



Imagine...

**BAE SYSTEMS**

[www.rochesteravionicarchives.co.uk](http://www.rochesteravionicarchives.co.uk)

# Imagine where we can go together



John P. Weston  
Chief Executive  
BAE SYSTEMS

Bringing together British Aerospace (BAe) with Marconi Electronic Systems (MES) has created a new group that is not only greater in size, but also greater in terms of the enhanced capability required to support aerospace and defence customers all over the world.

There are strong pressures for consolidation in our industry. In the defence market particularly, future demand will increasingly come from systems and service-related areas, rather than traditional platforms alone. Our major customers are seeking prime contractors and systems integrators with the scale, capability, and financial strength to manage large-scale system and service activities successfully on their behalf.

Across the world, participants have responded to this changing marketplace by consolidating

into enterprises with broad-based aerospace and defence capabilities. Now, with the merger of BAe and MES, we have moved up among the largest companies in our market sectors. This strengthens our competitive position in this challenging environment, and puts us at the core of the continuing industry consolidation. We have home markets in the UK, USA, Saudi Arabia, France, Italy, Germany, Sweden, Canada and Australia, and many international markets beyond.

The new group has a world-class prime contracting capability, combining key in-depth skills in naval platforms, military aircraft, electronics and other technologies. This enables us to offer outstanding support to customers across the main defence sectors, as well as in the civil aircraft market. We are also working towards a major boost in

operating performance through the synergies and opportunities available to the new group, not least through the cross-transfer of best practice across all operations. The commercial practices we employ in the civil aviation marketplace naturally feed through to our dealings in the ever-changing defence sector; and conversely, many of the technology breakthroughs we achieve in military programmes enable us to develop the right solutions for our wide customer base.

Our aim is for BAE SYSTEMS to be the benchmark aerospace and defence company – worldwide. Our method for attaining this aim is to listen carefully to what our customers tell us and deploy our combined industrial, technical and financial strength to meet their needs. Our capabilities for achieving that goal are outlined in the following pages.

# Imagine

The Tornado platform carries high-value equipment from the many teams that make up BAE SYSTEMS, plus sophisticated customer services that include synthetic environment training packages.



By sharing our technologies and facilities, we build long-term collaborative relationships with customers and partners, such as these trainee pilots from Saudi Arabia in a Hawk simulator.

Imagine a company with world-leading specialist groups, spread globally, between them covering all the main sectors of the defence electronics, aerospace and naval shipbuilding industries. It is among the biggest and best contractors in the world – operating as the prime contractor delivering an entire system, or as a sub-prime on projects where it has unrivalled understanding of the many complex components, sub-systems and interfaces. In both civil and military programmes, it seeks to maximise value to customers – for example, by transferring best practice between platforms, and providing the outstanding service and support that make it the customer's first choice.

This company is built on the brilliance of great innovators from the earliest days of radio communication and flight. But it is now positioned for a promising future built on its world-class ability to develop and integrate total system solutions to the most demanding requirements. This is the reality of BAE SYSTEMS: a future-oriented company with unrivalled technologies and astonishing global capability. The following will give you just a glimpse of that reality.

Astute – the UK's new  
7,000 tonne hunter  
killer submarine for  
which we are the prime  
contractor.



