

# *Jolly* good show!

**What makes the United Kingdom, home to this month's Farnborough International Airshow, critical to Boeing? Partnerships, products—and an integrated structure for Boeing's UK operations.**

At the Houses of Parliament in London, you'll find Boeing representatives working with stakeholders based in the United Kingdom. Boeing's partnerships with this nation have created benefits for both the country and for Boeing.

SHUTTERSTOCK.COM PHOTO

By NICK WEST AND JUNU KIM

To appreciate just how important an international market the United Kingdom is to Boeing, think about the drive from London's Heathrow Airport to The Portal, a modeling, simulation analysis and experimentation center in the town of Farnborough.

At Heathrow, one of the world's busiest airports, you'll find Boeing airplanes bearing the liveries of carriers from around the globe. These airlines are using long-haul airplanes like the 777 and the 747 to bring people and goods from all reaches of Earth to and from one of the world's great centers of culture and history. From Heathrow, the drive through the British countryside to Farnborough takes about 30 minutes. There you'll find The Portal, which Boeing operates in conjunction with QinetiQ, a British defense and security technology firm. The Portal is a high-power networked decision-support center where programs and customers—primarily the UK Ministry of Defence—can conduct experiments at all levels of armed conflict.

In other words, within a span of a mere 30 miles (48 kilometers), you can see the breadth of the Boeing-UK partnership, from cutting-edge products to customer support to technology for tomorrow's solutions—all for the benefit of the United Kingdom as well as of Boeing, its customers and employees.

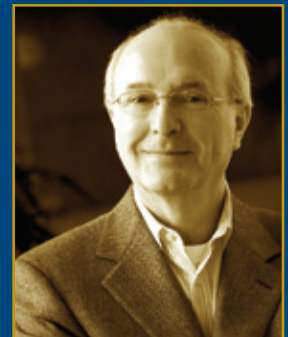
The United Kingdom—the setting of this month's Farnborough International Airshow, one of the global aerospace industry's most important gatherings—is a market that exemplifies how Boeing aims to work globally. This nation has not only a rich legacy of Boeing activity and a wide array of Boeing products in use, but it's a market where the company and its partners are helping shape the future of aerospace. By operating as an integrated entity that works for the benefit of the entire company, Boeing has established connections with industry and universities that have helped the British economy—and permit all of Boeing to offer customers in the UK, the United States and rest of the world higher-impact, technology-based solutions. And that means more work for Boeing business programs and their employees.

Indeed, the United Kingdom is home to four carriers—British Airways, TUI (through its purchase of First Choice Airways), Monarch Airlines and Virgin Atlantic Airways—that have acknowledged the revolutionary advances of the 787 Dreamliner by collectively ordering 57 of these airplanes. And it's the home of a defense customer that tapped Boeing to help lead the Future Rapid Effect System (FRES) program, which will provide the British Army with a family of medium-weight, network-enabled, air-deployable armored vehicles that will complement the UK's existing heavy and light forces.

To get deeper insight about why the UK is a critical international market to Boeing and its employees, *Boeing Frontiers* spoke to Sir Roger Bone, president of Boeing UK.

**Q: Why is the UK so important to Boeing?**

**A:** Boeing has had a relationship with the UK for more than 70 years, since the UK introduced a fixed-wing military training aircraft called the Harvard. During World War II, the C-47 Dakota and B-17 operated extensively



Sir Roger Bone,  
president Boeing UK

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with the UK's Armed Forces, and today Boeing has more platform types in service with the UK Ministry of Defence than any other U.S. company. The Chinook for example, has been in service with the Royal Air Force on every overseas operation since it entered service in the early 1980s.

On the commercial side, Boeing's commercial airplane products have made a vast contribution to delivering growth in the UK's air transport capability. This is set to continue with a high concentration of airline customers for the 787, who will in a few years' time operate the airplanes from regional and London airports.

We're honored to support our customers in the UK, but our partnerships here help both sides. The cutting-edge products and services that support our customers in the UK, the United States and around the world feature technologies we have developed with our UK partners. These contributions include new manufacturing technologies, systems and components for the 787, and even the rapid prototyping of the Blended Wing Body research aircraft.

So with our extensive range of customers, as well as industrial and scientific partners, it

is clear that the UK has been and will remain a very important market to the company.

**Q: Boeing has had longtime strong links with the Ministry of Defence and British industry. How do you see the business model, and is there any reason to change it?**

**A:** Traditionally the business model has been to sell into the UK from the U.S. The company has invested in technology partnerships, with universities in particular, but we really have felt the need to adjust our strategy.

Essentially, the Defence Industrial Strategy (DIS), published in December 2005, was the catalyst for change. In order to be a long-term partner with the Ministry of Defence, we have to possess the ability to develop intellectual property in the UK. Clear evidence of this is a new Boeing facility in Bristol, which we opened 15 months ago, and The Portal, opened 12 months ago. From there we successfully addressed, with our partner Thales, the bid for the systems-of-systems-integrator role for the FRES program. This should result in Boeing becoming a strategic partner to the Ministry of Defence. We initially employed a couple of dozen people in Bristol and 10 in Farnborough, and as time goes by we expect

this to increase significantly. So this is a concrete example of how we have responded to the DIS, built a capability onshore and won a contract.

