Agenda Item 15

Enclosure 8

Paper ETC 32/02

Education and Training Committee

REPORT ON THE WORK OF THE UK INTERPROFESSIONAL GROUP'S TASK FORCE ON THE " REVALIDATION OF PROFESSIONAL COMPETENCE " AND NOTES OF ITS F.H.E. WORKING PARTY ON 30 MAY 2002

From UKIPG via the Secretary

FOR INFORMATION

Executive Summary

This is an up-date on an important multi-professional project which is now liaising with the AHPF project and notes of a meeting across all regulated professions on 30 May 2002 which act as a notice-board for several relevant topics.

United Kingdom Inter Professional Group

Task Group on the 'Revalidation of Professional Competence'.

1. At its January 2002 meeting, the UKIPG agreed to set up a Task Group to examine the issues relating to the 'Revalidation of Professional Competence'. Robin Wilson (Engineering Council UK) agreed to lead the work, but first wished to 'take soundings' from a range of bodies within the Group, both those who were currently addressing statutory revalidation (eg GMC) and those administering internal 'license to practice' or 'practice certificate' schemes. He also raised that item at the meetings of the CPD Forum and the UKIPG's Working Parties on Professional Regulation and on Further and Higher Education.

2. Following this exploratory work, Robin presented ideas and concepts to the March 2002 meeting of UKIPG. Copies of the paper and the powerpoint presentation were included with the minutes. It was agreed to run an open meeting, for all those who wished to be involved in this work, on 29th April 2002. Notes on that meeting are attached. The notes were subsequently copied to the PRWP and FE&HEWP and further discussion ensued.

3. Robin now intends to consolidate the 'bottom line' thoughts and lessons from those meetings into a 'draft guidance note'. This would aim to set those contemplating a revalidation or recertification scheme on the right track, based on the lessons learned already. There was insufficient evidence for it to be other than tentative guidance at this stage, but it did provide an opportunity for sharing.

4. Robin Wilson intends to present this first draft at the meeting on 24th June, having first shared it by e-mail with those who attended the April meeting. If this 'common thread' can then be refined and agreed, the Task Group can move on to a more detailed mode of working, examining examples of practice developed for different applications. The Task Group will particularly be interested in how the principles can be applied in those sectors where 'maintenance of professional competence' is a professional obligation, but not backed up by a statutory order.

5. **The UKIPG is invited to:**

   - Note this interim Report and the record of the Task Group meeting attached.

   - Note Robin Wilson's oral presentation on the way ahead at the main Group meeting.

UK Inter Professional Group

Revalidation of Professional Competence Task Group

Notes of a Meeting held on Monday 29th April 2002 at 1415
at the Engineering Council Offices,
10 Maltravers Street, London WC2R 3ER

Introduction and Welcome

1. Robin Wilson introduced himself and the Task Group by reference to the UKIPG Main Group Meeting held at the RIBA on 25th March 2002. Copies of the Minutes dealing with this topic in Item 3 were tabled, although the full minutes had already been sent to UKIPG members. Also available were copies of the Robin's paper and 'powerpoint' presentation used at that meeting; again these had been circulated in advance and most people had them.

2. Attention was drawn to two current papers, which the Secretary had included with the Agenda for the next Professional Regulation WP meeting on 7th May. These were:

   - *'Engineering Ethics: Do engineers owe duties to the public?'* by Professor John Uff CBE QC FREng of Kings College.

   - Construction Industry Council *'Liability Alert'* dealing with PII.

3. Attendance was as recorded on the attached sheet. Apologies refer to those having previously shown an interest in attending. David Oakeley, who had experience of introducing a voluntary licensing scheme in the road transport sector, had been unable to attend.

4. It was stressed that this issue was being addressed primarily as one of 'professional regulation', although initial education and training, and continuing professional development, would be 'contributors to the process'.

Summary of Work to Date

5. Robin Wilson very briefly recalled his visits to several professional bodies to discuss this topic and refine ideas. This had led to the paper prepared to support his presentation to the main group meeting on 25th March 2002, and the 'powerpoint' slides. Robin Wilson summarised the main points in this paper, and the points raised in the subsequent discussion (and recorded in the minutes) for the benefit of those who had not been present at the meeting. This is not repeated here, as all concerned have had access to the papers (UKIPG.P02.02, UKIPG.P02A.02, UKIPG.P02B.02 and UKIPG.M1.02 - Item 3.). In the end, it was argued, the topic came down to a distinction between being 'on a register' and having a 'license to practice'.

Discussion

Types of Register

6. The discussion opened with an attempt to clarify the distinction between:

   - Being accepted as a member of a 'professional network';
   - Having a 'licence' for independent practice;
   - Being on a voluntary 'specialist register' of those claiming greater than the 'norm' expertise in particular areas of practice.

7. It initially seemed that there were two broad sets of views, represented as:

   - The 'register' (usually by implication a statutory one) of those currently fit in all respects to practice now to contemporary standards, and 'membership of a professional body' which did imply current knowledge and understanding, and professional competence and ethical commitment, but not necessarily 'in current practice'.
   - The 'register' or 'list of professional members' (usually by implication maintained by a non-statutory professional body) of those appropriately admitted to the profession and not been found wanting, and sub-sets of those who were entered in 'specialist registers' or issued with 'licences to practice' after further assessment and certification.

8. There was not a clean separation between systems applied by purely statutory bodies and those applied by Royal Charter (and similar) bodies. Some Royal Charter bodies maintained statutory registers under primary legislation (eg RCVS) and others were authorised bodies for the purpose of issuing 'practice certificates' or other authorisation required for particular statutory functions (eg ICAEW, Institute of Actuaries, and ICE (for reservoir engineers).

9. Additionally, some bodies, such as the RCVS, maintained under their own Royal Charter 'post graduate' registers of those with higher qualifications in particular fields. These were a sub-set of those on the current statutory register maintained by them under the Act.

10. It was posited that, in the general case, revalidation of a 'UKIPG professional' meant some form of formal endorsement that the person concerned was:

    - In good standing with the 'general register';

- Currently practising in some identifiable area of practice;
- Satisfying the criteria for 'good health' and 'good conduct';
- Meeting contemporary norms for current practice, as judged by professional peers.
- Being certified by a transparent and quality assured process.

11. It was additionally 'floated' that the certification process might:

- Satisfy the current European Standard for the Certification of Competent Persons (EN45013);
- Be formally accredited as such by the United Kingdom Accreditation Service (UKAS).

Logistics, Costs and Benefits

12. Most professions had made improvements to their processes and standards for the initial assessment and admission. In contrast, many perceived it to be much more difficult to warrant to the public that those standards were being maintained across their profession, 10, 15 or 20 years after initial admission. There was a view that the public - 'consumers' - expected (and perhaps assumed) more than was generally on offer at the present. With corporate memberships in some professional bodies being well in excess of 100,000, it was very challenging to develop and operate systems which addressed all members at all, never mind at reasonable intervals.

13. It could be argued that a minimalist approach would be to watch for politically sensitive areas, and at least see that they were addressed. (Politics was sensitive to what politicians believed that the public was sensitised towards - eg currently healthcare, some aspects of transport safety, and some 'public safety' aspects of construction [eg asbestos]). However, this 'barometer' was not reliable; politics was also sensitive to 'monopoly and competition' and the OFT took the view that professions were best regulated through the marketplace. In all cases, litigation was increasing; if professional bodies were to promote better systems for 'assessment of competence', they could be making themselves more liable to be sued. It was also important not to make themselves into a 'soft touch' for claimants.

14. Inevitably, the numbers involved meant that revalidation schemes had to address a proportion of the numbers involved in each year; perhaps one fifth every five years or one third every three years. Annual re-certification would only be manageable for limited sub-sets seen to present an exceptionally high risk to the public. Even then, the need to build up the process meant that it would be many years before some practitioners were assessed. This may not meet public expectations.

15. The profession furthest down this route was medicine, with about 150,000 on the Register and with a planned 5 year cycle. Dentistry was looking at about 30,000 on a 5 year cycle. In these cases, some reliance was to be placed on employer appraisals as 'evidence sources', to make the processes potentially manageable. The medical model was likely to cost about £6 or 7×10^6 per annum, working out at about £50 per registrant per year. As statutory registration was essential to work in the NHS, and almost essential in any other medical field, getting the additional fee paid would not be too difficult.

16. In the non-statutory area, the professional body would have to convince its members that there was an expected benefit from such an increase. There were counter arguments from both ends of the spectrum. In an area where professional membership was the expected norm, there would be little market advantage to individuals, as most others would be equally re-validated. At the other limit, where professional membership was relatively rare and even more rarely required, the client market would go for the cheaper option. The real economic case had to be built on some unique quality (eg validated specialist expertise), greater ease of getting (or a lower premium for) PII, or contract compliance as clients become persuaded of the protection available to themselves through the employment of firms employing re-validated professional staff.

Some 'Process' Issues

17. **Benchmark Standards.** If the re-validation was to be able to assure practice at, at least the minimum acceptable, contemporary standard, then an equally large logistic exercise would be involved in setting and regularly updating the 'benchmark practice standards'. Without these, the process would become subjective and not criterion referenced, and soon not based on evidence. This would lead to inevitable challenges under for human rights issues concerning fairness and transparency of the process. The more effective the revalidation system, the more threat it would be to livelihood, and the more opportunity for challenge.

18. **Use of Employer Data.** Some schemes were predicated on access to employer data from appraisal schemes. Whilst this may exceptionally be practical in the special case of a Government-owned NHS for *de facto* Government-regulated healthcare professions, the general case would be much more difficult. A pre-requisite would probably be some professional body quality assurance of employer 'human resource management' systems.

19. **Approved Companies.** An extension from the last point is the change of emphasis from the re-validation of the individual to the re-certification of an 'approved company', as the CAA now applies to large scale civil aircraft maintenance work. It may well be the that the professional bodies can best apply their efforts to accrediting firms, particularly those which interface directly with 'member of the public' clients.

Way Ahead

20. In seeking to move on, Robin Wilson said he would reflect on all that had been said in this meeting, and try to put his thoughts together in time to produce 'draft guidelines' for the 24th June meeting of UKIPG. The draft could be shared by e-mail, through the UKIPG Secretary.

21. It was clear that the health care area was being driven in a particular direction by the NMC and HPC statutory orders, and by the Section 60 Order for the GMC. These were likely to set the scene for the other health professions, particularly as the current Bill becomes law and the proposed Council for the Regulation of Health Care Professionals is established. Clearly, there was a case for the UKIPG facilitating an urgent and sector-specific response in this area. It was also important to learn from it, as some expectations would cross into other professions. On the other hand, 'protection of generic title' was an expected outcome in the health care area, but likely to be seen as anti-competitive in the DTI and OFT domain.

