TRAINING STANDARDS COUNCIL INSPECTION REPORT MAY 2000

ADULT LEARNING INSPECTORATE REINSPECTION AUGUST 2001

# QinetiQ Ltd MOD Boscombe Down formerly Defence Evaluation and Research Agency Boscombe Down



# **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 training within the remit of a single inspectorate. The ALI is responsible for inspecting a wide range of government-funded learning, including:

- work-based training for all people over 16
- provision in further education colleges for people aged 19 and over
- the University for Industry's learndirect provision
- adult and community learning
- training given by the Employment Service under the New Deals.

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.

# Grading

In summarising their judgements about the quality of provision in curriculum or occupational areas and about the quality of leadership and management, including quality assurance and equality of opportunity, inspectors use a five-point scale. The descriptors for the five grades are:

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

# SUMMARY

The original inspection of QinetiQ Ltd formerly the Defence Evaluation and Research Agency Boscombe Down was carried out by the Training Standards Council's inspectors. The inspection resulted in a less than satisfactory grade being awarded for quality assurance. This area has been reinspected against the requirements of the *Common Inspection Framework* by the Adult Learning Inspectorate, which replaced the Training Standards Council on 1 April 2001. The section of the original report dealing with quality assurance has been replaced with the findings of the reinspection. Also, the report summary, report introduction and introduction to the inspection findings have been updated and reflect the findings of the reinspection. Sections of the report, dealing with areas which have not been reinspected, have been left in their original form. The amended inspection report is published on the Adult Learning Inspectorate's website (<a href="https://www.ali.gov.uk">www.ali.gov.uk</a>).

QinetiQ Ltd MOD Boscombe Down, formerly the Defence Evaluation and Research Agency at Boscombe Down provides good training in engineering. Learners are frequently assessed in a well-equipped engineering training school. Retention and achievement rates are good. Learners are successful in obtaining employment. QinetiQ Ltd promotes equality of opportunity satisfactorily, but learners have little understanding of equal opportunities issues. Learner support is satisfactory. The selection process is thorough and their progress is monitored carefully. The management of training is good. Staff are well represented on committees and priority is given to staff development. There are effective procedures for ensuring that training is relevant to the operational systems. Staff have a poor understanding of the organisation's aims and values. Quality assurance is now satisfactory, but there is insufficient monitoring of training.

# **GRADES**

OCCUPATIONAL AREAS	GRADE
Engineering	2

GENERIC AREAS	GRADE
Equal opportunities	3
Trainee support	3
Management of training	2
Quality assurance	4

REINSPECTION	GRADE
Quality assurance	3

# **KEY STRENGTHS**

- high retention and achievement rates
- frequent assessment of learners
- learners' success in securing employment
- good monitoring of learners' progress
- effective participation of staff in the management of training

- careful planning of training to match the needs of operational sections
- good application of quality assurance policies and procedures

# **KEY WEAKNESSES**

- adverse effect of rigid training structure on some learners' progress
- learners' poor understanding of equal opportunities
- failure to set trainees targets for achievement of NVQs
- incomplete quality assurance manual

