# BRITISH AEROSPACE

**BRITISH AEROSPACE** *100 Pall Mall London England Telephone: 01 930 1020*


British airways
Philippine Airlines
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# BRITISH AEROSPACE

*the new name which unites in one powerful enterprise*

***British Aircraft Corporation***
***Hawker Siddeley Aviation***
***Hawker Siddeley Dynamics***
***Scottish Aviation***

British Aerospace inherits from its four founder companies a breadth and depth of skills and technology unsurpassed by any other single company in the world. British engineers have consistently, through the history of aviation, built fine aeroplanes. Their achievements have furthered the state of the art for sixty-eight years. Today's teams are of no less a stature, and their products support that claim.

In the course of their history, the factories of British Aerospace have produced over 224,000 aircraft, and among their achievements since World War 2 alone are:

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*the world's first* ***turboprop airliner*** – *Vickers Viscount (1948)*

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*the world's first* ***jetliner*** – *de Havilland Comet (1949)*

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*the world's first* ***fixed-wing V/STOL fighter*** – *Hawker Harrier (1961)*

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*the world's first* ***airliner to make auto-landings in passenger service*** – *Trident (1965)*

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*the world's first* ***supersonic airliner to enter passenger service*** – *Concorde (1976)*

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*the world's first* ***airliner digital air-intake control system*** – *Concorde (1976)*

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***BRITISH AEROSPACE*** *. . . a world leader, second to none*

## *A message from the Chairman of*

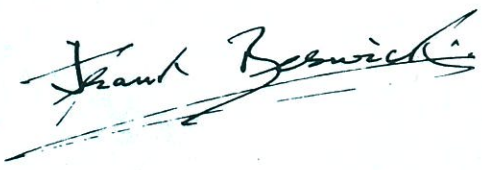
## BRITISH AEROSPACE

British Aerospace looks forward to the future. Our industry will serve the inevitable expansion of transport and communications of the world. In one form or another, our products are an integral part of national and international defence systems.

The organisation which I am privileged to lead brings together people and facilities of proven worth in this field of high technology. We spell out here some of our past and present achievements, but only to emphasise our capacity to secure a successful future.

We intend to play a full part in the future development of world aerospace, in certain projects on our own and in others in association with European or wider partnerships. Our experience in collaborative projects is second to none.

Our aim will be to excel in serving the customers of the industry world-wide and, in serving them, to afford fulfilment to all who work for British Aerospace.



# *Introduction*

British Aerospace is the name now given to a merger of the aircraft, space and guided weapon interests of the Hawker Siddeley Group with those of British Aircraft Corporation and Scottish Aviation.

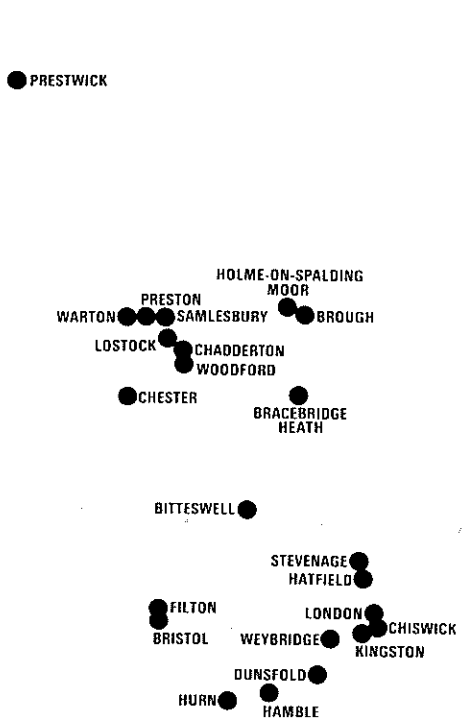
Together, British Aircraft Corporation, Hawker Siddeley Aviation, Hawker Siddeley Dynamics and Scottish Aviation form one of the most powerful Aerospace capabilities in the world, with a breadth of expertise which is unsurpassed by any other single company.

British Aerospace bears the national name because it is a great national enterprise. It is backed by the national resources of a country whose pioneering achievements in modern high technology are second to none. But British Aerospace is also an enterprise with wide experience in international collaborative programmes. It believes in the potential of international partnership.

British Aerospace brings together and gives added strength to the designers and engineers whose current credentials include the Concorde, Harrier, Tornado, HS.125, BAC One-Eleven, Jaguar, Hawk, Bulldog, and guided weapons such as Rapier, Seawolf, Sky Flash, Swingfire, Martel, SRAAM, and Sea Dart. It also has the most experienced satellite engineers in Europe and the finest industrial Space facilities outside the USA and Russia.

The great range of total expertise in British Aerospace is shown by its present products, which include the only supersonic airliner in passenger service, the first V/STOL "jump jet" military aircraft in service, the Western World's only fully operational specialised low-level surface-to-air missile system, and the Western World's only shipborne anti-missile point defence system.

British Aerospace also builds two major internationally operated subsonic jetliners, two turboprop transports, an executive jet, the far-ranging




Nimrod, and a whole family of trainers from the famous little Bulldog to the Jet Provost and Strikemaster and the new jet Hawk. Its major combat aircraft – Harrier, Tornado, Jaguar – are also the major military aircraft of Europe and NATO, while its guided weapons cover all the fields of anti-aircraft, air-to-air, ship-to-air, ship-to-missile, air-to-ground, anti-tank, and ship-to-ship. The Skylark sounding rockets are now nearing their 400th launch, and British Aerospace has constructed more Space hardware than anyone else in Europe.

In addition to all this, British Aerospace is also a recognised leader in the precision products field and has Europe's most sophisticated inertial gyro facility. It is a leader, too, in microwave plastics, avionics, radomes, automatic test equipment, air-conditioning equipment, computers, marine engineering and many other science-based activities, including manufacture of the latest undersea explorers.

### Defence Support Services

British Aerospace holds some of the largest contracts ever awarded for Defence Support Services. Already it has over 2,000 personnel in Saudi Arabia and Oman, engaged in almost every aspect of training and infrastructure and support for Defence Services of great strength and modernity.

### International Collaboration

British Aerospace can justly claim to have unrivalled experience of major collaborative projects. It is the British partner in Concorde, Jaguar and the Tornado multi-role combat aircraft; it is responsible for the design and build of the wings for the European Airbus and is also in active collaboration with Romania on the BAC One-Eleven, with France on Martel, and with Iran on Tracked Rapier. It has a significant number of guided weapons and Space agreements with the major countries of Europe and has worked, and is still working, extensively with leading manufacturers in the USA. It is also leading Europe in its most ambitious collaborative satellite projects, OTS and MAROTS. Its current activities also include a wide range of major aircraft refurbishing and modification programmes and sub-contract manufacture of components and sub-assemblies for many international companies.

There is hardly a country in the world today which does not use, or is not served by, products of the factories of British Aerospace.

### Economic Strength

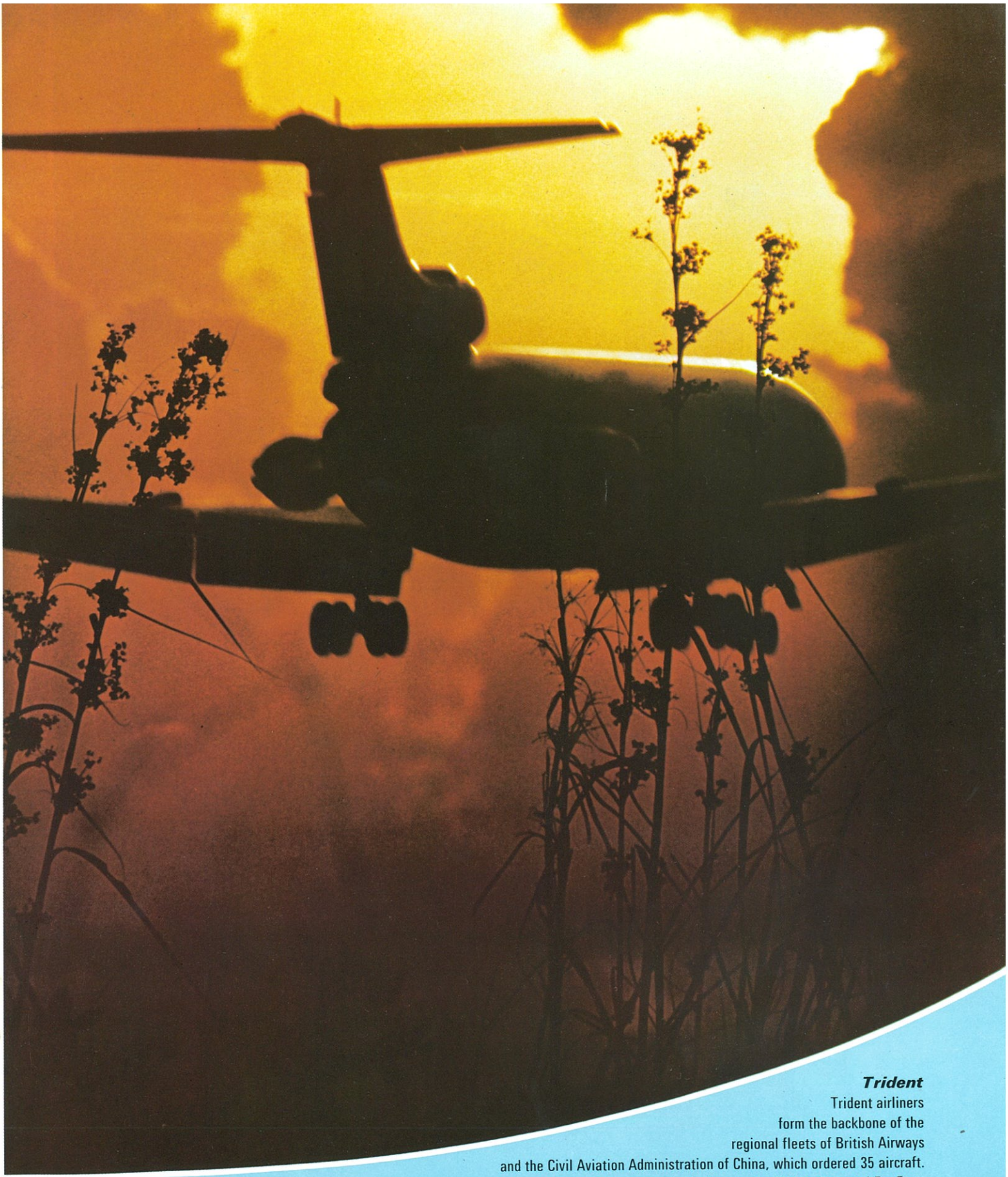
British Aerospace is a well-found combination of established strengths. It has a current turnover of £800 million a year and its forward order book stands at £1,500 million, of which 70 per cent is for export. It operates at 25 sites and employs over 65,000 people.

