainers and supported by high quality, user-friendly training materials, they will ensure your people measure when it matters.

**Thomas P Ritchie**, Group Managing Director

**THE FIRST  
BASE AGENCY**

**Cochran's Christmas 2020 Charity:** As has become a Cochran tradition, this year we are once again making a charity donation in place of spending money on Christmas cards, sending online best wishes instead. Our 2020 charity is 'The First Base Agency'. This fantastic Dumfries-based organisation provides food support to needy families, as well as delivering important education on the issues of drugs and alcohol to the area's schools, also supporting families affected by this serious and ever-growing problem.

# A Synergistic Solution for Dunlop

Dunlop Aircraft Tyres, Birmingham recently undertook a major changeout of its ageing, inefficient boilers. As part of the installation of the new Cochran equipment, the company's cutting edge Synergy boiler management technology has been introduced to monitor and control the two new boilers, their burners and associated equipment.

Very much Cochran's flagship boiler management system, Synergy offers a comprehensive package of controls, status indicators and monitoring as standard. Based around a high resolution toughened glass 10.1 inch touchscreen with maximum expandability, Synergy also offers extensive remote operation capability. This remote access feature makes it ideal in situations where the boilerhouse isn't manned 24/7.

The Company now offers two advanced boilerhouse management systems, Synergy and Eclipse. Each utilises a simple touchscreen interface that combines ease of use with an extensive array of monitoring and control tools that make efficient operation of your boiler and its ancillary equipment quick, simple and reliable.

Eclipse is the next generation of standard boiler control. The 7 inch touchscreen interface boasts a wide variety of on-screen controls, status indicators and a broad spectrum of optional monitoring extras. All of this, with future-proof expandability too!

## The Dunlop team has noted a number of advantages that Synergy offers over their previous boiler controls:

- **Graphics:** The visuals/mimic screen on the HMI, providing a good level of information on boiler and alarm status.
- **Interface:** The simple, intuitive touchscreen controls screen makes training other users easier. The onscreen graphics provide a visual representation of what the boiler is actually doing. Conversely, the old boiler control system was based on flashing and blinking lights, and basic text information, making it difficult to see what was going on.
- **Better Operational Structure:** The sequencing is better, making managing the duty cycle of the pumps simpler and more logical.
- **Remote Operation and Monitoring:** The ability to remotely access Synergy is a good facility, allowing the boilerhouse team to log in and see the boiler's status at any time. It also enables operators to provide engineers with important information - even when they are not on site.



New Cochran Apprentices



## Welcome Aboard!

As a company that's dedicated to developing the skills and careers of its people, Cochran has been training engineering apprentices in-house since the earliest days of the company.

It is Cochran's strong belief that apprenticeships which combine academic studies with real world experience under the guidance of highly experienced craftsman engineers are simply unbeatable... And they are of course also very popular with the trainees who actually get paid to learn, rather than running up huge debts at University with a much lower expectancy of employment at the end of their degree.

Despite the turmoil of 2020, this year we've interviewed, selected and employed three new apprentices:



Annan-based **Hayden Shaw**, who was a 2019 finalist in the Dumfries & Galloway Youth Awards, joined us on 26 October as an Apprentice Fitter. During his short time with Cochran Hayden feels he has already gained a great insight into the engineering environment. So-far the seventeen year-old has undertaken three weeks of Maintenance training and four weeks of Maintenance Fitting and Electrical Maintenance training.



Apprentice Plater, **Kyle Bell** also joined the company at the end of October 2020. Annan-based Kyle is keen cyclist and fitness fanatic. He has already gained extensive engineering experience, working as a Laser Operator at Ewart Engineering in Gretna for three years. Unfortunately the advent of COVID-19 saw him made redundant, but undaunted he picked himself up and applied to join the Cochran team.



Twenty year-old Welding Apprentice, **Daniel Nunes** from nearby Eastriggs left his job as a scaffolder to commence his Cochran training on 2 November 2020. Daniel, who is an avid footballer, sees himself as a rapid learner with a strong visual emphasis, making him an ideal candidate for training on the job by watching the ways in which our highly experienced craftsmen carry out their tasks.

We'd like to welcome these three new apprentices aboard and wish them a long and successful career with us. With tenacity and talent perhaps they'll one day rise to be a Senior Manager as a number of past apprentices have done... We're sure one-time Cochran apprentice, Managing Director Thomas Ritchie, won't want you competing for his job too soon though!

# Cochran on the Front Line

Who could have possibly imagined how utterly different our world would be today when the last issue of Energy magazine was published. Across the globe, medical professionals have been our front line in battling this terrible pandemic. The provision of reliable steam and hot water for washing and disinfecting is a crucial factor in maintaining COVID-safe hygiene practices and the welfare of patients and staff in the healthcare environment.

Cochran is proud to support the heroic work of hospitals; delivering highly efficient, reliable steam and hot water solutions; whilst our extensive national network of expert service and emergency breakdown engineers continue to work tirelessly to ensure heating and hot water remain on-stream, enabling health workers can carry out their essential work.

