



Enough is enough

CHTA Chairman
Terry Littlewood comments

At our last CHTA Management Committee meeting in May, there was a general and strongly-voiced consensus that our industry is constantly, year-on-year, caught in the crossfire of:

- unavoidable material/energy/quality cost increases; and
- the constant price-down demands from customers; whilst
- the UK market which we serve is exported for lower costs; and
- the burden of legislation increases beyond comprehension.

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

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The Contract Heat Treatment Association

Each year, subcontract heat treaters are expected by customers (and Government) to pay more and more for supplies, and to do *more and more* work for *less and less* reward.

Our Committee's overall view was that *enough is enough*. We must draw a line in the sand and stand our ground. We can no longer absorb these ever-increasing burdens. The only way we can earn a reasonable reward is to be fairly paid for what we do and how much it costs us.

In order to highlight the extreme challenges now facing us, several of the Management Committee members agreed on behalf of their companies that they would submit a brief article on how they see the current situation. Their responses appear in this edition of *Hotline* under the title "A healthy future for contract heat treatment?".

Individually we may all find it difficult, if not impossible, to get customers and Government to see things from our viewpoint. However, given reasonable support, your association, the CHTA, can publicise our industry's problems and lobby industry sector associations (such as aerospace, automotive, toolmaking, etc) to recognise the true costs and market value of the essential services we supply to industry.

You have an opinion, so please voice it! Your Managment Committee awaits your views.

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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.



Robert Edwards
Process Metallurgist



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NADCAP after ten years – from America’s perspective

M. Lance Miller, JD, CAE, Executive Vice President of the Metal Treating Institute, CHTA’s sister organisation in North America, offers some thoughts on Nadcap (or, as he prefers, NADCAP).

When it comes to the NADCAP (National Aerospace Defense Contractors Accreditation Program) process, what started out as a win-win proposition has turned out to be a losing proposition for one of the parties. At least, that’s the assessment of the members of the Metal Treating Institute, ten years after the program’s inception in North America.

When asked by my counterpart, Alan J. Hick, to provide an insight into North America’s experience, I immediately knew I was not going to make any friends at NADCAP. Nonetheless, our colleagues in the UK deserve these candid observations.

Unfulfilled

The premise was very rational:

- 1) Standardise audits for prime aerospace contractors.
- 2) Decrease the number of audits for heat treaters and, similarly, reduce audit costs.
- 3) Improve the suppliers by upgrading the quality of the audits.
- 4) Eliminate or substantially reduce the in-house audit departments of prime aerospace contractors.

Our best guess is that only the last objective has come to fruition. There exist many frustrations in the first three.

Many prime contractors still carry out their own audits in addition to the NADCAP audit as conducted by PRI (Performance Review Institute). The “one-size-fits-all” philosophy, although presumably less expensive to implement, simply doesn’t work in reality.

Every prime has its own specifications that fall outside the box. So, indeed, the number of audits undergone by the suppliers (contract heat treaters) has not substantially decreased. In many cases, the number of audits has increased.

Here, it should be noted that at the outset of the program, NADCAP, in its promotional material stated:

“NADCAP CUTS THE COSTS OF REDUNDANCY –

With a NADCAP audit, there’s no duplication of effort – or multiplication of expenses. One third party conducts an annual audit of each supplier for numerous contractors – which saves money for all concerned.”

That simply is not the case.

But that’s not all. The process has become, as one member puts it, “a *paperwork jungle*”. One must perform administrative gymnastics to even understand the application process and then there is the hierarchical system that stymies prudent and necessary changes to the specs being audited. Committees meet, then meet again, then ballot for changes, etc., etc., etc. It takes forever to promulgate a change that is intended to be in the best interest of the general public. Meanwhile, the general public is at risk, because improper standards are in place.

It may take months or, in some cases, years to approve a change. Conscientious and technically-knowledgeable contract heat treaters should have the opportunity to make on-site adjustments to ensure a properly heat-treated part. But to do so, without the formal sanctions, puts the supplier at risk of non-compliance (and subsequent loss of certification) even though the part(s) in question may be improperly treated. What’s wrong with that picture?



Author Lance Miller (left) is serving his 28th year as Executive Vice President of the Metal Treating Institute, now headquartered in Jacksonville Beach, Florida. He’s seen here with CHTA Secretary Alan J Hick at a reception in Copenhagen in 1990.

Audits

This brings up the issue of audits. First of all, they are costly. Typical audits, over a four-day period, run from \$US8000-10000. That cost and time frame usually does not vary with size of company, number of furnaces to be audited or number of employees. It is what it is. Obviously, part of that cost is for the expenses of auditors, who may have to travel great distances to perform their job. However, in all fairness, of all the commodities in the program, the heat-treating segment is the only one in which the audit fees have been reduced.