22. It was equally important to review other forms of regulation (or none) being applied by other government departments, and to learn to live under their regimes. The UKAS /Certification Body model has been applied already, for example in respect of gas engineering. Other sectors were being regulated on Europe-wide approaches, such as the change from the CAA system to JAR66 in aircraft maintenance. The remit of the Financial Services Authority was spreading across many areas of finance, insurance and related practice, as were other 'regulators' and 'ombudsmen'.

23. Therefore, there was not a simple 'Way Ahead', although on reflection, the general title for this activity 'Guidelines for the Revalidation of Professional Competence' was seen as the most suitable.

24. The key points for all professions were:

- Regulation for the protection of the public and clients.
- The need to maintain competence to current norms in the field of intended practice.
- Some form of quality assured assessment against contemporary benchmark standards.
- License to practice was different from membership of a professional community.
- Regulation of practice was about safeguarding the 'bottom line' of acceptable current practice; professional standards were about aspiring to excellence and being able to demonstrate it through peer judgement.

United Kingdom Inter Professional Group

Working Party on Further and Higher Education

Minutes of a meeting held on
Thursday 30th May 2002 at 1045
at the Engineering Council
10 Maltravers St, London WC2R 3ER

Members:	* Dr Peter Dangerfield	BMA	(Chairman)
	Mrs Freda Andrews	RCVS	
	Dr Peter Burley	HPC	
	Ms Lucy Courtenay	CII	
	* Ms Aileen Cowen	ICSA	
	Dr Elizabeth Goodwin	Institute of Actuaries	
	* Ms Janice Gosby	NMC	
	* Ms Sharon Hurlock	BMA	
	* Ms Aude Leonetti	ICAEW	
	Dr Rob Tovey	RICS	
	Mr Mike Walsh	ACCA	
	Mr Richard Shearman	Engineering Council UK	
	Mrs Dian Taylor	GOC	
	Dr Jon Levett	ARB	
	* Mrs Judy Whittaker	CIPD	
	* Ms Tracy Wood	CII	
	Mrs Ruth Wright	Engineering Council UK	
Secretariat:	* Mr Peter Swindlehurst	UKIPG	

(* Present)

Item 1 - Attendance

1. Apologies were received from Freda Andrews (RCVS), Peter Burley (HPC), Richard Clifford, Lucy Courtenay (CII - but represented by Tracy Wood), Elizabeth Goodwin (Actuaries), and Ruth Wright and Richard Shearman (EngC UK). The Chairman apologised for having to change the meeting date; he had been required to attend an academic conference on the arranged date. He welcomed Tracy Wood, Aude Leonetti and Sharon Hurlock to their first meeting of the WP.

Item 2 - Minutes

2. The Minutes of the meeting of 21st February 2002, which had previously been circulated, were approved.

Item 3 – Matters Arising, not elsewhere on the Agenda

3. The Working Party briefly reviewed the following points referred to in the Minutes of the 21st February 2002 Working Party meeting:

a. **Item 3 – Health and Nursing Professions Update.** In both professional areas, the new Boards had begun operating on 1st April, but with different transition agendas and processes. The HPC had held a formal launch on 17th April, at which the UKIPG and other member bodies were represented. In giving his apologies for this meeting, Peter Burley of HPC sent an note with some update information. The e-mail is attached to the minutes. The NMC had different issues to face, as it absorbed the work of the former 'National Boards'. It had gained new powers to initiate investigations into misconduct, rather than having to wait for an external complaint. There was a need to restructure the former UKCC Register as a matrix of areas of professional qualification and practice, and perhaps into 'levels' of practice. This might eventually embrace the registration of HCAs, as well as providing a 'specialist register' for those able to work beyond the 'register' standard in specialist practice. A new Code of Professional Conduct would probably require mandatory Professional Indemnity Insurance, although for some independent practitioners the cost were likely to exceed potential income. The DofH was establishing a Learning and Professional Development Division.

b. **Item 6 - Professional Education and Training Developments.** The BMA had responded to the DofH consultation on Post-Graduate Medical Education (copy enclosed). Some of the questions about the HE destinations of able young people were would be answered in the papers addressing the Roberts Review in Item 10. Further work was needed on the issue of selection testing based on parameters other than A-Level scores.

Item 4 – IPG Discussion of Working Party's Previous Report

4. The Working Party noted the Report to the main Group on 25th March 2002 and the paper on New Education Policies. The minutes of the subsequent discussions were also noted.

Item 5 – QAA Developments

5. The Working Party received a paper entitled 'QAA Matters' which summarised the changing procedures to be applied to most HE by the QAA, as a result of new HEFCE and DfES requirements. It was noted that the QAA was separately funded from DofH sources for directly-funded health profession HE; the 'lighter touch' approach would not be applied to those courses. Similarly, at the direction of HEFCE and DfES, 'lighter touch' would not be applied to HE delivered in FE establishments.

6. The QAA had published in March 2002 an 'Operational Description' of the external review process for England, and subsequently a draft of the 'Handbook for Institutional Audit: England'. A copy of the former, and extracts from the latter, were provided for the Working Party.

7. Both contained reference to expectations of how professional and statutory bodies (PSB) might be involved in the processes, whether by providing accreditation reports for HEIs to include in their 'information to be available' or by nominating appropriate persons to be specialist advisors (Annex F of the Draft Handbook). It was noted that, although much HE of interest to the professions is at 'I' level (eg HNDs and Nursing Diplomas) the current draft required auditors to be involved only in 'H' or 'M' level work. The WP's view was that at least some should have experience of 'I' level work, when that type of HE work was subject to audit. The PSBs were also mentioned in the Annex dealing with transition arrangements, where it was assumed that some PSBs require that the subject review method be used as a basis for decisions about accreditation. The WP did not have evidence, from those present, of PSBs using this approach.

8. There was concern that, although described as a 'lighter touch', the proposed methodology would still make a significant negative impact on those involved with teaching students and maintaining their research output. In the 'HE in FE' context, the former arrangements which ensured that QAA audits neither overlapped with nor ignored the FEFC Inspectorate's work in FE had not been replaced. Whilst the problem had been recognised, no arrangements had yet been put in place to co-ordinate the activities of OFSTED and ALI and QAA in relation to Departments (eg in engineering, construction and business) which had significant elements of FE, HE and work-related provision.

9. **It was decided that:**

- The QAA's references to the potential contribution of PSBs in audit work be brought to the attention of all UKIPG members through the Main Group.

- The informal offer of Peter Williams to meet the UKIPG be taken up either for the September or December 2002 meeting.

Item 6 – Proposed Directive on Mutual Recognition

10. The Working Party had a passing interest in the proposed Mutual Recognition Directive, in that it overlaps with education and training processes and assessment. Nevertheless, it recognised that the UKIPG's International and European Forum had had a special meeting dedicated to the subject on 15th May 2002; the WP had seen the papers for that meeting but not a report which was not yet available.

11. It seemed that more UK PSBs were tending towards support of a 'General Directive' style for the future, perhaps with a 'common professional platform'. Politically, it seemed that the former advisory committees had gone for ever, and that the pragmatic thing to do was to make the new system work. The ability to influence 'common professional platforms' and to set adaptation tests would be of value.

12. At first, many PSBs had welcomed the concept of a language test. However, it now seemed to be less clear cut, with the possibility that only the test currently applicable to host nation nationals could be applied. On reflection, this was then considered to be quite demanding if the various 'learning outcomes' concerning 'communication' were properly applied (eg in communicating with patients/clients and with colleagues from allied professions and workforces).

13. There was some discussion about how big an issue this was for the full range of UKIPG members. For those that were primarily (or partially) public protection regulators, it was very significant. Indeed, there was a view that the interests of 'the market' and of 'free movement of labour' were too strongly outweighing the need to protect patients and clients from incompetent practitioners. For those that were primarily 'representative associations' there was an equal concern that the Directive should not be used either to prevent needed recruitment to UK firms, nor to encourage certain overseas administrations which sought to discriminate against immigrants from the UK on spurious grounds. Several professions had recent experience of such cases, sometimes having to be referred to the European Court.

14. **It was decided that:**

- It was inevitable that individual UKIPG bodies would arrive at different solutions, depending upon their role and experience of extant systems. (The BMA draft response was briefly discussed but not enclosed as it was still under development.)

- Members could seek further information from their own 'international representatives', all of whom had the opportunity to participate in the 15th May meeting.

- The matter would be a main agenda item at the UKIPG meeting on 24th June 2002.

Item 7 – UKIPG Task Group on 'Maintaining Professional Competence'

15. Following discussion at the previous Working Party meeting, the Revalidation Task Group Chairman (Robin Wilson) had reported to the Main Group on 25th March, and had then conducted a full representative meeting on 29th April. Papers from the UKIPG main Group and a Report on the Revalidation task Group meeting had been made available to the Working Party.

16. **It was decided to:**

- Note the papers and reports so far;

- Await presentation of the Draft Guidelines at the 24th June main UKIPG Meeting

Item 8 - Schools and 14-19 Education and Training

17. The Working Party had received a paper pointing to some of the key issues raised under both Items 8 and 9. Since the previous WP meeting, held just after the 14-19 Green Paper and the 'language learning' paper had been launched, there had been limited inter-action between UKIPG members on these topics and a number of bodies had indicated that they would not be making a response.

18. The engineering and construction community had been active in the area, with a combined response from a range of professional bodies and from employers. The Secretary also shared a draft which he had prepared for another organisation (and authorised to share at the draft stage). A copy of the final version of this is enclosed for information.

19. **It was agreed to** report this limited interest to the Main Group.

Item 9 – DfES and LSC Activity and Funding

20. The Secretary reported that much current provision in the lower levels of FE and modern apprenticeship was at risk from a change in the way in which qualifications were accredited by QCA, approved for funding under Section 96 and 97 of the Learning and Skills Act 2000, accepted as 'Technical Certificates' for Modern Apprenticeship frameworks, and generally offered in publicly funded education and training in England. This issue was particularly acute in engineering and construction, but at least one Awarding Body reported that it would affect other areas.

21. Working party members had been copied some correspondence with the DfES, LSC, QCA, certain MPs and others, and were shown the response from the Minister of State which had arrived just before the meeting. Although this acknowledged some problems and hinted that those affecting Modern Apprenticeship would be cleared up, it did not offer a fully satisfactory conclusion. The issue had the potential to disrupt the further education, work-based learning and work-force development of those whose occupations supported professional practice (eg as accountancy technicians or as practice support staffs).

22. It was also noted that the transition from Nation Training Organisations (NTO) to fewer and larger Sector Skills Councils (SSC) was moving very slowly. Indeed, the system was now in 'limbo', as NTOs officially were abolished on 1st April but no SSCs had yet been appointed to undertake the functions (and handle the finance involved). There was now evidence that about four of the 30+ applicant SSCs had been given a tentative approval to progress to the next stage. There was considerable press speculation (and probable 'leaked' reports) that the intention was the smaller NTOs would be forced into larger SSC conglomerates 'or else'.

