

The Royal Air Force Benevolent Fund's International Air Tattoo 89



RAF FAIRFORD
22-23 JULY

Programme sponsored by



Introduction by the Patron
His Majesty King Hussein bin Talal

GCB (Mil) GCVO

King of the Hashemite Kingdom of Jordan

It is a very great pleasure for me to again introduce the programme for the International Air Tattoo. The 1989 International Air Tattoo is my second as Patron of the Event. No other airshow manages, so successfully, to combine the ingredients which together make the Tattoo the highlight of the display world that it has become. Thrilling spectacles allied with brilliant professionalism, underpinned by great camaraderie and friendship all gel together to produce an Event second to none.

IAT 89 has as its theme SEASEARCH 89 which brings together an extensive representation of the Maritime world for the exchange of views and ideas. The Theme helps to guarantee the continuation of the one aspect of the Event which makes IAT so unique — the involvement of air arms from around the whole world. I very much hope that you will enjoy this spectacular biennial Event, which is again proudly staged by the IAT team of experts and committed volunteers whom I am honoured to represent.

A handwritten signature in black ink, which appears to read 'Hussein'.



Welcome to the third International Air Tattoo (IAT) to be held at RAF Fairford. The men and women of the United States Air Forces in Europe (USAFE) are proud that we have been able to support this important RAF Benevolent Fund event over the years. Our support is given, in sincere appreciation, to those RAF members and families who have given so much of their country. We are indeed pleased that you are supporting IAT '89. Your support provides a two-fold benefit — I am sure you will have a wonderful day viewing the many ground and air displays, but more importantly, you will be helping the RAF Benevolent Fund at a time when demands on the Fund are increasing. Thank you for attending IAT '89, and we hope that you enjoy your visit to RAF Fairford.

Thomas LaPolt

Colonel Thomas LaPOLT, USAF Commander



It is indeed a pleasure to welcome you to IAT '89 on behalf of the Warriors of the Strategic Air Command. This year's theme 'SEA SEARCH' focuses on another facet of each nation's contributions to humanity. Additionally, we will be able to reflect on the 40th Anniversary of NATO (and the accomplishment that organisation has made to World Peace) as well as celebrate the 25th Anniversary of the Red Arrows. The entertainment provided by the IAT is well worth the price of admission; however, it becomes even more enjoyable when one realizes profits go to the RAF Benevolent Fund to relieve hardship and distress of former and present members of the Royal Air Force. Again, on behalf of the men and women of the 11th Strategic Group, welcome to RAF Fairford and IAT '89.

James F. McKeon

Colonel James F. McKEON, Commander 11th Strategic Group



RAF Fairford is now well established as the venue for the RAF Benevolent Fund's International Air Tattoo. The RAF Benevolent Fund needs to raise more money as the years pass and the number of potential recipients increase. Consequently, 1989 will be the biggest and best air tattoo so far. As RAF Commander, I welcome you to RAF Fairford confident that, either as an old friend of the International Air Tattoo or if this is your first visit, you will see air and static displays that you will remember for many years to come.

K. T. Lloyd

Squadron Leader K. T. LLOYD, RAF Commander



The 7020th Air Base Group is part of the USAF's 3rd Air Force, located at RAF Mildenhall, Suffolk, and part of the US Air Forces in Europe (USAFE), based at Ramstein Air Base, West Germany. The group is based here at RAF Fairford, Gloucestershire, approximately 20 miles north of Swindon. It has some 1,200 military and 90 civilian personnel assigned.

The 7020th Air Base Group is host unit at RAF Fairford, and was designated and activated at the base on 1 February 1979. After its activation, the group prepared the base for the main body of personnel which arrived that summer, and the KC-135A Stratotankers which arrived in September 1979.

The task of the 7020th Air Base Group is to provide for the operation and maintenance of RAF Fairford in support of the 11th Strategic Group (Strategic Air Command) and to provide support for other associate units. The group is composed of staff agencies and sections including legal, public affairs, administration, safety, services, personnel, base operations, resource plans, disaster preparedness, transportation, medical and finance services.

There are four squadrons within the group: the 7020th Headquarters Squadron, 7020th Civil Engineering Squadron, the 7020th Security Police Squadron and the 7020th Supply Squadron. The 870th Contingency Hospital at RAF Little Rissington, located some 25 miles north of RAF Fairford, is also part of the group. The group's insignia, a falcon poised on Cotswold stone, alludes to its location and indicates its task to support the 11th Strategic Group.



International Air Tattoo 1989 AWARDS

At IAT 89 participants in the flying display on Sunday 23 July will be eligible for one of the following awards:—

The SIR DOUGLAS BADER TROPHY

Presented by SHELL (UK) OIL for the best flying demonstration.

Shell (UK) Oil's perpetual trophy, presented in memory of Sir Douglas Bader (President of IAT from 1976 to 1982), will be awarded at the International Air Tattoo for the best overall flying demonstration. The Trophy will be presented to the pilot or team leader, who, in the opinion of the judges, gives the best overall flying demonstration on Sunday 23 July.

All participants, excluding aerobatic teams of more than six aircraft, and solo jet

demonstrations that qualify for the Superkings Solo Jet Trophy, will be eligible for the Sir Douglas Bader Trophy.

Participants will be assessed by the judges on the presentation of their aircraft, orientation of display and accuracy of manoeuvres.

The Sir Douglas Bader Trophy was won at IAT 87 by 'The Grasshoppers' Helicopter Display Team from the Royal Netherlands Air Force (below)



The SUPERKINGS SOLO JET AEROBATIC TROPHY

Presented by Imperial Tobacco for the best solo jet demonstration.

Imperial Tobacco generously donated a Solo Jet Trophy in 1972, to be awarded at the International Air Tattoo for the best solo jet demonstration.

All single/two seat jet demonstrations in the flying programme on Sunday 23 July will be considered for the award of the Superkings Solo Jet Aerobatic Trophy.

Participants will be assessed by the judges on the same criteria as for the Sir Douglas Bader Trophy.

The Superkings Solo Jet Aerobatic Trophy was awarded to Flight Lieutenant Paul Brown of 229 OCU, RAF Coningsby flying a Tornado F3 at IAT 87 (below)



The INTERNATIONAL DISPLAY SWORD

Presented by Nationwide Anglia Building Society for the best flying demonstration by an overseas participant.

Nationwide Anglia Building Society will again present a Wilkinson Crusader Sword to the pilot/team leader, who, in the opinion of the judges, gives the best flying demonstration by an overseas participant on Sunday 23 July.

All overseas participants will be eligible for this award and will be judged, as before, on the presentation of aircraft, orientation of display and accuracy of manoeuvre.

The Nationwide Anglia Building Society International Display Sword was also won at IAT 87 by 'The Grasshoppers' Helicopter Display Team from the Royal Netherlands Air Force (left)



SEA SEARCH 89



The second International Maritime Patrol and Search and Rescue Meet

The highly successful and widely acclaimed biennial International Air Tattoo has, since 1981, adopted a theme to feature a particular aspect of the employment of aircraft. At Fairford, SKYTANKER 85 highlighted in-flight refuelling and SKYLIFT 87 demonstrated air transport and recognised the widespread use of aircraft for the relief of disaster and distress.

SEA SEARCH 89 — the theme of International Air Tattoo 89 — is a major international aircraft Meet to pay tribute to the world's maritime patrol and search and rescue services. In the three days prior to IAT 89, it has focused on the employment of aircraft for ocean reconnaissance and surveillance, the protection of the offshore tapestry, pollution reporting, fishery patrols and the safeguarding of the maritime environment and, of particular international and humanitarian importance, the life saving search and rescue services.

The opportunity for highly skilled professionals in a specialised field of aviation to meet and discuss topics of mutual interest and to exchange views, experience and techniques is valued highly and eagerly sought. Air arms and civilian organisations operating both fixed and rotary wing aircraft from over 70 countries were asked to participate in SEA SEARCH 89. Their aircraft can be seen on the southern taxiway to the east of the Air Traffic Control Tower where the SEA SEARCH static display includes aircraft from Australia, New Zealand, South America, North America, Canada, Scandinavia, Europe and Mediterranean countries.

Companies of the aerospace and avionics industries involved in many aspects of maritime air and search and

rescue operations have also been associated with SEA SEARCH 89 and have sponsored the Meet by joining the Maritime Industries Team and by supporting various activities.

SEA SEARCH 89 included a full day symposium at which eminent speakers from the Services, industry and research organizations presented their papers on maritime surveillance and the four day International Maritime Air Exhibition (IMAX) held in conjunction with SEA SEARCH 89 presented the latest developments in theme related systems and equipment.

The aims of SEA SEARCH 89 were to create an atmosphere of international friendship, goodwill and understanding. It brought together fixed and rotary wing aircraft and crews from many parts of the world and promoted the exchange of views, experience, information and techniques between participants and industry.

Social activities have a part in developing the 'Spirit of the Meet' and the SEA SEARCH participants were first entertained at a 'Meet and Greet' reception in the Concord Club at RAF Fairford by members of the SEA SEARCH team and United States Air Force hosts from the 11th Strategic Group.

Another reception after the Symposium soon led to more informal and relaxed but valuable discussions.

Competitions held on Friday 21st July tested the crews in various aspects of aircraft operations in a series of activities which demanded skill, determination, physical fitness, team work and the practical application of professional knowledge and experience. An international Panel of Judges adjudicated in a Concours d'Elegance competition for the award of trophies for the best prepared and presented aircraft for display to the public.

The trophies were presented by the donors at a ceremony following the formal SEA SEARCH 89 Dinner which brought the Meet to a close.

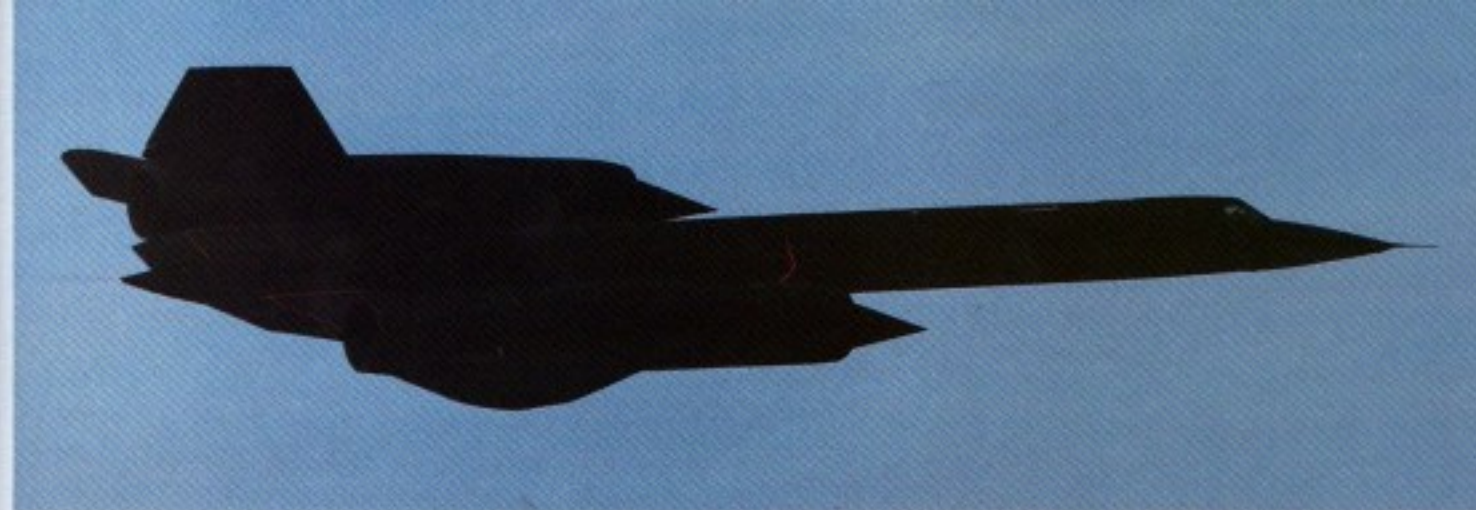
The Chairman and Organising Committee of IAT 89 acknowledge the support given to SEA SEARCH 89 by the following companies:

BOEING COMPANY
CFMI
FLIGHT INTERNATIONAL
GEC AVIONICS LTD
GENERAL ELECTRIC (US)
GRAVINER LTD
HOLIDAY INN, SWINDON
IAN ALLAN LTD
LOCKHEED CORPORATION
MARSHALL OF CAMBRIDGE
(ENGINEERING) LTD
PAGE AEROSPACE LTD
ROLLS ROYCE PLC
RUSTON GAS TURBINES LTD
THORN EMI ELECTRONICS LTD
THE VICTORIA WINE COMPANY

IAT 89 has offered once again a unique opportunity for professionals in a specialised field from far and wide to meet in a relaxed and friendly but exciting environment and has given the public a chance to see the aircraft, meet the crews and discuss the work of these dedicated aviators.



