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## **HEALTH AND SAFETY EXECUTIVE**

### **The HSE Board**

#### **Options for Increasing HSE's Human Factors Resources**

##### **A Paper by Trevor Shaw**

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#### **Issue**

1. Addressing the shortage of human factors (HF) resource at HSE.

#### **Timing**

2. An early decision is required in order that we can begin the process of selecting and retraining a group of inspectors as human factors specialists in April 2005.

#### **Recommendation**

3. That the Board approve the proposal as outlined in paragraphs 8 and 9 to retrain ten existing HSE inspectors (with a further ten to be considered the following year) in Human Factors using a purpose designed Masters degree course combined with internal tutorials and fieldwork while receiving mentoring from existing specialists.

#### **Background**

4. It has been recognised that human factors has a significant part to play in helping HSE deliver its PSA targets. Existing HF resource is stretched to capacity with several unfilled vacancies and more staff are required urgently if additional support is to be provided to the Strategic Programmes.
5. HSE has great difficulty attracting experienced HF staff and retaining those recruited with less experience after they have gained a few years experience. Directorates appear to perpetually carry several unfilled HF vacancies. Existing staff tend to be

heavily loaded with insufficient capacity to deliver all that HSE needs. The planned creation of pools of expertise in HF has further highlighted the limited number of experienced staff HSE currently employs. Therefore alternative ways of meeting the demand are being considered.

## Argument

6. HSE currently employs a relatively small number of fully qualified HF staff when compared to some other disciplines. There are 23 staff in HF posts, with a range of qualifications and experience. But less than half of these are professionally qualified and currently eligible for registered membership of either the Ergonomics Society or the British Psychological Society. In addition, HSL employs over 70 staff in its Human Factors Group, but less than half of these are psychologists or ergonomists and only 9 are registered members of one of the two main relevant bodies. In total, despite recent increases in HF staff at HSL, HSE/HSL together only employ about 20 HF staff who are professionally accredited. The remainder includes a small number of very experienced people who are not accredited, but the majority are relatively inexperienced by comparison.
7. There is a need to increase the amount of HF resource in HSE. The alternative options for achieving this are discussed below.
  - i. Recruitment. The demand for HF support has steadily increased in recent years and HSE has tried to fill any vacancies that have arisen. However, HSE has great difficulty recruiting suitably qualified and experienced human factors staff. The reasons for this are not entirely clear, but seem to relate in part at least to the relatively small size of the potential pool of external candidates. Over the past 5 years we have only succeeded in attracting a small number of new, experienced staff at Band 3 level and have not been able to recruit at Band 2. Recruitment at Bands 4 or 5 has been a little more successful (particularly at HSL) but generally only attracts new graduates/postgraduates with limited experience. This means there is an overhead involved while they gain experience of both HSE and applying their skills. By the time they are able to operate autonomously they often leave HSE. The cost and time spent on unsuccessful recruitment campaigns is a major drawback to continuing with this approach. Therefore alternative solutions for increasing the amount of available resource have been considered.
  - ii. Buying it in. HSE already has access to HF support through the Framework Agreement and HSL. The main advantages include flexibility (the ability to buy in as and when required the type of expertise needed) and freedom from long-term commitments. The disadvantages include the lack of familiarity such people may have with HSE, limited practical experience as they predominately have research or academic backgrounds, not being able to gain access to the right experience when required and the cost of their services. Buying in additional resource is most suited to meeting short-term demands or very specific needs rather than high levels of continuous delivery of front line operational activities.

iii. Retraining. An alternative way of gaining professionally qualified HF staff is to retrain existing non-specialists. Some success has been obtained by retraining existing staff with a relevant background, particularly in growing the HID Human Factors team. The primary advantage of using this model is that it makes use of existing staff who have a good knowledge of HSE and existing experience from working as inspectors. It also has the benefit of not increasing HSE's overall establishment and perhaps is more likely to result in those staff being retained after their training. The main disadvantages are the costs of the necessary courses, the indirect cost from suitable in-house mentors being drawn from their other work and the time it takes to achieve competence and professional recognition (usually minimum 3 years from graduation). The retraining will require:

- a. the selection of suitable candidates;
- b. the availability of a suitable course of education in ergonomics/HF;
- c. the preparation of in-house tutorials relevant to HSE HF specialists;
- d. the commitment of existing experienced HF staff to act as mentors.

8. There are currently only five degree courses recognised by the Ergonomics Society. What is needed is a flexible format such as a modular or distance learning course so that HSE staff are not taken away from work for a prolonged period. None of the existing courses precisely meets HSE's needs, which is for a modular course which will cover all the key topics HF at HSE is concerned with, while meeting also Ergonomics Society requirements. After exploring tailoring an existing course at Leeds University (unsuccessfully), discussions have been held with Cranfield University about the feasibility of setting up a new course, drawing on their existing ones where relevant. The proposal is for a ten module Masters level degree course in Human Factors in Health & Safety, which could also be used to train to diploma and certificate levels. The course would be taken over two-years. The cost would not be more than £1000 per module, with each module probably requiring a 2-week residential block at Cranfield for tuition and project work. The earliest the first course could commence is Autumn 2005. To have candidates up to speed and able to extract maximum benefit from the first academic modules they would need to begin a process of in-house pre training / on the job training during the late spring of 2005.

9. In parallel with the formal course, the retraining would require attendance at in-house tutorials, run at HSE by existing HF staff. These would focus on specific topics related to HF enforcement issues. Existing professionally accredited HF staff would also be needed to act as mentors in order that those being retrained could seek registration with the Ergonomics Society. Mentoring would include on the job field and practical work accompanied by and under the direction of existing HF specialists. HSE (including HSL) currently employs 13 Registered Ergonomists, but two of these are expected to transfer with HMRI.

## **Consultation**

10. Consultation has taken place with the HSL HF management team, COSAS, HF specialists in the Directorates, a limited number of regulatory inspection team leaders and with a strategic programme director.

## **Presentation**

11. Since some ergonomics/HF courses have closed in recent years, the establishment of a new Ergonomics Society approved course is likely to be welcomed. But some existing providers may feel aggrieved that HSE has not decided to support their course.

## **Costs and Benefits**

12. The costs of funding option three are substantial but should provide long-term benefits to HSE. The overall cost to produce ten additional HF inspectors is estimated to be around £120,000 over two years. It will take a further 2-3 years before they will be likely to become Registered Ergonomists (i.e. professional members of the Ergonomics Society) but it is expected they will be effective in their new roles well before this. They will be able to begin contributing to the HF effort from the point they are selected by being assigned a mentor and would therefore be eligible to contribute to the work of the two HF pools (Ergonomics or Work Psychology).

## **Financial/Resource Implications for HSE**

13. The proposed Masters degree course will cost approximately £10,000 per student for tuition fees. In addition there would be some travel and subsistence costs associated with attending each module. To retrain ten existing HSE inspectors the costs would be approximately £60,000 in the first year and £40,000 in the second, plus T&S, plus costs associated with loss of their productive time, plus loss of time for those existing qualified HF personnel while mentoring the new trainees. It is estimated the direct cost to budgets would be of the order of £120,000 over the two years.

## **Environmental Implications**

14. Not applicable

## **Other Implications**

15. The retraining proposal will have implications for the delivery of existing commitments since the involvement of the existing experienced HF staff is critical to its success.

## **Action**

16. The Board is invited to consider the proposals and agree the recommended way forward.