The expertise and attitude of the auditors

also vary. Some auditors are extremely well qualified and have a good understanding of the entrepreneurial environment in which they must perform their audits. Others have technical shortcomings and a “holier-than-thou” approach that turns adversarial. In those instances, friction between the two parties is prevalent from the initiation of the audit.

However, the real problem, with the audit itself, is its lack of flexibility. Auditors do not have the discretion to interpret the intent of engineering requirements. It is this intent that is most often misunderstood, because to comprehend the intent you have to know and understand what the writers meant by using specific wording. Having not “been in the writers’ minds”, auditors do not have the authority to approve any variation to the spec.

Because of this inflexibility, auditors are driven in the direction of filling in the blanks and checking all the squares, which in many cases can steer the specification in the wrong direction. Something has to be done to allow the people who know the processes, and their equipment’s capabilities, to make the proper metallurgical decisions to insure proper heat treatment.

It is important to note that PRI does not write the specifications. It is only the messenger. The prime contractors collectively compile the specs and you can only imagine the consensus-building structure that is in place. As in many such scenarios, often the most aggressive get their way ... and the results may not produce the best specification. There is a strong feeling that PRI should apply more pressure on the primes to get the specification right the first time.

There are also recorded instances of a lack of communication during the audit reviews. In many instances, cited deficiencies can be corrected immediately and on the spot. These immediate corrective actions would save much in the paperwork shuffle and subsequent costs. If this were not possible, at least a conference call, with PRI management and the supplier, could resolve the “minor” deficiencies. Additionally, in some cases, contract heat treaters did not receive their PRI certificates on a timely basis. NADCAP responded positively by allowing extensions in most cases.

Value?

The principal issue surrounding all of the aforementioned is whether there is value in receiving the NADCAP accreditation. Any strengthening of a quality system is a good thing. But on the whole, an MTI survey disclosed that, by a 2-1 margin, NADCAP

was NOT good value. Here's what NADCAP promised in its early promotional literature:

"THE MARKET VALUE OF ACCREDITATION –

NADCAP accreditation is evidence of compliance with the industry's highest standards, verified by an unbiased third party. The names and company profiles of accredited suppliers are published worldwide on PRI's computerized Qualified Manufacturers List, exclusively and confidentially accessible to contract subscribers. Suppliers can also cite their NADCAP certification in advertising and sales promotion to demonstrate their Heat Treating capabilities. Less capable competitors can't compete with that."

Early on, there was little perceived value, because only a handful of prime contractors embraced the program. Then others jumped on board somewhat with different levels of "acceptance". The levels were: (1) Accreditation required by prime; (2) Accreditation acceptance letter sent to suppliers; (3) Accept NADCAP accreditation; or (4) Pending subscriber. There were very few in the "required" category and, for the longest time, one of the largest "primes", Boeing, did not commit. After it bought McDonnell Douglas, which had been on board, Boeing joined the team. Many contract heat treaters contended that, with the lack of acceptance by many of the primes, the value was just not there. It boils down to a basic business decision. One member put it this way: "At \$8000 (US) an audit, we have to generate \$80,000 in business (assuming a 10% profit) or save \$8000. We probably don't". Another stated: "Our participation in NADCAP never gained us one job, nor did our withdrawal lose us any. The only payback was strengthening our quality system".

Good luck!

Let me conclude by putting a positive spin on the issue. Metal Treating Institute has some great capable friends within the NADCAP/PRI establishment. We, at MTI, and our member-company representatives have been able to sit down with NADCAP's managerial players, both informally and on the NADCAP Heat Treating Suppliers Task Group. The NADCAP people have also participated in association meetings. Both parties are constantly trying to make the program more viable. Suffice it to say, the main lingering concern stems from a complex layer of hierarchy that impedes greatly-needed adjustments to the aerospace standards environment.

Here's wishing you the best in working with NADCAP and hoping that you can learn from some of our experiences.

CCL effort continues . . . slowly

Dave Elliott provides an update on SEA's efforts to render CHTA members eligible for CCL rebates via negotiated climate change agreements.

Since the last *Hotline*, HM Customs & Excise has published its guidance on the new eligibility criteria for sectors to enter into climate changes agreements:

In order to qualify under the new eligibility criteria, businesses will have to be in sectors above a threshold of energy intensity, using a definition of energy intensity set out in the EU Energy Products Directive. This definition states: "An energy-intensive business is defined as a business entity where the purchases of energy products and electricity amount to at least 3% of the production value....".