# Scale

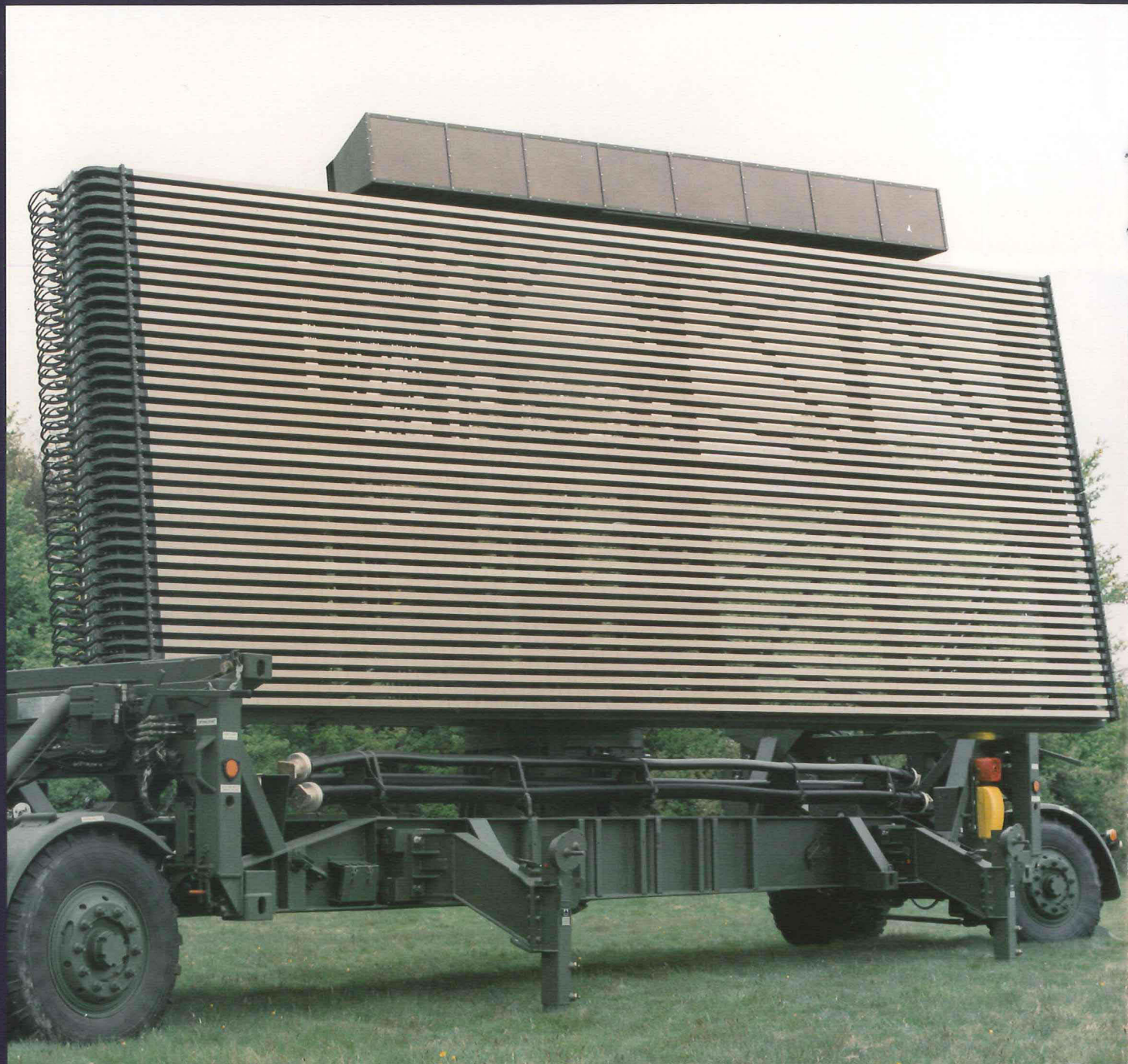
BAE SYSTEMS is a corporation of more than 100,000 employees operating at some 100 sites around the world – with the largest presence in the UK, and in the USA where we have major operations in 28 States. We generate a turnover of more than £12 billion, and a forward order book of more than three times that figure. Through our dramatically increased scale we have a high profile in the world's marketplaces – now not only ranked at the top of the European aerospace and defence league, but also as the number two defence company in the world, and the sixth-largest US defence electronics and systems company.

We have the financial strength, large-scale capability and international profile to take on the most challenging projects in our markets. As an illustration of this, we are the prime contractor for Astute, Britain's new nuclear submarine, while at the other end of the physical scale, we make a tiny silicon gyro. We also write some of the world's most advanced software using highly complex guidance and tracking algorithms for use in dynamics, electronic countermeasures and command and control.

We also extend our capability into major new areas by forming dozens of imaginative joint ventures with leading specialist companies around the world, to bring together the world's best technologies for the customer's needs.

