

INTERNATIONAL AIR TATTOO 81

RAF Greenham Common

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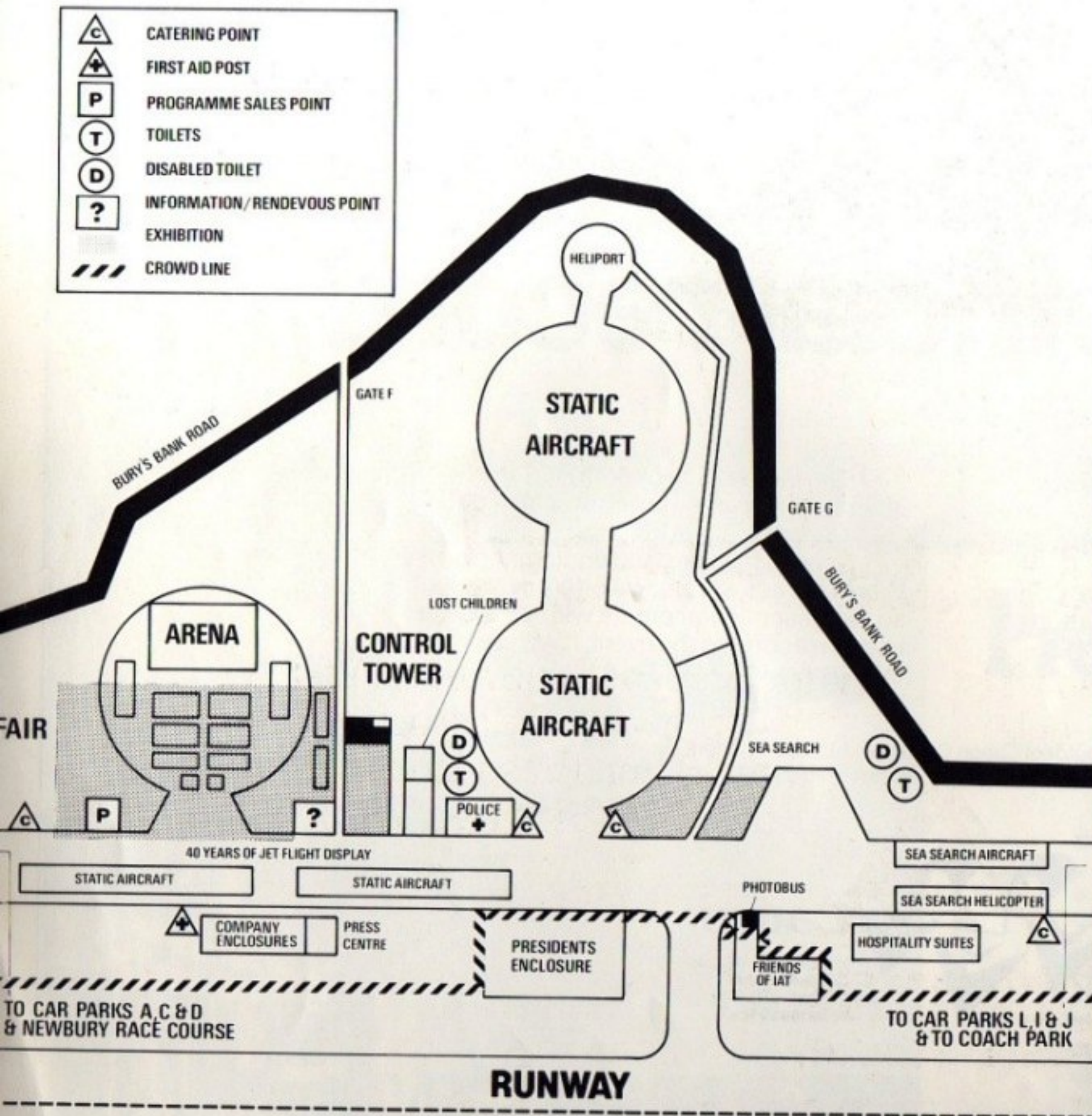
June 27 & 28



80p

In aid of THE ROYAL AIR FORCE BENEVOLENT FUND and in association with

 **Nationwide**
Building Society



Introduction by:

**Sir Douglas Bader, CBE, DSO*, DFC*,
President — International Air Tattoo**

I am delighted to welcome you to International Air Tattoo '81 at RAF Greenham Common and hope you will enjoy your day.

I have been specially encouraged by the tremendous response received from air arms world wide in sending aircraft to participate in the 'Sea Search' competitions and to appear in the static and flying displays. Their appearance establishes beyond doubt that International Air Tattoo is Europe's premier air show.

I hope you will be able to view the many displays which have been brought together for your benefit including the Arena performances which will take place at the rear of the Exhibition and Trade Fair. The crews will be in attendance at the static aircraft park so please take the opportunity to welcome them and talk with them.

International Air Tattoo '81 is held in aid of the Royal Air Force Benevolent Fund whose work is of greater importance now than ever before. Your support of this event is much appreciated and will ensure that those who have served their country are not forgotten.



Douglas Bader.

Douglas Bader



"The Royal Air Force Benevolent Fund is part of the conscience of the British Nation. A Nation without a conscience is a Nation without a soul. A Nation without a soul is a Nation that cannot live."

(The Rt Hon Sir Winston Churchill, 1951)



International Air Tattoo Background 1971-1981

1981 sees the 10th anniversary of the International Air Tattoo. Started by a small group of enthusiastic volunteers, the first Air Tattoo was held at the famous Battle of Britain airfield at RAF North Weald in 1971. The event became truly international in 1972 with participation from NATO and other overseas air arms. In the following year it moved to the much larger airfield at Royal Air Force Greenham Common where it quickly became established as Europe's biggest military flying display.

International Air Tattoos were subsequently held at the Berkshire airfield in 1974, 1976, 1977 and 1979. Nearly three quarters of a million people have attended these two day events, bringing much needed income to the principal charity concerned, the Royal Air Force Benevolent Fund. To date over 40 air arms from 25 countries have taken part in the Tattoos, from as far afield as Australasia, South America and Asia. In 1979 no less than 30 air arms participated in the year's biggest and most spectacular air show.

The aim of the International Air Tattoo is to present an entertaining and informative air event for a wide audience, bringing together the expertise of skilled pilots in a spirit of friendship and cooperation between the many participating nations. This has been achieved in the flying display, the 'Meet' which takes a special theme each year, and in the diverse social functions for the participants. The world's aviation press has acclaimed the Tattoo as "the finest military air spectacular" and "a unique display which has established it as an event in the best tradition of the Hendon, Farnborough and Paris Air Shows".

Royal Air Force Greenham Common is once again the venue for International Air Tattoo '81. It features a daily 8 hour flying display, a huge and varied static aircraft park and includes the world's first maritime aircraft meet 'Sea Search '81'. There will also be a commemorative display to mark 40 years of British jet powered aircraft and extensive exhibition and arena performances. This event is undoubtedly the world's major military air show of the year, providing two days of enthralling entertainment in the air and on the ground.



International Air Tattoo, Building 91, RAF Greenham Common, Newbury, Berks, England RG15 8HL, Tel. (0635) 30060

INTERNATIONAL AIR TATTOO '81

Organising Committee

PRESIDENT
Sir Douglas Bader,
 CBE, DSO*, DFC*

CHAIRMAN
Air Marshal Sir Denis Crowley-Milling,
 KCB, CBE, DSO, DFC*, AE



DIRECTOR
 Paul Bowen

Paul was born in Bath in 1947. On leaving school he trained as an Air Traffic Control Officer and was based for several years at Boscombe Down. In 1978 he left the Civil Aviation Authority to become the first full time Director of International Air Tattoo, having been one of the founder members of the IAT team at RAF North Weald in 1971. Recently appointed as Vice President, Europe, of the International Council of Air Shows, Paul is married with one son and lives at Bramley, Hants.



DIRECTOR OF FLYING
 Tim Prince

Tim was born in Wallingford, Oxfordshire in 1949, the son of a rose grower and nurseryman. After twelve years as an Air Traffic Controller, he left the Civil Aviation Authority in 1978, to pursue a full time career organising air displays. A founder member of the International Air Tattoo team, he is now the IAT Director of Flying, and recently became the European Director of the International Council of Air Shows. Tim now lives at Wildhern in Hampshire with his wife and two sons.



DIRECTOR OF ADMINISTRATION
 Frank Windle

Frank Windle is a serving Army Officer in the Royal Engineers. He is a family man with three children, and has been involved with International Air Tattoo since 1972 as Administration Manager, becoming Director of Administration in 1976. He has helped organise air displays at Greenham Common, Goodwood and Basingbourn with the IAT team. One of the major problems he faces this year is how to accommodate and feed anything up to 4,000 staff and participants during the event.

MANAGEMENT

ADMISSIONS

Geoff Hayhoe

ADVERTISING

Bob Moffat

AIRFIELD

Andy Walton

AIR TRAFFIC SERVICES

Mike McEvoy

ARENA

Brian Peapell

AVIATION FUELS

Jim Norris

CARTOGRAPHY

Dick Dawney

COMMUNICATIONS

Dave Caush

DOMESTIC SERVICES

Pauline Bailey

EMERGENCY SERVICES CO-ORDINATOR

Brian Hughes

ENCLOSURES

Mike Jarratt

EXHIBITION & TRADE FAIR

Mim Morris

FLYING DISPLAY

Geoff Brindle

FINANCE

Eric Dagnall

FIRE

Wilf Longmire

FRIENDS OF IAT/PHOTOBUS

Edwin Shackleton

INFORMATION

Annette Hill

MEDICAL

Dewi Morgan

NORTHSIDE CO-ORDINATOR

Ron Longley

OPERATIONS

Barrie Mortimer

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SIGNPOSTING

Nigel Dennis

STAFF RECEPTION

Ian Campbell

TECHNICAL OPERATIONS

Tony Webb

TECHNICAL SERVICES

Bob Basing

TICKET PRE-SALES

Ken & Irene Winder

TRANSPORT

John Morris

VIP Enclosure

Jeff Bullen

CHAIRMAN OF FLYING CONTROL COMMITTEE

Duncan M. S. Simpson OBE, CEng. FRAes

ROYAL AIR FORCE BENEVOLENT FUND

SECRETARY (APPEALS)

Air Commodore Mike Stanton CBE

SECRETARY (FINANCE)

Wing Commander Ted Holloway DFC

NOTICE

"Visitors entering RAF Greenham Common do so entirely at their own risk. No liability will be accepted by the Secretary of Defence, the Defence Council, the Organisers of International Air Tattoo 81, The Royal Air Force Benevolent Fund, their sponsors, servants or agents for any injury (including fatal injury), damage or loss to person or property, whether due to negligence or otherwise howsoever."

The United States Air Force at Greenham Common



On behalf of the United States Air Force and the 7273rd Air Base Group, it is indeed a pleasure to welcome you to RAF Greenham Common for International Air Tattoo 1981. We are proud to be a part of this event in support of the Royal Air Force Benevolent Fund and to support what we consider the finest and most professional Military Air Display in the world.

We wish the sponsors, organizers and participants continued success in the future.

James E. Salminen

JAMES E. SALMINEN, Col, USAF Commander

Greenham Common

RAF Greenham Common was a glider base during World War II in the lead up to the Normandy landings, but operational use of the airfield ceased with the end of hostilities. The United States Air Force first began to build up the base in February 1951 and on 18 June 1951 the RAF handed over operational control.