So far so good, as the data collected from CHTA members indicated an average energy intensity of 8%; but the guidance continued:

*All business in sectors that meet or exceed a 12% threshold on energy-intensity will be eligible to enter a climate change agreement. Businesses in sectors that meet or exceed a 3% threshold but fall below the 12% threshold will be eligible to enter an agreement **only** if they meet or exceed one of the following two international competitiveness tests:*

- (1) *An import penetration ratio of 50%. This is the percentage ratio of imports to home demand; or*
- (2) *An export to production ratio of 30%. This is the percentage ratio of exports to total manufacturers' sales.*

So the first hurdle has been put in place. Both DEFRA and HM Customs & Excise have been asked for further information and clarification of these tests and the second hurdle falls into place: the new eligibility criteria will not apply until the proposed measure has received state aid clearance from the European Commission. None of the Government departments are willing to discuss the matter until state aid clearance has been given.

Why we have to get approval from the European Commission is beyond me, particularly as the Government did not have to get approval to apply the Climate Change Levy in the first place. The SEA will continue to lobby on behalf of CHTA, but it looks like we are in for quite an uphill struggle.

SEA AWARDS UP FOR GRABS

The Surface Engineering Association is always urging CHTA members to attend its Gala Dinner and Awards evening, the highlight of SEA's social calendar. Details have been circulated about this year's event taking place at the International Convention Centre in Birmingham on Friday October 1st.

We encourage CHTA members not only to attend but to enter for the awards (using the form in the second of the circulars received). The categories are broad enough to encompass the contract heat treatment sector:

- **Marketing** (the company that best demonstrates a planned approach to marketing its services).
- **Quality** (the company that best demonstrates a successful approach to achieving excellence in quality).
- **Environmental** (the company that best demonstrates a successful approach to good environmental practice).
- **Training** (the company that best demonstrates a commitment to training and staff development).
- **Outstanding Achievement** (the organisation, company or individual who has contributed most to the improvement of the industry in the past twelve months). CHTA members have much to be proud of in these fields. **Give it a go – let's show our metal-finishing colleagues what we're made of!**

SEA comments: "We know that companies who have achievements to shout about are sometimes deterred from entering because they are hard pressed for time or perhaps feel they lack the expertise to put together a submission. To overcome this and make the Awards truly representative of the whole industry, we have arranged independent assistance. If you would like to take advantage of this, please contact David Elliott on dave.elliott@sea.org.uk".

The closing date for entries is 2nd August.

SEA HANDBOOK/WEBSITE UPDATE

CHTA members should be aware that SEA is updating its *Handbook* which includes a directory to processes offered by member companies. Expect a questionnaire within the next few months from SEA's agents, *Engineering Capacity*. Be sure to complete and return this to ensure that your company gets maximum exposure. The data collected will also be the basis for a planned revision of the buyers guide on SEA's website (www.sea.org.uk).

A healthy future for contract heat treatment?

- **Eroding customer base;**
- **Increasing costs;**
- **Price-down pressure;**
- **Ever-growing legislation/administration;**

... these are just a few of the modern-day challenges that make contract heat treatment "such fun"!

What are the concerns of individual CHTA members? How do they see the future of contract heat treatment? What are the important obstacles to be overcome to ensure a healthy future? What could Government do? How can CHTA/SEA help?

We asked four CHTA members to comment...



Richard Burslem
Director,
Wallwork Heat Treatment Ltd

Over the years, furnaces, equipment, control, training and quality have all improved and many new processes, such as low-pressure carburising and PVD coatings, have come out of the laboratory and onto the heat treater's shop floor. The typical contract heat treater has improved because of these things, but it is external factors that have really shaped our industry and will continue to do so.

We are a service industry to manufacturing and can only flourish whilst there is a vibrant manufacturing sector, something that has been politically unimportant in this country for some time.

We have lost many large manufacturers, such as car-assembly plants and steel works, and primary production, such as coal mining and agriculture, has been savagely cut. Many smaller suppliers to these industries have disappeared as well when their customers have gone. Consumption has increased, however, and has been satisfied by imported goods.

Having lost customers, we also suffer from customers increasing pressure on us to reduce prices as they compete in a global market. Most heat treaters have encountered year on year price-down contracts.

The roles of unpaid tax collector and social services, foisted on employers by central government, have reduced profit margins. These have been further eroded for the heat treater by arbitrary taxes such as the Climate Change Levy – but a healthy profit

is required for investment in the future by all businesses.

How will we prosper or even survive in the future? Our industry does not easily lend itself to following the manufacturers to their cheap-labour destinations. So we must second-guess the destiny of manufacturing in this country in order to shape the vision of our future.

Some manufacturing sectors remain particularly strong and some have strategic importance. Examples are aerospace, defence, nuclear, motor racing and medical devices. By targeting these industries for business, we can hope to retain a future customer base.

We can strive to become more efficient with better-trained staff, better-organised factories, waste-reduction schemes and even more modern equipment. This will certainly benefit those who do and prepare them for "survival of the fittest" if the market shrinks catastrophically. We can develop and market new or improved processes to give our customers a competitive edge in their market. We have had experience of this, with some success with even the simplest of products.