British Aerospace will work as a unified national enterprise, controlled by a Board whose Chairman, Lord Beswick, is a former Royal Air Force and commercial pilot, with a long record of public involvement, including major government ministerial appointments, in British aviation. With him on the Board are leaders of the former companies and others who have distinguished records in industrial management and trades union activity. Working with them in the two groups being established (Aircraft Group and Dynamics Group) will be colleagues who have spent their lives in the industry.

The following pages illustrate much of the range and accomplishment of the new corporation's products and the pioneering tradition which it has inherited and which it maintains.


***Concorde***

Concorde made history as
the first airliner to begin commercial supersonic passenger services
when it entered operation with British Airways and Air France in January 1976.
The supersonic airliner has been designed and built jointly with Aérospatiale of France
under the most ambitious civil aircraft collaboration programme ever undertaken.
Cruising at twice the speed of sound, Concorde has halved journey-times between Europe
and North and South America. At the same time, it has set remarkable standards of
consistent regularity and reliability in airline service.



***Trident***

Trident airliners
form the backbone of the
regional fleets of British Airways
and the Civil Aviation Administration of China, which ordered 35 aircraft.
Some 80 Tridents are in service in Europe, the Middle East and Far East.
Continuously developed since its first flight in 1962, the Trident was the
first airliner in the world to be certificated for automatic landing
in passenger-carrying operations and is now cleared for the
lowest operating minima permitted for any airliner in service.


***BAC One-Eleven 475***

The outstanding short-field performance of this 89-seat jetliner has enabled it to bring jet services to remote areas of the world for the first time.

***BAC One-Eleven 500***

This 99/119-seat "mainline" version of the One-Eleven has helped to swell sales to 222 aircraft, valued at £382m. One-Elevens today fly with over 60 operators to destinations in more than 60 countries.


***HS748***
Over 300 of these turboprop aircraft have been ordered by more than 60 operators throughout the world. The HS748 is also being built under licence in India.


***A300B Airbus***
In this multi-national venture, British Aerospace has responsibility for wing design and production and also acts as design consultant on the overall aircraft. Nine airlines have placed orders or options for 57 aircraft.



***HS125***
Over 350 of these successful executive jets have been sold in 26 countries, including 200 to North America. Development continues, the latest production variant being the Series 700.

***Jetstream***
Thirty of these turboprop-powered light transports are in service with feeder-line and corporate operators in the USA, France, Zaire and the UK.


***Bullfinch***
This attractive four-seater is a civil development, with retractable undercarriage, of the successful Bulldog 120 military trainer and is aimed at the touring and sports flying market.

***Tornado***

The Tornado multi-role combat aircraft is Europe's largest-ever military aircraft programme. A total of 809 aircraft is being built for the British, German and Italian air forces and German navy by Panavia, the tri-national company set up jointly with MBB of Germany and Aeritalia of Italy.

***Tornado ADV***

The Air Defence Variant of this Mach 2 swing-wing aircraft, being especially developed for the RAF.

***Harrier***

Harrier, the world's first fixed-wing V/STOL fighter, is in service with the RAF, US Marine Corps, and Spanish Navy. An advanced version, the AV8B, is being developed in the USA, to meet a Marine Corps requirement for some 350 aircraft.

***Sea Harrier***

The Sea Harrier has been developed primarily for use on anti-submarine cruisers and is in production for the Royal Navy.

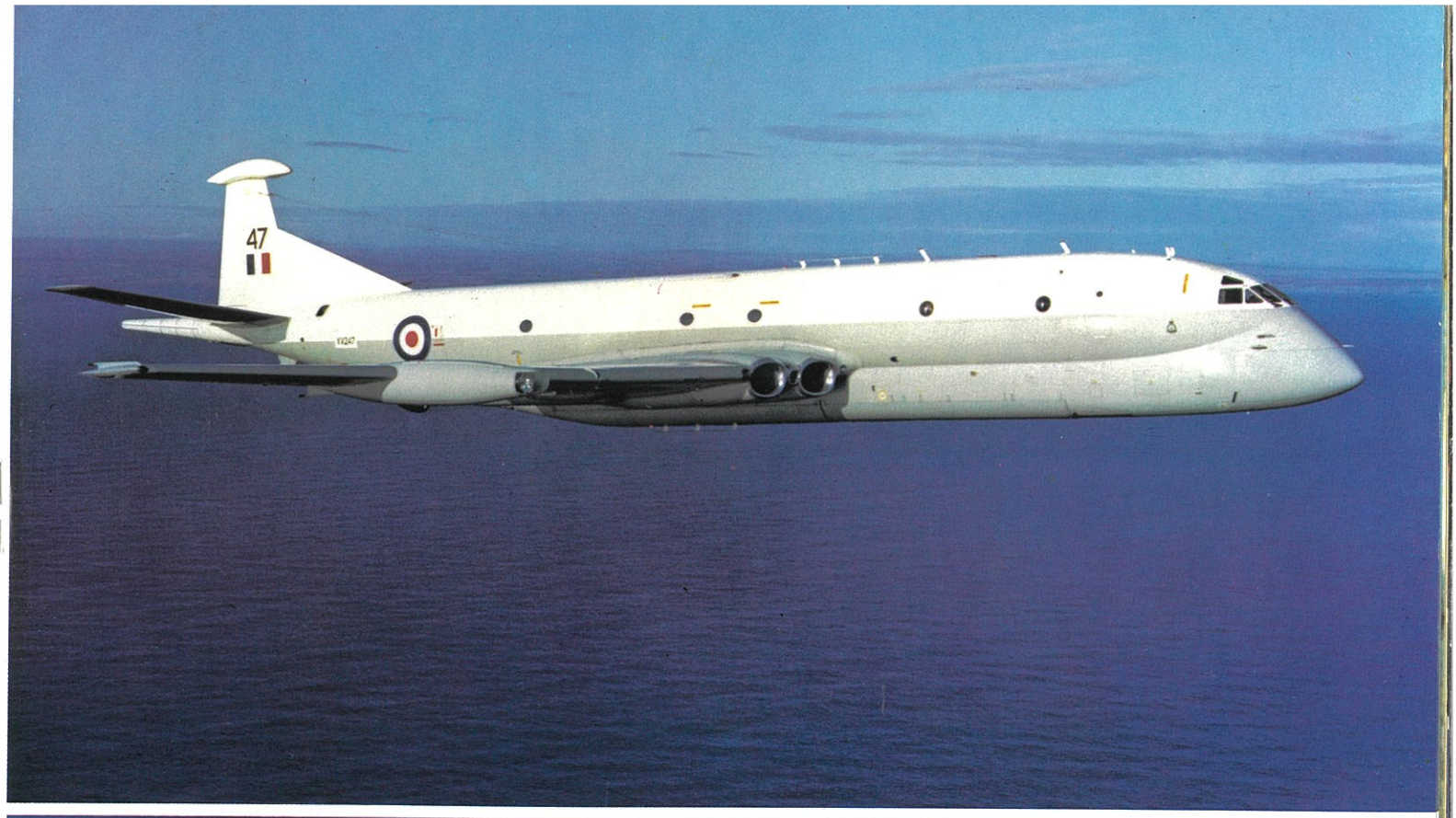
***Jaguar***

Designed and manufactured with Dassault-Breguet of France, Jaguar is in service with the RAF in the UK and Germany and l'Armée de l'Air in France. Jointly, the two air forces are taking delivery of 400 of these supersonic tactical strike fighters.

***Jaguar International***

This export version of the aircraft has up-rated engines giving 40 per cent more thrust in combat conditions. Overseas orders worth over £80m have been won.


***Hawk***
The Hawk is the RAF's new-generation jet trainer which will eventually replace the Gnat and Hunter. Initial deliveries of 175 aircraft began in October 1976. As a ground attack/trainer aircraft, the export version – as selected by Finland – will carry up to 5,600lb of stores and have a radius of action in excess of 200 miles.