Construction was completed in 1953, providing a runway 200ft wide and 10,000ft in length with an additional 1,000ft overrun at either end. The airfield became operational in March 1954 with B-47E aircraft of the 303rd Bomber Wing, Strategic Air Command.

The base was again deactivated in June 1964 and handed back to RAF control. When US Forces withdrew from France, however, it was reallocated to the USAF in January 1967 as a storage site and subsequently selected as a NATO standby base, operated by the 7551st Combat Support Group under the control of HQ 3rd Air Force, USAF. Several Reforger exercises involved Greenham Common in their activities and in March 1976 F-111Es of the 20th TFW moved in from Upper Heyford while repairs to their home runway were completed. They remained throughout the summer and after their departure the base continued to be operated by a detachment from the 20th TFW.

In 1978 Greenham Common was once again down-graded to a US Army storage unit as an annex to RAF Welford. In the meantime a major programme had been put in hand to re-surface much of the airfield and modernise the facilities

for operational use during the 1980s. On 1 January 1979 Greenham Common was re-designated the 7273rd Air Base Group. It was announced in 1980 that the airfield will be the first UK base for US. Cruise missiles.

The USAF in Europe

A major feature of the static display of aircraft at IAT '81 is a representative selection of the many United States Air Force machines based in, or regular visitors to Europe. It is hoped to include, subject to operational requirements, the following types: A-10 Thunderbolt II, OV-10 Bronco, HH-53 Jolly Green Giant, C-5A Galaxy, C-9A Nightingale, Beech C-12A, Lockheed C-130E Hercules, C-141 Starlifter, General Dynamics F-111E, F-15A Eagle, RF-4C Phantom, F-5E Tiger II, KC-135 Tanker and VC-140 Jetstar.



OV-10 Bronco



Lockheed U-2R



C-130E Hercules



A-10 Thunderbolt II



C-5A Galaxy

The Royal Air Force in action

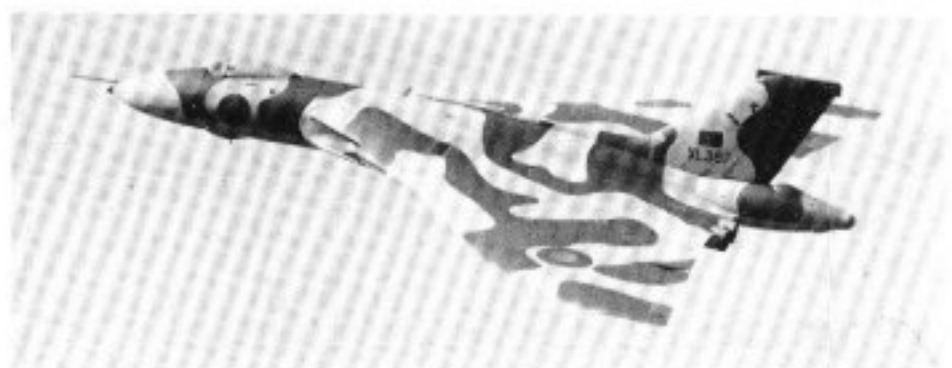


Tornado F2

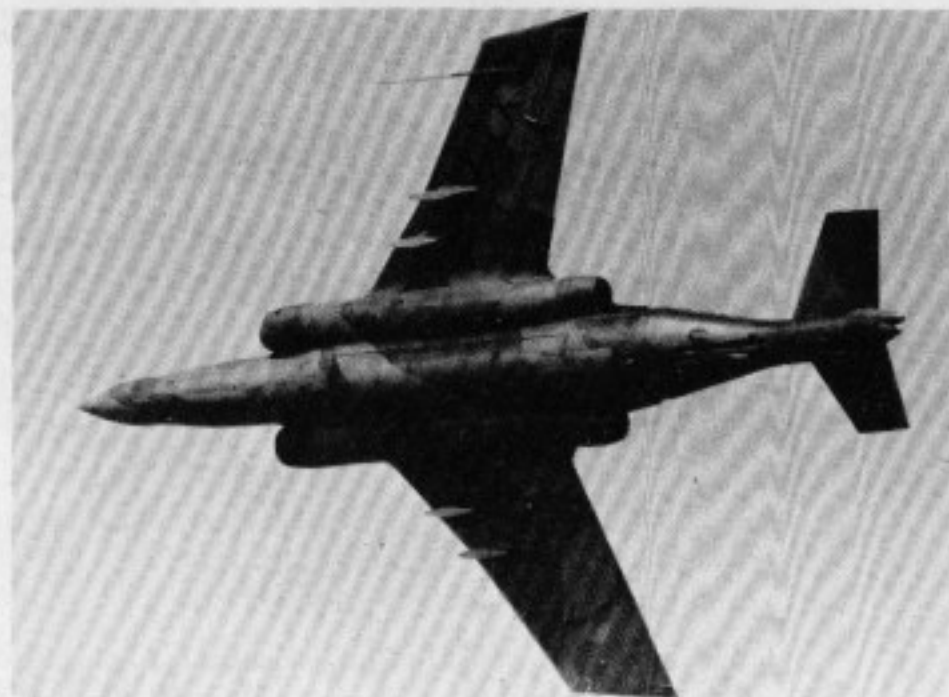
The Royal Air Force maintains the ability to defend the United Kingdom in the air, to provide ground and sea forces with aerial support and to work in harmony with our allies to preserve the peace in Europe. It is firmly committed to, and to a great degree integrated with, the North Atlantic Treaty Organisation (NATO) which is an alliance of east and west Atlantic nations dedicated to the joint defence of the Western countries.

The RAF is divided into two home based Commands, Strike and Support, while RAF Germany provides the Europe-based combat element.

Strike Command is the biggest and hardest-hitting Command that the peace-time RAF has ever known. It embraces all aspects of modern air warfare—conventional attack, nuclear strike, maritime reconnaissance, air-to-air refuelling, search and rescue, transport and close offensive support for ground forces. Strike Command is divided into a number of different Groups, each with a specialised role.



Vulcan B2

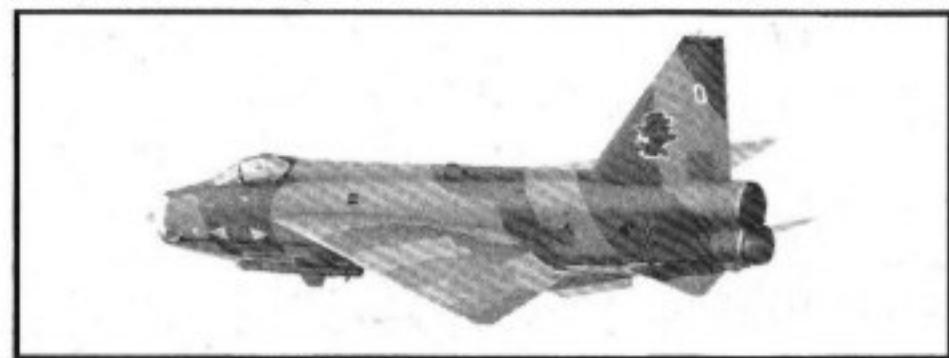


Buccaneer S2

No. 1 Group controls the strike/attack force. This comprises Vulcan delta-wing bombers, Buccaneer low-level strike/attack aircraft and Victor tankers for in-flight refuelling. Tactical reconnaissance is undertaken by Canberras, and strategic reconnaissance by Vulcans.

An unidentified aircraft approaching British airspace is intercepted by Phantom or Lightning fighter aircraft of No. 11 Group. The Phantom is equipped with a mix of Sparrow and Sidewinder air-to-air missiles and a remarkable 20-mm cannon which can fire at the rate of 100 rounds a second. Two squadrons of Lightnings, armed with Red Top missiles and cannon, remain in service. The Group also controls key radar stations and is responsible for giving early warning of enemy missile attack. Shackleton airborne early warning aircraft (due to be replaced by Nimrods) can detect aircraft flying at very low level.

The Nimrod maritime patrol and anti-submarine aircraft of No. 18 (Maritime) Group with their sophisticated equipment can detect and identify submarines cruising or resting immobile on the seabed. In wartime they would support NATO's Atlantic Fleet. In peacetime they monitor the movements of ships and submarines over a vast sea area.



Lightning F6



Nimrod AEW3

The work carried out by No. 18 Group's search and rescue helicopters is well known to the public. Frequently in the face of challenging weather conditions, they snatch holiday-makers from sinking yachts, motor boats and dinghies, lift climbers from mountain sides, rescue exhausted swimmers, lift to safety crew members of foundering vessels and rush emergency cases to hospital.



Sea King HAR3

If war in Europe were to become reality, the task of No. 38 Group would be to provide ground attack, battlefield reconnaissance and tactical/logistic support in aid of allied ground forces. This would be carried out in co-operation with RAF Germany and the air forces of other NATO countries. 38 Group employs squadrons of Harrier VTOL and Jaguar tactical fighters.

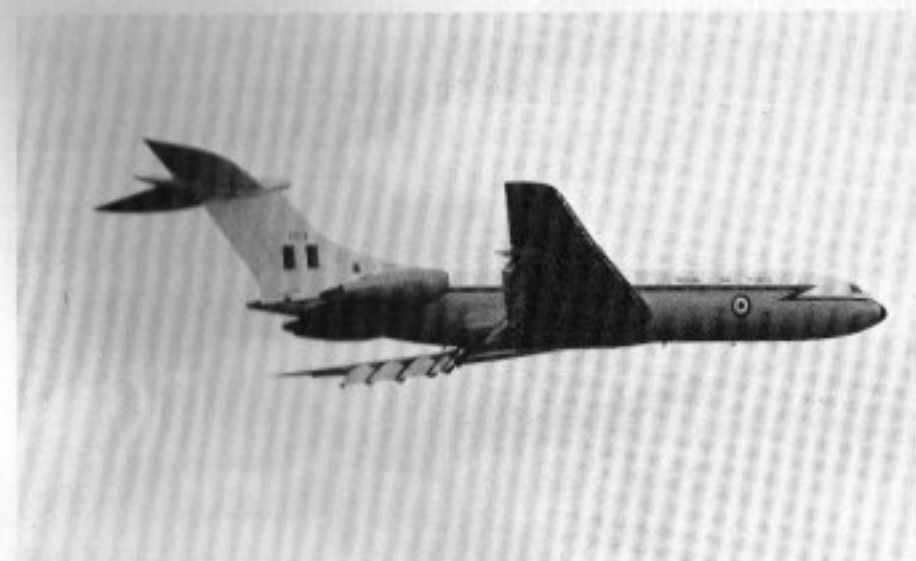


Jaguar GR1



Puma HC1

The peacetime activities of the RAF's transport force, also a part of No. 38 Group, have included famous famine relief and rescue operations around the world. One of the more spectacular "mercy missions" was to Nepal when Hercules squadrons dropped grain and other basic foodstuffs to starving villagers in the Himalayan foothills. Relief and evacuation operations have also been undertaken in West Africa, Pakistan, Bangladesh and Ethiopia. In war-time the primary task of the Group would be to undertake transport operations in support of NATO. The bulk of the fleet is made up of Hercules tactical transport aircraft supported by Wessex, Puma and the new Chinook helicopters.