Flying Display Programme



SATURDAY 22 JULY

0950

Super Stearman
Charity Wing Walk
Vic Norman & Katrina Hocking

Bell UH-1H
RAF Benevolent Fund/IAT

1000

KC-135A Stratotanker
USAF/SAC 11SG, RAF Fairford

Hawker Sea Fury T20
RN Historic Flight, Yeovilton

Westland Lynx
The Windmills
Royal Netherlands Navy

Jaguar Extra 230
Brian Lecomber

B-V Chinook HC1
7 Sqn, RAF Odiham

Antonov An-2
Hungarian Air Services

HS 748 Andover CC2
32 Sqn, RAF Northolt

Lynx, Gazelle, Scout,
AAC Eagles Display Team

KC-135R Stratotanker
USAF/SAC, Barksdale AFB

1100

Sikorsky S-61
HM Coastguard/
Bristol Helicopters

English Electric Canberra PR9
No 1 PRU, RAF Wyton

RM Parachute Display Team
Royal Marines, Poole

Westland Wessex HC2
SARTU, RAF Valley

HS Buccaneer S2B
12 Sqn, RAF Lossiemouth

A-10A Thunderbolt
USAFE/81 TFW,
RAF Bentwaters

4 Pitts Special
Royal Jordanian Falcons
Display Team

1200

Panavia Tornado GR1
TWCU, RAF Honington

Fokker F27M
334 Sqn, Royal Netherlands AF

6 Cessna T-37C
ASAS de Portugal
Display Team, Portuguese AF,
102 Sqn Sintra

BAe Harrier GR3
233 OCU, RAF Wittering

RAF Falcons
Parachute Display Team
No 1 PTS, RAF Brize Norton

1300

EC-135 Stratotanker
USAFE/10 ACCS,
RAF Mildenhall

Aeritalia G222
Italian Air Force

4 Alouette III
The Grasshoppers,
Royal Netherlands AF
Helicopter Display Team

Shorts Tucano T1
RAF Scampton

Hunting Jet Provost T3A
1 FTS, RAF Linton-on-Ouse

BAe Hawk T1A
2 TWU/151 Sqn
RAF Chivenor

Avro Shackleton AEW2
8 Sqn, RAF Lossiemouth

1400

GD FB-111A
USAFE/SAC 380BW,
Plattsberg AFB

Rockwell B-1B
USAF/SAC 319BW,
Grand Forks AFB

KC-135R Stratotanker
USAF/SAC 306SW,
RAF Mildenhall

B-52G Stratofortress
USAF/SAC 2BW,
Barksdale AFB

C-141B Starlifter
USAF/MAC, Charleston AFB

GD F-16 Fighting Falcon
315 Sqn, Royal Netherlands AF

Supermarine Spitfire
Hawker Hurricane and
Avro Lancaster
RAF Battle of Britain
Memorial Flight

1500

5 Pitts S2 Special
The Halcones, Chilean AF
Aerobatic Team

Dassault Mirage F1
Royal Jordanian AF

Mitsubishi Zlin 50L
Vic Norman

Avro Vulcan B2
Vulcan Display Flight,
RAF Marham

1600

4 CAP 230
Green March Royal Moroccan AF
Display Team

BAe Sea Harrier FRS1
899 NAS, RNAS Yeovilton

7 CASA 101 Aviojet
Team Aguila,
Spanish AF Display Team

Panavia Tornado F3
229 OCU, RAF Coningsby

3 HS Nimrod MR2
206 Sqn, RAF Kinloss

1700

Lockheed C-5B Galaxy
USAF/MAC, Dover AFB

3 Pilatus PC7
Patrouille Martini, France

HS Nimrod MR2
236 OCU, RAF St Mawgan

CF-18A Hornet
439 Sqn, Sollingen,
West Germany

Westland Puma HC1
33 Sqn, RAF Odiham

9 BAe Hawk T1A
Red Arrows
RAF Aerobatic Team

SUNDAY 23 JULY

0950

Super Stearman
Charity Wing Walk
Vic Norman & Simon Weston

Bell UH-1H
RAF Benevolent Fund/IAT

KC-135A Stratotanker
USAF/SAC 11SG, RAF Fairford

1000

9 BAe Hawk T1A
Red Arrows,
RAF Aerobatic Team

Hawker Sea Fury T20
RN Historic Flight, Yeovilton

Jaguar Extra 230
Brian Lecomber

HS 748 Andover CC2
32 Sqn, RAF Northolt

2 Westland Lynx
The Windmills,
Royal Netherlands Navy

1100

Sikorsky S-61
HM Coastguard/
Bristol Helicopters

3 Pilatus PC7
Patrouille Martini, France

RM Parachute Display Team
Royal Marines, Poole

Lockheed C-5B Galaxy
USAF MAC, Dover AFB

BAe Hawk T1A
2 TWU/151 Sqn
RAF Chivenor

4 Pitts Special
Royal Jordanian Falcons
Display Team

1200

Panavia Tornado GR1
TWCU, RAF Honington

BAe Harrier GR3
233 OCU, RAF Wittering

6 Cessna T-37C
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Display Team, Portuguese AF,
102 Sqn Sintra

RAF Falcons
Parachute Display Team
No 1 PTS, RAF Brize Norton

1300

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USAFE, 10 ACCS
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Helicopter Display Team

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Supermarine Spitfire
Hawker Hurricane and
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Memorial Flight

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GD FB-111A
USAF/SAC 380BW,
Plattsberg AFB

Rockwell B-1B
USAF/SAC 319BW,
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KC-135R Stratotanker
USAF/SAC 306SW,
RAF Mildenhall

B-52G Stratofortress
USAF/SAC 2BW,
Barksdale AFB

C-141B Starlifter
USAF/MAC Charleston AFB

GD F-16 Fighting Falcon
315 Sqn, Royal Netherlands AF

Lynx, Gazelle, Scout,
AAC Eagles Display Team

1500

5 Pitts S2 Special
The Halcones,
Chilean AF Aerobatic Team

A-10A Thunderbolt II
USAFE/81 TFW,
RAF Bentwaters

Avro Vulcan B2
Vulcan Display Flight,
RAF Marham

Westland Wessex HC2
SARTU, RAF Valley

Hunting Jet Provost T3A
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1600

Panavia Tornado F3
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334 Sqn, Royal Netherlands AF

B-V Chinook HC1
7 Sqn, RAF Odiham

Dassault Mirage F1
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4 CAP 230
Green March
Royal Moroccan AF
Display Team

1700

English Electric Canberra PR9
No 1 PRU, RAF Wyton

Mitsubishi Zlin 50L
Vic Norman

HS Nimrod MR2
236 OCU, RAF St Mawgan

CF-18A Hornet
439 Sqn, Sollingen,
West Germany

Westland Puma HC1
33 Sqn, RAF Odiham

Lockheed SR-71 Blackbird
9 SRW, RAF Mildenhall

7 CASA 101 Aviojet
Team Aguila,
Spanish AF Display Team



Arena Entertainment

A full programme of exciting and varied displays will be taking place twice every day in the arena at 1000hrs and 1600hrs.

After the morning performances the restored and preserved military vehicles which form a static display alongside the arena will be driven around inside the arena, giving a further chance to see these vehicles show their metal!

As you enjoy all the colour, pageantry and skills demonstrated to you today, it is hard to imagine that the IAT Organising Committee has taken over 18 months of planning to put the arena display together.

The volunteer staff helping the arena manager, Peter Busby, come from a variety of jobs ranging from postman John Saich to British Airways Super Shuttle ground-hostess Jackie Chandler.



Essex Dog Display

VINTAGE AND CLASSIC CARS/ VINTAGE MILITARY VEHICLES

Many of the items on view will have been rescued from scrap heaps or discovered hidden among the stinging nettles behind the barn. Almost all of them have been restored by private individuals. This is a mammoth task that needs total dedication and a considerable investment of time and money — not to mention an understanding spouse!

All of the vehicles are regular visitors to shows all over the country and are kept in tip-top condition. Several of the ex-army vehicles — under the umbrella of the Military Vehicle Conservation Groups — have recently toured Normandy as part of a massive international commemorative rally marking the 45th Anniversary of D-Day.

All the civilian and military vehicles will be on static display throughout the show. The groups have been co-ordinated by the EXCHANGE & MART SPECIAL EVENTS TEAM as part of their overall contribution to this year's International Air Tattoo.

Subject to weather conditions and availability the timetable of events will be:-

SATURDAY 22 JULY

- 1000 Royal Marines Light Infantry Cadet Marching Band
- 1030 Royal Navy & Royal Marines Commando Display Team
- 1055 Royal Air Force Halton Drill Squad
- 1115 Penhill Royal British Legion Corps of Drums
- 1150 Essex Dog Display
- 1220 Pegasus Parachute Regiment Band
- 1250 Gymnastic Display Team of the Junior Leaders Regiment RCT/ROAC
- 1315 Metropolitan Police Motorcycle Precision Team
- 1600 Metropolitan Police Motorcycle Precision Team
- 1625 Royal Air Force Halton Drill Squad
- 1645 Essex Dog Display
- 1715 Penhill Royal British Legion Corps of Drums
- 1750 Gymnastics Display Team of the Junior Leaders Regiment RCT/ROAC
- 1815 Royal Navy & Royal Marine Commando Display Team
- 1840 Royal Marines Light Infantry Cadet Marching Band

SUNDAY 23 JULY

- 1000 Royal Marines Light Infantry Cadet Marching Band
- 1030 Royal Navy & Royal Marines Commando Display Team
- 1055 Royal Air Force Halton Drill Squad
- 1115 Penhill Royal British Legion Corps of Drums
- 1150 Ministry of Defence Police Dog Display
- 1215 Pegasus Parachute Regiment Band
- 1245 Gymnastic Display Team of the Junior Leaders Regiment RCT/ROAC
- 1310 Royal Artillery Motorcycle Display Team
- 1600 Royal Artillery Motorcycle Display Team
- 1625 Royal Air Force Halton Drill Squad
- 1645 Pegasus Parachute Regiment Band
- 1715 Ministry of Defence Police Dogs
- 1740 Penhill Royal British Legion Corps of Drums
- 1815 Gymnastics Display Team of the Junior Leaders Regiment RCT/ROAC
- 1840 Royal Navy & Royal Marines Commando Display Team
- 1905 Royal Marines Light Infantry Cadet Marching Band

WARNING — You are required 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.

IAT BANDSTAND

There will be performances by the following bands at the IAT Bandstand each day:-

- CRICKLADE TOWN BAND (Saturday & Sunday)
- BRITISH AIRWAYS BAND (Saturday & Sunday)
- CIRENCESTER BAND (Sunday only)
- 93 (CITY OF BATH) ATC BAND (Sunday only)

SAR

SEARCH AND RESCUE

Edwin A. Shackleton

Few weeks pass without the RAF's buttercup yellow rescue helicopters coming to the notice of TV news viewers, readers of the national press or in the summer months, holidaymakers around the coasts of the UK. Although these flying ambulances are easily recognised, the wider role and responsibilities of this national rescue service is not widely known.

The Royal Air Force is responsible for the control of all military resources when employed on search and rescue in and around the United Kingdom. It is headed by Air Vice Marshal David Brook, of No 18 Group, with Rescue Co-Ordination Centres (RCC) at Edinburgh (Pitreavie) and Plymouth. Although the service is primarily set up to cover the military needs of the RAF, RN and Army at sea or on land, the greatest proportion of its work covers civilian distress. The UK control area is agreed internationally and covers an area of more than one million square miles from mid-Atlantic to the mid-North Sea, including most of the English Channel and an area to the west of Biscay. The RCC Edinburgh's responsibilities stretch to a line just north of Birmingham at 52° 30'N, while RCC Plymouth looks after the area to the south.

The two RCCs are manned continuously by shift systems and are prepared at any moment to receive requests for assistance from many different sources. An aircraft, either military or civil, may give a 'mayday' distress call some distance from land with perhaps an engine fault and this could be picked up directly by air traffic control or by another aircraft. The 'mayday' would then be relayed by land line to RCC. The situation is quickly assessed and a judgement made whether to scramble a rescue helicopter, long-range aircraft or alert local shipping. If the aircraft was forced to ditch in the sea the nearest rescue helicopter would be used, subject to its range. If it was beyond the helicopter's range, an RAF Nimrod maritime patrol aircraft may be diverted from its task or sent off from St Mawgan or Kinloss. At the same time, the coastguard would be alerted and, from their records of merchant navy vessel movements, they attempt to locate the nearest vessel. Concurrently, the Royal Navy Maritime HQ would know if any RN ships were in the area.

The Nimrod, should it be first overhead the rescue location, would drop a sonobuooy



which emits a tracking signal for a rescue vessel or helicopter, together with an inflatable dinghy with any necessary supplies. Then, by using its airborne radar, it would be able to locate the nearest vessel which may be a sailing boat or another vessel which is contacted from the Nimrod by Channel 16 on the marine band radio to direct it towards the ditched aircraft. The emergency might be in the vicinity of a North Sea oil rig in which case the 'local' helicopter would be asked to assist. Another possibility is that an RAF Shackleton AEW 2 or a NATO maritime aircraft may be available for assistance. In all cases, the nearest coastguard is informed and should a rescue helicopter be used, then preparations are made to activate another helicopter and crew, either from that base or from another location to cover the possibility of another alert. A rescue near to the coast, perhaps of a sailing vessel in distress, a drifting inflatable or a 'man overboard' would be co-ordinated through the coastguard and activated by an inshore lifeboat directly, but again the RCC may be asked for assistance.