# INTRODUCTION

- 1. The Defence Evaluation and Research Agency (DERA) is now a private company, QinetiQ Ltd MOD Boscombe Down (QinetiQ Ltd), owned by the Ministry of Defence (MOD). It provides land, sea and air capabilities at 22 locations throughout the United Kingdom. It employs approximately 30,000 staff. QinetiQ Ltd carries out the evaluation, testing and modification of equipment for military aircraft and employs some 150 military personnel and 1100 civilian staff. The Ministry of Defence at Boscombe Down dates back to 1914 when an experimental flight was established in the Royal Flying Corps. The aeroplane and armament experimental establishment was opened at Boscombe Down during the second world war. Today, QinetiQ Ltd has 48 aeroplanes and helicopters of varying types including Gazelles, Harriers, Hawks, Hercules, Jaguars, Lynx and Tornadoes.
- 2. The engineering training school was formed in 1969 and has continuously provided skilled technicians for the MOD, its agencies, and civilian aviation. Today, the school recruits, on average, 12 modern apprentices each year partly funded by the Wiltshire and Swindon Learning and Skills Council (LSC). After training, the technicians are responsible for maintaining the fleet of aircraft and working on experimental rigs used for testing. At the original inspection, there were 41 modern apprentices, there were 39 by the time of reinspection. QinetiQ Ltd has 11 trainers. A local college is subcontracted to provide off-the-job theory training.
- 3. The training school at Boscombe Down recruits learners nationally, although approximately half of the learners are from the immediate surrounding area. In Wiltshire, the major industries are distribution, hotels and restaurants, banking, finance and insurance. Employment rates are improving and last year 16 per cent of employers recruited more people. The growth areas are in personal and protective services, clerical and secretarial, sales and associate professional and technical services. In 1999, the unemployment rate in the county was 1.6 per cent, compared with the national average of 3.8 per cent. By the time of reinspection, the unemployment rate has decreased to 1.2 per cent, compared with the national average of 3 per cent for June 2001.
- 4. The proportion of people from minority ethnic groups in Wiltshire is less than 1 per cent compared with the national average of 6.2 per cent. In 1999, the number of school leavers in Wiltshire achieving five or more general certificates of secondary education (GCSEs) at grade C and above was 52.3 per cent, compared with the national average of 47.9 per cent. In 2000, the number of school leavers in Wiltshire achieving five or more GCSEs at grade C and above was 55.5 per cent compared with the national average of 49.2 per cent.

# **INSPECTION FINDINGS**

- 5. DERA Boscombe Down (DERA) produced a self-assessment report in March 2000 in preparation for the original inspection. The report was accompanied by a detailed action plan. The manager of the engineering training school and a senior instructor wrote the report after consultation with other instructors and the local training and enterprise council (TEC). The report was then discussed in a training meeting. The first draft was shared with the TEC which gave feedback and advice. Learners and employers did not contribute to the report. The second self-assessment report was written in June 2001 by the training manager. It gave inspectors a view of progress since the original inspection, but did not contain a list of strengths and weaknesses for quality assurance.
- 6. At the original inspection, two inspectors spent a total of 6 days with DERA in May 2000. They interviewed 14 staff, including workplace supervisors, managers and trainers, and 16 learners. They visited the subcontracted college and studied learners' files, management information and promotional material.
- 7. At the reinspection, two inspectors spent a total of four days at QinetiQ Ltd. They interviewed eight learners, visited two work placements and conducted five interviews with managers, supervisors and trainers. They interviewed an assistant principal from the subcontracted college and reviewed the new procedures, minutes of meetings and other paperwork.

# **OCCUPATIONAL AREAS**

Engineering Grade 2

8. There are 41 young people undertaking engineering training at DERA Boscombe Down. There are 15 avionics apprentices, 24 airframes/engines apprentices and two armaments apprentices. In the first two years, all apprentices undertake off-the-job training in the training school to acquire basic engineering skills, followed by a further year where the on-the-job training is tailored specifically to their specialist needs. In the first year of the apprenticeship, trainees gain level 2 of their NVQ. After two years' training they then rotate around operational sections of Boscombe Down. They work under the supervision of an apprentice master on placements maintaining modern planes and helicopters, or in specialist laboratories where they assist scientific staff making test rigs. While working in these sections, they gather evidence of their competencies in order to gain an NVQ at level 3. Trainees attend college one day a week in their third year of the apprenticeship to work towards theory qualifications. Some progress to degree qualifications. Staff in the training school have assessor and training qualifications. Senior instructors have responsibility for monitoring trainees' progress towards achieving the target qualification and for apprentices' personal welfare. Regular reviews of apprentices' progress take place in the training school or workplace. On completion of their apprenticeship, trainees apply for

employment in one of the sections, where they may negotiate with their manager if they wish to study for further or higher education qualifications. Inspectors considered that many of the strengths and weaknesses stated in the self-assessment report were more appropriate to generic areas. They found both strengths and weaknesses the organisation had not identified. They awarded a higher grade than that given in the self-assessment report.

