

BAE Systems PLC

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Background information

Inspection judgements

Inspectors use a four-point scale to summarise their judgements about achievement and standards, the quality of provision, and leadership and management, which includes a grade for equality of opportunity.

Key for inspection grades

Grade 1	Outstanding
Grade 2	Good
Grade 3	Satisfactory
Grade 4	Inadequate

Further information can be found on how inspection judgements are made on www.ofsted.gov.uk.

Scope of the inspection

In deciding the scope of the inspection, inspectors take account of the provider's most recent self-assessment report and development plans, and comments from the local Learning and Skills Council (LSC) or other funding body. Where appropriate, inspectors also consider the previous inspection report (www.ofsted.gov.uk), reports from the inspectorates' quality monitoring or annual assessment visits, and data on learners and their achievements over the period since the previous inspection.

In addition to reporting on overall effectiveness of the organisation, its capacity to improve further, achievement and standards, quality of provision and leadership and management, this inspection focused on specialist provision in:

- Engineering and manufacturing technologies
- Business, administration and law

Description of the provider

1. BAE Systems PLC (BAES) is an international company engaged in the development, delivery and support of advanced defence aerospace systems in the air, land, sea, space, and command and control market sectors. It has major operations across five continents and customers in some 130 countries and employs approximately 90,000 people.
2. BAES operates through a number of discreet business units, each responsible for its own recruitment of apprentices, to meet the needs of the individual units. BAES holds contracts with English and Scottish funding bodies for the delivery of apprenticeships and advanced apprenticeships. Most learners are on advanced apprenticeship programmes. All training of apprentices is contracted to Xchanging, formerly a partner of BAES and now a private company. Some aspects of training, for example, assessment, verification and the delivery of key skills and higher education courses, are subcontracted to colleges of further education and private training organisations.
3. The programmes in England are delivered across the three business units of Military Air Solutions, (MAS), Submarine Solutions, (Subs) and Platform Solutions, (PS), all of which deliver advanced apprenticeships. In addition, Subs delivers a small number of apprenticeships and a very small Train to Gain programme.
4. Approximately 50% of learners work in Barrow and most of the remainder are employed in business units in the Preston area. MAS learners are based either at Preston, Salmesbury or Warton in Lancashire, and Brough in Yorkshire. PS learners are based at Rochester, Kent. The Subs apprentices and Train to Gain learners are based at Barrow-in-Furness, Cumbria. Apprentices employed by SELEX Sensors and Airborne Systems, are based at Basildon in Essex and Luton in Bedfordshire.

Summary of grades awarded

Effectiveness of provision	Good: Grade 2
Capacity to improve	Satisfactory: Grade 3
Achievement and standards	Good: Grade 2
Quality of provision	Good: Grade 2
Leadership and management	Good: Grade 2
Equality of opportunity	Contributory grade: Satisfactory: Grade 3

Sector subject area

Engineering and manufacturing technologies	Good: Grade 2
Business, administration and law	Good: Grade 2

Overall judgement

Effectiveness of provision

Good: Grade 2

5. The overall effectiveness of the provision is good. Achievement and standards, the quality of provision and leadership and management are all good. Provision in engineering and manufacturing technologies and business administration and law is also good. Equality of opportunity is satisfactory.

Capacity to improve

Satisfactory: Grade 3

6. The capacity to improve is satisfactory. The effectiveness of steps taken to improve since the previous inspection are generally satisfactory. BAES has effectively maintained high success rates during a period of significant and potentially disruptive organisational change. It has maintained the good grades it received at its previous inspection. It has remedied weaknesses identified at that time concerning assessment practice and support for additional learning needs, but others in internal verification and quality improvement remain. Although it has made some useful additional improvements to provision, some areas judged as satisfactory at the previous inspection have not improved.
7. The accuracy and reliability of the self-assessment process is satisfactory. Self-assessment is regular and timely. The composite national report is mainly accurate and critical. Most grades on inspection are the same as those in the report. However, the content of the national report relies heavily on local self-assessment reports prepared by each business unit. Few staff or other stakeholders in the business units are familiar with the national report. The process at local level adequately includes the views of learners and Xchanging staff, but not those of BAES staff, colleges or private training organisations. Local reports share a broadly common format, but with significant inconsistencies, particularly in identifying key strengths and areas for improvement.