VC10 C1

Royal Air Force Germany is fully committed to, and integrated with, NATO forces in Europe. It forms a large part of NATO's Second Tactical Air Force which operates in support of the Northern Army Group of which the British Army

of the Rhine constitutes an important part. Primarily equipped with Harrier, Phantom, Jaguar and Buccaneer aircraft, RAF Germany's role lies in the provision of nuclear strike, conventional offensive support, air defence and reconnaissance in aid of NATO ground forces.



Dominie T1

None of the aircraft mentioned could be flown were there not a comprehensive organisation in existence within Support Command to train all categories of aircrew—pilots, navigators, air engineers, air electronics officers and operators. Six main types are operated in the flying training role: Jet Provost, Hawk, Hunter, Jetstream, Bulldog and Dominie. Helicopter training is carried out on Gazelles and Wessex. The training of officers in ground branches, and airmen/airwomen recruit and trade training, is also undertaken by the Command.

Support Command's other main task is to support all parts of the RAF and some aspects of the other Services, with an agreed satisfactory level of operation, repair, supply and



Gazelle HT3



Hunter FGA9



Hawk T1

administration. These functions can broadly be divided into telecommunications and the maintenance of equipment, aircraft engineering, supply, medical and administration.

Much of the RAF's strike power in the 1980s centres around its new force of Panavia Tornado multi-role combat aircraft. This swing-wing supersonic aircraft has been developed by Great Britain, West Germany and Italy. Capable of flying at twice the speed of sound, it carries advanced radar, navigation and attack and electronic countermeasure systems. The Tri-service Tornado Training Establishment was formed at RAF Cottesmore earlier this year and will shortly be providing the crews for the first operational squadron.

You will see many of these RAF aircraft in action here at International Air Tattoo '81.



Tornado F2

NATO—the key to defence

The existence today of a European alliance for the preservation of peace and security represents a unique accomplishment. The free countries of Europe, faced with a continuing military build up during the aftermath of World War II, recognised that the need to guarantee their freedom and security could be achieved only by combining their efforts.

Thus on 4 April 1949, in Washington, D.C., 12 nations signed the North Atlantic Treaty, forming an alliance of defence against the rising wave of military expansion in Eastern Europe.

These nations—Canada, the United States of America, Iceland, Norway, Denmark, the United Kingdom, The Netherlands, Belgium, Luxembourg, France, Portugal and Italy formed the North Atlantic Treaty Organisation (NATO) as a defensive alliance to prevent aggression, or to repel it. The treaty not only provided a military line of defence but also for joint action in the social, economic and political fields.

Three years after the alliance was formed Greece and Turkey joined and in May 1955, the signatories rose to 15 when the Federal Republic of Germany became a member. France formally withdrew in 1966 but has since maintained close links at all levels.

NATO is an intergovernmental instrument of defence. All decisions must be approved unanimously by the NATO Council representing all member nations. Military decisions are reached by the Chiefs of Staff of the countries meeting as the Military Committee.

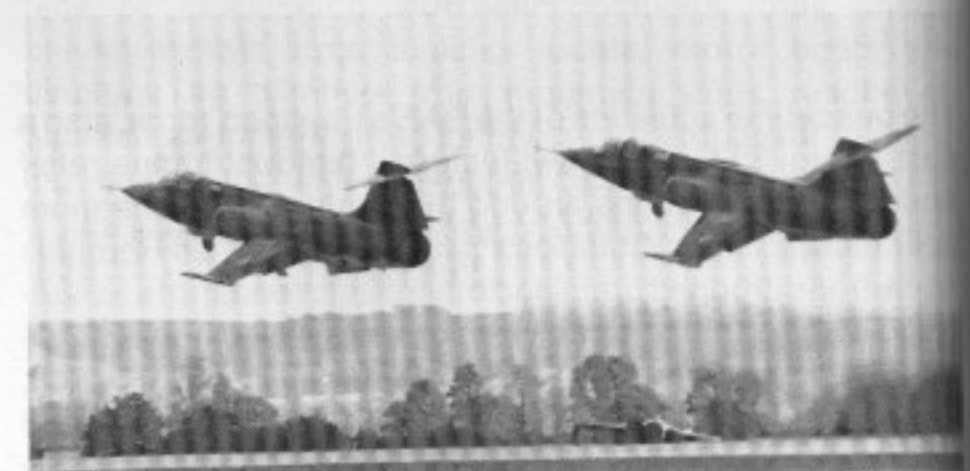
BALANCE OF READY FORCES IN NORTH ATLANTIC



The Committee is composed of a Chief of Staff of each member country. It is charged by the Council with the peace-time task of recommending those measures necessary for the common defence of the NATO area. The Committee provides advice to the North Atlantic Council, co-ordinates the requests and recommendations of the major NATO commanders, and provides the directions necessary to implement approved NATO plans and policy. It is to this body that the major NATO commanders are responsible.

Soon after the establishment of NATO the North Atlantic Council decided to create a unified European defensive

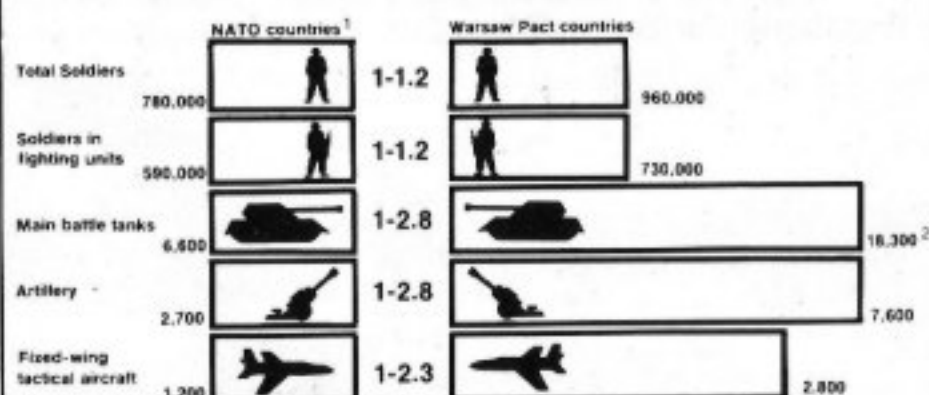
military organisation under a centralized supreme commander and to establish an internationally manned supreme headquarters in Europe. On December 19, 1950, General Dwight D. Eisenhower was designated the first Supreme Allied Commander Europe (SACEUR). A fully international staff was selected and on April 2, 1951, Allied Command Europe (ACE) and Supreme Headquarters Allied Powers Europe (SHAPE) were established near Paris. When the French withdrew its forces from the alliance, SHAPE moved to a new site in Belgium on 31 March 1976.



F104 Starfighter—Belgium

Allied Command Europe, HQ Casteau, covers the land area extending from the North Cape in Norway to North Africa and from the Atlantic to the eastern border of Turkey, excluding the United Kingdom and Portugal. The defence of these areas falls under separate Allied commands: Allied Forces Northern Europe (AFNORTH), HQ Kolsaas, Norway.

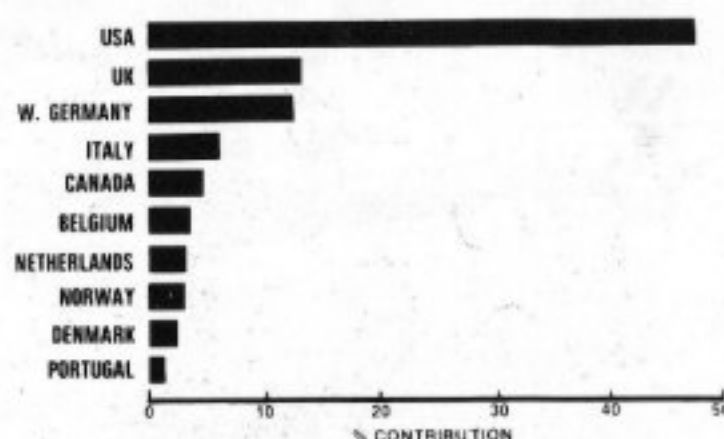
The CURRENT BALANCE of FORCES in CENTRAL EUROPE



¹ Including French forces in the Federal Republic of Germany, but excluding the Berlin garrison, which is not declared to NATO

² Includes some Warsaw Pact tanks in training units and storage which would be available for operational use

CONTRIBUTIONS TO NATO's TOTAL AIRCRAFT STRENGTH



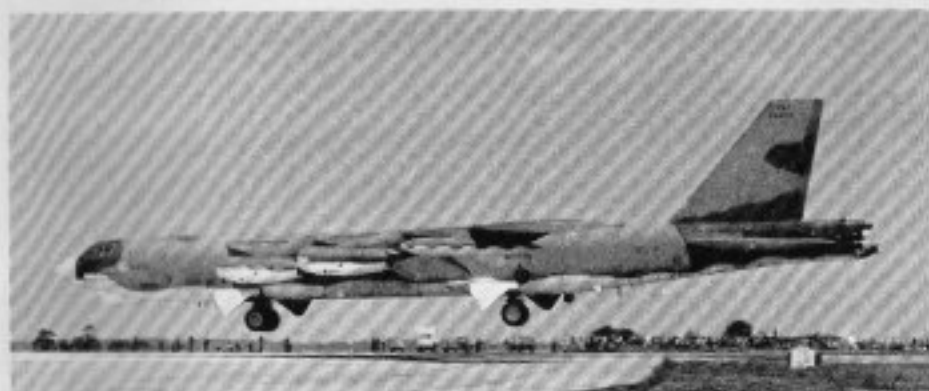
Northrop F-5—Norway

Allied Forces Central Europe (AFCENT), HQ Brunssum, The Netherlands.

Allied Forces Southern Europe (AFSOUTH), HQ Naples, Italy.

In addition, two other commanders are directly subordinate to SACEUR. They are Commander, Allied Command Europe Mobile Forces (AMF), HQ Seckenheim, West Germany and the Commander, United Kingdom Air Defence Region (UKADR), HQ High Wycombe.

The remaining NATO strategic areas are divided between two commands and a Regional Planning Group.



Boeing B-52—United States

Allied Command Atlantic, HQ Norfolk, Virginia, extends from the North Pole to the Tropic of Cancer and from the coastal waters of North America to those of Europe and Africa, including Portugal, but not the English Channel and the British Isles. The Supreme Allied Commander Atlantic (SACLANT) is responsible for defence plans in the North Atlantic area. In wartime, his main duty would be to insure that the communication lines of the Atlantic Ocean were maintained and secure, denying an enemy use of the sea lanes.



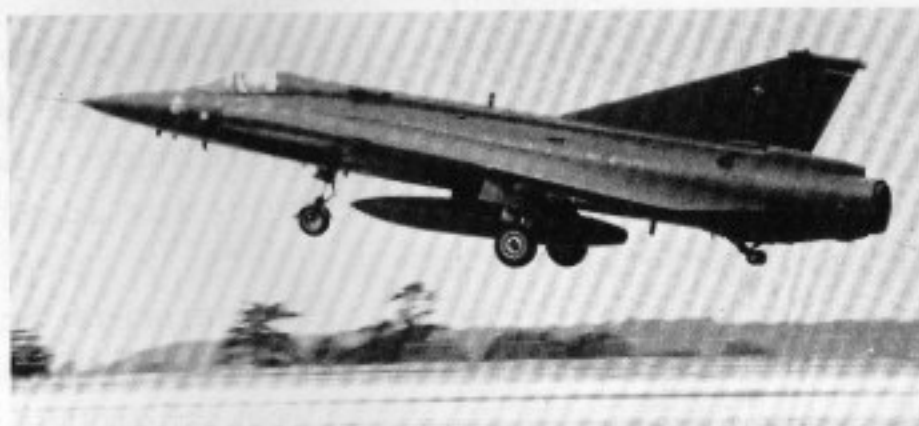
Transall—Germany



F-15 Eagle—United States

Channel Command, HQ Northwood, London, covers the English Channel and Southern North Sea. The Commander in Chief (CINCHAN), has the primary task of controlling and protecting merchant shipping in the Channel area.