**Q: How is Boeing viewed as a company in the UK?**

**A:** We have links and relationships with up to 250 British supply companies, and our story has been very much one of adding value to the economy in terms of being a customer to the aerospace industry and a supplier to the air transport industry. This all plays into the bigger approach of Boeing operating as a global company and being much more than an American company selling products globally. Boeing has tremendous brand equity and our stakeholder contacts and profile are much higher than they were four years ago.

We make a major contribution to the sustainable aviation debate with the positioning of the fuel-efficient 787 in particular, but also through contributing knowledge and expertise in biofuels, air traffic management and airport operations. In early May the company jointly hosted a Parliamentary debate and reception in conjunction with British Airways. This event was specifically aimed at working with one of



Boeing supports The Green Corridor's Tree Buddies Project, which raises environmental awareness and helps children new to the United Kingdom.

PHOTO COURTESY OF THE GREEN CORRIDOR

## A community partner

Boeing is committed to being an active, engaged corporate citizen of the communities in which it does business, and the United Kingdom is no exception. Community partners Boeing has worked with in the UK over the past several years include

**Prince's Trust xl clubs:** To address issues such as high truancy rates, incidents of social exclusion and student underachievement, the Prince's Trust in-school xl clubs promote skills development for at-risk 14- to 16-year-olds. Boeing UK is a long-standing supporter of the Prince's Trust xl clubs. In the city of Sheffield, where Boeing co-founded the Advanced Manufacturing Research Centre, the company has supported a local xl club for the last four years.

**Green Corridor:** The Green Corridor is based in West London, where some of the busiest transport networks converge. It's also an area in much need of social, economic and physical regeneration. Boeing specifically supports the group's Tree Buddies Project, a program aimed at 11- and 12-year-olds that has two core objectives: to help children new to the UK integrate into their schools and communities, and to raise environmental awareness. The young people are paired with "buddies" in their classes to learn about their local environment, specifically trees.

**Groundwork UK:** Boeing UK has given its support to two important social-improvement projects being run this year in London by Groundwork UK, an environmental development nonprofit. Under Groundwork's "Designing Out Crime" program, the entryway to the Belmont Recreation Ground, neglected and a haven for troublemakers, will be redesigned thanks to a Boeing grant. Also, Groundwork's "Past on your Doorstep, Future in your Hands" program is helping young people at risk of exclusion from school or those who may have already been excluded, to reconnect with their educational goals and their local communities.

our most important customers to illustrate the environmental performance endeavors of the industry.

We've been also an active supporter of the need for a third runway at Heathrow. There is a strong feeling in industry as a whole that it is necessary, and we are working both behind the scenes and in the public domain to support the case. So with all of these proof points as well as some reputation research, I think Boeing is well regarded and valued by our stakeholders.

**Q: How is Boeing viewed as a corporate citizen?**

**A:** To demonstrate Boeing's commitment to corporate citizenship, the company has built successful partnerships with several nonprofit organizations such as the Prince's Trust, the Green Corridor and Groundwork, to address key community priorities including education, social inclusion and the environment (see story on Page 14). In addition, Boeing UK has relationships with universities and also is involved with numerous industry groups and trade organizations. The company is a member of national-level organizations such as the Confederation of British Industry, the Royal Aeronautical Society and the Air League. It's also actively involved in regional issues with the UK's Regional Development Agencies and trade associations such as the Farnborough Aerospace Consortium, Northern Defence Industries, and the West of England Aerospace Forum.

There are less than 1,000 Boeing employees in the UK. That's far fewer than in the United States. But we know that the quality of the relationships we build with community partners, educational institutions and trade and industry groups is integral to being perceived as a responsible corporate citizen among our neighbors here.

**Q: What are the opportunities for Boeing employees to work in the UK?**

**A:** We have a small corporate team based in London. Elsewhere around the UK we have offices stretching geographically from Perth in Scotland to Gosport on the south coast. BCA has a team of around 40 people in Heathrow, where the European, Russian and Central Asian Sales operation is headquartered. The Alteon, Jeppesen and Continental Datagraphics subsidiaries add another 300-plus to the number of employees.

On the defense side of the business, our organic growth has seen a number of

local and expatriate positions created on the Chinook Through Life Customer Support program (a comprehensive program for support of UK Chinooks) and FRES in particular. With the long-term intent to generate intellectual property in the UK, we expect much greater growth in full-time local positions.

**Q: How is the company configuring itself for growth in the UK?**

**A:** IDS has created Boeing Defence UK, an organization for its activities here. This IDS integration effort is designed to position Boeing for growth and improve the company's defense capabilities in the UK (see story on Page 20). The essence of the IDS reorganization has been in line with the DIS and will increase Boeing's presence in the long term, establishing a cost structure that positions us to offer better value for money, more jobs, and development of on-shore industrial participation.