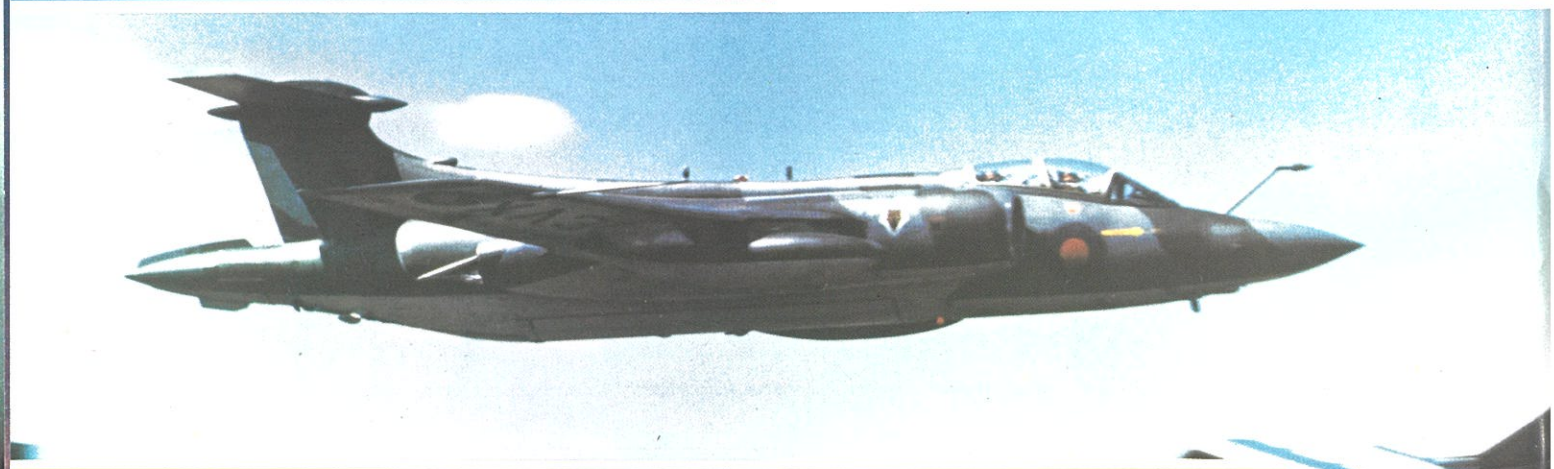



***Nimrod***

The world's first 4-jet long-range maritime reconnaissance and patrol aircraft, Nimrod carries the most up-to-date avionics and can fly to search areas at high speed, then descend to low altitude for long patrols at low speed.

***AEW Nimrod***

For service with the RAF, Britain's new Airborne Early Warning aircraft combines a new radar system by Marconi-Elliott Avionics with the long range and endurance of the RAF's Nimrod aircraft.

***Strikemaster*** *(Top)*
Strikemaster's low-cost multi-role capability, combining pilot and weapons training with strike and reconnaissance, has so far won 145 orders from nine air forces.

***Coastguarder*** *(Left)*
The latest variant of the HS748 turboprop, Coastguarder has been developed specifically for search/rescue and maritime surveillance duties.

***HS748*** *(Right)*
Military Transport is in service with 15 military operators.

***Buccaneer*** *(Bottom)*
the first aircraft structurally designed for high-speed, low-level strike and reconnaissance, is in service with the RAF, Royal Navy and South African Air Force.

***Bulldog 120*** *(Top)* basic trainer has won nearly 300 orders from eight countries. Under development is the 4-seat Bulldog 200.

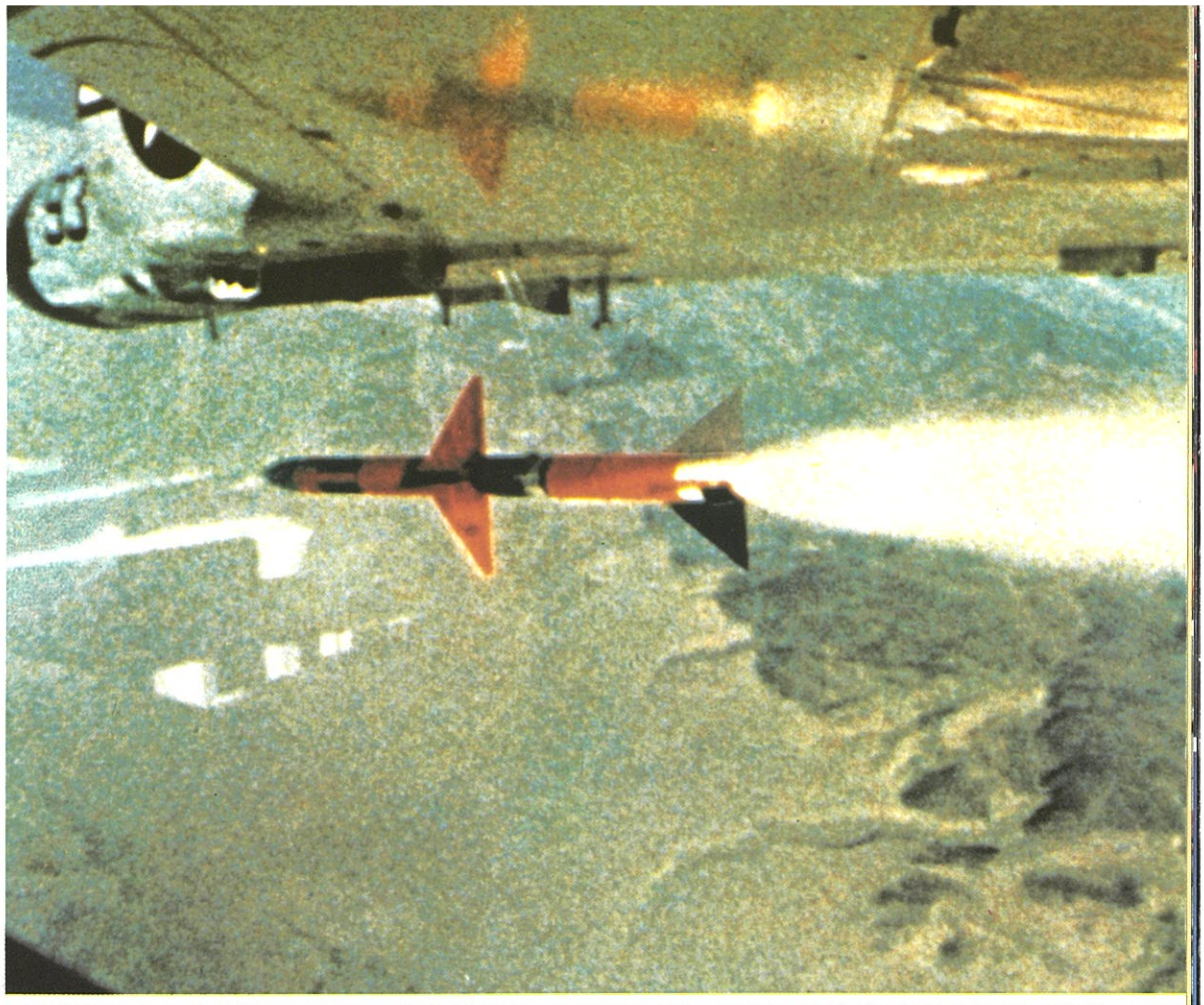
***Hunter*** *(Left)* continues to be a steady export earner, with aircraft still being refurbished for overseas sale.

***Canberra*** *(Right)* is also still adding to foreign earnings, which now exceed £130m. Over 100 have been refurbished, many for export.

