

## A message from CHTA's new Chairman

At its meeting on February 14th, the Management Committee appointed **David Wilkins** (Bodycote Heat Treatments Ltd.) as 2002 CHTA Chairman, following Ian Brown's retirement from the post, which we recorded in *Hotline 86*. Previously Chairman in 1991/92, David looks forward to his second term in office...



Much has changed in our industry since I last had the privilege of serving as Chairman of the Association.

Many of our smaller members have specialised in niche markets, whilst several of the larger companies have expanded into major groups.

Globalisation has become a major feature, as well as the increasing trend to outsourcing of heat treatment by even the largest manufacturing companies, including many hitherto stalwart exponents of the in-house vertically-integrated enterprise.

In addition to the commercial challenges we heat treaters face from market fluctuations, technological change, environmental probity, price-down pressures and skills shortages, we have latterly had to cope with the effect of the Climate Change Levy.

Your Management Committee has been active over the years in helping members address these challenges, wherever the

role of the Association allowed.

Latterly, the growing demands placed upon a wholly volunteer, and very part-time, Management Committee have led to the recognition that both members and the Association are best served by CHTA becoming affiliated with the SEA.

I am pleased to report that your Management Committee is once again at full strength, with the welcome addition of Paul Handley (Heat Treatment 2000 Ltd.) and the co-opted Mark Florence (Techniques Surfaces (UK) Ltd.) and Dave Walker (Beta Heat Treatment Ltd.) as new members.

We are all, together with Alan, our much-respected and long-serving Secretary, who provides so much of the continuity of our Association, looking forward to further strengthening the work of the CHTA and our role in the industry.

Other CHTA Officers elected at the February meeting were:

- Senior Vice-Chairman: **Chris Baumann** (TTI Group);
- Junior Vice-Chairman (Chairman-Elect): **Terry Littlewood** (Expert Heat Treatments).

### THE OLDEST UK CONTRACT HEAT TREATMENT COMPANY

In the absence of any counter-claims, following our challenge in *Hotline 86*, it would appear that Kepston Ltd., founded in 1916, is the oldest surviving contract heat treatment company amongst CHTA's membership. Please correct us if we're wrong!

### Inside . . .

	Page
● Member news	2
● CHTA Secretariat	3
● SEA news	3
● Integrated plant management systems for heat treatment applications	4
● CHTA Publicity Subcommittee	5
● MTI news	5
● Other news	6
● Market Movements	6

### Coming soon . . .

Imminent CHTA activities planned to aid members include:

- The launch of the "**Benchmarking Club**" outlined in *Hotline 86*. Member response, although mixed, has been sufficiently encouraging to justify a prototype run in the near future.
- Revival of the **Consumable Cost Survey**, once a regular *Hotline* feature for members to assess comparative purchasing performance in relation to annual consumption. Please be sure to return the questionnaire accompanying this issue of the newsletter.
- A review of **The CHTA Business Conditions Guide**, published over ten years ago. (Members will have recently seen the new *Standard Conditions for Work and Services provided by the Finishing Industry* from SEA).
- The addition of a "**Useful Links**" page to CHTA's website, facilitating direct mutually-beneficial access to the sites of other trade bodies in related disciplines.

Talking of which, readers should be sure to visit CHTA's site at...

**www.chta.co.uk**



Air Products is pleased to sponsor the CHTA newsletter

### Air Products' PURIFIRE® atmosphere systems: For generating the best atmosphere on site

In addition to providing safe and reliable equipment, Air Products also provides its customers with a breadth of technical know-how and in-house testing facilities that make a difference.