Providing an integrated support infrastructure will have benefits for all of our existing

programs. Equally, the creation of new functional heads such as Supplier Management & Procurement, Quality Assurance and Engineering, for example, from existing personnel will aid the integration process, leading to shared learning, common processes and career growth opportunities.

But we're also involved in activities that support all of Boeing. BDUK already has held several supplier industry days in partnership with Boeing Commercial Airplanes in a "one Boeing" approach to doing business globally. Bringing together suppliers from both our defense and commercial businesses allows us to deliver the depth and breadth of Boeing to our local industry partners. And that "one Boeing" presence also enables sharing of best practices—and contributes to our journey toward seamless organization within the company and throughout the supply chain. ■

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## United Kingdom at a glance

**Official name:** United Kingdom of Great Britain and Northern Ireland (Great Britain includes England, Scotland and Wales)

**Location:** Western Europe; islands including the northern one-sixth of the island of Ireland between the North Atlantic Ocean and the North Sea, northwest of France

**Area:** 244,820 square kilometers (94,525 square miles)—slightly smaller than the U.S. state of Oregon

**Population:** 61 million

**Estimated gross domestic product, 2007:** \$2.771 trillion

**Estimated GDP real growth rate, 2007:** 2.8 percent

**Defense budget, 2007-2008:** £32.6 billion (about \$65 billion)

**Military spending as part of GDP, 2006:** 2.5 percent

*Sources: Economist Intelligence Unit; UK Ministry of Defence*

# Engine of growth

## A look at some of Boeing's many technology-based UK partnerships

Perhaps it's fitting that the nation that gave birth to the Industrial Revolution is a major technology partner with Boeing.

The United Kingdom is a strategic center of research for Boeing. Although the nation has just 1 percent of the world's population, it undertakes around 5 percent of global research. And it's not standing still: The British government has set a target to raise national investment in research and development to 2.5 percent of gross domestic product by 2014.

The aerospace business also is important to the UK. At a recent Parliamentary forum, Ian Godden, chief executive of the Society of British Aerospace Companies, said aviation represents more than 1.5 percent of the overall economy in the United Kingdom. The sector employs 280,000 people, with an additional 500,000 people working in the supply chain, Godden added.

Accordingly, Boeing is keen to ensure it can continue and grow its relationship with the UK, where there are up to 250 suppliers and partners. "We are taking a cross-enterprise approach in our engagement with British industry, building on the depth and breadth of suppliers that Integrated Defense Systems' Industrial Participation program has traditionally given us. When combined with the technology sourcing of Phantom Works and the UK's industrial input on the 787 program, we see a long-term, mutually beneficial relationship that will grow even stronger over time," said Brian Moran, UK Industrial Participation lead.

Boeing has forged enduring links with UK industry and universities. Much of Boeing's relationship with British industry stems from the Industrial Participation program, which works actively with economic development agencies across the regions. The program also evaluates new research opportunities, most notably in collaboration with Phantom Works.

Among the partnerships that deliver cutting-edge capabilities to Boeing:

- QinetiQ, the UK's largest single research and development company, signed an overarching agreement with Boeing in 2004. The company works with Boeing in a cross-enterprise way. A leasing agreement, for example, gives Boeing Commercial Airplanes and IDS unfettered access QinetiQ's 5-meter wind tunnel, a world-class testing facility.

Strategic partnering with QinetiQ has established a powerful team to support UK Ministry of Defence and other UK and European business opportunities. The win of the Mission Training Through Distributed Simulation Capability Concept Demonstrator program marked a major success and has been followed by the establishment of The Portal, a state-of-the-art decision-support center at QinetiQ's Farnborough facility.

- Boeing has established multiyear collaborative R&D partnerships with



At the University of Sheffield's Advanced Manufacturing Research Centre, W.S. Tham inspects a part recently completed on the Shape Metal Deposition Cell at the facility. The cell uses titanium wire to literally grow parts up from CAD models. Boeing is the lead member and co-founder of this site, which has helped develop, validate and transition new manufacturing technologies. AMRC PHOTO

Sheffield, Cambridge and Cranfield universities to work on a variety of advanced information, aeronautics and manufacturing technologies.

As the lead member and co-founder of the University of Sheffield's Advanced Manufacturing Research Centre since 2001, Boeing has been instrumental in helping develop, validate and transition new manufacturing technologies. The AMRC originally was set up in support of the UK C-17 IP program and has grown to become a £60 million (about \$120 million) collaboration of more than 20 international partners. The AMRC played a vital role in Messier-Dowty's win of the 787 landing gear contract.

A new collaborative centre for Integrated Vehicle Health Monitoring, which will emulate the success of the AMRC, recently was established at Cranfield University. The center will focus on developing integrated health management systems, standards and software for a host of industries. Boeing and Cranfield are supported in this initiative by the East of England regional development agency and industrial partners such as BAE Systems, Meggitt PLC and Rolls-Royce. In addition, Cranfield, Britain's leading postgraduate research-intensive university, has undertaken numerous research projects with Boeing in recent years. The most visible example is the rapid prototyping of the Blended Wing Body research aircraft, which made its first flight last year.