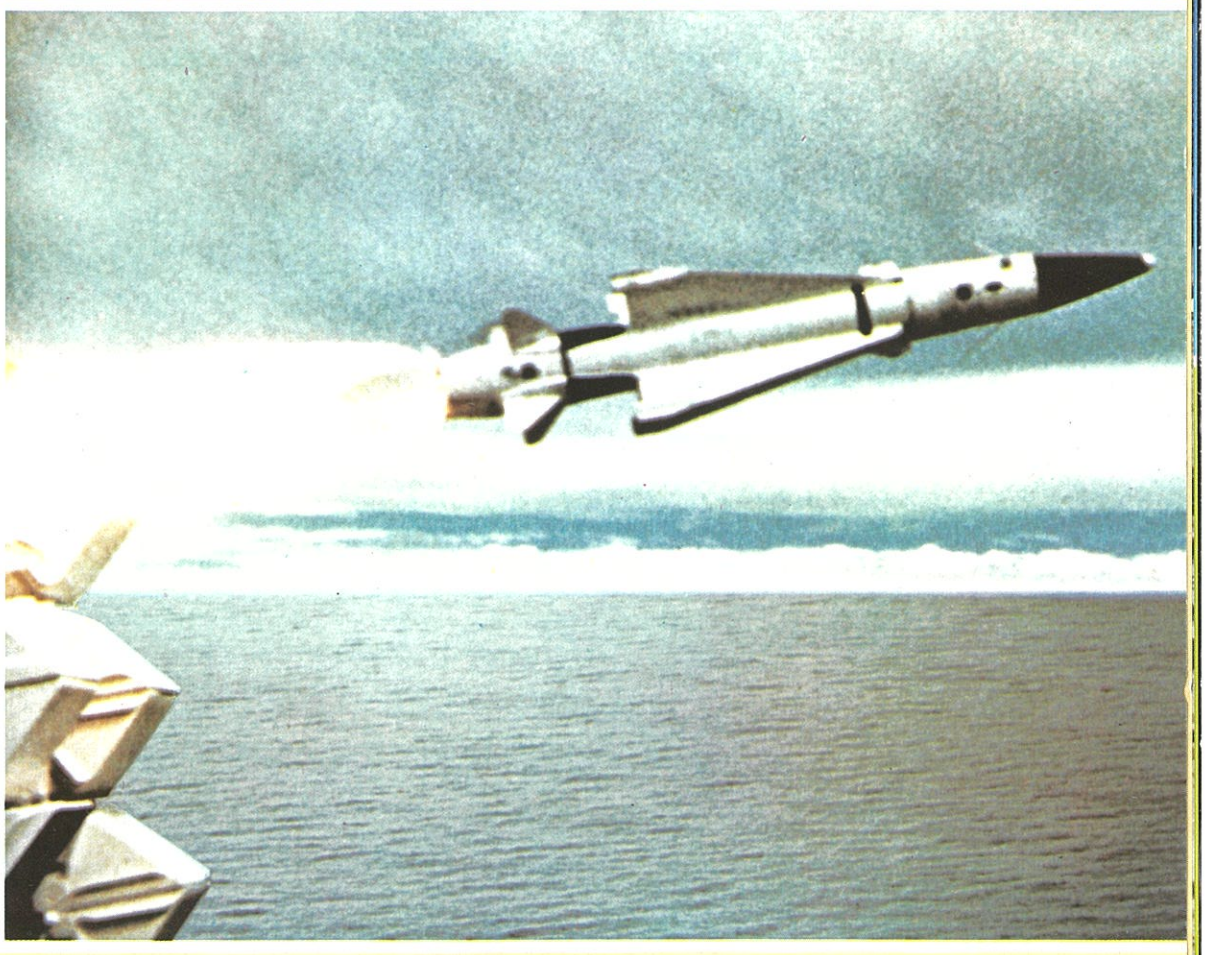
***Jetstream*** *(Bottom)* is a military aircrew trainer and transport, with 26 now delivered to the RAF and Royal Navy.

***Rapier***
is the Western World's first combat-ready specialised low-level missile defence system. It has earned over £600m in exports and is operational with the British Army and RAF Regt. in the UK and Germany, in Iran and elsewhere in the Middle East, and in Africa. It has also been ordered by Australia.

***Tracked Rapier***
is a variant of the successful Rapier system which has been developed and is being produced in close collaboration with Iran under a £400m contract. Based on an amphibious, tracked cargo carrier, it can move with armoured formations in the battle area.

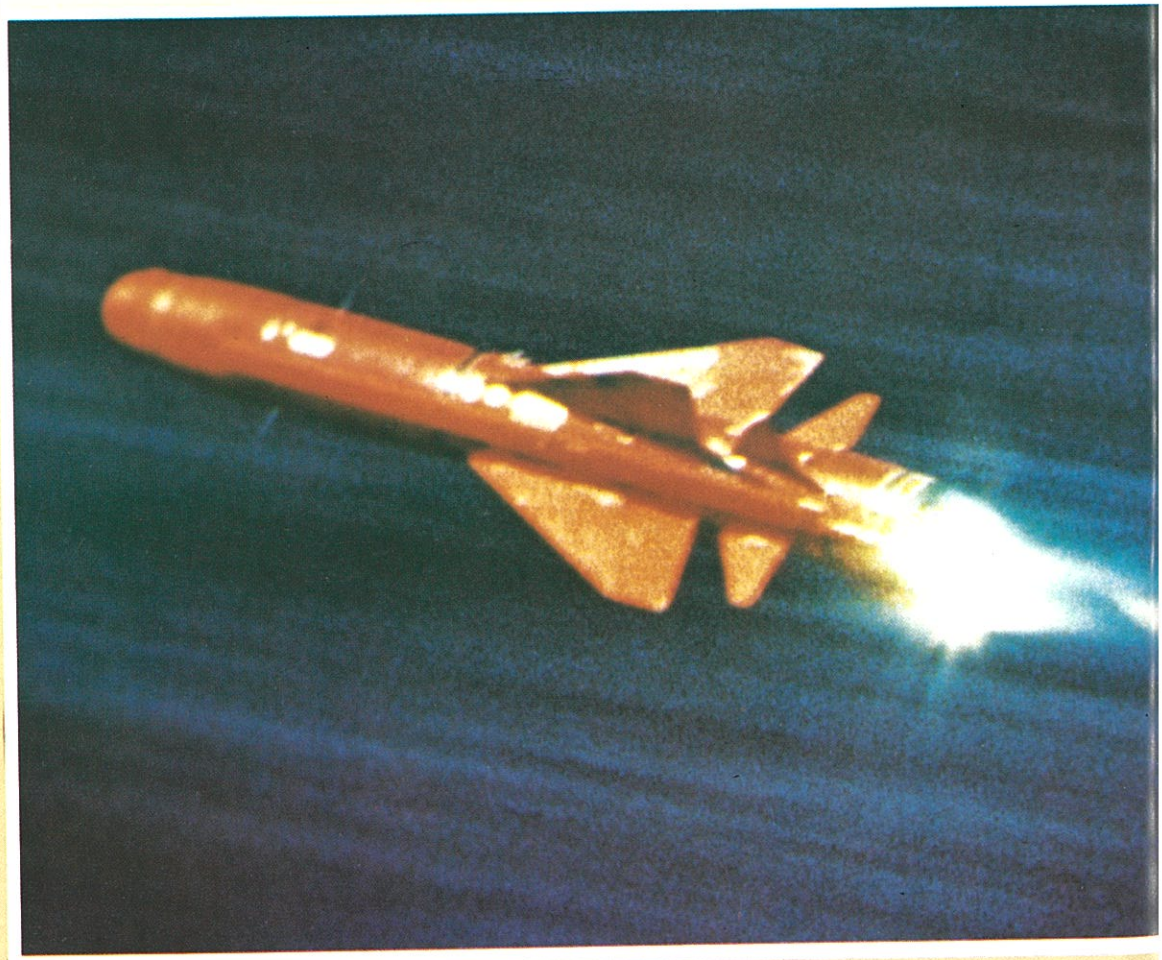


***Sky Flash***
This new British medium-range, radar-guided, all-weather, air-to-air missile – based on the Raytheon Sparrow missile – is in production for the RAF. British Aerospace is also giving technical assistance for integration of the missile with the Royal Swedish Air Force's Viggen aircraft.



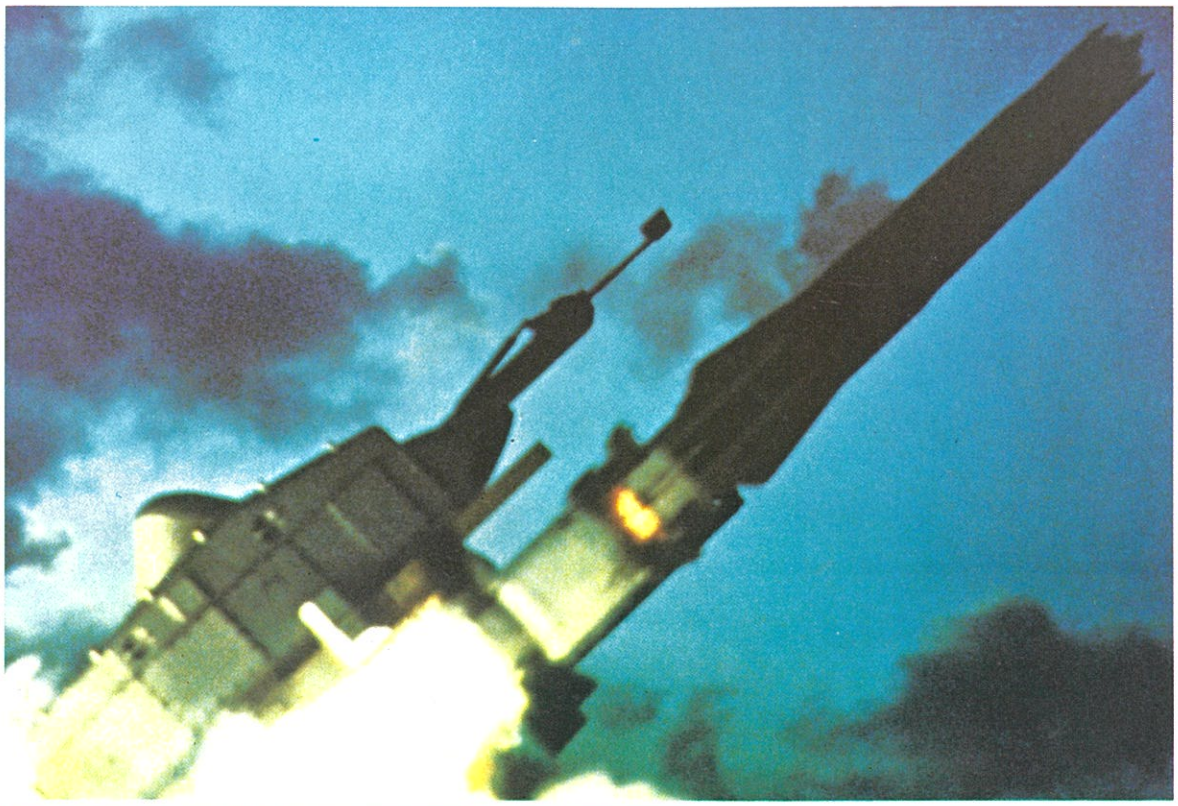
***Seawolf***
Seawolf is the first shipborne point defence system with proven anti-missile as well as anti-aircraft capability. Small supersonic anti-ship missiles have been intercepted and destroyed in firing trials, and successful sea trials have cleared the way for entry into Royal Navy service in the late 1970s.