There is a high value to this country in the retention of a large and capable manufacturing sector. It provides decent jobs at many levels of responsibility and requires a diverse skill base. With the continuing improvements to global communications, it is the true service industries that are really at risk from the low-cost economies. Today, call centres are going abroad – but what about solicitors, accountants and the stock market in the future?

We must encourage our contacts, at all levels and ages, that manufacturing is a sound and sensible path for this country for the future. If we fail, at least we ourselves will have a variety of skills to face an uncertain future.



Mike Hallas
Managing Director,
Bodycoat Heat Treatments Ltd

The future is definitely brighter for the outsourcing of heat treatment services within the UK. For the first time in a number of years, the markets are showing signs of improving demand. Coupled with this, there are a number of other significant drivers favouring the subcontract alterna-

tive to in-house capacity.

The high capital and operating cost of the new technologies required to achieve the efficiencies demanded by their customers, and the risk of low utilisation, will force OEM's towards subcontract, which is a relatively low-risk compared with in-house investment. Over the last year, Bodycote Heat Treatments has seen a significant increase in the number outsourcing opportunities and we believe this will continue.

We also believe it will be increasingly difficult for companies to attract the skill and expertise necessary to enable them to continue with in-house heat treatment operations over the long term. Do we not find it difficult enough already? The decline in the number of suitably-qualified materials science graduates, and lack of alternative training courses, are already resulting in an expertise shortage for many heat treat operations.

The costs associated with securing and maintaining the quality endorsements required by the primes will not be acceptable to manufacturing companies operating small in-house heat treatment facilities. While none of us like the cost associated with the mandating of *Nadcap* approval by the aerospace industry, it is clearly another driver towards utilising subcontract heat treatment services.

The development of niche markets and special products, employing improvements in surface engineering and associated thermochemical treatments, will give further opportunities for growth in the coming years.

With the oil price hitting a record level due to the situation in the Gulf, utility costs are now showing double-percentage-point year-on-year increases. Coupled with pressure, over the last two years, for continuous price-down from customers, it is self-evident that operational efficiency and sustainable volumes are evermore vital if subcontract heat treaters are to survive and prosper.

These aims can be secured only by careful differentiation from in-house services. Pricing policies will need to reflect the new realities of higher costs, offset to some extent by higher equipment utilisation, but with full recognition, by customers, of the true value to be obtained from reliable and timely heat treatment services.

The benefits and advantages of subcontract services as against in-house processing are numerous; it is just a question of getting our customers to recognise the advantages.



Paul Handley
Managing
Director,
Heat Treatment
2000 Ltd

Every week in the press, we hear of product being resourced overseas. The spotlight is either on the company losing direct trade or the end-user indicating his cost savings. Little is heard of the sub-contractor, be he plater, heat treater or component sub-assembly manufacturer. Heat Treatment 2000 serves two core markets: aluminium castings and steel fasteners. In the last four years, a significant volume of both product lines has been resourced abroad and, whilst we have survived, there are others less fortunate. In order merely to stand still, a significant investment in plant has been made because, to retain any product, our customers require even higher standards of quality whilst, at the same time, demanding cost-down. The equation between risk and reward is heavily weighted against the heat treater.

Costs in the market place continue to rise, and we are asked to absorb increases of up to 40% for fuels (for which there seems little negotiation) and about 10% for oils. Efficiencies mean trimming of the labour force and withholding modest pay awards. So it goes against the grain when the major motor companies appear to give away our economies to their workforce with inflation-beating pay increases. A sane man might be tempted to give in, but with such an investment in equipment, this is not an option.

In the drive to push more responsibility onto the heat treater, demands for accreditation to ever-higher standards are being made. No longer is ISO 9001: 2000 enough; TS 16949 will soon be the minimum.

Insurance companies are demanding more and more record-keeping, as society becomes more compensation minded, and premiums increase as settlement is often seen as the least-cost option.

Then we have the Trojan Horse, the Government. More and more legislation and taxation measures are introduced, be they Health and Safety, the Climate Change Levy, Fuel Duty increases, Employers National Insurance, or the administration of WFTC and SSP: all responsibilities put on the employer, with no reward.

Government has declared that we are a knowledge-based society, so what help can a manufacturer expect? Over the last few years, we have sought help from the local Business Link, Accelerate and Advantage West Midlands, but with very

little success.

The future? We shall continue to support our loyal band of customers. We will improve efficiencies and quality. Hopefully there will be something left to invest into the future, but the amount has been shrunk.



Roger Bird
Regional Sales
Manager,
TTI Group

Adversity has become as common a word as austenite and martensite in the heat treater's handbook. We have seen our manufacturing base eroded and been introduced to the mantra of "Global Purchasing". As responsible companies, we readily acknowledge the effects of pollution, waste disposal and the need to recycle; for our trouble, we have received the Climate Change Levy (non-refundable as yet) and environmental legislation. Our energy costs have more than doubled and our operators are subject to the European working directive. What little margins we had are now being attacked by the ubiquitous price-down demands on both short- and long-term contracts alike.