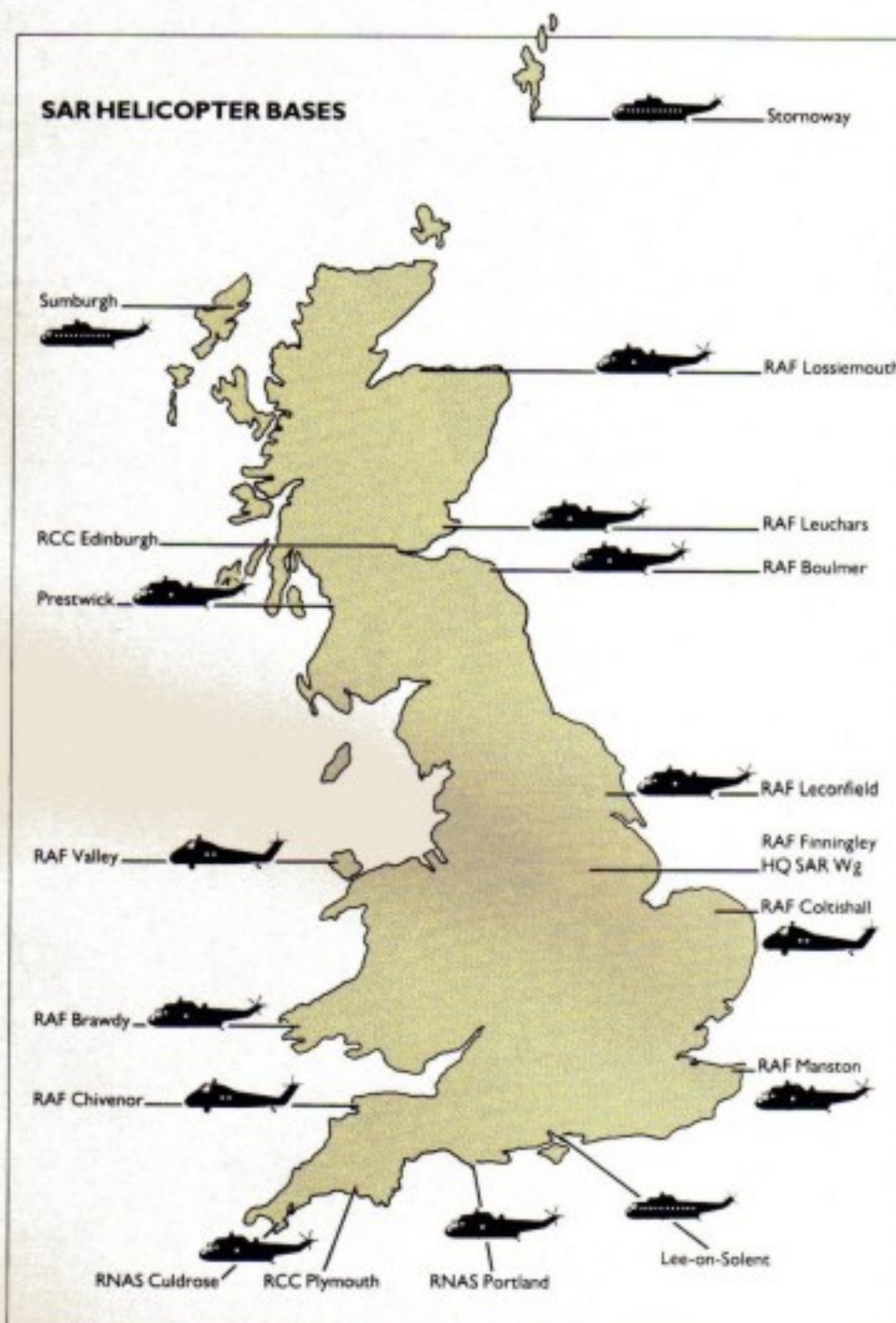
The Royal Air Force marine craft (well-known in the past for their air sea rescue missions) are still used for firing range duties and also by the School of Combat Survival at RAF Mountbatten. The craft are also based at Lowestoft, Holyhead and Ainess and are operated by James Fisher PLC on behalf of the Royal Air Force. They can also be called upon by either of the RCCs for rescue purposes.

Rescue missions are regularly requested on the land, from cliff tops, in open country or on mountain peaks. These vary from people cut off below cliffs by the tide or cliff/mountain falls, accidents where road access is difficult, lost persons on moorland or on mountains often in adverse weather. An alert can be received from a member of the public, the police or the armed services. The RCC will judge the type of rescue required, depending on the terrain and the location.

The RAF has six fully trained Mountain Rescue Teams each of which comprises a full-time NCO and five men who are backed up by volunteers. These teams are located at St Athan, Stafford, Valley, Leeming, Kinloss and Leuchars. By designation, they are primarily used for rescues in difficult terrain and may be supported by helicopters, if necessary.

A major crisis such as the Pan Am Boeing 747 crash at Lockerbie and the East Midlands Boeing 737 crash on the M1 were assisted by helicopter rescue services. The latter incident was picked up by RCC Plymouth from the media and, on its own initiative, called upon rescue helicopters to proceed to the accident scene before being officially requested.

The Rescue Co-Ordination Centres are manned by the Royal Air Force. RCC Plymouth is commanded by Group Captain Graham McMellin, the Senior RAF Officer, Plymouth. His staff comprises a controller (officer) and deputy (senior NCO) both of whom have first-hand rescue experience with a squadron and they are assisted by junior NCO assistant air traffic controllers and radio operators. Their role requires



specific skills and the ability to work under pressure. Direct telephone land lines connect the RCC to RAF bases, HM Coastguard and other important contacts. A full directory of military and civil bodies enables the RCC to obtain specialist information, even out of normal working hours. A computer is used to assist a rescue helicopter to a known sea rescue location where it is possible to use pre-programmed wind speed/direction and tidal information to obtain a more accurate track and avoid a local search near to the 'target'. The computer might show that it is better to scramble a helicopter from a more distant base down wind/tide because by the time the nearest helicopter reaches the scene the rescue target has drifted some miles further on.

It is, of course, important for the RCC to despatch a helicopter that has sufficient range and adequate carrying capacity for the rescue task. A major ship crew rescue would not, for example, be tasked to a single Wessex. The normal capacities, subject to fuel load, are Wessex — 5 passengers, and Sea King — 17 passengers,

with an operating radius of 90 and 300 miles respectively. The RCC can call upon the USAF's Sikorsky MH-53 Super Jolly helicopters from RAF Woodbridge, which can carry 37 passengers and have a radius of 250 miles. These also have the advantage of an in flight refuelling capability using locally based HC-130 Hercules tankers. It may be that the Sea King or Wessex can be refuelled away from home base on an oil rig, on the mainland in Southern Ireland or from a naval vessel, which would avoid the USAF call out.

The RCCs are also response centres for the international COSPAS/SARSAT system whereby seven centres across the northern hemisphere monitor the output from emergency beacons. The beacons which are carried in aircraft or ships and, depending on type, send out their emergency signal on a frequency of 121.5, 243 or 406 MHz, which is picked up by an orbiting satellite and transmitted to a ground station. Lasham is the UK receiving centre, (others are Moscow, Toulouse, Trenton, Bodo, Scott AFB). The signal is then transmitted to RCC Plymouth who



'A' Flight No 22 Squadron operations room.



Wessex HC2 at Chivenor.





Sea King HAR5 of 771 Naval Air Squadron based at Culdrose.

check whether it is in their area and take emergency action if necessary. When a tracking station such as Lasham is shut down for maintenance, the role can be accepted by a neighbouring station such as Bodo or vice versa. Thus a continuous service is maintained.

Examples of distress calls picked up by satellite include one received in June 1988 when a signal was pinpointed to 270 miles west of Lands End where a survivor from a transatlantic yacht in a dinghy was located

by a Nimrod and was rescued by a Spanish fishing boat. Another rescue, this time from the North Sea, was of three survivors from a burning ship — again found by means of a beacon distress signal.

Last year a total of 1,938 callouts were handled by the two UK Rescue Co-Ordination Centres (1,024 from RCC Edinburgh and 914 from RCC Plymouth). This compares with a total of 1,663 in 1987 (882 and 781 respectively).

HM Coastguard Helicopter Units with

Sikorsky S61Ns are operated by Bristow Helicopters from Lee-on-Solent, (Hants) Stornoway, (Outer Hebrides) and Sumburgh, (Shetland). Each of the units normally operates two helicopters with one helicopter and crew on immediate standby by day and able to be airborne within 15 minutes. A back-up crew at one hour readiness will be alerted on receipt of a call. At night, a less immediate readiness is provided. A Royal Air Force rescue flight has a normal complement of 4 flight crew

and 25 ground staff.

There are 15 helicopter detachments.

No 22 Squadron RAF — Wessex HC2

RAF Chivenor, Devon	A Flight
RAF Leuchars, Fife	B Flight
RAF Valley, Anglesey	C Flight
RAF Coltishall, Norfolk	E Flight

No 202 Squadron RAF — Sea King HAR 3

RAF Boulmer, Northumberland	A Flight
RAF Brawdy, Dyfed	B Flight
RAF Manston, Kent	C Flight
RAF Lossiemouth, Grampian	D Flight
RAF Leconfield, Humberside	E Flight

No 771 Naval Air Squadron

Sea King HAR5 — RNAS Culdrose, Cornwall

No 772 Naval Air Squadron

Sea King HAR5 — RNAS Portland, Dorset

No 819 Naval Air Squadron

Sea King HAS5 — Prestwick, Ayrshire

HM Coastguard/Bristow Helicopters

Sikorsky S61N — Lee-on-Solent, Hants; Stornoway, Outer Hebrides; Sumburgh, Shetland.

Typical of these busy helicopter rescue flights is No 22 squadron's 'A' Flight at RAF Chivenor, North Devon. It was called out on a record number of 191 occasions during 1988, which was the highest number of callouts by any of the 15 helicopter units. Formed in 1958 with Whirlwind helicopters and converted to Wessex HC2s in 1981, 'A' Flight has to date a proud record of 4,029 callouts completed, 1775 people rescued and 20 awards for bravery. A scan through last year's diary finds a busy July day starting with an 08.00 alert for a cliff faller with head and suspected back injuries who was lifted and taken to Morrision Hospital, Swansea. Then at 11.43 a medical evacuation request was made due to a liver failure, resulting in a flight from Bridgend to Birmingham's Queen Elizabeth Hospital. After a quiet afternoon and early evening, a 20.30 flight was made to nearby Woody



Above and top: Sea King HAR3s at the SKHTU, Culdrose.

Bay where a party was reported cut off by the tide, but they refused a winch lift and waited for the tide to turn. A final call at 21.50 resulted in the rescue of a man cut off by the tide at Morthoe Bay, Devon.

The RAF's Wessex crews are trained by the Search & Rescue Training Unit (SARTU) at Valley whilst RAF Sea King crews are trained by the Sea King Helicopter Training Unit (SKHTU) at RNAS Culdrose, Cornwall. The SKHTU, which is commanded by Sqn Ldr M. A. Williams,

RAF operates two Sea King HAR3 helicopters. It is lodger unit at HMS Seahawk, the Navy's largest helicopter base, with up to 90 Sea Kings and Gazelles normally resident.

The SKHTU usually trains six full Sea King crews each year: 12 pilots, 6 radar winch operators and 6 winchmen, most of whom then proceed to No 202 Squadron, although the joint Sea King/Chinook squadron in the Falklands (No 78 Squadron) may take crews. The SKHTU



Below: Nimrod MR2 based at Kinloss.



RAF Mountain Rescue team.



Royal Air Force marine craft operate from Mountbatten.



can also provide refresher courses to retrain former 202 Sqn crews and familiarisation courses for senior RAF officers. The unit is parented by RAF St Mawgan, but is responsible to the OC SAR Wing, Wing Commander Chadwick, at RAF Finningley.

The trainee pilots have already been on intensive flying training courses prior to their Sea King initiation and a typical student pilot's log book showed that he had flown 66 hours on Chipmunks (EFTS Swinderby), 86 hours in Jet Provosts (RAF Cranwell), 82 hours in Gazelle and 85 hours in Wessex. The Gazelle and initial Wessex flying was at No 2 FTS Shawbury with the final Wessex training at SARTU, Valley. A usual Sea King pilot operational