Key strengths

- High success rates
- Good skills development and high standards of work by learners
- Excellent progression to employment and higher education
- State of the art, high value work placements with good training
- Good enrichment activities
- Strong corporate commitment to apprenticeship training
- Very effective management of apprenticeship programmes

Key areas for improvement

- Inconsistent internal verification arrangements
- Weak aspects of key skills provision
- Incomplete quality improvement arrangements

Main findings

Achievement and standards

Good: Grade 2

8. Overall success rates are high at 84% in 2004-05 and 81% in 2005-06. Learners achieve well on all programmes. They make a positive contribution to the business and many take advantage of the opportunity to progress to higher education courses such as degree programmes. Learners demonstrate particularly high levels of skills in engineering which they use with confidence when working on good quality prototypes or innovative projects. Some learners have moved onto higher levels of employment in the company, as sales managers and design engineers, for example. Learners on the business administration programme produce high standards of work and work very effectively as team members. Attendance and punctuality are very good.

Quality of provision

Good: Grade 2

9. BAES provides a very good range of learning opportunities through well structured training programmes. Work placements are very good on all programmes and staff provide excellent pastoral and vocational support. Learners are moved around the sections within the business units which extend their experience and allow them to sample different aspects of the business.
10. Training provided by BAES is very good. Learners have access to whole or sectioned aircraft in the Preston Training Centre. This resource is used well to simulate working on real aircraft. One college has a section submarine for learners to practise their training and develop their skills in a real life working environment. Many of the NVQ assessors are ex-BAES employees and their working knowledge enhances the support for learners.
11. Some teaching of key skills is weak. Some provision does not have sufficient vocational relevance and not enough use is made of information from BAES to support key skills at level three. Where delivered by local college staff, some key skills teaching is weak. Assessment planning and internal verification is weak at some centres. While BAES has improved some of the processes since the previous inspection, staff changes have taken place and the speed of progress and areas of concern remain.

Leadership and management

Good: Grade 2

Equality of opportunity

Satisfactory: Grade 3

12. BAES has a strong corporate commitment to apprenticeship training. Apprenticeships are an important part of its wider training strategy to meet its business needs and contribute to the government's skills agenda. They are integral to the company's wider workforce development and succession planning. The chief executive and senior colleagues effectively champion apprenticeship training within the company and nationally. Performance of the apprenticeship programme is monitored routinely at board level. BAES has well conceived incentive schemes to reward those in learning and help retain apprentices once qualified. Celebrating learner achievement is a high priority. Many staff at all levels in the company are former apprentices.
13. Management of apprenticeship programmes is very effective. Action to sustain high success rates and good skills development is particularly good. Learning resources, and workplaces where apprentices receive on-the-job training, are good. Apprentice recruitment is efficient. The company-wide emphasis on health and safety is appropriate, with particularly good practice for apprentices working on submarines in Barrow. Central management structures are effective. The business units have different arrangements to manage apprentices all of which are effective. Most training staff display a high level of commitment and expertise in their roles.
14. Partnerships, and links with external organisations, are good. The partnership between BAES and its training subcontractor Xchanging is very effective. Development of a detailed service level specification has usefully clarified each partner's responsibilities for apprenticeship training. Contract monitoring arrangements vary between business units but are generally effective. Strong informal working relationships at operational level supplement formal agreements well. In Preston and Barrow apprentices benefit greatly from the Centres of Vocational Excellence (CoVEs) established jointly by local colleges and BAES business units. Links with schools are good. BAES has an extensive and well established programme to promote young school students' interest in following science and technology studies, with a particular emphasis on reaching women and learners from minority ethnic backgrounds. Good initiatives include travelling exhibitions, learning mentors, and web-based teaching resources. Good links exist with partner organisations outside Britain. Apprentices in Preston have exchange visits with counterparts in Germany.
15. The company's approach to equality of opportunity is satisfactory. Good procedures support equality of opportunity and respect at work. Learners have a good understanding of these and the comprehensive complaints and appeals procedures. At a corporate level, formal complaints are thoroughly investigated. Staff provide learners with high levels of pastoral support. Learners with specific learning difficulties are supported well to help them achieve. However, many learners have little knowledge of equality of opportunity covered at induction. They do not receive sufficient reinforcement of understanding during their subsequent years as apprentices. Progress reviews take place every 12 weeks and are used to check harassment and bullying issues.