In peacetime, SACEUR commands no national forces, with the exception of certain air defence units which are continuously in the alert status. His main functions are to prepare and finalize defence plans for the area under his command, and to insure the combat efficiency of forces assigned to him in the event of war.



Saab Draken—Denmark



Atlantic—Italy

In time of war, with the concurrence of member governments, he would control all land, sea and air operations in the area. Internal defence (including Corsica, Sardinia and Sicily) and the defence of coastal waters would remain the responsibility of the national authorities, but SACEUR would have full authority to carry out such operations as he considered necessary for the defence of the area under his command.

NATO and SHAPE have, through international cooperation, strengthened the political, social, economic and military objectives of Western Europe and the whole of the Atlantic area.



Northrop NF5—Netherlands



Sea King—UK



Phantom—Germany

Acknowledgments

The Chairman and Council of the Royal Air Force Benevolent Fund gratefully acknowledges the help so freely given by so many individuals who have been involved in the planning and organisation of International Air Tattoo '81. They very much regret that it is not possible to list them by name in this programme. An event of this magnitude could never be undertaken without their valuable assistance and dedication. This is particularly so in the case of the staff of the IAT office at RAF Greenham Common whose efforts warrant special mention.



PHOTOBUS

Tours of the operational apron



Last bus leaves at 4.00 p.m.

If you wish to photograph the aircraft on the operational apron on the south side of the airfield, take a £1 trip on an open top bus. Boarding point is to the east of the runway crossing.

Schneider Victory Commemorated



Supermarine S5

Fifty years ago Britain won the Schneider Trophy outright when Flt.Lt. J. N. Boothman flew the Supermarine S6B unopposed around the Solent course watched by over one million spectators who lined the beaches. This important international trophy had been introduced back in 1913 by wealthy French aviation enthusiast Jacques Schneider who wanted to encourage the development of the seaplane.

Not surprisingly France won the first race in 1913 with a Deperdussin floatplane but was never to repeat the success. In the eleven contests in which results were declared the winners were:-

1913 France—Deperdussin at 45.75 mph
1914 Great Britain-Sopwith at 86.78 mph
1920 Italy-Savoia S.19 at 107.224 mph
1921 Italy-Macchi VII at 117.859 mph
1922 Great Britain-Supermarine FB at 145.7 mph
1923 USA-Curtiss CR3 at 177.38 mph

1925 USA-Curtiss R3C2 at 232.57 mph
1926 Italy-Macchi M39 at 246.442 mph
1927 Great Britain-Supermarine S5 at 281.656 mph
1929 Great Britain-Supermarine S6 at 328.63 mph
1931 Great Britain-Supermarine S6B at 340.08 mph

To mark this notable achievement by the RAF's High Speed Flight, Rolls-Royce and Supermarine designer R. J. Mitchell, Leisure Sport will be flying the fine Supermarine S5 replica N220/G-BDFF during the display, weather and conditions permitting. This aircraft, powered by a 180 hp Continental engine, forms part of the Schneider Trophy Seaplanes exhibition at Thorpe Park, Chertsey which also includes replicas of the Deperdussin, Curtiss R3C2, Macchi M.39 and Supermarine S6B. The original 1931 winning Supermarine S6B S1595 and the Schneider Trophy can be seen in the Science Museum, South Kensington.



75 years of Rolls-Royce and 40 years of British Jet Power

Rolls-Royce, the name which thousands of spectators at the International Air Tattoo associate with the very latest jet engines, is 75 years old. The actual anniversary was three months ago but the historic birthday is being marked here at Greenham Common by a flying display of Rolls-Royce powered aircraft each day from 3.00 pm for an hour and a half. Taking part will be some of the oldest Rolls-Royce powered aircraft still flying as well as the most modern like the Sea Harrier and Tornado.



Alcock & Brown's Vickers Vimy (RR Eagle)

Rolls-Royce was formed by two men of contrasting backgrounds and temperaments. Charles Stewart Rolls a brilliant and adventurous aristocrat who sold cars to the rich and became a pioneer balloonist and aviator, and Henry Royce, the completely self taught engineer. The company they founded expanded dramatically in both world wars and the focus of attention shifted from cars to aero engines.

Today Rolls-Royce is one of only three major aero engine companies. The others, Pratt & Whitney and General Electric, are both American and the keenest rivalry exists between the three. Rolls has perhaps become best known in recent years for the RB211 series of big engines for passenger transports. But engines for military aircraft from subsonic trainers to helicopters and Mach 2 strike aircraft, account for more than half the company's business. In 1980 the company delivered £1,258 million worth of engines, spares and services, twice as much as five years ago.

Seventy five years ago Rolls-Royce was formally incorporated, on March 15, 1906, with capital of £60,000. Today the company's capital totals £328 million.



Supermarine S.6B (RR'R') and the Schneider Trophy



Avro Lancaster (RR Merlin)

Four years after the company was founded Rolls was dead, killed in a flying accident at Bournemouth. But the firm continued and won renown for its cars. Then came its first real crisis as the first World War erupted in 1914 and orders for the luxury cars were cancelled. There was little work in war-time for a company which produced goods for the rich, but within days of that war starting, Royce was designing his own aero engine. Less than six months after beginning the design Royce's engine was running at 225 hp on a test bed at Derby. An initial order for 25 was placed by the Admiralty for the engine now called the Eagle. Steadily improved in

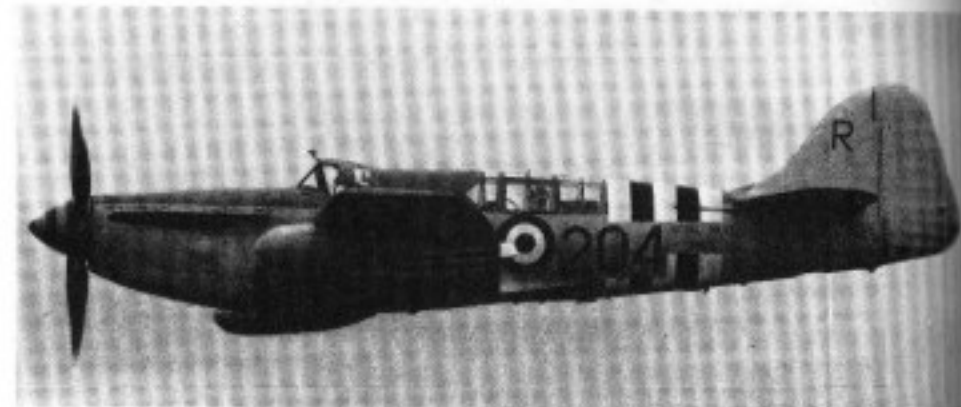
power and reliability it continued in military and then civil use into the 1930's. Two of them, in 1919 powered the Vickers Vimy in which Alcock and Brown made the first non-stop transatlantic crossing.



Hawker Hurricane and Supermarine Spitfire (RR Merlin)



DH Mosquito (RR Merlin)



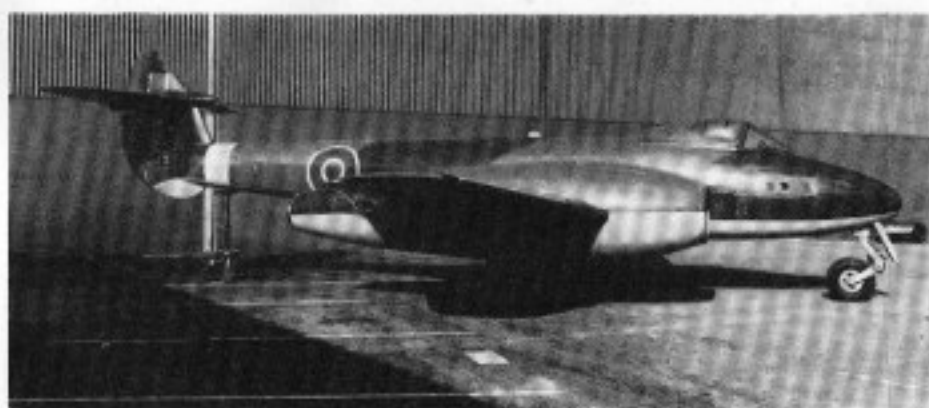
Fairey Firefly (RR Griffon)

Then came the famous Schneider Trophy races. An international event of supreme prestige won outright by Britain in 1931 with a Supermarine S-6B seaplane powered by a Rolls-Royce 'R' engine. The aircraft and the engine led directly to the Spitfire and the Merlin engines. The Merlin can still be seen and heard in the Lancaster, the Hurricane and the Spitfire of the RAF's Battle of Britain Memorial Flight.

The Second World War saw the Merlin ranging supreme among the aero engines of the Allied Powers. It was the engine in the Lancaster, the Mosquito and many versions of the Spitfire, and it powered the North American Mustang making that aircraft one of the most potent fighting machines fielded by the Allies.



Gloster E28/39 (Whittle W.1)



Gloster Meteor (RR Derwent)

Back in the late thirties Coventry born Frank Whittle had been beavering away at his scheme for a gas turbine engine and by 1941 he had succeeded. A small gas turbine jet flew in the Gloster E28/39 on May 25, that year—just 40 years ago. Thus 1981 is another great British aviation anniversary—that of the first flight of a practical jet aircraft powered by a jet engine. The Whittle jet was developed into the Welland and Derwent engines produced by Rolls-Royce to power the RAF's first jet fighter, the Gloster Meteor, and



Hawker Sea Hawk (RR Nene)

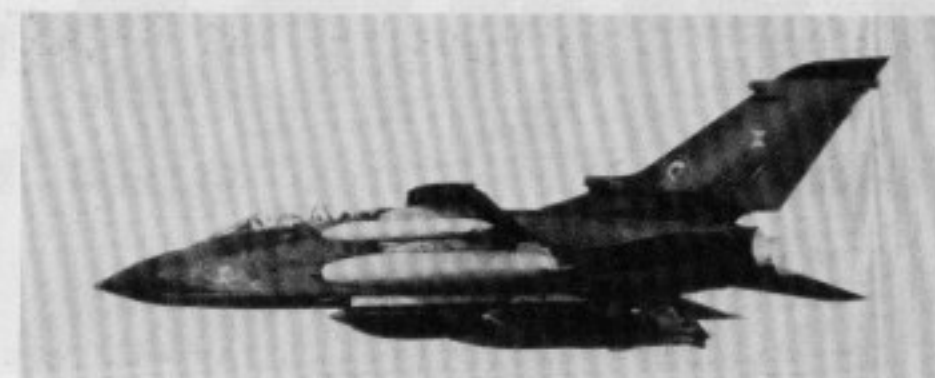
spawned the world's jet engines of today including those in Russia. Now Rolls-Royce is a company known for its family of passenger transport engines developed from the RB211 concept, for the RB199 military engine developed jointly with Germany and Italy for the Tornado, the Adour designed and developed jointly with Turbomeca of France, of which the 1,500th was produced only last month. The company has produced the Pegasus, the heart of the Harrier 'jump jet' and in service with the RAF, Royal Navy, U.S. Marine Corps, Spanish Navy and shortly the Indian Navy.