#### **STRENGTHS**

- very good retention and achievement rates
- strong emphasis on health and safety
- ♦ frequent assessment of trainees
- good opportunities for trainees to progress to further training or employment
- well-equipped training facilities

#### **WEAKNESSES**

- ♦ little scope for individual apprentices to complete their programme early
- 9. Nearly all the young people who embark on a training programme with DERA Boscombe Down achieve their qualification and gain employment in the occupational area of their choice. Over the past three years, 93 per cent of those apprentices commencing training have achieved the qualification and have secured employment. This proportion is well above the national average for trainees in engineering.
- 10. All apprentices start their training by studying for craft qualifications. Many progress to attend a subcontracted college of further education on a day-release basis to study for an ordinary national certificate. Some then take a higher national certificate. The subcontractor's training, resources and assessment practices are all satisfactory. There are further opportunities for apprentices to continue studying when they complete the apprenticeship. A number of former apprentices have gained degrees. Approximately 40 per cent of junior management positions are now filled by former apprentices. The manager of the engineering training school was also an apprentice. They provide good role models for today's trainees.
- 11. Health and safety regulations are covered in great depth during the apprentices' induction. The importance of maintaining high standards in health and safety practices, particularly in the context of experimental work on military aircraft, is emphasised at all stages of the apprentices' training programme.
- 12. Trainees' portfolios contain good evidence in the form of comprehensive and individual reports. Trainees gather evidence of their competence in key skills from a number of sources. For example, trainees participate in corporate events and from these, they are able to produce evidence of their acquisition of communication skills and their ability to work in a team. Apprentices and their supervisors identify ways in which evidence of competency in key skills can be obtained through on- and off-the-job training activities. Apprentices gather a

# GOOD PRACTICE

This is an example of good practice in key skill training. Apprentices are invited to organise and host an open evening for prospective applicants and their families. They have hosted a successful bring your daughter to work day'. These events provide trainees with good opportunities to gather evidence of their acquisition of skills in communications and working together.

minimal amount of evidence relating to key skills through project work. Apprentices attend a monthly assessment interview where they receive advice on how to gather evidence of competence and relate it to the NVQ log book. Assessment is largely through direct observation of the apprentices' work for the first two years. In the final year of the programme, when apprentices are in the operational sections assessment is mainly through witness testimony to the trainees' competence. The witness statements are collected properly but opportunities to assess apprentices by direct observation are missed at this stage of their training.

13. The training centre is well equipped. There are good basic engineering facilities. Machines, although old, are fit for their purpose, well maintained and calibrated annually. The avionics workshop is also well fitted out. In addition, once apprentices have learnt basic skills, they have the opportunity to work on the school's aircraft which includes an operational bulldog aeroplane and a gazelle helicopter. There are also many aircraft components and airframe sections on which apprentices can work and develop competencies. After the first two years, apprentices go out on four- to eight-week placements, and these are selected to meet the needs of the apprentice and the business. Apprentices may be relocated if they make slow progress because of circumstances outside their control, such as a fall off in the amount of maintenance work. The aerospace industry works to high standards and these are expected of apprentices from the outset. Apprentices acquire good skills in order to perform to the industry's high standards and establish their credibility with experienced fitters and technicians.

14. The training pattern is fixed and all apprentices progress towards their NVQ level 2 at the same pace for the first year. Those who achieve the requisite competencies early fill in time with additional projects. Within the first two years there is no provision for the more capable apprentice to complete the programme earlier. The final year of the apprenticeship is arranged more flexibly and there is some scope for apprentices to progress at their own pace towards achievement of the NVQ at level 3. On- and off-the-job training are closely co-ordinated.

# **GENERIC AREAS**

# **Equal opportunities**

Grade 3

15. DERA Boscombe Down is subject to the standard equal opportunities policy of the Ministry of Defence which meets contractual and legal requirements. This is implemented throughout the training school and is displayed prominently. Equality of opportunity is covered in the apprentices' induction programme. It is referred to in the candidates' guide to NVQs which the apprentices receive within the first month of their programme. The business management strategy details the complaints procedure for reporting cases of harassment. This procedure is explained to apprentices at induction. The training school is involved in a number of initiatives to address the shortfalls in the recruitment of women to engineering programmes. At the time of inspection, there were no apprentices with disabilities,

2.4 per cent of the apprentices were women and 2.4 per cent were from minority ethnic groups. The self-assessment report identified three strengths and no weaknesses. Inspectors agreed with only one of the strengths and considered the others to be no more than normal practice. They found weaknesses the organisation had not identified. Inspectors awarded the same grade as that given in the self-assessment report.