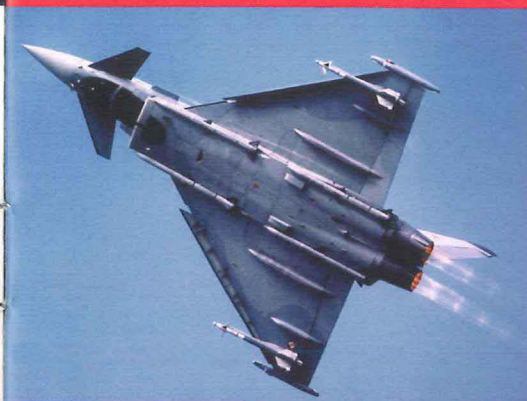


Silicon gyro – the tiny  
but rugged sensor, just  
15mm square, used in  
missiles, vehicles and  
many other applications  
where its reliable  
performance is critical.



AR327, a long range 3-D radar, provides advanced performance, low through-life cost and high availability.

# Spread



With our partners in Eurofighter GmbH, we have a primary role in producing this world-class combat aircraft – integrating complex systems that include its advanced radar, the electronics that control the aircraft and the countermeasures that protect it. To meet tight lead times and delivery schedules we have promoted teamwork between sites by investing in 'smart manufacturing' tools and processes.

Total systems capability can only come from a company that combines a strategic view of the customer's objectives with a detailed knowledge of systems and how they can be integrated to meet those objectives. In BAE SYSTEMS, we see a battlefield, aircraft, ship, submarine, satellite or air traffic management project as a complex 'system of systems', because our people understand that few elements of defence or aerospace capability can be addressed in isolation.

Many would claim to integrate systems, but the difference we deliver is in magnitude. We frequently use our know-how and technologies to integrate hundreds of systems into solutions that must perform in the most challenging of environments throughout their entire life. We apply our development and integration skills to making the best use of Commercial Off-The-Shelf (COTS) technology in building applications and providing interfaces for different kinds of user. The heart of our systems integration expertise lies in the ability to model not just individual components, but also how those components operate in unison and interface with the operator.

Very few companies embody the spread of disciplines, the foresight and the innovative drive necessary to meet these challenges. By applying our proven expertise to the specific needs of the customer, we create a team that will share the challenge, share the risk, and share the benefits.



Our strengths in electronic warfare have led to a variety of projects in the US, UK and around the world to develop counter-measures such as chaff, flares, jammers, decoys and towed radar decoys. Here a US Air Force Hercules fires BAE SYSTEMS flares.



The Helicopter Integrated Defence Aids System (HIDAS) fitted on British Army Apache WAH-64D helicopters draws on our expertise in electronic warfare systems to provide effective counter-measures against a range of threats.



The NULKA ship protection system is currently in service with Australia's armed forces.

# Insight

From the heritage of skills that make up BAE SYSTEMS we have specialised teams in all the major sectors of the defence and aerospace business. We have built them into a single, integrated company that draws on its total strengths to deliver the best solution.

For us, a contract begins long before production with painstaking work at the system engineering level to ensure that the real operational requirements will be met – on time and on budget. There are Ministries of Defence

and major aircraft builders around the world with large teams of our experts working permanently alongside their own people. They ensure that systems analysis and systems engineering are fully stable well before production begins; that requirements are revisited constantly to ensure that expectations are continually met; and that this close working relationship is maintained over the whole life of the project – long or short. The secure, PC-based mission planning and rehearsal system, developed with CSC Fairchild Defense to improve

mission success and safety, is in service with US Air Force, and enabled the US bomber aircraft mission to Kosovo to be planned in just five days.

Innovation is a concept that only makes commercial sense if it is linked to a clear understanding of what customers need to meet their real-world challenges – today and tomorrow. Only companies that go out of their way to understand the operational objectives of the customer can claim to provide the best solution.