23. **The Working party noted these reports.**

Item 10 – The Roberts Review

24. The Working Party had received a summary of the Report of the Roberts Review of the *'Supply of People with Science, Technology, Engineering and Science Skills'*. Shortly before the meeting, Tony Farrington of the Engineering Council (UK) had completed a detailed analysis of this report, albeit from an engineering and technology perspective. Nevertheless, much was relevant to other UKIPG professions which relied upon either maths and science A-level entrants to their university courses, or numerate graduates into the professional development schemes. A copy of Tony Farrington's analysis was tabled and is enclosed. Unfortunately, Tony was unable to attend the meeting to give a presentation, nor was there time to review the material during the meeting.

25. **It was decided to:**

- Fully review the report at the next meeting;
- Draw the report and summary to the attention of all UKIPG members in the Main Group.

Item 11 - Any Other Business

26. Following discussion of 'Roberts', it was suggested that the current pressure to undertake 'commissioned research' might be sacrificing innovative thinking and spoiling the academic base, in the search for short term outcomes and institutional financial stability.

Next Meeting

The date of the next meeting date was currently scheduled for Thursday 29th August 2002 at 1415 at the Engineering Council.

Enclosures:

1. Peter Burley's E-mailed Update.
2. BMA Response to DofH on Post Graduate Medical Education.
3. NFEC Response to the 14-19 Green Paper (for information)
4. Tony Farrington's Analysis of the Report of the 'Roberts Review'

Peter Swindlehurst

From: Peter Burley [peter.burley@hpcuk.org]
Sent: 27 May 2002 11:02
To: peter.swindlehurst@ntworld.com; Peter Swindlehurst
Subject: FW: UKIPG FHE Working Party agenda 30 May 2002

UKIPG FHE Working Party agenda...

Peter,

Please accept my apologies for the 30th. I have made some comments on the papers.

Peter

> <<UKIPG FHE Working Party agenda 30 May 02.doc>>

UKIPG FHE WORKING PARTY

Comments on the agenda from Peter Burley

1. Apologies for absence (pre-booked leave).

2. Members may have noticed that Peter Milton (formerly of QAA) died recently. There will be a memorial service in Gloucester on 15 July 2002. Some of us will have worked quite closely with him.

3. QAA's new guidelines for external review do not apply to health-funded courses in England. For them there will be a continued " roll-out " of Subject Review 2003 – 6. Whether health courses will rejoin the mainstream of QA after 2006 is still for discussion. The institutional approval for these health courses will be a quite separate process from the institutional audit process proposed for the generality of HE.

4. In health there are seven other new developments to report :
   - DoH has now appointed its four new QA officers for England. They are based in four different Regional offices, but from the working party's point of view there is no correlation between their geographical location and their duties. Jane Marr and Linda Burke will work on nursing, Judy Hall will work on AHPs and Scientific professions, and Ruth Howkins will co-ordinate the team. Their main role will be to oversee consistent implementation of existing policy. They will be issuing their own consultation paper shortly,
   - initiatives from the devolved authorities are starting to appear,
   - Alan Milburn announced earlier in May that the NHSU would be preparing pre- as well as post-registration curricula. Clarification from DoH is that this will be in the form of very general curriculum support,
   - LTSN is having a festival of learning in Bristol in September (19 – 20) with Bob Cryer (Chief Executive of NHSU) as a key note speaker,
   - DoH and HEFCE published an announcement of a strategic alliance between health and social care on 30 April 2002 (for a future agenda ?),
   - DoH and HEFCE published a joint statement on research funding for health – but without any figures – on 16 May 2002, and
   - The QAA prototype reviews are progressing well and the feedback to date is positive (according to DoH and QAA).

5. The HPC position and timetable is as follows :
   - 1 April 2002, established by statute,
   - 17 April, launched (and thank you to those members of the working party who attended),
   - 1 July 2002, consultation paper will be published,
   - July – September, consultation events on a geographical and sector basis,
   - autumn 2002, evaluation of responses,
   - spring, 2003, new procedures worked up,
   - 1 April 2003, Privy Council enacts subordinate legislation to allow HPC to introduce new means of working.

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MESB
Education & Training Directorate
Department of Health
Room 2E43,
Quarry House
Quarry Hill
LEEDS LS2 7UE

Our Ref: PRRG/IB/sh

12 March 2002

Dear Mr Allen

Governments consultation on its proposals for a Medical Education Standards Board

The BMA deeply regrets that the Government has lost the opportunity to involve doctors in a wide-ranging and informed debate about how best to improve the delivery of postgraduate medical education. This approach could have produced a model that had the confidence of both the profession and the public, and provided reassurance that high quality education would underpin the provision of high quality services to patients. The prescriptive model set out in the consultation exercise leaves many issues to be addressed before the delivery of quality training can be guaranteed.

Postgraduate medical education is important not only to doctors but to the future of the NHS. We are concerned that the proposed Medical Education Standards Board will launch us into a new system that could jeopardise rather than enhance the production of highly trained, effective and efficient senior doctors.

The comments from the British Medical Association are attached. We would welcome an opportunity to discuss these with Ministers.

Yours sincerely

Dr Ian G Bogle
Chairman of Council
British Medical Association

BMA

Consultation on the proposed Medical Education Standards Board:

The comments of the British Medical Association

The BMA shares the desire of Government to provide patients with health services of high quality. Postgraduate medical education is crucial to the production of competent doctors who can provide sustained high quality medical services and who recognise the importance of lifelong learning. We also share the desire of Government to see a co-ordinated and standardised approach to postgraduate medical education, both in terms of the educational content of training programmes and access to them.

In keeping with the current emphasis on evidence-based medicine, the BMA would have wished to see proposals for development underpinned by factors known to improve education and learning within the context of a high quality service to patients. The Government's proposal for a centralised body within the NHS is disappointing in this respect and in its relative disregard for the strenuous efforts of the profession to demonstrate robust and transparent self-regulation, develop and sustain quality postgraduate education programmes and foster continuing professional development. We are particularly disappointed by the decision to override the current competent authorities, the STA and the JCPTGP, bodies which have worked with dedicated staff to acquit themselves well in setting standards, monitoring the effectiveness of training and attesting the satisfactory completion of training.

We fully endorse the need to take into account the views of patients, the public and the NHS when it comes to postgraduate medical training. However we do not accept the premise that existing arrangements have not given the NHS 'a say' in how doctors are trained. NHS Trusts and Area Health Authorities have had immense ability to influence postgraduate training where they chose to do so, while in areas such as Scotland the Scottish Council for Postgraduate Medical and Dental Education has had consistent representation from the NHS at the highest level.

Outlined below are areas of particular concern to the BMA:

Title of the new statutory body

Given that the proposed body will have a defined role in postgraduate medical education only, it should be styled the 'Postgraduate Medical Education Standards Board' (PGMESB).

Achieving a balance between training and service needs

We agree strongly with the contention that postgraduate training programmes need to be flexible and able to adapt readily to medical advance and the changing needs of a modern health service. While we fully accept that the training of doctors and the provision of services are interdependent, we welcome wholeheartedly the statement that it 'is vital that service pressures do not compromise the training of doctors'. Indeed we see this statement as crucially important to the provision of quality training programmes. It is important to recognise that there may be occasions where undue emphasis on the continued provision of a service may be very damaging to the training of doctors. The long

term interests of patients, Government and the medical profession can only be best served if it is made explicit that the quality of training has paramount importance.

We fear that the balance between service provision and training quality could give rise to a conflict of interest for the PGMESB. To our eyes, the consultation document places an unacceptable emphasis on continuing to meet NHS service needs but we assume that it is not the intention of Government to downplay the importance of ensuring that training programmes are of the highest quality. We are confident that Government will wish to have mechanisms in place to ensure that the deliberations and decisions of the PGMESB are transparent and send a clear consistent signal about the importance attached to quality training and education.

Lines of accountability and the relationship between GMC and PGMESB

The concern expressed above regarding the potential conflict of interest between training and service needs is not allayed by the suggestion that the PGMESB should be accountable to the Secretary of State for Health (on behalf of all UK health secretaries). The BMA would prefer to see the PGMESB with direct accountability to Parliament. In advocating this line of accountability we appreciate that following devolution, responsibility for the organisation, delivery and management may well vary in the constituent parts of the UK. However, we note the intention that the key regulatory functions of the PGMESB will apply across the UK and see this as consistent with the current arrangement whereby the GMC's functions are regarded as reserved rather than devolved. It would be difficult to support an arrangement whereby the two competent authorities with an interest in medical education had different lines of accountability.

The proposal to create the PGMESB has significant implications for the status and role of the GMC. As the consultation paper argues, a strength of current arrangements is that doctors derive educational autonomy, self-respect and professional status from their independence. It is difficult to see the erosion of this professional independence as anything other than negative. Greater clarity will be needed as to the relationship between the PGMESB and the GMC, with definition of the roles and responsibilities of each organisation. For example which body will be responsible for dealing with 'poorly performing doctors'?

Standard setting and the relationship between the Medical Royal Colleges and the PGMESB

We welcome the praise in the consultation document for the Medical Royal Colleges in their work on standard setting and supervision of PGME. It is difficult to reconcile their success in these key areas with the loss of status now proposed within the PGMESB. The Colleges should retain due recognition as the bodies able to provide specialist in-depth knowledge and experience of medical practice in their fields. They must remain at the very heart of any arrangement to set standards, define curricula, assess competence and monitor the quality of training programmes.

The model proposed for the PGMESB does not adequately reflect the contribution that the Colleges can continue to play, and we are concerned by the implication that single-minded preoccupation with service provision could completely override concerns about the nature and quality of training programme. The Colleges must retain the right to remove training approval from posts/programmes that repeatedly fail to provide adequate training and experience. We cannot imagine that Government would wish to be seen to stifle this important public safeguard. We stress that removal of training recognition must be seen as an option of last resort but it may on occasion prove to be the only sanction that will compel an NHS Trust to improve the quality of its training to acceptable standards.

However constituted, the PGMESB will need to undertake regular checks on training posts/programmes and must develop clear, rapid and reactive mechanisms to deal with poor training. It will need sufficient resource to ensure that necessary improvements in training can be realised.