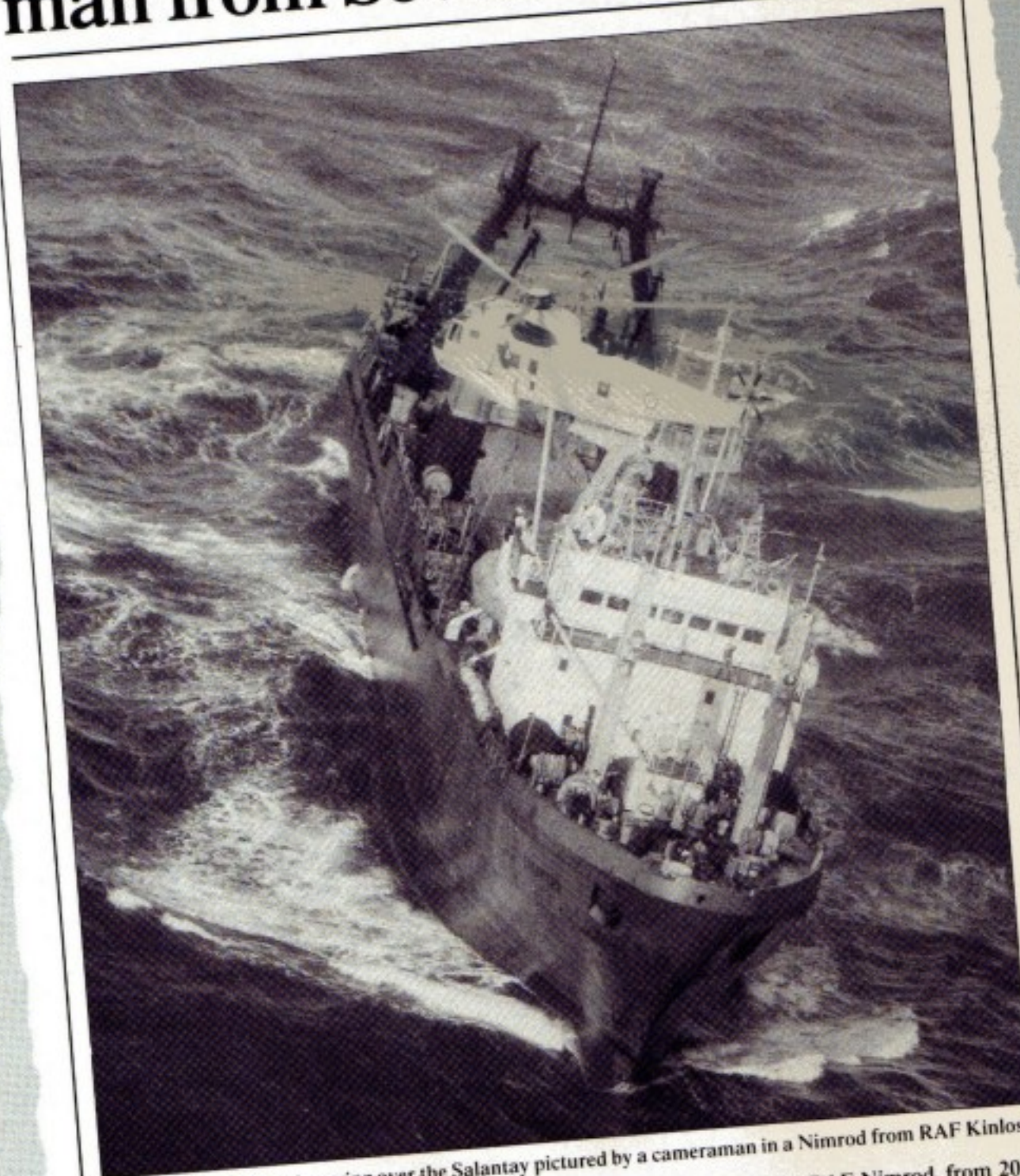
training course extends over 77 flying hours commencing with general handling and instrument flying, followed by a short night conversion, autopilot work, winching, deck winching, carrying underslung loads, mountain flying and engine out/emergency drills. A final 5 1/2 hour sortie with a general handling check completes the course. The remaining crew are trained during many of these same missions with instructor winch operator/winchemen working with the trainees. Use is made of the Navy's Sea King simulator for early training, but dissimilar navigation equipment requires dedicated training.

The unit was first formed in February 1978 under a naval commander. It was re-

designated the RAF Sea King Training Flight 18 months later with its own RAF CO and subsequently became the RAF SKHTU in January 1982. The location of the unit on the naval air station alongside the Fleet Air Arm's Sea King fleet works well, particularly in terms of technical support. No 771 Naval Air Squadron normally provides search and rescue cover from Culdrose, but the Rescue Co-Ordination Centre, Plymouth can also call upon the SKHTU in a particular emergency. Examples of this assistance came with the Zeebrugge ferry disaster and the search for the missing Harrier GR5 pilot from A & AEE Boscombe Down in which the SKHTU made a significant contribution.

THE TIMES MONDAY FEBRUARY 27 1989

Helicopter winches injured man from Soviet factory ship



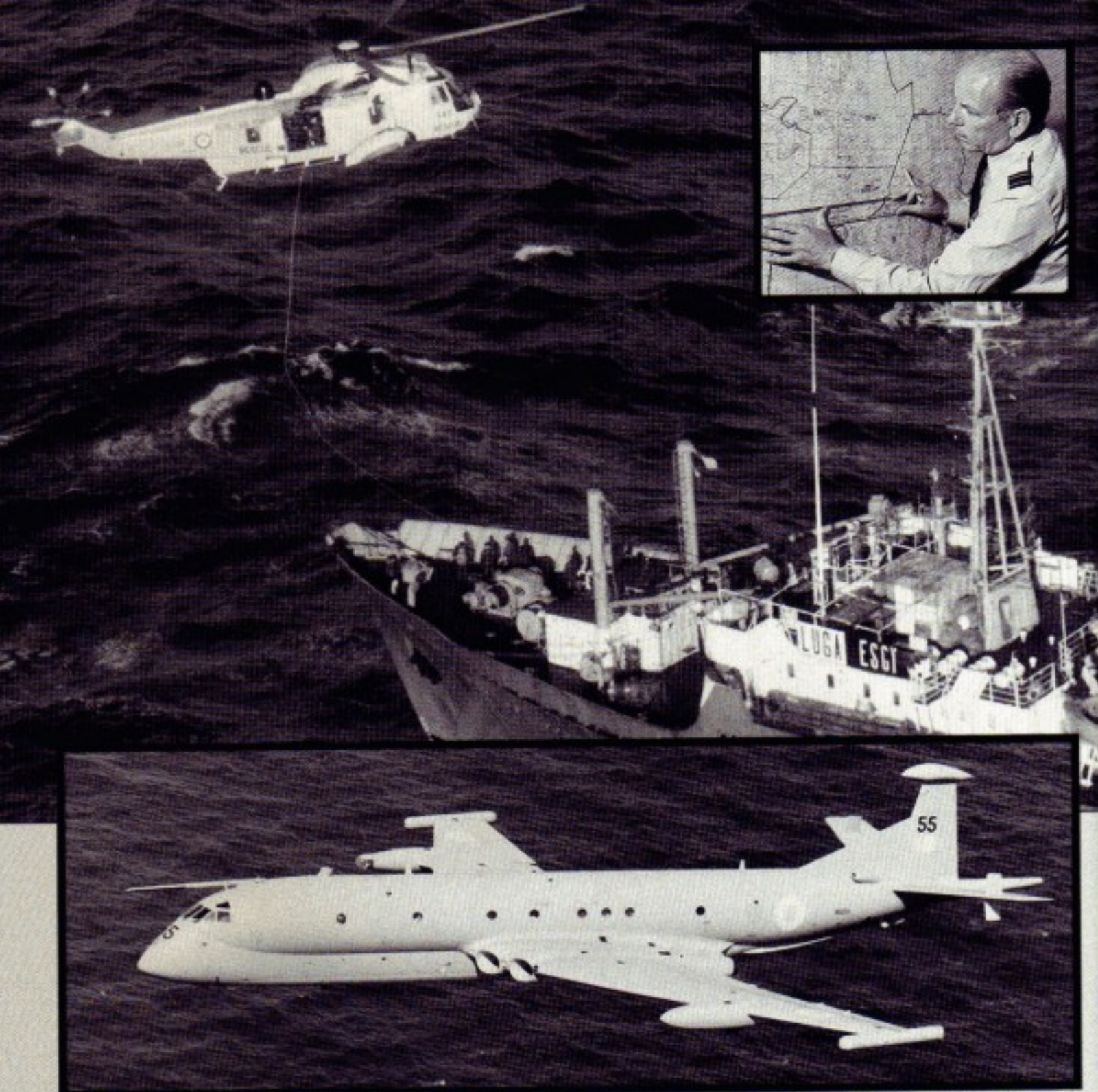
The rescue helicopter hovering over the Salantay pictured by a cameraman in a Nimrod from RAF Kinloss

Two hundred miles off Land's End, a Sea King helicopter from RAF Brawdy rescued an injured crewman from the Soviet factory ship, Salantay, and flew him to hospital in Truro.

Winchman Sergeant Dave Taylor was lowered to the

prow of the ship, which was lurching wildly in waves 24ft high, where he strapped the crewman, who had suffered a compound arm fracture, into a bosun's chair before both were lifted to the helicopter. He was taken to Trelisk hospital, in Cornwall.

An RAF Nimrod, from 202 Squadron, Kinloss, circled above, guiding the helicopter to the ship and then escorting it back to land. It was the 11th search and rescue mission flown by Nimrods from Kinloss since January 1.



MEDUR-SCUE

In the early hours of 25 April this year the Russian fish factory ship *Luga* alerted Shannon Maritime Rescue Co-ordination Centre that they had a medical problem. One of their crewmen was suffering from appendicitis and required immediate hospitalisation. Shannon's problem was that the vessel was 220 nautical miles out into the Atlantic and they have nothing capable of carrying out a rescue at that distance. They approached the Plymouth Rescue Co-ordination Centre for assistance.

Plymouth immediately informed the Search and Rescue Helicopter Flight at RAF Brawdy and the Search and Rescue

standby Nimrod from RAF Kinloss. Both aircraft were airborne at about 0230 hrs.

The Nimrod flew straight to the vessel and identified *Luga* on radar and opened two way communications. Meanwhile the Sea King helicopter from Brawdy made for Cork Airport to refuel and prepare for a long journey over the sea. After refuelling and continuing its mission the Sea King contacted the Nimrod on radio, which in turn identified the Sea King on radar. The Nimrod's job was now to direct the helicopter to *Luga*.

In due course the Sea King arrived at the vessel and lowered a winchman onto the deck. The winchman ensured that the

casualty was safely strapped into a stretcher and taken aboard the helicopter.

After a successful transfer the Sea King took the casualty back to Cork Airport while the Nimrod gave navigational assistance. When the Sea King was safely over land the Nimrod departed the area and landed back at RAF Kinloss after 7 hours. The Sea King crew handed the casualty to the medical authorities at Cork, returned to RAF Brawdy and landed after 7 hours flying time.

This was one of 250 incidents that Plymouth RCC has been involved in during the first five months of 1989.



HM Coastguard S61 from Lee-on-Solent operating with the Yarmouth (Isle of Wight) Arun Class Lifeboat.

Three Coastguard Search & Rescue helicopter contracts in the UK are operated by Bristow Helicopters Ltd and co-ordinated by Her Majesty's Coastguard. They are situated at Sumburgh in Shetland, Stornaway and Lee-On-Solent and they operate in identical fashion to the nine RAF and three RN SAR flights around the country. Crews are on standby for 24 hours, at 15 min notice from 0730 to 2100hr and at 45 min notice from 2100 to 0730hr.

The Sumburgh and Stornaway units were established in 1983 and 1986 respectively, primarily because of the fishing and offshore industry activity in the north of Scotland. The Coastguard helicopter at Lee-On-Solent replaced the RN Wessex flight when this was withdrawn in May 1988, to give all weather and night cover to the busy Solent area and Central Channel.

The HM Coastguard SAR S61N carries two pilots and two aircrewmen who have extensive previous military or CG SAR experience. It can accommodate 19 passengers with considerable overload capacity and the GE CT58 powerplants give the S61 an endurance of four hours including reserves and a radius of action of 150nm.

In addition to the usual North Sea



avionics fit the S61s are fitted with the following SAR specialist equipment making them among the most advanced SAR aircraft in the world and giving full all-weather and night capability.

Bendix RDR 1400C Colour Search and Weather Radar. This equipment is specially designed for SAR and incorporates a nav interface unit allowing navigation information to be displayed on the radar screen.

RACAL R.NAV Area Navigation Equipment. 100 waypoints and 30 routes may be stored. 3 separate plots are maintained using Decca, VOR/DME and Doppler allowing the most accurate to be used. 4 search patterns are also stored and a moving waypoint giving automatic interception of a target such as a ship. Accuracy to a 1/4nm can be expected.

Louis Newmark LN400/450 Auto Hover Equipment. The LN400 auto pilot and LN450 Flight Path Controller gives the aircraft coupled flight capability in the cruise and search pattern modes. It also allows automatic transition to the hover. This gives the aircraft full 'hands-off' capability in the hover at night and in fog when the pilot has no hover reference.

Homing Equipment. The aircraft's Chelton homing equipment allows homing on VHF 243 Mhz, VHF/AM 121.5 Mhz and VHF/FM Ch 16. It is fully diallable for VHF AM and FM. Homing on 2182 KHz is achieved with the aircraft's ADF.

FLIR Forward Looking Infra-red. A FLIR camera is mounted on the port side of the aircraft and operated by the winchman. He sits in the rear of the aircraft at a monitor screen and has the facility of enlarging the target by four times.



NATO AT 40

by Air Chief Marshal Sir Michael Knight

KCB, AFC, ADC, BA, D Litt, FRAeS, RAF

United Kingdom Military Representative to NATO



The 1989 International Air Tattoo is being staged at what is probably as interesting a time on the world political scene as any since the end of World War II. It is a happy fact that this period coincides with a significant anniversary for the North Atlantic Treaty Organisation — its 40th 'birthday' and, by popular reckoning, the approach of its middle age. But the timing of these two events is not merely coincidental, for it is a fact that NATO has played a significant role in helping to bring about the very recent marked (and thoroughly welcome) change in the climate of Western European security.

The Alliance was formed on 4 April 1949 in response to a perceived threat — the threat of Soviet expansionism which had already claimed hegemony over a number of the nations of eastern Europe. The original 12 (now 16) signatories of the North Atlantic Treaty perceived solidarity and collective defence as being the best guarantors of their security and, as the years passed, of their freedom for development as sovereign democratic

nations in the difficult, challenging, but potentially very rewarding post-war years. In fact, the signing of the Treaty was something of a landmark in international relations. Alliances are traditionally the resort of nations threatened by or already engaged in war and, throughout history, they have tended to dissolve once peace has been restored.