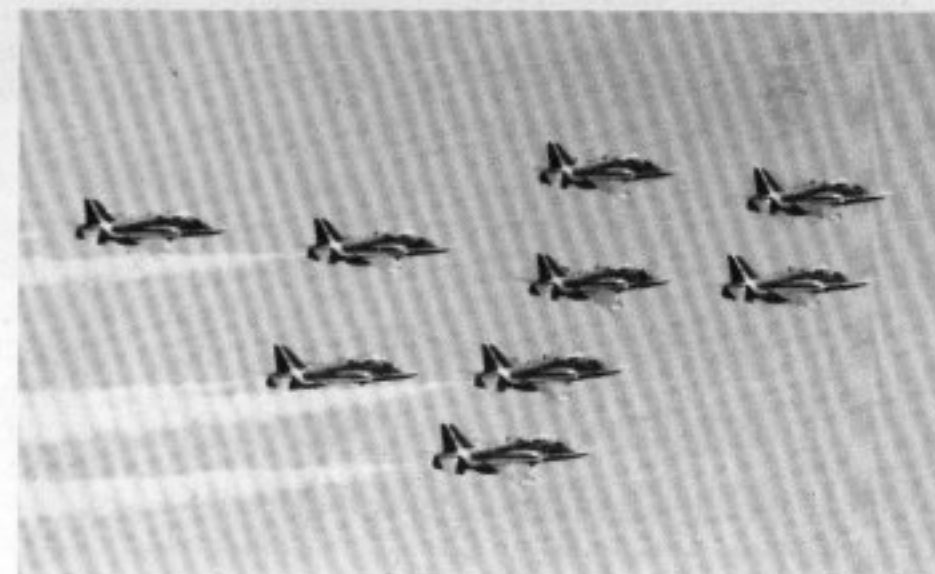
Hawker Hunter (RR Avon)



McDonnell Douglas Phantom (RR Spey)



Panavia Tornado (RB199)



BAe Hawk—Red Arrows (RR Adour)



BAe Sea Harrier (RR Pegasus)

This is a sketch of Rolls-Royce's first 75 years. Today the company with its current engines and new ones in development both in its own experimental shops and in collaboration with American, Japanese, German, French and Italian companies is set fair for a busy time as it heads on towards its century of British technological achievement.

Great War Dogfighters

World War I Display

International Air Tattoo is pleased to welcome the Leisure Sport World War I display team to Greenham Common for the first time in 1981. In the flying and static aircraft displays you will see a unique collection of First World War replica Royal Flying Corps and German Air Force aircraft which have been specially flown in from their base at Thorpe Park, Chertsey, Surrey.

It is hoped that the following types will be on display: Sopwith Camel, Albatros DVa, Fokker Dri Triplane, Fokker D.VII, Fokker D.VIII and possibly a SPAD XIII. The **Sopwith Camel** was the first British plane to carry twin Vickers guns with their breeches enclosed in a 'hump' that gave the camel its name. By 1918 it had become one of the most successful fighters of the Great War, with a total of almost 130 enemy aircraft destroyed. It was the classic dogfight machine—nothing that had flown up to that time could out-maneuvre it in close combat. The example flown today by Leisure Sport, C1701/G-AWYO was built by Slingsby



Sopwith Camel

Sailplanes and is powered by a 165hp Warner Super Scarab engine, the original Camel F.I had a 130hp Clerget. It is painted in the night-fighter colours of 44 Home Defence Squadron, based at Hainault, Essex to defend London against the Zeppelins and the Gotha bombers.

The **Albatros DVa** was a formidable German fighter, derived from the not too successful DIII and DV. It was equipped with two synchronised Spandau guns and was powered by a



Albatros Va

180hp Mercedes engine. The unique example flown today G-BFXL was built by Arthur Williams in Germany and is fitted with a 200hp Ranger engine. It is painted in the flamboyant style typical of German fighter squadrons, this particular scheme being that used by Lt Joachim Von Hippel.

Manfred Von Richthofen and the **Fokker DRI** triplane together became an aviation legend. Yet the aeroplane was not outstanding (only 300 were built) and "*The Red Baron*" was only slightly better than average as a pilot. He was, however, a superb marksman. Von Richthofen had one of the earliest of the new Fokker triplanes when it was introduced in summer 1917, and in his customary style painted scarlet. The DRI was fast, being powered by a 110hp



Fokker DR1



Fokker DVII

Oberursel engine and together with a strong, highly manoeuvrable airframe gave "*The Red Baron*" the perfect platform for his brilliant marksmanship with the two Spandau guns fitted. The Leisure Sport replica G-BEFR (425/17) was built by Viv Bellamy and is powered by a 165hp Warner Super Scarab.

Not a dogfighter but a hit-and-run destroyer, the **Fokker DVII** came too late in the war to have a full impact on Allied air superiority. There was nothing to match it—a big, steel-framed aeroplane powered by a 185hp water-cooled BMW that could climb higher and fly faster than anything else in the sky. The Leisure Sport DVIII replica G-BFPL (4253/18) was built by Arthur Williams and uses a 200hp Ranger engine. It is painted flamboyant red with the personal colours of Oberleutnant Ernst Udet who was Germany's second highest scoring fighter pilot and went on to become Inspector-General of aircraft for the Luftwaffe.



German Fleet at Thorpe Park

Arena Entertainment

Performances will take place each day at 10.30 a.m. and on Saturday at 5.0 p.m. and Sunday at 4.30 p.m., in the special arena located to the rear of the Exhibition. The colour, pageantry and skills demonstrated by the participating teams will provide entertainment for all the family. Look in on the varied programme.

SATURDAY 27 June

10.30 a.m.

Band of H.M. Royal Marines, Flag Officer Naval Air Command.

Junior Leaders Regiment, Royal Artillery, PT Display Team.

Metropolitan Police Motor Cycle Precision Team.

Central Band of the Royal Air Force.

Queens Colour Squadron, Royal Air Force.

Royal Signals White Helmets Motor Cycle Display Team.

5.0 p.m.

Band of HM Royal Marines, Flag Officer Naval Air Command.

Junior Leaders Regiment, Royal Artillery, PT Display Team.

Royal Signals White Helmets Motor Cycle Display Team.

SUNDAY 28 June

10.30 a.m.

Band of HM Royal Marines, Flag Officer Naval Air Command.

Junior Leaders Regiment, Royal Artillery, PT Display Team.

Metropolitan Police Motor Cycle Precision Team.

Central Band of the Royal Air Force.

Queens Colour Squadron, Royal Air Force.

Royal Signals, White Helmets Motor Cycle Display Team.

4.30 p.m.

Final of Sea Search 81 "Its a Knock Out" and Trophy Presentation.

Metropolitan Police Motor Cycle Precision Team.

Central Band of the Royal Air Force.

Queens Colour Squadron Royal Air Force.

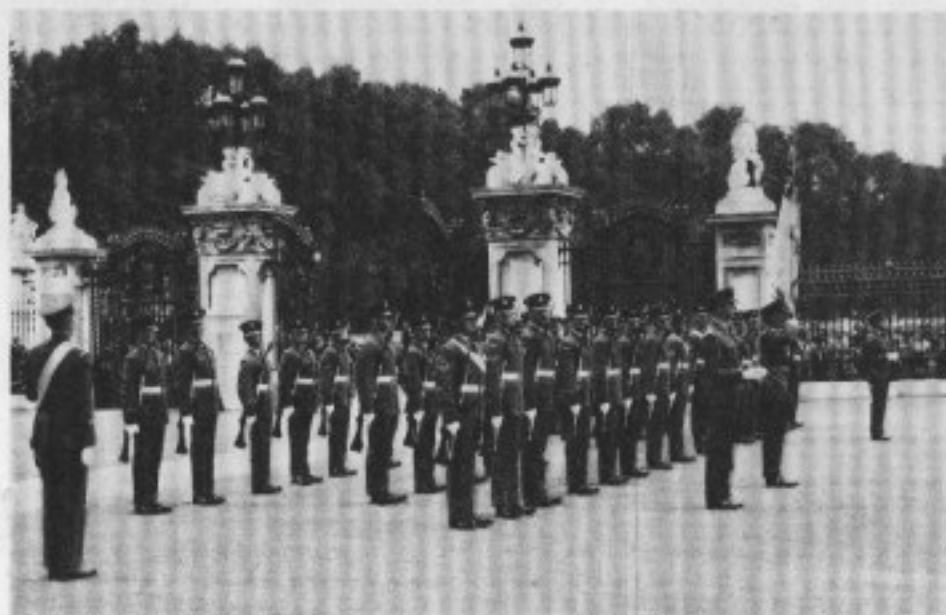
Royal Signals White Helmets Motor Cycle Display Team.

Beating the Retreat. Band of HM Royal Marines, Flag Officer Naval Air Command.

Arena Grandstand

For your added comfort, seats are available at the arena grandstand, in two sessions from 10.0 a.m. and 4.0 p.m. Why not view the arena entertainment and the flying display in comfort.

The Queen's Colour Squadron of the Royal Air Force



The Queen's Colour Squadron of the Royal Air Force is the custodian of the Queen's Colour for the Royal Air Force in the United Kingdom and has had this responsibility since its formation on 1 November 1960.

The Queen's Colour Squadron represents the Royal Air Force at all royal and national state occasions and mounts guards of honour for visiting royal families and heads of state. Additionally the Squadron provides continuity drill displays at the major Military Tattoos and Tournaments both at home and abroad.

The Queen's Colour Squadron, is manned by officers and airmen of the Royal Air Force Regiment who, after successfully completing a four week training course, may expect to serve with the Squadron for a period of two years. On completion of their tour all personnel return to normal operational duties within the Royal Air Force Regiment.

Band of Her Majesty's Royal Marines Flag Officer Naval Air Command

The Band of the Flag Officer Naval Air Command is based at the Royal Naval Air Station at Yeovilton, Somerset. From there it undertakes a wide variety of ceremonial work of national importance in addition to fulfilling its main role of providing music to the Fleet Air Arm.

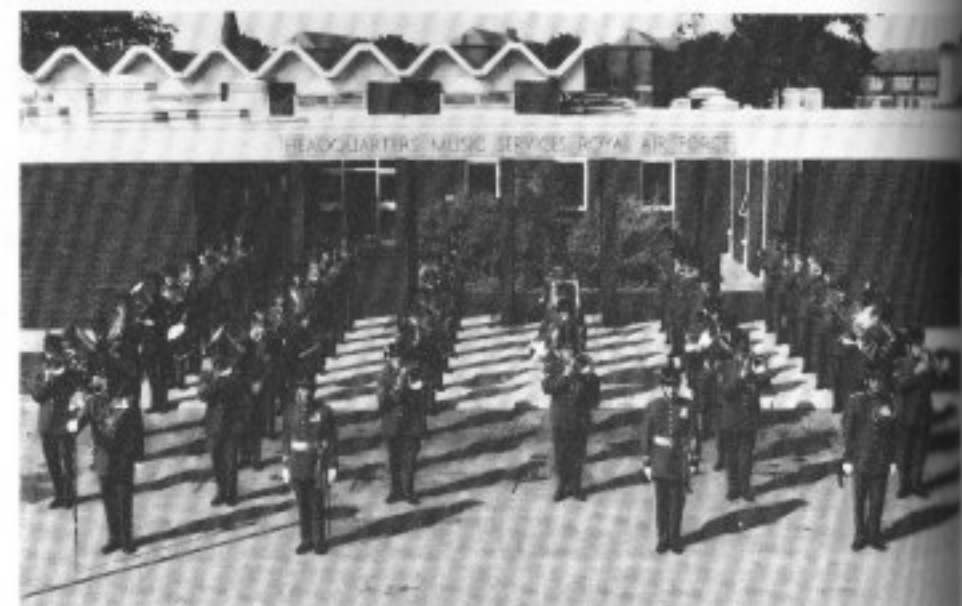
Musicians in the Royal Marines play at least two instruments and the band can also function as an orchestra and a dance band. The week's work may include a ceremonial parade for a visiting head of state, a television appearance, several "Beat Retreat" displays, a carnival, an all night dance and providing background orchestral music at naval dinners.



