ABSTRACT

In November 2002 a scientific audit of the Health and Safety Laboratory (HSL) was carried out by an international team of scientists. This report, which describes the audit, is divided into three parts: Part A describes the process by which HSL set up the audit; Part B is the report written by the audit team; and Part C is the HSL response to the audit report.
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PART A

SETTING UP THE AUDIT

It is assumed that the reader is familiar with the function and status of HSL. If not, information can either be gained from the web site (www.hsl.gov.uk) or from HSL’s Annual Report and Accounts.

All Government laboratories are subject to extensive audit but until recently most of these audits have not been directed at the raison d’être of the laboratories, namely the science. However, a number of laboratories have recently carried out scientific audits including DEFRA’s Central Science Laboratory and Veterinary Laboratories Agency, and overseas the Danish Government’s laboratory, AMI. University research has been the subject of audit for a number of years via the Research Assessment Exercise. Further, the Government’s Chief Scientific Adviser is pressing Government Departments with a scientific capability to undertake some form of science audit. Accordingly the time was ripe for HSL to set up an audit of its scientific capabilities.

In any scientific audit the key questions are what, how, and by whom? Discussions within HSL resulted in a decision to audit a cross-section of the laboratory’s activities using a team of independent auditors. The audit team was sent appropriate documentation prior to an intensive two day visit to the laboratory. So the terms of reference of the audit may be summarised:

**Purpose**: to give assurance that a cross section of HSL’s scientific activities bears highly favorable comparison with the international scientific community particularly as it pertains in comparable organizations.

**Scope**:

Staff resources – qualifications, experience, scientific management skills;
Equipment and facilities;
HSL Science and Technology Strategy;
Quality and relevance of work as represented by peer reviewed publications;
Engagement with the national and international scientific community – networks, collaboration, standards bodies, conference presentations etc;

with effort concentrated on the following HSL Sections: Process Safety, Control and Instrumentation, Personal Protective Equipment, Ergonomics, Health Effects, Biological Monitoring, and Organic Measurement.

The documentation sent to the team included:

- Annual Reports
- Science and Technology Strategy
- Bibliography of peer review publications
- Capability Statement, brochures
- Abstracts of technical papers
- Staff qualifications
It was decided that the audit team should be international, preferably with some experience in similar laboratories, and the following team was selected:

**The Audit Panel:**

Dr Ib Andersen  
Director AMI Denmark

Professor Graham Davies FREng  
Professor of Chemical Engineering, UMIST

Dr Jean Francois Raffoux  
Deputy Director INERIS France

Dr Geoff Robinson FREng  
Former Chief Scientist DTI

Dr Jean-Yves Savoie  
Former Director IRSST Canada

The Panel’s expertise covers general engineering, computing, chemical engineering, medicine and occupational hygiene.

The laboratories AMI and IRSST are broadly HSL’s equivalents in Denmark and Quebec, and INERIS is a French laboratory similar to HSL but specialising in environmental issues. The team was asked to produce a brief report at the conclusion of their study. The audit itself was carried out from the evening of Sunday 17 November and concluded late afternoon on 19 November. During this period the team was given general presentations on HSL, had the opportunity to meet individual scientists from the relevant sections, and, of course, to meet privately as a group. The full programme is attached as Appendix 1 of the audit team’s report – see Part B.

The final report was received on 27 January 2003 but the team made an earlier draft available to HSL’s management and this allowed some factual errors to be corrected. The audit team’s report is reproduced verbatim in Part B.

Right from the beginning it was made clear to the audit team and to all HSL staff that the audit team report and HSL response would be put into the public domain. This commitment is honored here on HSL’s web site.
PART B

REPORT ON A SCIENTIFIC AUDIT OF
THE HEALTH AND SAFETY LABORATORY

November 2002
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   6.4 Quality and relevance of work as presented in peer reviewed publications
   6.5 Engagement with the national and international scientific community
   6.6 Communications
7. Conclusion and Recommendations

Appendices

1 Comments on the Audit process
2 Audit programme
1. Summary

The assessment was focussed on six areas, staff resource, equipment, the strategy document developed by HSL 2002/03-2006/07, quality and relevance of the work, engagement of staff with the scientific community and communications both internal and external.