In standards setting, we see the following issues as important:

- Any restructuring of postgraduate training must comply with the European Working Time Directive for junior doctors.
- Agreed examination and competency standards should not be compromised to cater to service demands.
- Training should not be prolonged unnecessarily once doctors have completed the appropriate training programme and acquired proficiency in the prescribed skills.
- The PGMESB should pursue competency-based assessment.
- High quality postgraduate training is not provided without cost. Given its welcome emphasis on quality, we urge Government to ensure that funding levels, and in particular study leave budgets, are adequate. This will be a key factor in determining the success of the PGMESB.
- Postgraduate training programmes should include appropriate consideration of the implications of public health/primary care issues in relevant specialities.
- Programmes must allow those undertaking career changes/career breaks to gain recognised credits for past experiences. Flexibility in changing career pathways will be enhanced by the widespread use of competency-based assessment.

Creation of a GP register

The creation of the GP register is a welcome suggestion and one that has been advocated by the profession in recent years. The General Practitioners Committee of the BMA suggests that such a register should contain details of those qualified to work in NHS general practice and those qualified to work only as a locum deputy or assistant. It should differentiate clearly between the two categories of doctor and should not provide any potentially discriminatory details of the route of entry to the register.

The constitution of the PGMESB Board

The consultation suggests a Board of no more than 25 members (including chair) with an equal split (12 and 12) between medical representation and lay/NHS interests. The BMA is concerned to ensure that the Board contains the appropriate expertise to enable it to review the decisions of its committees and discharge the combined functions of the STA and the JCPTGP with authority. We are also concerned that the Board will be too small to adequately reflect the full spectrum of medicine if the number of those medically qualified is restricted to 12. We appreciate that the Board cannot have representation from every medical specialty and constituency if it is to remain workable and we fully recognise the potential for delegation of tasks to appropriate subcommittees. Nevertheless, the point remains that the Board will require sufficient medical membership if it is to discharge its duties effectively while commanding the respect of the profession at large.

The BMA believes that Chairman of the Board should be medically qualified. This would allow the appointment of an individual with a grasp of the complexities of postgraduate medical education whilst sending a reassuring signal to the profession that its work to date was not undervalued.

Appropriate representation from medical professional bodies and groups such as the Medical Royal Colleges, BMA and Postgraduate Deans will be critically important. Cross-membership between the GMC and the PGMESB will be advantageous, and the organisation would need to allow representation of the interests of overseas doctors and those working in non-consultant career grades.

We wish to emphasise particularly the importance of representation of junior doctors at Board level. We greatly welcome the stress in the consultation paper that the creation of the PGMESB is an

opportunity to ensure greater participation of the public, the health service and *doctors currently in training*. As the 'consumers' of postgraduate training, junior doctors are in the strongest position to comment on the quality of training programmes and have unique insights that will greatly assist the work of the Board. It would be folly to miss the opportunity of enfranchising this large key constituency.

Lay representation on the Board

The BMA welcomes the proposal for lay representation as a means of fostering public involvement, transparency, openness and accountability. However, given the specialist and technical nature of the Board's work, it may be not be possible or indeed necessary to retain seats for 12 lay members. We believe that clinically qualified and suitably experienced personnel, including educationalists, will be essential to take forward work on curriculum development and standard setting for PGME. We suggest that an appropriate balance between medical and lay representation might be 70% medical qualified and 30% lay representation. Selection of lay representatives should be open and transparent and seen to be removed from any perception of political influence. We assume that remuneration will be sufficient to attract applicants of a suitably high calibre.

Funding the PGMESB

Although the Government has committed to fund start-up costs, we note with concern that the PGMESB is ultimately expected to be self-financing. Individual doctors will be asked to bear the cost of the Board by paying a certification fee and possibly by the levy of registration fees. We believe strongly that doctors should not be asked to bear the costs of the Board when one of its main stated justifications is to ensure alignment of postgraduate curricula and training programmes with the interests of patients and the service needs of the NHS.

Junior doctors already face high charges for Royal College examinations and are often forced to subsidise study leave to support their educational progress. Any charges incurred for education should be reimbursed and the importance of providing adequate budgets for study leave is again emphasised. If charging is introduced despite our protestations, the system should be transparent and should not discriminate unfairly against any particular group(s). It is hoped that the PGMESB would develop a mechanism to waive or reduce charges for refugee doctors who might have particular training needs and significant financial hardship.

Role of postgraduate deans and the PGMESB

The BMA strongly believes that the success of the current arrangements for PGME has depended in large part, on the authority and pivotal role of postgraduate deans. This important resource needs to be used fully and effectively in any new arrangement. The role proposed for the postgraduate deans needs clarification, as does their proposed line of accountability.

Assessing fitness to practice of overseas doctors

Creation of the PGMESB provides an opportunity for greater transparency and a more streamlined assessment of overseas doctors and their qualifications This applies particularly to those qualified outside the European Economic Area (EEA), for whom the Professional and Linguistic Assessment Board (PLAB) examination is not the most appropriate route to registration. These doctors have been at a significant disadvantage since the GMC abolished the "senior doctor" route to registration in autumn 2001. Those affected include refugee doctors with many years of experience in their specialties who are willing and able to use their skills in the service of the country that has given them

sanctuary. We hope that the PGMESB will continue the flexible approach adopted by the STA recently in dealing with refugee doctors who have arrived in this country without full sets of documents.

The recent changes to the funding regulations and immigration rules have greatly improved the position of overseas doctors who wish to train or work in general practice. However, some disparities remain. For example, overseas doctors who join the specialist register are given exemption from the PLAB test, but there is no equivalent route open to overseas doctors who are granted a certificate of equivalent experience to practise as GPs. The BMA believes that the PGMESB should take a uniform and transparent approach to assessing higher qualifications, whether in general practice or hospital medicine. Clear guidelines need to be in place before the PGMESB is able to request that the GMC registers any doctor.

Various questions remain unanswered at this stage. If the PGMESB recommends periods of further training, how will the system work in practice? How will the doctors gain access to the training and who will fund it? Will they compete for fixed-term training appointments? Will the GMC be obliged to register the doctors concerned without asking them to take the PLAB examination?

Other issues that require clarification

- How will the work of the PGMESB fit in with devolved educational arrangements such as the new Special Health Board for Education in Scotland?
- What are the implications for medical academic staff career pathways and academic training?
- What will be the nature of the relationship between the NHS University and the PGMESB?

March 2002

NFEC)

National Forum for Engineering in Colleges
Promoting Quality Education and Training in Engineering
PO Box 8980, Birmingham B18 6WA
Tel : 0121 200 3048 Fax: 0121 200 3049 Email: admin@nfec.org.uk

29th May 2002

Ms Jane Fox
DfES 14-19 Green Paper Consultation
Response Unit
Area 1B, Castle View House
East Lane
Runcorn WA7 2GJ

Dear Ms Fox,

NFEC Response to '14-19; extending opportunities, raising standards'

The **National Forum for Engineering in Colleges** ***(NFEC)*** represents Heads of Department/Deans of Faculty concerned with engineering and technology in the FE sector. The majority of Colleges providing engineering education and training are represented on the Forum. It has a regional structure, provides staff development, and maintains a close relationship with relevant professional and employer bodies.

NFEC has been involved in curriculum development and the dissemination of good practice in education and training since its inception, and is thoroughly committed to playing its part in a fully integrated and flexible system. Overall, we welcome the 'freeing up' of Key Stage 4 from a fully prescriptive National Curriculum and accept that the loss of the full range of subjects is a price worth paying. We fully support the insistence on a 'science base' for the population at large, although we do question whether these broad objectives might better be achieved by the content and learning styles of the Design and Technology curriculum, rather than 'Science'.

We fully support the vision of flexibility and the need to match individual learning needs. However, we are concerned that this will be more rhetoric than practice, as an increasingly complex and rigid system of approving qualifications and linking funding to approval is put in place. NFEC is currently in correspondence over this issue, which has not yet been satisfactorily resolved. Vocational education and training is important and does not deserve to be treated as a 'trade business' and not given the respect accorded to the more academic streams, for example when changes are made. We must change this culture.

Our detailed response to the Green Paper questions is attached. NFEC is ready to help with implementation in any way it can.

Yours sincerely

Peter Swindlehurst
For *NFEC* Executive.

NFEC Response to the DfES Green Paper "14-19: extending opportunities, raising standards"

Chapter 1 – The Vision for the 14 – 19 Phase

Q1. Do you share our vision of the 14-19 phase?

A1. Yes, we share the vision as expressed. We believe that there is an economic case for enhancing vocational education and training at this stage, and that there are strong reasons for supporting 14-19 coherence. We fear, however, that the administrative and funding procedures will continue to divide that which should be integrated. For example, attempts to promote the MA Frameworks and the National Qualifications Framework, and to control funding access rigidly through too tight a control on Section 96/97, will be used to obstruct provision which is *'flexible and responsive to students' individual needs'*. Also, the top limit of age 19 is not a natural one. The continuum really needs to go on until nearer age 22, when most people will be completing their initial courses, whether in FE, HE or work-based initial training. The 'adult' phase generally does not start until then.

Chapter 2 – 14-19; marking the start of the phase

Q2. Do you agree that the aims set out in paragraph 2.6 are the right ones to mark the start of the phase?

A2. Yes; the end of Key Stage 3 really does mark the end of the general education of a child and the beginning of a more focussed development of a young person in the world. The difficulty will be in maintaining an open approach to planning and options in Key Stage 3, as school staffs at that level generally have limited knowledge and experience of the world or work and inaccurate perceptions of routes other than 'school – university – traditional job'.

Q3. Do you support the proposal that pupils should draw up an individual learning plan towards the end of Key Stage 3 to plot how they would achieve their planned goals by age 19?

A3. Yes; this is fine in principle but significant aids will be required to make it work on the necessary scale. There is some useful 'coursefinder' software available for '6th Form' students to assess their aptitudes and interests and to suggest possible HE courses that match them. This widens horizons in an objective way, provided it can be made available to all. Resources will need to be put into the development of such software and systems for use towards the end of KS3, so as to provide objective advice to all young people independently of the perceptions of their own school and its staff.

Q4. What support should be available to prepare young people for entry to the 14-19 phase:

A4.

- *From the school?* The best preparation in school is the development of a good all-round ability across the National Curriculum, building on the recent good work on literacy and numeracy in the Primary phase.

Emphasis also needs to be placed on self-discipline and motivation, as the greater range of choices will mean that children will have to take more responsibility for their own learning decisions at an earlier age.

- *From the ConneXions Service?* The main challenge for the ConneXions Service will be to focus on the greater number who are 'mainstream' and not 'problem children', as all will be faced with significant choices at an early age. Careers services must have the resources to address whole cohorts. This will inevitably mean more 'systems development' and validation of computer based 'coursefinder' systems.

Q5. *Would you welcome guidance on how different models of marking the start of the 14-19 phase might be developed?*

A5. This is not a question within the particular competence of the FE community. However, we believe it to be important that proper preparations are made for the newly envisaged KS4 collaboration arrangements that could involve FE, private providers and work-based learning experience.