***Sea Skua***
This is the first helicopter-launched anti-ship missile developed to defend warships against threat of attack by missile-carrying fast patrol craft. Already at an advanced stage of development, it will be widely used on the Royal Navy's Lynx helicopters from the early 1980s onwards.



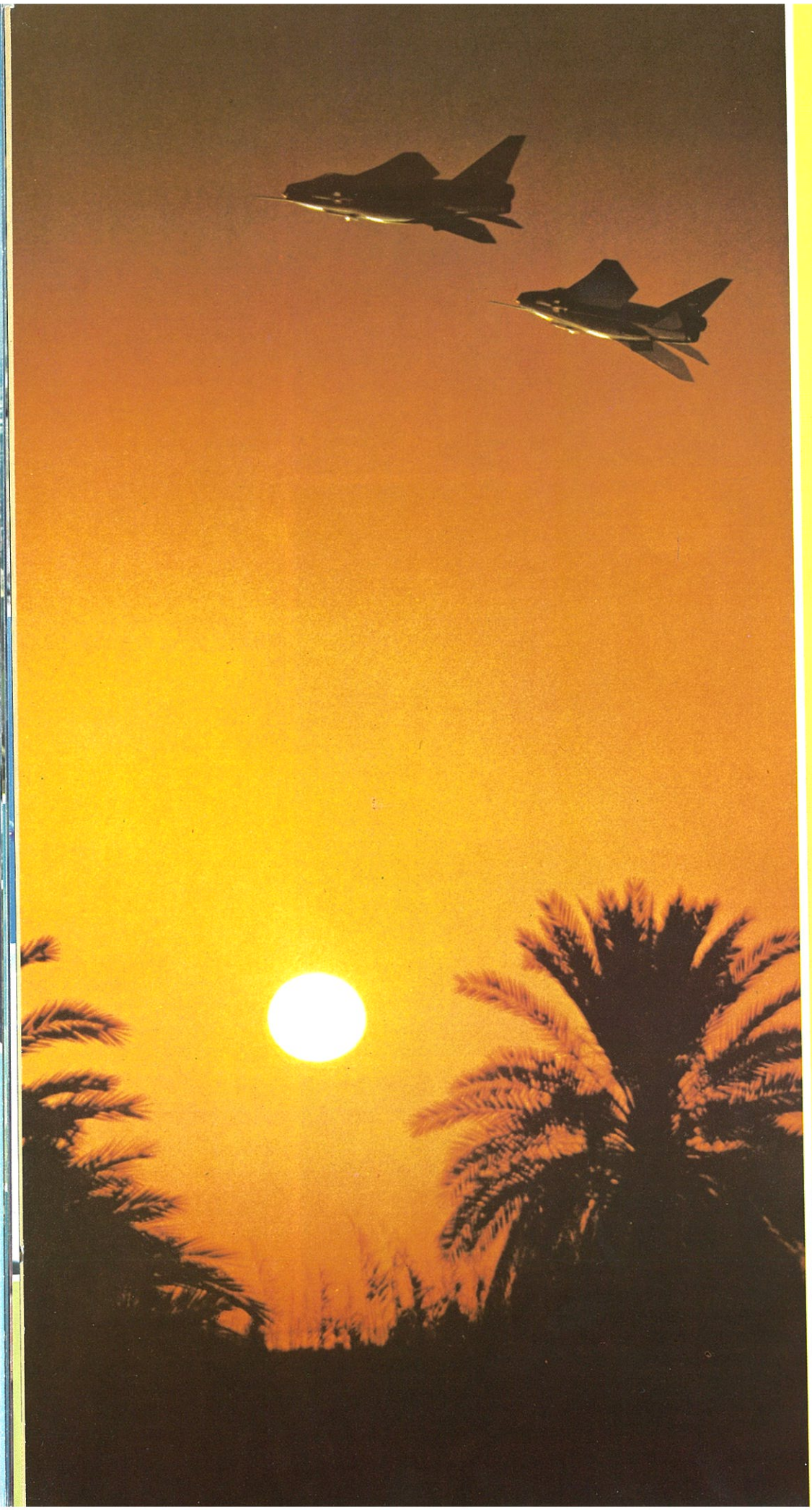
***Martel***
This air-to-surface precision tactical strike missile, developed jointly with Matra of France, is in service with the British and French armed forces. TV-guided and anti-radar versions are available, and a sea-skimming anti-ship version is under study.

***Swingfire***
This anti-tank missile system – in service with the British and Belgian Armies and ordered by Egypt – has set new standards of range, lethality and battlefield survivability. Vehicle-mounted, infantry-portable and helicopter-borne versions have been developed.



***Land/Sea Dart***
The world's most advanced area defence anti-aircraft system, the Dart is equally suitable for use on land or in ships. It also has anti-missile and surface-to-surface capability.

***SRAAM***
Designed specifically for use in close combat, this Short-Range Air-to-Air Missile can be fitted to most modern fighters with little modification. Test firings have been carried out under a technology demonstration programme.



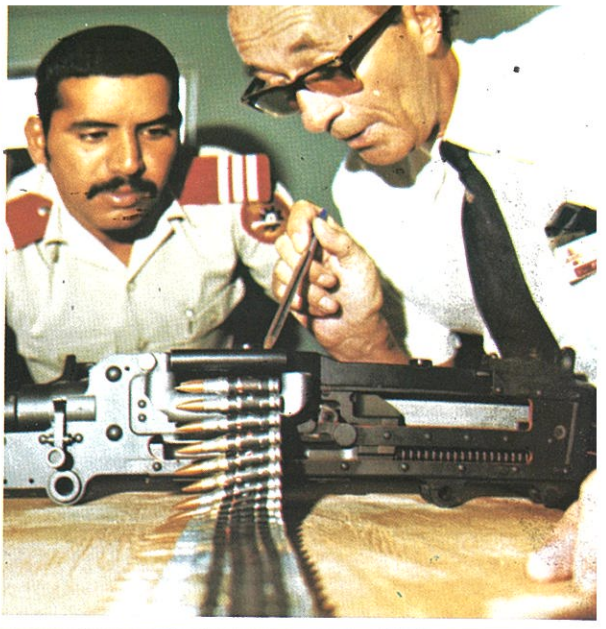
***Defence Support Services***

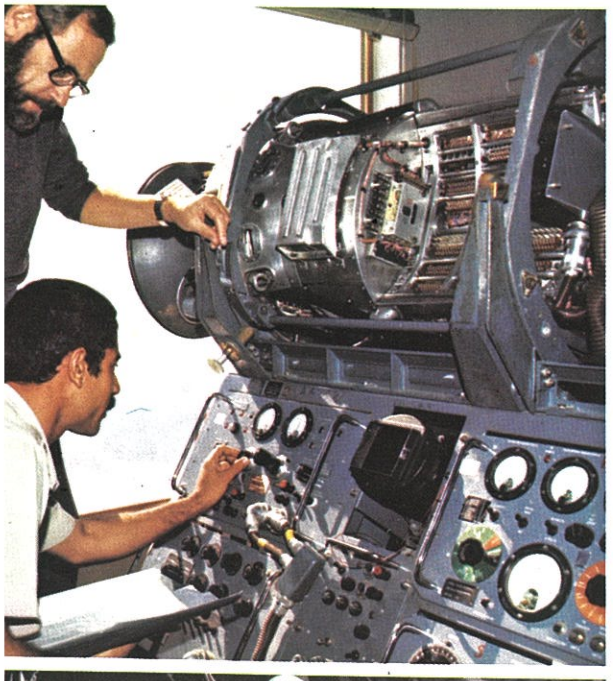
The provision of comprehensive Defence Support Services to overseas nations has become a very important facet of British Aerospace's business and, in the years ahead, promises to make even more substantial contributions to Britain's export earnings.

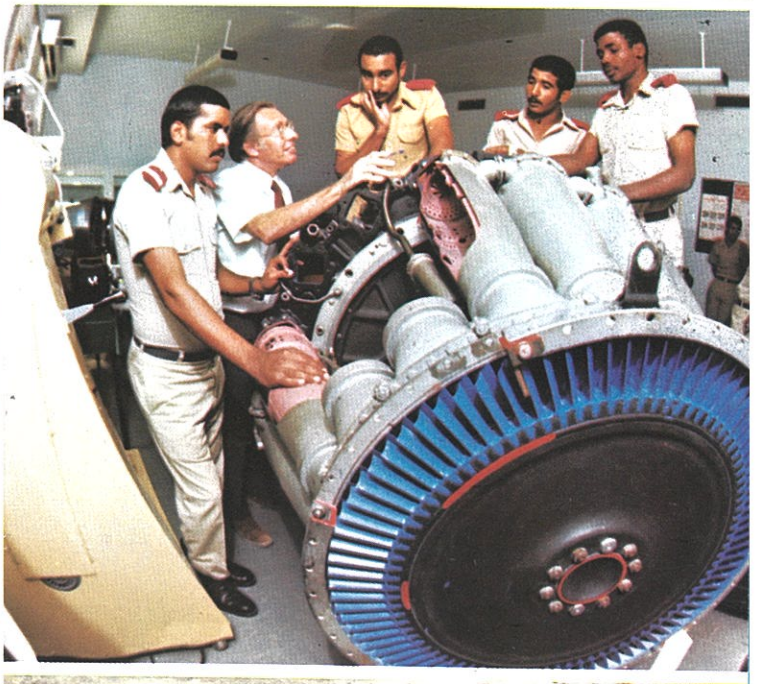
Valued at many hundreds of millions of pounds, the contracts cover not only the supply of aircraft, missiles and other equipment but also extensive programmes of flying and ground training, civil engineering and construction, maintenance and repair, logistics and all the intricate infrastructure of support services needed to establish and maintain a modern air defence system.