We were impressed by the positive approach of the staff towards this assessment. They were generally well qualified, professional and enthusiastic towards the work of the Laboratory. We noted that the group structure was rather static. Some interchange of staff where appropriate both within the Laboratory, with other research institutions and perhaps between HSE-HSL should be considered. This would provide a valuable mechanism for staff development, an important factor when developing new areas of expertise within the Laboratory. Also we noted that not all scientists had a clear impression of the national research needs in occupational safety and health research.

The Laboratory is in most areas well equipped with modern instrumentation. The planned move to one site at Buxton will help in consolidating activities and resources. The site at Buxton can offer unique facilities for research-development and testing under extreme environmental conditions. This could be of national and international importance.

The expansion of fields of expertise described in the strategy document is crucial for enlarging the activities and client base of the Laboratory. The proposals presented in the document need to be prioritised against perceived scientific and technical needs.

There is scope for improving the communications both internal within the organisation and with external laboratories, companies and academe. The publications policy of the Laboratory should be reviewed and made clear to the staff.

Overall the activities and achievements of the Laboratory compare favourably with similar national laboratories in Europe and North America. In particular areas of the present activities the work is at the level of international standards.
2. Scientific Audit Committee

Dr Ib Anderson                                  Director AMI Denmark
Professor Graham Davies FREng      UMIST
Dr Jean Francois Raffoux                  Deputy Director INERIS France
Dr Geoff Robinson FREng                Former Chief Scientist DTI
Dr Jean-Yves Savoie                         Former Director IRSST Canada

3. Brief

To give assurance that a cross section of HSL’s scientific activities bears highly favourable comparison with the international scientific community particularly as it pertains in comparable organisations.

4. Process

Members of the Audit Committee visited the Laboratories at Sheffield on Monday 18th and Tuesday 19th November 2002. Prior to the visit each member was sent a set of documents for review. These documents included:

- Annual Reports
- Science and Technology Strategy
- Peer review publications
- Capability Statement and brochures

The programme for the two days at HSL is included in Appendix 1.

This review focused on the work of seven of the Laboratory’s twenty-nine sections:

- Biological Monitoring
- Control & Instrumentation
- Ergonomics
- Health Effects
- Organic Measurement
- Personal Protective Equipment
- Process Safety

The specific sections to be reviewed were chosen by the Laboratory Chief Executive as representing a cross section of the Laboratory’s activities and capabilities. It is intended that other sections would be the subject of future audits.

During these two days we had presentations from the Laboratory’s executive management; presentation, demonstration and interview sessions with the seven sections under review; and private discussions amongst the audit team.

This report is the result of meetings and discussions with the scientific and management staff during the two days at Sheffield. A brief audit of this nature is bound to be somewhat superficial but our concluding discussions with the Laboratory’s executive management leave us confident that our conclusions and
recommendations have identified issues that merit, and will receive, careful consideration.

Appendix 2 makes some comments on the format of the process, which may be helpful for future audits of other sections.

5. Overall Impressions

The positive attitude of staff to their work in the Laboratory was most noticeable. They are enthusiastic in their work and appear to be genuinely committed to the long-term development and enlargement of the activities of HSL. The members of the Review Committee wish to thank all the staff for their co-operation and interest in the review process.

6. Items of Assessment

6.1 Staff Resources

Albeit based upon our limited exposure to a relatively small number of people, the scientific and technical staffs are well qualified for the work they are involved in. They are highly motivated and committed to the work of the Laboratory. Their experience, as it related to the topics within the group, was significant. However, we did feel that, for many of the staff, this experience was relatively narrow. This may limit the potential for expansion into other technical areas, as described in HSL Science and Technology Strategy Document 2002/03-2006/07.