#### **STRENGTHS**

- rigorous implementation of procedures for upholding equality of opportunity
- ♦ successful measures to recruit women apprentices
- effective guidelines to ensure an equitable selection process

#### **WEAKNESSES**

- trainees' poor understanding of equal opportunities
- ♦ no staff training in equal opportunities
- 16. The Ministry of Defence is rigorous in promoting equality of opportunity. Penalties for infringement of its policy on equal opportunities are severe. The training school also upholds equality of opportunity rigorously. Staff lead by good example and apprentices follow this.
- 17. The training school has engaged in a number of activities designed to persuade more women to take up engineering. These include recruitment in one local girls' school, a 'bring your daughter to work day' and positive promotion to girls at careers events. There have been nine applications from women for the 2000 intake. In 1999, no women applied. There have been articles in Ministry of Defence, local TEC publications and local newspapers about the achievements of previous female apprentices and these promote engineering as a career for women.
- 18. DERA Boscombe Down uses standard Ministry of Defence guidelines to recruit new apprentices. The aptitude test is administered by independent invigilators appointed by the main office in Glasgow, which also allows the use of readers for applicants with learning difficulties. The test results are analysed without reference to candidates' names. A three-person interview panel works to strict guidelines to ensure equality of opportunity for all applicants. The manager of the engineering school monitors the extent to which the organisation is successful in recruiting women and people from minority ethnic groups. The training school is accessible to persons in wheelchairs and most placements are also in buildings at ground level. It is, however, not practicable for some persons with restricted mobility to work on aircraft.
- 19. Apprentices are given a session on equal opportunities during induction. The equal opportunities policy is included in the induction pack. However, apprentices have a low awareness and poor understanding of equal opportunities. Most apprentices are unable to recall what they were told about equal opportunities during induction. They do not engage in any activities or discussion during the

training programme to strengthen their understanding of equal opportunities.

20. There has been no staff development training on equal opportunities in recent years. This weakness has been identified in the self-assessment report the action plan accompanying it specifies ways of rectifying it.

Trainee support Grade 3

21. Prospective apprentices complete a Ministry of Defence application form and are invited to sit an aptitude test, which is carried out by independent invigilators. Successful candidates are invited to attend an interview that assesses their personal characteristics and to discus employment opportunities in the industry. Successful candidates are offered an apprenticeship subject to security clearance and medical examination. All apprentices attend a three-day induction spread over five days at the beginning of September covering health and safety, equal opportunities, security, the NVQ process and training school practices. All apprentices work to a standard training plan detailed in their 'standards based training' document. If apprentices are identified as having extra learning needs, these are met by extra tutorial support and the use of extra time allowances for assessments in the case of apprentices with dyslexia. Counselling services are available through the welfare officer based at Boscombe Down. Apprentices receive monthly reviews of their progress and these involve trainees, instructors, apprentice masters and the principal instructor. In addition, the assessor meets individual trainees each month to discuss their progress towards achieving the NVQ and help them compile portfolio evidence, if appropriate. The self-assessment report identified five strengths and no weaknesses. Inspectors agreed with two of the strengths but found some weaknesses.

# **STRENGTHS**

- ♦ robust selection process
- good monitoring of progress through trainees' planning document
- ♦ highly responsive on-site welfare support

# **WEAKNESSES**

- ♦ poor target-setting following trainees' review
- initial assessment does not influence individual training plans
- 22. The selection test and interview process is very thorough. The organisation aims to recruit candidates who will be successful. Apprentices are selected carefully and applicants are judged against specific selection criteria. Apprentices have high retention and achievement rates and many are kept on as employees. During the selection process, sound advice is given to candidates on openings within the establishment and engineering apprenticeships in general.
- 23. At the start of the training process, each trainee is issued with a training plan

entitled 'standards based training'. This is used throughout the training process and trainees discuss and update it at the monthly meetings with their assessor. The plan enables apprentices to see, at a glance, how far they have progressed. A record of their progress is maintained.