The Band of HM Royal Marines is directed by Lt. E. P. Whealing, LRAM, ARCM, LTCL, RM and appears by kind permission of the Flag Officer Naval Air Command.

The Central Band of the Royal Air Force

The Central Band, inaugurated by Sir George Dyson, was first established in 1920, and quickly earned itself a reputation as one of the country's leading military bands. Among early milestones were the first broadcast by a military band in 1923, a performance at the wedding of the then Duke of York (later to become King George VI), the opening of Wembley Exhibition in 1925, and a tour of Canada in 1928.



Events continued in the pattern established in the 1920's until the outbreak of war in 1939, when the band accompanied the British Expeditionary Force to France. In April, 1940, the Germans broke through the Allied lines and the band was almost cut off by the rapid advance. Throughout the war years the band undertook a vast range and number of engagements and with the addition

of the Command bands contributed to the maintenance of high service and civilian morale.

The present band is capable of fulfilling any musical engagement, from one trumpeter to a marching band of eighty and is in great demand at home and overseas for its concert band, dance band, show band and orchestral performance. Recent overseas tours have included Canada, Malta, Cyprus, Jordan and Hong Kong. The year 1980 saw the band celebrating its own sixty years, the centenary of the Royal Tournament, and the fortieth anniversary of the Battle of Britain.

The band appears by kind permission of the Air Force Board of the Defence council.

Junior Leaders RA. PT Display Team



The Junior Leaders Regiment Royal Artillery is stationed at Bramcote near Nuneaton in Warwickshire. It is tasked with training the future Senior Non Commissioned Officers and Warrant Officers of the Royal Regiment. Young men between the ages of 16½ and 17½ come to the Regiment for one year of training prior to joining an adult unit in the United Kingdom or within the British Army of the Rhine.

The Team was formed in September last year and began training in January, approximately four times a week, to provide the high standard of team work required for this demonstration. As this is in addition to their normal military and educational training, their enthusiasm for these displays is vital. A high degree of fitness and strength, combined with courage, daring and determination are the qualities that the young Gunner of the 1980's needs.

The PT Displays Team will attend 15 displays during the Summer season, and on many of them will be adding a new finale to their performance—somersaulting over the Mini Metro. Any soldier landing on the car may well find himself serving in the Royal Artillery for 22 years until he has paid for the damage!

The Metropolitan Police Motor Cycle Precision Team

The Precision Team in its present form began in 1959 and since then it has appeared at more than 500 shows in this country and abroad.



The team of eight riders, all from the Metropolitan Police Traffic Patrol, are presented by Inspector M. Vaisey, and led by Sergeant D. Christopher. All the officers are also members of the Special Escort Group which provide ceremonial and security escorts for V.I.P. visitors to London.

The machines used by the team are B.M.W. 800 cc 80/7, similar to those used by traffic patrol on duty in London. Each rider has his own motor cycle, and is responsible for the preparation and maintenance of his machine.

The display is not one of trick riding, but is a disciplined team effort. The object of the show is to demonstrate the control a rider should be able to exercise over his machine, and the manner in which powerful motor cycles can be ridden at fast and slow speeds in a confined area.

The Metropolitan Police Motor Cycle Precision Team appear by kind permission of Sir David McNee, Q.P.M., Commissioner of Police of the Metropolis.

The Royal Signals White Helmets

The Royal Signals White Helmets, led by Captain David Elson with sergeant Fred Alexander as team sergeant is in its fifty-fourth season this year. They specialise in providing a unique and thrilling arena performance of skill, high speed precision and spectacular feats of balance on motorcycles. Originally formed from despatch riders of the Royal Corps of Signals, the team is now made up from a wide range of volunteer Royal Signals tradesmen.

All team members have undergone a tough two week and highly competitive selection course carried out at Catterick and the surrounding Yorkshire Moors. The few selected then undergo six months show training before their first public performance. The team produces a display of high speed cross over rides and split second timing, feats of balance, with as many as twenty two men on six machines and ten men on a single motorcycle and breathtaking spectacles such as the Fire Jump and the famous Car Jump.



The team is proud to use all British equipment, ranging from the Princess 2000 HLS, the Triumph Tiger 750, with its Lucas Rita Electronic ignition and Girling Gas/Oil shock absorbers to the CCM 500 Moto Cross machine, equipped with Champion Spark Plugs, Renold Chain and Dunlop Tyres.

This year's display will be seen live by about two million spectators and will feature on television with performances at the Royal Tournament, many shows in the U.K., Belgium and Germany. In recent years the team has toured the United States, Hong Kong, Canada, Oman and most of Europe.

WARNING You are requested to ensure that children and pets are kept well clear of the arena display area. This is particularly important during performances involving motor vehicles and motor cycles.

Static Aircraft on Display

It is hoped to include the following aircraft, subject to availability, in the static displays

SEA SEARCH 81 MEET

Royal Air Force

Nimrod MR1
Vulcan B2
Sea King HAR3
Wessex HC2
Puma HC1
Hercules C3

Royal Navy

Sea King HAS2
Lynx HAS2
Wessex HU5

Army Air Corps

Lynx AH1
Gazelle AH1

Civilian

BAe Coastguarder
Colt Squirrel
PBN Defender

Argentina

KC-130E Hercules

Belgium

Sea King 48
Sud S-58

Canada

CP140 Aurora

France

Atlantic
Super Frelon

Germany

Atlantic

Italy

Atlantic

Denmark

Alouette III
Sikorsky S61A

Australia

C-130H Hercules

Norway

Sea King
Lynx

Spain

Fokker F27M

United States

HC-130N (USAF)
HC-130P (AFRes)
HC-130N (ANG)
HH-53 (USAF)
P-3C Orion (USN)
P-3C Orion (USNRes)
S-3A Viking (USN)

ROLLS-ROYCE

JET POWER

Lightning F6
Jaguar GR1
Jet Provost T3
Jet Provost T5
Meteor T7
Meteor F8
Hunter T7
Hunter FGA9
Canberra B2
Canberra PR9
Buccaneer S2
Dominie T1
Hawk T1
Phantom FGR2
Sea Harrier FRS1
Canadair T-33 (CAF)
S-35XD Draken (RDAF)

INTERNATIONAL STATIC

Royal Air Force

Jetstream T1
Chipmunk T10
Victor K2
Bulldog T1
Andover E3
Devon C2

Royal Navy

Jetstream T2

Army Air Corps

Scout AH1
Beaver AL1
Chipmunk T10
Skeeter AOP12
Auster AOP9
Sioux AH1

MoD(PE)

Harvard T2B
Basset CC1
Dakota C4
Comet
Viscount
BAC 1-11

British Aerospace

HS125-700

Canadian Armed Forces

CC132 Dash 7

French Air Force

Noratlant

French Navy

Falcon 10MER
Super Etendard
Etendard IVP
F-8E (FN) Crusader

Italian Air Force

Aeritalia G222

Royal Danish Air Force

F-104G Starfighter

Royal Jordanian Air Force

C-130H Hercules

Royal Netherlands

Air Force

F-16 Fighting Falcon
Northrop NF-5A

Royal Saudi Air Force

C-130H Hercules

Swiss Air Force

Twin Bonanza

United States Air Force

C-5A Galaxy
C-141B Starlifter
C-9A Nightingale
C-130E Hercules
F-15C Eagle
A-10A Thunderbolt II
RF-4C, F-4D, F-4E, F-4G
Phantoms
F-5E Tiger II
OV-10A Bronco
KC-135A Stratotanker
VC-140B Jetstar
T-39 Sabreliner
B-52H Stratofortress
UH-1D Iroquois
FB-111 & F-111E
Beech C-12

Air Force Reserve

AC-130A Hercules

Air National Guard

EC-130E Hercules
C-130E Hercules

West German Air Force

Alpha Jet
RF-4E Phantom

Civilian

Piper Geronimo
Morane 505
YAK 11
Miles Gemini
Super King Air
Stampe SV-4
Cessna Conquest
Partenavia P68B
Piper Cherokee
Percival Prentice
Piper Seneca
Bolkow 207