At present the institute is organized into 5 groups, each divided into 6 or 5 sections ~ totalling 29 sections. The sizes of most sections are above the critical mass, but their size is moderate in consideration of their professional responsibilities. A future development towards fewer, larger departments and research groups should be considered. Such a development would also facilitate internal communications.

The development of scientific and personal skills of the staff is extremely important in the context of work carried out by HSL, especially within the new strategic areas to be developed. This will become even more important as work with private sector companies increases. It was not clear how this is managed within the Laboratory. No specific programmes beyond the routine human resources development programmes seem to support some major reorientations as presented in the capability statement. In some sections case work was dominant and only minor resources were used in research. A better balance between case work and research work should be aimed for in these sections.

There appears to be a very static structure in expertise within the sections we visited; many of the senior members had been in the same post for more than ten years. It would seem appropriate to encourage some level of proactive staff interchange between sections. It would also be beneficial to give more staff the opportunity for short-term secondments to appropriate organisations outside HSL; for example, HSE, customers, universities, other public sector laboratories, comparable overseas institutes and so on. We welcome the programme of recent
“new blood” appointments. However, we would have liked to see more evidence of programmes aimed at keeping the new blood “new”, and revitalising those whose experience might be described as “mature”. Young staff members are supported to obtain PhDs. This support should be further developed.

The collaboration of the scientific and technical staff between various sections appeared to be good when working on specific projects, especially those arising from “major incidents”. The group and section leaders appreciated the need to form multi-disciplinary teams. Outside specific projects, however, there was no visible structure for encouraging more informal collaborations. There are, for example, no routine meetings established between groups or section leaders to review or plan work programmes. Discussions about the national needs and international developments in occupational safety and health research are scarce. The customers’ needs do not necessarily reflect national needs.

Over and above the points above, we were not able to form a view on the management skills of the staff in the limited time at our disposal.

6.2 Equipment and Facilities

The laboratories are well equipped and well maintained. The analytical equipment available in the laboratories ranges from good to excellent, certainly at least as good as that available in comparable institutions. The staff seemed to be content with the equipment available to them. The quality control of analyses is well organized.

We did feel that, in analytical laboratories, the techniques for handling samples could be improved by relatively simple process changes.

The site at Buxton offers unique opportunities to undertake research, development and testing work under hazardous conditions. Consideration should be given as to whether this could become a site of broader national importance.

There is, at the present time, a serious under-use of HSL’s capital equipment facilities. This is almost inevitable given the need for HSL to be able to respond to the infrequent demands of major incidents. However, it is not clear that sufficient work has been done to identify any benefit that other institutions might be able to gain from under-used HSL facilities or, conversely, facilities in other institutions that could readily be used by HSL. As part of the work proposed in the HSL science and technology strategy a detailed inventory of relevant equipment in other national laboratories and organisations should be prepared.

6.3 HSL Science and Technology Strategy

The aims of the Laboratory are clearly set out in the document. It includes a serious attempt to estimate the volume and demand of future work from HSE over the time period considered in the plan. It is recognised that potential problems exist in defining a development programme for 5-6 years ahead when the major client is HSE. Within these constraints, the document provides a sound basis for understanding the future of “business as usual” activities.
However, it is not clear how the programme relates to the perceived future needs of HSE in exploring “new” areas. We recognise that it is difficult to do this without a strong lead from HSE, and welcome HSL’s future engagement with the proposed HSE scientific strategy work. Because of long turn around time required by research, HSL should be proactive in foreseeing future needs and preparing the appropriate research agenda, in close co-operation with HSE.

We would also like to see more evidence of active engagement with other bodies that may have a role to play in setting and delivering the scientific and medical component of the future Health & Safety agenda. Certainly, in moving into new areas there will need to be very pro-active programmes, involving alliances and collaboration with other national and international laboratories, universities, companies and so on.