Q6. *Would it be helpful for schools to have access to a toolkit based on approaches materials and processes developed for the Progress File?*

A6. In principle it would be good, although to cope with the full cohort some new approaches will be required. Evaluation must identify why currently it is seen to be of value only to one third of schools.

Q7. *Are there any further measures that might be taken to encourage young people from groups under-represented in higher education to aim for entry to higher education?*

A7. What is important is the identification and nurturing of young people who have latent potential. Going back to the 1950s, few of those entering apprenticeships and vocational education thought about HE at the start. However, those who showed promise were encouraged, nurtured and cajoled into HE, often first into Higher National level HE, and then some on to degree courses and higher degrees. It is important that progression is not made 'too big a deal' at one go.

Chapter 3 – The Content of the 14-19 Curriculum

Q8. *Do you agree with the rationale for the 14-19 compulsory curriculum set out in paragraph 3.9?*

A8. Yes; we agree.

Q9. *Do you agree that mathematics, English, science and ICT should form the core of the 14- 16 curriculum?*

A9. Not necessarily so. The 'core curriculum' issue is about how best to provide for the general education of those who will live and work in a technological society. This requires different kinds of knowledge, skills and attitudes to those required as the 'stepping stones' to an academically-based science,

engineering or technology-based career. The 'pure' sciences, broadly as currently specified whether in single or 'double award' style, may well be the best for the latter group. But that is not necessarily an argument for preserving 'Science' in the core for all. The best of 'Design and Technology' teaching and learning may be more effective in achieving the numeracy, accuracy, practical skills and 'public understanding of science' that is required *'for our economy'*. The new vocationally related and hybid GCSE courses may do the same. We are not convinced that the argument for the retention of science, as opposed to design and technology, in the compulsory core has been made.

Q10. Do you agree that the areas set out in paragraphs 3.12 – 3.14 should also be compulsory at 14 – 16?

A10. Yes; the difficulty is not in agreeing to the proposition but in devising sufficiently flexible but rigorous and well-resourced methods of teaching, learning and motivation. In some cases, the use of youth and cadet organisations, sports teams, youth orchestras, church activities etc may well achieve the aims, but not necessarily to tightly specified objectives. Also, in view of the mandatory inclusion of Employment Rights and Responsibilities in the MA Framework, and the fact that the vast majority of young people are in part-time employment during this phase, why was that not included?

Q11. Do you support the proposal for new statutory entitlement to a subject within modern foreign languages, design and technology, the arts and humanities set out in paragraphs 3.16 – 3.23?

A11. We support the proposal primarily because some freeing up of the KS4 curriculum is really necessary. It is not possible for all pupils to do everything to the same level. The problems are likely to be practical. Schools may be obliged to make these subjects available, but what about 'marketing' of them within school, scheduling to avoid *de facto* non-availability through clashes of time-tabling, the problems of meeting the wishes of a small number of pupils with appropriately qualified staff? It would make a mockery of the 'entitlement' concept if it was available only through 'unqualified staff' or by making the topic available for 'self-study'. We do know that engineering employers also have reservations about the removal of Modern Foreign Languages from the core, as business becomes increasingly global.

Q12. Do you support the changes to the disapplication arrangements proposed in paragraph 3.24?

A12. Yes; the idea of positive choice for things, rather than dispensation from the norm, should be encouraged. 'Disapplication' was a horrible word!

Q13. Do you support the extension of vocational options proposed in paragraphs 3.28 – 3.29?

A13. In principle, yes. The challenge will be to do them well, and for the provision to be seen as a positive choice and not an 'or else' for those less good.

Q14. Do you support the development of hybrid qualifications as proposed in paragraph 3.30?

A14. Yes; and the concept could be more widely adopted beyond KS4 into early post-compulsory education and training. It is effectively the putting together of 'part qualifications', a process which has always been seen as anathema by the funding bodies, despite being requested by employers and suited to individuals' learning needs.

Q15. Do you agree that in future all GCSEs should be called simply that as proposed in paragraph 3.31?

A15. Yes; the separation would simply be by name of the GCSE.

Q16. Are there other ways in which you think GCSEs might evolve?

A16. Ultimately, all Level 2 qualifications other than NVQs might well become GCSEs (whether currently 'traditional' GCSE, 'vocational' GCSE, BTEC 'Firsts', C&G 2000 etc Series, and 'Technical Certificates at Level 2'. This would clearly show parity and avoid individuals having to explain the differences.

Q17. Do you agree that more opportunities should be provided at A Level for the most able students to demonstrate greater depth of understanding?

A17. Possibly, but simply by requiring it as a normal part of the qualification specification. 'A' Levels are supposed to be about 'understanding' rather than 'recall'. There is no great value in adding A* etc to the system. Norm reference the results so that 'A' grades are always the best X%.

Q18. Do you agree that the existing grade range at A level should be extended to provide greater differentiation between more able candidates?

A18. No; that should be achieved as in the previous answer.

Q19. Do you agree with the proposal to introduce more demanding questions into A2 papers so as to produce a higher grade at A level?

A19. Only if it is perceived that the A2 paper standard has 'slipped'.

Q20. Do you agree with the proposal to relabel vocational A levels in paragraph 3.41?

A20. We are more concerned with the proposals to re-engineer yet again the Advanced GNVQ / AVCE than about proposals to change the name. When it started, it offered a distinctly different approach to teaching, learning and assessment. It has already been 'squeezed' into a more academic model, at the expense of the integrated approach to learning with which it started. AdvGNVQ did begin to establish its name within HE, eg when it was accepted by DfEE for its Bursary Scheme. Just as the GATE project began to achieve recognition, and HE admission tutors began to understand the 'old' assessment system, it was changed. Leave well alone!

Q21. Do you agree that all young people aged 16-19 should be entitled to continue studying literacy, numeracy and ICT until they have reached Level 2 (paragraph 3.43)?

A21. Yes; but we should recognise that many of the young people who need to do work to achieve Level 2 will learn better if they do it 'without noticing'. Thus numeracy and literacy may best be achieved through the use of vocationally-related qualifications. Similarly Key Skills are often best learned informally through a vocational context, rather than being taught as a separate subject. Many of those who can subtract in the process of playing darts would shy away from the idea of 'learning numeracy'!

Q22. Do you support the framework proposed in paragraph 3.44?

A22. Very strongly; it is unfortunate that the current bureaucracies mitigate against it at present.

Q23. Do you agree that we should expect all young people to participate in active citizenship, wider interests and work-related learning (paragraphs 3.49 – 3.50)?

A.23. Yes; but we should not be prescriptive about how it is achieved. Much can be achieved through voluntary activities, until they themselves are spoiled for the purpose by too much constraint. They then do not appear to be voluntary and fun. Too rigorous imposition of regulation, and insufficient interest in the unconventional, can militate against some useful learning.

Chapter 4 – Recognising achievement – a new award

Q24. Do you agree that there should be a new overarching award to recognise achievement by age 19 (paragraph 4.2)?

A24. We do not believe that a case has been made that the benefits would outweigh the additional costs of assessment, recording, verification and administration.

Q25. Do you prefer the model for the award outlined in paragraphs 4.8 – 4.15 or for a Certificate as outlined in paragraph 4.16?

A25. If we had to choose, we would choose the 4.16 model. The practical problem is that few people would be at a stage worthy of 'certification' at the age of 19. Most would either be just staring HE, in the midst of a Modern Apprenticeship, or on some other professional learning scheme.

Q26. What do you think the award should be called (paragraph 4.3)?

A26. Not a 'Matriculation Diploma'; to most people that means a qualification to enter university. It must also embrace the 'Apprenticeship Diploma' proposed by Cassels. BTEC already 'owns' the 'National Diploma' title, and most employers will accept only that meaning. If we cannot think of a name, are we sure that we have a market for the project?

Q27. Do you agree with a structure for the award that includes a common strand and main qualifications (paragraph 4.8)?

A27. We are not sufficiently convinced of the need for any of these models.

Q28. Do you agree that there should be a record of progress for those who do not gain the intermediate award (paragraph 4.9)?

A28. We are not sufficiently convinced of the need for any of these models.

Q29. Do you agree with our proposal that the award should have three different levels (paragraph 4.10)?

A29. We are not sufficiently convinced of the need for any of these models.

Q30. Do you agree with our proposals for main qualifications thresholds for the Intermediate, Advanced and Higher awards (paragraph 4.11)?

A30. We are not sufficiently convinced of the need for any of these models.

Q31. Should general studies A/AS levels count towards the thresholds for the Advanced and Higher awards (paragraph 4.11)?

A31. If there is to be a General Studies A or AS level, then it must be as good and as rigorous as all others; and then not treated any differently. The current approach of getting young people to do 'General Studies', and then saying that it will not count for many UCAS admission scores, is pointless.

Q32. Do you agree that the award should have a common strand of attainment at Level 2 in literacy, numeracy and ICT (paragraph 4.12)?

A32. If there is to be an 'end of 14-19' award, then Level 2 literacy, numeracy and ICT must be prerequisites.

Q33. Do you think wider activities should be required for the achievement of the award (paragraph 4.13)?

A33. If there is to be an 'end of 14-19' award, then 'yes'.

Q34. How do you think the wider activities could be assessed (paragraph 4.14)?

A34. By a broadly-based accreditation of the processes of other providers, such as youth and cadet organisations, music and athletic awards etc.

Chapter 5 – Pace and Progression

Q35 Do you support our proposals for ensuring that young people should be able to progress at a pace consistent with their potential and abilities?

A35. Yes.

Chapter 6 – Advice, guidance and support for young people

Q36. Do you support the proposed focus of the national specification for careers education and guidance described above?

A36. Broadly 'yes'. The challenge is to provide careers guidance competently from those who inevitably have very limited knowledge of what real careers are about, and in an objective way that is not influenced by the 'needs' of any one set of education or training providers or employment recruiters. The specification must, however, also cope with the concept of few 'traditional careers' being available; more a series of evolving employment opportunities.

Q37. Do you agree that it should begin from Year 7, with a very light touch in the early years of Key Stage 3?

A37. Yes; it is even necessary to lay some foundations to avoid gender and other stereotyping in the Primary phase.

Q38. Are there ways in which ConneXions Personal Advisors should provide support to young people in the 14-19 phase?

A38. Yes. Although it has a valuable role to play in supporting young people at risk of disengagement or disaffection, the ConneXions Service must spread its horizons more widely and provide 'equal opportunities' for all. This does imply a very wide knowledge, not of the simple direct routes, but of the 'climbing frame' of progression possibilities.

Chapter 7 – Drivers and support for change

Q39. Do you support our proposals for extending the qualifications included in the performance tables?

