

# INSPECTION REPORT

## **Atomic Weapons Establishment Plc**

**09 September 2004**



ADULT LEARNING  
INSPECTORATE

## Grading

Inspectors use a seven-point scale to summarise their judgements about the quality of learning sessions. The descriptors for the seven grades are:

- *grade 1 - excellent*
- *grade 2 - very good*
- *grade 3 - good*
- *grade 4 - satisfactory*
- *grade 5 - unsatisfactory*
- *grade 6 - poor*
- *grade 7 - very poor.*

Inspectors use a five-point scale to summarise their judgements about the quality of provision in occupational/curriculum areas and Jobcentre Plus programmes. The same scale is used to describe the quality of leadership and management, which includes quality assurance and equality of opportunity. The descriptors for the five grades are:

- *grade 1 - outstanding*
- *grade 2 - good*
- *grade 3 - satisfactory*
- *grade 4 - unsatisfactory*
- *grade 5 - very weak.*

The two grading scales relate to each other as follows:

SEVEN-POINT SCALE	FIVE-POINT SCALE
grade 1	grade 1
grade 2	
grade 3	grade 2
grade 4	grade 3
grade 5	grade 4
grade 6	grade 5
grade 7	

## Adult Learning Inspectorate

The Adult Learning Inspectorate (ALI) was established under the provisions of the *Learning and Skills Act 2000* to bring the inspection of all aspects of adult learning and work-based learning within the remit of a single inspectorate. The ALI is responsible for inspecting a wide range of government-funded learning, including:

- work-based learning for all people over 16
- provision in further education colleges for people aged 19 and over
- **learndirect** provision
- Adult and Community Learning
- training funded by Jobcentre Plus
- education and training in prisons, at the invitation of Her Majesty's Chief Inspector of Prisons.

Inspections are carried out in accordance with the *Common Inspection Framework* by teams of full-time inspectors and part-time associate inspectors who have knowledge of, and experience in, the work which they inspect. All providers are invited to nominate a senior member of their staff to participate in the inspection as a team member.

## Overall judgement

Where the overall judgement is that the provision is adequate, only those aspects of the provision which are less than satisfactory will be reinspected.

Provision will normally be deemed to be inadequate where:

- more than one third of published grades for occupational/curriculum areas, **or**
- leadership and management are judged to be less than satisfactory.

This provision will be subject to a full reinspection.

The final decision as to whether the provision is inadequate rests with the Chief Inspector of Adult Learning. A statement as to whether the provision is adequate or not is included in the summary section of the inspection report.

# **INSPECTION REPORT**

## **Atomic Weapons Establishment Plc**

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## INSPECTION REPORT

### DESCRIPTION OF THE PROVIDER

1. The Atomic Weapons Establishment Plc (AWE) was created in 1946 as the Atomic Weapons Research Establishment. It was a Ministry of Defence (MoD) establishment with the primary role of designing and maintaining the country's nuclear deterrent. This remains the company's core activity today. In 1993 it became a government-owned contracted operated site and changed its name to AWE Plc. In 2000, the site contract was awarded to AWE Management Limited, a joint venture of British Nuclear Fuels Limited, SERCo Limited and Lockheed Martin.

2. AWE's Aldermaston site is its centre of design and research. It covers approximately 670 acres near the village of Aldermaston in Berkshire and employs approximately 3,500 staff. A training centre on site employs 13 staff, including the apprentice training manager, who has overall responsibility for the training. Eight of the staff are directly involved in training. The company recruits about 25 learners each year. There are currently 88 learners, 33 of whom are advanced modern apprentices in mechanical, electrical or electronic engineering, and 55 are foundation modern apprentices. There are also four advanced modern apprentices in information technology (IT), but these are managed by another training provider. Training takes place at AWE's site and at five subcontracted local colleges. Training is funded by AWE and through Berkshire Learning and Skills Council (LSC).

3. AWE recruits its learners from the local area, which includes Reading, Newbury and Andover. In July 2004, the rate of unemployment in West Berkshire and Hampshire was less than 1 per cent, compared with 2.2 per cent nationally.

4. According to the 2001 census, the proportion of the population of West Berkshire and Hampshire from minority ethnic groups is 2.6 per cent and 2.2 per cent respectively, compared with 4.9 per cent in the Southeast and 9.1 per cent nationally. The proportion of people from minority ethnic groups in Reading is higher at 13.2 per cent.

### SCOPE OF PROVISION

#### Engineering, technology & manufacturing

5. There are 88 learners on the four-year modern apprenticeship. Of these, 44 are in mechanical engineering and 44 are in electrical or electronic engineering. Thirty-three of the learners are advanced modern apprentices and the remaining 55 are foundation modern apprentices. Learners working towards national vocational qualifications (NVQs) at level 3. All learners take an initial assessment test that measures their ability in literacy and numeracy. Learners have a three-week induction, which covers rules and regulations as well as information on the programme and the NVQ.