In order to drive implementation, the strategy document should set out and justify the basis for any proposed business change. We found this section of the document weak; the jump from analysis to proposed “solutions” was less than rigorous.

The “seed corn” money of ~£1M described in the document for developing new areas or extending existing areas with HSL is inadequate and is spread too thinly across a wide area of science and technology. The staff certainly didn’t see it as a focused investment on the Laboratory’s future; it seemed to be regarded more as a panacea for funding whatever fell through the cracks. We didn’t ascertain whether this was based on experience or wishful thinking.

The list of potential new projects presented in the strategy document is far too long and broad in subject areas. It will not be possible with the present staff and monetary constraints to take on this number of projects within the time scale set out. The list should be ordered into a priority with details of staffing (and expertise necessary) and the financial investment required. The staffing implications are crucial to the success of the strategy. When a priority list of projects has been defined it will only then be possible to define the new skills and experience that will be required to set against recruitment or re-training of staff. At least as important is the need to decide, and communicate clearly, what current work will be phased out to make way for the new, or what future options will explicitly be ruled out.

In this regard, we were pleased that the staff had clearly been actively involved in the preparation of the Strategy. However, we did not sense that most of them had yet seen the Strategy as directly impinging on their future work patterns. Again, we obviously couldn’t judge whether this was based on experience or wishful thinking, or whether it was simply too early in the communication process.

6.4 Quality and relevance of work as presented in peer reviewed publications

The policy with respect to the publication of work in peer reviewed journals, conferences and books needs to be clarified. There seemed to be differences in the emphasis placed on these publications between and even within groups.
There are mixed perceptions of incentives for publications and of the funding provision for the work necessary to produce the material in proper form for publication. For some the customer-contractor relationship may be a constraint to scientific publications. There are also mixed perceptions of the importance to individuals within HSL of joint authorship of papers with outside institutions.

The publications of the groups visited were studied. Inevitably these varied in quantity and quality. Overall the publication record was acceptable - particularly when judged against the demands for short term and urgent projects required (understandably) by HSE. There were, however, clear cases where important research results had been acquired that were worthy of peer reviewed publication but had not been written up.

These matters need to be clarified within an overall framework which includes the importance to be given to all forms of “quality assessment”: customer feedback, confidential reports to clients, non-technical publications, patents, non refereed publications and presentations and peer reviewed publications. The question of enforcing appropriate guidelines covering the preparation of work for publication at the appropriate level could then be addressed.

6.5 Engagement with the national and international scientific community

In work areas relating to specific projects the engagement of the scientific staff with both the national and international scientific communities is very evident. However, the further removed from directly project related science, the less comfortable we were that staff were actively engaged in the broader research agenda – even when these broader scientific issues were of potential future relevance to HSL, HSE or other national priorities. In particular, many of the topics presented in the strategy document will require engagement on a much broader front. In this regard, it is not clear that staff know what is expected of them. There are clear benefits to be gained by networking with national and international laboratories and with university departments. This approach needs to be developed. Publications (as discussed above), networking and active collaborations with partners in the UK and overseas will raise the awareness of HSL, increase its credibility with its clients and raise its capacity to answer more complex questions.

6.6 Communications

6.6.1 Internal

Communications between sections at the working level need to be improved beyond that arising from specific project related issues. This will become increasingly important as the activity with private sector companies increases and as the scope of the activities of the Laboratory increase as the new strategy is rolled out. The move to Buxton will greatly facilitate this.
6.6.2 External

HSL’s external communication today takes place through HSE and through HSL’s teaching and training activities, newsletters and HSL’s Internet site. A well developed external communication and dialogue with its customers is essential for a governmental research institute. To serve its present customers, and to enlarge its customer base, a proactive communication strategy should be developed which makes it possible for enterprises, social partners, professional organizations etc. to have full information about publications, ongoing research projects, and to be linked to other prominent Occupational Safety and Health (OSH) research institutes.