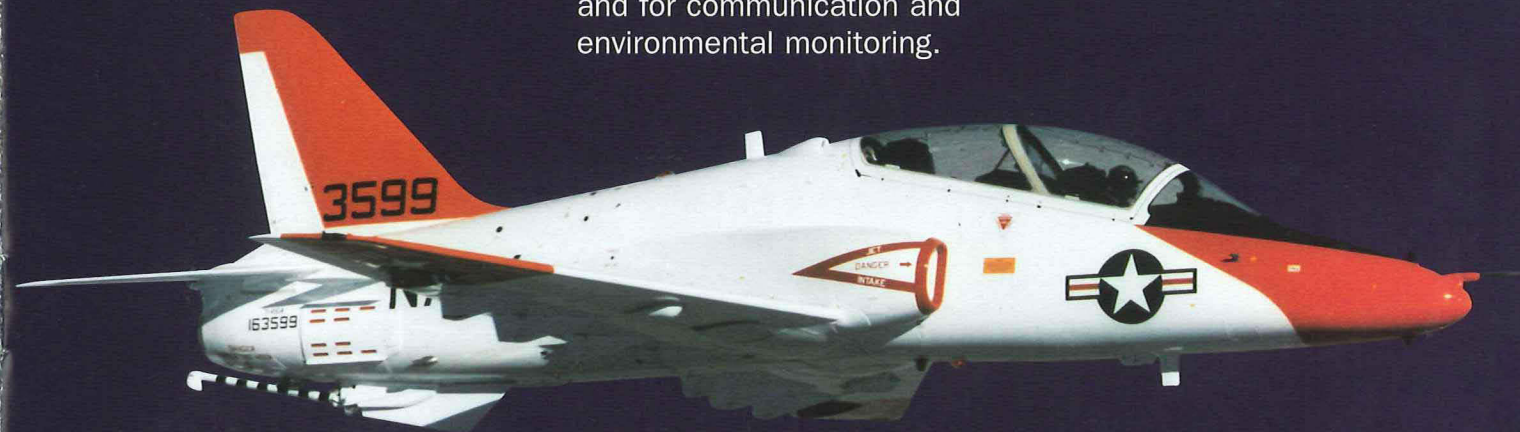
We lead the world in evolutionary fly-by-wire primary flight computers and in aircraft low-pressure fuel pumps – vital components for which we are the sole supplier to the Boeing 777.

# Breadth

Through the complementary capabilities brought together in BAE SYSTEMS, we offer our customers a global capability in air, sea, land and space – along with the assurance that our customer support teams are on hand to ensure the continued availability of their equipment.

In the air, we take a leading role in joint programmes for both military and civil aircraft in partnership with the world's leading aircraft companies. For the world's navies, we offer a world-class ship design capability, and build frigates, submarines and aircraft carriers, as well as communications systems, missiles, and torpedoes. On land, in the emerging digital battlefield, our systems include radars, communications networks, artillery, guided weapons, and electro optics. In space, we offer satellite systems for both civil and defence navigation, and for communication and environmental monitoring.

The breadth of our systems capability is matched by the understanding that a contract is not completed when a system is delivered. For customers worldwide, non-product elements are a major part of the contract – with in-service support, advice, upgrades, refits, trouble-shooting and training seen as part of a package that protects their investment. Because of this, our through-life support process begins at the early stages of product development, so that reliability, maintainability and supportability are designed in from the outset.



Hawk – the world's most successful fast jet trainer, selected by 17 countries. Produced in conjunction with our US partner Boeing, the Hawk-variant T-45A Goshawk is in service with the US Navy as a sea-going carrier capable trainer.



Our systems are integral to two separate bids for the Joint Strike Fighter, expected to enter service in the next decade.



Harrier, shown here carrying Brimstone anti-armour missiles.

# Depth

In pooling the considerable resources of the new company, we now have one of the largest research and development budgets of any private organisation in the world.

Our R&D projects cover the spectrum of technologies, materials and synthetic environments – such as virtual reality training and 3D modelling – that constantly extend the frontiers of performance. The high software content in our complex systems means that software development is a key activity that involves more than 10,000 systems software engineers, and has won us a worldwide reputation for excellence.

We have a proud heritage of 'firsts' from the first days of wireless communication through to Concorde, the world's first supersonic passenger aircraft, plus the world's first vertical take-off and landing capability, and the world's first fly-by-light system. Through our intense focus on R&D, we are investing in the next generation of breakthroughs.

The demand on our capacity for innovation on both sides of the Atlantic is illustrated by our involvement with separate bids to build the Joint Strike Fighter, expected to be one of the largest aircraft manufacturing programmes of the new century.



A340 – The fuel-efficient wings we design and build for the Airbus family put our technology at the heart of the European consortium's success.



# Spirit



The Spearfish heavyweight torpedo has unsurpassed performance.