Morane 505



Falcon 10MER



RF-4C Phantom



Meteor T7

International Air Tattoo '81

Flying Programme

Item	DISPLAY	Item	DISPLAY	Item	DISPLAY
1	HOT AIR BALLOON DEMONSTRATIONS Famous Grouse, Allen & Harris, Smirnoff Vodka, British Gas, Nivea, Initial Services, Colt Airship	18	'LASCAR BLEU'—2 F-8E(FN) CRUSADER Flottille 12F, French Navy	38	DE HAVILLAND MOSQUITO British Aerospace PLC, Woodford
2	IAT EMERGENCY SERVICES—FLY/DRIVEPAST RN Wessex, RAF Sea King with RAF, RN, USAF, MOD(Army), MOD(PE), BAe, Chubb Carmichel and Perren Fire Tenders leading elements of 212 Field Hospital (Sheffield) RAMC(V) and HQ P & SS, RAF 10.00 am	19	NORTHROP NF5A 315 Squadron, Royal Netherlands Air Force, Twenthe	39	HAWKER HURRICANE, AVRO LANCASTER & SUPERMARINE SPITFIRE Battle of Britain Memorial Flight, RAF Coningsby
3 SAT	'THE SHARKS'—4 WESTLAND GAZELLE HT2 705 Squadron, Royal Naval Air Station Culdrose	20	PILATUS BRITTEN NORMAN BN-2A ISLANDER Pilatus Britten Norman Ltd, Bembridge	40	BAC LIGHTNING Lightning Training Flight, RAF Binbrook
SUN	'THE SWALLOWS'—2 SF260M EFS Goetsenhoven, Belgian Air Force	21	WESTLAND SEA KING HAR3 HQ SAR Wing, RAF Finningley	41	BAe SEA HARRIER FRS1 899 Squadron Royal Naval Air Station Yeovilton
4	MORANE 733 ALCYON Lindsey Walton Esq	22	'LA PATROUILLE DE FRANCE'—9 ALPHA JET French Air Force, Salon 12.45 pm	42	PANAVIA TORNADO ADV British Aerospace PLC, Warton
5	BAC JET PROVOST T3 Wright Jubilee Trophy Winner-Flight Lieutenant Les Hatcher, 7 FTS, RAF Church Fenton	23	DE HAVILLAND CANADA CC115 BUFFALO 424 Transport and Rescue Squadron, CFB Trenton	43	'IL FRECCIE TRICOLORI'—9 FIAT G91PAN Italian Air Force, Rivolto 4.00 pm
6	DE HAVILLAND CANADA CC132 DASH 7 Canadian Armed Forces, Lahr CFB, Germany	24	GENERAL DYNAMICS F-16A FIGHTING FALCON 332 Squadron, Royal Norwegian Air Force, Rygge	44	WESTLAND LYNX AH1 HQ Army Air Corps Centre, Middle Wallop
7	CAMPBELL CRICKET Captain John Kitchen, British Airways	25 SAT	'ROYAL JORDANIAN FALCONS'—3 PITTS S2 SPECIAL Alia Airlines, Amman, Royal Hashemite Kingdom of Jordan	45	HSA NIMROD MR1 42 Squadron, RAF St Mawgan
8	BOEING N2S-5 STEARMAN Wing Commander John Allison	SUN	'MARLBORO PITTS'—3 PITTS S1/S2 SPECIAL Marlboro Aerobatic Team—Philip Meeson Esq.	46	'THE VINTAGE PAIR'—GLOSTER METEOR T7 & DE HAVILLAND VAMPIRE T11 Central Flying School, RAF Leeming
9	SEPECAT JAGUAR GR1 226 OCU, RAF Lossiemouth	26	SAAB 105OE Austrian Air Force, Horschling 2.00 pm	47	'WORLD WAR 1 DISPLAY'—SPAD 7, CAMEL, FOKKER DIII, FOKKER DVII, FOKKER DVIII & ALBATROSS Leisure Sport Ltd, Thorpe Park Leisure Centre
10	LOCKHEED C130K HERCULES C1 47 Squadron RAF Lyneham	27	'THE STARFIGHTERS'—5 CF104G STARFIGHTER 441 Tactical Fighter Squadron, Canadian Armed Forces, Soellingen	48	'DUNLOP PITTS'—PITTS S1S SPECIAL Brian Lecomber Esq
11	HAWKER SEA FURY, FAIREY SWORDFISH & FAIREY FIREFLY FAA HISTORIC Aircraft Flight, Royal Naval Air Station Yeovilton	28	BAe NIMROD AEW3 British Aerospace PLC, Woodford	49 SAT	HAWKER SEA HAWK FGA6 Sea Hawk Flight, Royal Naval Air Station Culdrose
12	FAIRCHILD A-10 THUNDERBOLT II 81st TFW, USAF—RAF Bentwaters	29	HAWKER HUNTER FGA9 79 Squadron, RAF Brawdy	SUN	'THE FALCONS' Royal Air Force Parachute Display Team, RAF Brize Norton
13 SAT	'THE SWALLOWS'—2 SF260M EFS Goetsenhoven, Belgian Air Force	30	FOKKER F27M TROOPSHIP 334 Squadron, Royal Netherlands Air Force, Soesterberg	50 SAT	'THE GRASSHOPPERS'—4 ALOUETTE III Royal Netherlands Air Force Helicopter Display Team, Deelen
SUN	THE GRASSHOPPERS'—4 ALOUETTE III Royal Netherlands Air Force Helicopter Display Team, Deelen	31	2 SUPER ETENDARD/ETENDARD IVP Flotille 16F French Navy, Landivisiau	SUN	'THE SHARKS'—4 WESTLAND GAZELLE HT2 705 Squadron, Royal Naval Air Station, Culdrose
14	BAe JETSTREAM T2 750 Squadron, Royal Naval Air Station, Culdrose 11.30 am	32	WESTLAND SEA KING HAS2 706 Squadron, Royal Naval Air Station Culdrose	51	MCDONNELL DOUGLAS F-15C EAGLE 36th TFW USAF, Bitberg, Germany
15	'THE KARO AS'—4 SAAB 105OE Austrian Air Force, Zettweg	33	HAWKER SEA FURY FB11 Frank Saunders Esq	52	AVRO SHACKLETON AEW2 8 Squadron, RAF Lossiemouth
16 SAT	'THE FALCONS' Royal Air Force Parachute Display Team, RAF Brize Norton	34	NORTHROP F-5E TIGER II Royal Hashemite Kingdom of Jordan Air Force	53	MC-130E HERCULES—FULTON RECOVERY SYSTEM DEMO 7th Special Operations Squadron, USAF
SUN	HAWKER SEA HAWK FGA6 Sea Hawk Flight, Royal Naval Air Station Culdrose	35 SAT	'MARLBORO PITTS'—3 PITTS S1/S2 SPECIAL Marlboro Aerobatic Team—Philip Meeson Esq.	54	'THE RED ARROWS'—9 HAWK T1 Central Flying School Detachment, RAF Kemble 5.50 pm
17	HSA VULCAN B2 50 Squadron, RAF Waddington	SUN	'ROYAL JORDANIAN FALCONS'—3 PITTS S2 SPECIAL Alia Airlines, Amman, Royal Hashemite Kingdom of Jordan	55	HOT AIR BALLOON DEMONSTRATIONS Famous Grouse, Smirnoff Vodka, British Gas, Nivea, Initial Services, Colt Airship, Allen & Harris
		36	'PATROUILLE SUISSE'—6 HAWKER HUNTER MK58 Swiss Air Force, Dubendorf 3.00 pm		
		37	SUPERMARINE S5 REPLICA Leisure Sport Ltd, Thorpe Park Leisure Centre		

International Air Tattoo '81 Souvenir Programme written and edited by Peter March and Andrew March. Advertisement manager Claire Lock. Original cover paintings by Wilf Hardy. Photographs by Brian Atkinson, Andrew March, Peter March, Kit Townend and from official archives. Cameras by Canon. Maps drawn by Dick Dawnay. Filmset and printed by Taylor Brothers Bristol Limited, 15-25 Wilder Street, Bristol BS2 8PY.
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The organisers of IAT '81 reserve the right to alter the programme according to the availability of aircraft, aircrew and the weather conditions prevailing at the time.

International Competition at IAT '81

Four magnificent trophies will be awarded for performances given during the flying display on Sunday, 28 June. The panel of international judges will announce their decision after the close of flying on Sunday evening.

The **Embassy Jet Aerobatic Trophy**, donated by W.D. & H.O. Wills, will be presented to the pilot who gives the best solo jet demonstration. The **Shell UK Oil Trophy** will be awarded for the best overall flying display, excluding solo jet competitors and display teams of more than six aircraft, and the **Nationwide Building Society International Display Sword** will be awarded for the best flying demonstration by an overseas participant.

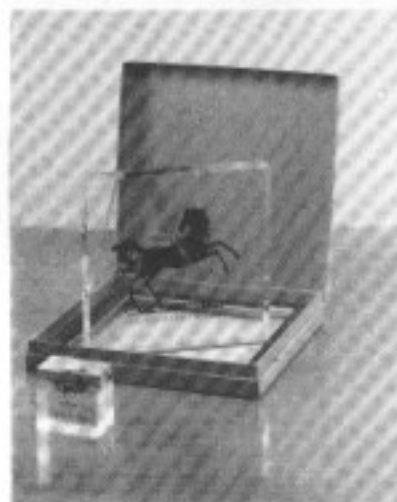


International Display
Sword



Shell UK Oil Trophy

A new trophy for 1981 is the **Lloyds Bank Ltd Spirit of the Tattoo Award**, which will be presented to the participant who, in the opinion of the IAT Organising Committee, has made the most outstanding contribution to the success and safety of the event.



Spirit of the Tattoo Award



Embassy Jet Aerobatic
Trophy

Amongst the many aerobatic and display teams participating at IAT '81 we are delighted to welcome from:

Austria—the Karo AS (Saab 105)

Belgium—the Swallows (SIAI SF260M)

Canada—the Starfighters (CF-104G)

Italy—the Frecce Tricolori (Fiat G91)

Netherlands—the Grasshoppers (Alouette III)

Switzerland—the Patrouille Suisse (Hunter)

also the Patrouille France (Alphajet), RN Sharks (Gazelle) and the RAF Red Arrows (Hawk) as well as numerous other team and solo performers from air arms at home and overseas.



Austria—Karo As



Belgium—Swallows



Italy—Frecce Tricolori



Canada—the Starfighters



Switzerland—Patrouille Suisse

The Army at IAT '81

In addition to its contribution to the Arena entertainment, the Army is well represented by a number of static displays. These displays give a clear idea of the role and equipment of several of the combat arms, supporting arms, and logistic services.

Combat Arms

The Household Cavalry, made up of two Regiments, The Life Guards and the Blues and Royals, will be showing that it is not just a ceremonial regiment. It is normally very busily engaged in the activities of either an armoured regiment equipped with Chieftain tanks or that of an armoured reconnaissance regiment equipped with the Scorpion, Scimitar/Fox tracked reconnaissance vehicles.

You can also see representatives of **The Royal Hussars**, which is Berkshire's Armoured Regiment, formed by the amalgamation in 1969 of the 10th Royal Hussars and the 11th Hussars.

The Infantry is well represented by display teams from the Prince of Wales's Division and visitors will have the opportunity to talk to men from such famous Regiments as the Duke of Edinburgh's Royal Regiment (an amalgamation of the Royal Berkshire Regiment and the Wiltshire Regiment), the Royal Hampshire Regiment, the Gloucestershire Regiment and the Devonshire and Dorset Regiment.



Supporting Arms

The Royal Regiment of Artillery has an interesting display provided by the School of Artillery at Larkhill and the equipment on view includes the M-107 Self Propelled Gun, a Light Gun, a Rapier and Blowpipe from the Guided Weapons Support Troop and a Drone of 22 Locating Battery RA.

The Royal Engineers Mobile Display Team's display is centred around two main caravans and is designed to illustrate both the combat engineering tasks of the Sapper in war and the many trades and specialist skills within the Corps.

Soldiers of 6 Field Force Headquarters and Signals Squadron will be on hand to demonstrate the skills and equipment of the **Royal Corps of Signals** in the field of communications.



The **Army Air Corps** is taking its usual part in the main flying display with a Lynx helicopter and there will be an impressive line-up of fixed wing aircraft and helicopters used by the Corps in the static display. Formed in 1957 from the Glider Pilot Regiment and the Air Observation Post Squadrons, the Army Air Corps is now well established in its own right with its own direct recruiting and manning. It operates Westland Scouts and Lynx helicopters in the anti-tank, air observation and communications roles and Gazelles for similar support duties.

Army Services

The RAOC today is one of the largest supply organisations in the United Kingdom and provides the Army with everything it needs to live, move and fight. Their display is dominated by a 33 foot climbing tower and visitors are invited to have a go at 'rock' climbing.

The RAEC is responsible for all aspects of education in the Army.

The **Royal Military Police** work wherever soldiers serve and their job varies from routine police work to specialist roles and activities in operational areas. Their display covers these duties, plus those of the Special Investigation Branch. You will have the opportunity to see a display of fingerprinting and, if you wish; have your own 'prints' taken to keep as a souvenir of your visit.

Should you want to know more about careers in the modern Army then take the opportunity of talking to members of the **Army Careers Staff** who can answer your questions and give you advice.