The work carried out by certain sections has produced valuable data that should be made available on the Internet to scientists in other national and international laboratories. This is particularly so in the work on biological monitoring and health effects. The national database for chemical and biochemical analysis at the workplace which is already fully developed for internal use should be further developed for the public domain.

7. Conclusions and Recommendations

7.1 Conclusions

- The staff are generally of high quality, well qualified for the work and well motivated.
- Where possible there should be a planned inter-change of staff within sections. The present system is too static and restricts the personal development of individuals.
- The Laboratory is in most areas well equipped with modern instrumentation.
- The planned move to one site at Buxton will help in consolidating activities and resources.
- The Buxton site offers unique facilities for research, development and testing under extreme conditions. If developed this could become of national importance to industry and academe.
- The expansion of fields of expertise described in the strategy document is crucial for enlarging the activities and client base of the Laboratory. However the proposals presented in the document need to be prioritised against perceived scientific and technical needs, staffing, human resources development and financial investments required.
- There is scope for improving the communications both internal within the organisation and with external laboratories, companies and academe.
- The publications policy of the Laboratory should be reviewed and made clear to the staff.
- Overall the activities and achievements of the Laboratory compare favourably with similar national laboratories in Europe and North America. In particular areas of the present activities the work is at the level of international standards.
7.2 Recommendations

We have deliberately kept our formal recommendations to those we feel most worthy of management focus:

- **HSL Science and Technology Strategy document**: This document provides an excellent basis for positioning the debate about the laboratory’s future. However, it needs to be developed. The new areas discussed in the document should be considered in terms of the potential with respect to anticipated needs of HSE and private and public industry. In this HSL should try to be more pro-active. The investment required to develop expertise and the physical resource in each area should be assessed. A priority list should then be produced. It will be important to ensure that the staff understand and “buy into” the resultant programme.

- We suggest that an active development programme is established which will provide for human resources development in the developing areas and staff inter-change between different groups where appropriate. There should also include the temporary exchange of staff with HSE and other laboratories or universities.

- A more explicit policy on external “quality assessment and feedback” needs to be formulated for the scientific and technical work. This should include – but is not necessarily limited to - the policy for publication in external journals. Staff should be encouraged to have an active involvement in developing this policy and have ownership of it.

- Communications within the organisation need to be reviewed with a view to encouraging a greater degree of intellectual cross-fertilisation across the laboratory than that arising from natural day-to-day work pressures.
## Appendices

### 1. The Audit Programme

**HSL Scientific Audit**

**Programme**

**Sunday 17 November**

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Organizer(s)</th>
</tr>
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<tbody>
<tr>
<td>2000</td>
<td>Dinner, Beauchief Hotel</td>
<td>David Buchanan and Norman West</td>
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**Monday 18 November**

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Organizer(s)</th>
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<tbody>
<tr>
<td>0810</td>
<td>Taxi from Hotel to Sheffield Lab</td>
<td>David Buchanan</td>
</tr>
<tr>
<td>0830</td>
<td>Arrive, Introduction to HSL and HSE</td>
<td>David Buchanan</td>
</tr>
<tr>
<td>0915</td>
<td>Private Audit Team Discussion</td>
<td>Anne Wright</td>
</tr>
<tr>
<td>0945</td>
<td>Overview of the Work Programme</td>
<td>Norman West</td>
</tr>
<tr>
<td>1030</td>
<td>Science and Technology Strategy</td>
<td>Norman West</td>
</tr>
<tr>
<td>1115</td>
<td>Quality Procedures</td>
<td>David Brunt</td>
</tr>
<tr>
<td>1145</td>
<td>Engineering Lab: facilities and work</td>
<td>Phil Heyes</td>
</tr>
<tr>
<td>1230</td>
<td>Buffet Lunch</td>
<td></td>
</tr>
</tbody>
</table>