We work with a huge community of commercial partners – collaborating with European corporations such as Thomson, Alenia, Matra and Saab as well as working closely with major US platform and sub-system manufacturers such as Boeing, Lockheed Martin, and Raytheon. The number of joint ventures and joint projects runs into hundreds. Our joint venture company with Thomson places us in the top rank of sonar suppliers – with nearly 50 of the world's navies using our sonar systems. Through our ownership of many of the best technologies we are in demand as a partner in important programmes such as the Eurofighter Typhoon, the new F-22 and the Joint Strike Fighter in the US, and on major naval and land-based projects. We are also a full partner in the Airbus Industrie consortium – one of the world's largest commercial aircraft makers.

Our success depends on large numbers of partners and suppliers working with us towards common goals: to provide high-quality, reliable solutions on time, to cost, and at the exacting specification demanded by the customer. To achieve this, we have invested in state-of-the-art software procurement systems for managing the supply chain and sharing project information with our supply partners. For the Eurofighter Typhoon we have installed a logistics supply chain facility beside the build stations to manage 'just in time' delivery systems with minimal storage of parts, and downtime.



We are supplying our AS90 Howitzer to the Polish Army through the Polish company HSW, and working with them to transfer our know-how so that they can build the gun themselves.

Our SAMPSON multi-function radar has been selected as the primary sensor for the next-generation frigate for the Royal Navy, the Type 45, for which we are the prime contractor.



Lightweight and highly mobile, Rapier FSC is the latest, most advanced air defence system available, and is in service with the Royal Air Force and British Army.



Our Visual Guidance Systems are advanced displays that provide the pilot with essential aircraft performance, guidance and navigational information in his forward field of view. VGS enhances an aircraft's safety and capabilities, particularly when visibility is low.