When it comes to combining proven engineering skills with technical innovation in quality heat generation and transfer systems, Cochran are second to none. The company is world-renowned for the steam and hot water boilers it supplies to many of the world's leading hospitals; systems that are the cornerstone of healthcare hygiene.

## **Global Health Sector Reputation**

In the past 20 years, Cochran has installed more than 500 boilers, generating over 2 million kg/h of steam, in hospitals around the globe. Today, in a field where COVID access restrictions make reliability more critical than ever, those statistics attest to the exceptional standards the company represents.

In addition to the UK, Cochran has also installed boiler equipment in many prestigious overseas medical facilities. These including projects in the Gulf States, Egypt, Iraq, China and Hong Kong, Caribbean and West Africa. In fact, in some cases these installations were actually replacing life-expired Cochran boilers that had provided up to 60 years of solid service – an incredible testament to the durability of our boilers.

## **Unrivalled Quality and Reliability**

David Weild, Cochran's Industrial Boiler Business Manager, heads a team with unrivalled experience in delivering effective and efficient healthcare boiler systems. Commenting on this most critical of sectors, he said, "We've worked in the healthcare sector for many years. It's a sector where quality and reliability are critical and our boilers' exceptional performance has helped ensure we've had significant ongoing UK and global success. It's clear that our hospital customers recognise that their steam or hot water provision is in safe hands when it's supplied by Cochran - I'm extremely proud to know our boilers are playing their part in combatting coronavirus."

He continued "Over the years we have supplied many hospital projects to the Arab Gulf states. Whilst reliability is a key factor for healthcare applications, in the period running up to the COVID-19 outbreak we also noticed an increased demand for the latest energy efficient technology, despite the relatively low fuel costs in oil-rich countries. Indeed, a recent major project we commissioned in Qatar required high efficiency economisers and the latest PLC combustion control technology to save every last fuel cent."

# Five hundred Cochran boilers installed in hospitals and healthcare facilities around the globe in the last 20 years - generating over 2 million kg of steam every hour.

## Ever Greater Efficiency

In recent years, as energy security and efficiency have come to the fore, combined heat and power systems have become a key component in meeting these demands.

The Company has a proven track record in working with key consultants and CHP solution providers in meeting these requirements. Cochran will design a bespoke boiler and economiser system installation, tailored to the needs of the site. Heat recovery plant and conventional boilers are specifically designed to give optimal performance from a specific piece of power generating equipment. Whatever the requirement, Cochran has the range and flexibility essential to meet the need; from the smallest system to the planning, engineering, management and delivery of the largest turnkey energy centres.

A good example of this capability is Foresterhill Health Campus Energy Centre in Aberdeen, which is one of the larger-scale projects completed by Cochran in recent years. This project, which has attracted plaudits for its energy efficiency, has the capacity to supply a combined steam output

of 55,000 kg/hr – that's equivalent to 34 MW of heat output, or enough power to supply 63,000 households for a year. The vast energy needs of the Foresterhill Health Campus are met by three conventionally fired boilers and a waste heat recovery boiler. There is also a biomass boiler on site, fuelled by locally-sourced woodchip.

Once installed, the hospital requires a reliable preventative maintenance and servicing programme to be put in place to ensure it runs reliably and at its optimum performance. Cochran will provide the support to ensure plant availability of over 8,000 hours per year are possible.

**High efficiency economisers and the latest PLC combustion control technology help save every last fuel cent possible.**

## Repeat Business from Satisfied Customers

David says, "Our success in the healthcare sector is reflected in the fact that a high percentage of our business is repeat custom: That speaks volumes about the high standard and durability of our products and services. A lot of customers also come to us for a total 'turnkey' package, leaving them to concentrate on their core activities."

Working closely with the client, Cochran will develop a project from initial concept through to delivery. An in-depth survey of specific requirements establishes the design parameters and boiler specification.

Following manufacture at the Newbie plant in South West Scotland, on-site installation takes place. This often includes construction of a new boilerhouse, as well as all the associated mechanical and electrical work, commissioning and training. A global network of carefully chosen agents provides international support for all Cochran products.

# Foresterhill Energy Centre

Following detailed assessment it was decided to replace the existing boilerhouse with a new highly efficient energy centre. The new plant includes a gas turbine CHP plant, a biomass boiler and three of the latest dual fuel boilers - all provided by Cochran.

Together they provide heat, and around 90% of the peak electricity requirements for the University of Aberdeen's Foresterhill Health Campus. Selection of Cochran boilers as part of the comprehensive scheme was driven by the need to replace outdated plant that was not achieving cost, sustainability and reliability targets, whilst meeting increasing site energy demands.

Despite significantly increased output, the new installation has reduced CO<sub>2</sub> emissions by 15%, whilst also cutting site energy costs from £6.2m to £5.3m per annum.

- Three conventionally fired Cochran dual fuel boilers.
- One Cochran waste heat recovery boiler.
- One Cochran biomass boiler.
- Total steam Output of 55,000kg/hr.
- 34 MW of heat output; enough to supply power to 63,000 households for a whole year.