Air Products PLC +44(0)1932 249299 [www.airproducts.com](http://www.airproducts.com)

**NITROTEC GAINS QS 9000**

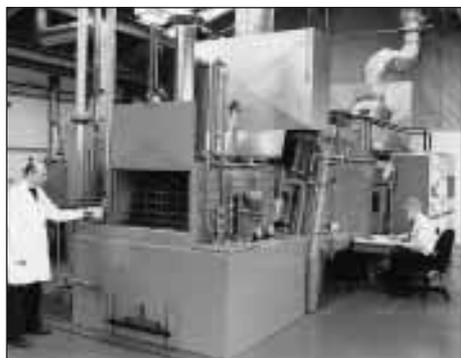
After 18 months of preparation, training and consultancy, TTI Group has achieved the important quality standard QS 9000 accreditation for its Nitrotec Services business in Birmingham. The standard requires the development of systems and procedures which address the specific automotive requirements of Ford, General Motors and Chrysler.

The three-day/night audit by BSI took place in October, resulting in an open verdict with a number of minor non-conformities. These had to be addressed and closed out to the satisfaction of both the BSI auditor and an independent assessor (a mandatory requirement of the QS 9000 system) before approval was given just before Christmas, 2001.

The preparation and training was not without its expected problems and heart-aches, especially since the QS 9000 philosophy is based on team effort throughout the company. Never have so many differences of opinion been strongly voiced on specific topics! However, development of the QS 9000 internal auditing system produced some unexpected gems, with certain personnel exhibiting otherwise unknown auditing skills!

On a lighter note, during the audit, it was established that the auditor was an avid Aston Villa supporter; he unfortunately found out that a fair number of Nitrotec managers / supervisors were "Bluenoses" (Birmingham City supporters). This meant that much "mickey-taking" had to be endured without being able to respond in kind! It was all taken in good spirit, and meant that the intense pressure of the audit was relieved occasionally.

Attainment of QS 9000 has been essential to Nitrotec Services as all of its current and future major projects are associated with the "big-three" automotive giants. On a



Reflecting the continuing success of TTI's Birmingham-based Nitrotec Services division, this Nitrotec cell was commissioned at the Group's Letchworth site last year. It provides additional capacity for the fast-expanding application of this range of advanced nitrocarburising processes, whilst meeting the need for wider geographical coverage.

local level, the new procedures and standards, together with the involvement of all personnel in the company, will help foster the continuous improvement philosophy so essential in today's environment in order to achieve, and better, customer expectations.

For further details contact Colin Smith (tel: 0121 322 2280).

**NEW CUSTOMER PARTNERSHIP FOR TOCCO**

As the name implies, CHTA-member Tocco Induction Heat Treatment specialises in induction heat treating. Indeed, its parent company in the USA is credited with being the pioneer in this field, with the first commercial application of induction hardening on automotive crankshafts.

This relationship with the automotive sector is being continued at Tocco's Birmingham plant with the forming of a new 'partnership' with a major supplier of automotive engine drive sprockets to both European and USA manufacturers.



Tocco's new induction hardening equipment.

A specialised cell has been set up containing two indexing table machines capable of hardening two parts at a time. These will be integrated with a washing and automatic inspection and crack-detection facility. In addition, load and unload will be automated and full process monitoring will be employed. Total hardening capacity will be up to 80,000 parts per week using a two-shift system.

Tocco's customer has in-house processing but has made the move to subcontracting due to an increase in demand, its lack of space for expansion, plus the investment required.

"Tocco was chosen due to our ability to provide purpose-designed equipment from our manufacturing facility, our close proximity giving low transport costs, and our many years of expertise in this specialised field" says Managing Director Chris Kenwood. "We look forward to an expansion of this facility over the next 2/3 years as worldwide demand grows for chain-driven automotive engines."



Kristan Bromley in action. At the Winter Olympics he finished a creditable 1.47 seconds behind the gold medal winner over the two runs.

**BODYCOTE TAKES FAST-TRACK TECHNOLOGY TO WINTER OLYMPICS**

Travelling down the ice at speeds in excess of 80mph, at the recent Winter Olympic Games in Salt Lake City, were the members of the British Skeleton Bobsleigh Team. Launching them down the ice was the pioneering technology developed and finished by two companies – BAE Systems and Bodycote Heat Treatments.