6. Since 2000, all learners are employed by AWE and are recruited as foundation modern

## ATOMIC WEAPONS ESTABLISHMENT PLC

apprentices with the intention of progressing to an advanced modern apprenticeship. Before 2000, learners were recruited directly onto an advanced modern apprenticeship. Learners spend the first 18 months to two years of their training programme at AWE's own apprentice training centre on the Aldermaston site and are expected to complete the apprenticeship within this period. During this time, they work towards an NVQ at level 2 in machining, electrical, electronic or maintenance engineering, and five key skill units at level 2. They attend one of five local colleges one day each week to study for a suitable technical certificate.

7. After two years, most learners progress to the advanced modern apprenticeship programme. Learners spend three months in each of a series of work placements where they receive on-the-job training. During this time, learners work towards achieving an NVQ at level 3 in machining, electrical, electronic or maintenance engineering, and they continue to attend college on a day-release basis to complete their technical certificates or further qualifications. AWE's staff carry out workplace assessments and internal verification.

## ABOUT THE INSPECTION

Number of inspectors	3
Number of inspection days	12
Number of learner interviews	29
Number of staff interviews	17
Number of subcontractor interviews	1
Number of locations/sites/learning centres visited	1

## OVERALL JUDGEMENT

8. The quality of the provision is adequate to meet the reasonable needs of those receiving it. More specifically, AWE's leadership and management and arrangements for quality assurance are good. Equality of opportunity is satisfactory. Work-based learning in engineering is good.

## GRADES

*grade 1 = outstanding, grade 2 = good, grade 3 = satisfactory, grade 4 = unsatisfactory, grade 5 = very weak*

<b>Leadership and management</b>	<b>2</b>
Contributory grades:	
Equality of opportunity	3
Quality assurance	2

Engineering, technology & manufacturing		2
Contributory areas:	Number of learners	Contributory grade
<b>Mechanical engineering</b> - Work-based learning for young people	44	2
<b>Electrical engineering</b> - Work-based learning for young people	44	2

## KEY FINDINGS

### Achievement and standards

9. **Retention and achievement rates on all of its training programmes are good.** The retention of foundation modern apprentices from 2000-03 averages 92 per cent. In the same period, achievement rates on foundation modern apprenticeships averages 75 per cent. Similarly, the retention for advanced modern apprentices from 1997-99 averages 87 per cent, while achievement rates on advanced modern apprenticeship programmes over this period averages 85 per cent. Of the 48 learners starting their advanced modern apprenticeship programme from 2001-03, all have either completed successfully or are still in learning. Of the 54 learners commencing their foundation modern apprenticeship programme in 2003 and 2004, 52 are still in learning.

10. **There is very good progress into employment upon completion of training.** To date, all learners completing their training have gained permanent employment as technicians within AWE.

### Quality of education and training

Grades awarded to learning sessions

	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Total
Engineering, technology & manufacturing	0	1	2	3	0	0	0	6
<b>Total</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6</b>

11. **Teaching in practical classes is good.** Learners are given a wide range of practical tasks structured to progressively increase their abilities and confidence. Differentiated exercises allow learners to progress at their own pace and afford them opportunities to practise their new skills and extend their learning. All teaching and learning observed were at least satisfactory. However, teaching in background knowledge sessions did not fully stretch the more-able learners. In some lessons, tutors introduced too much new information while explaining a concept that some learners found confusing.

12. **Learners receive good technical support in the workplace and experience a wide**

**range of engineering tasks.** All learners work with experienced technicians in the workplace who act as apprentice mentors. Workplace apprentice mentors are well qualified and experienced in their vocational areas and many have received training in effective mentoring.

13. **There is an extensive three-week induction,** which covers all aspects of the training and a good initial introduction to equality of opportunity to raise the learners' awareness of diversity issues. Learners are also suitably inducted into each of the work placements and this is monitored thoroughly to ensure that learners are always aware of local health and safety issues.

14. **Initial assessment of learners' literacy and numeracy needs is comprehensive and leads to good additional learning support.** Where appropriate, learners attend dedicated literacy and numeracy sessions each week with specialist tutors. Most learners progress well with their literacy and numeracy skills, and in most cases specialist support is no longer necessary after the first year.

15. **AWE encourages and supports its learners to pursue additional higher-level qualifications upon completing their frameworks,** including higher national certificates or degrees, and there is good achievement of these. Most learners achieve qualifications in addition to their framework requirements. Learners are encouraged to follow courses in motor vehicle maintenance, welding, computer-aided design, and computing or IT qualifications.