Two Thermax boilers and a Cochran Composite boiler at work at Queens Hospital, Burton-on-Trent.



34MW of power, Foresterhill Energy Centre, Aberdeen.



# Humber Power Station Upgrade

When it was concluded that the Thermax twin flue boiler's control equipment had become obsolete at EP Waste Management Limited's South Humber Bank Power Station, they called in Cochran to specify new equipment and to carry out the renewal. The changeout included replacement of the Saacke Cam and linkage control system with direct drive servos; the control panel and water level controls were then replaced with an AutoFlame Mk8 application for a twin burner boiler, complete with Gestra self-monitoring water levels.

EP Waste Management Limited's South Humber Bank Power Station is a major waste energy plant near Stallingborough in North East Lincolnshire. The company which is currently negotiating to massively increase the environmentally responsible energy output of the site operates a Cochran twin flue Thermax which is used to restart the powerstation after outages.

EPWM had become aware that the systems used to control and operate the Thermax were no longer supported by the original equipment manufacturer; leaving the site unserviceable and exposed to a high risk equipment failure during critical plant restart protocols.

The customer was mindful of the recent changes to BG01 legislation centred on unmanned operation which could potentially see the boiler system fail inspection.

## Call in Cochran!

At this stage EP Waste Management contacted Cochran. Cochran had built a solid, long-term relationship with EPWM as their expert Thermax service provider.

As both an OEM and agent for all the leading manufacturers, Cochran are in a unique position to market and support a complete range of equipment. This enables the company to specify the very best technical solution from a broad spectrum of options; as opposed to other providers who may foist the one product they supply on a client, even if it doesn't measure up to requirements.

Cochran proposed a resolution that would bring the operation of the Thermax boiler up to modern standards, whilst enabling the customer to retain existing infrastructure. The new equipment also brought the boiler into compliance with latest guidelines, reaping the benefits of modern technology and enhanced operator feedback.

At the centre of the new equipment supplied and fitted by Cochran is a bespoke AutoFlame MK 8 Control Suite; complete with high integrity self-monitoring water level controls and variable speed drive.

The project, which cost some £30k represents a masterclass in cost effectively upgrading existing equipment that is still in good mechanical condition to replace obsolete elements, bringing the system into compliance with the latest statutory requirements.

## Benefits of the new equipment

- **Fuel Savings:** Improved operating protocols reduce overall fuel usage through more efficient firing.
- **Compliance:** The new self checking high integrity controls are fully compliant with the requirements of BG01, delivering better unmanned operation and enhanced safety.
- **Cutting-Edge Technology:** Cochran integrated the new third party control elements into the existing control panel, simplifying on-site controls and making operation easier. All aspects of the boiler controls are also now supported via a single provider, rather than individual elements relying on different suppliers.
- **Improved Operability:** The essential upgrades will pay dividends in terms of reliability, maintainability and the enhanced user interface. Operational energy consumption is also reduced, with the VSD fan motors using up to 60% less electricity.
- **Easier:** The project enabled EPWM to retain all of the positive aspects of their existing Thermax boiler by simply, and cost-effectively replacing the obsolete elements, providing all the benefits of the latest technology for older plant.