- Boeing's importance to the United Kingdom, and value to the British economy, is typified by the 787 Dreamliner program. Among the many UK aerospace entities that play a part in the 787 are GE Aviation (formerly Smiths Aerospace), Rolls-Royce, Messier-Dowty, Cobham, GKN, Ultra Electronics, Eaton Aerospace, Claverham, QinetiQ and the AMRC.

In addition, Boeing subsidiary Alteon will provide training for all European 787 pilots, cabin crews and maintenance personnel at its new European training facility near London's Gatwick Airport. Simulators used in the training will be built at Thales UK, which is a short walk from Alteon.

# A climate of change

## The UK cares greatly about aviation's role in the environment. And so does Boeing

Although public concern over global warming has grown immensely as of late, the issue of climate change and the environment has been high on the public agenda in the United Kingdom for several years.

The UK's discussion on this topic has touched on aviation's role. Although the United Nations' International Panel on Climate Change said airlines contribute only 2 percent of global man-made carbon dioxide emissions, Boeing is taking a leadership role to help the global industry limit its share of emissions. The work Boeing performs in support of the environment and aviation in the UK, as with the rest of the world, reflects how Boeing pioneers new technologies that create value to its stakeholders.

"Boeing takes its environmental responsibilities very seriously. We have a good story to tell about our products and we try to play a constructive part in public debate about how to achieve reductions in fuel use—and carbon dioxide emissions," said Marlin Dailey, Boeing Commercial Airplanes vice president of Sales for Europe, Russia and Central Asia.

The strongest evidence of how Boeing is helping UK-based airlines cut fuel consumption and greenhouse gas emissions is that four of the nation's carriers collectively have ordered 57 787 Dreamliners. Thanks to the advanced technologies employed in this new, midsize airplane, the 787 will use 20 percent less fuel for comparable missions than today's similarly sized jetliners, with an equivalent reduction in carbon dioxide emissions. The 787's technologies also mean quieter takeoffs and landings, as well as a noise footprint that's more than 60 percent smaller than today's similarly sized airplanes.

Boeing is active in numerous efforts to make air travel more environmentally friendly. Here's a quick look at some of these many activities.



In February, Boeing, Virgin Atlantic, Imperium Renewables and GE Aviation partnered to conduct the first commercial aviation flight using a sustainable biomass-to-liquid fuel mixed with traditional kerosene-based jet fuel. Commemorating this flight are (from left) Geoff Adreassen, Virgin Atlantic chief Boeing pilot; John Plaza, Imperium Renewables CEO; Sir Richard Branson, president of Virgin Atlantic; Marlin Dailey, Commercial Airplanes vice president of Sales, Europe, Russia and Central Asia; and Tim Held, GE Aviation's manager of advanced combustion engineering. BOEING PHOTO

- Boeing is a member of a broad coalition, called Flying Matters, that highlights the positive impact of the air transport industry on economies and society. Boeing's approach is that it can contribute the most to the aviation and environment debate in the technical arena. "This is where we can directly support our customers, helping them in turn to assure their stakeholders that the industry is making the advances needed," Dailey said.

- For several years Boeing has been engaged in the Community Awareness program that has helped UK customers such as First Choice, Virgin and British Airways engage with community, business and commerce groups around airports. Many of the company's UK-based 787 partners have helped the company in this process. Rolls-Royce and GE Aviation (formerly Smiths Aerospace) have been actively engaged in the dialogue.

- In February, a Virgin Atlantic 747-400 made the first commercial aviation flight using a sustainable biomass-to-liquid fuel mixed with traditional kerosene-based jet fuel. This flight, for which Boeing partnered with GE Aviation, Imperium Renewables and Virgin Atlantic,

marked the first step in a broader industry-wide technology initiative to commercialize alternative fuel sources for aviation. On this London-to-Amsterdam trip, one engine used a kerosene/biofuel blend including babassu oil and coconut oil provided by Seattle-based Imperium Renewables.

# Who's who among UK airlines



**TUI**  
 Type: Charter airline  
 Approximate number of jetliners\*: 75  
 Key jetliners in fleet: Boeing 737-300, -500, -800, 757-200, 767-200, -300,

-300ER; Airbus A320, A321  
 Key jetliners on order: Boeing 787-8

TUI Travel was formed by last September's merger of TUI AG's Tourism business and First Choice Airways, the European launch customer for the 787. The UK airline operation includes both First Choice and Thomsonfly, the largest charter airline in the world.



**Ryanair**  
 Type: Low-cost airline  
 Approximate number of jetliners\*: 173  
 Key jetliners in fleet: Boeing 737-800

Key jetliners on order: Boeing 737-800

Since its founding in 1985, Ryanair has grown into one of Europe's largest carriers. Although Ryanair is based in Ireland, it's launched 12 new UK routes this year. Ryanair operates only Boeing 737-800 airplanes and has firm orders for more than 100 new aircraft to be delivered over the next five years.