Don't miss next year's great army aviation event

**ARMY AIR CORPS
SILVER JUBILEE AIR PAGEANT**
Middle Wallop, Hants
23—25 JULY 1982



The main theme of this year's International Air Tattoo is 'Sea Search 81'. This is the largest gathering of anti-submarine, maritime patrol and search and rescue aircraft ever to be staged. Aeroplanes and aircrew from the four corners of the world assembled at RAF Greenham Common to take part in the competitions and symposium that have taken place in the week preceding the Tattoo. It is a tribute to the professionalism and dedication of all these participants that they should travel such distances for the Sea Search Meet and take part in such a spirit of friendship and co-operation.

To assist the International Air Tattoo Organising Committee to mount this event a Maritime Industries Team was formed. The Team is a consortium of companies who have given their support and financial backing to the venture, and comprises:—

Boeing, British Aerospace, EMI, Fokker, Lockheed, Marconi and Westland Helicopters

The complete spectrum of search and rescue aircraft is represented at Sea Search 81, from the anti-submarine British Aerospace Nimrod and Lockheed P3 Orion to the rescue helicopter and the latest developments of the Pilatus Britten Norman Defender, BAe Coastguarder and Fokker F27 Maritime.



BAe Nimrod MR.1



Lockheed P-3 Orion



Breguet Atlantic



BAe Coastguarder



Pilatus Britten Norman Defender

All Sea Searchers took part in flying competitions on Wednesday, 24 June, the fixed wing aircraft flying out to the Western Approaches in order to carry out simulated rescues, submarine attacks and navigational tests, while the helicopters flew a navigation and detection exercise which incorporated winching and slalom competitions. Bowood House, Lord Shelburne's stately home near Calne, Wiltshire. The latter events sponsored by Famous Grouse.

A Symposium was held at the Hexagon Civic Centre, Reading on Thursday, 25 June when all those who attended were treated to a variety of papers presented by the aerospace industry, and participants with specialist techniques. It provided an excellent forum for the exchange of ideas and information over a wide range of topics from operations in Antarctica to economic zone patrol and long range maritime surveillance.

The Sea Search 81 participants took part in competitions for a host of trophies specially donated by the following companies:

Concours d'Elegance
Spirit of the Meet
Spirit of the Tattoo
Sea Search 81 Champions
Overall Flying
Competition Winner (Fixed-wing)
Best Overseas Entry
—Flying Competition
Best Overall
Photograph
Best Photographic Crew
Best Non ASW Crew
Best Adherence to Schedule
Competitor who travelled
Greatest Distance
Overall Flying
Competition Winner (Helicopter)
Best Overall Winching
Best Civilian Entry
Best Overall Slalom

Aviation & Marine
Graviner
Lloyds Bank
Mappin & Webb

Lockheed

Rolls-Royce
Lloyds Bank

Canon
Boeing
Fokker

Marconi

Rolls-Royce
Aviempo
Allied Breweries
Famous Grouse

During the two days of International Air Tattoo the Sea Search crews are manning their aircraft in the static line, the largest and most impressive gathering of maritime search and rescue equipment ever assembled before the public, some of which are shown on the following page.

The IAT and Sea Search 81 Organisers would like to take this opportunity to thank all those who have made this Meet possible, especially the Maritime Industries Team, Famous Grouse and the participants.



Bandeirante



UH-14A Lynx and Lynx HAS.2



S-3A Viking



Buffalo



Sea King HAS.2



Wessex HU.5



SP-2H Neptune



CP-140 Aurora



Sikorsky HH-53



Super Frelon

Tattoo Display

Your guide to some of the varied and interesting aircraft types visiting RAF Greenham Common for interanational Air Tattoo '81.



Royal Jordanian Falcons



Campbell Super Cricket



Dunlop Pitts S1 Special



YAK-11



Alcyon "Cambrian Gunship"



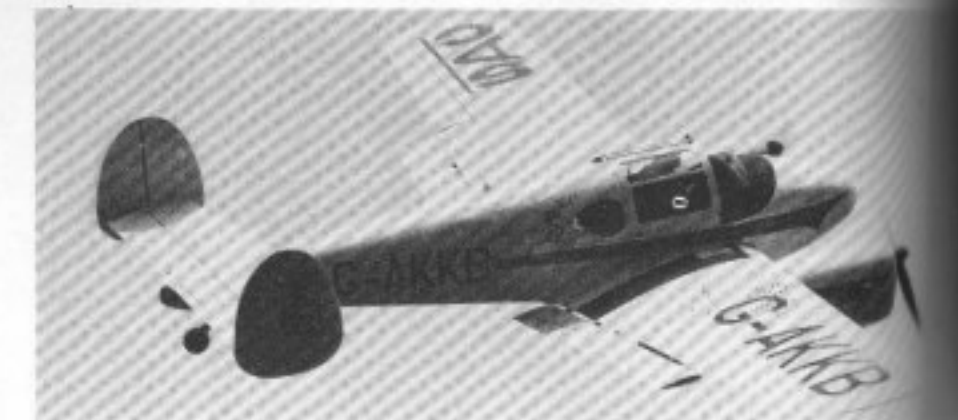
Super Etendard



F-16B Fighting Falcon



Fairey Swordfish



Miles Gemini



Harvard Duo



"Shark's" Gazelles

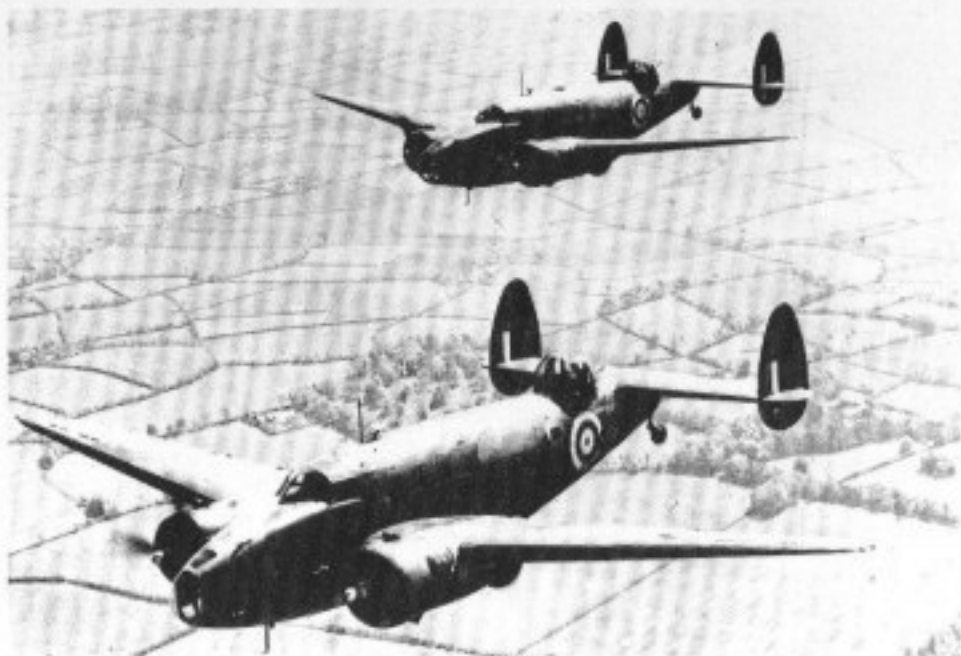


Boeing Stearman

Lockheed's 40 years of ASW

The history of Lockheed antisubmarine warfare aircraft began more than 40 years ago—nearly 15 months before Hitler's sweep into Eastern Europe. That's when the British Purchasing Commission ordered a military version of the Lockheed, California Company's Super Electra for the Royal Air Force. Dubbed the 'Hudson,' the plane was first flown in December 1938 and the initial deliveries were made in February 1939. By January 1940 Hudsons were equipped with ASV radar, and Lockheed found itself in the anti-submarine warfare business.

A total of 2,941 Hudsons rolled from Lockheed's assembly lines before being replaced by the PV-1 Ventura. Although a feared adversary, the Ventura carried only ASV radar, a manually operated radio detection finder, and communications equipment that was marginal beyond 500 miles. Lockheed added greater range and more equipment to the PV-2 Harpoon, the Ventura's successor. Initially flown in December 1943, the first Harpoons saw action from bases on the Aleutian islands.



Lockheed Hudson

Then came the P-2V Neptune, an aircraft that was an engineer's dream. It could land at 80 mph and 'home' in for the kill at 300 mph. The third off the production line, the 'Truculent Turtle,' broke the world's long-distance flight

record in 1946. Perhaps Neptune's most significant contribution lay in its pioneering ASW systems integration. It could localize submerged submarines with the use of sonobuoys dropped from its bays.

Yet, in light of the growing threat from nuclear submarines, the Neptune was becoming outdated by the end of the 1950's. Called upon to develop a more sophisticated ASW aircraft, Lockheed responded with the P-3 Orion, which entered service in 1962. The P-3A carried automatic and semi-automatic data transmission links interconnecting many of the 'black boxes', making pertinent information readily available to tactical crew members. Lockheed designed Orion for growth. In late 1965 the first P-3B rolled from the production lines. It featured more powerful turboprop engines, an integral starting system, Bullpup missile capabilities and an advanced system of sonobuoy monitoring and analysis. In 1970 Lockheed delivered the P-3C to the U.S. Navy. The 'C' version carries a data processing system that relegates time-consuming tactical calculations and route functions to a digital computer.



HC-130 Hercules—US Coast Guard

Under two update programs, the P-3C was improved in 1975 with new avionics and software and in 1977 with an infra-red detection system, a sonobuoy reference system, the Harpoon anti-ship missile, and a 28-channel magnetic tape recorder/reproducer. The next stage in P-3 development will be the P-3C update III, which will feature an advanced IBM signal processor. Lockheed has produced more than 500 P-3 Orions. In addition to the United States, P-3s are flown by Australia, Iran, Japan, New Zealand, Norway and Spain. The Netherlands is scheduled to receive the first of 13 Orions in November.

Delighted with the land-based P-3, the U.S. Navy turned to Lockheed in the early 1970s for a sea-based ASW aircraft that would replace the S-2 Tracker. Lockheed responded with the turboprop S-3A Viking, which entered service in 1974. The Viking contains an advanced avionics system and

can carry a variety of ordinance, including torpedoes, mines, depth charges, rockets and missiles. Lockheed built 10 S-3A Vikings. In the spring of this year the S-3 weapon system improvement program, that will include the Harpoon missile and expanded electronic support measures, was initiated. The sophisticated ASW suite Lockheed incorporated into the Viking found additional use in another maritime patrol aircraft—the CP-140, which has the fuselage frame and engines of the Orion. Lockheed has manufactured 18 CP-140s for the Canadian Forces.



P-3C Orion—US Navy

Until 1980 all of Lockheed's specialized maritime patrol aircraft were produced in Burbank, California. Beginning that year, however, the Lockheed-Georgia Company, started production of a maritime patrol version of its versatile C-130 Hercules transport aircraft. Designated the C-130H-MP, the aircraft features fuel efficient propjet engines and has a highly accurate sea/search radar. Two Southeast Asian nations have already purchased the new aircraft. More than 100 other Hercules also perform maritime patrol search and rescue missions.

For over 40 years Lockheed has demonstrated its readiness to respond to the threat of submarine warfare and its ability to adapt to the latest requirements. With its new C-130H-MP, its continuous updating of the P-30 and its weapon system improvement program for the S-3A, Lockheed plans to stay in the forefront of ASW maritime patrol aviation.



S-3A Viking—US Navy



INTERNATIONAL MARITIME PATROL SEARCH AND RESCUE MEET 81

Canon
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Calculator of the
International
Air Tattoo 81

HARDY