Here was an alliance forged in peace — albeit peace of a less than satisfactory or comprehensive nature. That this alliance has stood the test of 40 years, in the course of which its member-nations have enjoyed hitherto unimagined levels of security and prosperity, is eloquent testimony to its success. And now, a dramatic — perhaps fundamental — re-thinking of Soviet objectives and strategy owes arguably as much to NATO's solidarity and determination as it does to pragmatism or personalities. Despite determined attempts at 'wedge-driving' over the years (attempts which are, incidentally, not yet entirely abandoned) successive Soviet leaderships have been brought to one very sobering

conclusion: that the nations of the North Atlantic Alliance are not about to desert each other in pursuit of narrower national self-interest. In times of crisis and in times of relative calm, NATO has proved itself capable of meeting each and every challenge of our complex, multi-polar world.

Challenges there have, of course, been in plenty: crises too. But at the end of the day, the habits of collective security and collective decision-making have triumphed. They have also brought their own very significant rewards. Since its adoption of the so-called Harmel doctrine in December 1967, NATO has pursued twin (and linked) policies — those of maintaining its military strength as a continued deterrent to war in Europe, and of actively encouraging the establishment of security at lower levels of armament through dialogue between its member-nations and the Soviet Union and her allies. Such dialogue has been seen as the necessary precursor of any genuine and lasting reduction of tension across the East-West

divide. However, it has been a *sine qua non* that such desirable results could only be achieved were both sides actively and unequivocally to want them. NATO has always been a purely defensive alliance, committed to the use of none of its weapons unless attacked. Until comparatively recently, such has not been the stance of its potential aggressor.

Now we have signs of a very welcome and long overdue change. Indeed our publics might be forgiven for thinking that the initiative for peace lay now with the Soviet Union through the medium of its energetic and charismatic leader, Mikhail Gorbachev. Given the intense degree of favourable media coverage he is daily accorded, it is easy to overlook the fact that virtually every one of his arms control 'initiatives' in fact has its genesis in an earlier proposal by NATO. Not that the Alliance would wish to claim too many proprietorial rights in this regard. Within limits, NATO is quite happy to accept that the Soviet leadership has acknowledged (albeit tacitly) the moral superiority of

positions adopted over the years, by the Western alliance. That said, the management of arms control in such a way as not to put at risk the stability — even security — of the North Atlantic Treaty area was always likely to be rather easier to discuss than to achieve. On these literally vital issues, NATO may be forgiven for treading a little cautiously, until such time as the new rhetoric of the East has been translated into fact — and verifiable fact at that.

It is against the background of potentially momentous events such as these that NATO's critics (and they are not confined to areas east of the inner-German border) should properly view those rather less important differences of opinion which are bound to occur from time to time between vigorous and justifiably self-confident allies. The cry of 'NATO in crisis' has been a very familiar one over the years: indeed, one very distinguished former Secretary-General has suggested that he feels distinctly uneasy when NATO is not in crisis. But it would be easy to overlay the

disagreements over detail and to overlook a very considerable measure of accord over the things that really count. Differing perceptions of a whole range of issues are only to be expected in an alliance which numbers in its ranks nations as different in size as Canada and Luxembourg; in history as Iceland and Greece; and in culture as Norway and Turkey. What matters is that all of NATO's sixteen nations are united in the primary aim of ensuring peace and stability in that cockpit of war which was Europe before 1945.

That by their stability and firmness of purpose they are now in sight of achieving this, at very much lower levels of risk, is not only a tribute to their successive governments: it is also a guarantee of their alliance's thriving well into middle age. Now is not the time for NATO to drop its guard; but there have never been more hopeful prospects of its being able to breathe a little more easily.



NATO'S AIRCRAFT



General Dynamics F-16B Fighting Falcon
Royal Danish Air Force

Above: McDonnell Douglas F-4G Phantom — USAF



Above: McDonnell Douglas CF-18 Hornet — Canadian Forces



Sue J. Bushell

Signed at the height of the Berlin Blockade, the North Atlantic Treaty today provides the most effective agreement between countries of the Western World. The current membership comprises Belgium, Denmark, Greece (joined 1952), Iceland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain (joined 1982), Turkey (joined 1952), the United Kingdom and West Germany (joined 1956) from Europe and the United States of America and Canada from the other side of the ocean. The latter two countries permanently station aircraft in Europe.

Whilst they maintain a united front, there has over the past forty years been some political arguments between the various members, the most serious of these being the withdrawal of France from NATO in 1966. However, the French participate at all levels, with aircraft taking part in major exercises. The Turkish invasion of the island of Cyprus resulted in the withdrawal of Greece for a time, and these two countries continue to eye each other warily. Iceland and Luxembourg have no armed forces of their own.

The past few years have seen the NATO members bringing their equipment up to date and continuing to consolidate onto 'standard' types. Foremost among these has been the F-16 Fighting Falcon, which came onto the scene in the late seventies, replacing the F-104 Starfighter. Currently the F-16 is flown by Belgium, Denmark, the Netherlands, Norway and Turkey as well as the United States Air Force, the latter stationing four wings in Europe — at Torrejon in Spain and at Hahn, Ramstein and Spangdahlem in West Germany.

Transall — West German Air Force



Dassault-Breguet-Dornier Alpha Jet — Belgian Air Force



Dassault Mirage 5BA — Belgian Air Force



Panavia Tornado — West German Navy



Saab Draken — Royal Danish Air Force

Additionally, the Fighting Falcon is used for aggressor training by the 527th Aggressor Squadron, currently based at Bentwaters but frequently to be found at Decimomannu on Sardinia.

The F-104 Starfighter continues to serve within NATO, principally with the Italian, Greek and Turkish Air Forces. The last two have recently increased the size of their Starfighter fleets by the acquisition of aircraft retired from active duty with other NATO members, principally the Netherlands and West Germany.

The United Kingdom, West Germany and Italy are the three partners in the Panavia Tornado programme, while Canada and Spain have both chosen the F-18 Hornet to provide the mainstay of their fighter forces. The Royal Air Force also provides squadrons of Phantoms and Harriers to NATO from its bases in West Germany. Portugal has opted for the Fiat G-91 and A-7 Corsair II, both being types in service with other NATO countries — the 'Gina' with Italy and the A-7 with Greece.

The F-4 Phantom is also used by several member countries, including West Germany, which uses both RF-4E and F-4F variants, and Greece, Spain and Turkey. The USA has a wing of

reconnaissance RF-4Cs stationed at Zweibrücken in West Germany, as well as a fleet of F-4G Wild Weasels in service with the 52nd Tactical Fighter Wing at Spangdahlem, where they are used in conjunction with the F-16 Fighting Falcon.

On the transport front, most members of NATO have chosen to use the Lockheed C-130 Hercules, and this could almost be described as standard equipment, with the only members not possessing the type being the Netherlands (which uses its own F27 Troopship) and Turkey and West Germany, both of whom use the Transall. Additionally, France has a large fleet of this twin-engined type and only a small fleet of recently acquired Hercules. The Transall, which has been in operational service for some twenty years, was designed to meet an alliance requirement.

For search and rescue duties the Lockheed P-3 Orion is favoured by many members, including Canada, the Netherlands, Norway, Portugal, Spain and the United States. The United Kingdom has its own fleet of Nimrods, while France, West Germany and Italy all use another European design, the Breguet Atlantic. Many of the smaller nations utilise helicopters such as the Westland Sea King

for these duties, while other types used for this role include the Westland Lynx, Aerospatiale Ecureuil and Sud Alouette III.

NATO itself operates a fleet of 18 Boeing E-3A Sentry aircraft in the airborne early warning role, demonstrating to advantage the co-operation that exists between its members. The aircraft are based at Geilenkirchen in West Germany with detachments to other bases throughout Europe. They are jointly operated by most nations, and for convenience are serialised within the Luxembourg national register. The United Kingdom and France have both taken separate steps, the latter being shortly due to receive its own E-3 aircraft while the UK developed the Nimrod AEW3 which, despite a great deal of research and development costs, ultimately proved to be a failure. As a result, it too has opted to purchase the E-3.

When it finally enters service with the Royal Air Force, the E-3 Sentry will replace an aircraft that is as old as the North Atlantic Treaty and still going strong. The Avro Shackleton first flew in 1949 and continues to operate in the Airborne Early Warning role with No 8 Squadron at Lossiemouth. In NATO, experience counts for everything.

Breguet Atlantic — West German Navy



ROCKWELL INTERNATIONAL B-1B

The B-1B is US Strategic Air Command's most modern strategic bomber. Advanced avionics equipment, the ability to carry a heavy weapons payload, and a reduced radar cross-section provide improved capability to penetrate enemy defences.

Studies for an advanced bomber to replace the B-52 were initiated in 1965. The characteristics needed for this bomber were established following detailed studies of strategic concepts and numerous designs. In a 5-point strategic modernisation programme announced on 2 October 1981, President Reagan stated that 100 B-1B aircraft would be built and deployed. The B-1B was evolved from the B-1A in response to current and future strategic needs. Two of the four original



B-1A aircraft were used for the B-1B development flight test programme at Edwards AFB, California. The first production B-1Bs were delivered to Dyess AFB, Texas, in 1985, and the last arrived at McConnell AFB, Kansas in April 1988.

The B-1B takes advantage of the many advances made in airframe, engine, and avionics technology. It adds unique capabilities to U.S. deterrence by enhancing the mixed force concept of manned bombers and land-launched and sea-launched missiles.

This new variable-wing-geometry bomber can fly at low supersonic speeds at high altitude and high subsonic speeds at low level. On 4 July 1987, a B-1B set a series of international speed and distance-with-payload records, including 670mph over a 2,000km closed course, carrying a 66,000lb payload. The bomber's wings extend forward to 15 deg for take-off and low-speed flight and sweep back to 67.5 deg for flights at high speeds.

Smaller than the B-52, the B-1B is capable of intercontinental missions without aerial refuelling. However, it is air refuelling compatible with existing KC-135 and KC-10 tankers. Its quick take-



off capability and improved hardness to nuclear weapons effects improve the bomber force's ability to survive a missile attack. The B-1B, with its improved penetration aids and low radar cross-section, is more difficult for enemy defences to detect.

The B-1B can carry a wide variety of current and future weapons including

gravity bombs, short range attack missiles (SRAM) and air-launched cruise missiles (ALCM).

Four wings are equipped with the B-1B: the 96th BMW, Dyess AFB, Texas; the 28th BMW, Ellsworth AFB, South Dakota; the 319th BMW, Grand Forks AFB, North Dakota; and the 384th BMW, McConnell AFB, Kansas.





YOUR RED ARROWS SILVER JUBILEE COLOUR SOUVENIR EDITION ON SALE HERE

***The appearance of
the Red Arrows in the
flying display at
International Air Tattoo
'89 will be provided
courtesy of the***

 **SUNDAY EXPRESS**



Introduction by
Robin Esser
Editor, The Sunday Express

May I on behalf of the Sunday Express, welcome you all to the greatest air show in Europe. We are delighted to be associated with an event which every two years captures the hearts and imagination of flying enthusiasts all over the world.

This year the Sunday Express is supporting the Red Arrows at the International Air Tattoo in this, their Silver Jubilee year. In their nimble British Aerospace Hawk T1A jets, the nine crack pilots of this elite team are regarded as the most skilled in the world. Tribute must also be made to the ground crew whose professional capability enables the Red Arrows to put on nearly 100 displays during the 1989 season. We salute this unique team under the leadership of Squadron Leader Tim Miller and the managership of Squadron Leader Andy Stewart, who earlier this year received the Sunday Express Sheila Scott Trophy from record breaking balloonist Per Lindstrand. The award which honours significant contributions to British Aviation is presented annually at the Fighter Meet at North Weald and the Red Arrows were most worthy winners.

1989 also celebrates the 40th anniversary of the North Atlantic Treaty Organisation and the fact that we are able to be here today enjoying this splendid show is to a great extent due to the vigilance of our NATO allies in Western and Southern Europe and North America. The aircraft that form the mainstay of the air defence umbrella of these free countries are all around you.

Browse among the exhibits, watch the displays and talk to the crews. I am sure you will be impressed with their abilities and enthusiasm.

I hope you enjoy yourselves as much as we have enjoyed helping to bring this event to you.

Robin Esser



1989 marks the 25th consecutive air show season for the Red Arrows, the Royal Air Force's premier display team. To mark this important event, the Red Arrows, which are acknowledged as being the best aerobatic performers in the world, are presenting their exciting routine here at the International Air Tattoo at RAF Fairford in Gloucestershire. RAF Fairford has strong associations with the Red Arrows, as the team was based here in 1965. The IAT team is also proud to be able to celebrate the Red Arrows' Silver Jubilee with a birthday party for the pilots and groundcrew which is sponsored by Shell (UK) Oil Ltd.

Until the formation of the Red Arrows in 1965, the role of aerobatic display team passed between various front-line units of the Royal Air Force, a practice that ended in 1964. The Hawker Siddeley Gnat, then just entering service, was considered to be an ideal aircraft for aerobatics.

After a season as the Yellowjacks, the Red Arrows was formed as the RAF's permanent aerobatic team, first with the Gnat and, since 1980, flying the British Aerospace Hawk T1A.

In the last 25 years the Red Arrows have performed more than 2,000 displays throughout the world, including tours of North America and the Far East. Each year they tour the UK and Europe, flying up to three shows per day — this year they will perform at more than 100 different venues.

Leading the Red Arrows in its Silver Jubilee Year is Squadron Leader Tim Miller. He initially joined the Red Arrows in 1981 and stayed with them for three years before returning as Team Leader in 1988.