The Skeleton Bobsleigh, unlike other bob track events, requires the participant to ride solo, adopting the face-down head-first minimal-drag position. From an explosive start the rider accelerates, pushing the sled along the start section for some 20m before jumping aboard and attempting the fastest possible descent of the one-mile ice track. This descent leads the rider into 15 to 20 banked corners and centrifugal forces of over five 'G'. To the rider, ultimate control is the difference between first and second place.

Over a period of six years, a team of engineers and scientists at BAE Systems have researched the sport to produce one of the most technically-advanced skeleton sleds existing. They called upon Bodycote's expertise to assist in the field of control dynamics. The steel chassis which supports the sled was heat treated by Bodycote, at their state-of-the-art heat treatment facility in Macclesfield, to minimise distortion and provide a strong and energy-efficient frame – the material properties required for a fast run. In a sport where one hundredth of a second often splits the winner from the losers, component performance is crucial. The treated chassis gives the rider maximum control whilst absorbing any imperfections in the ice, allowing more energy to be used as speed.

In 2000, the sport received full Olympic recognition and was shown as a main event at this year's Winter Olympics. The

British team was sponsored by BAE Systems and led by Dr. Kristan Lee Bromley, who works for BAE as a Development Engineer. Dr. Bromley has played a key role in the research and development of the Skeleton sled and says: "Our sport owes so much to the support we have received from the engineering and research community in this country. We are a nation that does not have a bobsleigh track so we have used our strengths in technology to try and bridge the gap. Understanding the physics of the course was the first step. Once we had grasped these concepts, we were able to design from first principles the chassis that was central to the sled at the games in Salt Lake City. It has been a huge success story to date and, thanks to BAE Systems and Bodycote, we were competing on level terms."



A further step in **Tamworth Heat Treatment's** programme of ongoing investment and improvement, the addition of this latest vacuum furnace enhances their heat treatment service to toolmakers and engineers. Manufactured in the West Midlands by Vacuum Furnace Engineering, it offers a temperature range up to 1300°C, working dimensions of 450mm diameter x 600mm deep, load capacity of 150kg at 1050°C, and variable multidirectional nitrogen gas quenching at up to 5bar. The new unit utilises a Honeywell control system with a PC-based supervisory system.

## CHTA Secretariat

Items for inclusion in *Hotline* and enquiries about CHTA activities should be addressed to:

### Contract Heat Treatment Association

c/o WHTC, Aston University,  
Aston Triangle, Birmingham B4 7ET.

Tel: 0121 359 3611, ext.5212

Fax: 0121 359 8910.

E-mail: mail@chta.co.uk

Website: www.chta.co.uk

CHTA Secretary: Alan J. Hick

The Contract Heat Treatment Association is not responsible for the statements made or opinions expressed by contributors to *Hotline*.

## SEA appoints General Manager

The Surface Engineering Association (SEA) has appointed David Elliott (44) as General Manager. He brings 20 years of experience in surface engineering, beginning as an electroplating trainee through to operations director. He



David Elliott

has a degree in Manufacturing Studies and Materials Technology and is a member of the Institute of Metal Finishing.

During his career, David Elliott has managed both a plastic- and a metal-based office product manufacturing business for a multi-national, the Avery Dennison Corporation. He has also been responsible for operations at metal finisher William Bate and its sister company Motad International, a leading manufacturer of motorcycle exhaust systems. In the 1980s, he worked for three years as general manager of a division of Zinc Alloy, Sherard-Verzinkung, in Germany.

Mr. Elliott says: "I see my primary role as ensuring the long-term development and efficient operation of the SEA as a powerful focus and voice for the surface engineering industry."

Mrs. Linda Evans, Chair of the SEA, comments: "David Elliott brings to our association a breadth of industrial experience. His achievements in his career to date demonstrate that he has the management and communications skills to develop, empower and motivate teams to achieve desired objectives. We are confident that under his guidance, the SEA will become a stronger and ever more forceful body."