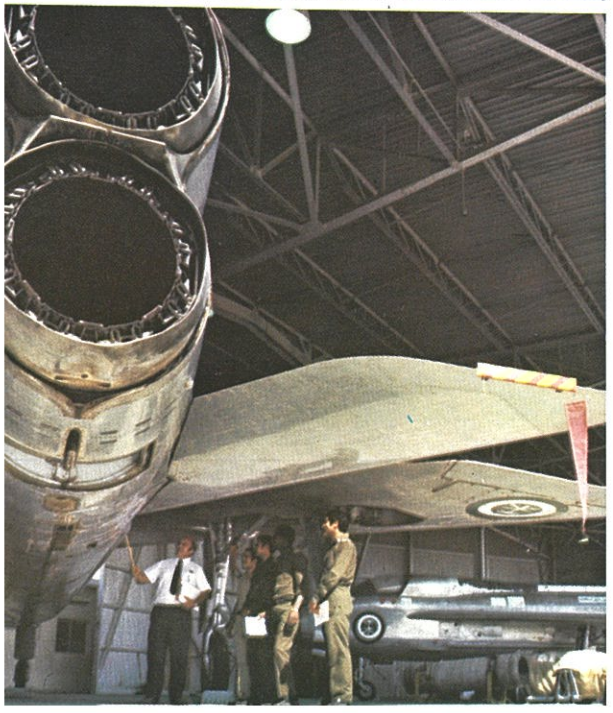
Today, for example, British Aerospace has over 2,000 UK personnel in Saudi Arabia and Oman.

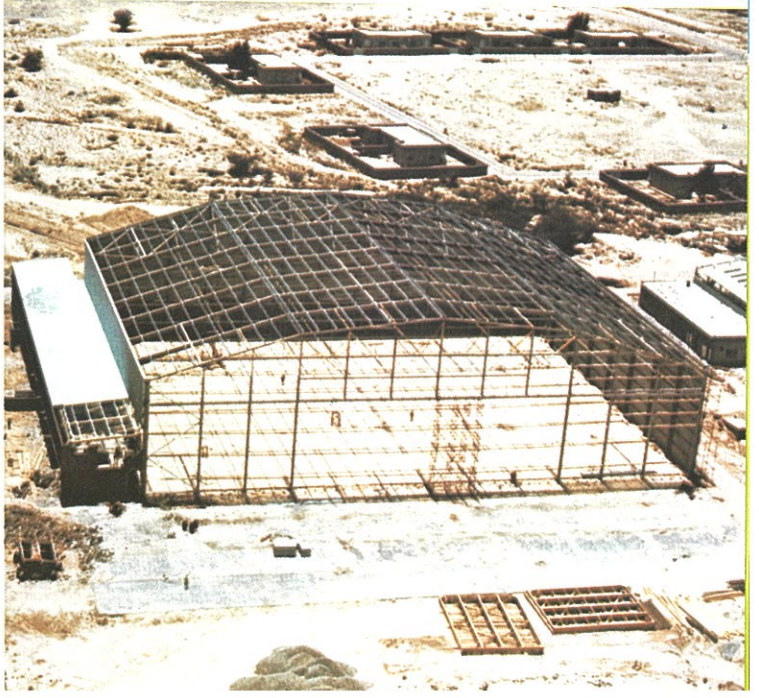
Many areas of British industry outside British Aerospace itself benefit from these contracts: for instance, the Saudi Arabian defence contract – now valued at well over £300 million – involves the co-ordination by the support department at Warton Aerodrome, Lancashire, of the purchase and delivery of products from some 700 suppliers in the UK.