Tim joined the Royal Air Force in 1972, flew Hunters after training, then moved onto Harriers becoming the display pilot for RAF Germany in 1978-79. He is married with two children and enjoys sport,

especially golf and skiing.

Each pilot, as well as the Manager and Engineer, stays with the team for three years after which time many return to operational flying or instruction. The team has a new Manager this year — Squadron Leader Andy Stewart and the three new pilots who have joined the Red Arrows for their Silver Jubilee season are Flight Lieutenants: - Martin Cliff, Al Hoy and John Newton. These three spent over five months on an intensive training programme before giving their first public appearance in May.

Competition among RAF pilots is intense and every year there are more applicants than the Red Arrows can possibly accommodate. At the end of each season, seven potential pilots are short-listed for the following years' three places. Final selection is based upon their ability to work as a member of the team as well as their considerable skill at flying the Hawk.



Static Aircraft on Display

SEA SEARCH 89

ROYAL AIR FORCE
Nimrod MR2
Sea King HAR3
Wessex HC2

ROYAL AUSTRALIAN AIR FORCE
P-3C Orion
C-130H Hercules

ROYAL NEW ZEALAND AIR FORCE
P-3K Orion
C-130E Hercules

CANADIAN FORCES
CP-140 Aurora
CP-115 Buffalo

CHILEAN AIR FORCE
C-130H Hercules

FRENCH NAVY
Atlantic

ITALIAN NAVY
Atlantic

ROYAL NETHERLANDS AIR FORCE
Alouette III

ROYAL NETHERLANDS NAVY
P-3C Orion
SH14 Lynx

ROYAL NORWEGIAN AIR FORCE
C-130H Hercules

SPANISH AIR FORCE
CASA 212D Aviocar

SWEDISH COASTGUARD
CASA 212

UNITED STATES AIR FORCE (SAC)
B-52G Stratofortress (43BW)
KC-135A Stratotanker (160 ARG)
KC-135R Stratotanker (11SG)

UNITED STATES AIR FORCE (MAC)
HC-130N Hercules
Sikorsky HH-3E
Sikorsky MH-53J

UNITED STATES COAST GUARD
HC-130H Hercules
HH-65A Dauphin

UNITED STATES AIR FORCE RESERVE
HC-130H Hercules (305 ARRS)

UNITED STATES AIR NATIONAL GUARD
HC-130H Hercules (106ARRG)
LC-130H Hercules (109TAG)

UNITED STATES NAVY
P-3C Orion (VP5)
P-3C Orion (VP6)
P-3C Orion (VP8)

AIR ATLANTIQUE
Cessna 412
Dakota

It is hoped that the following aircraft will be available to take part in the static aircraft displays

ROYAL AIR FORCE
Tornado GR1
Tornado F3
Harrier GR5
Harrier GR3 X 2
Hawk T1/T1A
Buccaneer S2B
Hunter T7
Canberra PR9
Jet Provost T3A
Jet Provost T5
Phantom F4K
Bulldog T1
Chipmunk T10
Wessex HC2
Jetstream T1
Dominie T1
Victor K2
VC10 C1/K2
Hercules C2/C3
Hercules W2
Gazelle HT3
Andover CC2/E3
BAe 125
Tristar K1
Jaguar

MINISTRY OF DEFENCE PROCUREMENT EXECUTIVE
Harvard (A&AE)
Scout AH1 (ETPS)
Lynx AH1 (ETPS)
Sea King (ETPS)
Gazelle (ETPS)
Andover (ETPS)
Jaguar (ETPS)
Hunter T7 (ETPS)
Hawk T1 (ETPS)
BAe 111 (ETPS)
Tornado (ETPS)
Jet Provost (ETPS)
Varsity T1 (RAE)
Dakota (RAE)
Meteor T7 (RAE)

ROYAL NAVY
Jetstream T2
Harrier T4N
Sea Heron
Chipmunk T10
Sea King HAS5
Lynx HAS3

BELGIAN AIR FORCE
Fouga Magister
SiAI SF260M
Falcon 20

CANADIAN FORCES
CF-18A Hornet
CC-142 Dash 8
T-33A Silver Star

CHILEAN AIR FORCE
T35 Pillan

ROYAL DANISH AIR FORCE
F-16 Fighting Falcon
F35 Draken

FRENCH NAVY
Etendard IVP
Super Etendard
Falcon 10 (MER)

GERMAN AIR FORCE
Alpha Jet

HELLENIC AIR FORCE
A-7H/TA-7H Corsair

ITALIAN AIR FORCE
C-130H Hercules
RF-104G Starfighter

NATO
Boeing E-3A AWACS

PORTUGUESE AIR FORCE
C-130H Hercules

ROYAL JORDANIAN AIR FORCE
C-130H Hercules

ROYAL MOROCCAN AIR FORCE
Do28 Skyservant

ROYAL NETHERLANDS AIR FORCE
F-16 Fighting Falcon
Northrop NF5
MBB Bo105c

ROYAL NORWEGIAN AIR FORCE
F-16B Fighting Falcon
Falcon 20

SPANISH AIR FORCE
Casa 212 Aviocar

USAF - Europe
A-10A Thunderbolt II
MC-130 Hercules
F-15 Eagle
GD F-111F
EC-135 Stratotanker
F-4G Phantom
F-16 Fighting Falcon
UH-1N Iroquois
C-12 Super King Air
C-20A Gulfstream III
C-21A Learjet
EF-111A Raven

USAF - SAC
Rockwell B-1B
GD FB-111A
KC-10 Extender
KC-135A Stratotanker
KC-135R Stratotanker
Lockheed TR-1A
Lockheed SR-71A
RC-135 Stratotanker
F-4D Phantom

USAF - MAC
C-5B Galaxy
C-141B Starlifter
C-23 Sherpa
C-9A Nightingale
C-130E Hercules

USAF - TAC
F-15E Eagle

USAF - AIR NATIONAL GUARD
EC-130 Hercules
KC-135 Stratotanker
Boeing C-22
A-7D Corsair II

US ARMY
OH-58A Kiowa
AH-1S Huey Cobra
UH-1N Iroquois
OV-10 Mohawk
RC-12D Super King Air

US NAVY
UC-12 Super King Air

US MARINE CORPS
KC-130T Hercules

CIVILIAN
Metro II (NLR)
BAe146 STA (BAe)
PA28 Cherokee (IATFSD)
Cessna 340 (B Stocker)
L-18 Cub (CAF(UK))
Hurel-Dubois HD34 (D Chable)
Provost (R Starling)
Bleriot 11 (R Finnes)
Turbo Porter (ITPS)
Speed Canard (ITPS)
Saab 340 (Crossair)
Blackhawk (Westlands)
Fokker F27 (NLM)

AIRCRAFT ON DISPLAY



F-27 Troopship - Royal Netherlands Air Force



McDonnell Douglas CF-18 - Canadian Forces



Panavia Tornado F3 - RAF





General Dynamics FB-111A — USAF



Boeing KC-135A — USAF



Lockheed Hercules C1 — RAF



Lockheed C-5 Galaxy — USAF



Boeing B-52G Stratofortress — USAF



Rockwell International B-1B USAF



Avro Shackleton AEW2 — RAF





Breguet Atlantic — Italian Navy



Panavia Tornado GR1 — RAF



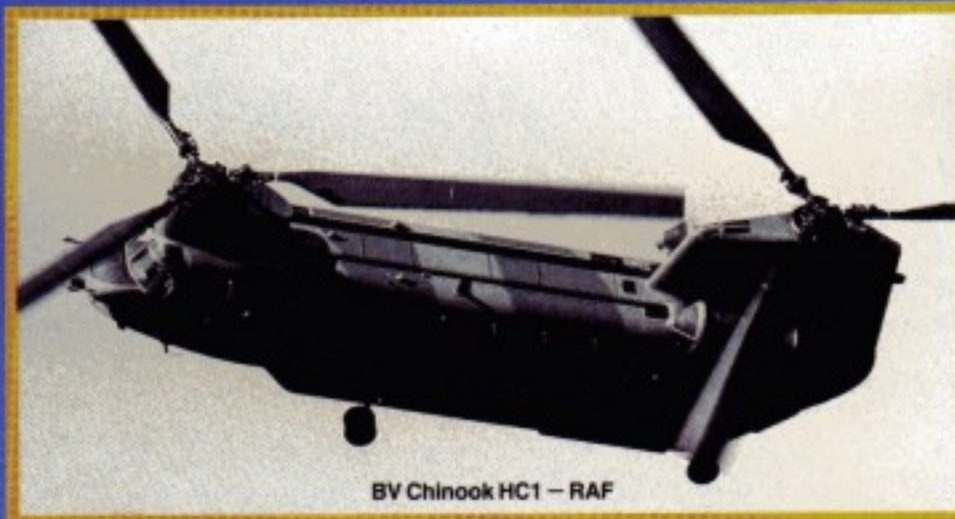
Westland Puma HC1 — RAF



Fairchild A-10A Thunderbolt II — USAF



HS Buccaneer S2B — RAF



BV Chinook HC1 — RAF



Lockheed TR1 — USAF

Lockheed HC-130H — US Coastguard



BAe Sea Harrier FRS1 — Royal Navy



BAe Harrier GR5 — RAF



The Red Arrows — RAF



The Falcons
RAF Parachute Display Team



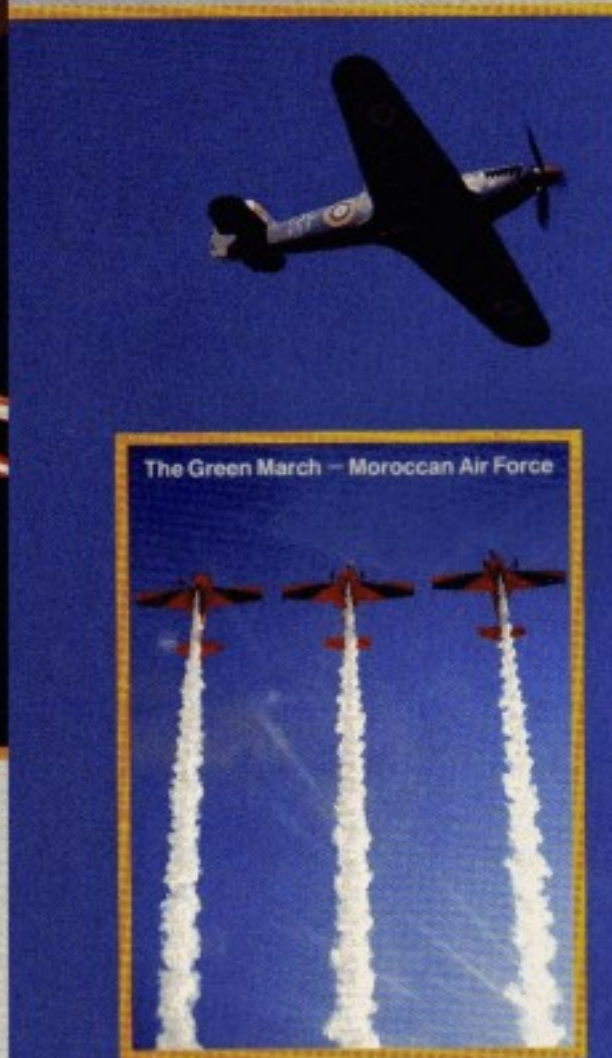
Royal Jordanian Falcons



The Windmills — Royal Netherlands Navy



Team Aguila — Spanish Air Force



The Green March — Moroccan Air Force



The Battle of Britain Memorial Flight

International Air Tattoo 89

DISPLAY TEAMS



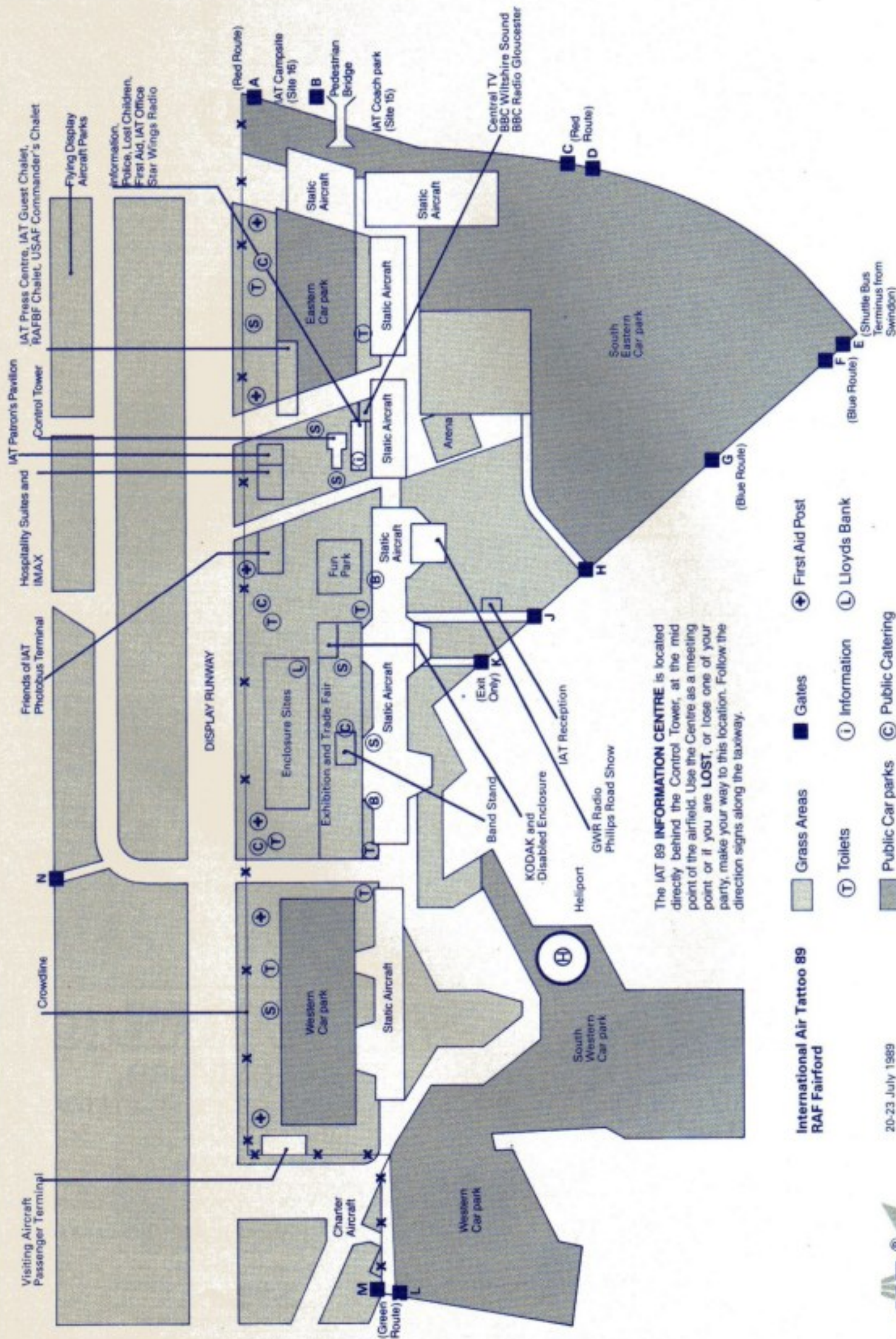
The Grasshoppers — Royal Netherlands Air Force