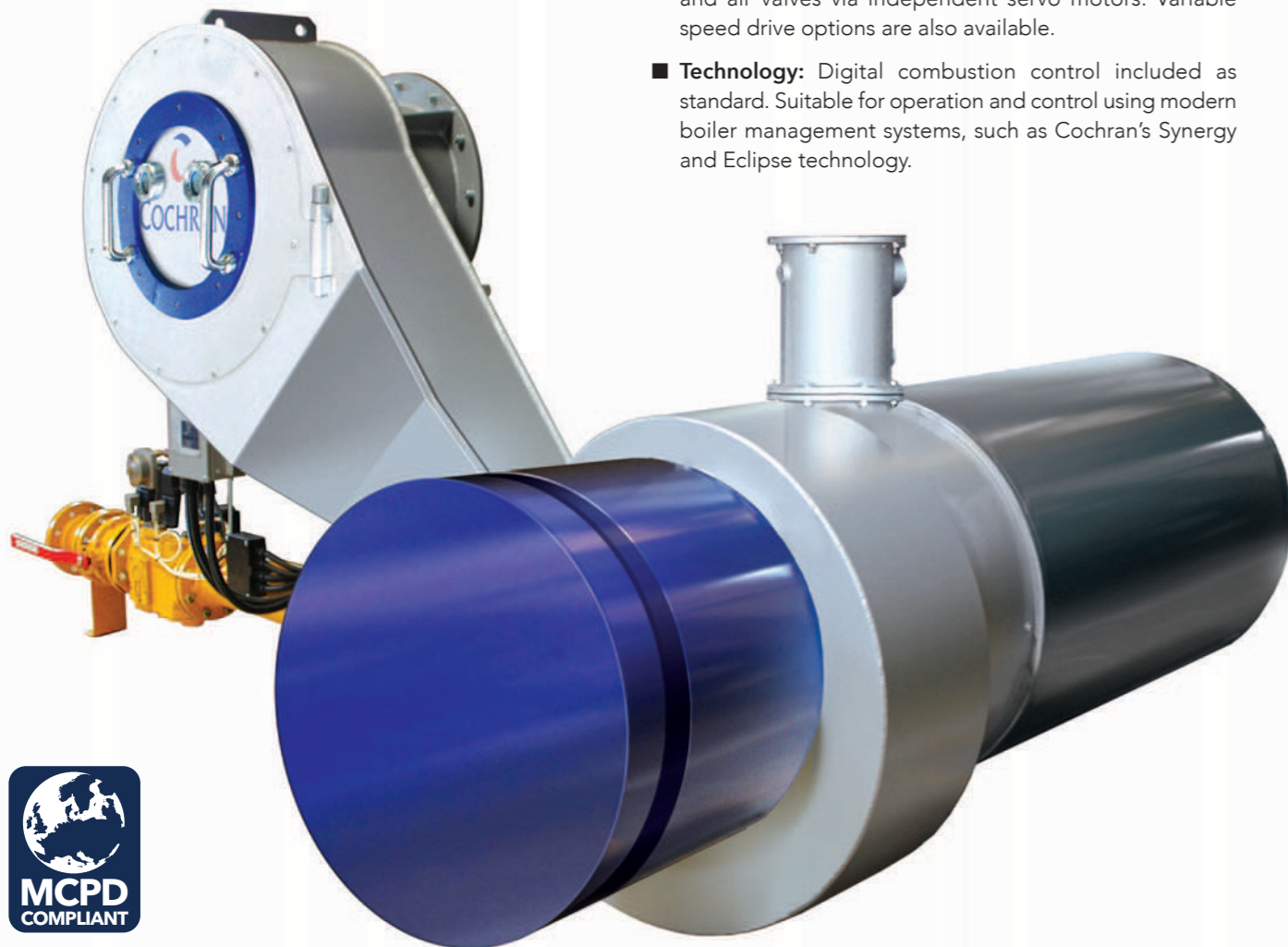


# Ultranox: Ultragreen

Cochran's Ultranox burner is rapidly establishing a significant reputation in the global market place. The result of extensive product development and testing, Ultranox burners achieve benchmark Medium Combustion Plant Directive (MCPD) standards in environmental emissions. Innovative design delivers maximum reliability whilst remaining easy to both service and operate. When paired with the Cochran's Synergy or Eclipse boiler management systems, Ultranox burners offer an exceptional proposition that reflects Cochran's impressive inhouse development and unrivalled know how.

## Cochran's innovative ultra-low emissions Ultranox burners offer the following key features:

- **Low Emissions:** Delivering efficient fuel combustion and low NO<sub>x</sub> emissions throughout the firing range, subject to other equipment, Ultranox achieves MCPD-compliant NO<sub>x</sub> emissions of less than 100mg/Nm<sup>3</sup> firing gas and 200mg/Nm<sup>3</sup> with oil.
- **Even Lower Emissions:** Firing natural gas in combination with flue gas recirculation (FGR) delivers even lower emissions with as little as 30mg of NO<sub>x</sub> per Nm<sup>3</sup>.
- **Flexible:** Suitable for both gaseous fuels and dual oil/gas firing, Ultranox burners are ideal for a broad spectrum of furnace applications, including kilns and dryers, in addition to a wide variety of industrial steam and hot water boilers.
- **Efficient:** Delivers efficient fuel combustion and low NO<sub>x</sub> emissions throughout the firing range.
- **Direct and Variable Drive:** Provides direct drive to all fuel and air valves via independent servo motors. Variable speed drive options are also available.
- **Technology:** Digital combustion control included as standard. Suitable for operation and control using modern boiler management systems, such as Cochran's Synergy and Eclipse technology.



## Cochran Apprentices

After almost a year of global turmoil, we finally have the opportunity to officially congratulate young Cochran Engineers, Alex Retson, above, and Ross Brown, below, on completion of their apprenticeships.

Joining the company back in 2016 as engineering apprentices, they have recently completed their Mechanical Engineering HNCs. Alex and Ross are now pursuing further academic training with our full support and expect to gain their HND qualifications shortly.

Gaining their HNC and HND qualifications will enable them to develop a great career within Cochran's pivotal engineering department. Ross and Alex, who both live close to Newbie, now join a long list of highly qualified Engineers and Senior Managers trained by the company.

Cochran have long been active in developing talented personnel who measure up to Cochran's exacting standards. In fact, Cochran's current MD, Thomas Ritchie undertook his apprenticeship with the company.



## ISO 45001

Energy magazine is absolutely delighted to announce that, following a long approval process, Cochran was awarded the Lloyd's Register ISO 45001: 2018 Certification in October.

The stringent new accreditation covers Occupational Health and Safety Management Systems and is aimed at helping responsible businesses protect and enhance their most important asset; their people, driving excellence throughout the business.

This key new standard provides a single global occupational health and safety system for businesses of all sizes. It increases organisational resilience through proactive risk prevention, innovation and continual improvement. This in turn strengthens legal and regulatory compliance, whilst also reducing business losses.