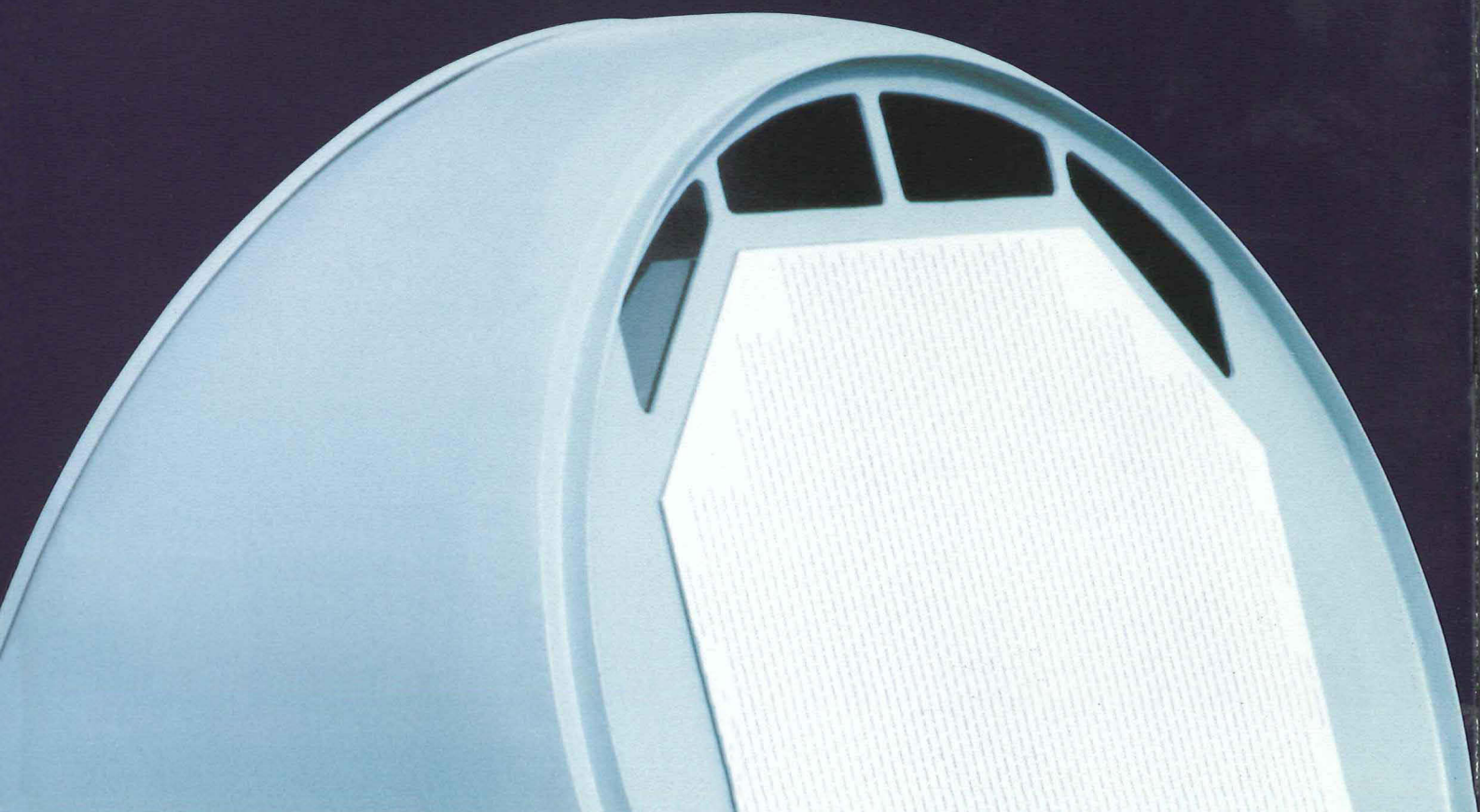
# Focus

We've become world leaders in so many of the dominant technologies in our industry through an obsession for developing the quality processes that result in quality systems, and that conform to internationally recognised standards. In BAE SYSTEMS, our 'electronic audit trail' runs from system requirements through detailed functional and implementation modelling at all levels, even down to tiny components like integrated circuits. In the Astute programme alone, the analysis and planning that underpin the project are based on the work of more than 350 highly qualified systems engineers.

The pivotal role of software engineering in our business demands an intense focus on maintaining a world-class standard of skills in this field. As part of this, we are working towards the highest levels of the Capability Maturity Model of the American Software Excellence Institute (SEI).

In addition, we use our well-established Benchmark programme to measure our performance at every stage from co-operation between internal departments to dealings with customers and suppliers. We are also gaining extra value from BAE SYSTEMS' expanded

community by speeding the cross-transfer of best practice between all areas of the business. Through steps like these we have created a culture of continuous improvement, in which today's performance – however good – can always be bettered tomorrow.



# Flair

The success of our teams depends, above all, on the exceptional flair of our people, especially our engineering and software graduates. Many of them hold a PhD or advanced qualification in their specialist field. This powerhouse of engineering talent stretches worldwide, and through our graduate recruitment programme we continue to employ the brightest brains from the world's major seats of scientific learning. We maximise the influence of this brainpower with state-of-the-art internet/intranet networks that provide a fast-flowing channel for

managing the immense store of knowledge within the company and for sharing ideas and feedback with our own, and our partners' teams.

Customers expect to work with the best people. Many of our sites are working towards accreditation by external standards bodies for people development, employee involvement and internal communication. In parallel, we have our own company-wide programmes to enable every one of our people to take up learning opportunities and achieve their full potential

as part of a successful and forward-looking organisation. We are committed to life-long personal skills development, to providing scope for mobility within the company, and to recognising and rewarding the skills of the individuals who sustain our world-leading position in so many areas.

Our people's inventive flair has led the way in lifting the pilot's workload with Head-Up Displays (HUD), and we have fitted more than 11,000 displays to more than 50 different types of aircraft. In tomorrow's advanced combat aircraft such as the F-22 in the US and the Eurofighter Typhoon, the HUD will incorporate the next generation display system that projects information from the aircraft's systems onto the pilot's helmet visor.

A highly agile, multi-role combat aircraft, Gripen has been chosen by the Swedish and South African Air Forces.



Our Avro RJ aircraft fulfil an important role in regional air travel throughout the world.



With our partner Matra we have built all of Europe's earth observation satellites, and our space satellites have been in orbit cumulatively for more than 200 years.

The company has a major presence in all international markets, particularly in Europe and the USA, as well as in the Middle East, Pacific Rim and Australia.