ASAS de Portugal — Portuguese Air Force



The Halcones — Chilean Air Force



MITSUBISHI MOTORS ZLIN Z50L



Local pilot Vic Norman from North Cerney flies the unique Zlin Z50L in the colours of Mitsubishi Motors which has its UK headquarters at Cirencester, Glos. Vic is also known as an enthusiastic and successful driver of historic and sports racing cars. He started go-karting as a school boy, graduated up to racing cars, and then even higher to flying the Zlin Z50L.

He started flying in 1965, his first lesson appropriately given by the late Neville Browning of early Zlin fame. It was not until 1980 that Vic started serious aerobatic flying. Vic says "aerobatic flying is so much more demanding mentally than motor racing, with the added third dimension playing an important role. It is also a sport that has a very long learning curve after the initial basics and one at which you can be just as competitive at 60 years of age". He is a member of the British Aerobatic Association and this

is his seventh full season displaying the superb Zlin Z50L. Vic is 40 years old and married with three children.

The Mitsubishi Motors Zlin Z50L is manufactured by the world's largest and most successful designer of aerobatic aeroplanes, the Zlin factory in Czechoslovakia. The Zlin has a string of world and

European championships to its credit. Following the first appearance of the Z50L at the World Championships in 1976, Ivan Tucek of Czechoslovakia, won the 1978 World Aerobatic Championships in a Z50L, and three Zlins finished in the first eight in the 1982 Championships, first and second in the 1983 European

Championships and first in the 1984 World Aerobatic Championships. Peter Jirmus of Czechoslovakia again took the top prize flying a Zlin 50 in WAC86 at South Cerney.

The Zlin's staggering manoeuvrability and power makes it the finest of all aerobatic planes. Its full-span ailerons and massive elevators also give it an extraordinary rate of roll and pitch, whilst at the same time much of the fascination of the Z50L lies in its extreme agility and character. The construction is of all metal, and built to very high standards of engineering, being immensely strong with operation 'g' limits of $\pm 9g$ and an ultimate 'g' tolerance of 16.2g.

JAGUAR Extra

One of the highlights of the day will be a spectacular air display of Unlimited aerobatics by the Jaguar Extra 230.

The Jaguar Extra represents the forefront of technology in the field of aerobatics. The display is a non-stop, low-level sequence of the most exuberant and complex manoeuvres imaginable — indeed, the majority of the aerobatic figures in the performance would have been impossible for any aircraft in the world only a few years ago.

Part of the key to the Extra's performance lies in the power-to-weight ratio. The aircraft weighs 1100lb in display trim and is powered by a tuned 230hp Lycoming engine — a power-plant more normally used in conventional aircraft of some three times that weight. This gives the single-seat Extra a climb rate of over 3,000 feet a minute and a maximum level flight speed of more than 200mph.

Sheer power is only part of the equation: of even greater significance is the monoplane wing. This is built as a single unit with the mainspar running through the fuselage, and features a new shape of aerofoil section specifically designed (with the aid of extensive computer analysis) to meet the demands of modern aerobatics.

The result is a roll-rate of nearly 360 degrees a second, coupled with immense 'controlability' over a wide speed range, from barely-moving to over 250mph.

Jaguar Cars are, of course, no newcomers to aerobatics, having sponsored the well-known vintage Stampe for five years before switching to the ultra-modern Extra to complement the current generation of Jaguar cars.

The Jaguar Extra will be flown by Brian Lecomber or John Harper, both of whom have been at the top of the aerobatic profession for many years. With more than 1,300 public performances behind him, Brian is probably the most experienced display pilot in the world. John has also been flying aerobatics now for over 15 years, and has been a member of the British Aerobatic Team in the last four World Championships.



PATROUILLE MARTINI



Millions of European spectators have already been thrilled by the aerial manoeuvres of the Pilatus PC7 planes flown by the Patrouille Martini. The leader, Jacques Bothelin established the team in 1982, flying Sial Marchetti SF260s. Aerobatics are the basis of aerial combat, and it was indeed the air forces who formed the first aerobatic teams. Even though they have an entirely peaceful mission the Patrouille Martini knows that in order to merit its reputation as the most prestigious private formation, it has to push its limits a little further each year, without ever leaving anything to chance. It's a sort of programmed adventure-dazzling and breathtaking.

JACQUES BOTHELIN

Aged 34. Flying hours: almost 4,700

He has filled the role of both leader and manager since the creation of the team in 1982. An avid aviation fan, he worked for four years as demonstration pilot for Robin, a constructor based at Dijon, followed by a stint at Socata. During these years he competed regularly in aerobatic contests. He has flown 128 different types and has participated in air shows for eleven years. Jacques created the Patrouille Martini when he was 28 years old. He is still a pilot in the military reserve. His hobbies include squash, swimming, tennis and the martial arts.

JEAN-LOUIS JORDANO

Aged 39. Flying hours: more than 5,200

A former military pilot, Jean-Louis had previously worked as instructor on the Fouga Magister. He also flew in the French Air Force aerobatic team on a CAP 20 for five years. He has been in the Patrouille Martini since its beginning. Now in his 14th season, his flying experience at airshows is unmatched. When Jean-Louis Jordano isn't flying, he rushes off to the ski-slopes.

MICHEL 'HUGO' VERAN

Aged 41. Flying hours: almost 4,700

A former Air Force Pilot, Michel was an instructor on the Fouga Magister before getting into the operational pilot's seat of a Mirage III-R with the reconnaissance squadron at Strasbourg. Between 1979 and 1984, he enjoyed the rare privilege of flying both the Fouga Magister and the Alpha Jet for the French Air Force where he held diverse roles including that of a navigator and soloist. He followed this experience with 2 years in Morocco on the military co-operation programme, working as instructor for the Royal Military Academy. This is his third year flying for the Patrouille.



Patrouille Martini: Michel Veran (left), Jacques Bothelin (centre), Jean-Louis Jordano (right).

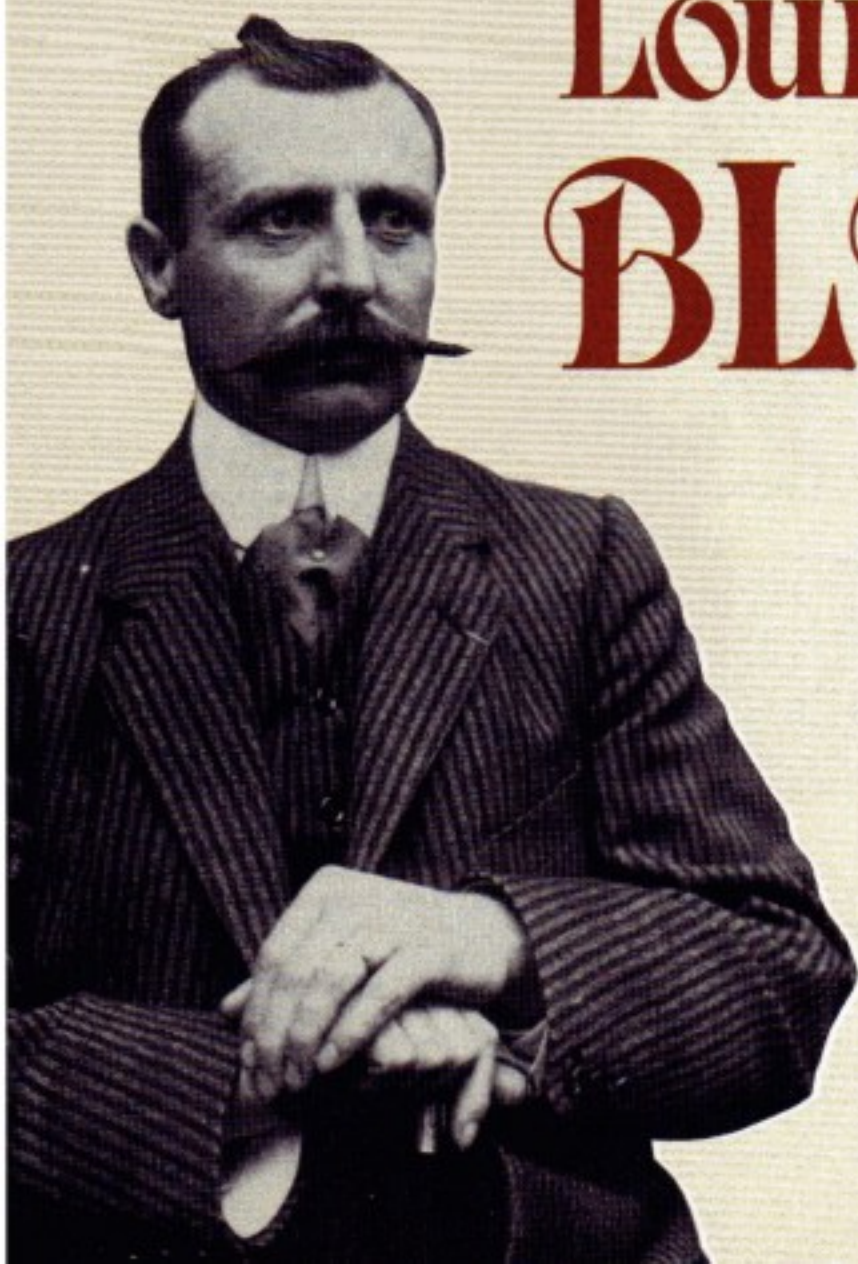


The Pilatus PC7 is a high performance turboprop trainer which has been designed to meet the most stringent aeronautical requirements in terms of technology and reliability. The constructor, Pilatus S.A., is known worldwide for the innovative design of its training aircraft.

The Pilatus PC7 Turbo Trainer is one of the very few aircraft in the world to have gained a strong foothold in the military training market. It is now in service in a total of 16 different countries. Just under 500

PC7s have been constructed, and it is interesting to learn that four of these are in the hands of rich private owners who couldn't resist buying themselves this fabulous toy.

The Patrouille Martini's Pilatus PC7 has truly earned a place alongside the Lancia Delta HF, 'Martini-Bianco' (offshore powerboat), the Porsche 917 and the rest of the winning fleet which has borne the red and blue banner of Martini Racing to fame and glory.



Louis BLERIOT

On 25 July 1909, this young French engineer made the first successful flight across the English Channel from Calais, landing in a meadow close to Dover Castle.

Today, flying in a jet airliner is accepted as routine by young and old. With supersonic flight from one edge of the globe to the other and the reliability of modern passenger services it is sometimes hard to believe that man's first powered flight took place as recently as 1903.

In the autumn of 1908, the Daily Mail announced a prize of £1,000 to be awarded to the first person to cross the English Channel by powered flight. It was a bold move by the newspaper to sponsor such an event, as aviation was still very much in its infancy.

Over the next eight months, several pilots tried unsuccessfully to fly the 21 miles between Calais and Dover. By mid 1909 the race had narrowed to three main contenders: the French aristocrat, the Comte de Lambert; the Englishman, Hubert Latham; and a French engineer Louis Bleriot.

Louis Bleriot was born and lived in Cambrai, Northern France. Gifted with a keen sense of ingenuity and foresight, he qualified as an engineer and set up a business as an inventor, working from his garden shed. With his successful patent for a car headlamp he became wealthy and was able to devote more

time and money to his passion — 'flying machines'.

After ten rather disastrous prototypes, Bleriot's fortune was almost exhausted, so the £1,000, offered by the Daily Mail for the cross-channel powered flight, certainly caught his imagination. A late entrant to the competition, he discovered that he had only two main rivals, the Comte de Lambert and the Englishman Hubert Latham. Poor weather had prevented any attempt for several days and the race had developed into a waiting game.