## 70 years and counting...

**June 9, 1938:** The North American Harvard, based on the T-6 Texan, is sold to the British government for aerial reconnaissance and training.

**March 20, 1941:** The British government purchases three Boeing 314A aircraft and allots them to the British Overseas Airways Corporation for use as transport aircraft.

**Feb. 16, 1948:** U.S. Air Force bomb groups equipped with the Boeing B-29 Superfortress participate in air defense exercises with Royal Air Force Fighter Command for the first time.

**April 25, 1971:** BOAC operates its first Boeing 747 flight between London and New York.

1930s

1940s

1950s

1960s

1970s

**June 24, 1939:** Pan American inaugurates the first northern transatlantic mail service to Southampton, UK, in a Boeing 314 Yankee Clipper. Four days later, the first passenger air service commences from New York to Southampton.

**June 6, 1944:** More than 1,000 military Douglas DC-3s and C-47s airlift more than 20,000 paratroopers across the English Channel during the first hours of the D-Day invasion of occupied Europe.

**May 27, 1960:** BOAC introduces the Boeing 707-436 aircraft on its London to New York service.



**EasyJet**  
 Type: Low-cost airline  
 Approximate number of jetliners: 137  
 Key jetliners in fleet: Airbus 319, Boeing 737

Key jetliners on order: Airbus 319

EasyJet, founded by entrepreneur Stelios Haji-loannou, started operations in 1995 with two leased Boeing 737 Classics. In a growing market, the airline quickly expanded its fleet with Next-Generation aircraft. In 2002, the airline placed an order for 120 A319 aircraft with Airbus. It's currently phasing out its Next-Generation 737s.

\* UK operation only. Excludes regional jets



**Monarch Airlines**  
 Type: Low-cost scheduled airline; integrated tour operator  
 Approximate number of jetliners: 31  
 Key jetliners in fleet: Boeing 757-200, 767-300; Airbus A330-200, A300-600, A320, A321

Key jetliners on order: Boeing 787

The Monarch Group of companies includes scheduled, charter, engineering, technical, leasing and cargo operations. In its 40th year of existence, the company counts itself among the leading low-cost and charter airlines in the UK, flying six million people to around 100 destinations annually. In 2006, Monarch joined the 787 customer base with an order for six 787 jetliners.



**British Airways**

Type: Full-service airline, national flag carrier

Approximate number of jetliners\*: 235

Key jetliners in fleet: Boeing 747-400, 777-200

and -200ER, 767-300ER, 757-200, 737-300, -400 and -500; Airbus A319, A320, A321

Key jetliners on order: Boeing 787-8 and -9, 777-200ER; Airbus A380, A320

British Airways is UK's largest international scheduled airline and today serves more than 550 destinations. It's also the largest operator of Boeing 747s. In response to the recent agreement that liberalizes air travel between the United States and the European Union, British Airways just launched its new subsidiary OpenSkies. This carrier will use Boeing 757s configured to carry about 80 passengers to connect New York with cities on the European continent.



**Virgin Atlantic**

Type: Full-service airline

Approximate number of jetliners\*: 38

Key jetliners in fleet: Boeing 747-400; Airbus A340-600, A340-300

Key jetliners on order: Boeing 787-9

On June 22, 1984 Virgin Atlantic, owned by Sir Richard Branson, operated its inaugural scheduled air service between London Gatwick and Newark, N.J., using a single, leased Boeing 747-200. Today the carrier serves 30 destinations worldwide. In 2006 (the most recent figures available), Virgin carried 5.14 million passengers, up 14.7 percent from the previous year. In February, Virgin flew one of its Boeing 747 aircraft from London to Amsterdam with 20 percent of power for one engine being provided by a plant-based biofuel.

**April 16, 1988:** First flight of the T-45 Goshawk, a highly modified version of the BAE Hawk land-based training jet. Developed by McDonnell Douglas and British Aerospace, the T-45 is used by the U.S. Navy as an aircraft carrier-capable jet trainer.

**May 24, 1982:** British Airways operates its last flight using the Boeing 707, which has been in service with British Airways and BOAC, one of its predecessor carriers, for 22 years.

**Oct. 27, 1988:** Air United Kingdom becomes the first airline based outside the United States to operate the Boeing 737-400 airliner.

**Nov. 10, 2005:** The Boeing 777-200LR Worldliner jet lands at London's Heathrow Airport, breaking the record for the longest nonstop passenger airline flight, after a 12,500-mile trip from Hong Kong.

**May 23, 2001:** The Boeing C-17 Globemaster III is formally accepted into Royal Air Force service, with No. 99 Squadron.

**Sept. 28, 1998:** AgustaWestland, under license from Boeing, delivers the first of 67 UK Apaches.

**July 18, 2007:** A Boeing Chinook Exhibition is officially opened by Baroness Thatcher at the Royal Air Force Museum in Hendon.