- 24. All apprentices at DERA Boscombe Down are full employees and have the same rights and responsibilities as other civil servants on the site. They are entitled to use the welfare service that provides counselling and guidance for all employees. If appropriate, apprentices are referred to this service. When they use it, their needs are met promptly.
- 25. Supervisors write a monthly report on each apprentice. The report is discussed with the apprentices but he or she does not receive a copy of it. The report does not include targets relating to the NVQ that the apprentice has to achieve in the next month. In some cases there is a long delay in the writing of these reports as drafts have to be shown to a number of personnel in the establishment.
- 26. The trainees' results in initial assessment and the selection tests are not taken into account when drawing up the trainees' individual training plans. All training plans are identical. Some apprentices have their prior attainments in key skills identified and recognised, but others do not.

# Management of training

Grade 2

27. Training at DERA Boscombe Down is carried out by the technical training department headed by a business area manager, who reports to the director of aircraft test and evaluation. A business group manager heads the engineering training school where government-funded engineering training is based. There are another 12 staff in the training school, including 10 instructors. Seven hold assessor awards and two are also internal verifiers. Others are working towards assessor qualifications. Two senior instructors are responsible for the apprentices in grouped avionics and airframes/engines/armaments. Detailed company procedures outline the routines for recruitment, training and staff appraisal and development. Staff receive an annual appraisal. Off-the-job training is provided within the school and at a subcontracted college of further education. Apprentices have a rotation of work placements in operational departments. The agency has been accredited as an Investor in People since June 1999. The self-assessment report identified some strengths and weaknesses. Inspectors agreed with some and identified others. They awarded the same grade was awarded as that given in the self-assessment report.

# **STRENGTHS**

- ♦ staff involvement in the management of training
- successful matching of training to the needs of the operational sections
- ♦ comprehensive staff procedures

• good staff development

# **WEAKNESSES**

- weak monitoring of the subcontracted provision
- ♦ poor understanding of business aims and values on the part of staff
- 28. The management of the training is guided by a number of committees which meet regularly. They have appropriate terms of reference, clear agendas and meetings are carefully minuted. A wide cross-section of staff participate in the training process, including senior civil service managers, who have a countrywide perspective of Ministry of Defence training, business group managers from the operational areas, and instructional staff. Within the training school, there are monthly meetings at which staff discuss a range of issues including resources, training methods and apprentices' progress. The manager of the engineering training school knows each apprentice personally and can readily produce retention and achievement data. The data are considered carefully and appropriate action is taken to resolve any problems they present.
- 29. Within the operational sections, such as the flying squadrons, there is a comprehensive and detailed list of competencies required for each role. A database then matches each individual within the sections to the roles. Details of apprentices leaving training are entered on this database. There is a good match between apprentices, in terms of their skills and the job roles they undertake. The committee structure enables operational sections to provide feedback on training. A high degree of satisfaction is expressed. The manager of the engineering training school identifies what competencies are needed and influences the syllabus to ensure future needs are met. On joining, apprentices are warned that they are not guaranteed employment on completion of their training. However, during the past seven years, all apprentices except one have been successful in becoming employed technicians.
- 30. DERA is a government agency and benefits from comprehensive staff procedures developed over many years and regularly reviewed by experts within specialist departments. These cover many aspects including recruitment and selection, promotion, annual appraisal, and pension arrangements. There are good, local procedures for staff induction and organisation of training. Newly published job descriptions clearly describe the duties of the training school staff. Staff have a high degree of occupational competence. They are deployed effectively in order that they may extend the breadth of their experience for their own benefit and that of the organisation, and gain greater job satisfaction.
- 31. Part of the annual appraisal process is a performance development agreement. This is implemented immediately for staff joining the school who are enabled to follow highly worthwhile courses. For instance, within a short time of joining many of the instructors have obtained NVQ assessor qualifications. There are plans for them to attend instructional technique courses. Longer serving staff have obtained, or are progressing towards internal verifier awards, and one has obtained the qualification to accredit prior learning. Staff have received no training in equal

opportunities.