Mr. Elliott lives at Willenhall in the West Midlands with his wife and two children.

### ANDY HARRY MOVES ON

Our good friend Andy Harry is leaving his post as SEA's Trade Association Affairs Manager at the end of the month. He joins the Burton-based British Gear Association, as Technical Executive, with CHTA's best wishes for the future.

### LOW-COST PARTICIPATION IN SUBCON EXHIBITION

The Surface Engineering Association will have a presence at the forthcoming *Subcon 2002* exhibition (29 April – 2 May, NEC) and has come up with a proposal whereby even its smallest members can advertise their services there at an

affordable price. It's open to affiliated CHTA members.

The UK's premier subcontracting event, *Subcon* (www.subconshow.co.uk) runs alongside the *MACH 2002*, *Metalworking 2002* and *Welding & Metal Fabrication* shows. This combination constitutes the UK's largest manufacturing and engineering event which traditionally attracts around 60,000 visitors.

SEA is looking for 15 members to display their literature, and possibly samples of their work, at a price of £380 per member. If the company can send a representative to man the stand for some of the time, all the better.

The names of members exhibiting at the event, together with the services they offer, will be displayed on panels inside the 27m<sup>2</sup> stand. Tables, chairs and refreshments will also be available on the stand for discussions with interested parties.

For further details, contact SEA at the address below. Swift action is recommended in view of the large number of SEA members likely to wish to take advantage of this attractive limited offer.

### FREE EMPLOYMENT LAW SEMINAR

- I have an employee who has had an accident at work. He is blaming the company. What do I do?
- I am having to make employees redundant. What do I have to pay them? How do I do it fairly?
- What do I have to do about parental leave? How much will it cost the company?

CHTA members should have received details of a free SEA Employment Law Seminar designed to answer these types of question and more. It takes place on Wednesday 19th June in Rugby. For details and a registration form, contact SEA at the address below.

**Surface Engineering Association,**  
Federation House, 10 Vyse Street,  
Birmingham B18 6LT (tel: 0121 237 1123;  
Fax: 0121 237 1124; e-mail:  
finishes@waverider.co.uk)

## Advertising in *Hotline* – a bargain!

Readers are reminded that advertising in *Hotline* is open to both CHTA members and suppliers to the trade. A quarter-page ad, for example, is a bargain at a cost of only £100. For booking space or further details, contact CHTA's Secretariat.

# Integrated Plant Management Systems for Heat Treatment Applications

As more and more plants and processes involve either computer control or supervision, the ability to provide additional levels of plant integration into the business is more easily realised than most of us may think. **Roger Banks**, Managing Director of Custom Electronics, explains...

An integrated plant management system typically encompasses:

- computerised process control;
- data logging;
- barcode reading;
- shop-floor data collection;
- job tracking and reporting;
- capacity planning and scheduling.

Apart from improved process control, these systems offer business benefits such as:

- reduced cycle times;
- improved throughput;
- comprehensive data logging;
- full traceability;
- enhanced process quality control;
- ease of data review;
- increased on-time delivery.

The Control and Automation Division of Custom Electronics, at Biggleswade, has been providing integrated plant management systems for industry for over 25 years. The company has developed highly-advanced systems and techniques in high-profile heat treatment applications in aerospace and high-tech materials applications.

In a typical situation, a client works closely with analysts and engineers from Custom Electronics to design, tailor and implement a system. Each piece of plant included within the scheme is provided with computerised digital control, using industry-standard PC technology and control equipment plant interfaces.

As well as preserving the integrity and fault-tolerance provided by various levels of manual and semi-automatic control, the computers provide a user-friendly operator interface, facilitating the entry of batch data from barcodes, the real-time graphical status display as batches progress, and the automatic background process data logging and recording for customer and management information.



TTI Group's hot isostatic pressing facility at Letchworth has just implemented a new control and data logging system.