Audit Team Divides

Dr Geoff Robinson and Prof Graham Davies to Buxton

1315  Departure to Buxton Lab:

1415  Arrive Buxton: Process Safety

1630  Depart Buxton Lab

1730  Arrive Hotel

Dr Ib Andersen, Dr Jean Francois Raffoux, Dr Jean Yves Savoie remain in the Sheffield Lab

1315  Biological Monitoring: facilities and work

1515  Health Effects: facilities and work

1715  Depart Sheffield Lab

1730  Arrive Hotel

Audit Team Reassembles

2000  Dinner, Thyme Restaurant

David Buchanan

Norman West

Anne Wright
Tuesday 19 November

810  Taxi from Hotel to Sheffield Lab

Audit Team Divides

0830  Dr Robinson and Prof Davies
Control and Instrumentation: facilities and work  Phil Heyes and Dave Gregory

Dr Andersen, Dr Raffoux, Dr Savoie
Personal Protective Equipment: facilities and work  Lee Kenny, Nick Vaughan, and Steve Thorpe

Audit Team Reassembles

1015  Ergonomics – facilities and work  Lee Kenny and Mike Gray

1200  Buffet Lunch
1230  Organic Measurement: facilities and work  John Groves and Duncan Rimmer
1415  Private Audit Team Discussion
1515  Final meeting  David Buchanan
1545  Depart
2. Comments on the Audit Process

The Audit team would like to offer a few comments and suggestions on the Audit process. These are taken both from our own experiences on this occasion, and from the process that Ib Anderson described from the review of his own institution in Denmark.

- There was a good international cross section of reviewers covering a range of science and engineering disciplines, backgrounds and experiences. We felt there might be benefit to be gained from the Danish model: i.e. having one person be responsible for the overarching process whilst specific experts were called in to review the specific topics and/or sectors.

- The topics reviewed were varied over the activities of the Laboratory. This helped the audit team members gain a wide perspective of the Laboratory’s activities, but consequently meant that our review of any one topic was necessarily shallow. There was insufficient time to spend on probing the detail of the scientific work. A longer period for this would have been desirable. The model described in the previous paragraph would alleviate this problem. Alternatively, it might be better to narrow the focus of future reviews.

- The attitude of all of the staff involved was extremely positive. This certainly made our task easier than it would have been if they had felt threatened by the process. However, the unstructured nature of the review sessions inevitably resulted in varied coverage between sections. It would have been more efficient, and informative, if we had prepared some standard questions in advance for the heads of the sections before we visited them.

- The visit to the Buxton site took up too much time simply travelling from Sheffield and around the site (especially as both reviewers had been there before). The consolidation on to the Buxton site should remove this problem.

- The documents sent to the reviewers were helpful in preparing for the visit. However, it would have been a great help if the material had included the context into which each group’s work fitted – the role of research, provision of services, role in major incident investigations and so on. It would also have been a good discipline for each section leader to be required to provide his/her own SWOT analysis of their section’s activities.

- Whilst the material did include details of publications and collaborations, it was almost impossible to get a qualitative – as opposed to quantitative – view of this material. Inclusion of information from international citation surveys would provide an objective measure of quality of papers; some measure of the depth, breadth and longevity of collaborations would help identify those that were of significance. It would also be more helpful to give examples of
professional engagement – for example, in policy and standards setting – especially where they demonstrated HSL’s impact on a broader agenda.

- We were conscious of operating within the relatively narrow scope of HSL. In future, consideration might be given as to whether the terms of reference should attempt to place the scope of HSL’s work in the much broader scope of Occupational Health & Safety for the nation as a whole.

- Documents relating to staff training, evaluation and promotion would also have been helpful. As it is, we didn’t have enough time to get into these subjects from scratch in our interviews.
PART C

THE HSL RESPONSE

The audit report is set out against the topics selected as being in scope and this response takes the same structure.