- 32. Monitoring of the provision at the subcontracted college of further education is weak. Staff from DERA Boscombe Down do not call for external verifier reports or observe the training. They do receive a report on each apprentice twice a year and are advised about any trainees' poor attendance, but otherwise there is minimal contact between the organisations and the college.
- 33. DERA Boscombe Down publishes a strategic plan which includes a statement of its mission and values. It includes operational business aims and values. Training staff, however, have a poor understanding of these aims and values and make little contribution to their formulation. They say they feel marginalised and do not consider they contribute to the planning process. The training school is on different premises from the operational sections. Nobody from DERA, except the manager of the engineering training school, attended the inspectors' feedback sessions.

# **Quality assurance**

Grade 3

34. QinetiQ Ltd has ISO 9000 and the quality assurance manual has been produced in accordance with the ISO system. A qualified internal auditor at the training school carries out internal quality assurance audits. Feedback from learners is collected at various stages throughout the training programme. Feedback is analysed by the manager of the engineering training school who takes action on learners' suggestions where appropriate. There are two qualified internal verifiers in the school. Awarding body guidelines have been adopted for internal verification purposes. The assessment and verification process is explained to learners during their inductions. QinetiQ has now began to monitor training in the classroom.

At the original inspection, the main weaknesses identified were:

- ♦ failure of the quality assurance process to cover training
- no programme for the observation of training
- failure to make self-assessment integral to the quality assurance system
- ♦ inadequate self-assessment process
- 35. Quality assurance now covers the training provision. There is still no programme for observation of training, but observation is good in the training centre. Self-assessment is now good and is an integral part of the quality assurance system. The self-assessment report available at reinspection did not include new strengths and weaknesses, but used those from the original inspection. Inspectors found two further strengths and weaknesses and gave the same grade as that given in the self-assessment report.

#### **STRENGTHS**

- good application of quality assurance policies and procedures
- good use of learners' feedback

#### **WEAKNESSES**

- insufficient monitoring of training
- ♦ incomplete quality assurance manual
- 36. There is good use of quality assurance policies and procedures by staff and learners. Information from collected data is used to improve the training provision. For example, learners are allowed a more flexible timetable for college attendance and there have been improvements to exam layouts, course handouts and videos. In some cases minutes of meetings have not been monitored to check that actions are successful.
- 37. Informative feedback is collected from learners at various stages throughout the training programme. They complete a questionnaire on the training, resources and examination content at the end of a topic or after a college examination. Learners are also able to provide feedback during their monthly progress reviews. There is a local apprentice training committee which meets every three months to discuss issues relating to the training programme as a whole. There are also weekly tutorial meetings where learners can discuss issues about the training programme. Following these meetings actions are recorded and improvements carried out. The training centre manager has made staff changes as a result of this feedback.
- 38. Good monitoring of the training at the training centre has led to an improvement in the training provision but the observation of training and assessment has not been carried out at subcontractor's premises. The monitoring of the work experience gained by those learners in the training provider's employment section is inadequate. There is no quality assurance of subcontractor's paperwork. For example, external verification reports and internal audits of training have not been supplied for the engineering self-assessment report.
- 39. Although the training centre has a quality assurance manual this does not contain all necessary procedures. For example, it lacks procedures for internal verification, staff selection, recruitment and training. There are no procedures to establish the format of meetings to evaluate data. Staff do not fully understand the quality assurance policies and procedures and view the quality assurance manual merely as a paper exercise rather than a framework for a working system.
- 40. The self-assessment process is now clearly part of the new quality assurance system. It is mostly compiled by the training centre manager with insufficient input from learners, staff, supervisors or subcontractors. It is mainly descriptive and for reinspection purposes used the original inspection findings.

# **POOR PRACTICE**

This is an example of poor co-operation. A subcontracted college failed to make arrangements for the training provider to monitor training, despite a request being made 14 months previously. The college has agreed to supply a copy of the Further Education Funding Council (FEFC) inspection report. This is already freely available on the intranet.