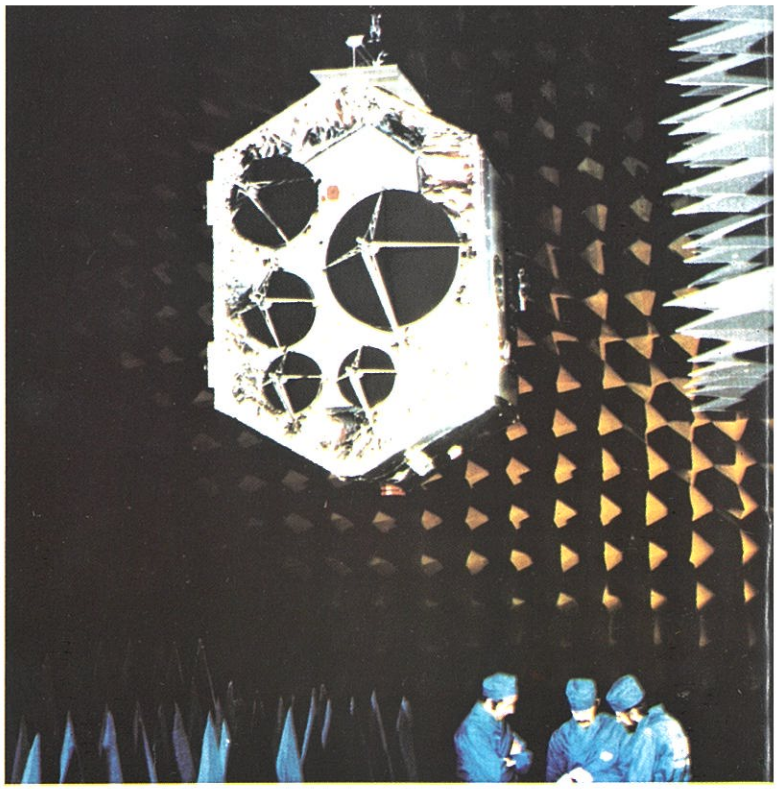


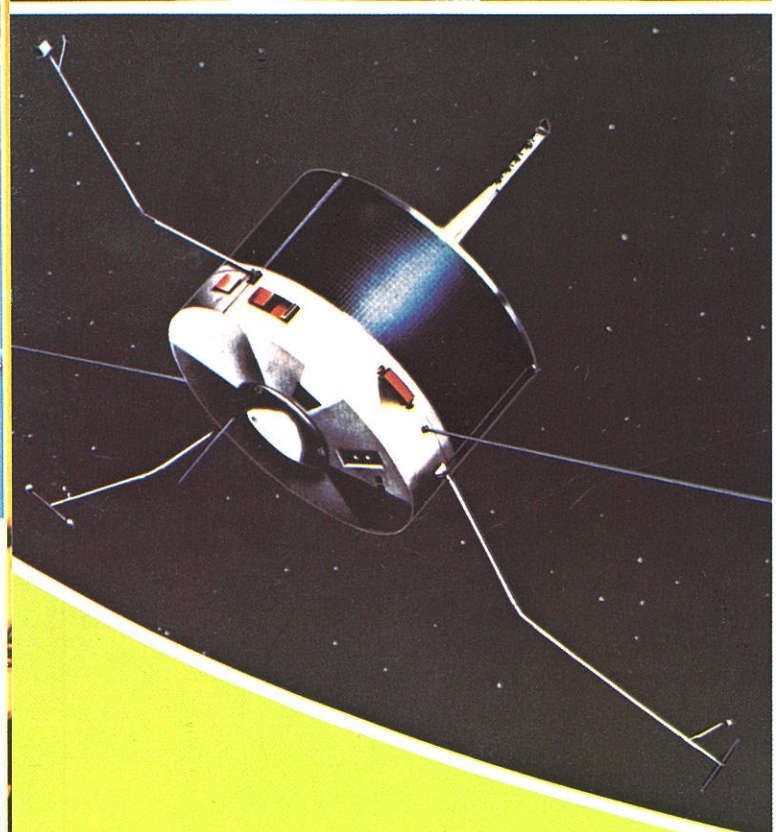


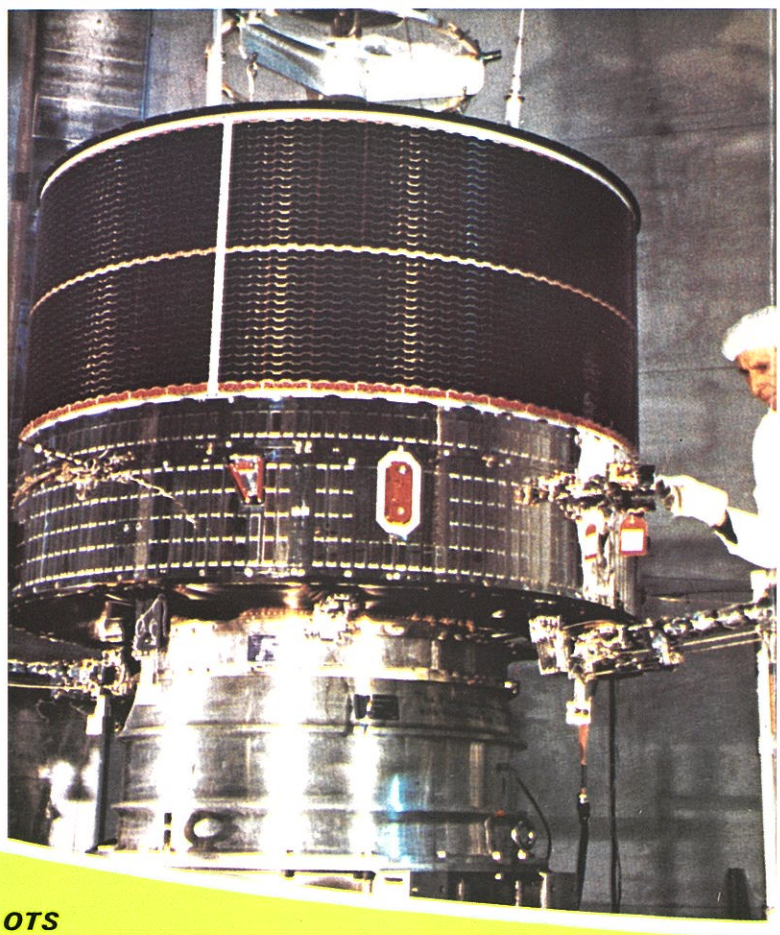










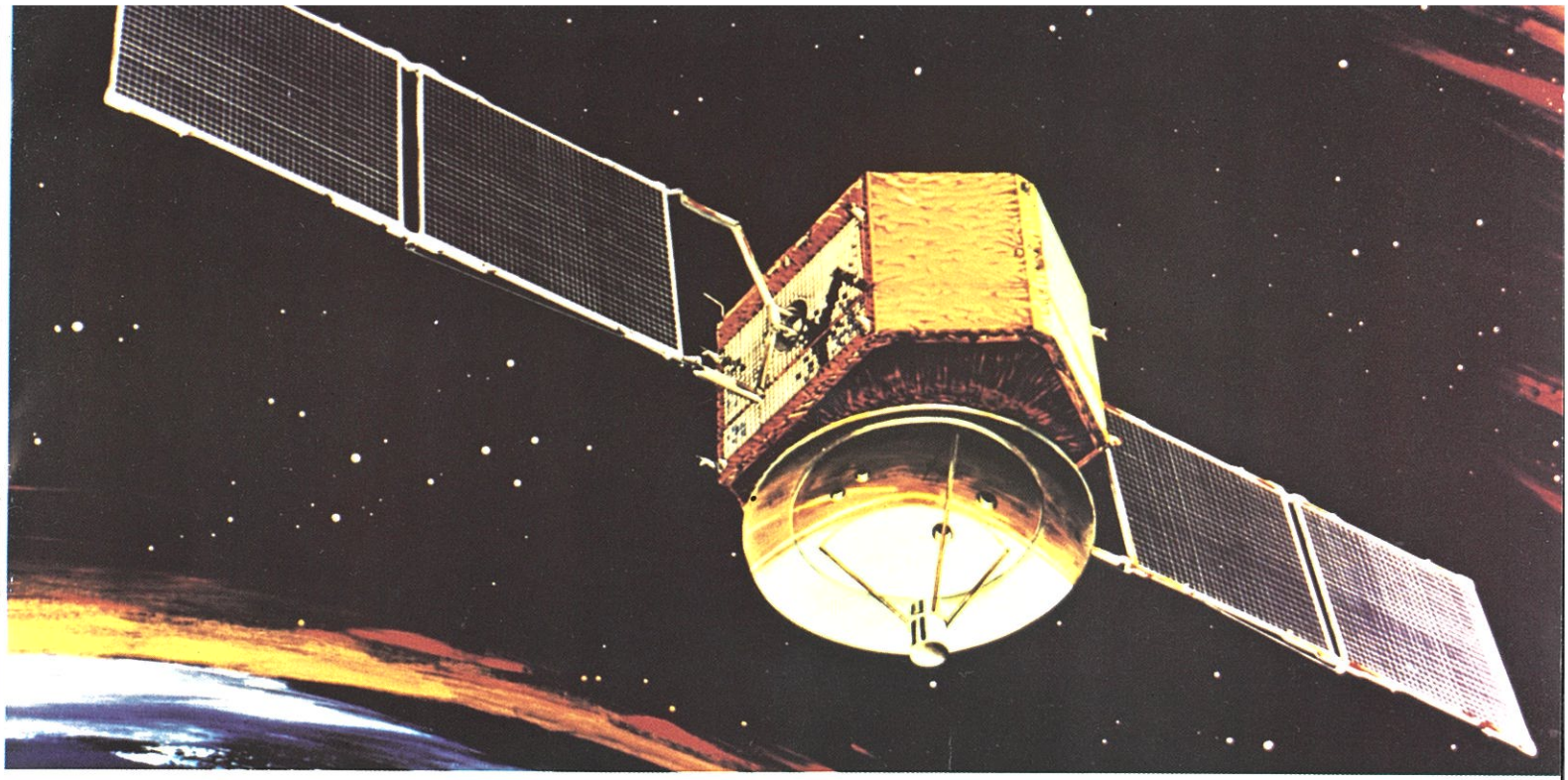


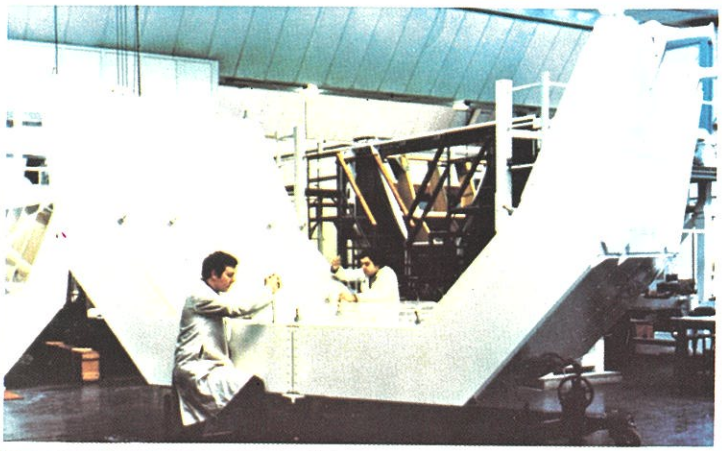
***Intelsat IVA***
The world's largest commercial satellite incorporates sub-systems built by British Aerospace as main overseas contractor to Hughes Aircraft Company, USA.

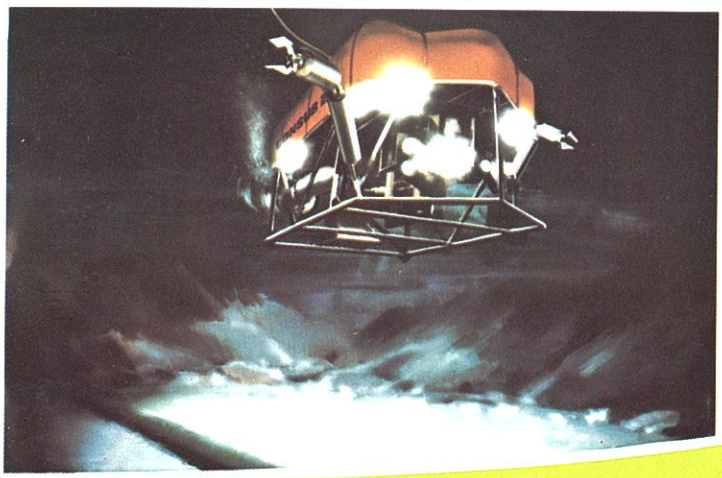
***OTS***
Leading the European MESH Consortium, British Aerospace is prime contractor for ESA's Orbital Test Satellite, planned for launch in June 1977.

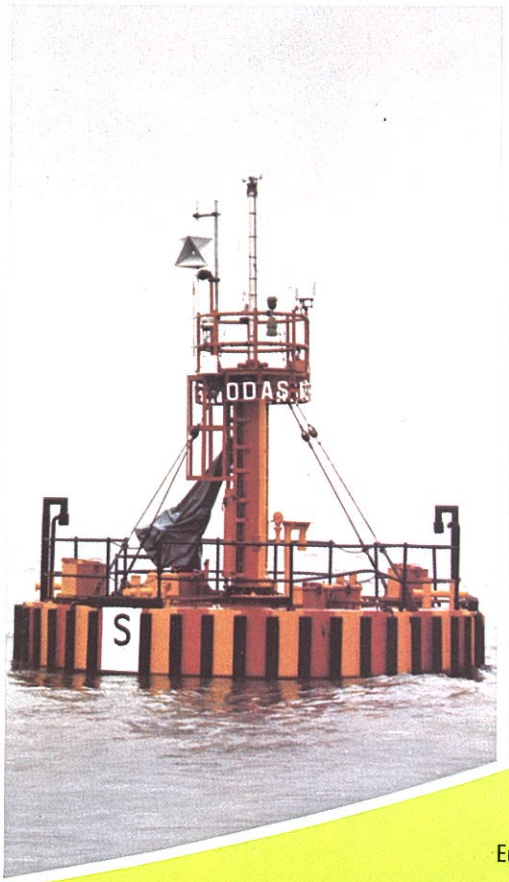
***ISEE-B***
As a member of Europe's STAR Consortium, British Aerospace is developing important sub-systems for the NASA/ESA International Sun Earth Explorer satellite.

***GEOS***
This scientific satellite, launched in April 1977, was built for ESA by the seven-nation STAR Consortium led by British Aerospace.