Fortunately the heat treatment process enhances the properties of metal components, many of which would fail prematurely or, worse, not even perform without heat treatment. Therefore, we actually give added value to the product. This fact is not fully appreciated or recognised by purchasing departments who view heat treatment as merely commodity buying.

Furthermore, the tremendous variety of treatments available can allow material substitutions to be made using cheaper steels and, with the right heat treatment process, still achieve the original specification, so effectively gaining the customer a cost-down.

We recognise the changes in manufacturing, the assembly-only philosophy and relocation of large operations to China and new Europe. However, these are in their infancy and still have to prove they can perform, be cost-effective and deliver on quality and time. The benefits may be short-lived as people's expectations and desires in these countries rise. With further unknowns, akin to the way steel price increases have stalled our tentative recovery in the UK, so effectively the cycle may reverse.

We may see, in the short term, less demand for our traditional treatments and should, perhaps, take on board the need to diversify into more high-tech heat treatment and surface-engineering

processes, such as vacuum carburising and coating.

Energy issues will dominate the future decades as we come to accept that fuel resources are finite. The UK, however, is blessed with inventors, designers and innovators continually searching for more energy-efficient solutions. They are using lighter materials to conserve fuel, for example, in automotive and aircraft industries, with greater use of carbon fibre, plastic and even engines made from glass which, in turn, require more demanding heat treatment techniques.

In order to meet the challenges as heat treaters, we need to become more energy conscious and invest in high-energy-efficient equipment, increase the levels of automation and, in all probability, contract the size of operation to satisfy "just-in-time" demands. Our future will lie within industries that are high-skills based: world leaders such as Formula 1 and aerospace, which have specialist applications and niche markets.

The main obstacle to our future is government thinking. Its perception is that we no longer require a manufacturing industry in this country, whilst hypocritically welcoming foreign investment and implants here with all the financial enticement, support and associated tax advantages unavailable to UK industries. Nissan, Toyota and Honda UK factories, synonymous with quality and efficiency, demonstrate that the UK workforce can still lead the world in engineering. However, UK companies are relocating abroad to receive some of the same advantages.

We must endeavour to influence this thinking and reverse the trend at every opportunity and at the highest levels. As an association, our CHTA voice will be small. Therefore, to reinforce the message, we must begin dialogue with other like-minded associations – plating/foundry/forging/metalworking/tool and gauge – and form a united front. Then, in conjunction with the CBI, we should confront our MPs and decision-makers at the houses of Parliament. Who knows what their reaction will be with the general election just round the corner?

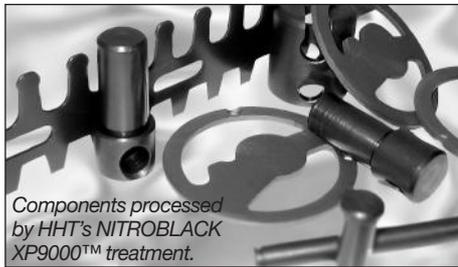
What is patently obvious, as the world population increases, is that demand will increase proportionately. If we lose our manufacturing base in the UK, no matter how good we are as heat treaters, our furnaces will become empty.

What are the views of other CHTA members? Please send your thoughts for publication, and/or Management Committee consideration, to CHTA's Secretariat.

HHT APPOINTMENT

Hammond Heat Treatment Ltd has announced the appointment of **Patrick Robinson** as New Business Director.

Patrick has many years' experience in the contract heat treatment industry and will support the HHT management team in exploring and developing new markets and innovative product design opportunities as the business continues to grow. The environmentally-friendly surface engineering process **NITROBLACK XP9000™** (oxy-nitrocarburising process), now available from HHT's Darlaston plant, is projected as a growth area, complementing the traditional case-hardening, through-hardening and induction-hardening processes available on the one site. Responding to customer requests, the management and logistical control of down-stream processes after heat



Components processed by HHT's NITROBLACK XP9000™ treatment.

treatment will also become an area of expansion at HHT.

For more information, visit www.hht.co.uk

Nadcap AND TTI

TTI Group's Cheltenham facility was awarded *Nadcap* accreditation during May. It is the first heat treatment plant in the group to receive the award. Acorn Surface Technologies have *Nadcap* approval on the NDT testing side of the business. The wet plating activity will be audited in June.

Other TTI plants, including West Bromwich and Letchworth, have already been audited to the new standard. These audits went extremely well and the minor issues raised are currently being addressed. Both plants carry current Rolls-Royce approvals and have a good reputation within the aerospace sector.

NEW FACES AT TTI GROUP

Two new but familiar faces have joined TTI Group over recent weeks.