**Nov. 9, 1978:** The AV-8B Harrier prototype for the U.S. Marine Corps makes its first flight. Based on the British-designed Hawker Siddeley P.1127 Kestrel/Harrier aircraft series, the AV-8B Harrier II was developed by a team representing McDonnell Douglas (now Boeing), British Aerospace (now BAE Systems) and Rolls-Royce.

**1980s**

**Sept. 14, 2004:** Boeing announces plans to invest £7 million (about \$14 million) to build a new Alteon training centre at London's Gatwick Airport. Alteon is a wholly owned subsidiary of Boeing.

**May 22, 2006:** Boeing formally commences work on the 34-year Through Life Contractor Support program for the Royal Air Force's fleet of Chinook helicopters.

**April 17, 2007:** Boeing officially opens its new defense Systems Engineering and Integration facility in Bristol.

**July 11, 2007:** Boeing and QinetiQ, a British defense and security research firm, open The Portal, a new decision-support capability center in Farnborough.

**1990s**

**Nov. 3, 1998:** British Airways takes delivery of its 50th Boeing 747-400.

**2000s**

**2010s**

**Feb. 24, 2008:** A Virgin Atlantic Boeing 747-400 conducts the world's first flight utilizing biofuel for power.




An overhead view of Boeing's facilities at the 2006 Farnborough International Airshow. Boeing will participate in this year's version of the biennial aerospace industry gathering.

FARNBOROUGH INTERNATIONAL AIRSHOW PHOTO

**Farnborough:**  
A key UK aerospace center

One hundred years ago, Samuel Cody, an American, made the first powered flight in the United Kingdom on board British Army Aeroplane No 1A. Cody's flight took place in the town of Farnborough—which has since become one of this nation's most important aerospace centers. Today, the town is known for the Farnborough International Airshow, one of the aerospace industry's biggest events. In 2008 the show, which takes place every other year, celebrates its 60th anniversary. Boeing will be at the event with a range of products on static display. ■





Among the Boeing aircraft serving the UK Ministry of Defence is the Apache helicopter.

# Unity in the UK

**Boeing's UK defense operations realign for growth and customer support**

BY MARIBETH BRUNO AND MADONNA WALSH

**A** special relationship—British Prime Minister Winston Churchill coined that term to describe his country's history of military and economic cooperation with the United States. He said the countries' close ties required not only "growing friendship and mutual understanding" but also "common study of potential dangers," similar weapons and joint use of military bases.

Since Churchill's time, the United States and United Kingdom have continued to maintain their "special relationship" as the world's No. 1 and No. 2 defense markets. Boeing has been active in the United Kingdom for just as long, from the country's purchase of North America's Harvard trainer aircraft in 1938 to this year's reorganization of Boeing's UK defense businesses under the umbrella of Boeing Defence UK. Boeing will formally introduce BDUK this month at the Farnborough International Airshow, which takes place in the United Kingdom—a nation where Integrated Defense Systems sees up to \$7 billion in business opportunities over the next decade.

"Boeing sees the United Kingdom as a source of highly skilled suppliers and partners as well as a valued customer," said BDUK Managing Director Mike Kurth. "Bringing together IDS businesses as part of a single UK entity positions us for growth by streamlining our infrastructure, building a cohesive, local strategy and demonstrating our continued commitment to UK stakeholders. BDUK is also the foundation of our response to the Ministry of Defence's Defence Industrial Strategy."

Boeing employees already have noticed how this streamlining is

making a difference. "[BDUK] has been very effective in opening up communication between the various IDS groups in the UK," said Roland Perez, who manages the U.S. T-45 Supplier Program under which BAE Systems manufactures about 80 percent of the T-45 trainer's bill of material. "It comes in handy knowing about other Boeing resources throughout the country."

The Defence Industrial Strategy (DIS), launched in 2005, calls for retaining certain industrial capabilities within the United Kingdom to protect national security, develop intellectual property, and create jobs across a wide range of skills. It asks suppliers to make commitments in areas including through-life support, systems engineering, and innovation/research and development, and to "create value, employment, technology or intellectual assets in the UK and thus become part of the UK defence industry." Lt. Gen. Andrew Figgures, Ministry of Defence Deputy Chief of Defence Staff (Equipment Capability), put it in even plainer terms: "To me, it means commitment. It means you are investing in our future."

That's just what BDUK is doing across the country, with a variety of products and services.

## FRES: A Foothold for Expansion

One of several milestones on the way to a single BDUK was the opening of a new facility in Bristol in April 2007 in support of IDS Combat Systems' contribution to the Future Rapid Effect System program. In October, the Ministry of Defence awarded Boeing and partner Thales UK the program's initial System-of-Systems Integrator contract. FRES will provide

the British Army with a family of medium-weight, network-enabled, air-deployable armored vehicles to meet up to 16 roles.

“Establishing a base, setting up a long-term partnership and developing intellectual property onshore were key factors in the FRES win,” said Jonathan Bailey, deputy director, BDUK Bristol.