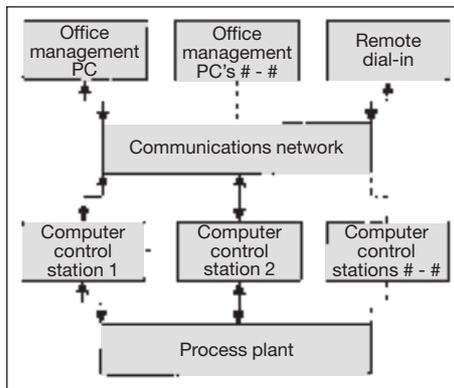


Figure 1. Structure of a typical system.

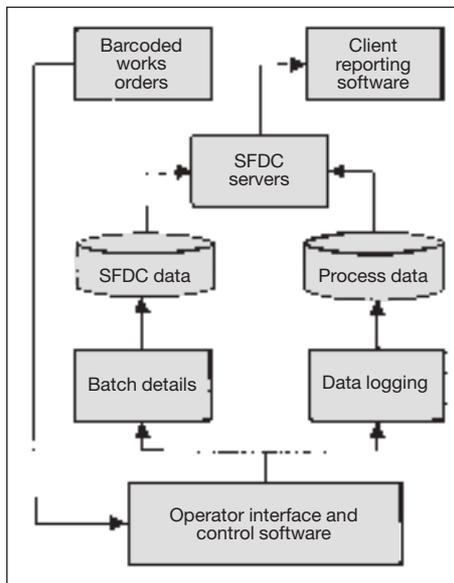


Figure 2. Information flow.

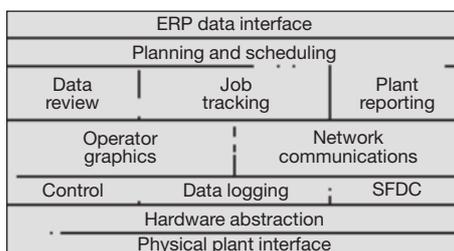


Figure 3. Software structure.

## System Structure

The structure of a typical system is shown in Figure 1. Key pieces of process plant are each provided with shop-floor computer control stations, managing the throughput of product in either continuous or batch processes in the plant. These are integrated with office computers, using fast networking and the dial-in routing as appropriate.

The information flow through the system is shown in Figure 2. Batch information is operator-generated at loading time, with the use of pre-barcoded labels tracking the relevant process route cards. This information is integrated with the process data for that batch by the SFDC server systems, which can be interrogated in real time by the client software across the network.

## Software Structure

The object-oriented software provided by Custom Electronics uses a technique of abstraction from the plant hardware. This allows the same software to be applied easily to process plant and machinery with a wide variety of requirements for control and data recording. Details are shown in Figure 3.

All data recorded are integrated in shop-floor data collection servers and made available to operators, management and authorised clients over the system's local area network. Interested parties, using standard office PC's with the system's client software installed, can report easily on activities within the plant, including:

- tracking or locating a specific order;
- inspecting the progress of a batch through a process in real time;
- listing plant activities over a period;
- providing detailed graphical data of all process information relating to a client's batch: see the example in Figure 4.

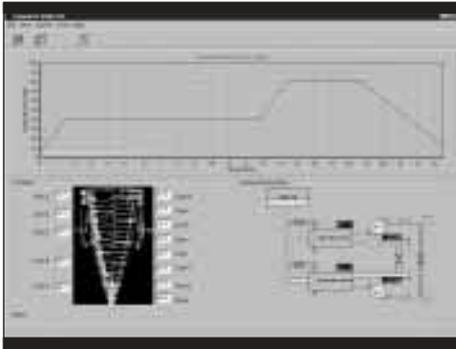


Figure 4. An example of graphical process data.

### Implementations

Custom Electronics have provided many integrated plant management systems in the aerospace, metals, automotive and heat treatment industries.

TTI Group Ltd., a major UK supplier of heat treatment and surface engineering processes, has recently implemented a new furnace control and data logging system at its hot isostatic pressing plant in Letchworth, Hertfordshire.