Paul Couldwell has taken on the role of Works Manager at TTI's Letchworth plant. One of the largest in the UK subcontract sector, this plant offers a wide range of processes including hot isostatic pressing and *Nitrotec*. Paul brings valuable heat

treatment experience to the division, as well as keen commercial skills and an in-depth knowledge of the market place.

Mike Hurley, another figure well known in the industry, joined TTI's West Bromwich facility on June 1st. Mike has a wealth of experience in the heat treatment sector, and his knowledge and expertise will be of great value to the business. Currently, West Brom's business is focussed on the tool and die sector and its extensive capacity is ideally suited for all types of tooling. However, the division is currently undergoing accreditation to the *Nadcap* standard which should extend its capabilities into other market sectors.

INVESTMENT IN VACUUM CARBURISING GIVES NEW CONTRACT SERVICE FOR BRITISH INDUSTRY

Wallwork Heat Treatment is now offering a low-pressure vacuum carburising service in the UK, following a £300,000 investment in a new Seco/Warwick vacuum furnace at its Bury, Lancashire site.

The new contract process provides steel parts with a case-hardened surface which is free from surface and inter-granular oxidation (IGO), virtually eliminating post-processing operations, such as cleaning and grinding.

MEMBER PROFILE

Tamworth Heat Treatment

Supplying a contract heat treatment service to toolmakers and specialist engineers since 1980, Tamworth Heat Treatment (THT) currently trades on three sites, based on the Amington Industrial Estate in Tamworth. It offers a range of heat treatment services from its salt-bath, vacuum and surface-engineering divisions.

The salt-bath division can process jobbing components in a variety of material types, ranging from high-speed steels to engineering steels such as En19 and En24. Processing temperatures of 1250°C can be reached within the neutral salt-bath furnaces.

The vacuum division is able to treat tool steels in a clean computer-controlled fashion. Plastic-mould and cold-work steels are successfully treated using modern vacuum processing methods and controls. High-speed steels can be also hardened in vacuum; this is especially critical when tools are to be coated at a later date, as surface finish is very important to coating adhesion.

THT has recently made available to

customers surface-engineering techniques that include plasma nitriding and PVD (successfully applying very hard coatings to a variety of tools using TiN, TiAlN and TiCN coating techniques).



Plasma nitriding, giving a hard surface (up to 1200HV) with a low processing temperature, minimises the distortion of treated components. As well as the standard plasma nitriding process, THT is able to offer a nitrocarburising and oxidation process that imparts enhanced corrosion resistance and an aesthetically-pleasing black finish. The process is also environmentally-friendly, compared with traditional gas nitriding, reflecting THT's commitment to minimising the impact of its processes on the environment.

THT is always willing to give advice and

guidance to the toolmaker and specialist engineer at any time during the design or manufacturing process. Knowledge of materials and available process routes is used to optimise the heat treatment of components and tools.

The company can offer transport to many areas in the central region and can also organise carrier collections and delivery. A heat treatment service to all parts of the UK is provided by utilising carrier services and customers' own transport.

THT is run by people with many years' experience in the heat treatment industry. The management prides itself on staff training and development to enable the satisfaction of its customer's requirements for turn-around and quality of service. As a result, the company has full accreditation to ISO 9001:2000 and is aiming to gain ISO 14001 in the near future.

THT can help companies in the transition from in-house heat treatment to the facilities and services on offer at Tamworth for all their heat treatment needs.

Customer enquires may be addressed to the Heat Treatment Manager, Kevin Bannister, or to the Works Manager, Gary Coffey on 01827 318030 (e-mail: gary@tamworth-heat.co.uk or kevin@tamworth-heat.co.uk).

Using vacuum-carburising steels, the new process yields very low distortion levels, an excellent 'clean' surface finish and highly-accurate cycle reproducibility. This gives a significant gain in quality performance compared with gas carburising.

The new Seco/Warwick furnace technology uses multi-pulsed gas management during the carburising process, which gives high penetration into holes, even blind holes, making it very suitable for complex shapes such as fuel-injection components. The low distortion and lack of IGO make this process especially suitable for gears, where the post-grinding operation can usually be eliminated.

The vacuum carburising process is completely computer controlled using advanced digital control systems and a carburising simulation program developed by Seco/Warwick. This ensures full process repeatability for separate batches of identical components.

Although substantial investment is required to carry out this process, faster treatment times and the elimination of washing after quenching (a high-pressure nitrogen quench is used rather than oil) mean that treatment costs are similar to conventional gas carburising.

Wallwork Heat Treatment director Richard Burslem commented: "This is a step change. Vacuum carburising is a better

TERRY ELLIOTT RETIRES

After spending most of his working life in the heat treatment industry, Terry Elliott retires at the end of the month.