16. Recruitment to support equality of opportunity and widen participation is satisfactory. The engineering industry has a low number of female and minority ethnic learners. Overall, BAES has had some success in increasing its number of female learners. Currently 36 of the 585 learners on apprenticeships are women. On the business administration programme approximately 50% are male and, overall, around 2% are from minority ethnic groups. The company has made satisfactory efforts to widen participation through very effective partnerships with schools. Staff training in equality of opportunity and diversity is satisfactory with some on-line training provided for staff. Some staff training is scheduled as part of their personal development programmes and there is a long-term strategy to support additional training in equality and diversity. Some data is collected but is not yet routinely used to aid decision-making at a local level.
17. Quality improvement arrangements are incomplete. Some written quality assurance procedures exist but implementation is poor. They do not cater adequately for current working arrangements between BAES and Xchanging. Quality improvement measures are not consistent across the provision. Local arrangements are inconsistent. Some standardised operating procedures exist, but BAES does not monitor their use. Arrangements for the systematic sharing of good practice between business units are insufficient. Service level agreements with subcontractors are generally appropriate, but monitoring of college subcontractors is inconsistent and sometimes poor. Data is not used effectively across the provision to set and monitor demanding targets for improvement. BAES and Xchanging have identified shortfalls in quality improvement arrangements and are actively developing a revised framework to remedy them. Some weak quality assurance was identified as a key weakness at the previous inspection.

What learners like:

- Opportunity to be a school and/or safety ambassador
- The outdoor activities course
- 'Rotating work placements was very useful as it provided different training opportunities and challenges'
- 'The opportunity to go as far as you want by doing additional qualifications'
- Good variety of work and good working conditions
- Encouragement and support from ex-apprentices and work colleagues
- Time given at work to complete NVQ portfolios
- 'I have recommended BAES apprenticeships to everyone I know'

What learners think could improve:

- 'The off-the-job training in business administration is often boring and not challenging'
- More experience across functions and not just within sections
- Some work placements are not always ready for the apprentice
- The long working hours
- The need to take more notice of learners' views about the college

Sector subject areas

Engineering and manufacturing technologies

Good: Grade 2

Context

18. Some 553 learners are on advanced apprenticeships and 11 are on a recently started apprenticeships in engineering. Learners follow programmes in either craft or technician studies, depending on their entry qualifications. Typically, those with three to five general certificates of secondary education (GCSE) subjects at grades A to C, including mathematics, English and a science subject, join the technician programmes, and those with grades A to E start on the craft programmes. At some units, the whole training programme is conducted in-house, and at others extensive use is made of contractors, with some use of both in-house and contracted provision. All of the regional training centres are approved centres for the apprenticeship frameworks.

Strengths

- High success rates
- Good skills development by learners
- Excellent progression to employment and higher education
- Highly effective and well structured first year off-the-job training in many centres
- Excellent training resources in the Preston training centre
- Excellent work placements

Areas for improvement

- Weak aspects of key skills provision
- Weak assessment planning and internal verification at some centres

Achievement and standards

19. Success rates on engineering programmes are high. Framework success rates for apprentices have been consistently high for the last three years. Overall success rates for advanced apprenticeship framework achievement in 2004-05 and 2005-06 were 83% and 80% respectively. In 2004-05 success rates stood at 71% for technical apprentices and 89% for craft apprentices. In 2005-06, when the number of learners more than doubled, success rates were 80% for technical apprentices and 82% for craft apprentices. At the time of inspection success rates were at 69% and 64% respectively. Current attendance on engineering programmes and the progress of current learners is good.

20. Learners develop good skills. They work and gain experience on a wide range of engineering projects in the workplace and at the training centre. Learners work to a very high standard. Once learners have completed their initial performing engineering operations NVQ at level 2 they start working at BAES. Learners work in various parts of the company gaining valuable experience of the different engineering trade areas. An effective programme is organised for learners to work for periods of three to six months in different work sections to train and develop their skills. This provides learners with good

opportunities to gain skills that can be used in many parts of the business. As well as developing skills it also provides learners with opportunities to experience the different working environments and to express a preference about which area they would like to work in full time. If a vacancy exists in the chosen area then they will often be allowed to gain employment in the area when they have completed their apprenticeship.