1. Staff

It is noted with satisfaction that the staff are “well qualified, highly motivated and committed”. The team noted that some staff had expertise which was relatively narrow and that perhaps, fewer, but larger, sections should be considered. HSL has considered its organisational structure on many occasions. The technical remit on HSL is very wide and many disciplines are necessarily represented. Some staff are deep specialists and others have more general experience. Different structures based on, for example, programmes of work or matrix-like organisation etc have all been considered and debated with staff representatives. New sections have been created to meet changing customer needs, for example Computational Modelling Section and Pedestrian Safety Section, and others have been merged or reduced in size where improved effectiveness could be gained. It is our view that the manageable size of a section is in the range 10-15 people. It has been concluded, and remains our conclusion, that the current structure is fit for purpose.

The team also noted that there were no specific programmes aimed at redeveloping staff. In fact, development of staff is addressed through HSL’s Annual Training and Development Plan which sets the top level corporate strategy and takes account of the gaps in staff skills and expertise identified in the Science and Technology (S&T) Strategy (see below). This is translated into personal Development Action Plans for individuals. Neither the overall nor individual training plans had been made available to the team.

The team also thought there should be a better balance between case (support) work and research. This point is accepted and has been discussed on several occasions with HSL’s owner and principal customer, the Health and Safety Executive (HSE). There is a problem of definition of what constitutes research and support, but it must be remembered that the primary reason for HSL’s existence is to provide technical support to HSE particularly on the investigation of accidents. However, both HSL and HSE would like to see research effort of at least 25% of the whole and are working closely together to achieve this aim.

The team thought the composition of sections was static with little interchange of staff. To a large extent this is true and is reflective of the specialist disciplines involved. Nevertheless, HSL accepts that more interchange is desirable and will be endeavouring to set up a programme to promote interchange both between sections within HSL, and also develop a programme of secondments and exchanges with other organisations in the UK and overseas.

The team also thought that there should be more joint meetings between Section Heads to review and plan work programmes, and discuss national needs in health and
safety research. This is partly a reflection of the customer-contractor principle which HSL operates. HSL does not generate its own programmes, however its principal customer HSE does, and there is a stated intention by HSE to involve HSL staff more closely in programme development. For example, recently the first meeting of the newly formed HSE corporate S&T topic groups was held and HSL was fully engaged in this. This is particularly welcomed by HSL. Furthermore, HSL will endeavour to ensure that there is greater common understanding across HSL of the work programme by setting up appropriate internal laboratory meetings and building upon the use of electronic topic-based ‘teams rooms’ and ‘research in progress’ seminars.

The team also had a view that customers do not necessarily reflect national needs, but HSE would dispute this as it has in place extensive consultative mechanisms with stakeholders.

2. Equipment and Facilities

The team noted that the laboratory was “well equipped and maintained”. It was suggested that the site at Buxton could be developed into one of broader national importance. HSL’s new laboratory, which is being constructed on the Buxton site, will greatly increase utilisation of this resource. HSL has good links to universities on both sides of the Peak District and, long term, there is the opportunity to develop the site into some sort of science park.

The team noted that some facilities were under used. This is a problem recognised by both HSL and HSE and some facilities are labelled as “key facilities” required for use infrequently in connection with major incidents. These facilities are reviewed periodically by HSE and HSL. Nevertheless, HSL accepts that more could be done to market these facilities to non-HSE customers. HSL also recognises that it needs to review and keep better records on relevant facilities in other organisations.

The team recommended that sample handling procedures could be improved by the introduction of bar codes and HSL will look at this.

3. HSL Science and Technology Strategy

HSL’s Science and Technology (S&T) Strategy seeks to look at future technical demands in the market place, at HSL’s capabilities for meeting these demands, the gaps in HSL’s capabilities, and the means of closing the gaps. HSL uses its investment research budget to fund some of the work aimed at closing the gaps.