Terry started work, in 1958, as an apprentice metallurgist at the Standard Motor Company in Coventry, where he helped commission some of the first sealed-quench furnaces to be installed in the UK. After an excellent period of training and a good education at Lanchester Polytechnic, he joined ICI to sell their salt-bath furnaces and heat treatment services in Scotland. In 1971, Terry joined Wild Barfield Heat Treatment where, after four years, he became Managing Director and, with the assistance of a good management team, developed the business to be one of Europe's leading heat treatment companies. Terry was also Managing Director of Wild Barfield Furnaces, which

gave him the opportunity for considerable overseas travel.

For the last eleven years, Terry has been employed by Bodycote Heat Treatments, selling their heat treatment services in the south of England, where he made many friends in the automotive and aerospace industries.

A Chartered Engineer, Terry was a founder member of CHTA and served on its Management Committee for 17 years (1976-93).

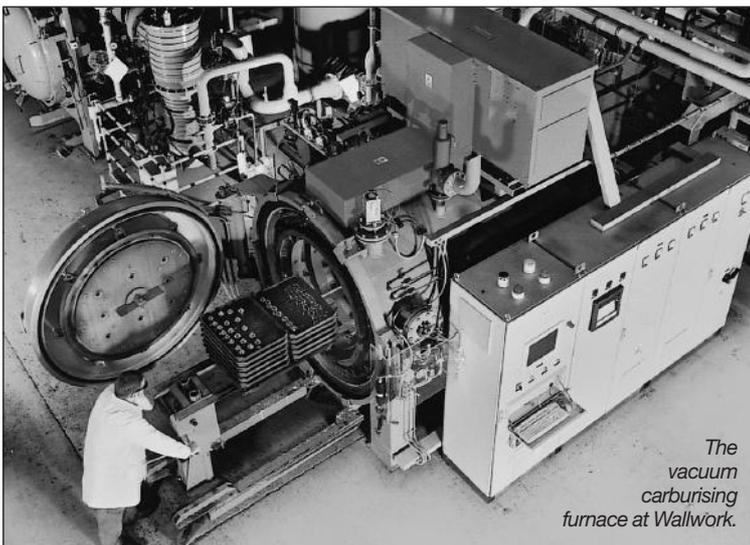
In retirement, Terry plans to spend more time with his family, including his grandsons (to whom he will attempt to pass on some of his limited sporting skills), and his large garden. The extra time will also be used to train, in order to be ready to complete the swim leg for his family team in the Milton Keynes Triathlon, later this year.

The best wishes of the Association go out to Terry, one of heat treatment's gentlemen, for a long and enjoyable retirement.

quality than comparable processes, it requires no post-processing, and is faster and more flexible than conventional methods. As far as we at Wallwork are concerned, we also have the obvious

benefit of faster cycle times and a more environmentally-friendly process."

To find out more about Wallwork's new vacuum carburising process, contact Peter Carpenter on 0161 797 9111.



The vacuum carburising furnace at Wallwork.

Spread the word by proclaiming your CHTA membership



For use on company letterheads, literature, websites and advertisements, members can download CHTA's logo from the Members Area of the Association's website.

News for Hotline 97 should be sent to CHTA's Secretariat by no later than August 31st 2004

Heat resistant castings

Our specialist service for heat resistant castings is based on over 40 years experience of the heat treatment business.

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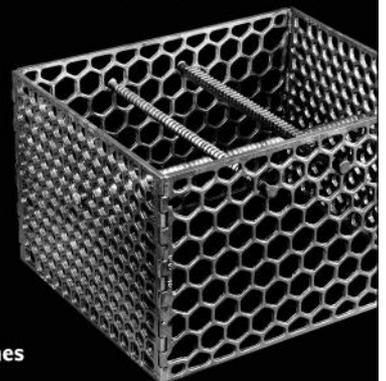
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Design, pattern making

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Benchmark quality

Unbeatable delivery times



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PROFIT FROM OUR EXPERIENCE

NEW SHOT BLASTER FOR ALLOY HEAT TREATMENT

When it comes to aluminium heat treatment, few companies have more experience than the UK's largest sub-contractor, Alloy Heat Treatment. Based in Dudley, AHT's spacious heat treatment centre, equipped with the latest top-loading and rapid-quench ovens, can process parts from fine-limit aerospace panels to 3-tonne sand castings.

In order to provide bright-finished heat-treated components and to offer a comprehensive service to its customers, AHT has recently installed a model H16/26 ISPC Schlick overhead-rail-hanger-type shot-blast machine with full media recovery and reverse jet-cartridge dust collector.

Before ordering, Production Manager Ian Perks took time to evaluate the products of all market-leading companies by visiting similar installations throughout the UK and talking to end-users. "ISPC's competitive price, and the fact that we could, if we had wanted, be shown a large number of similar machines operating in foundries throughout Europe, made our decision fairly straightforward."