Nick Lane, TTI's Project Manager, comments: "TTI engineers worked closely with Custom Electronics to ensure that the things that were really important to us were included in the system. The ability, from a desktop, to see easily what is going on where, either now or historically, is a real plus. Being able to drill-down, to give a client specific detailed data about his batch, when he requires it, is allowing TTI to provide even higher levels of service to their clients. This project is an example of TTI's group-wide strategy for job planning and tracking."

System implementation commenced in November 2001, with one installation, and was completed in February this year on time and within budget. The shop-floor data collection facilities will allow the plant to be monitored for effectiveness. They have also provided the basic information necessary for the introduction of finite capacity planning and load scheduling, if it is felt appropriate at some stage in the future.

### Further Information

Technical descriptions of the control systems and the shop-floor reporting system described in this article can be found in literature available from Custom Electronics, which includes screen shots and sample outputs.

Custom Electronics' CCA division can be contacted on +44 (0)1767 313167 or online at <http://www.custom-electronics.co.uk>, where full literature on the products available can also be found. Custom Electronics also has a Software Systems division specialising in development of tailored software for specific applications.

## New CHTA Publicity Subcommittee Chairman encourages greater member involvement

TTI Group's Nick Lane succeeds Richard Burslem as Chairman of CHTA's Publicity Subcommittee, the body responsible for the Association's promotional activities such as *Hotline* newsletter, the *Buyers Guide* and the CHTA website.



Nick Lane

Elected Chairman at February 7th's meeting, and a member of the Publicity Subcommittee since 1997, Nick acknowledges his predecessor's quite exceptional contribution to CHTA initiatives and *Hotline* content. "Richard has certainly helped raise CHTA's profile by drawing attention to various matters of significant importance. I can only hope to contribute as successfully with the help of my fellow committee members and the continuing excellent support of CHTA Secretary Alan J. Hick and his team".

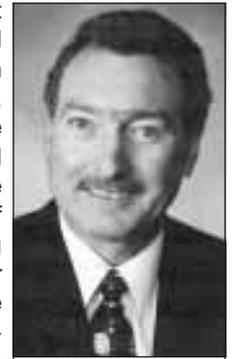
Nick notes that, ultimately, the success of most Publicity Subcommittee activities depends upon the valued input of the Association's membership. In this context, he urges *all* members to contribute particularly by:

- providing more items for *Hotline*, such as news, company profiles and comment on issues that are of interest or concern to all of us.
- making better use of CHTA's website; hitherto, the recently-introduced well-designed "bulletin board", in the members-only area, has been under-employed as a valuable easy-to-use open forum.
- volunteering representatives to serve on the Publicity Subcommittee; these are urgently needed to strengthen the committee and ensure that it represents the widest-possible spectrum of member views.

*If you have material for inclusion in Hotline or are able to offer a representative to serve on the Publicity Subcommittee (four half-day meetings per annum in Birmingham), please contact CHTA's Secretariat.*

## New MTI President

Harry Hall, President of Aberfoyle Metal Treating Ltd. in Guelph, Ontario, Canada, has become only the second Canadian to be elected President of the Metal Treating Institute, our sister North American trade association representing the corporate heat treating industry.



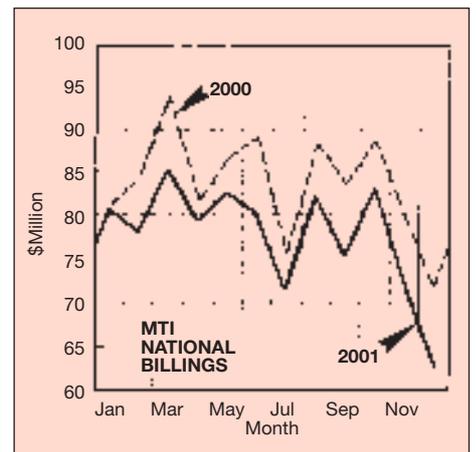
Harry Hall

He previously served in all elected offices of MTI and remains active in other metals-related organisations. Born in Belfast, Northern Ireland, Hall emigrated to Canada in 1970 and worked his way through various metalworking positions for larger corporations before founding his company in 1989. Aberfoyle Metal Treating Ltd. is recognised as having one of the largest capacities for stress relieving in North America. It's four huge car-bottom furnaces and three lengthy quench lines are served by a crane with a 100-tonne capacity.