The team thought the document provided a sound basis for “business as usual” but that it was not obvious how it took account of HSE’s emerging needs. In fact, HSL staff did discuss HSE’s requirements with appropriate staff in HSE, and HSL continues to be engaged in dialogue with HSE on its corporate S&T needs, in particular what HSE requires of HSL as its in-house provider of S&T.

The team also thought that HSL should have engaged more actively with other bodies in devising this strategy. HSL accepts this point. Although account was taken of external drivers through published documents from other organisations and both HSL
and HSE networks, no direct contact was made with external bodies. This is something that HSL will remedy when developing future strategies.

The team commented that the jump from analysis to proposed solutions was less than rigorous. HSL recognises that the strategy does not contain business appraisals, nor detailed implementation plans, and nor does it prioritise the recommended actions. In fact, the changes proposed are more in the nature of evolution rather than revolution. However, business appraisals will be conducted and implementation will be via HSL’s existing planning system including the Science Group Operating Plans, HSL’s Corporate Training and Development Plan, Capital Scientific Equipment and Facilities Procurement Plan, and the Investment Research Programme.

Significantly, the team thought the “seed corn” money of £1m (the Investment Research budget) was inadequate and too thinly spread. The level of the budget is something that HSL will discuss with HSE, and HSL accepts the need to use the budget to fund major investments rather than spreading it around. HSL will also prioritise its use of this budget.

4. Quality and Relevance of Work as Presented in Peer Reviewed Publications

The team thought that staff had mixed perceptions on the importance of publishing work in peer reviewed journals, although they concluded that the overall publication record was acceptable. HSL will be reviewing its publication policy as a matter of urgency and putting more emphasis on it. This will also fit in with HSE’s policy on publication although it should be noted that some customers are unwilling to fund this activity.

The team also thought that the publication quality framework needed to be widened to include customer feedback, patents, presentations, non-technical publications etc. On customer feedback, HSL has twice commissioned Opinion Research Corporation International to conduct independent surveys of customer satisfaction and such surveys are of all types of products for customers. The last customer satisfaction survey was conducted in 2002 and showed an overall satisfaction of 88%, up from 81% in the previous survey conducted in 1999.

5. Engagement with the national and international scientific community

The team recognised that there was good interaction on specific projects but were less satisfied that staff were actively engaged in the broader research agenda. HSL staff do in fact spend considerable time at other laboratories discussing specific projects, and at international conferences and standards meetings. It is accepted however, that greater staff interchange would help. HSL is one of the founding organisations of a new European network of occupational safety and health research institutes and this should assist in shaping the future agenda as well as assisting in specific collaborations.

The team also thought that the external communications strategy should be developed. HSL’s work on external communications was not well enough exposed to the team, but in any case plans for an improved web site, and better networking should assist.
The team thought that the national database for chemical and biochemical analysis in the workplace should be further developed for the public domain. This will be discussed with HSE.

6. Conclusions

HSL notes with satisfaction the team’s overall conclusion:

“the activities and achievements of the Laboratory compare favourably with similar national laboratories in Europe and North America. In particular areas of the present activities, the work is at the level of international standards”

7. Recommendations

The team made four specific recommendations relating to the S&T strategy, staff interchange, publication policy and external quality assessment, intra-laboratory communications on technical work. These points have been discussed in more detail in the previous sections and in HSL’s Management response. Specifically, however, HSL will:

- implement the S&T strategy, prioritising the actions through existing planning processes; and review the strategy later this year;
- develop arrangements for staff interchange within and beyond the laboratory;
- review and widen HSL’s policy on publication; and
- review the systems for internal communication of technical issues in the laboratory.

HSL also notes Appendix 2 of the team’s report which comments on the audit process, and will take these comments into account when considering future audits.

Finally, HSL management records here its gratitude to the team who willingly undertook a difficult task, and also to HSL staff for the time and effort they put into the audit.

David Buchanan
Chief Executive
Health and Safety Laboratory