16. **The range of personal development activities is particularly good.** During their first year all learners participate in weekly sports activities, which are scheduled into their programme. After the first year these are still available but not mandatory. On passing their driving test learners attend a safe driving course arranged and funded by AWE. Other activities include sailing, first aid and outdoor adventure courses. Learners receive useful lectures from the police, a medical officer and other invited visitors, to raise their awareness of topics such as alcohol and drug misuse, safe driving issues, crime, and money management. The apprentices have their own association which organises a range of educational and social events.

17. **Most learners demonstrate significant levels of motivation and enthusiasm to progress,** and have readily taken responsibility for their own learning and rate of progress. Learners have a very clear understanding of their role within AWE and the opportunities available to them. Some learners have been given significant responsibility to manage projects or represent learners on various committees. Learners are given stimulating and interesting projects to promote their progress and stretch their understanding, and participate enthusiastically in local action teams to solve problems within their workplaces.

18. **There is very good progress into employment on completion of training.** To date, all learners completing their training have subsequently gained permanent employment within AWE. Of the company's current workforce of 3,500 employees, over 400 are former apprentices and some hold positions of significant responsibility.



19. Assessment and internal verification are satisfactory. AWE carries out detailed assessment at level 2 on tasks in the training centre and provides the learners with clear criteria and appropriate feedback. Assessment for the NVQ at level 3 is carried out in the workplace. Assessment is frequent and learners have the opportunity to request assessment in the workplace after practising tasks several times. However, the records of observations are insufficiently detailed about the task observed and the agreed outcomes. Assessors' feedback to learners is too often just verbal and insufficient to guide to learners on how to improve.

### **Leadership and management**

20. **AWE has very clear strategic objectives relating to apprentice training.** The apprentice training centre is an important part of the company's strong commitment to education and training. The three-year development plan identifies clear improvement targets for learners' numbers, retention and completion, and employer engagement.

21. **The open and inclusive management effectively engages staff in meeting the learners' needs and interests.** The centre is a closely knit training and learning community, with a strong sense of common purpose. Staff are committed to providing the best possible service to learners and to the manufacturing departments, who are their customers. Internal communications are very good, aided by clear organisational structures, which staff and learners understand.

22. **The management of engineering training is good.** The quality of provision is good and learners are well supported throughout their programmes. They achieve good standards and retention and achievement rates are high.

23. **AWE prioritises staff development, which is well planned and resourced.** There are good initiatives to enable tutors to receive teacher training and to train workplace supervisors as mentors to apprentices.

24. **AWE has a wide range of policies and procedures, including those for equality of opportunity, anti-harassment, drugs, disability and racial equality.** Policies are up to date, comprehensive and clearly written. They include some good guidance on the definition of terms such as discrimination and harassment, with useful examples. Learners are not routinely provided with copies but are aware of their existence and how to access them.

25. **AWE has made good progress in widening the participation of learners of learners' under-represented groups.** It has developed good links with Connexions to encourage more learners from under-represented groups to apply. The company visits local schools to promote the programme and particularly local girls' schools. A women-only work-experience programme has been developed and widely publicised. There has been an increase in the number of applicants from women and people from minority ethnic groups in 2004, and a corresponding increase in such learners starting on the programme.

26. **Learners who started this year benefited from a particularly good introduction to equal opportunities during their induction.** AWE intends to provide the same training for existing learners, supervisors and members of the apprentice training committee, however this has not yet happened.

27. **There is a clear framework and procedure for quality assurance,** that encompasses the company's quality assurance manual, quality assurance policy, the internal audit process of systems, quality assurance plans, self-assessment, internal verification, learner and staff surveys, and the monitoring of learners' progress, retention and achievement.

28. **The training centre has paid particular attention to developing the quality of its self-assessment and broadening the role of the apprentice training committee.** At an earlier stage of development is an internal scheme for the observation of training and learning and systematic measures to assure the quality of provision outside of the centre, including in further education colleges. Internal verification is satisfactory.

29. **The work of the apprentice training committee is thorough and at the heart of the training centre's approach to quality assurance.** It exercises a powerful supervising and monitoring role for the centre and its work. It meets quarterly to review the progress of learners, to hear their views, consider the effectiveness of the centre and college training and to discuss aspects of pastoral support for learners.

30. **Aspects of quality assurance are insufficiently developed, especially at the level of training delivery.** Some useful observation of training and learning has taken place as part of training and 'mock inspection' programmes, but until very recently there has been no planned and systematic scheme. The training centre does not have substantial first-hand evidence to make explicit judgments on the quality of some aspects of its training.