The MTI Board of Trustees, at its Annual Meeting in Toronto, Ontario, also elected John Reger, President of Winston Heat Treating Inc. (Dayton, OH) as International Vice President/President-Elect and re-elected Norman Graves, President of National Metal Processing Inc. (Richmond, KY) as Treasurer.

### US HEAT TREAT SALES DECLINE 7.2% IN 2001

Based on returns from "participating members", the Metal Treating Institute reports that total sales for North American commercial heat treaters last year tallied \$932.0million, a drop of 7.2% from 2000 when sales topped \$1004.7million. December billings reached \$62.1million, off 13.3% from December 2000's figure of \$71.6million.



## REGIONAL ENGINEERING EVENTS

"More and more industrial suppliers to manufacturing are reacting to the shift in visiting habits away from national shows to regional exhibitions" say European Trade and Exhibition Services Ltd. "As a result, an increasing number are opting for a regional focus to marketing when planning their UK sales campaign and exhibition activities".

ETES organise six low-cost regional events annually. This year, following *Southern Manufacturing 2002* (26-28 February) and *Midlands Manufacturing 2002* (20-21 March), they have scheduled:

- *Manufacturing Technology Scotland 2002*, 22-23 May in Edinburgh;
- *Welsh & South West Manufacturing 2002*, 9-10 October in Cardiff;
- *Northern Manufacturing 2002*, 23-24 October in Newcastle;
- *NorthWest Manufacturing 2002*, 19-20 November in Manchester.

For further details, contact European Trade and Exhibition Services Ltd., 9-11 High Street, Staines, Middlesex TW18 4QY (tel: 01784 880890; fax: 01784 880892; e-mail: enquiries@etes.co.uk; web: www.industry.co.uk).

## BSI RESPONDS TO NEEDS OF BRITISH STEEL INDUSTRY

The British Standards Institution has announced the publication of PD 970:2001 'Wrought steels for mechanical and allied engineering purposes', outlining technical delivery requirements for carbon, carbon/manganese and alloy hot-worked or cold-finished steels.

At the request of British industry, PD 970:2001 has been prepared as a revision of BS970:1996 to cover those steels referenced in BS970-1:1996 and BS970-3:1991 for which there is a current regular demand but no equivalent within present European Standards\*.

PD 970:2001 costs £100 (£50 to BSI

## \* ADDITIONAL INFORMATION

The situation with the standards in the BS970 series currently is as follows:

- BS970-1:1996 is current but has been partially replaced by: BS EN's 10084:1998, 10087:1999 and 10250-4:2000.
- BS970-2:1988 is current but will be replaced by BS EN 10089.
- BS970-3:1991 is withdrawn and has been replaced by: BS EN 10277: 1999 and BS EN 10278:1999.
- BS970-4 is withdrawn and has been replaced by BS EN 10090:1998.

## SPONSORSHIP RENEWED

CHTA expresses sincere thanks to Air Products PLC who once again kindly sponsor both *Hotline* and the Association's website this year.