A39. While ever performance tables are to be used, they must give equal recognition to all forms of learning. Otherwise, insufficient management attention and resources will be given to the 'also rans'. 'Equal esteem' for vocational qualifications means 'equal recognition' in the performance tables.

Q40. Do you agree with our proposals for recording the performance of AS?

A40. Yes.

Q41. How would you propose that the performance tables deal with the achievements of those who take GCSE or equivalent qualifications up to a year later than age 16?

A41. There will be transitional problems, but once schools and colleges change to a more flexible system, there should be some balancing between those sitting exams earlier and those sitting them later.

Q42. Do you support the proposal to change the performance indicators for schools and colleges at age 18 to reflect achievement at Levels 2 and 3?

A42. In principle, 'yes'.

Q43. What further measures would help to support improvement in the FE sector?

A43. The FE Sector is particularly constrained by being 'sandwiched' between school and HE, by being perceived as a second class alternative to School 6th Form, and by having to serve three other masters (employers, the work-based learning infrastructure, and the funding bodies and inspectorates) as well as their students. In engineering FE, most of the students are part-time, many are mature, most classes mix 'new deal', MAs, directly recruited young students, mature adult job changers and 'upskillers' etc. Yet we have a bureaucratic funding and inspection system which wishes to treat them all in different ways. There is an expectation that employers (and students) will make a major contribution to costs, but a failure to realise that employers do not like to be 'messed about' with constant and short notice changes to qualifications and seemingly irrational approaches to education.

FE would benefit from measures which recognise its distinct nature as a primary contributor to the industries and business sectors that it supports. It is less an 'educational sector' and more a component part of the relevant business area. In that context, it must also compete for staff, not just with education, but with current business practice. At present, it is grossly understaffed in terms of current technical expertise, especially in the skill shortage areas where the demand for training to redress those shortages is the greatest. FE cannot compete on salaries either with schools or with HE.

Chapter 8 – Implementation

Q44. Do you agree with the timetable indicated?

A44. Yes; but we need to keep the systems flexible and in phase. The current debacle over the removal of existing qualifications from Section 96 before their replacements are available is an example of how not to do it. We must recognise the lead times in preparing prospectuses, changing curriculum materials, updating staff. We must also allow times for difficult matters to be dealt with carefully, for example the 'child protection' issues involved for FE, private providers and companies offering work-based learning opportunities in KS4 will not be easy, especially if CRB checks will be required on all staff as well as appropriate training.

Q45. Do you support our proposals for pathfinders?

A45. Yes; and the LSC Standards Fund is currently supporting NFEC and partners in developing good practice for 14-19 provision in engineering and construction FE and training.

Q46. Are there aspects other than those mentioned which should be covered by the pathfinders?

A46. We need to make sure that the child protection issues for non-school partners are fully addressed and that best practice and LEA guidelines are shared.

Q47. Do you have a view on the way students attending both school and college should be funded?

A47. We shall probably finish up with LSC funding 14-19 under the 'Young People's Learning Committee'.

Q48. Do you support the ways in which we wish to encourage collaboration?

A48. Yes, in principle.

Q49. Are there additional ways in which collaboration could be encouraged?

A49. Not known at this stage.

Roberts Review

Peter Swindlehurst

From: Tony Farrington
Sent: 22 May 2002 14:18
To: Andrew Ramsay
Cc: Richard Shearman; Chris Senior; Terry Smith; Juliet Upton; Clive Coker; Margareta De la Touche; Adrian Walsh; Paul Langdell; David Worskett; Peter Swindlehurst; Ruth Wright; Graham Nicholls; Val Simmonds; Jim Birch; Stuart Robinson
Subject: The Roberts Review - A Statistical Critique

Andrew,

Please find attached a detailed statistical critique of the Roberts Review:

Comments on RobertsReviewMay20...

I have copied this not only to interested colleagues in the Eng (UK) but to our "old friends" upstairs in the ETB/CPE. There is clearly a wider community context here if you are going to look at people with the highest skill and educational attainments; that is the formation of graduates and postgraduates in science, technology, engineering and mathematics in the UK.

It turned out to be rather long but I make absolutely no apologies for this. There is a wealth of data in this impressive document. And critique is perhaps too strong a word for what I have tried to do. As I suggest in paragraph 1, tbe Review Team has successfully penetrated the now vast statistical resources available from the Office of National Statistics.

Finally this is best read with the aid of a copy of the report itself at your side. If you do not have a copy there is one on the HM Treasury Web Site. But if any of you are keen (or mad enough?) enough to really have a go I will happily lend to you my copy for a day or two.

Tony

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TONY FARRINGTON'S COMMENTS ON THE REPORT "SET for Success; the Supply of people with science, technology, engineering and mathematics skills"

Report for the Chancellor of the Exchequer; April 2002
The Report of Sir Gareth Roberts' Review

The whole report can be found currently on the Treasury web site: www.hm-treasury.gov.uk by going to the Research and Enterprise Index

1. I have at last managed to read this thoroughly. It is on the whole an impressive document. I shall here in these comments focus almost entirely on the statistical material and data. And there is plenty available here as the Review Team has successfully penetrated the vast statistical resources now available from the Office for National Statistics.

2. Some of the data here we have already found and commented. Some we haven't. And I will comment on both chronologically.

Chapter 1 Scientists and Engineers in the UK

3. Page 19 - Numerous studies have found a link between investment and R & D and future improvements in productivity (see reference 11; Economic Inquiry, Volume 29 (2), (1991). Obtain via British Library journal access "Inside"?). Page 20 Figure 1.1 - Business R & D spend down in the last 18 years in UK but not elsewhere overseas. Some sign though that UK businesses' commitment has risen in recent years.

4. Page 21 - **UK Supply.** Figures 1.2 suggests that the supply of UK new scientists and engineers in the labour force is in fact "strong" when compared to other countries and measured as the percentage of the labour force aged 25 - 35 years. Page 22 - majority are in the biological sciences or engineering and technology. Note: here "Computer Science" is defined as HESA code G5; we have been defining it more widely to include G6, G7 and G8 as well. Total supply has been rising in recent years but this masks a weakening in demand for courses in physical sciences, engineering and technology and mathematics - see Figure 1.4. We have also noticed the trend in engineering and technology using the same source HESA from 1994/95.

5. Page 23. Table 1,1 has some interesting "year group taking SET qualification " statistics going from A-level to first degree to PhD. Also A-level engineering and technology is taken to be design and technology (reference 18). Figure 1.5 has percentage changes in these cohorts from 1994/95 to 1999/00 for a selection of subject categories.

6. Page 25 - **UK demand.** The demand for Scientists and engineers exists over a wide range of economic sectors (including the demand for numerate people in financial services). But over a half of new graduates enter employment working in "R&D Manufacturing"; this is defined as the SIC group for manufacturing plus the SIC group for Real estate and renting and R&D, where the latter is thought to be primarily R&D (see references 22 and 23). This information comes via the HESA first destinations data 1999/00. (Note: there could be a problem here in the apparent assumption made that most will be entering R&D; quite a few must also be entering real estate and renting as e.g. software engineers).

7. Page 26 - **Shortages in the supply of scientists and engineers** might be expected show up in increased salaries for these graduates. Figures 1.7, page 27, has data from the Labour Force Survey, March 2001, giving average gross salary by degree subject. And higher salaries are found in computing, engineering and technology, physical sciences and mathematics. And in business R&D there are found figures showing that real median salaries have increased for senior specialist and technical specialist in recent years than in the 80's and 90's. This suggests an emerging shortage in the supply of SET for work in R&D. Other data taken from the ONS New Earnings Survey suggests recent large real increases (after adjustment for inflation) from 1994 to 2000 for engineers and technologists and smaller increases for natural scientists.

8. Page 28 - an alternative way of identifying emerging shortages is to compare "Economic Activity Rates" for SET graduates and postgraduates. Higher activity rates are for postgraduates in engineering and technology, physics and mathematics (Figure 1.8). Reference 26 states that differences in activity rates due to career breaks to start a family are allowed for, but it does not explain how this is done.

9. The idea that there are emerging shortages was supported by the Review's consultation of employers. Also other studies were quoted some of which we have seen - Mason (reference 27); and various skills studies ICT (28), electronics (29) and engineering (30). There are a few referenced here that we haven't come across (32) and (33). And of course both recruitment difficulties (quantity) and "gaps" (quality) are both recognised as being in existence in various sectors of the labour force.

10. All this leads to the report's thesis of "disconnect" existing in mathematics and the engineering and physical sciences (but not in IT and computer science)

Chapter 2 School and Further Education

11. Page 34 Box "Primary school education", and nearby, has an excellent summary of how the National Curriculum is supposed to work; this could be a very useful reference source. It also notes that education is not compulsory after age 16 but around 60% will go on to study full time after this age in a sixth form or further education college. This chapter by the way focuses on England including the statistics gathered (see reference 37).

12. Page 37 - Pupils steady improvement in attainment in Key Stage 2 examinations is demonstrated in Figure 2.1. Achievements in Key Stage 3 (English, Maths and Science again) are not so impressive (1996 to 2001 again). Key Stage 3 National Strategy is well summarised in Box on page 39.

13. Page 40 - Figure 2.3 has a time series of pupils' achievements in selected GCSE examinations from 1991/92 to 1999/00 (in England) and shows the percentage gaining A* to C grades. This (and Figure 2.4) suggests considerable differences in the achievements of pupils in different subjects. There are found lower proportions achieving A* to C in mathematics and the combined sciences but higher proportions are found in the individual sciences such as biological sciences, chemistry and physics. This is thought to be because a majority of pupils taking these subjects attend selective schools (often in the independent sector).

14. Page 41 - Figure 2.5 has pupils achievements in selected A-level examinations (1999/00; England). This indicates that the highest proportions of pupils with A-C grades are found in chemistry, mathematics and physics. This is consistent with the views of many pupils that these subjects are "harder" than others (Is it?).

15. **International Comparisons.** Page 42 - Figure 2.6 - the UK compares favourably when pupils are ranked in mathematical literacy (Source OECD 2002; PISA). And Page 32 - Figure 2.7 - shows the UK in slightly better light when ranked by scientific literacy (Note: Japan and Korea top the list in both instances).

16. **Pupils preferences.** The earliest time to judge pupils SET preferences is when they choose A/AS levels; until then pupils are constrained by the National Curriculum. (However reference 44 acknowledges that pupils can be "disapplied" from certain subjects, such as design and technology and science, in order to spend more time on other subjects).

17. Page 44 - Table 2.1 has numbers of pupils taking selected A-levels from 1991/92 to 1999/00 with percentages over this period (again England

only). And numbers taking chemistry, physics and mathematics have been falling (although computer science rose a large 129%). Page 45 - Figure 2.8 also has the growth in the proportions of pupils receiving grades A - C at A-level 1991/92 and 1999/00. The low growth in physics, maths and chemistry is noted. Table 2.2 has UCAS entry figures to selected first-degree courses 1994/95 and 1999/00, with percentage changes calculated. Engineering and technology and mathematics and the physical sciences are both down.