31. **There is insufficient reinforcement of learners' understanding of equal opportunities after their induction.** During progress reviews much emphasis is given to ensuring that inappropriate or offensive materials are not on display in the workplace, but little else is discussed. Until recently there has been insufficient attention to extending the learners' understanding beyond the general awareness of policies and procedures and the equal opportunities charter.

## **Leadership and management**

### **Strengths**

- clear strategic objectives with a key role for modern apprenticeship training
- open and inclusive management meeting the learners' needs of interest
- good management of training
- good initiatives to widen the participation of learners from under-represented groups
- positive role of the modern apprentice training committee

### **Weaknesses**

- insufficient reinforcement of learners' understanding of equal opportunities

- insufficiently developed quality assurance

## **Engineering, technology & manufacturing**

### ***Mechanical engineering***

#### *Strengths*

- good retention and achievement rates
- very good progress into employment
- good practical teaching
- thorough and effective recruitment and induction
- comprehensive initial assessment leading to good additional learning support
- highly motivated learners who take responsibility for their own learning
- good technical support in the workplace
- particularly good personal development activities

#### *Weaknesses*

- slow progress towards framework completion for a few foundation apprentices
- weak target-setting at learners' progress reviews
- slow action to reinstate horizontal milling machine

### ***Electrical engineering***

#### *Strengths*

- good retention and achievement rates
- very good progression
- good practical teaching
- thorough and effective recruitment and induction
- comprehensive initial assessment leading to good additional learning support
- highly motivated learners who take responsibility for their own learning
- good technical support in the workplace
- particularly good personal development activities

#### *Weaknesses*

- slow progress towards framework achievement for a few foundation apprentices
- weak target-setting at learners' progress reviews

## **WHAT LEARNERS LIKE ABOUT ATOMIC WEAPONS ESTABLISHMENT PLC:**

- the good technical assistance and support
- achieving additional qualifications
- 'the strong links between what we do at work and college'
- the good focus on health and safety
- 'any concerns we have are looked at quickly'
- 'we are as one team with the instructors'
- 'the many extra things we do'
- the high reputation of the scheme and the company

## **WHAT LEARNERS THINK ATOMIC WEAPONS ESTABLISHMENT PLC COULD IMPROVE:**

- the amount of paperwork
- the induction

## **KEY CHALLENGES FOR ATOMIC WEAPONS ESTABLISHMENT PLC:**

- further improving the good quality of education and training
- increasing the amount of good teaching
- further enhancing the knowledge and understanding of equal opportunities among staff and learners
- further developing the quality assurance arrangements

## DETAILED INSPECTION FINDINGS

### LEADERSHIP AND MANAGEMENT

Grade 2

#### Strengths

- clear strategic objectives with a key role for modern apprenticeship training
- open and inclusive management meeting the learners' needs of interest
- good management of training
- good initiatives to widen the participation of learners from under-represented groups
- positive role of the modern apprentice training committee

#### Weaknesses

- insufficient reinforcement of learners' understanding of equal opportunities
- insufficiently developed quality assurance

32. Clear, company-wide strategic objectives place the development of employees at the heart of AWE's priorities. The apprentice training centre is an important part of the company's strong commitment to education and training. Its activities are directed towards its strategic imperative of maintaining the capability of the employees, and developing their skills and commitment. Inspectors agreed with the company's most recent self-assessment report that strategic and operational planning are particularly effective. The training centre has a growing role in meeting the company's need for skilled engineers, trained through apprenticeships. Its various development plans are informed by detailed and effective manpower planning, the employee development plan and the work of the employee development board. The three-year development plan identifies headline improvement targets for the number of learners' retention and completion rates, and employer engagement. The management structure promotes co-operation between managers. Close working relationships between the training centre and operational engineering managers ensure that it has a central role in developmental change. For example, the training centre has been fully involved with the creation of a new employment structure for craft engineers and in conceiving appropriate training.

33. Open and inclusive management effectively engages staff in meeting the learners' needs and interests. The centre is a closely knit training and learning community, with a strong sense of common purpose. Staff are committed to providing the best possible service to learners and to the manufacturing departments, who are their customers. This helps to promote co-operative and positive working relationships, among the training centre staff and between learners and staff. Internal communications are very good, aided by clear organisational structures, which staff and learners understand. The training centre manager and senior managers foster a spirit of debate and open discussion. For example, the training centre manager holds fortnightly staff meetings, but there are also many informal opportunities for discussion. Staff and learners raise issues confident that managers will listen to them. They are increasingly involved in self-assessment. Most

meetings are recorded, but inspectors identified the need for more action points, including timed actions, to monitor progress.