## Market Movements

ANALYSIS OF QUESTIONNAIRE REPLIES RELATING TO 41 CHTA MEMBER SITES

"THIS QUARTER" =

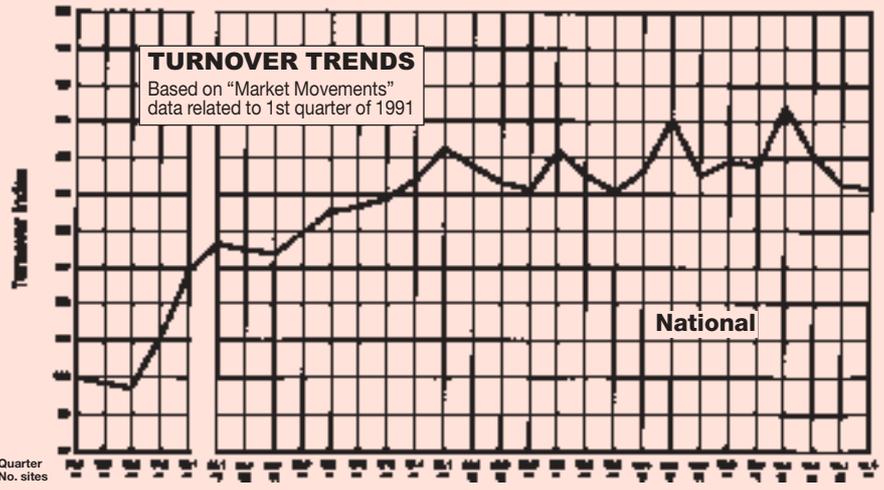
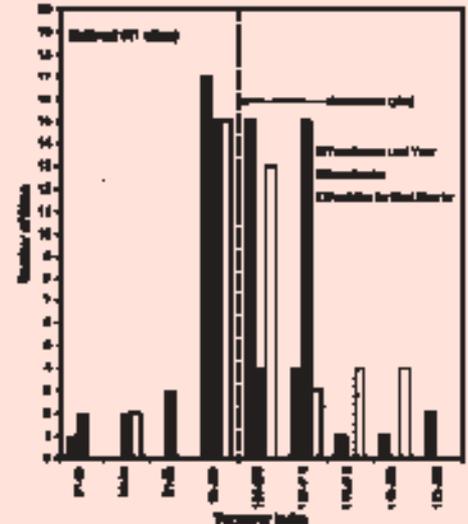
1 OCTOBER –  
31 DECEMBER  
2001

= TURNOVER INDEX 100

## National

OVERALL ANALYSIS  
(41 SITES)

	Mean index
This quarter last year	101.8
Last quarter	100.7
Predicted next quarter	104.3



members), and can be ordered online at [www.bsi-global.com](http://www.bsi-global.com). Alternatively, contact BSI Customer Services, 389 Chiswick High Road, London W4 4AL, England (tel: +44 (0)20 8996 9001; fax: +44 (0)20 8996 7001; e-mail: info@bsi-global.com).

## MONITORING AND MANAGING SOLVENT EMISSIONS

Companies that use their organic solvents wisely can become more competitive, while helping to protect the environment, by reducing volatile organic compound (VOC) emissions. Choosing the best option for VOC monitoring is an important step of cost-effective solvent management.

Envirowise, formerly the Environmental Technology Best Practice Programme, has a free *Good Practice Guide* (GG203) to help you to choose the best option to monitor solvent emissions for your site and processes.

For a free copy of the Guide, ring the Environment and Energy Helpline on 0800 585794 or fax 01235 433066.

## HSE PUBLISHES NEW TRAINING GUIDANCE

The Health and Safety Executive (HSE) has published "*Health and Safety Training – what you need to know*" for employers, and "*Effective Health and Safety Training: a trainer's resource pack*".

These new publications will help employers and trainers to provide effective health and safety training for their employees. The guidance covers all organisations across industry, but will be particularly useful to small firms.

Single copies of *Health and Safety Training – what you need to know* (INDG 345) are free, or alternatively are available in packs of 15, priced £5 (ISBN 0 7176 2137 5). *Effective Health and Safety Training: a trainers resource pack* (ISBN 0 7176 2109 X) costs £21.95. Both publications can be ordered online at <http://www.hsebooks.co.uk> or from HSE Books, PO Box 1999, Sudbury, Suffolk CO10 2WA (tel: 01787 881165; fax: 01787 313995). HSE priced publications are also available from all good bookshops.