ISO 45001 is applicable to all areas of the Cochran business; from design and manufacture; to installation and commissioning of boiler islands, packaged boilers, combustion equipment and heat recovery systems; as well as supporting ancillary equipment and pressure vessels, together with aftermarket service, repairs, training and operational support.

## Export Markets

Despite the global pandemic and tough business conditions, Cochran's export activity remains buoyant. In fact, the company currently has FIVE boilers lined up on the Newbie factory floor ready for dispatch.

Varying greatly in both output and size, they comprise a huge ST36 destined for the Bangladesh garment industry and four ST25 boilers which will be installed in the Qatar's world-famous Katara Towers.

The ST36 combine a small footprint with low NO<sub>x</sub> options and high efficiency performance. Delivering between 6000 and 24000 kg/hour of steam, they are constructed in full accordance with BS EN 12953.

## Manufacturing Spotlight

# The Quality Team

Cochran is well respected for the quality and reliability of their boilers. Needless to say this is no accident; it's the result of over 140 years of engineering know-how, unrivalled craftsmanship, close attention to details and careful inspection to ensure every boiler, burner or associated piece of equipment that leaves the Newbie factory measures up to the very highest standards.

### Quality Passport

Throughout its construction phase and upon completion, each boiler goes through a gruelling battery of tests by the Quality Team and Engineering Supervisors. The inspections required are specified by the national or international code that the equipment is being manufactured to. Of course, being a Cochran boiler our tests are always more comprehensive and rigorous than the minimum statutory requirements.

Up to seventy production processes are individually checked and signed off during construction. Data from every test is carefully recorded on the boiler's own Quality Passport as it makes its way through the stages of construction. This raft of test data goes on to form the foundation of the comprehensive data pack which is provided to the customer upon delivery of their new boiler.

### Testing

Key testing processes include X-Raying and/or Ultrasonic checking of welds and use of Magnetic Particle Inspection to identify surface defects.

All constituent components used in boiler, economiser or burner construction are individually checked - even though they will have been inspected following original manufacture. Hydrostatic testing is utilised to ensure that the boiler's pressure vessel does not deform during use. Information on the smooth contour of the longitudinal welds forms another critical baseline for future inspections during the boiler's operational life.

### Boiler Data Pack

The boiler data pack delivered with each boiler is packed with important information on the boiler, which is also retained by Cochran. This unique range of stats will form a crucial baseline for future safety and maintenance inspections; helping identify any significant changes in the boiler's structure or operational stats that might signal a developing problem.

The data pack contains information on the shell, tubeplate, tubes and stay bars, as well as the results of boiler hydrotesting, and any component code numbers.

Importantly, this pack also features an official declaration of conformity, as required under the PED, as well as any official EC Certification, CE marking information, the Inspector's final report, and all other statutory certification required for the code to which its been manufactured.

## X-Rays

X-ray images are taken of various welded joints of up to 400 x 75 mm in size. Since many of the joints will be subjected to high operating pressures, weld quality is crucial. The specific areas to be tested are determined by requirements of the National or International code; ASME, Chinese, Russian or European; the boiler is being manufactured to.

In this photo a section of long seam weld on a boiler shell is being inspected by Alistair Latimer.



## Ultrasonics

This image shows Alistair Latimer at work carrying out ultrasonic testing on a furnace to tube plate weld.

Ultrasonic testing utilises sound waves to check for defects in both the weld and the constituent materials.

When a boiler is being built to BS EN 12953 or BS EN 2790, most seam welds are ultrasonically tested instead of being X-Rayed. Like X-Ray, anomalies show up on screen, but they require a qualified expert to check and categorise the information provided by the test output.



## MPI

Here we see James Richardson undertaking 'Magnetic Particle Inspection' on boiler stay bars. MPI is used specifically to detect surface and shallow subsurface defects in the metal that could adversely affect the safety and reliability of the boiler.

MPI uses a white contrast paint, the green magnetic yoke is then used to apply a black coating containing metallic particles. The black liquid runs off the surface, unless there's a crack or pitting where it will collect clearly identifying the defect.



## The Quality Team

The company's Quality Team is comprised of four fastidious long-term Cochran stalwarts:

**Left to right:**  
Helen Slater  
James Lynn  
Alistair Latimer  
James Richardson.





## Visual Inspection

Here Helen Slater undertakes careful visual inspection of some of the numerous flanges used in the construction of a Cochran boiler.

Whilst they will have already been checked and tested when originally made, rigorous additional examination, not only of every component used, but also of all their associated documentation, is carried out prior to their release for use in boiler manufacture.



## Hydro Peaking

Extensive boiler shell profile checks are carried out on the boiler shell's crucial longitudinal welded seams to ensure code compliance. An uneven seam could result in a serious weak spot.

All stats are carefully recorded in the Boiler's Quality Plan, where they are subsequently checked by the Inspection Authorities during the operational life of the boiler to ensure no detrimental changes in profile have occurred.



## Final Inspection

Comprehensive baseline visual and dimensional checks are undertaken throughout every stage of the manufacturing process.