Heat-treated castings are presented to the machine on carriers suspended from an in/out overhead rail system that transports them through pneumatically-operated doors into the blast chamber. They are then rotated for a pre-set period, presenting all surfaces to the cleaning action of the abrasive projected by the three 'Roto-Jet' blast turbines.

After three month's continuous use, the customer is delighted: "The ISPC Schlick machine is certainly value for money and fulfils all our needs; it allows us to successfully clean a wide range of products and we now have the potential to develop new markets" concluded Ian.



Alloy Heat Treatment's new shot blaster.

Market Movements

ANALYSIS OF QUESTIONNAIRE REPLIES RELATING TO 40 CHTA MEMBER SITES

"THIS QUARTER" =

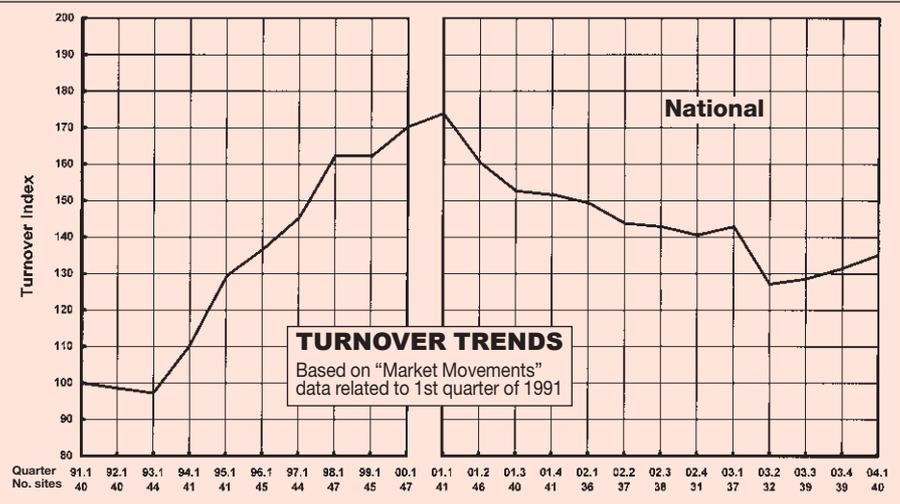
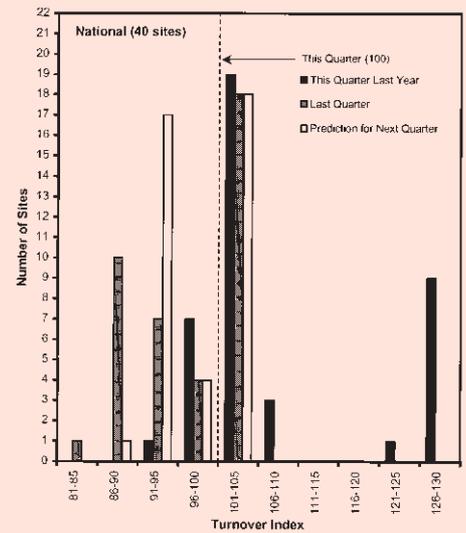
**1 JANUARY –
31 MARCH
2004**

= **TURNOVER INDEX 100**

National

OVERALL ANALYSIS
(40 SITES)

	Mean index
This quarter last year	108.5
Last quarter	97.3
Predicted next quarter	98.6



ANOTHER WOLFSON HEAT TREATMENT COURSE

Readers are reminded that Wolfson Heat Treatment Centre's well-established three-day *Understanding Heat Treatment* course will be repeated on October 12-14 this year.

Held in the Business School at Aston University in Birmingham, the course is designed to impart a general insight into the metallurgical/technological background to industrial heat treatment processing. It was originally conceived with the heat treatment shop supervisor in mind, but has proved equally suitable for engineers, laboratory personnel and suppliers to the trade.

With the emphasis on steel processing, the syllabus covers: basic metallurgical theory of heat treatment; quenching principles and practice; surface hardening theory and practice; furnace types, materials and heating methods; salt-bath heat treatment; controlled-atmosphere heat treatment; fluidised-bed processing; vacuum heat treatment; temperature measurement;

quality assurance; and computer software to assist the heat treader.

For full details and registration forms, contact the Course Administrator, Wolfson Heat Treatment Centre, Aston University, Aston Triangle, Birmingham B4 7ET, England (tel: 0121-359 3611, ext.5212; fax: 0121-359 8910; e-mail: whtc@aston.ac.uk; web: www.aston.ac.uk/whtc).

STATESIDE STATS

NORTH AMERICAN HEAT TREATING ON THE UP

According to returns from participating members of MTI, first-quarter 2004 commercial heat treating sales in North America (\$226.3million) outpaced those in 2003 (\$211.2million) by 7.1%. The industry experienced a very strong March with sales of \$85.1million, an increase of 13.8% over March 2003's \$74.8million. Latest figures for April 2004 show sales reached \$78.5million, an increase of 12.1% over April 2003's \$70.0million.