Combat Systems UK Director Jim Freeman added that Boeing’s actions fall into an essential category of the Ministry of Defence’s evaluation: behavior. “We need to understand, act like and actually be a UK company that understands how the Ministry of Defence and industry do business, and bring the best of Boeing together for our customer,” he said.

“Successfully executing this program will position us to expand our capability in the UK and European defense markets,” Bailey concluded.

### THE PORTAL: A GLOBAL RESOURCE

The Portal, a Farnborough-based joint effort between Boeing and UK defense technology firm QinetiQ, officially reaches its first anniversary this month. But it was providing programs with modeling and simulation services for months before its opening ceremony. In fact, the Portal team directly contributed to the FRES contract win by using its simulation environments to help explore battlefield scenarios.

“The Portal is a central resource for all BDUK and IDS activities in the UK,” said Boeing Technical Fellow and Portal Facility Director Shane Arnott. “Any program can request support, from a simple presentation to a large experiment that links facilities across the UK, the United States and Australia.

“The DIS is very specific about the need for industry and the Ministry of Defence to engage earlier in the systems-development process,” Arnott continued, “and its companion document, the Defence Technology Strategy, makes dozens of references to the need for simulation and synthetic environments to aid decision making. The Portal is the answer to those calls from the customer.”

Arnott, who is Australian and set up a similar capability for Boeing Australia Limited, is pleased that when he moves to a new assignment in August, he will be succeeded by a “local”—Portal operations analyst John Winskill, a former British Army officer. “Another way we can build our presence here is by placing highly qualified UK citizens in leadership positions,” Arnott said.

### SUPPORT—AND IMPROVEMENT

BDUK’s activities in the United Kingdom involve not just product development but also support for existing assets.

- IDS Support Systems Integrated Logistics, partnering with major subcontractor Vector Aerospace (formerly the Defence Aviation and Repair Agency), has committed to keeping 27 of the 40 UK Chinooks available to the front lines at all times. Just two years into the 34-year Chinook Through Life Customer Support program, the team is exceeding performance indicators for both availability and mission capability.

Program Director James O’Loughlin credits widespread sharing of best practices in Lean and Employee Involvement with the program’s cycle-time reductions. “We work with our customer, with Vector and with the Boeing Rotorcraft team in Philadelphia to make improvements that will return Chinooks to service as quickly as possible, while reducing overall maintenance costs,” O’Loughlin said.

- Boeing delivered the Royal Air Force’s sixth C-17 Globemaster III on June 11. The new airlifter was a welcome addition to a hardworking fleet that supplies the “air bridge” to Afghanistan and Iraq. Since the first

RAF C-17’s operational debut in 2001, the aircraft have been used at about 120 percent of their originally planned flight hours per year.

Supporting that punishing schedule is the job of the C-17 Globemaster Sustainment Partnership (GSP)—a contract between Boeing and the U.S. Air Force that the United Kingdom takes part in through a Foreign Military Sales agreement. Boeing field service representatives work on-site at RAF base Brize Norton.

“Our engineers’ postproduction product review authority means repairs can take place right on-site, which saves time and keeps C-17s in the air,” said Boeing C-17 Field Services Manager Trevor Kirby.

- The Boeing team in Yeovil, England, and Mesa, Ariz.—working as a contractor to Britain’s AgustaWestland—provides a full range of support services for the British Army’s fleet of 67 Apache helicopters. British Army Air Corps Apaches are forward-deployed from Wattisham Air Field in the UK in support of NATO-led operations in Afghanistan. Aviation Training International Limited, a joint venture between Boeing and AgustaWestland, provides crew training services.

“The Boeing technical staff and management team are located in the same building as



Through the Chinook Through Life Customer Support program, Boeing is maintaining the United Kingdom’s fleet of Chinook helicopters. NICK WEST PHOTO

the Ministry of Defence, AgustaWestland and other industry-alliance partners,” said Technical Support Services and Yeovil Site Manager Don Brubaker. “So the lines of communication are excellent—we understand our customers’ needs, and they see us as listening and responding appropriately.”

Program Manager and Capture Team Leader John Wilson said his team is working on a Future Support Arrangement that will transition the program into a long-term, Performance Based Logistics solution similar to Chinook TLCs. “We’re also working closely with BDUK and others to share lessons learned and exploit economies of scale,” Wilson added.

- The BDUK support team for the RAF’s fleet

of seven E-3D Airborne Warning and Control System (AWACS) surveillance/command-and-control aircraft also is located close to its customer, on base at RAF Waddington. Boeing completed the seven deliveries in 1992, but its support began with predelivery preparations and continues today with postdesign services. The team has completed an upgrade of the fleet’s radar capability and installation of the Global Positioning System/Inertial Navigation System.

The Ministry of Defence continues to review potential enhancements to maintain interoperability with AWACS fleets in the United States, NATO, France and Saudi Arabia. BDUK stands ready to provide whatever support

is required. “Clearly, we’re in it for the long haul,” said Boeing Field Support Manager Brad White.