34. The management of engineering training is good. The quality of provision is good and learners are well supported throughout their training programmes. They achieve good standards and retention and achievement rates are high. Recruitment, induction and initial assessment are well planned and executed. Also, there is a wide range of development opportunities for learners. There are a few aspects of the management of training that require attention, such as the procedures to ensure that the company takes faster action to replace or repair defective machinery. Resources are managed efficiently and the budget is closely integrated with the various business and development plans for the training centre and for the company. There are medium-term plans to provide the centre with new accommodation, to enable its further expansion, including the further development of alternative sources of work other than apprentice training.

35. The support and development of the learners' literacy, numeracy and language skills are good. There are well-documented arrangements for all prospective learners to have their literacy and numeracy skills tested as part of the interview and recruitment process. Learners have diagnostic tests during their induction and the provision of additional learning support is well planned and managed. However, the further education colleges providing course-specific training are not alerted to the learners' additional needs, although they work well with the training centre to deal with them when they are aware of them.

36. As identified in the company's most recent self-assessment report, staff development is well planned and resourced. AWE prioritises the development of its staff and ensures that each of them receives an annual performance appraisal. Appraisals lead to staff development plans, built around their individual needs and the company's priorities, which are identified in business area plans. There are good initiatives to enable tutors to receive teacher training and to train workplace supervisors as mentors to learners.

### **Equality of opportunity**

### **Contributory grade 3**

37. AWE has a wide range of policies and procedures, including those for equality of opportunity, anti-harassment, drug misuse, disability and racial equality. The company has restrictions on who it can employ, since all staff are subject to security clearance and must be British nationals. Policies are up to date, comprehensive and written clearly. They include some good guidance on the definition of terms such as discrimination and harassment with useful examples. Policies are contained in the managers' handbook and available on the company's intranet. However, there is very little explanation in the employees' handbook and not all policies are openly displayed in the training centre or other work areas. Learners are not routinely provided with copies but are aware of their existence and where to find them. All learners have an adequate understanding of equality of opportunity. AWE also has a clear grievance and discipline procedure. Learners are aware of how to complain and have the confidence to do so. There have been no formal complaints from learners about their training or treatment.

## ATOMIC WEAPONS ESTABLISHMENT PLC

38. AWE has good initiatives to widen the participation of learners from under-represented groups. The company is aware that women and people from minority ethnic groups are under-represented on the apprenticeship scheme and it has taken steps to increase the number of applicants from these groups. For example, it has developed good links with Connexions to encourage more learners from these groups to apply and has visited local schools to promote the programme particularly at local girls' schools. AWE has developed a women-only work-experience programme and publicised it widely. There has been an increase in the number of applicants from women and people from minority groups in 2004, and a corresponding increase in learners starting on the training programme. However, most learners at AWE are still white men and of the 94 learners, just three are women and one is from a minority ethnic group.

39. During induction, learners develop an equal opportunities charter that they are prepared to sign and abide by. The learners value this as it helps to develop their understanding of individual rights and responsibilities, as well as providing a good basis for measuring their behaviour. Each year, the company distributes the newly revised charter to all of the learners.

40. AWE has recently developed effective links with a local racial equality charity. The charity has developed a good one-day training programme for staff and learners which AWE has incorporated into its induction programme. The company plans for all learners to attend this but only those who joined the scheme this year have benefited from it. AWE also intends to provide the training for workplace supervisors and members of the apprentice training committee.

41. The company collects appropriate data on the gender, ethnic origin, disability and age of learners and all applicants. It uses this data to analyse the range of people applying for places on the apprenticeship scheme, those invited for testing, those invited for interview and those offered a place on the scheme. In 2004, the information indicates an increase in applications and places for women and people from minority ethnic groups. AWE also analyses retention and achievement rates for different groups. The results of the analysis are provided to the apprentice training committee to support their decisions.

42. AWE and the apprentice training centre offer adequate levels of access to people with restricted mobility.

43. There is insufficient reinforcement of the learners' understanding of equal opportunities after their induction. During their progress reviews AWE emphasises the importance of not displaying inappropriate or offensive materials in the workplace, but discusses little else with them. Until recently, there has been insufficient attention to extending the learners' understanding beyond the general awareness of policies and procedures and the equal opportunities charter. There are plans to extend the new one-day training course to all learners, but this has yet to take place.



**Quality assurance****Contributory grade 2**

44. AWE and the training centre encourage a self-critical culture. There is a clear framework and procedure for quality assurance, embracing the company's quality assurance manual, quality assurance policy, the internal audit process of systems, quality plans, self-assessment, internal verification, learner and staff surveys, and the monitoring of learners' progress, retention and achievement. Some elements of this quality assurance framework are more pertinent to training and the work of the training centre. The centre has paid particular attention to developing the quality of its self-assessment and broadening the role of the apprentice training committee. At an earlier stage of development is an internal scheme for the observation of training and learning, and systematic measures to assure the quality of provision outside of the centre, including in further education colleges. Internal verification is satisfactory.