Data collected during these inspection is recorded within each individual boiler's Quality Plan for use during future safety inspections and maintenance work.



## Job Done!

Once the Quality Team is fully satisfied that final Inspection and Simulation tests confirm a new boiler measures up to Cochran's own exacting standards, as well as the relevant National or International codes it's been made to, it's finally given its approval sticker ready for despatch.

## Documentation

Once a boiler is Quality Assurance-approved Helen Slater goes to work preparing its Document Pack ready for despatch. Great care is taken to ensure all relevant information, approvals and certifications are included.

Every new Cochran boiler is accompanied by this highly detailed package of technical information and production test results. The information is specific to that boiler alone and will serve as a baseline for future safety and maintenance inspections. It will help identify any significant changes in the boiler's structure or operational stats that might signal a developing problem.



# Why Training?

## WHY should you undertake training?

Well, to put it simply, legally you HAVE TO.

Under the Provision and Use of Work Equipment Regulations, 1998 (PUWER), ALL employees who are required to use equipment at work MUST be properly trained to do so. The company itself MUST also have training policies in place for relevant staff. This of course includes the training and competence assessment of operators and managers of boilers, all the associated ancillary plant, and any feedwater treatment plant. Every Cochran course is specially formulated to ensure this legal requirement is met.

Cochran's CEA-approved Boiler Operation Accreditation Scheme (BOAS) satisfies this legal training requirement, with the accreditation candidates achieve proving 'competence' to the Health and Safety Executive (HSE).

Of course, not every boiler operator or manager has the knowledge or experience to undertake our BOAS training. In these instances, Cochran's Logic-accredited Boiler Operation, Maintenance and Safety Awareness course is ideal. It is particularly suited to operators doing minor work in the boilerhouse, or to those carrying out duties under the supervision of a competent person. It is also an excellent first step towards full BOAS accreditation.

## Ancillary Training

Cochran training satisfies the PUWER's legal requirement for training to use ancillary equipment by providing water treatment courses which help companies comply with BG04 (Guidance on Water Treatment for Steam Boilers).

Under PSSR and PUWER the company must ensure that the pressure system is properly maintained in good repair, minimising danger. Companies must also have training policies in place for the staff carrying out this maintenance. Cochran will soon be offering a dedicated pressure system maintenance course in association with Eastwood Park Training.

## PSSR Requirements

PSSR requires the system to be designed to avoid 'as far as possible' the accumulation of liquids, condensates or sediment in pipework. For example, the design of steam pipework should minimise the number of places, such as low points, where liquid can accumulate and should also provide adequate drainage.

Devices should be feature appropriate points to allow venting of vapour and/or to prevent a vacuum forming. All pipework drainage should of course be to a safe place. Cochran offer a Design of Steam and Condensate Systems to help companies who design steam systems, who are modifying their existing system, or want to understand and implement best practice.

## Health and Safety at Work Regulations

Under the government's Management of Health and Safety at Work Regulations, a Technical Boilerhouse Risk Assessment is not only necessary to comply with the requirements of BG01, but is also a LEGAL requirement.

Under JSP375 the company should appoint an 'Authorised Person' who is responsible for a number of tasks under that guidance. Cochran provide an Authorised Person training course that ensures candidates understand their responsibilities and are able to undertake them out correctly.

Finally, under BG01 a company must also have a 'Suitably Trained and Instructed Person' on site. This is someone who has been trained to respond to specific boilerhouse alarms by undertaking agreed actions. These will include contacting the duty Competent Boiler Operator. Cochran provide an 'Introduction to Steam Boilers and Steam Systems' course that is ideal for this person and which satisfies the company's onus.

## Developing Your Operators' Skills

Where to start? What is the progression path? Working in close partnership with your team, Cochran can develop personalised training paths to upskill your workforce.

Of course, there is no single training and development path for boiler operators, however is a great starting point Boiler Operation, Maintenance & Safety Awareness that frequently leads up to candidates undertaking Cochran's CEA-accredited Boiler Operation Accreditation Scheme (BOAS).

Whilst it can be undertaken prior to BOAS, the next step after BOAS is often Authorised Person, Pressure Systems (JSP375) training. This course is primarily for boilerhouse Managers rather than operators. Alternatively, 'An Introduction to Steam Boilers and Steam Systems' is ideal for the nominated 'Suitably Trained and Instructed Person'.

## Cochran Courses

Cochran's Logic-accredited 'Boiler Operation, Maintenance & Safety Awareness' training is ideal for those personnel who operate a steam boilers under the guidance of a 'competent' colleague. It is also an excellent means of bridging knowledge for those who wish to progress to undertaking BOAS training.

Now also available online, the 'Boiler Operation Accreditation Scheme' (BOAS) has been specially developed by Cochran for boilerhouse operators and for those who are responsible for managing a boilerhouse. 'Boiler Operation and Maintenance with Burner Combustion' (BOM-BC) is an additional day-long module specifically centred on Autoflame's combustion control systems.