18. Page 45 - Vocational courses; the numbers taking GNVQ's in science, engineering and ICT have increased in the last few years. But these numbers are small in comparison to e.g. the nearly 40,000 taking A-level chemistry (Figure 2.9 - Page 46).

19. **Gender.** Figure 2.10 shows entry and achievements by girls in selected GCSE's. In every subject the girls tend to outperform the boys. This is still noticeable but not so apparent at A-level - Figure 2.11, Page 47.

20. **Ethnicity.** Figure 2.12 is very interesting as it shows achievements in mathematics and science by ethnic group of pupil (Birmingham LEA, 1999), expressed as a per cent difference from the LEA average. Note: the African-Caribbean figures nosedive; and only "White" and "Indian" are found to be consistently above average. Is this the underlying reason why the proportion of the ethnic minorities who are registrants is so low? And no one seems to know why this is happening; but there has just been set up an "African-Caribbean Task Force" to examine this issue.

21. Page 49 - Table 2.3. Pupils choices of A-level subject do not seem to differ greatly by region; however proportionately more in London choose mathematics and chemistry than in other regions.

22. There are not now many more statistics left in this long chapter. But given that the Review believes that attitude studies show that many pupils are put of SET by the quality of the experience that the receive in school science education, a lot of thought goes into finding out why this might be so. And teachers they say make a huge difference to the morale and enthusiasm of pupils and, as far as teaching science is concerned, teachers are found wanting in this regard.

23. Primary teachers are seen as unable to stretch their pupils; and they often lack confidence in teaching science and mathematics.

24. And there are well-documented difficulties in recruiting science and mathematics teachers in secondary schools and further education. DfES vacancies data and a survey by Smithers and Robinson are cited here as evidence. Shortages are particularly acute in London. Page 53 - Figure

2.13, suggests that these shortages could worsen over time due to the demographic structures revealed. Figure 2.14 also suggests that things are worse in the UK than in the OECD.

25. Page 54. Although the postgraduate trainee incentives are noted (£6,000 + £4,000) and they are stated to have an effect, however Table 2.4 suggests that there are still considerable difficulties in recruiting maths and science graduates to teaching (Note: use this data to up-date the next Digest of engineering statistics?). Reference 53 neatly sums up the current incentives available, while still giving key details.

26. Page 55 notes that late entrants to teaching are becoming increasingly more important; there are now some "welcome back" bonuses for maths and science returners.

27. Page 55 - figure 2.15. Alongside the shortage of numbers there is also possibly a quality issue in that a lower proportion of (GTTR) entrants have a 2.1 or higher in D&T, mathematics and science (and in so far as the class of degree affects teaching ability).

28. The Review's consultation revealed a widespread concern over the effect of teachers teaching in areas not covered by their degree programme. Page 56 - Figures 2.16 gives proportions of teachers of physics, chemistry and biology without qualifications in the subject at both Key Stage 3 & 4. At Key Stage 4 there is evidence of slightly more specialisation but even so nearly 30% of those teaching physics do not have an A-level in this subject.

29. Page 58 - Table 2.5 Deterrents to teaching. Surveys of those entering teaching identify a number of reasons that may be acting to deter teachers form teaching. Pay, pupil behaviour and stress/hard work rank the most highly here. However the Review believes that the most critical appear to be in two areas, namely teachers' remuneration and the need for Continuing professional development (CPD).

30. Teachers' Remuneration. From 1 September teachers will be on a new progressive scale that includes a performance threshold and some management allowances. The most senior teachers will be become assistant, deputy or headteacher on a leadership pay spine with a maximum of over £80,000. And there are, of course, recruitment and retention allowances to keep staff in general and there are additions to this for teachers of shortage subjects (e.g. golden hellos worth £4,000). Teachers here will also be able to benefit from having their student loans written off over time. This would have the effect of putting up the effective salaries of science, mathematics, ICT and D&T teachers (including the teachers of engineering and construction) by around £1,500 a year for the

first ten years. Finally the government has also some "fast track schemes", so as to improve the career progression of the best teachers.

31. While the above measures are beginning to have effect, recruitment targets in mathematics and sciences are still being missed. Page 61 - Figure 2.17 - Median salaries of male physics graduates in different sectors of employment, 2001 - indicates that physics teachers earn considerably less than they might be able to earn in other sectors of employment. This data is supported by an Institute of Physics survey of its members.

32. But the environment in which pupils are taught is also important as well as the influence of the teachers themselves. Pages 65 and 66 - Figures 2.19 and 2.20; information collected here by the OECD suggests that the learning experience of pupils in the UK may be hindered by the state of science equipment and buildings relative to other countries. And there is also data from e.g. OFSTED inspections that suggests that the state of D&T and science laboratories is not satisfactory (Page 65 - Figure 2.18 - Adequacy of school laboratories, 2000/01) and is worse than that found in nearly all other subjects.

Chapter 3 Undergraduate Education

33. Page 83 - Figure 3.1 - Changes in numbers of entrants onto SET courses, 1994/95 to 1999/00; this shows that the numbers of science and engineering students are bolstered by sports science, computer science, and biology while the popularity of the physical sciences, mathematics and engineering has declined. Page 84 - Figure 3.2 - one third of those accepted onto SET courses are women, although the proportions vary according to subject. Men dominate the fields of computer science, engineering & technology, mathematics and physics while two thirds of biological science students are women. Biological sciences is the only SET subject where women account for more than 50% of the total student population and the proportion has been increasing over time.

34. Page 85 - Figure 3.3 - shows ethnicity of SET course entrants in 2000. The two most notable points are the high proportion of Asian students studying medicine and the high proportion of white students studying the physical sciences. Note; the proportion studying engineering & technology, about 18%, is much higher than those who register, only about 3% (or to put in another way the proportion who classify themselves as white is 82% compared to 97% for registrants).

35. Page 87 - Table 3.1 - Changes in student numbers for SET subjects. This tables shows a summary of the general position for student demand overall and for the demand for any additional places; and the last column

has the possible conclusions. And for engineering & technology it has overall student demand fairly static/falling slightly, the demand for additional places being high and the possible conclusion being as follows. A restructuring of engineering provision may be occurring with some HEI's opening new courses, bidding for additional places and accommodating demand, while others are closing departments or dropping some courses as a result of falling demand.

36. There are concerns that the quality of SET undergraduates is declining but the report finds that A-level scores here have been rising (though not as much as the rise in other subjects). Also average A-level points of those entering computer systems engineering has fallen 15% over 1996 to 2000.

37. Some science entrants do have high scores, as do mathematics entrants where 34% had 30 or more points in 2000; 26% of physicists and 16% of chemists had similar scores. However the high score subjects may be perceived as "hard" because of this. The reports notes that if subjects do indeed become too hard, then people will be put off (as happened with AS level Maths recently).

38. Page 89 - Mathematics skills of university entrants. The report notes that mathematics syllabuses are sometimes not providing a sufficient grounding in e.g. algebra and calculus. Remedial courses are sometimes required in the first year (as we know). Reference 98 is "An historical study of the correlation between GCE advanced level grades and the subsequent performance of well-qualified students in a university engineering department", K Todd, Mathematics Today, Vol 37 No: 5, IMMA, 2000; it may be obtainable via the British Library. (Note: This has now been obtained from the British Library).

39. But A-level specifications cannot easily return to the depth of say 15 years ago. However the right balance has to be achieved between the depth and breadth of all subjects. And support course will be needed for weaker and some other students.

40. Page 97 - Figure 3.5 - Sandwich students as a percentage of full-time first-degree students, 1994/95 to 199/00, HESA. Fewer undergraduates are on industrial placements in 1999/00 than before (despite the Dearing Review recommendation that there should me more of them. Engineering has one of the highest subject proportions however).

41. Page 101 - figures here in paragraphs 3.61 to 3.63 give SET per capita staff costs of around £2,500 to £15,000 per annum higher than for history. And Page 102 - Table 3.2 has the HEFCE produces premia and cost weights for the (usual) 4 subject groups. Should these figures now be revised? - the Review Report suggests they should.

42. Page 103 - Figure 3.6 - this has the proportion of SET first years expecting to study for over 3 years and less than 4. 3-year courses in biology are still quite common (but not so in other subjects such as engineering and technology).

43. Page 106 - Quality of SET graduates - Figure 3.7 - Number of SET undergraduate degrees by classification and subject over time. The Review interprets this as an indication that the quality of SET graduates is stable or slowly improving (from 1995/96 to 1999/00).

Chapter 4 Postgraduate Education

44 Postgraduate study is fundamental to the development of the highest level of science and engineering skills. Page 114 - Figure 4.1 - Number of first year postgraduates (Full-time and Part-time), 1994/95 to 1999/00 - this shows an improvement in recruitment at the end of the 1990's (in predominately PhDs). This includes engineering but stipends went up in 1998/99.

45 Page 115 - Figure 4.2 - Gender and subject of qualifying postgraduates 1999/00 (split into doctorates and other postgraduate degrees). In the physical and biological sciences around 40% are doctorates whereas non-doctoral degrees are more common elsewhere as in engineering. Page 116 - Figure 4.3 - Proportion of doctorates awarded to women, 1995/96 to 1999/00. This shows a general upward trend in women's participation.

46 PhD stipends are increasingly uncompetitive with the salaries of graduates - Page 118 - Figure 4.4 - Comparison of PhD stipend, graduate starting salary and national average salary, 1996/97 to 2002/03, as expressed in 1999 prices. The trend seems obvious and recent increases in Research Council stipends merely prevent the gap from widening.

47 Page 119 - Table 4.1 - Comparison of PhD stipend levels with available salaries - this table summarises the current position very well net of tax and National Insurance. Current PhD stipend is little different from the National Minimum Wage.

48 However this has to be offset against the long-term benefits of postgraduate study. Page 121 - Figure 4.5 - Gross annual pay in main job by discipline and level, 2001 - this shows average salaries for postgraduates exceeds that of graduates for most SET subjects; except computer science and physics. The "premium" to engineering and technology is particularly high. Clearly HEI's currently rely on non-financial factors to recruit PhD students and these may not now be sufficient; higher stipends are required.

49 Page 124 - Figure 4.6 - Per cent of PhD entrants with a 2:1 or First, 1995 to 1999 - the proportion has largely remained unchanged in most SET subjects (but upward in computer science and engineering?; downward in chemistry and maths?).

50 Page 133 - Table 4.4 - Comparison of the benefits of 3 year and 4 year PhDs - this is an excellent summary of the advantages and disadvantages of 4 year PhDs.