45. The work of the apprentice training committee is thought out at the heart of the training centre's approach to quality assurance. Inspectors agreed with the self-assessment report that the apprentice training committee exercises a powerful supervisory and monitoring role for the training centre and its work. Chaired by a senior company manager, with a membership of key operational managers, the sponsors of learners, and of the centre manager, it reports to the employee development board. It meets quarterly to review learners' progress, hear their views, consider the effectiveness of centre and college training, and discuss aspects of pastoral support for learners. Members receive detailed progress reports on each learner, analysis of performance, including trend analysis, and the manager's report on other developments. The work of the committee has significant impact. For example, it has changed the content of programmes, considered the work of tutors, challenged the adequacy of some college work and influenced the development of new employment structures. It also provides an essential professional forum for debate in which the training centre manager can share his plans. In addition to presenting their views to the committee, learners have a regular weekly opportunity to raise their concerns with the manager and tutors, and any issues are resolved quickly.

46. AWE has carried out a lot of work to improve its self-assessment process. It is beginning to provide another key focus for much of the training centre's quality assurance work. The current report is the company's fifth. It is much sharper in its judgments than earlier reports and its evidence is broader and clearer. For example, the outcomes of learners' evaluations are now contributing to the report. Staff are more fully involved in its development and increasingly understand it. A team of training centre staff and learners, the company's human relations staff and the local LSC contract manager, contributed their views on strengths and weaknesses against the 'Common Inspection Framework' key questions. The chairman of the apprentice training committee reviewed the whole report, although it was not considered by the committee. Colleges were not invited to contribute or comment. The company's most recent self-assessment report is largely accurate and the inspectors agreed with all of the grades that it noted. The report is accompanied by separate action plans, although progress against actions is not recorded clearly and those plans are not linked adequately with the various centre and company development plans.

#### ATOMIC WEAPONS ESTABLISHMENT PLC

47. Aspects of AWE's quality assurance are insufficiently developed, especially at the level of training delivery. Some useful observation of training and learning has taken place as part of training and mock inspection programmes, but until very recently there has been no planned and systematic scheme. The training centre does not have substantial first-hand evidence to make explicit judgements on the quality of its training and these are missing from the self-assessment report. Quality assurance of learners' progress reviews is incomplete and has not identified the weaknesses in target-setting that the inspectors identified. In another respect, the training centre is improving its systems to monitor and assure the quality of college courses that its learners attend. Until recently it has relied heavily upon the college's own systems. It has introduced thorough, new, detailed service level agreements, embracing monitoring strategies, and there is a 'college charter' that learners have designed that sets out their expectations of colleges.

## AREAS OF LEARNING

### Engineering, technology & manufacturing

Engineering, technology & manufacturing		2
Contributory areas:	Number of learners	Contributory grade
<b>Mechanical engineering</b> - Work-based learning for young people	44	2
<b>Electrical engineering</b> - Work-based learning for young people	44	2

### **Mechanical engineering**

#### *Strengths*

- good retention and achievement rates
- very good progress into employment
- good practical teaching
- thorough and effective recruitment and induction
- comprehensive initial assessment leading to good additional learning support
- highly motivated learners who take responsibility for their own learning
- good technical support in the workplace
- particularly good personal development activities

#### *Weaknesses*

- slow progress towards framework completion for a few foundation apprentices
- weak target-setting at learners' progress reviews
- slow action to reinstate horizontal milling machine

## ***Electrical engineering***

### *Strengths*

- good retention and achievement rates
- very good progression
- good practical teaching
- thorough and effective recruitment and induction
- comprehensive initial assessment leading to good additional learning support
- highly motivated learners who take responsibility for their own learning
- good technical support in the workplace
- particularly good personal development activities

### *Weaknesses*

- slow progress towards framework achievement for a few foundation apprentices
- weak target-setting at learners' progress reviews

## **Achievement and standards**

48. There are good retention and achievement rates on all training programmes. In 2000-03 the retention rate of foundation modern apprentices, averages 92 per cent. In the same period the achievement rate averages 75 per cent. Similarly, the retention rate for advanced modern apprentices from 1997-99 averages 87 per cent and the achievement rate averages 85 per cent. There has been slow progress for a few learners following foundation modern apprenticeship. Five of the 46 learners retained from 2001-03, who would normally be expected to have completed their programme by now, are still in learning.