Cochran's 'Boilerhouse Risk Assessment' training highlights the legal requirements of a 'Technical Boilerhouse Risk Assessment' and how to undertake it correctly.

'Authorised Person, Pressure Systems' (JSP375) has been developed for those engineering staff responsible for directly managing, overseeing or auditing Safe Systems of Work within the scope of the Pressure Systems Safety Regulations 2000 (PSSR).

With today's ever-increasing fuel costs and environmental restrictions, 'Reduce Boiler and Steam System Fuel Costs' is an invaluable course designed to manage and reduce a company's fuel bills and carbon emissions from the boiler and steam system.

'Industrial Gas Training and Assessment' (I-GAS) is a recently introduced course that is suitable for Engineers and Technicians working on a range of gas equipment in factory premises. Candidates undertaking this course must be able to demonstrate suitable, appropriate experience and must also have completed an approved gas qualification, such as CCN1 and COCN1 or their equivalent. I-GAS Level 1 is an entry-level course for less experienced operatives.

'Design of Steam and Condensate Systems' is a Cochran course that has been specially developed for anyone involved in designing steam boiler and steam plant and for people who are upgrading their steam and condensate system.

'Maintenance of Steam Systems' is ideal for those who are responsible for the day-to-day maintenance and upkeep of steam and condensate systems. 'Boilerhouse Water Treatment' is another useful course that has been formulated for people who wish to gain a better understanding of water treatment and management of their boilers' water quality.

## NEW Online BOAS Training

Cochran are very proud to announce the launch of our first online BOAS Cat 2 Steam Shell Boiler training course. Initially held from 18-22 January 2021, this excellent new four day format fully mirrors our respected classroom course, but is delivered to a strictly limited group, guaranteeing maximum personal training support.

Going forward it is planned that training will operate during the every third week of the month in January February, March and April. Cochran, as ever, flexible and if you have a group of six delegates (who obviously needn't be in the same location) we are happy to deliver the course on your timetable.

For further info or to book your place simply contact: [jriddell@cochran.co.uk](mailto:jriddell@cochran.co.uk) or call 07710 306 048

## New Brochure

Despite extensive home working, the marketing and technical teams have certainly been busy during the pandemic pulling together all the latest technical information for our all-new product brochure.

This comprehensive new publication contains specifications and technical data for Cochran's entire range of low emission steam, hot water and heat recovery boilers... There's also info on our four MCPD-complaint burner options; our economisers; and the company's leading-edge boiler management systems; plus Cochran's packaged and hire boilers and our worry-free turnkey boilerhouse construction services.

Marking their upgrading to meet the most stringent MCPD-compliant boiler standards, famed old names like 'Borderer' and 'Wee Chieftain' have now been superceded by codings reflecting size, type and output. Steam boilers are now prefixed by 'ST', and 'HW' for hot water units. All the updated info has also been rolled-out to our datasheets which are linked to their relevant boilers as downloads on our website. The datasheets also include some specialised bespoke heat recovery and composite boilers.

The new brochure is available to view on the Cochran website as a 'flipbook' and to download as a pdf. It will also shortly be going to print, if you would like to receive a copy please email [CYoung@cochran.co.uk](mailto:CYoung@cochran.co.uk) or ask your Cochran representative.

# Cochran Training Dates

All the courses are held at Cochran-selected venues, however they can also be delivered at a customers' venue by arrangement and subject to meeting safe distancing guidelines. Courses are fully Coronavirus guideline-compliant, but may be subject to extra COVID-19 restrictions resulting in rescheduling/cancellation at short notice. **For further information and to book call 01461 202 111 or visit [cochran.co.uk/training.aspx](http://cochran.co.uk/training.aspx)**

## Officially Accredited Courses:

**Online Boiler Operation Accreditation Scheme (BOAS)  
Cat 2 Steam Course, check page 18 for further info.**

### Boiler Operation Accreditation Scheme (BOAS) Cat 2 Steam

Duration: Five days  
Cost per person: £1350  
Plus KIWA-Gastec registration and assessment fees  
Shell Boiler Operators: £475  
Shell Boiler Managers: £525  
Can be delivered at a customer site for a between five and twelve delegates: PoA

#### Who should attend?

This course is designed for practicing boilerhouse operators or those who are responsible for managing a boilerhouse and its operators. Delegates can also attend who are working on boilers such as commissioning engineers or boiler service engineers.

**Course Dates: Cochran Training Centre, Annan.**  
25-29 January 2021    22 March - 26 March 2021  
17-21 May 2021        27 Sept - 1 October 2021  
29 Nov - 3 December 2021

### Boiler Operation Accreditation Scheme Cat 2 Steam Re-Accreditation Course

Duration: Four days  
Cost per person: £1050  
Plus KIWA-Gastec registration and assessment fees  
Shell boiler Operators: £475  
Shell boiler Managers: £525  
Can be delivered at a customer site for a between five and twelve delegates: PoA

#### Who should attend?

BOAS is valid for 5 years so this course is for operators, managers, commissioning engineers or boiler service engineers who are BOAS accredited. This course should be taken on or before the fifth anniversary of gaining BOAS.