Suddenly on 25 July the wind dropped, for the first time in days, and Bleriot sprang into action. Assembling his team at 'Les Baraques', outside Calais, they hurriedly prepared the flimsy aircraft for flight, while the pilot waited patiently for the sun to come up. As soon as dawn broke he was airborne and away over the Channel.

He soon lost sight of France and with no sign of England ahead was very much alone. The engine, not used to this extended time in the air, began to overheat. Losing power and height, he began to lose heart as he struggled to remain airborne. Then, when all seemed lost, a sudden rainstorm drenched the aircraft, cooled the engine and allowed

him to gain power and bring the plane up and over the looming White Cliffs of Dover.

With its small army of reporters stationed in Calais and Dover, and the help of the newly installed telegraph communications, the Daily Mail had been alerted of Louis' early start. Woken from their beds, the reporters sped quickly through the Dover streets hoping to meet the aviator as he landed.

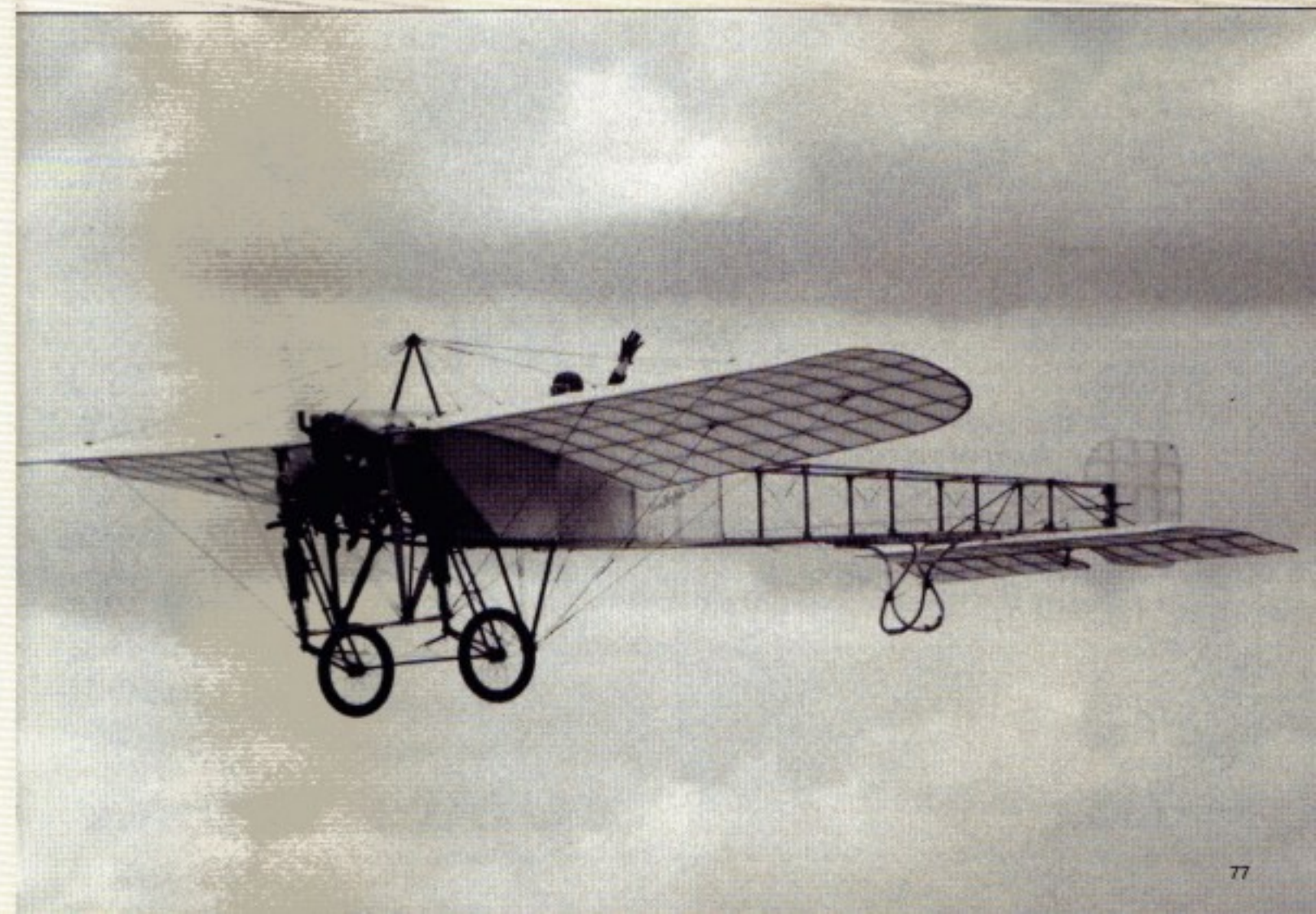
Having successfully climbed over the cliffs Bleriot managed to bring his tiny aeroplane to a bumpy landing in Northfall Meadow, by Dover Castle, 32

minutes after take-off, watched only by a bugle boy from the nearby barracks. Out of breath from their chase, the Daily Mail reporters reassured the growing numbers of curious bystanders that the small, grinning man standing beside his strange winged craft was not a threat to them. Taking charge, the Daily Mail somehow convinced Dover's Customs Officer, for the sake of good order, that the plane was in fact a yacht and hastily made arrangements to bring Louis and his wife to London for their prize.

Within hours of the successful crossing the whole

world had learned of Louis Bleriot's achievement and the Frenchman quickly became an international hero. At the prize-giving ceremony in the Savoy Hotel, Lord Northcliffe referred to Britain as being "no longer an island", echoing the thoughts of the nation that aviation had somehow come of age.

Eighty years later, as a celebration of the notable anniversary, the Daily Mail has again been instrumental in sponsoring another cross-channel flight. This time with Louis Bleriot's grandson at the controls of an original Bleriot XI.



The Royal Air Force Benevolent Fund's International Air Tattoo Flying Scholarship for Disabled People in memory of Sir Douglas Bader



Sir Douglas Bader lost both his legs in a flying accident early in his career in the Royal Air Force. He achieved fame in World War II as a fighter pilot flying Hurricanes and Spitfires and as a leader of men. He was a dedicated supporter of disabled people to whom he was a great example and encouragement by his courage and indomitable spirit. From 1976 until his death in 1982, Sir Douglas was President of the Royal Air Force Benevolent Fund's International Air Tattoo (IAT) where he inspired the many volunteers dedicated to raising funds for the relief of hardship and distress amongst past and present members of the RAF and their dependants.

IAT decided in 1983 to perpetuate the memory of Sir Douglas Bader by a scheme for the award of flying scholarships to enable disabled people to learn to fly leading, where appropriate, to the issue of a private pilot licence (PPL). Through the generosity of His Majesty King Hussein, Nationwide Anglia Building Society and the Maxwell Family Foundation, nine scholarships are awarded annually.

International Air Tattoo flying Scholarships for Disabled People (FSD) are publicized widely in the press and in magazines and news sheets published by organisations and societies for disabled people and on radio and television. Information leaflets are distributed on request and disabled people are invited to submit application forms by 31 January each year.

The initial selection is made on the basis of the candidates personal history and the essay which is part of the application. This is done by a preliminary board of four members which is also attended by a representative from the medical department of CAA and the number is reduced to 20. About April each year the 20 candidates undergo aptitude tests and medical examination at the RAF's Officer and Aircrew Selection Centre before a

Board convened at Royal Air Force Biggin Hill interviews each applicant with the object of selecting the final nine plus two reserves.

Each scholarship provides 40 hours dual and solo flying during a six week residential course at an approved flying school, books and equipment, examinations, licence and landing fees, accommodation and meals and the candidate's travelling expenses. Additional flying hours can be authorised if the Chief Flying Instructor (CFI) assesses that the student has good prospects of qualifying for a private pilot licence. An IAT flying badge is awarded after completion of a general handling test which satisfies the CFI that the student has reached an acceptable standard of competence compatible with the extent of disability.

The flying school selected for use by FSD winners provides residential, messing and club facilities at the airfield for 3 courses each of 3 students each year and has engineering authority for the design, production and installation of modifications to the aircraft controls required by paraplegics, amputees and others with varying disabilities. The most suitable aircraft for modifications, particularly to the rudder control, has been found so far to be the Piper 28-140 Cherokee.

Since 1983, IAT has awarded 48 flying scholarships which have led to the award of 24 PPL's and another 10 licences are expected. Where appropriate, students are flight tested by the licensing authority for the removal of licence restrictions imposed because of physical disabilities. The most notable successes to date are the issue of a completely unrestricted licence to a paraplegic and a PPL for a triple amputee.

Until December 1988, the flying training and residential facilities were provided by the Oxford Air Training School at Oxford Airport. However, the vagaries of the English weather seriously interrupted flying training and other factors at the Airport

added to the delays which the scholarship winners experienced in completing their flying training. No other flying school could be found in the United Kingdom which offered all the facilities required for the disabled students and the decision was made to transfer the training to the USA.

The scholarship winners in 1989 and subsequently will spend up to six weeks in Panama City, Florida, where it can be almost guaranteed that they will complete the flying course on time without any delays due to the weather. On return to the UK, those who have earned a US FAA private pilot licence will have the opportunity to qualify for a British CAA licence to allow them to continue flying in this country.

A most generous gift from CSE Aviation Ltd, the parent company of Oxford Air Training School, to IAT of the two Piper PA-28-140 Cherokee aircraft which were used for training by the disabled scholarship winners will enable those who are qualified to continue flying. It is intended that these aircraft will be leased to a flying club which will agree to form a section for disabled pilots and offer flying at a reduced rate to our IAT disabled PPL holders.

The two Cherokees have been refurbished and repainted by CSE Aviation Ltd. They can be seen at IAT 89 with their specially designed IAT livery and new registration letters, near the entrance to the Patron's Pavilion where the aircraft documents will be formally handed over to IAT by CSE Aviation Ltd on Sunday 23rd July 1989. Immediately after this ceremony, each of the nine 1989 scholarship winners will be presented with a certificate of award and the 1988 winners who have qualified will proudly receive the IAT flying badge.

Information on the flying scholarship scheme can be obtained from: John Patterson, IAT, Building 1108, RAF Fairford, Glos. GL7 4DL.



1988 Flying Scholarship trainees at Oxford....



.... with patron King Hussein

ARMOUR ON DISPLAY

On display are vehicles from:

THE ROYAL HUSSARS (PWO) 'The Cherrypickers'

The Royal Hussars (PWO) are stationed in Tidworth as the Armoured Regiment. They were formed on 25 October 1969 at Tidworth by the amalgamation of the 10th Royal Hussars (PWO) and the 11th Hussars (PAO). The 10th Royal Hussars (PWO) (The Shiny Tenth) were raised in 1715. The regiment took part in the battles of Falkirk and Culloden in 1745. Since then the regiment saw service in the seven years war, the Peninsular war, Crimea, Sudan and both world wars. The 11th Hussars (PAO) (The Cherrypickers) were also raised in 1715 and the regiment took part in the battles of Preston and Culloden. They earned the name Cherrypickers for an action in the Peninsular War. They were granted the crimson livery trousers by Prince Albert in 1840 and these are still worn today. The regiment played a prominent role in the battle of Balaklava in the charge of the Light Brigade. They also saw action in both world wars.

Today the Royal Hussars (PWO) are equipped with Chieftain main battle tanks, having recently returned from Germany where they were the first regiment to be equipped with the new Challenger tank. Both the Chieftain and Challenger tanks are equipped with 120 mm rifled guns which fire split ammunition, (separate projectiles and explosive charges). They also have computerised gun laying equipment. Both weigh approximately 60 tons.

Should you require more information about the Regular Army and the Royal Hussars (PWO) then contact your local Recruiting Office.

YOUR COUNTY ARMOURED REGIMENTS



Affiliated to the regiment and also on display are:-

A (ROYAL WILTSHIRE YEOMANRY) SQUADRON of THE ROYAL YEOMANRY

A (Royal Wiltshire Yeomanry) Squadron is a Territorial Army Squadron and part of The Royal Yeomanry. The Squadron is a

descendant of the Royal Wiltshire Yeomanry. The regiment was raised in 1745 and bears the title Primus in Armis (First in Arms) as the first unit of Yeomanry Cavalry. It has a fine record in the South African Campaign and the two World Wars.

The Squadrons role is



Armoured Reconnaissance. Reconnaissance is the business of locating the enemies positions and equipments in advance of our own forces. To this end troops have to be very mobile and good at radio communications. The Squadron is equipped with Fox armoured cars. The Fox is armed with a 30 mm cannon and powered by a Jaguar car engine. They have good radio communication with their Clansman radios.

If you wish to join the squadron and be paid for your services then visit the TA centre in Church Place, Swindon or telephone on 0793 23865.

THE ROYAL WESSEX YEOMANRY

The Royal Wessex Yeomanry's Regimental headquarters is in Cirencester. The regiment was formed in 1971 yet it has within it squadrons that are descendant of The Royal Wiltshire Yeomanry, The Royal Gloucestershire Hussars and The Royal Devon Yeomanry.

The Regiment is a Territorial Army Home defence Regiment. Their role is reconnaissance equipped with Landrovers. Their vehicles are specially prepared and fitted with sophisticated radios.

You can join the Wessex Yeomanry in Cirencester, Gloucester, Salisbury, Stroud or Barnstaple. The regiment is able to employ women within its squadrons. If you require further details telephone

0285 652367. Find out more about us and what we do by visiting the display.