BDUK’s efforts such as the ones listed above are already attracting notice, said Air Vice-Marshal Stuart Butler, Capability Manager (Information Superiority). “You’ve now got an increased presence in the country and you’re very much becoming part of the UK infrastructure,” he said. “We’re delighted to see that particular buildup is increasing.

“We’re in this game to win,” Butler added, “and we can only do that by working together.” ■

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The Portal, a joint effort between Boeing and QinetiQ, is a high-tech decision-support facility that provides modeling and simulation services.

## The same language: *Creating BDUK*

The task was clear: Bring together the dispersed operations and employees working on Integrated Defense Systems projects in the United Kingdom to present a single Boeing Defence United Kingdom face to stakeholders. As it happened, this transformation is occurring at a time when Shared Services Group, Information Technology, Human Resources and Finance are working to enhance their international operations.

The administrative transition is progressing on schedule, with all affected operations and employees expected to move officially into the new organization early this month. IDS’ nearly 170 UK-based employees stay informed via a new intranet site and a monthly all-hands teleconference and webcast.

“We want to be sure that when we align everyone into Boeing Defence UK there are no disruptions to the level of service employees receive and expect,” said BDUK Managing Director Mike Kurth. “The alignment also simplifies compliance and other legal concerns—reducing the number of audits, for example. We’re working closely with the SSG team to streamline the infrastructure services that support our operations.”

“SSG’s goal is to help BDUK run its business without having to worry about the infrastructure,” said Russell Geen, business manager of the Boeing St. James London office, where BDUK is headquartered. “Our efforts are aligned to support the Internal Services Productivity initiative. Everything we do is intended to create a more effective operation.”

# Across the *pond*

Who's working for Boeing Defence UK? Here are a couple of the many teammates.



**Marie Perry** Systems engineer, Future Rapid Effect System (FRES), Bristol, England

**What I do:** Currently, I'm looking at Interfacing Programs and Systems (IP&S) for FRES. FRES is a System of Systems program, and as such we are trying to achieve effective integration across multiple dimensions. Just part of this is achieved by looking at IP&S.

**What I hope will come of the creation of BDUK:** I hope it will become a stepping-stone for Boeing to grow as a business in Europe. We have the potential to become a several hundred- or thousand-person organization of UK personnel, able to operate independently and to reach back into the rest of Boeing for assistance when needed.

**What I like about working for Boeing in the UK:** It's an exciting place to work and we have a strong feeling of camaraderie. Having the chance to shape something new is a great opportunity and outweighs any initial "growing pains." Having support from Boeing in the United States also provides us with opportunities to develop our careers.



**Stu Duncan** Site manager, UK Chinook Through Life Customer Support program, Perth, Scotland

**What I do:** I'm responsible for oversight and provision of Boeing Technical Services and Support to facilitate the overhaul and repair of the Royal Air Force CH-47 Chinook helicopter's major and flight-critical components. We have an extremely close relationship with our RAF customer.

**What I hope will come of the creation of BDUK:** For the first time, we are recognized as "one Boeing" rather than a series of satellite program offices. Our ability to capitalize on lessons learned and move forward together will lay solid foundations on which we can build even stronger bonds with our customer base.

**What I like about working for Boeing in the UK:** It's great to be part of an organization that values its people and continually pushes the boundaries of the possible. We're able to draw on the expertise of the entire Boeing community in the development of agile, proactive support solutions.

## *Industrial Participation:* Why it matters

Industrial Participation (IP) is an essential element of many of Boeing's proposals for contracts outside the United States, whether it's contractually required or—as in the case of the United Kingdom—strongly encouraged by the customer country. Boeing's IP agreements include placement of direct work, orders for supplies, opportunities to bid on supply contracts, transfer of technology, or other forms of assistance to the customer country. In some cases, commitments are satisfied with help from Boeing's current vendors. Since Boeing does not formally commit to IP agreements unless a contract for sale of its products or services is signed, offering a substantive IP proposal increases Boeing's chances of winning international competitions. To be considered as a beneficiary, the potential supplier must have sufficient capability and capacity and be competitive in cost, quality and schedule.

Some of Boeing's U.S. employees are concerned about the company's placement of work outside the United States. Integrated Defense Systems President and CEO Jim Albaugh said that while he understands their

concerns, "many countries require [IP]. It's a fact of life. ... I think another way to look at it is, if we didn't satisfy those requirements it would generate no additional work in the United States. Winning programs that have offset requirements creates jobs not only in the customer country but also for the rest of Boeing and our suppliers."

Brian Moran, IDS lead for UK Industrial Participation, said IP increases Boeing's access to goods, services and intellectual property while strengthening alliances with key stakeholders—all of which positions the company for growth. "The UK government via its Defence Industrial Strategy acts in support of onshore technology creation and aerospace employment, and IP is one of the ways in which Boeing demonstrates strong awareness of and compliance with this policy," said Moran. "The advocacy we receive from our UK customers, the world-class supply of UK products and services, and the country's high level of technical innovation make our products more capable, desirable and competitive worldwide."