49. Key skills are introduced early in the work programmes and pass rates are good. Some key skills are appropriately set in an engineering context but evidence is also drawn from the extensive range of team-building and personal development activities that learners attend. All learners display good skills and understanding of engineering concepts. Learners' work is of a satisfactory standard and in most cases builds on their previous achievements.

50. There is very good progression into employment on completion of training. All learners who complete their training have gained permanent employment within AWE. Of the company's current workforce of 3,500 employees, over 400 are former learners and some hold positions of significant responsibility.

The following tables show the achievement and retention rates available up to the time of the inspection.

<b>LSC funded work-based learning</b>																
<b>Advanced apprenticeships</b>																
	<b>2004-05</b>		<b>2003-04</b>		<b>2002-03</b>		<b>2001-02</b>		<b>2000-01</b>		<b>1999-2000</b>		<b>1998-99</b>		<b>1997-98</b>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Number of starts			12		15		11				21		20		22	
Retained*			0		0		5				17		16		22	
Successfully completed			0		0		5				17		16		21	
Still in learning			12		15		6				0		0		0	

\*retained learners are those who have stayed in learning for at least the planned duration of their training programmes, or have successfully completed their programme within the time allowed

<b>LSC funded work-based learning</b>																
<b>Apprenticeships</b>																
	<b>2004-05</b>		<b>2003-04</b>		<b>2002-03</b>		<b>2001-02</b>		<b>2000-01</b>							
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Number of starts	26		28		23		25		17							
Retained*	0		0		21		25		14							
Successfully completed	0		0		15		22		12							
Still in learning	26		24		3		2		0							

\*retained learners are those who have stayed in learning for at least the planned duration of their training programmes, or have successfully completed their programme within the time allowed

## Quality of education and training

51. Teaching in practical classes is good. Learners are given a wide range of practical tasks structured to progressively increase their abilities and confidence. Differentiated exercises allow learners to progress at their own pace and afford opportunities for them to practise their new skills and extend their learning. In the better practical classes, the tutors make good use of the differentiated practical tasks to occupy all learners and support learners individually during practical exercises. All teaching and learning observed were at least satisfactory. Teaching in background knowledge sessions did not fully stretch the more-able learners. In some lessons, tutors introduced too much new information while explaining a concept that some learners found confusing. Tutors used some good research projects to encourage learners to find out information for themselves.

52. AWE's recruitment and induction programme is thorough and effective. Most learners are recruited by direct advertising, referrals from Connexions and by recommendation. The company tests all applicants using a bank of psychometric tests covering numerical computation, numerical reasoning, mechanical comprehension, spatial recognition and technical understanding. AWE carries out interviews using a panel of representatives from the training department and the company. Union officers

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are appropriately involved. Applicants receive good advice and guidance during the selection process, including good support and advice at interview regarding appropriate questioning and fair treatment. There is an extensive three-week induction that covers all aspects of the training and a good initial introduction to equality of opportunity to raise the learners' awareness of diversity issues. Learners are also suitably inducted into each of the work placements and AWE monitors this to ensure that learners are always aware of local health and safety issues.

53. Initial assessment of learners' literacy and numeracy needs is comprehensive. It starts during the selection process and continues through their induction. The company uses the results of initial assessment to plan an appropriate individual programme of support. Where appropriate, learners attend dedicated literacy and numeracy sessions each week with specialist tutors. Other support includes individually paced computer-based learning from the company's own computer-based learning system, which has a range of learning packages encompassing vocational, management and interpersonal coaching skills. Tutors also offer good ongoing support. The effectiveness of this support is measured by the learners' achievement of key skills. Most learners progress well with their literacy and numeracy skills and, in most cases, specialist support is no longer necessary after the first year.

54. All learners demonstrate good levels of understanding of engineering concepts and of the content of their frameworks. Most learners demonstrate significant levels of motivation and enthusiasm to progress, and have readily taken responsibility for their own learning and rate of progress. Learners have a very clear understanding of their role within AWE and the opportunities available to them. Some learners have been given significant responsibility, such as project managing a major IT upgrade for the training centre or representing learners on various committees. Learners are given stimulating and interesting projects to promote their progress and stretch their understanding, and participate enthusiastically in local action teams to solve problems within their workplaces. All learners are given responsibility to monitor health and safety within the training centre, participating in weekly health and safety monitoring exercises. Within the work placements, learners participate in the behavioural safety initiative, accompanying experienced technicians and craftsmen in monitoring health and safety locally within their work placements.

55. Learners receive good technical support in the workplace and experience a wide range of engineering tasks. All learners work with experienced technicians in the workplace who act as apprentice mentors. Workplace apprentice mentors are well qualified and experienced in their vocational areas and many have received training in effective mentoring. Some hold, or are about to work towards, assessor and training qualifications, although staff from the training centre carry out assessments.