21. There is excellent progression to employment and higher education. In the last three years 98% of learners have gained full-time employment with the company. Learners can complete higher level qualifications than those required for the apprenticeship framework. For example, all technician apprentices are required to complete higher national certificates which are above the requirements for the framework. The higher level additional courses are all paid for by the company.

Quality of provision

22. First year training within the training centres is well structured and highly effective. Tutors provide good support for learners throughout their practical activities. Learners work well on meaningful tasks including constructing actual wiring looms for aircraft and producing workpieces to very close tolerances. Learners participate enthusiastically in their training and are motivated to progress towards achievement of their qualifications. Practical activities are well structured and good use is made of projects to motivate learners.
23. The Preston training centre has excellent resources to support training. First year learners work on a whole Tornado aircraft and a Harrier fuselage salvaged from three actual aircraft. Gantries have been assembled around these aircraft to allow learners easy access to work on a wide range of work activities replicating the workplaces.
24. Some aspects of key skills are weak. Key skills are not always set in a vocational context. In one session observed too much use was made of undirected questioning that failed to check the individual learners' understanding. Insufficient qualitative feedback is given to learners on submitted work.
25. Assessment planning and internal verification are weak at the Brough centre. Recently new assessors have been used through a subcontractor at the Brough centre. Some learners have been advised that evidence previously submitted is not sufficient and now have to provide more evidence towards parts of their qualifications. Internal verification did not take place between September 2006 and April 2007. One standardisation meeting has now been held, and an internal verification sampling schedule has been produced, but it is too early to judge the effectiveness of these new measures. One internal verification event has taken place but feedback to assessors is not sufficient to guide them in how to improve performance. At the Barrow centre there is insufficient formal planning of assessment to ensure the range of criteria for the qualifications are met.

Leadership and management

26. Leadership and management are good. Managers and workplace supervisors are fully committed to the success of learners. While in the workplace all learners are overseen by well qualified and experienced BAES staff. In most workplaces learners are set clear objectives on what they should attain and competencies that can be successfully

demonstrated within that workplace. However, the Barrow site does not have any overall monitoring system that tracks learners progress, achievements and areas still to be covered while they are working in the various work placements.

27. Work placements are excellent. Many of the apprentices working at BAES work in state of the art high value work placements that produce good quality components for innovative and high technology products. Often the work areas are equipped with the very latest technology to design and manufacture important components and machinery for the defence industry.

Business, administration and law

Good: Grade 2

Context

28. Some 21 advanced apprentices are on business programmes with 11 at Preston, five at Rochester and five with SELEX. Learners are selected to join the programme based on their GCSE qualifications and a selection interview. After one week's induction, they are placed in one of the functions of BAES according to business needs. Work placements are rotated within and across the functions every four to six months. Off-the-job training at the three sites is contracted to local colleges. All learners at Rochester are offered key skills at level three. Assessors frequently visit apprentices in their workplace to assess practical activities and to review progress.

Strengths

- Very high success rates
- High standards of work produced by learners
- Very good progression to higher education
- Very good workplace training
- Good enrichment activities

Areas for improvement

- Insufficient monitoring of college provision
- Insufficient internal verification arrangements

Achievement and standards

29. Success rates are very high. For 2004-05 and 2005-06 the success rates are 100% and 90%. At the time of inspection 88% of learners had completed their full frameworks. Learners also take additional qualifications. At Rochester learners have access to a two-year higher national certificate course in business and at Preston, a project management course and an exam-based computer literacy qualification. Success rates in these additional qualifications are 100% for the past three years. Although all learners are exempt from key skills, those at Rochester have all taken the opportunity to study communication, information technology and application of number key skills at level three.

30. Learners produce high standards of work. They are confident, articulate and highly motivated. They are given challenging responsibilities in the workplace and are considered, by managers, to be valuable members of the section teams. Learners' standards of work often surpass that expected of advanced apprentices, particularly in the innovative and complex projects, which learners undertake. Portfolios are well constructed and clearly referenced. They contain good work product evidence that effectively demonstrates competence at level three.