**Course Dates/Location: TBA, call for details.**

### Boiler Operation, Maintenance and Safety Awareness (Logic Accredited)

Duration: Two days  
Cost per person: £680  
Can be delivered at a customer site for a maximum of eight delegates: £4050

#### Who should attend?

Delegates who want to be able to operate steam boiler and ancillaries safely under the guidance of a competent colleague. Delegates who currently do not have sufficient experience to attend BOAS and wish to bridge the gap in their knowledge in order to progress.

**Course Dates: Cochran Training Centre, Annan.**  
9-10 February 2021        5-6 May 2021  
10-11 August 2021        16-17 November 2021

## Officially Accredited Courses, continued:

### Industrial Gas Training and Assessment (I-GAS)

Duration: One day, five days and five days  
Cost per person: £4750

#### Who should attend?

Cochran is now approved by the Combustion Engineering Association (CEA) to deliver I-GAS training and assessment for engineers and technicians working in factory premises containing gas fired equipment. This three level course provides the only formal accreditation specifically designed for maintenance staff and technicians working with gas in industrial premises that is currently available.

**Course Dates/Location: TBA, call for details.**

## Cochran Courses:

### Introduction to Steam Boilers and Steam Systems

Duration: One day  
Cost per person: £380  
Can be delivered at a customer site for a maximum of eight delegates: £2250

#### Who should attend?

Delegates who are completely new to steam boilers and steam systems, or who are moving into a basic boiler or steam role and require a greater appreciation. Delegates who need to suitably trained to answer alarms under BG01.

**Course Dates: BK Lab Tech, Biggin Hill TN16 3YN. TBA**

### Boilerhouse Risk Assessment

Duration: One day  
Cost per person: £395  
Can be delivered at a customer site for a maximum of eight delegates: £2350

#### Who should attend?

BG01 has become recognised as industrial best practice for steam and hot water boilers and highlights the legal requirement to carry out a 'Technical Boilerhouse Risk Assessment' under the Management of HSAW Regulations. This course enables delegates to develop a logical approach in assessing the key components of the boilerhouse system. Combining the latest legislative requirements and industry guidance with practical experience, Cochran helps delegates identify potential risks and areas of improvement appropriate to their site.

**Course Dates: Cochran Training Centre, Annan.**

28 April 2021                      28 July 2021  
6 October 2021                    10 October 2021

### Boilerhouse Water Treatment

Duration: One day  
Cost per person: £395  
Can be delivered at a customer site for a maximum of eight delegates: £2350

#### Who should attend?

Boiler Operators and Managers who wish to gain a better understanding and manage the water quality of their boilers and the contractors supplying such services.

**Course Dates/Location: TBA, call for details.**

## Cochran Courses, continued:

### Reduce Boiler and Steam System Fuel Costs

Duration: One day  
Cost per person: £395  
Can be delivered at a customer site for a maximum of eight delegates: £2350

#### Who should attend?

Delegates who need to manage and reduce fuel costs and carbon emissions within the boiler and steam systems. The course starts with costing steam production on a site and covers methods for reducing the overall fuel costs, providing a working knowledge of potential savings.

**Course Dates/Location: TBA, call for details.**

### Maintenance of Steam Systems

Duration: Three days  
Cost per person: £900  
Can be delivered at a customer site for a maximum of eight delegates: £2350

#### Who should attend?

Delegates who are responsible for maintenance and upkeep of a steam and condensate systems. By the end of this course the delegate will be able to identify steam boiler maintenance and tests; understand the fundamental failings of steam systems; and how to isolate steam and condensate systems correctly and safely (as per HSG253).

Upon completion, delegates will gain a UK Certification in Maintenance of Steam Systems.

**Course Dates/Location: TBA, call for details.**

### Practical Operation of a Steam Boiler

Duration: One day  
Subject to COVID restrictions, delivered at your site for a maximum of eight delegates: £2250

#### Who should attend?

Those who want a greater understanding of practical boilerhouse operation or need a refresher on current best practice. Learn about operational activities, checks, tests and record keeping that need to be carried out to maintain a safe and efficient boilerhouse.

**Course Dates: TBA, call for details.**

### Boiler Operation and Maintenance with Burner Combustion (BOM-BC)

Duration: Three days  
Cost per person: TBA

#### Who should attend?

Cochran has teamed up with Autoflame/BK Labtech to combine our popular BOM course with an intensive third day providing detailed coverage of Autoflame's combustion control systems. The course will be run BK Labtech's state of the art Biggin Hill Training Facility, complete with a working Cochran boiler equipped with the latest Autoflame combustion and control equipment.

**Course Dates: BK Lab Tech, Biggin Hill TN16 3YN. TBA**

**All prices quoted are exclusive of VAT.**

**Courses are fully Coronavirus guideline-compliant, but may be subject to extra COVID-19 restrictions resulting in rescheduling/cancellation at short notice.**



# COCHRAN

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Newbie Works, Annan, Scotland DG12 5QU. +44(0) 1461 202 111 [www.cochran.co.uk](http://www.cochran.co.uk)

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