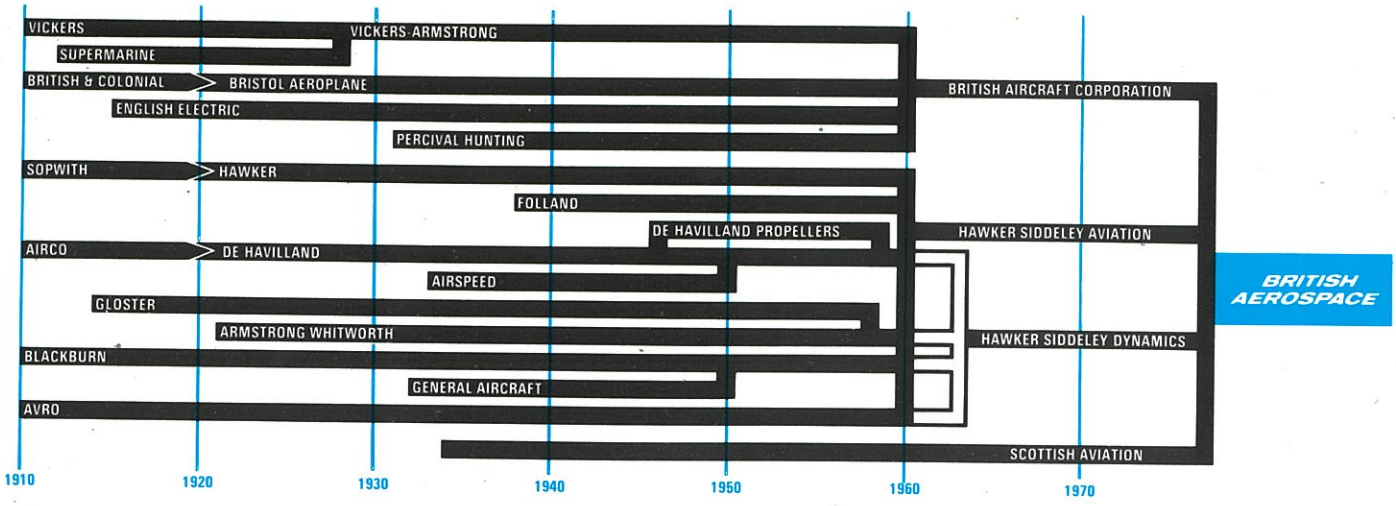
***MAROTS***
This satellite – built for launch in 1978 by Europe's MESH consortium led by British Aerospace – is the forerunner of a worldwide maritime communications service.

***Space Lab Pallets***
capable of carrying 3-ton payloads and making 50 space sorties are being manufactured for the US Space Shuttle programme.

***Consub 2***
is an unmanned, remotely-controlled submersible for inspecting and working on underwater structures.

***Marine Engineering***
products include offshore structure-monitoring equipment and oceanographic and meteorological data-gathering systems such as the UK National Data Buoy.

***Skylark***
is Europe's most successful upper-atmosphere research rocket, with a current total of almost 400 launchings in half a dozen countries.




# *A history and a tradition*

British Aerospace inherits a tradition of pioneering and achievement which is beyond rivalry.

It began with Avro, Blackburn, Bristol, Sopwith, Vickers, Gloster, Hawker, de Havilland, English Electric and many others – great names later to be drawn together in Hawker Siddeley and British Aircraft Corporation and, with Scottish Aviation, now all embodied in British Aerospace.

As early as 1908, the factories of British Aerospace were producing pioneering aircraft. The World War I production lines built the Scouts, Pups, Camels and Brisfits of the story-books. Between the wars, the factories produced a whole catalogue of aeroplanes, including those most beautiful of biplanes, the Fury, Hart, Gauntlet and Gladiator.

The Vimy was the first conqueror of the North Atlantic and, in the succeeding years, the heroes and heroines of the 'twenties and 'thirties flew our Moths and Gulls into the headlines of the world. Record after record for speed, height and distance fell to British aircraft, including those unforgettable S-class seaplanes which won the Schneider Trophy three times in a row, so to retain it forever in Britain.

In what are mostly still today the production centres of British Aerospace were built aeroplanes of every kind from flying boats to fighters, from transports to torpedo bombers, and from the famous R-100 airship to tiny racers.

Then the effort of World War II provided the Wellington, Blenheim, Anson, Whitley, Beaufort, Beaufighter, Lancaster, Mosquito, the dam-busting mines and earthquake bombs – and the two most famous fighters of all time, the Spitfire and Hurricane. Then the jets and turboprops, starting with the Gloster-Whittle E28/39 and leading on through the Meteor, Vampire and Venom, Canberra and B57, the Valiant and Vulcan V-bombers, Hunter and Lightning, Gnat and Jet Provost, Viscount, Britannia, HS.748, Comet, VC10, and BAC One-Eleven to the other products of today.

And, in parallel during the postwar period, the design and engineering teams set the pace in Europe in the development of guided weapons, beginning with Blue Streak, Bloodhound, Thunderbird, Blue Steel, Sea Slug, Firestreak, Red Top and Vigilant and progressing to today's formidable armoury of missiles, such as Sea Dart, Sky Flash, Rapier, SRAAM, and Seawolf. In Space technology, too, the teams now united in British Aerospace have led the way in Europe.

**The skills and resources which lie behind these achievements have now been brought together into one great national enterprise . . .**

**BRITISH AEROSPACE**

**the most comprehensive capability in the industry**

## *The present product list of* **BRITISH AEROSPACE** *includes:–*

| *Civil Aircraft* | *Military Aircraft* | *Guided Weapons* | *Space* |
|---|---|---|---|
| **Concorde** | **Harrier** | **Rapier** | **GEOS** |
| **A300B Airbus** | **Tornado** | **Swingfire** | **ISEE B** |
| **Trident** | **Jaguar** | **Seawolf** | **OTS** |
| **BAC One-Eleven*** | **Hawk** | **Sea Skua** | **MAROTS** |
| **HS748*** | **Nimrod** | **Sea Dart** | **UK6** |
| **HS125** | **AEW Nimrod** | **Martel** | **Skylark** |
| **Jetstream*** | **Strikemaster** | **Sky Flash** | **Space Lab pallets** |
| **Bullfinch** | **Bulldog** | | |
| **military and civil variants* | **Buccaneer** | | |

*See overleaf for international collaborative programmes.*

## *Supporting specialist activities of British Aerospace include:–*

Precision products, including inertial-grade gyros
Gyro-based instruments of many kinds
Radomes
Air conditioning systems
Advanced antenna systems
Infra-red fuzes
Propellers (including glass fibre)
Computer controllers
Flight test instrumentation
Weighing equipment
Counter-measures equipment
Remote-controlled submersibles
Micro-electronics
Infra-red Linescan equipment
Thermal imagers
Automatic test equipment
Computer modelling
Oceanographic equipment
Automatic weather satellite receivers
Data-processing equipment

# *International Collaboration*

British Aerospace can justly claim to have, within its constituent companies, more experience in the organisation and management of major collaborative projects than anyone else in the Industry. The operation of programmes such as the Concorde, Tornado, Jaguar and Airbus, and, in the recent past, the Intelsat communication satellites, has required the development of new skills in administration, engineering, and cost control, as well as in co-ordination, not only with the partner companies, but also with the various Governments concerned.

It is beyond question that, in future, most major civil and military projects will be collaborative ones. The united technical abilities and resources which British Aerospace can bring to any partnerships, and the experience it already has in the practical aspects of such complex undertakings place it in a position of considerable strength in this expanding and vital field.

*Its present international programmes are:-*

**CIVIL AIRCRAFT**

| | |
|---|---|
| Concorde | – *with France* |
| One-Eleven | – *with Romania* |
| A300 Airbus | – *with France, Germany, Holland and Spain (through Airbus Industrie)* |

**MILITARY AIRCRAFT**

| | |
|---|---|
| Tornado MRCA | – *with Germany and Italy (through Panavia GmbH)* |
| Jaguar | – *with France (through SEPECAT)* |
| Harrier | – *with U.S.A.* |
| HS. 748 | – *with India (includes civil variants)* |

**GUIDED WEAPONS**

| | |
|---|---|
| Rapier | – *with Australia* |
| Tracked Rapier | – *with Iran* |
| Swingfire | – *with Belgium* |
| Martel | – *with France* |
| Ikara | – *with Australia* |
| RPV's | – *with Germany* |
| Missile Technology | – *with U.S.A.* |

**DEFENCE SUPPORT SERVICES**

| | |
|---|---|
| Military Aircraft | – *Saudi Arabia* |
| Guided Weapons and Military Aircraft | – *Oman* |

**SPACE**

| | |
|---|---|
| ISEE-B | – *with Germany* |
| OTS | – *with the European MESH consortium (U.K., France, Germany, Italy, Spain, Sweden and Netherlands)* |
| MAROTS | – *with the MESH consortium* |
| Skylark Rocket | – *with Germany and Sweden* |
| Space Computer and Micro-processing | – *with U.S.A.* |
| Space Lab (Pallets) | – *with U.S.A., France, Germany, Spain, Sweden and Netherlands* |

**MISCELLANEOUS**

| | |
|---|---|
| Air Conditioning Systems | – *with U.S.A. and France* |
| Propellers | – *with U.S.A. and France* |
| Infra-Red systems | – *with Canada* |
| Oceanographic Buoys | – *with Germany* |

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