56. The range of personal development activities is particularly good. During their first year all learners participate in sporting activities that are scheduled into their training programme. After the first year these are still available but not mandatory. On passing their driving test, learners attend a safe driving course that the company provides. Other activities include sailing, first aid and outdoor adventure courses. Learners receive useful

lectures from the police, the medical officer, and other invited visitors, to raise their awareness of topics, including alcohol and drug misuse, safe driving issues, crime and money management. The learners have their own association, which organises a range of educational and social events.

57. There is a wide range of skills training available to learners and most achieve additional qualifications and skills during their apprenticeship. The company supports and encourages learners to pursue additional higher-level qualifications upon completing their frameworks, including higher national certificates or degrees, and there is good achievement of these. The company sponsors 10 per cent of those learners who have completed their training to progress to higher education or university studies. Most learners achieve qualifications in addition to their apprenticeship framework requirements. AWE encourages learners to follow courses in motor vehicle maintenance, welding, computer-aided design, and computing or IT qualifications.

58. Monitoring of learners' progress is good. AWE monitors achievement effectively at unit level and learners' progress information is readily available to all learners, training centre staff and workplace supervisors. AWE does not apply for unit certification unless a learner leaves the programme early and will not achieve the full qualification. Many learners achieve additional units within the NVQ at level 2.

59. Assessment and internal verification are satisfactory. AWE carries out detailed assessment at level 2 on tasks in the training centre and provides the learners with clear criteria and appropriate feedback. Assessment for the NVQ at level 3 is carried out in the workplace. Assessors visit learners in the workplace every three weeks to carry out assessments or reviews. Assessment is frequent and learners have the opportunity to request assessment in the workplace after practising tasks several times. Assessors respond quickly to requests for assessment and carry out thorough observations. However, the records of observations are insufficiently detailed about the task observed and the agreed outcomes. The assessors' feedback to learners is too often just verbal and is insufficient to enable improved performance. There are sufficient assessors and internal verifiers.

60. Resources in the workplace are satisfactory and learners have sufficient access to modern testing and fault diagnosis equipment. The workshops and areas used by learners in the training centre are satisfactory, but they do not provide stimulating study. There are few displays either in the rooms or the surrounding corridors.

61. There is a suitable range of courses for learners. AWE's internal departments have committed each other to ensure that the additional units and additional qualifications available suit the company's need. Learners and employers appreciate the range of units available and have detailed knowledge of their content. Many workplace supervisors or apprentice mentors are former learners who have recently completed the framework or have a good understanding of the framework content. There is sufficient recognition of the learners' prior learning and attainment. One learner, who had already completed the first diploma and the national diploma in engineering before joining the scheme, has been encouraged to follow a level 3 machining qualification in parallel with an AS level

mathematics qualification before proceeding on to the higher national certificate. AWE consulted with the learner and the college before carefully planning the best route for this learner to progress.

62. Planning is adequate. Most learners are aware of when they will be moving between departments to broaden their experience and gain further competences. Individual learning plans are dynamic documents and are used effectively within the review process. They are updated to reflect changes to learners' programmes or record achievement. Learners' files, including their individual learning plan, are held centrally and learners have open access to their files. Lesson planning within the training centre is adequate but is often generic. Lesson plans do not indicate the expected progress of individual learners within the session or how the tutor would check individual learner progress during the lesson. Schemes of work are appropriately detailed.

63. AWE carries out reviews of learners' progress regularly. Reviews adequately cover all aspects of training and development and individual learning plans are then updated. However, few useful targets are agreed with learners and, where they agreed, they are insufficiently specific and do not receive clear measures of success. Learners do not receive a clear indication of what they should achieve by the next review.

### **Leadership and management**

64. The apprentice training manager manages the modern apprenticeship programme well, and there are sufficient numbers of qualified assessors and internal verifiers to support the learners. There are good policies and procedures in support of learners and AWE has been effective in improving and maintaining good levels of learner retention and achievement on all programmes. AWE introduced a reward and recognition scheme by which learners can earn monetary vouchers for performing well in any aspect of their training or work placements. Communication between AWE and the subcontracting colleges is satisfactory but there is an over-reliance on informal communications. Quality monitoring procedures are adequate overall, but many are too new to judge their effectiveness. AWE has only recently introduced lesson observations, and does not monitor the effectiveness of reviews. The self-assessment report was accurate and the Inspectors agreed with many of the strengths and weaknesses identified. Management action to reinstate a previously prohibited horizontal milling machine in the training centre was slow. Use of the machine was prohibited due to inappropriate guard in March 2004, and remained out of service until September 2004. Meanwhile, learners had to use other machines and machine tools to obtain particular profiles and this inhibited the progress of some learners.