31. Progression to higher education is very good. All learners due to complete their programme in 2007 plan to progress to a degree, or to an equivalent vocational

qualification, such as accounting or procurement. BAES provides financial support for these further qualifications.

Quality of provision

32. Learners receive very good training in good quality working environments. Learners are well integrated with the work teams and are given much good guidance and support to help them make appropriate decisions, develop projects and work autonomously. Learners remain in a work placement for up to six months before being moved to another placement, usually within the same function. They develop a wide range of skills and experiences and particular talents and interests are identified for future employment.
33. BAES offers a wide range of good enrichment activities that contribute well to learners' achievements and their enjoyment of the programme. These include external personal development activities to develop team work, a company-run charity event, the Duke of Edinburgh Award scheme and a German exchange programme. Some learners are given the opportunity, as part of their work placement, to visit BAES partners abroad.
34. Assessment, and assessment planning, is satisfactory. Assessors are highly supportive of their apprentices and frequently visit the workplace to conduct observations and review individual progress. However, the recording of assessment observations on awarding body documents is not sufficiently detailed to help verifiers ensure competence has been demonstrated.

Leadership and management

35. Management of the business administration programme is satisfactory. Communication within each site is particularly good. However, there is little standardisation of processes, such as assessment practice, and insufficient sharing of good practice across sites. Staff are appropriately qualified and experienced and learners' progress is monitored well with effective systems to identify slow progress in place at Rochester.
36. The quality of subcontracted off-the-job training is not sufficiently monitored. BAES relies on information from the colleges, such as internal lesson observation grades and schemes of work, to monitor the provision. The service level agreement with the college at Preston states that Xchanging staff will make spot checks of the provision, but these have not been done. Communication with college contacts is good and most courses are well received by learners. However, in Preston, the training for the technical certificate is insufficiently challenging and poorly taught. Individual college review forms are completed by tutors to inform the progress reviews. Critical comments from tutors and learners are not recorded at these reviews. End of course evaluations have identified these problems. However, the situation has not been fully resolved since the previous inspection.
37. Internal verification arrangements have improved since the previous inspection, but still rely on portfolio and unit sampling, with little observation of assessors. Staffing difficulties have occurred at Preston and insufficient internal verification has been carried out. However, in February 2007 the process was contracted to an external organisation, but it is too early to judge the effectiveness of this measure. Learners at Preston starting in September 2005, whose pay rises are awarded on the achievement of NVQ milestones, did

not start their NVQ until June 2006. The most recent self-assessment report contains some factual inaccuracies. It identified most of the strengths but not all of the weaknesses identified during inspection.

Learners' achievements

Success rates on work-based learning 'apprenticeship' programmes

Overall success rates

Programme	End Year	Success rate	No. of learners*	Provider NVQ rate**	National NVQ rate**	Provider framework rate**	National framework rate**
Advanced Apprenticeships	03-04	overall	193	83%	48%	83%	31%
		timely	201	52%	30%	52%	19%
	04-05	overall	176	78%	48%	84%	34%
		timely	174	68%	31%	68%	21%
	05-06	overall	428	81%	54%	81%	44%
		timely	441	63%	34%	52%	27%

Success rates for engineering and manufacturing technologies

Programme	End Year	Success rate	No. of learners*	Provider NVQ rate**	National NVQ rate**	Provider framework rate**	National framework rate**
Advanced Apprenticeships	03-04	overall	193	83%	57%	83%	47%
		timely	201	52%	34%	52%	27%
	04-05	overall	161	83%	56%	83%	47%
		timely	159	65%	33%	65%	26%
	05-06	overall	398	80%	55%	80%	49%
		timely	410	61%	34%	61%	39%

Success rates for business, administration and law

Programme	End Year	Success rate	No. of learners*	Provider NVQ rate**	National NVQ rate**	Provider framework rate**	National framework rate**
Advanced Apprenticeships	04-05	overall	15	100%	47%	100%	32%
		timely	15	100%	34%	100%	23%
	05-06	overall	30	90%	59%	90%	51%
		timely	31	90%	44%	90%	37%