Our strength in the US, where our teams carry out some of our most advanced development work, positions us strategically to take part in

important programmes related to the US Government's investment in R&D for defence.

Global reach is essential because we sell support and services all over the world – not only working with customers to develop tailored solutions for their environment, but also offering the management and operation of their

facilities, training, repair and overhaul of products, and the provision of professional logistic support. BAE SYSTEMS is a global citizen – not a visitor – so that wherever we have sites we seek to operate as a local company, employing local people in local offices. Some 30,000 of our employees are in countries outside the UK, with more than half of these in the USA.

# Reach



The wide range of custom-built command, control, communication, computer and intelligence solutions for the digital battlefield illustrate how we pull together the many strands of our expertise to build world-leading systems. Our unmanned aerial vehicles (UAVs) for battle situations draw on our capability on both sides of the Atlantic, and were successfully deployed in Kosovo.



The Battlefield Artillery Target Engagement Systems (BATES) is a programme for the British Army that enables forces to evaluate target priority and obtain better battlefield intelligence.

# Excellence



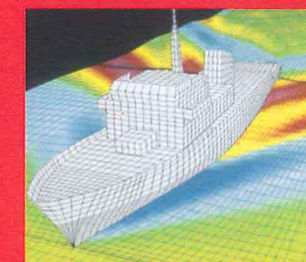
As the prime contractor, we have formed a cross-company team to bid for this future-generation aircraft carrier for the UK Royal Navy.



Sir Charles Masfield  
Group Marketing  
Director  
BAE SYSTEMS

This brochure gives just a snapshot of the much wider picture that is BAE SYSTEMS, with its people, skills and customers around the world. We hope it captures the essence of the new company – the scale of capabilities, the depth of technical understanding, the spread of prime contracting and systems integration skills, focus on quality, global reach, and customer focus.

Although we are the world's second largest defence company, scale has not been pursued simply for its own sake. The importance of such scale to our customers is in our capacity to provide total solutions across the value chain around the world at a competitive price. We will enter the new century focused on the importance to our customers of providing high quality and consistent value that will, in turn, provide them with a competitive advantage.



The use of computational fluid dynamics ensures leading edge performance in product development.



BAE SYSTEMS is a significant investor in ground-breaking research projects.

This will entail working ever more closely with our partners and customers to ensure in depth understanding of their long-term needs and requirements. All of our people are committed to our customers and to using our imagination and skill not just to satisfy them, but to delight them by exceeding their expectations. Our new company structure has been specifically designed to be more customer-facing and flexible than anything the industry has seen before.

With the people, capabilities, technologies, partnerships and customer base that form BAE SYSTEMS, I have no doubt that this great new corporation will rapidly achieve its declared intent of becoming the benchmark aerospace and defence company – setting the standards for excellence worldwide.

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30 November 1999

Dear Colleague,

Today is a very special day for us all, as we launch our new company, BAE SYSTEMS.

It has taken time and a great deal of effort from many people, to get us to this day. The 19th of January, when we first announced our plans to merge, seems a long time ago.

Today we start on our new journey, to build on the foundations of two great companies to create one and one that can truly deliver our Vision of being the Benchmark Aerospace and Defence Systems company in the world.

Aiming to be the best is an ambitious goal, but one we can achieve, if we all work together, learn from each other, support each other and strive for excellence in all we do.

BAE SYSTEMS is a global family and our new world spans nine countries across four continents. Between us we have seven different languages as our mother tongues. We are the second largest Defence company in the world and equal third largest in Aerospace and Defence. This strength gives us great opportunities for our future.

There is hard work ahead of us. We need to build our single global team and develop our new culture. We need to understand and live our Values. We need to stay focused on our performance, delivering outstanding quality in our programmes, our engineering and our innovation. We all need to share in a commitment to creating success, because then we can really deliver for our customers and shape our company to become a world-beater.

The next few months are going to be uncomfortable for many people – change always brings difficulties and I do not under-estimate what many of you might be feeling. Equally I do not under-estimate what BAE SYSTEMS is capable of achieving, for our customers, our partners and each other.

We have a terrific team in BAE SYSTEMS and I look forward to the great future we can enjoy together.



**John Weston**  
**Chief Executive**