51 Retention of PhD students in the UK. Page 138 - Figure 4.8 - Location of first and current jobs of EPSRC postgraduates. This figure shows that of those students who leave the UK on completion of a PhD, many return quite quickly. Page 139 - Proportion of UK doctorates in engineering by student origin, 1995/96 to 1999/00 - the greatest proportion of students from outside the UK is found on engineering courses; 40-50% are typically not of UK origin. This is similar to the situation found in the USA. The Review concludes that the presence of non-UK students in the UK is almost wholly beneficial, as long as there is a sufficient supply of UK SETs (or of SETs who will to work in the UK). Non-UK students should be encouraged to stay in the UK (via the work permit system).

Chapter 5 Employment in Higher Education

52 Page 145 - Figure 5.1 - Full-time and part-time researchers by gender, 1994/95 to 1999/00 - this shows a rise in the number of contract researchers employed by HEIs in recent years. This is not surprising given that at the same time the number and size of UK corporate research laboratories have been reduced. Page 146 - Figure 5.2 - Percentage breakdown of full-time staff by grade and SET discipline, 1999/00 - this indicates that contract researchers across all disciplines represent 28 per cent of full-time staff; but for SET subjects this rises to 42% (with biosciences 55%; physics 54%).

53 Page 153 - Figure 5.3 - Training or relevant experience reported by survey of CRS (contract research staff) in 2000 - this data indicates that only a little over a half of CRS (56%) received on-the-job training specific to their research topic in 2000 and only 20 -25% received specific off-the-job training. Page 154 - Table 5.1 - Training provision and uptake by CRS - training in communications skills was available to 22% in 1997 and to 42% in 2000, although only 58% of those to whom it was available in 2000 took part. So while the proportion of CRS receiving training has remained low, the availability of training has increased dramatically over the period covered by the CRS surveys.

54 Page 155 - Figure 5.4 - Comparison in real terms of spinal point 4 and 6 with graduate starting salaries (in 2000/01 prices) - this indicates clearly

that the decline in CRS salaries both in absolute terms and relative to graduate starting salaries. Falling real salaries relative to those available elsewhere mean that fewer of the best PhD graduates are attracted to post-doctoral posts.

55 Page 158 - Table 5.2 - Percentage of wholly institutionally funded staff age 55+ 1994/95 and 1999/00 - this shows that the average age of institutionally-funded staff has been increasing with 16% due to retire in 1999/00 compared to 14% in 1994/95. This change in age structure is most noticeable in mathematics where the rise has been from 18% to 25%. For engineering the proportion was 19% in 1999/00.

56 Results of the demographic model - Table 5.3 - actual and forecast inflows by SET disciplines 1998, 2005 and 2010. This table compares the inflows required to maintain 1998 staff numbers to actual inflows in 1998. The modelling predicts a significant shortfall in the number of academics with an engineering qualification; the predicted inflow in 2010 is 22% higher than the actual inflow in 1998. In part this is explained by the age profile of the 1998 stock - 19% were over the age of 55. However, the recent pattern of recruitment reflects the recent relatively static student numbers, leading to lower than required recruitment levels. But other factors are at work though; engineers tend to enter the academic profession at a later age (after work in industry? after post-doctoral work?) and they tend to retire earlier than average (greater range of employment opportunities available?). The model therefore, predicts that in certain key areas, greater inflows of academic staff will be necessary if current levels of academic staff are to be maintained.

57 Page 160 - Table 5.4 - Comparison of modelled inflows and PhD output - this table, as an extension of Table 5.3, shows that a higher proportion of both mathematics and engineering post-graduates will have to be recruited in order to meet necessary inflows.

58 Finally Academic Salary Levels. Page 161 - table 5.5 - International comparisons of average academic spending power, 1998 - These figures, based on OECD data ("Education at a Glance" 2001), seem to indicate that UK academics are not paid as well as their counterparts in the US and Canada. But taking a wider view internationally they are paid neither particularly well nor particularly badly. Note: these figures, based on work by the National Association of Teachers in Further and Higher Education (NATFHE), claim to take account of differing purchasing power parities, benefits and taxes including pension and other social benefits such as healthcare). But this data does not distinguish between different disciplines or grades of staff. And the Bett Review found, of course, that pay for the most junior and most senior staff was low relative to

comparable jobs elsewhere in other sectors; and it predicted that there would be recruitment and retention difficulties.

59 Page 162 - Table 5.6 - Grade drift in UK HEIs between 1995 and 2000 by subject of highest qualification - shows very clearly the rising "grade drift" in e.g. the Professorial grade. Page 163 - Table 5.7 - Increases in senior lecturer and professorial grades in UK HEIs, 1998 to 2000 - this extends Table 5.6 so as to present the increase for both the senior lecturer and professorial grades in percentage terms by major disciplines in both the arts and sciences. Universities are clearly using promotion as a recruitment tool, in certain disciplines, particularly at senior level and where international competition is most visible.

Chapter 6 Scientists and Engineers in R&D

60 Page 166 - Figure 6.1 - First destination for first-degree students entering employment 1999/00 - this shows that the demand for scientists and engineers is across a range of sectors (as we have always maintained). The Review states here that it "shows...over half of all physics, chemistry, engineering and computer science graduates work in what is (loosely?) described as "R&D manufacturing". However, as noted before in paragraph 6, this report may not be right in implying, both in the text and in reference 205, that SIC K, defined a property development, rental and R&D, is in this case "primarily R&D". In may not be so as a large number of engineers, particularly software and IT engineers, are likely to be employed elsewhere in this service sector. But they are surely right in deducing that this data "shows...that financial services are an important employer of graduates in the mathematical sciences (as high as 25%) and physics, due to the high level numerical skills that they have possessed. Also as we have noted as well, the education sector and public sector organisations such as the NHS, research establishments and government departments are significant employers of scientists and engineers.

61 Page 167 - Figure 6.2 - Full-time staff employed in R&D, 1986 to 1999 (source: OECD and OST) - shows that the number of full-time staff fell by over 10% between 1986 and 19997, from nearly 300,000 to 260,000. The main cause of this observed reduction was a fall in R&D staff in business, which was somewhat offset by the rise in research staff in higher education. The increase in 1998 and 1999 suggests an upturn in the level of R&D activity (Note: But not in 2000; see reference 206).

62 Page 168 - Figure 6.3 - Employment of professional scientists and engineers in business research sectors, 1986 and 1996 (Source: OECD, ANRSE) - this figure presents some of the changes in the key sectors. And although the number of scientists and engineers has fallen in may

sectors, the number employed in pharmaceuticals and services have increased significantly.

63 Salaries for scientists and engineers. An attractive starting salary and salary progression are increasingly important now due to rising debt and the commercial awareness of students. But salaries of R&D SETs working in a "professional" capacity are about 10% less than qualified SETs elsewhere; Source: ONS Labour Force Survey. This is backed up by Mason's NIESR report (reference 208, "The Labour Market for engineering, science and IT graduates", NIESR, March 1999). This report found that technical graduates working in the financial services and computer services sectors earned more than their counterparts elsewhere in electronics, machinery, pharmaceuticals and R&D services sectors. Salary differences were greater at the top end of the income spectrum - particularly in the top decile where financial services pay around 20% more than elsewhere.

64 The gap in salaries observed also seems to grow over time and with experience. Page 170 - Figure 6.4 - Median salaries of male physics graduates by sector and age, 2001 - this has findings from the Institute of Physics, which show that there is very little difference in starting salaries of their members working in industry, services and financial services. However big differences soon emerge (Note: for example, age 35 - 39, government £30,000; age 35 - 39, financial services nearly £90,000).

65 Page 171 - Figure 6.5 - Growth in median salaries of male members of the Institute of Physics in various careers, between ages of 25 - 29 and 35 - 39. This figure shows that male physics graduates employed in financial services and the service sector generally received significantly larger salary increases than did their counterparts in industry. (Note: Contract R&D rises the lowest amount of all).

66 The report does then also recognise that there are a number of non-salary factors, which effect the recruitment and retention of scientists and engineers. These are listed and discussed; they include poor job design; poor job security; training and CPD. Better ways of communication and collaboration in research and training are also discussed; as are ways of improving the assessment of skill needs and HE-business collaboration in training and skills supply and research and development. On the latter see reference 221 - Page 180 - Studies suggest that there are significant benefits for companies if their scientists and engineers collaborate with university research teams. One such study is "Commercialising knowledge: university science, knowledge capture and firm performance in biotechnology", J Armstrong, M Darby, L Zucker, NBER Working Paper 8499, October 2000. However the Review is concerned that not enough collaborations are driven by business needs - reference 223.

67 Page 183 - Figure 6.6 - Regional GDP, R&D activity and SET first-degree entrants - this sets out the various proportions broken down by regions and countries. It shows that whereas London, the NE and Yorkshire and Humber tend to generate a higher proportion of SET graduates than the businesses in these regions employ in R&D activities, the reverse is the case in the East and Southeast. Scotland also has a greater proportion of SET graduates than it has in UK R&D employment (but is this higher participation? A more buoyant supply of SET skills?).

68 The International Mobility of Scientists and Engineers. Page 184 - figure 6.7 - Proportion of UK domiciled graduates and postgraduates taking employment abroad, 1999/00 - the report states that this shows that SET graduates are more likely to move abroad for employment than graduates in general. (Note: but there isn't much difference when you look at it; also several SET subjects are below all subjects, including engineering and technology; and the data used is HESA first destinations and therefore not indicative of the "long run").

69 Also other studies show that this is not happening on a sufficient scale to cause a significant supply shortage (reference 227; Skills Task Force Research Paper 17, December 1999). Also the UK attracts a large number of SET graduates from abroad - for example in 2001 there was a net inflow of nearly 5,000 SETs (reference 228 - Flows of scientific professionals from the (excellent) Office for National Statistics "The International Passenger Survey"). It looks like there isn't a "brain drain"; there is a net gain of science and engineering talent. Also the Home Office found that 10% (6,226) of work permits granted in 2000 were for engineers and technologists (reference 229).

70 Page 186 - Figure 6.8 - Proportion of non-UK domiciled students at undergraduate level by subject, 1999/00 - this shows very clearly the large numbers and proportion of overseas students studying engineering at UK universities compared to other subjects, including SET subjects. This is due to the good reputation of UK engineering departments and universities and the fact that UK engineering degrees are shorter and cheaper than elsewhere.

71 The work permit system allows employers based in Great Britain to employ people who are not nationals of a European economic Area (EEA) country. Two occupational areas where the government currently recognises that vacancies are hard to fill with EEA nationals are electronic engineers and physicists at IEng level or equivalent.

72 Finally there have been recent changes to the work permit system and these are very neatly summed up in a Box on Page 187 where they apply to SET graduates and postgraduates.

Tony Farrington May 2002